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MCAR-21 Initial Airworthiness

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Maldives Civil Aviation Authority
Republic of Maldives

Maldivian Civil Aviation Regulations

MCAR-21 Initial Airworthiness

Issue 4.00, 15 January 2025

Foreword

Maldives Civil Aviation Authority, in exercise of the powers conferred on it under Articles 5 and 6 of the Maldives Civil Aviation Authority Act 2/2012 has adopted this Regulation.

This Regulation shall be cited as MCAR-21 Initial Airworthiness and shall come in to force on 15 January 2025.

Existing aviation requirements in the field of airworthiness as listed in MCAR-21 Initial Airworthiness dated 18 December 2019 will be repealed as from 15 January 2025.

'Acceptable Means of Compliance' (AMC) illustrate a means, or several alternative means, but not necessarily the only possible means by which a requirement can be met.

'Guidance Material' (GM) helps to illustrate the meaning of a requirement.

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Section A – TECHNICAL REQUIREMENTS

Subpart A — GENERAL PROVISIONS

MCAR-21.A.1 Scope

This Section establishes general provisions governing the rights and obligations of the applicant for, and holder of, any certificate issued or to be issued in accordance with this Section.

MCAR-21.A.3B Airworthiness directives

- (a) An airworthiness directive means a document issued or adopted by the State of Design or the CAA which mandates actions to be performed on an aircraft to restore an acceptable level of safety, when evidence shows that the safety level of this aircraft may otherwise be compromised.
- (b) The CAA shall issue an airworthiness directive when:
1. an unsafe condition has been determined by the CAA to exist in an aircraft, as a result of a deficiency in the aircraft, or an engine, propeller, part or appliance installed on this aircraft; and
 2. that condition is likely to exist or develop in other aircraft.
- (c) When an airworthiness directive has to be issued by the CAA to correct the unsafe condition referred to in paragraph (b), or to require the performance of an inspection, the holder of the type-certificate, supplemental type-certificate, major repair design approval, Technical Standard Order (TSO) authorisation or any other relevant approval deemed to have been issued under this Regulation, shall:
1. Propose the appropriate corrective action or required inspections, or both, and submit details of these proposals to the CAA for approval.
 2. Following the approval by the CAA of the proposals referred to under subparagraph (1), make available to all known operators or owners of the product, part or appliance and, on request, to any person required to comply with the airworthiness directive, appropriate descriptive data and accomplishment instructions.
- (d) An airworthiness directive shall contain at least the following information:
1. An identification of the unsafe condition;
 2. An identification of the affected aircraft;
 3. The action(s) required;
 4. The compliance time for the required action(s);
 5. The date of entry into force.

AMC1 21.A.3B(b) Failures, malfunctions and defects

UNSAFE CONDITION

An unsafe condition exists if there is factual evidence (from service experience, analysis or tests) that:

(a) An event may occur that would result in fatalities, usually with the loss of the aircraft, or reduce the capability of the aircraft or the ability of the crew to cope with adverse operating conditions to the extent that there would be:

- (i) A large reduction in safety margins or functional capabilities, or
- (ii) Physical distress or excessive workload such that the flight crew cannot be relied upon to perform their tasks accurately or completely, or
- (iii) Serious or fatal injury to one or more occupants

unless it is shown that the probability of such an event is within the limit defined by the applicable certification specifications, or

- (b) There is an unacceptable risk of serious or fatal injury to persons other than occupants, or
- (c) Design features intended to minimise the effects of survivable accidents are not performing their intended function.

Note 1: Non-compliance with applicable certification specifications is generally considered as an unsafe condition, unless it is shown that possible events resulting from this non-compliance do not constitute an unsafe condition as defined under paragraphs (a), (b) and (c).

Note 2: An unsafe condition may exist even though applicable airworthiness requirements are complied with.

Note 3: The above definition covers the majority of cases where the CAA considers there is an unsafe condition. There may be other cases where overriding safety considerations may lead the CAA to issue an airworthiness directive.

Note 4: There may be cases where events can be considered as an unsafe condition if they occur too frequently (significantly beyond the applicable safety objectives) and could eventually lead to consequences listed in paragraph (a) in specific operating environments. Although having less severe immediate consequences than those listed in paragraph (a), the referenced events may reduce the capability of the aircraft or the ability of the crew to cope with adverse operating conditions to the extent that there would be, for example, a significant reduction in safety margins or functional capabilities, a significant increase in crew workload, or in conditions impairing crew efficiency, or discomfort to occupants, possibly including injuries.

MCAR-21.A.5 Record-keeping

All natural or legal persons that hold or have applied for a design change or repair design approval or permit to fly under this Regulation shall:

- (a) establish a record-keeping system and maintain the relevant design information/data; that information/data shall be made available to the CAA in order to provide the information/data that is necessary to ensure the continued airworthiness of the product, part or appliance, the continued validity of the operational suitability data, and compliance with the applicable environmental protection requirements;
- (b) (reserved);
- (c) with regard to permits to fly:
 - 1. maintain the documents that are produced to establish and justify the flight conditions, and make them available to the CAA in order to provide the information that is necessary to ensure the continued airworthiness of the aircraft;
 - 2. when they issue a permit to fly under the privilege of approved organisations, maintain the documents associated with it, including inspection records and documents that support the approval of the flight conditions and the issuance of the permit to fly itself, and make them available to the CAA in order to provide the information that is necessary to ensure the continued airworthiness of the aircraft.

AMC1 21.A.5 Record-keeping

- (a) The record-keeping system should ensure that all the records that are required by point 21.A.5 are accessible within a reasonable time. Those records should be organised in a manner that ensures their traceability and retrievability throughout the required retention period.
- (b) The records should remain legible throughout the required retention period and be protected against damage, alteration, and tampering.
- (c) The format of the records should be specified in the organisation's procedures.
- (d) [reserved]
- (e) The retention period starts when the record is created or when it is last amended

GM1 21.A.5 Repair designs and record keeping

For repair designs, the record-keeping requirement of point 21.A.5 applies to the data described in AMC 21.A.433(a).

AMC1 21.A.5(a) and 21.A.433(b) Repair design and record-keeping

- (a) The relevant substantiation data related to a new major repair design and record-keeping should include:
- (1) identification of the damage and of the source of the report;
 - (2) the major repair design approval sheet that identifies the applicable specifications and the references of the justifications;
 - (3) the repair drawing and/or instructions, and the scheme identifier;
 - (4) any correspondence with the holder of the type certificate (TC), supplemental type certificate (STC), or auxilliary power unit (APU) European technical standard order (ETSO) authorisation, if their advice on the design was sought;
 - (5) the structural justification (static strength, fatigue, damage tolerance, flutter, etc.) or references to that data;
 - (6) the effect on the aircraft, engines and/or systems (performance, flight handling, etc., as appropriate);
 - (7) the effect on the maintenance programme;
 - (8) the effect on the airworthiness limitations, the flight manual, and the operating manual;
 - (9) any change in the weight and moment; and
 - (10) any special test requirements.
- (b) The relevant minor repair documentation includes points (a)(1) and (a)(3). Other elements of point (a) may be included, where necessary. If the repair is outside the approved data, a justification for the classification is required.
- (c) Special consideration should be given to repairs that impose subsequent limitations on the part, product or appliance (e.g. engine turbine segments that may only be repaired a finite number of times, the number of repaired turbine blades per set, the oversizing of fastener holes, etc.).
- (d) Special consideration should also be given to life-limited parts and critical parts, notably with the involvement of the TC or STC holder, when deemed necessary under point 21.A.433(a)(4).
- (e) Repairs to engines or to APU-critical parts would normally be accepted only with the involvement of the TC holder

GM1 21.A.5(a) and (b) Record-keeping

RECORDING AND ARCHIVING SYSTEM

All forms of recording media are acceptable (paper, film, magnetic, etc.), including the use of electronic records*, provided that they can meet the required duration for archiving under the given conditions and that the continued readability of the records is ensured.

The related procedures are required to:

- identify the records to be kept;
- describe the organisation of, and responsibility for, the archiving system (its location, compilation, format) and the conditions for access to the information (e.g. by product, subject, etc.);
- control access to the data and provide effective protection from deterioration or accidental damage, alteration, and tampering;
- ensure the continued readability of the records;
- demonstrate to the CAA the proper functioning of the record system.

*Related to electronic records, the following definitions apply:

- electronic record: electronic or digital data that is created, generated, sent, communicated, received, or stored by electronic means;
- electronic data: it is typically in the form of documentation that is statically stored in a computer file that is not modifiable (e.g. pdf of a scanned document with wet ink signatures);
and
- digital data: it is typically in the form of computer-generated bytes of information that is stored in a computer workable file (e.g. MS Word file, MS Excel file, 3D CAD file).

MCAR-21.A.7 Instructions for continued airworthiness

- (a) The holder of a type acceptance certificate, design change or repair design approval, shall develop or reference the instructions which are necessary for ensuring that the airworthiness standard related to the aircraft type and any associated part is maintained throughout the operational life of the aircraft, when demonstrating compliance with the applicable type-certification basis established by the State of Design.
- (b) At least one set of complete instructions for continued airworthiness shall be provided by the holder of:
1. a type acceptance certificate to each known owner of one or more products upon its delivery or upon the issuance of the first certificate of airworthiness for the affected aircraft, whichever occurs later,
 2. a design change approval, to all known operators of the product affected by the change upon the release to service of the modified product,
 3. a repair design approval, to all known operators of the product affected by the repair upon the release to service of the product in which the repair design is embodied.

Thereafter, those design approval holders shall make those instructions available on request to any other person required to comply with those instructions.

- (c) By way of derogation from point (b), the type acceptance certificate holder may delay the availability of a part of the instructions for continued airworthiness, dealing with long lead accomplishment instructions of a scheduled nature, until after the product or modified product has entered into service, but shall make those instructions available before the use of this data is required for the product or modified product.
- (d) The design approval holder, who is required to provide instructions for continued airworthiness in accordance with point (b), shall also make available changes to those instructions to all known operators of the product affected by the change and, on request, to any other person required to comply with those changes.

GM1 21.A.7(b) Other persons required to comply

For the purpose of this GM, 'any other person required to comply' means:

- any independent certifying staff who performs maintenance on a product or article, in accordance with MCAR-A, in the framework of a contract (or work order) with the person or organisation responsible for the aircraft continuing airworthiness;
- any maintenance organisation approved to maintain a product or article, in accordance with MCAR-A, in the framework of a contract (or work order) with the owner of the engine or article, or the person or organisation responsible for the aircraft continuing airworthiness;
- any organisation approved to manage the aircraft continuing airworthiness in accordance with MCAR-A, in the framework of a contract with the aircraft owner or aircraft operator

MCAR-21.A.9 Access and investigation

Any natural or legal person that holds or has applied for a design change or repair approval, certificate of airworthiness, noise certificate, permit to fly under this Regulation, shall:

- (a) grant the CAA access to any facility, product, part and appliance, document, record, data, process, procedure or to any other material in order to review any report, make any inspection, or perform or witness any flight and ground test, as necessary, in order to verify the initial and continued compliance of the organisation with the applicable requirements of Maldives Civil Aviation Act 2/2001 and its delegated and implementing acts;
- (b) make arrangements to ensure the CAA has access, as provided for in point (a), also in respect of the natural or legal person's partners, suppliers and subcontractors.

Subpart B — TYPE-CERTIFICATES

MCAR-21.A.11 Scope

- (a) CAA does not issue type certificates.
- (b) This Subpart establishes the procedure for issuing type acceptance certificates (TAC) for products with foreign type certificates.

GM 21.A.11 Scope

The TAC is issued to recognise a foreign type certificate in the Maldives. The TAC is issued to the foreign type certificate holder. Once issued, any subsequent aircraft of that type may enter Maldives without going through the type acceptance process.

All aircraft must go through the entry process for the issue of an airworthiness certificate.

Acceptance of the aircraft's type-certificate (TC) will imply acceptance of the associated engine and/or propeller type-certificate. Acceptance of the type-certificate also implies the acceptance of the associated airworthiness codes.

MCAR-21.A.12 Acceptability of foreign type certificates

The following foreign type-certificates may be accepted by the CAA for issuing a TAC:

- (a) a type-certificate issued by the EASA
- (b) a type-certificate accepted by EASA
- (c) a type-certificate issued by a national aviation authority of an ICAO Contracting State in compliance with Annexes 8 and 16 to the Convention on International Civil Aviation.

MCAR-21.A.15 Application

- (a) An application for a TAC shall be made in a form and manner established by the CAA.
- (b) An applicant for TAC shall provide CAA:
 - 1. evidence that a type certificate acceptable to CAA as per MCAR 21.A.12, has been issued;
 - 2. details of any airworthiness requirement not complied with is compensated for by a factor that provides an equivalent level of safety;
 - 3. a copy of the applicable type certificate data sheet;
 - 4. a copy of the type certificate data sheet for noise;
 - 5. a copy of the flight manual that contains all the available options applicable to the type, and that was approved by the national aviation authority that issued the foreign type certificate;
 - 6. a copy of the manufacturer's instructions for continued airworthiness of the aircraft;
 - 7. a copy of the parts catalogue for the aircraft;
 - 8. a list of all current field service documents applicable to the aircraft ;
 - 9. an undertaking from the holder of the foreign type certificate to continue to supply CAA at no charge, service bulletins and instructions for the continuing airworthiness of aircraft of that type and any amendments of the documents mentioned in subparagraphs 5, 6, 7 & 8;
 - 10. maintenance and flight crew type training to a CAA Inspector.
- (c) If the application relates to a variant of an aircraft type for which there is already a TAC in force, then only data peculiar to the variant needs to be supplied. The TAC will be amended to include the new variant. The applicant shall provide maintenance and flight crew type training relevant to the changes in type acceptance certificate, to a CAA Inspector.

AMC 21.A.15(a) Application

1. An application should be made on CAA Form 735.
2. The application form should state exactly which models are to be included on the TAC. These models shall be included on the foreign type-certificate.
3. The data requirements specified in MCAR-21.A.15 (c) shall be met for each model included on the application form.

MCAR-21.A.15B Grant of a TAC

When an applicant has demonstrated to the satisfaction of the CAA that:

- (a) the product meets the applicable type-certification basis and environmental protection requirements;
- (b) the requirements of MCAR-21.A.15(b) have been met; and
- (c) no feature or characteristic of the aircraft type makes it unsafe for the intended use,

the CAA may, subject to such conditions that the CAA deems necessary, grant a TAC.

MCAR-21.A.16 Suspension or cancellation of a TAC

- (a) CAA may suspend or cancel a TAC if it considers that it is necessary to do so in the interests of aviation safety. An inability on the part of the foreign TC holder to provide ongoing technical support for the aircraft type may constitute grounds for such suspension or cancellation.

- (b) Suspension or cancellation of the foreign type certificate by the State of Design automatically invalidates the associated TAC.

MCAR-21.A.31 Type design

- (a) The type design consists of:
 - 1. The drawings and specifications, and a listing of those drawings and specifications, necessary to define the configuration and the design features of the product shown to comply with the applicable type-certification basis and environmental protection requirements;
 - 2. Information on materials and processes and on methods of manufacture and assembly of the product necessary to ensure the conformity of the product;
 - 3. An approved airworthiness limitations section of the instructions for continued airworthiness as defined by the applicable airworthiness code; and
 - 4. Any other data allowing by comparison, the determination of the airworthiness and, if relevant, the environmental characteristics of later products of the same type.

MCAR-21.A.41 Type-certificate

The type-certificate is considered to include the type design, the operating limitations, the instructions for continued airworthiness, the type-certificate data sheet for airworthiness and emissions, the applicable type-certification basis and environmental protection requirements with which the State of Design records compliance, and any other conditions or limitations prescribed for the product in the applicable certification specifications and environmental protection requirements. The aircraft type-certificate, in addition, includes the applicable operational suitability data certification basis, the operational suitability data and the type-certificate data sheet for noise. The aircraft type-certificate data sheet includes the record of CO₂ emissions compliance and the engine type-certificate data sheet includes the record of exhaust emissions compliance.

MCAR-21.A.62 Availability of operational suitability data

The holder of the type-certificate, for which a type acceptance certificate has been issued in accordance with MCAR-21.A.15B, shall make available:

- (a) at least one set of complete operational suitability data prepared in accordance with the applicable operational suitability certification basis, to all known operators of the aircraft, before the operational suitability data must be used by a training organisation or a Maldivian operator; and
- (b) any change to the operational suitability data to all known Maldivian operators of the aircraft; and
- (c) on request, the relevant data referred to in points (a) and (b) above, to:
 - 1. the CAA; and
 - 2. any person required to comply with one or more elements of this set of operational suitability data.

(Subpart C — RESERVED)

Subpart D — CHANGES TO TYPE-CERTIFICATES

MCAR-21.A.90A Scope

This Subpart establishes the procedure for the approval of changes to type-certificates and established the rights and obligations of the applicants for, and holders of, those approvals. This Subpart also defines standard changes that are not subject to an approval process under this Subpart.

GM 21.A.90A Scope

The term 'changes to the type certificate' is consistently used in MCAR-21, Subpart D and E, as well as in the related AMC and GM. This term does not refer to changing the document that reflects the type certificate (TC) but to the elements of TC as defined in 21.A.41. It means that the processes for the approval of changes, as described in the said two Subparts, do not only apply to changes to the type design, but may also apply to changes to:

- the operating limitations;
- the type certificate data sheet (TCDS) for airworthiness and emissions;
- the applicable type-certification basis and environmental protection requirements with which the applicant has to demonstrate compliance;
- any other conditions or limitations prescribed for the product;
- the applicable operational suitability data (OSD) certification basis;
- the OSD; and
- the TCDS for noise.

NOTE: OSD is only applicable to aircraft TCs and not to engine or propeller TCs. Therefore, changes to OSD are only relevant for changes to aircraft TCs.

MCAR-21.A.90B Standard Changes

(a) Standard changes are changes to a type-certificate:

1. in relation to:
 - (i) aeroplanes of 5700 kg Maximum Take-Off Mass (MTOM) or less;
 - (ii) rotorcraft of 3175 kg MTOM or less;
 - (iii) sailplanes, powered sailplanes, balloons and airships, as defined in ELA1 or ELA2,
2. that follow design data included in certification specifications accepted by the CAA containing acceptable methods, techniques and practices for carrying out and identifying standard changes, including the associated instructions for continuing airworthiness; and
3. that are not in conflict with TC holders data.

(b) Points 21.A.91 to 21.A.105 are not applicable to standard changes.

GM 21.A.90B Standard changes – Certification Specifications

EASA CS-STAN contains the certification specification referred to in MCAR-21.A.90B(a)2. Guidance on the implementation of Standard Changes and Standard Repairs can be found in AMC M.A.801 of the AMC to MCAR-M.

MCAR-21.A.91 Classification of changes to a type-certificate

Changes to a type-certificate are classified as minor and major. A ‘minor change’ has no appreciable effect on the mass, balance, structural strength, reliability, operational characteristics, noise, operational suitability data or other characteristics affecting the airworthiness of the product or its environmental characteristics. Except where CAA finds that the change in design, power, thrust, or mass is so extensive that a substantially complete investigation of compliance with the applicable type-certification basis is required, all other changes are ‘major changes’ under this Subpart. Major and minor changes shall be approved in accordance with MCAR-21.A.95 or MCAR-21.A.97 as appropriate and shall be adequately identified.

GM 21.A.91 Classification of changes to type-certificate

1. PURPOSE OF CLASSIFICATION

Classification of changes to a type-certificate (TC) into MAJOR or MINOR is to determine the approval route to be followed in MCAR-21 Subpart D, i.e., either MCAR-21.A.95 or MCAR-21.A.97, or alternatively whether application and approval has to be made in accordance with MCAR-21 Subpart E.

2. INTRODUCTION

2.1. MCAR-21.A.91 proposes criteria for the classification of changes to a type-certificate as minor or major.

- i. This GM is intended to provide guidance on the term ‘appreciable effect’ affecting the airworthiness of the product or affecting any of the other characteristics mentioned in MCAR-21.A.91, where ‘airworthiness’ is interpreted in the context of a product in conformity with type design and in condition for safe operation. It provides complementary guidelines to assess a change to the type-certificate in order to fulfil the requirements of MCAR-21.A.91 where classification is the first step of a procedure.

Note: For classification of Repairs see GM 21.A.435.

- ii. Although this GM provides guidance on the classification of major changes, as opposed to minor changes as defined in MCAR-21.A.91, the GM and MCAR-21.A.91 are deemed entirely compatible.

3. ASSESSMENT OF DESIGN CHANGE FOR CLASSIFICATION

3.1. Changes to the TC

MCAR-21.A.91 addresses all changes to any of the aspects of a TC. This includes changes to a the type design, as defined in MCAR-21.A.31, as well as to the other constituents of a TC, as defined in MCAR-21.A.41.

3.2. (Reserved)

3.3. Classification Process (see also the flowchart ‘Classification process’ in Appendix A to GM 21.A.91)

MCAR-21.A.91 requires all changes to be classified as either major or minor, using the criteria of MCAR-21.A.91.

Wherever there is doubt as to the classification of a change, the CAA should be consulted for clarification.

When the strict application of the paragraph 3.4 criteria results in a major classification, the applicant may request re-classification, if justified, and the CAA could take the responsibility for re-classifying the change.

A simple design change planned to be mandated by an airworthiness directive may be re-classified as minor due to the involvement of the State of Design in the continued airworthiness process.

The reasons for a classification decision should be recorded.

3.4. Complementary guidance for classification of changes.

A change to the type design is judged to have an ‘appreciable effect on the mass, balance, structural strength, reliability, operational characteristics, noise, fuel venting, exhaust emission, operational suitability or other characteristics affecting the airworthiness, environment protection or operational suitability of the product’ and therefore should be classified as major, in particular but not only when one or more of the following conditions are met:

- (a) Where the change requires an adjustment of the type-certification basis or the OSD certification basis (special conditions or equivalent safety findings) other than elect to comply with later certification specifications;
- (b) Where the applicant proposes a new interpretation of the certification specifications used for the type-certification basis or the OSD certification basis, that has not been published as AMC material or otherwise agreed with the CAA;
- (c) Where the demonstration of compliance uses methods that have not been previously accepted as appropriate for the nature of the change;

- (d) Where the extent of new substantiation data necessary to comply with the applicable certification specifications and the degree to which the original substantiation data has to be re-assessed and re-evaluated is considerable;
- (e) where the change alters the airworthiness limitations or the operating limitations;
- (f) Where the change is made mandatory by an airworthiness directive or the change is the terminating action of an airworthiness directive (ref. MCAR-21.A.3B). See note 1; and
- (g) Where the design change introduces or affects functions where the failure effect is classified as catastrophic or hazardous.

Note 1: A change previously classified as minor and approved prior to the airworthiness directive issuance decision needs no re-classification. However, the CAA retains the right to review the change and re-classify/re-approve it if found necessary.

Note 2: The conditions listed in (a) through (g) above conditions are an explanation of the criteria noted in MCAR-21.A.91.

For an understanding of how to apply the above conditions it is useful to take note of the examples given in Appendix A to GM 21.A.91.

3.5. Complementary guidance on the classification of changes to OSD

This paragraph provides firstly general guidance on minor OSD change classification, and secondly additional guidance specific to each OSD constituent.

Changes to OSD are considered minor when they:

- incorporate optional information (representing improvements/enhancements);
- provide clarifications, interpretations, definitions or advisory text; or
- do not change the intent of the OSD document, e.g. changes to:
 - o titles, numbering, formatting, applicability;
 - o order, sequence, pagination; or
 - o sketches, figures, units of measurement, and correction of editorial mistakes such as:
 - spelling; or
 - reference numbers.

Given the structure and individual intent of the separate OSD constituents, the interpretation of 'appreciable' is also affected by the specific nature of the applicable certification specifications (CS) for that constituent. Therefore, specific guidance on each of the OSD constituents is provided hereafter.

(a) Master minimum equipment list (MMEL)

1. A change to the MMEL is judged to have an 'appreciable effect on the operational suitability of the aircraft' and, therefore, should be classified as

major, in particular but not only when one or more of the following conditions are met:

- i. where the change requires an adjustment of the OSD certification basis;
 - ii. where the applicant proposes changes to the means of compliance with the requirements used for the OSD certification basis (i.e. MMEL safety methodology);
 - iii. where the extent of substantiation data and the degree to which the substantiation data has to be assessed and evaluated is considerable, in particular but not only when:
 - (A) the substantiation data involving the review of failure conditions that are classified as hazardous or catastrophic has to be evaluated;
 - (B) the assessment of the failure effects (including next worst failure/event effects) on crew workload and the applicable crew procedures has to be evaluated; or
 - (C) the capability of the aircraft to perform types of operation (e.g. extended-range twin operations (ETOPS), instrument flight rules (IFR)) under MMEL is extended.
2. A change to the MMEL is judged not to have an ‘appreciable effect on the operational suitability of the aircraft’ and, therefore, should be classified as minor, in particular but not only when one or more of the following conditions are met:

Modifications to an existing item when:

- i. the change only corresponds to the applicability of an item for configuration management purposes;
- ii. the change corresponds to the removal of an item;
- iii. the change corresponds to the increase in the number of items required for dispatch; and
- iv. the change corresponds to a reduction in the rectification interval of an item.

Addition of a new item when:

- v. it is considered as non-safety-related (refer to EASA CS-MMEL, GM2 MMEL.110); or

- vi. it is indicated as eligible for minor change classification in 1 to GM1 EASA CS-MMEL-145.

(b) Flight crew data (FCD)

- 1. FCD change related to change to the type design

When classifying the FCD change as minor or major, the method of EASA CS-FCD, Subpart D should be used.

- i. An analysis should be performed to assess the change impact on the FCD through the allocation of difference levels realised with operator difference requirement (ODR) tables as per EASA CS FCD.400. In this case, the base aircraft is the aircraft without the type design change, whereas the candidate aircraft is the aircraft which includes the type design change.

- (A) If a no more than level B difference is assigned for training, checking and currency for the candidate aircraft, the related FCD change should be classified as minor.

- (B) If a difference level C, D or E for training, checking and currency is assigned to the candidate aircraft, the related FCD change should be classified as major.

- ii. Notwithstanding the above, the change to FCD should be classified as major when a T1 or T2 test is found necessary by the applicant to confirm that the aircraft with the type design change is not a new type for pilot type rating.

- 2. Stand-alone changes to FCD are not related to any type design changes. They may be triggered for example by in-service experience or by the introduction of data at the request of the applicant after type certification.

- i. Introduction of credits in training, checking or currency should be classified as major. Example: addition of further-differences training, common take-off and landing credits, etc.

- ii. Stand-alone changes to FCD that correspond to a change of the intent of a data should be classified as major. Example: addition of a training area of special emphasis (TASE) or prerequisite, expansion of a TASE.

(c) Cabin crew data (CCD)

- 1. OSD change related to change to the type design

When classifying the OSD CCD change as minor or major, the method from EASA CS-CCD, Subpart B should be used.

- i. An analysis should be performed to assess the change impact on the OSD CCD through the identification of the difference and its impact on operation in the aircraft difference table (ADT) as per EASA CS CCD.200. In this case, the base aircraft is the aircraft without the type design change, whereas the candidate aircraft is the aircraft which includes the type design change.
 - (A) If the difference has no impact on the operation of an element of the ADT for the candidate aircraft, the related OSD CCD change should be classified as minor.
 - (B) If the difference has an impact on the operation of an element of the ADT for the candidate aircraft, the related OSD CCD change should be classified as major.
 - ii. Notwithstanding the above, the change to OSD CCD should be classified as major when an ADT analysis is found necessary by the applicant to confirm that the aircraft with the type design change is not a new type for cabin crew.
2. Stand-alone changes to OSD CCD are not related to any type design changes. They may be triggered for example by in-service experience or by the introduction of data at the request of the applicant after type certification.
- i. Stand-alone changes to cabin aspects of special emphasis (CASE) should be classified as major. Example: addition of further CASE, expansion of CASE.
 - ii. When classifying stand-alone changes to type-specific data for cabin crew the method from EASA CS-CCD, Subpart B should be used. An analysis should be performed to assess the change impact on the type-specific data through the identification of the difference and its impact on operation in the ADT as per EASA CS CCD.200.
 - (A) If the change does not concern a determination element of EASA CS CCD.205, the stand-alone change should be classified as minor.
 - (B) If the change has no impact on the operation of an element of the ADT, the stand-alone change should be classified as minor.
 - (C) If the change has an impact on the operation of an element of the ADT, the stand-alone change should be classified as major.
- (d) Simulator data (SIMD)

The OSD constituent 'simulator data' does not include the data package that is necessary to build the simulator. It includes only the definition of the scope of

validation source data to support the objective qualification of a simulator. So, when this guidance discusses changes to ‘simulator data’, this concerns only changes to the ‘definition of scope of validation source data’ and not changes to the data package.

1. A change to the SIMD should be classified as major, in particular but not only when one or more of the following conditions are met:
 - i. when a change to the SIMD introduces validation source data from an engineering platform where the process to derive such data has not been audited by the Agency in the initial SIMD approval; or
 - ii. when the process to derive validation source data from an engineering platform is changed.
2. A change to the SIMD could be classified as minor, in particular but not only when one or more of the following conditions are met:
 - i. changes to engineering validation data independent of the aircraft due to improvements or corrections in simulation modelling (e.g. aerodynamics, propulsion);
 - ii. configuration changes to the aircraft where the process to derive validation source data from an engineering platform is unchanged;
 - iii. changes to validation source data by using better, more applicable flight test data; or
 - iv. editorial changes to the validation data roadmap (VDR).

(e) Maintenance certifying staff data (MCSD)
[Reserved]

3.6. Complementary guidance for the classification of changes to aircraft flight manuals (AFMs)

The following changes to the AFM are deemed to be minor:

- (a) revisions to the AFM associated with changes to the type design that are classified as minor in accordance with point MCAR-21.A.91;
- (b) revisions to the AFM that are not associated with changes to the type design (also identified as stand-alone revisions) which fall into one of the following categories:
 - 1) changes to limitations or procedures that remain within already certified limits (e.g. weight, structural data, noise, etc.);

- 2) consolidation of two or more previously approved and compatible AFMs into one, or the compilation of different parts taken from previously approved and compatible AFMs that are directly applicable to the individual aircraft (customisation); and
 - 3) the introduction into a given AFM of compatible and previously approved AFM amendments, revisions, appendices or supplements; and
- (c) administrative revisions to the AFM, defined as follows:
- 1) for the AFMs issued by the TC holder:
 - (i) editorial revisions or corrections to the AFM;
 - (ii) changes to parts of the AFM that do not require approval by the State of Design;
 - (iii) conversions of previously Federal Aviation Administration (FAA)- or EASA-approved combinations of units of measurement added to the AFM in a previously approved manner;
 - (iv) the addition of aircraft serial numbers to an existing AFM where the aircraft configuration, as related to the AFM, is identical to the configuration of aircraft already covered by that AFM;
 - (v) the removal of references to aircraft serial numbers no longer applicable to that AFM; and
 - (vi) the translation of an EASA-approved AFM into the language of the State of design or State of registration;
 - 2) for AFM supplements issued by STC holders:
 - (i) editorial revisions or corrections to the AFM supplement;
 - (ii) changes to parts of the AFM supplement that are not required to be approved by the State of Design;
 - (iii) conversions of previously FAA- or EASA-approved combinations of units of measurement added to the AFM supplement in a previously approved manner;
 - (iv) the addition of aircraft serial numbers to an existing AFM supplement where the aircraft configuration, as related to the AFM supplement, is identical to that of the aircraft already in that AFM supplement; 'identical' means here that all the aircraft have to belong to the same type and model/variant;

- (v) the addition of a new STC to an existing AFM supplement, when this supplement is fully applicable to the new STC;
- (vi) the removal of references to aircraft serial numbers that are no longer applicable to that AFM supplement;
- (vii) the translation of an EASA-approved AFM supplement into the language of the State of design or the State of registration.

- 3.7. Complementary guidance for classification of changes to environmental protection characteristics
See Section 8 of Appendix A to GM 21.A.91.

MCAR-21.A.92 Eligibility

Any natural or legal person may apply for approval of a change to a type-certificate under this Subpart.

MCAR-21.A.93 Application

- (a) An application for approval of a change to a type design shall be made in a form and manner established by the CAA:
- (b) An application shall include a description of the change identifying:
- (i) the configuration(s) of the product in the type certificate upon which the change is to be made
 - (ii) all areas of the product in the type-certificate, including the approved manuals, that are changed or affected by the change;
 - (iii) when the change affects the operational suitability data, any necessary changes to the operational suitability data; and
 - (iv) the certification specifications and environmental protection requirements with which the change has been designed to comply in accordance with MCAR-21.A.101.

AMC 21.A.93(b) Certification programme for a change to a TC or an STC

The description of the change should include an explanation of the purpose of the change, the pre-modification and post-modification configuration(s) of the product, schematics/pictures, and any other detailed features and boundaries of the physical change (this may be supplemented by drawings or outlines of the design, if this helps to understand the design change), as well as the identification of the changes in areas of the product that are functionally affected by the change, and the identification of any changes to the approved manuals.

GM2 to 21.A.93(b)(1)(iii) Interaction of changes to the type design and changes to the master minimum equipment list (MMEL)

In general, it has to be assumed that changes to the type certificate (TC) that affect the type design can have an effect on the MMEL.

Due to its alleviating nature, the MMEL is developed to improve aircraft use, thereby providing a more convenient and economical air transportation for the public.

Therefore, not introducing MMEL relief for new equipment, system or function has no effect on the safety of the operation. The introduction of MMEL relief for new equipment can, therefore, be treated as a stand-alone MMEL change, separately from the design change, and can be processed at a later date than the date of entry into service of the aircraft including the design change.

MCAR-21.A.95 Requirements for approval of a minor change

Minor changes to a type-certificate shall be classified and approved either:

- (a) By the CAA; or
- (b) By a design organization acceptable to CAA, provided
 1. The design organisation furnishes a handbook to the CAA describing, directly or by cross-reference, the organisation, the relevant procedures and the products or changes to products to be designed.
 2. The handbook is amended as necessary to remain an up-to-date description of the organisation, and copies of amendments shall be supplied to the CAA.

AMC 21.A.95 (b)1 Minor changes

TYPICAL CONTENT OF HANDBOOK FOR ORGANISATIONS THAT DESIGN MINOR CHANGES TO TYPE DESIGN OR MINOR REPAIRS TO PRODUCTS.

The following is a typical table of contents for the handbook:

Part 1. Organisation

- 1.1. Objective of the handbook and binding statement
- 1.2. Responsible person for the administration of the handbook
- 1.3. Amendment procedure
- 1.4. List of effective pages
- 1.5. Distribution list
- 1.6. Presentation of the design organisation (DO) (including locations)
- 1.7. Scope of work (with identification of type and models of products)
- 1.8. Organisation charts
- 1.9. Human resources
- 1.10. Management staff
- 1.11. Certifying personnel (i.e. the persons responsible to):
 - i. classify changes to type design or repairs
 - ii. verify compliance
 - iii. approve minor changes to type design and minor repairs
 - iv. issue information or instructions
- 1.12. Independent system monitoring
- 1.13. Safety management system

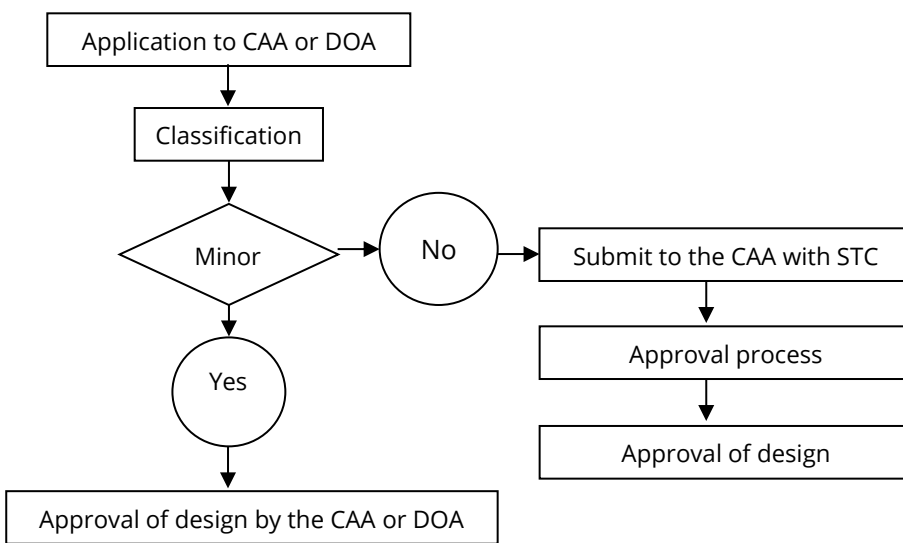
Part 2. Procedures

- 2.1. Management of changes to type design and design of repairs
 - i. configuration control
 - ii. classification, and
 - iii. approval of minor changes to type design and minor repairs

- 2.2. Control of design subcontractors
- 2.3. Collecting/Investigating of failures, malfunctions and defects
- 2.4. Coordination with production
- 2.5. Documentation control
 - i. in relation to the changes and repairs, and
 - ii. in relation to failures/malfunctions and defects (i.e. Services - Bulletins)
- 2.6. Record-keeping

GM 21.A.95 Type design change (modification) approval flowchart

Flowchart 1 to GM 21.A.95 – Design change approval



GM 21.A.95(b) Minor changes

An owner/operator may get their minor change classified and approved by the TC/STC holder even though the TC/STC holder has not submitted the handbook to the CAA.

The requirement to submit a handbook to CAA is for design organisations other than TC/STC holder.

MCAR-21.A.97 Requirements for approval of a major change

An applicant for approval of a major change shall submit a supplemental type certificate (STC) which meets Subpart E requirements.

Approval of a major change to a type-certificate is limited to that or those specific configuration(s) in the type-certificate upon which the change is made.

GM 21.A.97 Type design change (modification) approval flowchart

(Refer to GM 21.A.95)

MCAR-21.A.101 Designation of applicable certification specifications and environmental protection requirements

An applicant for a change to a type certificate shall demonstrate that the changed product complies with the type-certification basis incorporated by reference in the type-certificate, and with the applicable environmental protection requirements laid down in ICAO Annex 16.

AMC 21.A.101 Designation of applicable certification specifications and environmental protection requirements – Explanation of terminology

Type-certification basis: the applicable airworthiness and OSD certification specifications as established for the change according to point MCAR-21.A.101, as appropriate, special conditions, equivalent level of safety findings, elects to comply, and deviations applicable to the product to be certified.

MCAR-21.A.103 Issue of approval

- (a) The applicant shall be entitled to have a major change to a type design approved by the CAA after submitting the STC referred to in MCAR-21.A.97. Where a major change to an aircraft type-certificate is approved before compliance with the applicable operational suitability data certification basis is demonstrated, the applicant shall demonstrate compliance with the operational suitability data certification basis before the operational suitability data must actually be used.

- (b) A minor change to a type design shall only be approved in accordance with MCAR-21.A.95 if it is shown that the changed product meets the applicable certification specifications/airworthiness code, as specified in MCAR-21.A.101.

Subpart E — SUPPLEMENTAL TYPE-CERTIFICATES

MCAR-21.A.111 Scope

- a) The CAA does not issue supplemental type certificates.
- b) This subpart describes the requirements for the acceptance of supplemental type certificates.

MCAR-21.A.111B Acceptability of foreign supplemental type certificates

The following foreign supplemental type certificates may be accepted by the CAA:

- (a) a supplemental type certificate issued by EASA
- (b) a supplemental type certificate accepted by EASA
- (c) a supplemental type certificate issued by an ICAO Contracting State in compliance with Annexes 8 and 16 to the Convention on International Civil Aviation.

MCAR-21.A.111C Incorporation of supplemental type certificates

An STC shall be incorporated in accordance with subpart D or M.

(Subpart F — RESERVED)

(Subpart G — RESERVED)

Subpart H — CERTIFICATES OF AIRWORTHINESS

MCAR-21.A.171 Scope

This Subpart establishes the procedure for issuing Certificates of Airworthiness.

The Certificate of Airworthiness as used in this Regulation is the Certificate of Airworthiness referred to in Article 31 of the Convention on International Civil Aviation.

MCAR-21.A.172 Eligibility

- (a) Any natural or legal person under whose name an aircraft is registered or will be registered in the Maldives ('State of registry'), or its representative, shall be eligible as an applicant for a Certificate of Airworthiness for that aircraft under this Subpart.
- (b) Certificates of airworthiness shall be issued for aircraft which conform to a type acceptance certificate that has been issued in accordance with this Regulation.

MCAR-21.A.174 **Application**

- (a) Pursuant to MCAR-21.A.172, an application for a Certificate of Airworthiness shall be made in a form and manner established by the CAA.
- (b) Each application for a Certificate of Airworthiness shall include:
1. the class of airworthiness certificate applied for;
 2. with regard to new aircraft:
 - (i) A statement of conformity
— issued by the production organisation;
 - (ii) A weight and balance report with a loading schedule;
 - (iii) The flight manual, when required by the applicable certification specifications for the particular aircraft.
 3. with regard to used aircraft:
 - (i) a statement by the national aviation authority of the State where the aircraft is, or was, registered, reflecting the airworthiness status of the aircraft on its register at time of transfer;
 - (ii) a weight and balance report with a loading schedule;
 - (iii) the flight manual when such material is required by the applicable airworthiness code for the particular aircraft;
 - (iv) historical records to establish the production, modification, and maintenance standard of the aircraft;
 - (v) a recommendation for the issuance of a certificate of airworthiness and an airworthiness review certificate pursuant to an airworthiness review in accordance with MCAR-M or MCAR-ML;
 - (vi) the date on which the first certificate of airworthiness was issued and, if the standards of Volume III of Annex 16 to the Chicago Convention apply, the CO₂ metric value data.
- (c) Unless otherwise agreed, the statements referred to in subparagraphs (b)(2)(i) and (b)(3) shall be issued no more than 60 days before presentation of the aircraft to the CAA.

AMC 21.A.174(b)2(i) **Application**

A statement of conformity confirms that that the product, part or appliance conforms to the approved design data and is in condition for safe operation. Typical statements of conformity are:

- (i) EASA Form 52 issued for complete aircraft by EASA approved production organisations
- (ii) FAA Form 8130-9 (previously Form 317) issued for complete aircraft in USA
- (iii) CASA Form 724 in Australia

AMC 21.A.174(b)3(i) Application

A statement reflecting the airworthiness state can be:

- (i) An Airworthiness Review Certificate (ARC) issued under European Commission Regulation (EU) 2018/1142 (Part M)
- (ii) An Export Certificate of Airworthiness issued within 60 days preceding the date of receipt of the application by the CAA
- (iii) A current domestic Certificate of Airworthiness issued or renewed less than twelve months prior to the date of receipt of the application by the CAA
- (iv) A current domestic Certificate of Airworthiness issued or renewed more than twelve months prior to the date of receipt of the application by the CAA and a statement from the exporting authority

MCAR-21.A.175 Language

The manuals, placards, listings, and instrument markings and other necessary information required by applicable certification specifications/airworthiness code shall be presented in English and where applicable in Dhivehi.

MCAR-21.A.177 Amendment or modification

An airworthiness certificate may be amended or modified only by CAA.

MCAR-21.A.179 (Reserved)

MCAR-21.A.181 Duration and continued validity

- (a) An airworthiness certificate shall be issued for an unlimited period of time. It shall remain valid subject to compliance with the following conditions:
1. The aircraft continues to comply with the applicable type-design and continuing airworthiness requirements; and
 2. the aircraft remaining on the Maldivian civil aircraft register; and
 3. the type acceptance certificate under which it is issued not being previously invalidated under MCAR-21.A.16; and
 4. the certificate has not been revoked by the CAA under point MCAR-21.B.65 or surrendered by the certificate holder.
- (b) Upon surrender or revocation, the certificate shall be returned to the CAA.

MCAR-21.A.182 Aircraft identification

Each applicant for an airworthiness certificate under this Subpart shall demonstrate that its aircraft is identified in accordance with Subpart Q.

MCAR-21.A.185 Training

- (a) Each applicant for an airworthiness certificate for the first aircraft of the type registered under the applicant's name, shall provide maintenance and flight crew type training to a CAA Inspector.
- (b) Each holder of a valid airworthiness certificate for a type accepted aircraft shall provide maintenance and flight crew recurrent training on that type to a CAA Inspector.
- (c) Each holder of a valid airworthiness certificate for a type accepted aircraft shall provide:
1. A minimum of one flight duty period per week to a CAA Inspector; and
 2. A minimum of one day maintenance experience per week to a CAA Inspector.

Subpart I — NOISE CERTIFICATES

MCAR-21.A.201 Scope

This Subpart establishes the procedure for issuing noise certificates.

MCAR-21.A.203 Eligibility

Any natural or legal person under whose name an aircraft is registered or will be registered in the Maldives (State of registry), or its representative, shall be eligible as an applicant for a noise certificate for that aircraft under this Subpart.

MCAR-21.A.204 Application

- (a) Pursuant to MCAR-21.A.203, an application for a noise certificate shall be made in a form and manner established by the CAA.
- (b) Each application shall include:
1. with regard to new aircraft:
 - (i) A statement of conformity:
 - issued by the production organisation; and
 - (ii) The noise information determined in accordance with the applicable noise requirements.
 2. with regard to used aircraft:
 - (i) The noise information determined in accordance with the applicable noise requirements; and
 - (ii) Historical records to establish the production, modification, and maintenance standard of the aircraft.
- (c) Unless otherwise agreed, the statements referred to in subparagraph (b)(1) shall be issued no more than 60 days before presentation of the aircraft to the CAA.

MCAR-21.A.207 Amendment or modification

A noise certificate may be amended or modified only by the CAA.

MCAR-21.A.209 (Reserved)

MCAR-21.A.211 Duration and continued validity

- (a) A noise certificate shall be issued for an unlimited period of time. It shall remain valid subject to compliance with the following conditions:
1. The aircraft continues to comply with the applicable type-design, environmental protection and continuing airworthiness requirements; and
 2. the aircraft remaining on the Maldivian civil aircraft register; and
 3. the type acceptance certificate under which it is issued not being previously invalidated under MCAR-21.A.16; and
 4. the certificate has not been revoked by the CAA under point MCAR-21.B.65, or surrendered by the certificate holder.
- (b) Upon surrender or revocation, the certificate shall be returned to the CAA.

Subpart J — DESIGN ORGANISATION APPROVAL

MCAR-21.A.231 Scope

- (a) The CAA does not issue design organisation approvals.
- (b) This Subpart establishes the procedure for the acceptance of design organisation approvals.

MCAR-21.A.232 Acceptability of foreign design organisations

The following foreign design organisation approvals may be accepted by the CAA:

- (a) a design organisation approval issued by EASA
- (b) a design organisation approval accepted by EASA
- (c) a design organisation approval issued by an ICAO Contracting State in compliance with Annexes 8 and 16 to the Convention on International Civil Aviation.

Subpart K — PARTS AND APPLIANCES

MCAR-21.A.301 Scope

This Subpart establishes the procedure relating to the approval of parts and appliances.

MCAR-21.A.303 Acceptability of parts and appliances

The acceptance of parts and appliances to be installed in a type-certificated product shall meet the following requirements:

- (a) compliance with applicable requirements in conjunction with the type-certification procedures for the product in which it is to be installed; or
- (b) compliance with Subpart O; or
- (c) in the case of standard parts, in accordance with officially recognised Standards.

AMC 21.A.303(c) Standard Parts

1. In this context a part is considered as a 'standard part' where it is designated as such by the design approval holder responsible for the product, part or appliance, in which the part is intended to be used. In order to be considered a 'standard part', all design, manufacturing, inspection data and marking requirements necessary to demonstrate conformity of that part should be in the public domain and published or established as part of officially recognised Standards, or
2. For sailplanes and powered sailplanes, where it is a non-required instrument and/or equipment certified under the provision of CS 22.1301(b) or equivalent, if that instrument or equipment, when installed, functioning, functioning improperly or not functioning at all, does not in itself, or by its effect upon the sailplane and its operation, constitute a safety hazard.

'Required' in the term 'non-required' as used above means required by the applicable certification specifications (CS 22.1303, 22.1305 and 22.1307 or equivalent) or required by the relevant operating regulations and the applicable Rules of the Air or as required by Air Traffic Management (e.g. a transponder in certain controlled airspace).

Examples of equipment which can be considered standard parts are electrical variometers, bank/slip indicators ball type, total energy probes, capacity bottles (for variometers), final glide calculators, navigation computers, data logger / barograph / turnpoint camera, bug-wipers and anti-collision systems.

Equipment which must be approved in accordance to the certification specifications shall comply with the applicable TSO or equivalent and is not considered a standard part (e.g. oxygen equipment).

GM 21.A.303(c) Officially recognised Standards

In this context “officially recognised Standards” means:

1. Those standards established or published by an official body whether having legal personality or not, which are widely recognised by the air transport sector as constituting good practice; or
2. The standard used by the manufacturer of the equipment as mentioned in paragraph 2 of AMC 21.A.303(c).

MCAR-21.A.305 (Reserved)

MCAR-21.A.307 The eligibility of parts and appliances for installation

- (a) A part or appliance is eligible for installation in a type-certified product when it is in a condition for safe operation, marked in accordance with Subpart Q and accompanied by an authorised release certificate (CAA Form 1 or equivalent), certifying that the item was manufactured in conformity with approved design data.
- (b) By way of derogation from point (a) and provided that the conditions in point (c) are met, the following parts or appliances do not require a CAA Form 1 or equivalent in order to be eligible for installation in a type-certified product:
- (1) a standard part;
 - (2) in the case of ELA1 or ELA2, a part or appliance that is:
 - (i) not life limited, nor part of the primary structure, nor part of the flight controls;
 - (ii) identified for installation in the specific aircraft;
 - (iii) to be installed in an aircraft whose owner has verified compliance with the applicable conditions in (i) and (ii), and has accepted responsibility for this compliance;
 - (3) a part or appliance for which the consequences of a non-conformity with its approved design data has a negligible safety effect on the product and which is identified as such by the holder of the design approval in the instructions for continued airworthiness. In order to determine the safety effects of a non-conforming part or appliance, the design approval holder may establish in the instructions for continued airworthiness specific verification activities to be conducted by the installer of the part or appliance on the product;
 - (4) in the case of the embodiment of a standard change in accordance with point MCAR-21.A.90B or a standard repair in accordance with point MCAR-21.A.431B, a part or appliance, for which the consequences of a non-conformity with its design data have a negligible safety effect on the product, and which is identified as such in the certification specifications for standard changes and standard repairs issued in accordance with point (a)(2) of point MCAR-21.A.90B and point (a)(2) of point MCAR-21.A.431B. In order to determine the safety effects of a non-conforming part or appliance, specific verification activities to be conducted by the person that installs the part or appliance on the product may be established in the certification specifications referred to above;
 - (5) a part or appliance that is exempted from an airworthiness approval in accordance with MCAR-Air Operations; and
 - (6) a part or appliance that is an item of a higher assembly identified in points (b)(1) to (b)(5).

- (c) Parts and appliances listed in point (b) are eligible for installation in a type-certified product without being accompanied by a CAA Form 1, provided that the installer holds a document issued by the person or organisation that manufactured the part or appliance, which declares the name of the part or appliance, the part number, and the conformity of the part or appliance with its design data, and which contains the issuance date.

AMC1 21.A.307(b)(3) and (b)(4) Verification activities to be conducted on the part or appliance or release documentation prior to installation

To prevent a non-negligible safety effect on the product, due to the installation of a part or appliance referred to in point MCAR-21.A.307(b)(3) and (b)(4) that could potentially not conform to its design, the design approval holder (DAH) or State of Design may identify in the ICA (in the case of MCAR-21.A.307(b)(3)) or in EASA CS-STAN (in the case of MCAR-21.A.307(b)(4)) any specific verification activities to be conducted by the installer on the part or appliance before installing it on the product in accordance with MCAR-A.

When assessing the safety effect of a part or appliance identified in point MCAR-21.A.307(b)(3) or (b)(4), the DAH should assume that the installer would conduct, in accordance with MCAR-A, any specific verification activities on the part or appliance or release documentation, as identified in the ICA or in EASA CS-STAN.

Example: Information from the DAH contained in the ICA: 'Part XXX-YY must comply with flammability requirement JJJ-KKK'.

GM1 21.A.307(b)(3) and (b)(4) Meaning of 'negligible safety effect'

For the purpose of MCAR-21.A.307(b)(3) and (b)(4), when 'a part or appliance for which the consequences of non-conformity to its design has a negligible safety effect when installed on the product' is mentioned, it means that any non-conformity of the part or appliance not identified by the installer that conducted the specific verification activities mentioned in 21.A.307(c):

(a) for ELA1 and ELA2 aircraft, at worst:

- (1) slightly reduces the operational or functional certified capabilities of the aircraft or its safety margins;
- (2) causes some physical discomfort to its occupants; and
- (3) slightly increases the workload of the flight crew; and

(b) for any other aircraft:

- (1) has no effect on the operational or functional certified capabilities of the aircraft, or on its safety margins;

- (2) causes no physical discomfort to the occupants; and
- (3) has no effect on the flight crew

GM1 21.A.307(b)(4) Certification specifications referred to in point MCAR-21.A.307(b)(4)

The corresponding certification specifications issued by EASA and mentioned in point MCAR-21.A.307(b)(4) are the Certification Specifications for Standard Changes and Standard Repairs (CS-STAN).

GM1 21.A.307(b)(5) Equipment exempted from an airworthiness approval in accordance with MCAR-Air Operations

The equipment exempted from an airworthiness approval in accordance with MCAR-Air Operations that can be installed during maintenance as new equipment on an aircraft under point MCAR-21.A.307(b)(5) is the equipment identified in the following points:

- CAT.IDE.A.100(a),
 - CAT.IDE.H.100(a),
 - NCC.IDE.A.100(b) and (c),
 - NCC.IDE.H.100(b) and (c),
 - NCO.IDE.A.100(b) and (c),
 - NCO.IDE.H.100(b) and (c),
 - NCO.IDE.S.100(b) and (c),
 - NCO.IDE.B.100(b) and (c),
 - SPO.IDE.A.100(b) and (c),
 - SPO.IDE.H.100(b) and (c),
 - SPO.IDE.S.100(b) and (c), and
 - SPO.IDE.B.100(b) and (c)
- of MCAR-Air Operations

GM1 21.A.307(b)(6) Part or appliance that is part of a higher-level assembly

A CAA Form 1 or equivalent is not required for a part or appliance when that part or appliance is an element of a higher-level assembly for which a CAA Form 1 is not required.

Subpart L — EXPORT AIRWORTHINESS CERTIFICATES

MCAR-21.A.321 Scope

This Subpart establishes the procedure for issuing export airworthiness certificates and establishes the rights and obligations of the applicants for, and holders of, those approvals.

MCAR-21.A.325 Export Airworthiness Approvals

- (a) An export airworthiness approval for an aircraft is issued in the form of an export certificate of airworthiness. This certificate does not authorize operation of that aircraft.
- (b) A “CAA Form 1” as specified in MCAR-M.A.501(a)(1) may be used for the export of an engine or a propeller or a part or an appliance.
- (c) If the CAA finds no undue burden in administering the applicable requirements of this Regulation, an export airworthiness approval may be issued for an aircraft located outside of the Republic of Maldives.

MCAR-21.A.327 Application

- (a) Any exporter of a Maldivian registered aircraft or exporter's authorised representative may apply for an Export Certificate of Airworthiness.
- (b) The application for Export Certificate of Airworthiness shall be in a form and manner established by the CAA.
- (c) Each application for an Export Certificate of Airworthiness shall include:
 - (1) evidence that—
 - (i) the aircraft possesses a valid Airworthiness Review Certificate or qualifies for a Certificate of Airworthiness under Subpart H; and
 - (ii) any installations incorporated for the purpose of export delivery comply with the applicable airworthiness requirements or have been approved by the issue of a Permit to Fly under Subpart P;
 - (2) confirmation that any installation described in paragraph (c)(1)(ii) is to be removed and the aircraft restored to the approved type configuration upon completion of the delivery flight;
 - (3) any differences in configuration between the exported product and the relative type accepted product.

- (d) The applicant must make the product that is the subject of the export airworthiness certificate and associated data available for inspection if required by the CAA.

MCAR-21.A.329 Issue of an Export Certificate of Airworthiness

- (a) The CAA may issue an export certificate of airworthiness and an applicant is entitled to an export certificate of airworthiness if the CAA is satisfied that—
- (1) the applicant meets the applicable requirements of this Subpart; and
 - (2) the issue of the certificate is not contrary to the interests of aviation safety; and
 - (3) any airworthiness requirement that is not complied with is compensated for by a factor that provides an acceptable level of safety.
- (b) Notwithstanding paragraph (a)(1), the CAA may issue an export certificate of airworthiness for a product that does not meet every airworthiness requirement of point MCAR-21.A.327 if the applicant provides written evidence that the non-compliance with any particular requirement is acceptable to the State of the importer.
- (c) An export certificate of airworthiness issued by the CAA under this Subpart—
- (1) may be subject to conditions as the CAA considers appropriate in each particular case; and
 - (2) does not authorise the installation or use of a product.

MCAR-21.A.335 Validity of Certificate

- (a) An export airworthiness certificate issued under this Subpart shall remain valid, providing there is no subsequent design change to the product, until the completion of delivery to the importer's State.
- (b) The holder of an export airworthiness certificate invalidated because of a design change shall forthwith surrender the certificate to the CAA.

MCAR-21.A.339 Use of CAA Form 1 for export

- (a) The CAA Form 1 – authorised release certificate must only be used for the export of an engine or a propeller or a part or appliance if:

(1) the component:

- (i) is new, has been newly overhauled, or was last installed in an aircraft which possesses a valid certificate of airworthiness and the component is fit for release to service; and
- (ii) conforms to approved design data; and
- (iii) is in a condition for safe operation; and

(2) the CAA Form 1 has been issued in accordance with the procedures of:

- (i) an aircraft maintenance organisation certificated in accordance with MCAR-145 or MCAR-CAO.

(b) A part or appliance does not need to meet every requirement under paragraph (a) if the State of the importer indicates in writing that the part or appliance is acceptable to the State.

MCAR-21.A.341 Responsibilities of the Exporter

(a) When title to an aircraft passes or has passed to a foreign purchaser, the exporter who was granted an export airworthiness certificate shall—

- (1) where applicable, request the cancellation of the Maldives registration and airworthiness certificates, giving the date of transfer of title and the name and address of the foreign owner; and
- (2) return the registration and airworthiness certificates to the CAA; and
- (3) submit a statement certifying that the Maldives nationality and registration marks have been removed from the aircraft.

(b) Unless otherwise agreed with the State of the importer, the exporter who was granted an export airworthiness certificate shall:

(1) forward to the appropriate authority of the State of the importer:

- (i) all documents and information necessary for the proper operation of the product; and
- (ii) the applicable manufacturer's assembly instructions for un-assembled aircraft and an approved flight test check list; and

- (2) preserve and package products to protect them against corrosion and damage whilst in transit or storage; and
- (3) upon completion of an export delivery of an aircraft, remove, or have removed, any temporary installation incorporated for the purpose of delivery and restore the aircraft to the approved type configuration.

Subpart M – REPAIRS

MCAR-21.A.431A Scope

- (a) This Subpart establishes the procedure for the approval of a repair design of a product, part or appliance and establishes the rights and obligations of the applicants for, and holders of, those approvals.
- (b) This Subpart defines standard repairs that are not subject to an approval process under this Subpart.
- (c) A 'repair' means the elimination of damage and/or restoration to an airworthy condition following the initial release into service by the manufacturer of any product, part or appliance.
- (d) The elimination of damage by replacement of parts or appliances without the necessity for design activity shall be considered as a maintenance task and shall therefore require no approval under this Regulation.
- (e) A repair to a European TSO (ETSO) article other than an Auxiliary Power Unit (APU) shall be treated as a change to the ETSO design and shall be processed in accordance with Subpart O.

GM 21.A.431A(a) Scope

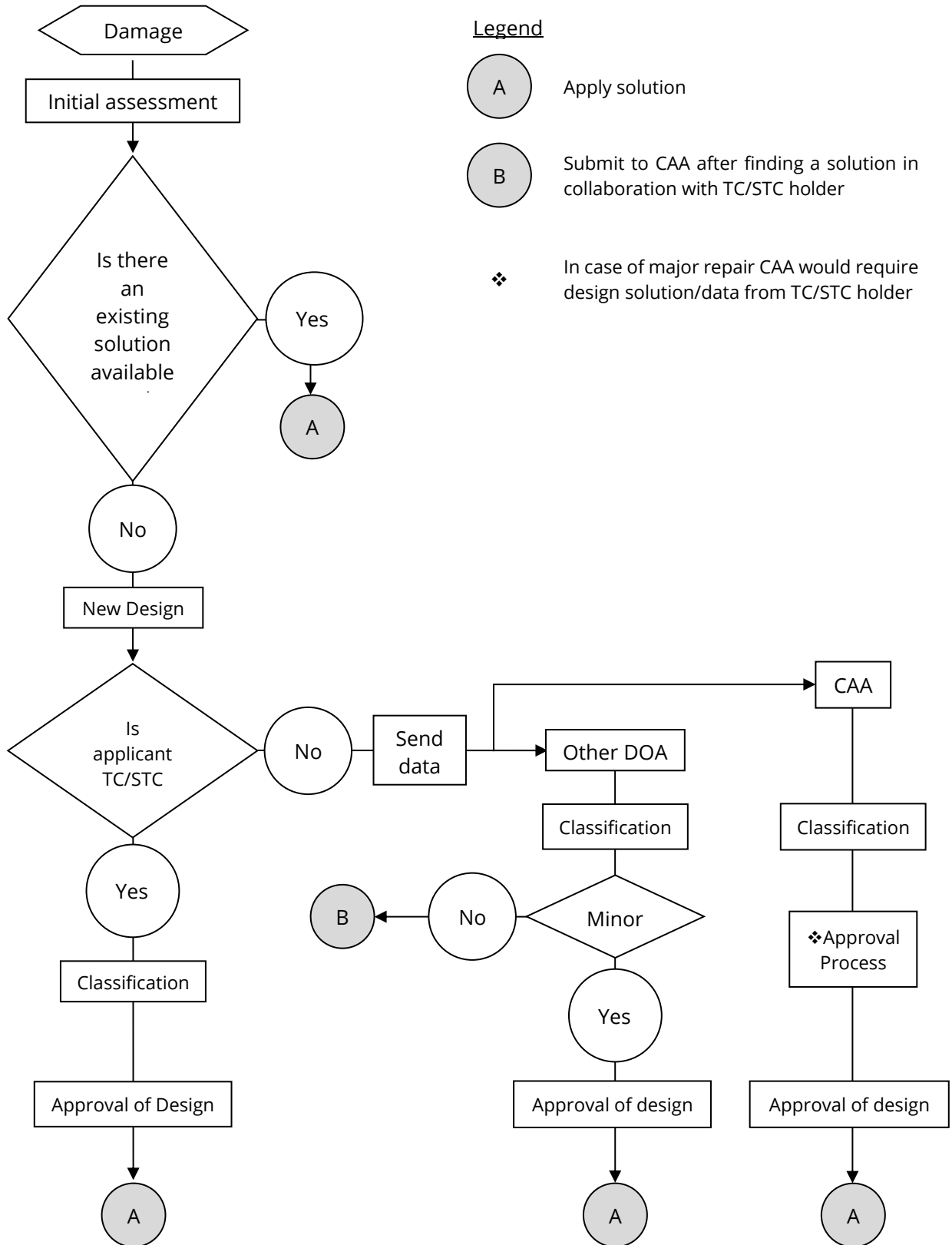
Manuals and other instructions for continued airworthiness (such as the Manufacturers Structural Repair Manual, Maintenance Manuals and Engine Manuals provided by the holder of the type-certificate, supplemental type-certificate, or APU TSO authorisation as applicable) for operators, contain useful information for the development and approval of repairs.

When these data are explicitly identified as approved, they may be used by operators without further approval to cope with anticipated in-service problems arising from normal usage provided that they are used strictly for the purpose for which they have been developed.

Approved data is data which is approved either by the state of design/CAA, or by an appropriately approved design organisation.

Flowchart 1 to GM 21.A.431(a) addresses the procedures that should be followed for approval of a repair.

Flowchart 1 to GM 21.A.431(a) - Repair approval procedure



GM 21.A.431A(e) Repairs to ETSO articles other than an APU

A repair to an ETSO article other than an APU can be either be seen:

1. In the context of an ETSO authorisation, i.e., when an article as such is specifically approved under Subpart O, with dedicated rules that give specific rights and obligations to the designer of the article, irrespective of any product type design or change to the type design. For a repair to such an article, irrespective of installation on any aircraft, Subpart O should be followed; or
2. When an airline or a maintenance organisation is designing a new repair (based on data not published in the TC holder or Original Equipment Manufacturer documentation) on an article installed on an aircraft, such a repair can be considered as a repair to the product in which the article is installed, not to the article taken in isolation. Therefore Subpart M can be used for the approval of this repair, that will be identified as 'repair to product x affecting article y', but not 'repair to article y'.

MCAR-21.A.431B Standard repairs

- (a) Standard repairs are repairs:
- (1) in relation to:
 - i. aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;
 - ii. rotorcraft of 3 175 kg MTOM or less;
 - iii. sailplanes and powered sailplanes, balloons and airships as defined in ELA1 or ELA2.
 - (2) that follow design data included in certification specifications accepted by the CAA, containing acceptable methods, techniques and practices for carrying out and identifying standard repairs, including the associated instructions for continuing airworthiness; and
 - (3) that are not in conflict with TC holders data.
- (b) Points MCAR-21.A.432A to MCAR-21.A.451 are not applicable to standard repairs.

GM 21.A.431B Standard repairs - Certification Specifications

EASA CS-STAN contains the certification specifications referred to in MCAR-21.A.431B(a)2. Guidance on the implementation of Standard Changes and Standard Repairs can be found in AMC M.A.801 of the AMC to MCAR-M.

MCAR-21.A.432A **Eligibility**

Any natural or legal person shall be eligible to apply for approval of a repair design.

MCAR-21.A.432B **[Reserved]**

MCAR-21.A.432C **Application for a repair design approval**

An application for a repair design approval shall be made in a form and manner established by the CAA.

MCAR-21.A.433 **Requirements for approval of a repair design**

(a) A repair design shall only be approved:

1. when it has been demonstrated that the repair design complies with the type-certification basis incorporated by reference in, as applicable, either the type-certificate, the supplemental type-certificate or the APU ETSO authorisation, as well as with any amendments established and notified by the State of Design of the Product;
2. when compliance with the type-certification basis that applies in accordance with point (a)(1) has been declared and the justifications of compliance have been recorded in the compliance documents;
3. when no feature or characteristic has been identified that may make the product unsafe for the uses for which certification is requested;
4. where the applicant has specified that it provided certification data on the basis of an arrangement with the owner of the type-certification data in accordance:
 - (i) when the holder has indicated that it has no technical objection to the information submitted under point (a)(2); and
 - (ii) when the holder has agreed to collaborate with the repair design approval holder to ensure discharge of all obligations for continued airworthiness of the changed product.
5. when, for a repair to an aeroplane subject to point 26.302 of EASA Part-26, it has been demonstrated that the structural integrity of the repair and affected structure is at least equivalent to the level of structural integrity established for the baseline structure by point 26.302 of EASA Part-26.

(b) The applicant shall submit to the CAA the declaration referred to in point (a)(2) and, on request by the CAA, all necessary substantiation data.

AMC1 21.A.433(a)(5) Requirements for the approval of repairs to large aeroplanes subject to point 26.302 of EASA Part-26

For repairs that affect fatigue-critical structures of turbine-powered large aeroplanes certified to carry 30 passengers or more, or with a payload capacity of 3 402 kg (7 500 lbs) or more, damage-tolerance evaluations demonstrate compliance with point 21.A.433(a)(5) when the certification basis used for the repair is:

- (a) Amdt 19 to CS 25.571, or subsequent amendments; or
- (b) the certification basis of the aeroplane, unless it precedes JAR 25.571 Change 7 or 14 CFR §25.571 Amendment 45, in which case the certification basis for the repair should be:
 - (1) JAR 25.571 Change 7 or 14 CFR §25.571 Amendment 45, or later amendments; or
 - (2) the specifications used for compliance with the applicable points of EASA Part-26 for the fatigue-critical structures affected by the repair.

MCAR-21.A.435 Classification and approval of repair designs

- (a) A repair design shall be classified as either 'major' or 'minor' in accordance with the criteria set out in point MCAR-21.A.91 for a change to the type-certificate.
- (b) A repair design shall be classified and approved by:
1. the CAA, or
 2. a design organisation accepted by the CAA, that is also the type-certificate or the supplemental type-certificate or APU TSO authorisation holder; or
 3. a design organization acceptable to the CAA, provided
 - (i) The design organisation furnishes a handbook to the CAA describing, directly or by cross-reference, the organisation, the relevant procedures and the products or changes to products to be designed.
 - (ii) The handbook is amended as necessary to remain an up-to-date description of the organisation, and copies of amendments shall be supplied to the CAA.

GM 21.A.435(a) Classification of repairs

1. Clarification of the terms Major/Minor

In line with the definitions given in MCAR-21.A.91, a new repair is classified as 'major' if the result on the approved type design has an appreciable effect on structural performance, weight, balance, systems, operational characteristics or other characteristics affecting the airworthiness of the product, part or appliance. In particular, a repair is classified as major if it needs extensive static, fatigue and damage tolerance strength justification and/or testing in its own right, or if it needs methods, techniques or practices that are unusual (i.e., unusual material selection, heat treatment, material processes, jiggling diagrams, etc.)

Repairs that require a re-assessment and re-evaluation of the original certification substantiation data to ensure that the aircraft still complies with all the relevant requirements, are to be considered as major repairs.

Repairs whose effects are considered minor and require minimal or no assessment of the original certification substantiation data to ensure that the aircraft still complies with all the relevant requirements, are to be considered "minor".

It is understood that not all the certification substantiation data will be available to those persons/organisations classifying repairs. A qualitative judgement of the effects of the repair will therefore be acceptable for the initial classification. The subsequent review of the design of the repair may lead to it being re-classified, owing to early judgements being no longer valid.

2. Airworthiness concerns for Major/Minor classification

The following should be considered for the significance of their effect when classifying repairs. Should the effect be considered to be significant then the repair should be classified 'Major'. The repair may be classified as 'Minor' where the effect is known to be without appreciable consequence.

i. Structural performance

Structural performance of the product includes static strength, fatigue, damage tolerance, flutter and stiffness characteristics. Repairs to any element of the structure should be assessed for their effect upon the structural performance.

ii. Weight and balance

The weight of the repair may have a greater effect upon smaller aircraft as opposed to larger aircraft. The effects to be considered are related to overall aircraft centre of gravity and aircraft load distribution. Control surfaces are particularly sensitive to the changes due to the effect upon the stiffness, mass distribution and surface profile which may have an effect upon flutter characteristics and controllability.

iii. Systems

Repairs to any elements of a system should be assessed for the effect intended on the operation of the complete system and for the effect on system redundancy. The consequence of a structural repair on an adjacent or remote system should also be considered as above, (for example: airframe repair in area of a static port).

iv. Operational characteristics. Changes may include:

- stall characteristics
- handling
- performance and drag
- vibration

v. Other characteristics

- changes to load path and load sharing
- change to noise and emissions
- fire protection / resistance

Note: Considerations for classifying repairs 'Major/Minor' should not be limited to those listed above.

3. Examples of 'Major' repairs

- i. A repair that requires a permanent additional inspection to the approved maintenance programme, necessary to ensure the continued airworthiness of the product. Temporary repairs for which specific inspections are required prior to installation of a permanent repair do not necessarily need to be classified as 'Major'. Also, inspections and changes to inspection frequencies not required as part of the approval to ensure continued airworthiness do not cause classification as 'Major' of the associated repair.
- ii. A repair to life limited or critical parts.
- iii. A repair that introduces a change to the Aircraft Flight Manual.

GM 21.A.435(b) Repair design approval

(a) REPAIR DESIGN APPROVAL BY THE CAA

- (1) An owner/operator may get their repair design classified and approved by the TC/STC holder even though the TC/STC holder has not submitted the handbook to the CAA.
- (2) The requirement to submit a handbook to CAA is for design organisations other than TC/STC holder.

(b) REPAIR DESIGN APPROVAL BY A DESIGN ORGANISATION ACCEPTED BY THE CAA

(1) Approval by DOA holder

The DOA may approve repairs through the use of procedures in the handbook without requiring CAA involvement. However, the owner or operator shall provide the CAA:

- (i) Notification before incorporation of modification by sending all the documents relevant to the modification
- (ii) Any instructions for continued airworthiness issued by the design organization

(2) Previously approved data for other applications

When it is intended to use previously approved data for other applications, it is expected that applicability and effectiveness would be checked with an appropriately approved design organisation. After damage identification, if a repair solution exists in the available approved data, and if the application of this solution to the identified damage remains justified by the previous approved repair design, (structural justifications still valid, possible airworthiness limitations unchanged), the solution can be considered approved and can be used again.

(3) Temporary repairs.

These are repairs that are life limited, to be removed and replaced by a permanent repair after a limited service period. These repairs should be classified under MCAR-21.A.435 and the service period defined at the approval of the repair.

(4) Fatigue and damage tolerance.

When the repaired product is released into service before the fatigue and damage tolerance evaluation has been completed, the release should be for a limited service period, defined at the issue of the repair.

MCAR-21.A.439 Production of Repair Parts

Parts and appliances to be used for the repair shall be manufactured in accordance with production data based upon all the necessary design data as provided by the repair design approval holder:

- (a) (reserved)
- (b) by an organisation appropriately approved in accordance with EASA Part-21 Subpart G; or
- (c) by an appropriately approved maintenance organisation; or
- (d) by an organisation appropriately approved in accordance with Part 21 Subpart G of Title 14 Code of Federal Regulations of the United States of America; or
- (e) by an organisation appropriately approved in accordance with Part V Subpart 61 of the Canadian Aviation Regulations.

MCAR-21.A.441 Repair embodiment

- (a) The embodiment of a repair shall be made in accordance with MCAR-M, MCAR-145, MCAR-ML, MCAR-CAO as appropriate, or by a production organisation accepted by CAA.
- (b) The design organisation shall transmit to the organisation performing the repair all the necessary installation instructions.

MCAR-21.A.443 Limitations

A repair design may be approved subject to limitations, in which case the repair design approval shall include all necessary instructions and limitations. These instructions and limitations shall be held by the operator.

MCAR-21.A.445 Unrepaired damage

(a) When a damaged product, part or appliance, is left unrepaired, and is not covered by previously approved data, the evaluation of the damage for its airworthiness consequences may only be made;

1. by the CAA, or
2. by a design organisation accepted by CAA, provided
 - (i) The design organisation furnishes a handbook to the CAA describing, directly or by cross-reference, the organisation, the relevant procedures and the products or changes to products to be designed.
 - (ii) The handbook is amended as necessary to remain an up-to-date description of the organisation, and copies of amendments shall be supplied to the CAA.

Any necessary limitations shall be processed in accordance with the procedures of MCAR-21.A.443.

(b) Where the organisation evaluating the damage under paragraph (a) is neither the CAA nor the type-certificate, supplemental type-certificate or APU TSO authorisation holder, this organisation shall justify that the information on which the evaluation is based is adequate either from its organisation's own resources or through an arrangement with the type-certificate, supplemental type-certificate or APU TSO authorisation holder, or manufacturer, as applicable.

GM 21.A.445 Unrepaired damage

This is not intended to supersede the normal maintenance practices defined by the type certificate holder, (e.g., blending out corrosion and re-protection, stop drilling cracks, etc.), but addresses specific cases not covered in the manufacturer's documentation.

GM 21.A.445(a) Unrepaired damage

An owner/operator may get their unrepaired damage evaluated for its airworthiness consequences by the TC/STC holder even though the TC/STC holder has not submitted the handbook to the CAA.

The requirement to submit a handbook to CAA is for design organisations other than TC/STC holder.

MCAR-21.A.451 (Reserved)

(Subpart N — RESERVED)

Subpart O — TECHNICAL STANDARD ORDER AUTHORISATIONS

MCAR-21.A.601 Scope

- (a) The CAA does not issue technical standard order (TSO) authorisations.
- (b) This Subpart describes the requirements for the acceptance of TSO authorisations.

MCAR-21.A.601B Acceptability of foreign TSO authorisations

The following foreign TSO authorisations may be accepted by the CAA:

- (a) a TSO authorisation issued by EASA
- (b) a TSO authorisation accepted by EASA
- (c) a TSO authorisation issued by an ICAO Contracting State in compliance with Annexes 8 and 16 to the Convention on International Civil Aviation.

Subpart P — PERMIT TO FLY

MCAR-21.A.701 Scope

- (a) Permits to fly shall be issued in accordance with this Subpart to aircraft that do not meet, or have not been shown to meet, applicable airworthiness requirements but are capable of safe flight under defined conditions and for the following purposes:
1. development;
 2. showing compliance with regulations or certification specifications;
 3. design organisations or production organisations crew training;
 4. production flight testing of new production aircraft;
 5. flying aircraft under production between production facilities;
 6. flying the aircraft for customer acceptance;
 7. delivering or exporting the aircraft;
 8. flying the aircraft for CAA acceptance;
 9. market survey, including customer's crew training;
 10. exhibition and air show;
 11. flying the aircraft to a location where maintenance or airworthiness review are to be performed, or to a place of storage;
 12. flying an aircraft at a weight in excess of its maximum certificated takeoff weight for flight beyond the normal range over water, or over land areas where adequate landing facilities or appropriate fuel is not available;
 13. record breaking, air racing or similar competition;
 14. flying aircraft meeting the applicable airworthiness requirements before conformity to the environmental requirements has been found;
 15. for non-commercial flying activity on individual non-complex aircraft or types for which a certificate of airworthiness is not appropriate.
 16. flying an aircraft for troubleshooting purposes or to check the functioning of one or more systems, parts or appliances after maintenance.
- (b) This subpart establishes the procedure for issuing permits to fly and approving associated flight conditions, and establishes the rights and obligations of the applicants for, and holders of, those permits to fly and approvals of flight conditions.

GM Subpart P Permit to Fly

The process allowing a flight under a permit to fly can be described as follows:

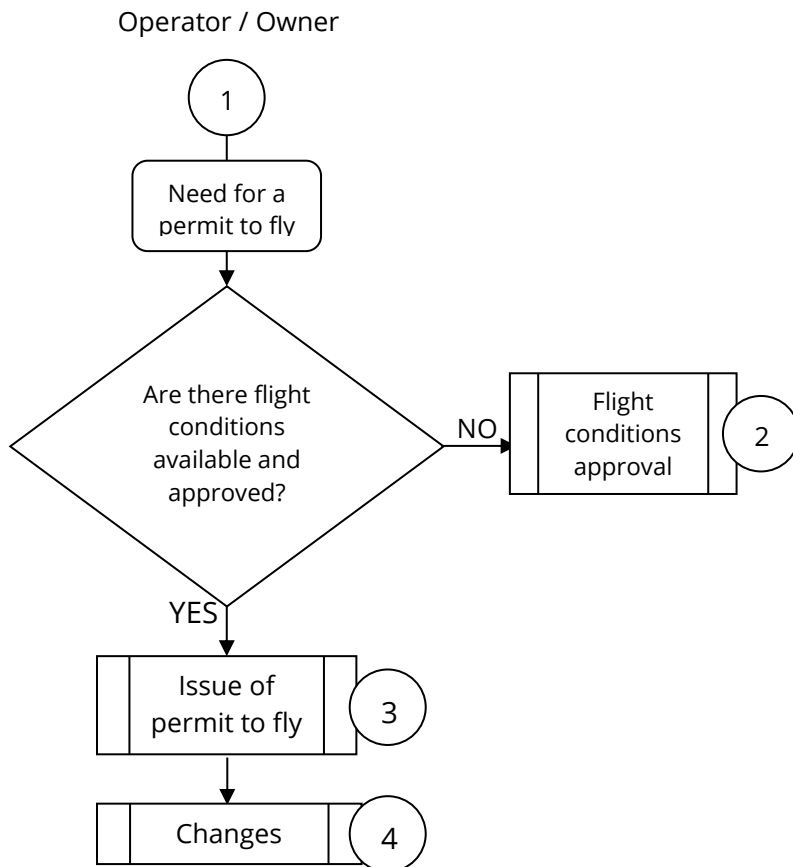
Flowchart 1 – Overview

Flowchart 2 – Approval of flight conditions

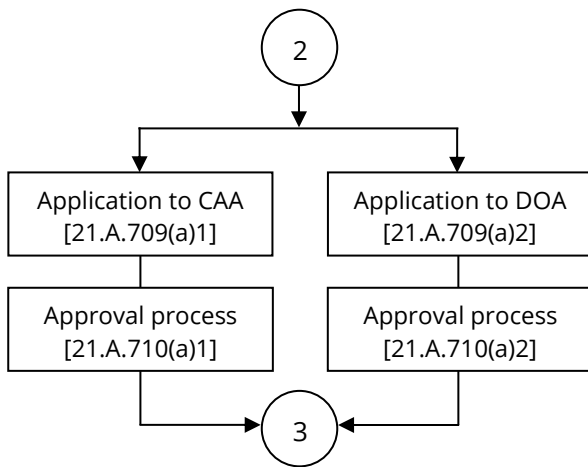
Flowchart 3 – Issue of permit to fly

Flowchart 4 – Changes after the first issue of permit to fly

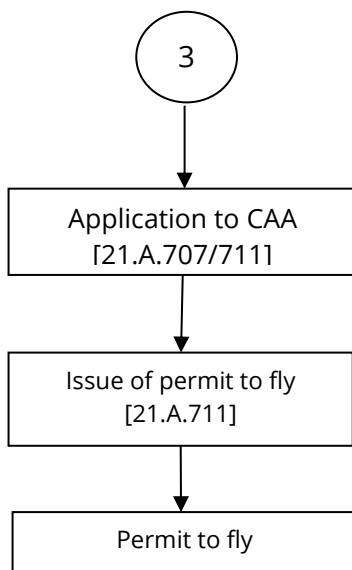
Flowchart 1 to GM Subpart P – Overview



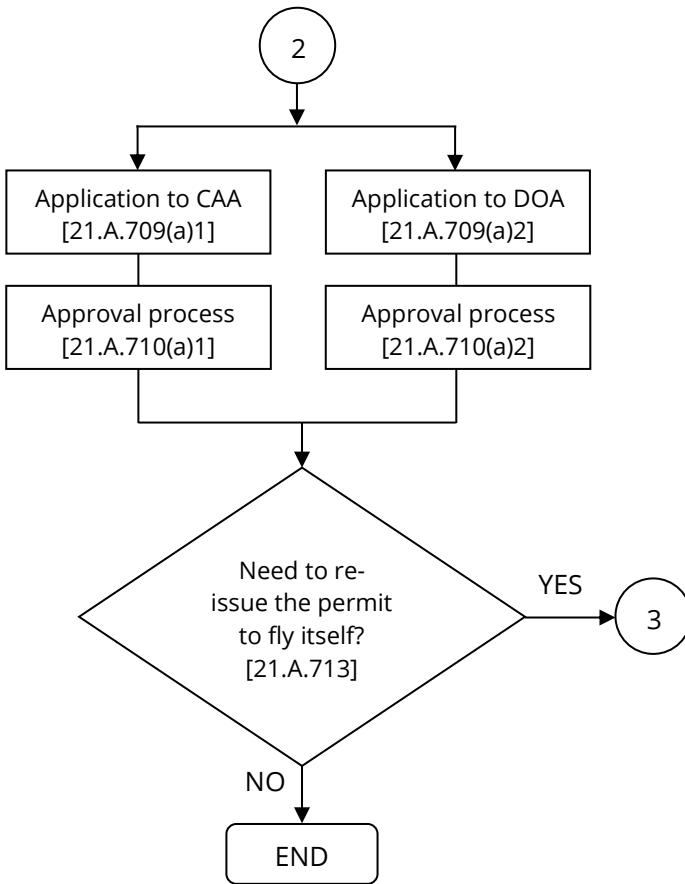
Flowchart 2 to GM Subpart P – Approval of flight conditions



Flowchart 3 to GM Subpart P – Issue of permit to fly



Flowchart 4 to GM Subpart P – Changes after the first issue of permit to fly



GM 21.A.701(a) Permit to fly when certificate of airworthiness is not appropriate

A certificate of airworthiness may not be appropriate for an individual aircraft or aircraft type when it is not practicable to comply with the normal continued airworthiness requirements and the aircraft is to a design standard that is demonstrated to be capable of safe flight under defined conditions.

MCAR-21.A.701 identifies cases where the issuance of a Certificate of Airworthiness may not be possible or appropriate and this GM provides further information and typical examples for clarification where appropriate:-

Note: This list of examples is not exhaustive

1. Development:
 - testing of new aircraft or modifications
 - testing of new concepts of airframe, engine propeller and equipment;
 - testing of new operating techniques;
2. Demonstration of compliance with regulations or certification specifications:
 - certification flight testing for type certification, supplemental type certificates, changes to type certificates or Technical Standard Order authorisation;
3. Design organisations or production organisations crew training:
 - Flights for training of crew that will perform design or production flight testing before the design approval or Certificate of Airworthiness can be issued.
4. Production flight testing of new production aircraft:
 - For establishing conformity with the approved design, typically this would be the same program for a number of similar aircraft;
5. Flying aircraft under production between production facilities:
 - green aircraft ferry for follow on final production.
6. Flying the aircraft for customer acceptance:
 - Before the aircraft is sold and/or registered.
7. Delivering or exporting the aircraft:
 - Before the aircraft is registered in the State where the Certificate of Airworthiness will be issued.
8. Flying the aircraft for Authority acceptance:
 - In the case of inspection flight test by the authority before the Certificate of Airworthiness is issued.
9. Market survey, including customer's crew training:
 - Flights for the purpose of conducting market survey, sales demonstrations and customer crew training with non type-certificated aircraft or aircraft for which conformity has not yet been established or for non-registered a/c and before the Certificate of Airworthiness is issued

10. Exhibition and air show:
 - Flying the aircraft to an exhibition or show and participating to the exhibition or show before the design approval is issued or before conformity with the approved design has been shown.
11. Flying the aircraft to a location where maintenance or airworthiness review are to be performed, or to a place of storage:
 - Ferry flights in cases where maintenance is not performed in accordance with approved programmes, where an AD has not been complied with where certain equipment outside the Minimum Equipment List (MEL) is unserviceable or when the aircraft has sustained damage beyond the applicable limits.
12. Flying an aircraft at a weight in excess of its maximum certificated take-off weight for flight beyond the normal range over water, or over land areas where adequate landing facilities or appropriate fuel is not available:
 - Oversees ferry flights with additional fuel capacity.
13. Record breaking, air racing or similar competition:
 - Training flight and positioning flight for this purpose are included
14. Flying aircraft meeting the applicable certification specifications before conformity to the environmental requirements has been found:
 - Flying an aircraft which has been demonstrated to comply with all applicable certification specifications but not with environmental requirements.
15. For non-commercial flying activity on individual non-complex aircraft or types for which a certificate of airworthiness is not appropriate.
 - For aircraft which cannot practically meet all applicable certification specifications, such as certain aircraft without TC-holder (“generically termed orphan aircraft”) or aircraft which have been under national systems of Permit to Fly and have not been demonstrated to meet all applicable requirements. The option of a permit to fly for such an aircraft should only be used if a certificate of airworthiness cannot be issued due to conditions which are outside the direct control of the aircraft owner, such as the absence of properly certified spare parts.
16. Flying an aircraft for troubleshooting purposes or to check the functioning of one or more systems, parts or appliances after maintenance.
 - After maintenance, when the diagnosis of the functioning of an aircraft system needs to be made in flight and the design approval holder has not issued instructions to perform this diagnosis within the approved aircraft limitations, the flight should be conducted under a permit to fly. Further guidance is available in subparagraph (b) of GM M.A.301(i) of the AMC and GM to MCAR-M.

Note: The above listing is of cases when a permit to fly MAY be issued; it does not mean that in the described cases a permit to fly MUST be issued. If other legal means are available to allow the intended flight(s) they can also be used.

MCAR-21.A.703 Eligibility

- (a) Any natural or legal person shall be eligible as an applicant for a permit to fly except for a permit to fly requested for the purpose of point 21.A.701(a)(15) where the applicant shall be the owner.
- (b) A person eligible for an application for permit to fly, is also eligible for application for the approval of the flight conditions.

MCAR-21.A.705 (Reserved)

MCAR-21.A.707 Application for permit to fly

- (a) Pursuant to MCAR-21.A.703, an application for a permit to fly shall be made to the CAA in a form and manner established by the CAA.
- (b) Each application for a permit to fly shall include:
 - 1. the purpose(s) of the flight(s), in accordance with MCAR-21.A.701;
 - 2. the ways in which the aircraft does not comply with the applicable airworthiness requirements;
 - 3. the flight conditions approved in accordance with MCAR-21.A.710.
- (c) Where the flight conditions are not approved at the time of application for a permit to fly, an application for approval of the flight conditions shall be made in accordance with MCAR-21.A.709.

GM 21.A.707(b) Application

An application should be made on CAA Form 21.

MCAR-21.A.708 **Flight conditions**

Flight conditions include:

- (a) the configuration(s) for which the permit to fly is requested;
- (b) any condition or restriction necessary for safe operation of the aircraft, including:
 - 1. the conditions or restrictions put on itineraries or airspace, or both, required for the flight(s);
 - 2. the conditions and restrictions put on the flight crew to fly the aircraft;
 - 3. the restrictions regarding carriage of persons other than flight crew;
 - 4. the operating limitations, specific procedures or technical conditions to be met;
 - 5. the specific flight test programme (if applicable);
 - 6. the specific continuing airworthiness arrangements including maintenance instructions and regime under which they will be performed;
- (c) the substantiation that the aircraft is capable of safe flight under the conditions or restrictions of subparagraph (b);
- (d) the method used for the control of the aircraft configuration, in order to remain within the established conditions.

GM 21.A.708(b)6 **Continuing airworthiness**

In most cases a simple reference to existing maintenance requirements will suffice for aircraft that have a temporarily invalid Certificate of Airworthiness.

For other aircraft it will have to be proposed by the applicant as part of the flight conditions. For approved organisations they can be included in their procedures.

GM No. 1 to 21.A.708(c) **Safe flight**

Safe flight normally means continued safe flight and landing but in some limited cases (e.g. higher risk flight testing) it can mean that the aircraft is able to fly in a manner that will primarily ensure the safety of overflown third parties, the flight crew and, if applicable other occupants.

This definition of 'safe flight' should not be interpreted as allowing a test pilot, equipped with a parachute and operating over a sparsely populated area, to set out on a test flight in the full knowledge that there is a high probability of losing the aircraft. The applicant should take reasonable care to minimise safety risks and to be satisfied that there is a reasonable probability that the aircraft will carry out the flight without damage or injury to the aircraft and its occupants or to other property or persons whether in the air or on the ground.

GM No. 2 to 21.A.708(c) Substantiations

The substantiations should include analysis, calculations, tests or other means used to determine under which conditions or restrictions the aircraft can perform safely a flight.

GM No. 3 to 21.A.708(c) Operation of Overweight Aircraft

This GM provides information and guidance with respect to permit to fly for operating an aircraft in excess of its maximum certificated take-off weight, for flight beyond the normal range over water, or over land areas where adequate landing facilities or appropriate fuel is not available.

1. GENERAL.

The excess weight that may be authorized for overweight operations should be limited to additional fuel, fuel carrying facilities, and navigational equipment necessary for the flight.

It is recommended that the applicant discuss the proposed flight with the TC holder of the aircraft to determine the availability of technical data on the installation of additional fuel carrying facilities and/or navigational equipment.

2. CRITERIA USED TO DETERMINE THE SAFETY OF ADDITIONAL FACILITIES.

In evaluating the installation of additional facilities, the CAA or the design organisation must find that the changed aircraft is safe for operation. To assist in arriving at such a determination, the following questions are normally considered:

- a. Does the technical data include installation drawings, structural substantiating reports, weight, balance, new centre of gravity limits computations, and aircraft performance limitations in sufficient detail to allow a conformity inspection of the aircraft to be made?
- b. In what ways does the aircraft not comply with the applicable certification specifications?
- c. Are the fuel tanks vented to the outside? Are all areas in which tanks are located ventilated to reduce fire, explosion, and toxicity hazards?
- d. Are the tanks even when empty strong enough to withstand the differential pressure at maximum operating altitude for a pressurized aircraft?
- e. Have means been provided for determining the fuel quantity in each tank prior to flight?
- f. Are shutoff valves, accessible to the pilot, provided for each additional tank to disconnect these tanks from the main fuel system?

- g. Are the additional fuel tank filler connections designed to prevent spillage within the aircraft during servicing?
- h. Is the engine oil supply and cooling adequate for the extended weight and range?

3. LIMITATIONS.

The following types of limitations may be necessary for safe operation of the aircraft:

- a. Revised operational airspeeds for use in the overweight condition.
- b. Increased pilot skill requirements.
- c. A prescribed sequence for using fuel from various tanks as necessary to keep the aircraft within its centre of gravity range.
- d. Notification to the control tower of the overweight take-off condition to permit use of a runway to minimize flight over congested areas.
- e. Avoidance of severe turbulence. If encountered, the aircraft should be inspected for damage as soon as possible.

4. EXAMPLE OF OPERATING LIMITATIONS WHICH MAY BE PRESCRIBED AS PART OF THE PERMIT TO FLY.

Aircraft type: XXXX Model: YYYY

Limitations:

- a. Maximum weight must not exceed 8,150 pounds.
- b. Maximum quantity of fuel carried in auxiliary tanks must not exceed 106 gallons in fwd tank, 164 gallons in centre tank, and 45 gallons in aft tank.
- c. Centre of gravity limits must not exceed (fwd) +116.8 and (aft) +124.6.
- d. Aerobatics are prohibited.
- e. Use of autopilot while in overweight condition is prohibited.
- f. Weather conditions with moderate to severe turbulence should be avoided.
- g. When an overweight landing is made or the aircraft has been flown through moderate or severe turbulence while in an overweight condition, the aircraft must be inspected for damage after landing. The inspections performed and the findings

must be entered in the aircraft log. The pilot must determine, before the next take-off, that the aircraft is airworthy.

- h. When operated in the overweight condition, the cruising speed (Vc) shall not exceed 185 m.p.h. and the maximum speed (Vne) shall not exceed 205 m.p.h.
- i. Operation in the overweight condition must be conducted to avoid areas having heavy air traffic, to avoid cities, towns, villages, and congested areas, or any other areas where such flights might create hazardous exposure to person or property on the ground.

GM 21.A.708(d) Control of aircraft configuration

The applicant should establish a method for the control of any change or repair made to the aircraft, for changes and repairs that do not invalidate the conditions established for the permit to fly.

All other changes should be approved in accordance with MCAR 21.A.713 and when necessary a new permit to fly should be issued in accordance with MCAR 21.A.711.

MCAR-21.A.709 Application for approval of flight conditions

- (a) Pursuant to MCAR-21.A.707(c), an application for approval of the flight conditions shall be made to:
1. CAA in a form and manner established by the CAA; or
 2. an appropriately approved design organisation accepted by the CAA, under subpart J
- (b) Each application for approval of the flight conditions shall include:
1. the proposed flight conditions;
 2. the documentation supporting these conditions; and
 3. a declaration that the aircraft is capable of safe flight under the conditions or restrictions of paragraph MCAR-21.A.708(b).

AMC1 21.A.709(b) Application for the approval of flight conditions

SUBMISSION OF DOCUMENTATION SUPPORTING THE ESTABLISHMENT OF FLIGHT CONDITIONS

The applicant should submit, together with the application, the documentation required by point MCAR 21.A.709(b) with the approval form (CAA Form 18B) defined below, completed with all the relevant information. If the complete set of data is not available at the time of application, the missing elements can be provided later. In such cases, the approval form should be provided only when all data is available, to allow the applicant to make the statement required in block 9 of the form.

When the flight conditions are approved under a privilege, this form should be used by the approved organisation to document the approval.

MCAR-21.A.710 Approval of flight conditions

(a) Flight conditions shall be approved by:

1. the CAA ; or
2. an appropriately approved design organisation accepted by CAA, under subpart J.

(b) Reserved

(c) Before approving the flight conditions, CAA or the approved organisation must be satisfied that the aircraft is capable of safe flight under the specified conditions and restrictions. CAA may make or require the applicant to make any necessary inspections or tests for that purpose.

MCAR-21.A.711 Issue of a permit to fly

- (a) A permit to fly (CAA Form 20a, see Appendix III) may be issued by the CAA under the conditions specified in point 21.B.525
- (b) Reserved
- (c) Reserved
- (d) An approved organisation may issue a permit to fly (CAA Form 20b, see Appendix IV) under the privilege granted in accordance with point MCAR-M.A.711 or point MCAR-CAMO.A.125 or point MCAR-CAO.A.095, when the flight conditions referred to in point 21.A.708 have been approved in accordance with point 21.A.710.
- (e) The permit to fly shall specify the purpose(s) and any conditions and restrictions approved under MCAR-21.A.710.
- (f) For permits issued under (d), a copy of the permit to fly and associated flight conditions shall be submitted to the CAA at the earliest opportunity but not later than 3 days.
- (g) Upon evidence that any of the conditions specified in point 21.A.723(a) are not met for a permit to fly that an organisation has issued pursuant to point (d), that organisation shall immediately revoke that permit to fly and inform without delay the CAA.

GM 21.A.711(e) Additional conditions and restrictions

The conditions and restrictions prescribed by the CAA may include airspace restrictions to make the conditions approved under MCAR 21.A.710 more concrete, or conditions outside the scope of the ones mentioned in MCAR 21.A.708(b) such as a radio station license.

MCAR-21.A.713 Changes

- (a) Any change that invalidates the flight conditions or associated substantiation established for the permit to fly shall be approved in accordance with MCAR-21.A.710. When relevant an application shall be made in accordance with MCAR-21.A.709.
- (b) A change affecting the content of the permit to fly requires the issuance of a new permit to fly in accordance with MCAR-21.A.711.

GM 21.A.713 Changes

Changes to the conditions or associated substantiations that are approved but do not affect the text on the permit to fly do not require issuance of a new permit to fly.

In case a new application is necessary, the substantiation for approval of the flight conditions only needs to address the change.

MCAR-21.A.715 Language

The manuals, placards, listings, and instrument markings and other necessary information required by applicable certification specifications shall be presented in English and where applicable in Dhivehi.

MCAR-21.A.719 Transferability

- (a) A permit to fly is not transferable.

- (b) Reserved

MCAR-21.A.723 Duration and continued validity

- (a) A permit to fly shall be issued for a maximum of 12 months and shall remain valid subject to compliance with all the following conditions:
1. compliance with the conditions and restrictions of MCAR-21.A.711(e) associated with the permit to fly;
 2. the holder or any of its partners, suppliers or subcontractors acknowledge that the CAA may carry out investigations in accordance with point MCAR-21.A.9;
 3. the permit to fly not being surrendered or revoked by the CAA;
 4. the aircraft remaining on Maldivian civil aircraft register.
- (b) Notwithstanding subparagraph (a), a permit to fly issued for the purpose of MCAR-21.A.701(15) may be issued for unlimited duration.
- (c) Upon surrender or revocation, the permit to fly shall be returned to the CAA.

MCAR-21.A.725 Renewal of permit to fly

Renewal of the permit to fly shall be processed as a change in accordance with MCAR-21.A.713.

MCAR-21.A.727 Obligations of the holder of a permit to fly

The holder of a permit to fly shall ensure that all the conditions and restrictions associated with the permit to fly are satisfied and maintained.

Subpart Q — IDENTIFICATION OF PRODUCTS, PARTS AND APPLIANCES

MCAR-21.A.801 Identification of products

- (a) The identification of products shall include the following information:
1. Manufacturer's name.
 2. Product designation.
 3. Manufacturer's Serial number.
 4. the 'EXEMPT' mark in case of an engine, when the State of Design has granted an exemption from the environmental protection requirements
 5. Any other information the CAA finds appropriate.
- (b) An aircraft or engine shall be identified by means of a fireproof plate that has the information specified in paragraph (a) marked on it by etching, stamping, engraving, or other approved method of fireproof marking. The identification plate shall be secured in such a manner that it is accessible and legible, and will not likely be defaced or removed during normal service, or lost or destroyed in an accident.
- (c) A propeller, propeller blade, or propeller hub shall be identified by means of a plate, stamping, engraving, etching or other approved method of fireproof identification that is placed on it on a non-critical surface, contains the information specified in paragraph (a), and will not likely be defaced or removed during normal service or lost or destroyed in an accident.
- (d) For manned balloons, the identification plate prescribed in paragraph (b) shall be secured to the balloon envelope and shall be located, if practicable, where it is legible to the operator when the balloon is inflated. In addition, the basket, load frame assembly and any heater assembly shall be permanently and legibly marked with the manufacturer's name, part number, or equivalent, and serial number, or equivalent.

MCAR-21.A.803 Handling of identification data

- (a) No person shall remove, change, or place identification information referred to in MCAR-21.A.801(a) on any aircraft, engine, propeller, propeller blade, or propeller hub, or in MCAR-21.A.807(a) on an APU, without the approval of the CAA.
- (b) No person shall remove or install any identification plate referred to in MCAR-21.A.801 or in MCAR-21.A.807 for an APU, without the approval of the CAA.
- (c) By way of derogation from paragraphs (a) and (b), any natural or legal person performing maintenance work under the applicable Maldivian Civil Aviation Regulations may, in accordance with methods, techniques and practices established by the CAA:
 - 1. Remove, change, or place the identification information referred to in MCAR-21.A.801(a) on any aircraft, engine, propeller, propeller blade, or propeller hub, or in MCAR-21.A.807(a) on an APU; or
 - 2. Remove an identification plate referred to in MCAR-21.A.801, or MCAR-21.A.807 for an APU, when necessary during maintenance operations.
- (d) No person shall install an identification plate removed in accordance with subparagraph (c) (2) on any aircraft, engine, propeller, propeller blade, or propeller hub other than the one from which it was removed.

MCAR-21.A.804 Identification of parts and appliances

- (a) Each part or appliance which is eligible for installation in a type-certified product shall be permanently and legibly marked with:
1. a name, trademark, or symbol identifying the manufacturer in a manner identified by the applicable design data; and
 2. the part number, as defined in the applicable design data; and
 3. the letters EPA (European Part Approval)/PMA (Parts Manufacturer Approval) or equivalent for parts or appliances produced in accordance with approved design data not belonging to the type-certificate holder of the related product, except for TSO articles and for parts and appliances covered under point (b) of point MCAR-21.A.307.
- (b) By way of derogation from paragraph (a), if the CAA agrees that a part or appliance is too small or that it is otherwise impractical to mark a part or appliance with any of the information required by point (a), the authorised release document accompanying the part or appliance or its container shall include the information that could not be marked on the part or appliance.

GM1 21.A.804(a)(3) Identification of parts and appliances

EUROPEAN PARTS APPROVAL (EPA) MARKING FOR REPAIR PARTS

The EPA marking only applies to the parts, specifically designed or modified for the repair, to be incorporated as part of the repair design. If the repair scheme does not require the addition of any new parts or the use of modified parts, there is no need to mark the repaired part with the letters 'EPA'.

MCAR-21.A.805 Identification of critical parts

In addition to the requirement of MCAR-21.A.804, a part to be fitted on a type-certificated product which has been identified as a critical part shall be permanently and legibly marked with a part number and a serial number.

GM1 21.A.805 Identification of critical parts

PARTS TO BE MARKED

For the purposes of point MCAR-21.A.805, a part that requires individual traceability for the management of its continued airworthiness, as identified by the design approval holder, shall be permanently marked with a part number and a serial number.

The need for the design approval holder to identify and mark parts may be related to specific requirements for critical parts included in a certification specification. For instance, according to point (c) of CS-E 110 Drawings and Marking of Parts — Assembly of Parts: ‘Certain parts (including Engine Critical Parts; see CS-E 515) as may be required by the Agency must be marked and the constructor must maintain records related to this marking such that it is possible to establish the relevant manufacturing history of the parts.’ Another example is in point AC 29.602 of FAA AC 29-2C, as referenced in Book 2 of CS-29: ‘(7) – Critical parts are identified as required, and relevant records relating to the identification are maintained such that it is possible to establish the manufacturing history of the individual parts or batches of parts.’

Another typical case is for any part subject to an individually specified life limit or inspection requirement when it is also possible for that part to be removed from one serial number of the associated product during maintenance and installed on another serial number of the same product. In this case, the traceability of the part, which is necessary for continued airworthiness management purposes, is not assured through the serial number of the product alone, and it is necessary to maintain records for the part through its serial number.

MCAR-21.A.807 Identification of TSO articles

- (a) Each TSO article shall be permanently and legibly marked with the following information:
1. The name and address of the manufacturer;
 2. The name, type, part number or model designation of the article;
 3. The serial number or the date of manufacture of the article or both; and
 4. The applicable TSO number.
- (b) By way of derogation from paragraph (a), if the CAA agrees that a part is too small or that it is otherwise impractical to mark a part with any of the information required by paragraph (a), the authorised release document accompanying the part or its container shall include the information that could not be marked on the part.
- (c) An APU shall be identified by means of a fireproof plate that has the information specified in paragraph (a) marked on it by etching, stamping, engraving, or other approved method of fireproof marking. The identification plate shall be secured in such a manner that it is accessible and legible, and will not likely be defaced or removed during normal service, or lost or destroyed in an accident.

Section B — PROCEDURE FOR CIVIL AVIATION AUTHORITY

SUBPART A — GENERAL PROVISIONS

21.B.65 Suspension, limitation and revocation

The CAA will:

- (a) suspend a certificate, approval or permit to fly when it considers that there are reasonable grounds that such action is necessary to prevent a credible threat to aircraft safety;
- (b) [reserved]
- (c) suspend or revoke a certificate of airworthiness or a noise certificate upon evidence that some of the conditions specified in points MCAR-21.A.181(a) or MCAR-21.A.211(a) are not met;
- (d) suspend or limit in whole or in part a certificate, approval or permit to fly if unforeseeable circumstances outside the control of the CAA prevent its inspectors from discharging their oversight responsibilities over the oversight planning cycle.

SUBPART P — PERMIT TO FLY

21.B.525 Issuance of a permit to fly

The CAA may issue a permit to fly (CAA Form 20a, see Appendix III):

- (a) upon presentation of the data required by point MCAR-21.A.707; and
- (b) when the flight conditions referred to in point MCAR-21.A.708 have been approved in accordance with point MCAR-21.A.710; and
- (c) when the CAA, through its own investigations, which may include inspections, or through procedures agreed with the applicant, is satisfied that the aircraft conforms to the design defined under point MCAR-21.A.708 before flight.

APPENDICES TO THE REGULATIONS

Appendix I (Reserved)

Appendix II Airworthiness Review Certificate (CAA Form 15a and 15c)

(Refer to MCAR-M for CAA form 15a and MCAR-ML for CAA Form 15c)

Appendix III Permit to Fly (CAA Form 20a)

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



MALDIVES CIVIL AVIATION AUTHORITY
REPUBLIC OF MALDIVES

Permit No
21P/YYYY/XXX

PERMIT TO FLY

This permit to fly is issued pursuant to Civil Aviation Regulations in force and certifies that the aircraft is capable of safe flight for the purpose and within the conditions listed below and is valid within Maldives

This permit is also valid for flight to and within other states provided separate approval is obtained from the competent authorities of such States:

1. Nationality & Registration Marks:	
2. Aircraft Manufacturer/type:	
3. Serial No:	

4. The permit covers: <i>[purpose in accordance with MCAR-21.A.701(a)]</i>

5. Holder: <i>[in case of a permit to fly issued for the purpose of MCAR-21.A.701(a)(15) this should state: 'the registered owner']</i>
--

6. Conditions/remarks: The aircraft shall be operated in accordance with the following limitations: - general conditions specified overleaf; -
--

7. Validity period:

8. Place and date of issue:	9. Signature of CAA representative:

PERMIT TO FLY
General Conditions

- a. This Permit shall be carried on board an aircraft when it is being operated pursuant to this Permit.
- b. The nationality and registration marks assigned to the aircraft by the CAA shall be displayed on the aircraft in conformity with the requirements of MCAR-47.
- c. Persons or property shall not be carried for hire, remuneration or reward.
- d. No person shall be carried in the aircraft unless that person is essential to the purpose of the flight and has been advised of the contents of this Permit and the airworthiness status of the aircraft.
- e. The aircraft shall be operated only by crew who are aware of the purpose of the flight and any limitations imposed, and who hold appropriate certificates or licenses acceptable to CAA.
- f. All flights should be conducted so as to avoid areas where flights might create hazardous exposure to persons or property.
- g. Operation of an aircraft pursuant to this Permit shall be in accordance with the aircraft's flight manual or pilot's Operations Manual/handbook approved for the aircraft and any additional limitations specified "Conditions/Remarks" section of this Permit.
- h. The aircraft must be certified as fit and safe for flight for the proposed flight(s) by an appropriately qualified and authorized certifying staff in the aircraft technical log prior to commencement of flight.
- i. The aircraft shall be insured in accordance with the applicable regulations.
- j. This Permit is not valid for use in foreign airspace unless relevant permits are obtained from the competent aviation authorities of the countries whose airspace will be overflown.

Appendix IV Permit to Fly Issued by Approved Organisations (CAA Form 20b)

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



**CIVIL AVIATION DEPARTMENT
REPUBLIC OF MALDIVES**

**Permit No
21P/ORG/YYYY/XXX**

PERMIT TO FLY

This permit to fly is issued pursuant to Civil Aviation Regulations in force and certifies that the aircraft is capable of safe flight for the purpose and within the conditions listed below and is valid within Maldives

This permit is also valid for flight to and within other states provided separate approval is obtained from the Competent Authorities of such States:

Name & Address of the Organisation Issuing the Permit to Fly	
1. Nationality & Registration Marks:	
2. Aircraft Manufacturer/type:	
3. Serial No:	
4. The permit covers: <i>[purpose in accordance with MCAR-21.A.701(a)]</i>	
5. Holder: <i>[Organisation issuing the permit to fly]</i>	
6. Conditions/remarks: The aircraft shall be operated in accordance with the following limitations: - general conditions specified overleaf; -	
7. Validity period:	
8. Place and date of issue	9. Authorised Signature: Name: Approval Reference No:

PERMIT TO FLY
General Conditions

- a. This Permit shall be carried on board an aircraft when it is being operated pursuant to this Permit.
- b. The nationality and registration marks assigned to the aircraft by the CAA shall be displayed on the aircraft in conformity with the requirements of MCAR-47.
- c. Persons or property shall not be carried for hire, remuneration or reward.
- d. No person shall be carried in the aircraft unless that person is essential to the purpose of the flight and has been advised of the contents of this Permit and the airworthiness status of the aircraft.
- e. The aircraft shall be operated only by crew who are aware of the purpose of the flight and any limitations imposed, and who hold appropriate certificates or licenses acceptable to CAA.
- f. All flights should be conducted so as to avoid areas where flights might create hazardous exposure to persons or property.
- g. Operation of an aircraft pursuant to this Permit shall be in accordance with the aircraft's flight manual or pilot's Operations Manual/handbook approved for the aircraft and any additional limitations specified "Conditions/Remarks" section of this Permit.
- h. The aircraft must be certified as fit and safe for flight for the proposed flight(s) by an appropriately qualified and authorized certifying staff in the aircraft technical log prior to commencement of flight.
- i. The aircraft shall be insured in accordance with the applicable regulations.
- j. This Permit is not valid for use in foreign airspace unless relevant permits are obtained from the competent aviation authorities of the countries whose airspace will be over flown.

Appendix V (Reserved)

Appendix VI Certificate of Airworthiness (CAA Form 25)



MALDIVES CIVIL AVIATION AUTHORITY
REPUBLIC OF MALDIVES

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Certificate No
MV-21H-XXXX

CERTIFICATE OF AIRWORTHINESS

1. Nationality and Registration Marks	2. Manufacturer and Manufacturer's Designation of Aircraft	3. Aircraft Serial Number
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4. Categories

<p>5. This certificate of Airworthiness is issued pursuant to the Convention on International Civil Aviation dated 07 December 1944 and in accordance with the Civil Aviation Regulations, in respect of the above-mentioned aircraft which is considered to be airworthy when maintained and operated in accordance with the forgoing and the pertinent operating limitations.</p> <p>Date of issue:</p> <p>Signature:</p>
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<p>6. This Certificate of Airworthiness is valid unless revoked by the Civil Aviation Authority. A current Airworthiness Review Certificate shall be attached to this Certificate.</p>

CAA Form 25 (01 June 2013)

Appendix VII Noise Certificate (CAA Form 45)

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



MALDIVES CIVIL AVIATION AUTHORITY
REPUBLIC OF MALDIVES

Document No
MV-21H-XXXX

NOISE CERTIFICATE

4. Registration Marks	5. Manufacturer and Manufacturer's Designation of Aircraft	6. Aircraft Serial Number
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7. Engine:	8. Propeller: (*)
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9. Maximum take-off mass (kg)	10. Maximum landing mass (kg)(*)	11. Noise certification standard:
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12. Additional modifications incorporated for the purpose of compliance with the applicable noise certification standards:
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13. Lateral / full-power noise level: (*)	14. Approach noise level (*)	15. Flyover noise level (*)	16. Overflight noise level (*)	17. Take-off noise level (*)
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Remarks

18. This Noise Certificate is issued pursuant to Annex 16, Volume 1 to the Convention on International Civil Aviation dated 7 December 1944 and Civil Aviation Regulations in force in respect of the above mentioned aircraft, which is considered to comply with the indicated noise standard when maintained and operated in accordance with the relevant requirements and operating limitations.
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19. Date of issue:	20. Signature
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CAA Form 45 (Issue 2, 18 January 2012)

(*) These boxes may be omitted depending on noise certification standard.

APPENDICES TO THE AMC

Appendix A to GM 21.A.91 Examples of Major Changes per discipline

The information below is intended to provide a few major change examples per discipline, resulting from application of MCAR-21.A.91 and paragraph 3.3 conditions. It is not intended to present a comprehensive list of all major changes. Examples are categorised per discipline and are applicable to all products (aircraft, engines and propellers). However a particular change may involve more than one discipline, e.g., a change to engine controls may be covered in engines and systems (software).

Those involved with classification should always be aware of the interaction between disciplines and the consequences this will have when assessing the effects of a change (i.e., operations and structures, systems and structures, systems and systems, etc.; see example in paragraph 2 (ii).

Specific rules may exist which override the guidance of these examples.

In the MCAR-21 a negative definition is given of minor changes only. However in the following list of examples it was preferred to give examples of major changes.

Where in this list of examples the words 'has effect' or 'affect(s)' are used, they have always to be understood as being the opposite of 'no appreciable effect' as in the definition of minor change in MCAR-21.A.91. Strictly speaking the words 'has appreciable effect' and 'appreciably affect(s)' should have been used, but this has not been done to improve readability.

1. Structure

- (i) changes such as a cargo door cut-out, fuselage plugs, change of dihedral, addition of floats;
- (ii) changes to materials, processes or methods of manufacture of primary structural elements, such as spars, frames and critical parts;
- (iii) changes that adversely affect fatigue or damage tolerance or life limit characteristics;
- (iv) changes that adversely affect aeroelastic characteristics.

2. Cabin Safety

- (i) changes which introduce a new cabin layout of sufficient change to require a re-assessment of emergency evacuation capability or which adversely affect other aspects of passenger or crew safety.

Items to consider include, but are not limited to:

- changes to or introduction of dynamically tested seats.
- change to the pitch between seat rows.
- change of distance between seat and adjacent obstacle like a divider.
- changes to cabin lay outs that affect evacuation path or access to exits.
- installation of new galleys, toilets, wardrobes, etc.
- installation of new type of electrically powered galley insert.

- (ii) changes to the pressurisation control system which adversely affect previously approved limitations.

3. Flight

- (i) Changes which adversely affect the approved performance, such as high altitude operation, brake changes that affect braking performance.
- (ii) Changes which adversely affect the flight envelope.
- (iii) Changes which adversely affect the handling qualities of the product including changes to the flight controls function (gains adjustments, functional modification to software) or changes to the flight protection or warning system.

4. Systems

For systems assessed under CS 25.1309 or equivalent, the classification process is based on the functional aspects of the change and its potential effects on safety.

- (i) Where failure effect is 'Catastrophic' or 'Hazardous', the change should be classified as major.
- (ii) Where failure effect is 'major', the change should be classified as major if:
 - aspects of the compliance demonstration use means that have not been previously accepted for the nature of the change to the system; or
 - the change affects the pilot/system interface (displays, controls, approved procedures); or
 - the change introduces new types of functions/systems such as GPS primary, TCAS, Predictive windshear, HUD.

The assessment of the criteria for software changes to systems also needs to be performed.

When software is involved, account should be taken also of the following guidelines:

Where a change is made to software produced in accordance with the guidelines of the latest edition of EASA AMC 20-115 (see EASA AMC-20 document) or equivalent, the change should be classified as major if either of the following apply, and the failure effect is Catastrophic, Hazardous or Major:

- (i) the executable code for software, determined to be Level A or Level B in accordance with the guidelines, is changed unless that change involves only a variation of a parameter value within a range already verified for the previous certification standard; or
- (ii) the software is upgraded to or downgraded from Level A, Level B or Level C; or
- (iii) the executable code, determined to be level C, is deeply changed, e.g., after a software reengineering process accompanying a change of processor.

For software developed to guidelines other than the latest edition of EASA AMC 20-115 or equivalent, the applicant should assess changes in accordance with the foregoing principles.

For other codes the principles noted above may be used. However, due consideration should be given to specific certification specification/interpretations.

In the context of a product information security risk assessment (PISRA), a change that may introduce the potential for unauthorised electronic access to product systems should be considered to be 'major' if there is a need to mitigate the risks for an identified unsafe condition. The following examples do not provide a complete list of conditions to classify a modification as major, but rather they present the general interactions between security domains. Examples of modifications that should be classified as 'major' are when any of the following changes occur:

- A new digital communication means, logical or physical, is established between a more closed, controlled information security domain, and a more open, less controlled security domain.
 - o For example, in the context of large aircraft, a communication means is established between the aircraft control domain (ACD) and the airline information services domain (AISD), or between the AISD and the passenger information and entertainment services domain (PIESD) (see ARINC 811).

As an exception, new simplex digital communication means (e.g. ARINC 429) from a controlled domain to a more open domain is not considered as major modification, if it has been verified that the simplex control cannot be reversed by any known intentional unauthorised electronic interaction (IUEI).

- o A new service is introduced between a system of a more closed, controlled information security domain and a system of a more open, less controlled security domain, which allows the exploitation of a vulnerability of the service that has been introduced, creating a new attack path.

For example:

- opening and listening on a User Datagram Protocol (UDP) port in an end system of an already certified topology;
- activating a protocol in a point-to-point communication channel.
- o The modification of a service between a system of a more closed, controlled security domain and a system of a more open, less controlled security domain.
- o The modification of a security control between a system of a more closed, controlled information security domain and a system of a more open, less controlled security domain.

5. Propellers

Changes to:

- diameter
- airfoil
- planform
- material
- blade retention system, etc.

6. Engines

Changes:

- (i) that adversely affect operating speeds, temperatures, and other limitations.
- (ii) that affect or introduce parts identified by CS E-510 or equivalent where the failure effect has been shown to be hazardous.
- (iii) that affect or introduce engine critical parts (CS E-515 or equivalent) or their life limits.
- (iv) to a structural part which requires a re-substantiation of the fatigue and static load determination used during certification.
- (v) to any part of the engine which adversely affects the existing containment capability of the structure.
- (vi) that adversely affect the fuel, oil and air systems, which alter the method of operation, or require reinvestigation against the type-certification basis.
- (vii) that introduce new materials or processes, particularly on critical components.

7. Rotors and drive systems

Changes that:

- (i) adversely affect fatigue evaluation unless the service life or inspection interval are unchanged. This includes changes to materials, processes or methods of manufacture of parts, such as
 - rotor blades
 - rotor hubs including dampers and controls
 - gears
 - drive shafts
 - couplings
- (ii) affect systems the failure of which may have hazardous or catastrophic effects. The design assessment will include:
 - cooling system
 - lubrication system
 - rotor controls
- (iii) adversely affect the results of the rotor drive system endurance test, the rotor drive system being defined in CS 27/29.917 or equivalent.
- (iv) adversely affect the results of the shafting critical speed analysis required by CS 27/29.931 or equivalent.

8. Environment

The introductory text to Appendix A to GM 21.A.91 describes how in MCAR-21 a negative definition is given of minor changes only. This philosophy is similar to the manner in which the ICAO Standards and Recommended Practices for environmental protection (ICAO Annex 16) and the associated Guidance Material (ICAO Environmental Technical Manual) define changes affecting a product's environmental characteristics in terms of 'no-acoustical changes' and 'no-emissions changes' and 'no-CO₂ changes' (i.e. changes which do not appreciably affect the product's environmental characteristics).

Following the general philosophy of this Appendix, however, it is preferred to give examples of changes which might have an appreciable effect on a product's environmental characteristics (i.e. the effect might be greater than the no-acoustic change, no-emissions change and no-CO₂ change criteria) and might therefore lead to a major change classification.

Where a change is made to an aircraft or aircraft engine, the effect of the change on the product's environmental characteristics should be taken into account. Examples of changes that might have an appreciable effect on the product's environmental characteristics, and might therefore be classified as a major change, are listed below. The examples are not exhaustive and will not, in every case, result in an appreciable change to the product's environmental characteristics, and therefore, will not per se and in every case result in a 'major change' classification.

An appreciable effect is considered to be one which exceeds the ICAO criteria for a no-acoustical change, a no-emissions change or a no-CO₂ change. For the definition of a no-acoustical change refer to the section of the ICAO Environmental Technical Manual, Volume I (ICAO Doc 9501, Volume I – Procedures for the Noise Certification of Aircraft) concerning changes to aircraft type designs involving no-acoustical changes (see also the definitions of a 'derived version' in ICAO Annex 16, Volume I). For the definition of a no-emissions change, refer to the section of the ICAO Environmental Technical Manual, Volume II (ICAO Doc 9501, Volume II – Procedures for the Emissions Certification of Aircraft Engines) concerning no-emissions changes. For the definition of a no-CO₂ change, refer to ICAO Doc 9501 'Environmental Technical Manual', Volume III 'Procedures for the CO₂ Emissions Certification of Aeroplanes', 1st Edition 2018, concerning no-CO₂ changes.

- (i) Noise: A change that introduces either:
- an increase in the noise certification level(s); or
 - a reduction in the noise certification level(s) for which the applicant wishes to take credit.

Examples of noise-related changes that might lead to a major change classification are:

- (1) For jet and heavy (maximum take-off mass greater than 8618 kg) propeller-driven aeroplanes:
- A change that might affect the aircraft's take-off performance including:
 - o a change to the maximum take-off mass;
 - o a change to V₂ ('take-off safety speed'); or
 - o a change to the lift augmentation devices, including their configuration under normal take-off operating conditions.
 - A change that might affect the aircraft's landing performance including:
 - o a change to the maximum landing mass;
 - o a change to V_{REF} (reference landing speed); or
 - o change to the lift augmentation devices, including their deployment under normal landing operating conditions.
 - A change to the Centre of Gravity (CG) limits;

- A change that increases the aircraft's drag;
 - A change that alters the external profile of the aircraft, including the installation or change of shape or size of any item on the external surface of the aircraft that might protrude into the airflow such as winglets and vortex generators; generally the installation of small antennas does not represent an acoustical change;
 - A change that introduces an open-ended hollow cavity at more or less right angles to the airflow (e.g. hollow pins in undercarriage assemblies);
 - A change of engine or, if fitted, propeller type;
 - A change in engine thrust rating;
 - A change to the engine rotating parts or stators, such as geometry, blade profile or blade number;
 - A change to the aerodynamic flow lines through the engine;
 - A change that affects the engine thermodynamic cycle, including a change to the engine's bypass ratio;
 - A change to the engine nacelle, including a change to the acoustic liners;
 - A change to the engine exhaust;
 - A change to the engine bleed valves, including bleed valve scheduling;
 - A change in the operation of engine power off-takes (e.g. the operation of the Environmental Control System (ECS) during a normal take-off or approach);
 - A change to the Auxiliary Power Unit (APU), including associated operating limitations (e.g. a change that allows the APU to be operated during a normal approach when previously it was not allowed);
 - A change to the propeller pitch and/or propeller speed during a normal take-off or approach;
 - A change that causes a change to the angle at which air flows into the propeller.
- (2) For light (maximum take-off mass 8 618 kg or less) propeller-driven aeroplanes:
- A change that might affect the aircraft's take-off performance including:
 - o a change to the maximum take-off mass;
 - o a change to the take-off distance;
 - o a change to the rate of climb; or
 - o a change to Vy (best rate of climb speed).

- A change that increases the aircraft's drag (e.g. the installation of external cargo pods, external fuel tanks, larger tyres to a fixed undercarriage, floats etc.);
- A change of engine or propeller type;
- A change in take-off power including a change in engine speed (tachometer 'red line') or, for piston engines, a change to the manifold pressure limitations;
- A change to the highest power in the normal operating range ('top of green arc');
- In the case of an aircraft where take-off power/engine speed is time limited, a change in the period over which take-off power/engine speed may be applied;
- A change to the engine inlet or exhaust including, if fitted, the inlet or exhaust muffler;
- A change in propeller diameter, tip shape, blade thickness or the number of blades;
- The installation of a variable or adjustable pitch propeller in place of a fixed pitch propeller and vice versa;
- A change that causes a change to the angle at which air flows into the propeller.

(3) For helicopters:

- A change that might affect the take-off and/or landing performance, including a change in take-off mass and VY (best rate of climb speed);
- A change to VNE (never-exceed airspeed) or to VH (airspeed in level flight obtained using the torque corresponding to minimum engine installed, maximum continuous power available for sea level pressure, 25°C ambient conditions at the relevant maximum certificated mass);
- A change to the maximum take-off engine power or maximum continuous power;
- A change to the gearbox torque limits;
- A change of engine type;
- A change to the engine intake or exhaust;
- A change to the maximum normal operating rpm of the main or tail rotors;
- A change to the main or tail rotors, including a change in diameter, blade thickness or blade tip profile.

Note: The effect on the helicopter's noise characteristics of either carrying external loads or the installation of external equipment need not be considered.

(ii) Emissions: A change that introduces an increase or decrease in the emissions certification levels. Examples of smoke and gaseous engine emission-related changes that might lead to a major change classification are:

- A change in engine thrust rating;
- A change to the aerodynamic flow lines through the engine;
- A change that affects the engine thermodynamic cycle, specifically relevant engine cycle parameters (e.g. combustor pressure P3, combustor entry temperature T3, Air Fuel Ratio (AFR));
- A change to the compressor that might influence the combustor inlet conditions and engine overall pressure ratio;
- A change to the combustor design (geometry);
- A change to the cooling of the combustor;
- A change to the air mass flow through the combustor;
- A change that affects the fuel spray characteristics.

(iii) CO₂: a change that introduces either:

- an increase in the CO₂ emissions certification level; or
- a decrease in the CO₂ emissions certification level for which an applicant wishes to take credit.

Examples of CO₂ emission-related changes that may lead to a 'major change' classification are:

- a change to the maximum take-off mass;
- a change that may affect the aeroplane's specific air range performance, including one or several of the following:
 - o a change that increases the aircraft's drag;
 - o a change of engine or, if fitted, propeller type;
 - o a change in the engine design that affects the engine specific fuel consumption in cruise.
- a change to the aeroplane's reference geometric factor (RGF).

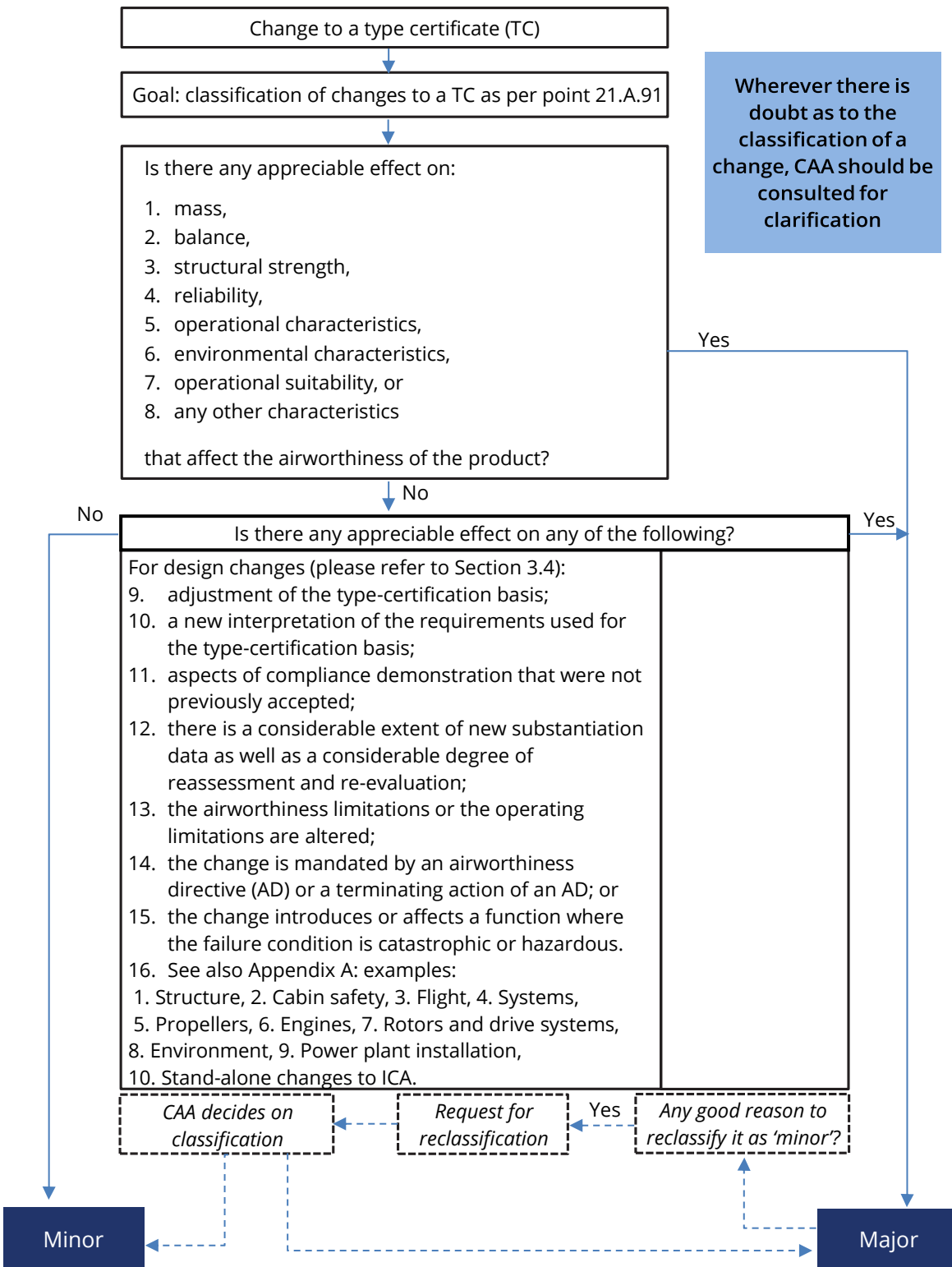
9. Power plant Installation

Changes which include:

- (i) control system changes which affect the engine/propeller/airframe interface;
- (ii) new instrumentation displaying operating limits;
- (iii) modifications to the fuel system and tanks (number, size and configuration);
- (iv) change of engine/propeller type

10. Stand-alone changes to non-ALS ICA that require additional work to demonstrate compliance with the applicable certification basis as follows:
- (i) changes related to accomplishment instructions (e.g. to the aircraft maintenance manual) related to the CDCCL, or the EWIS ICA, for which the technical content (e.g. gaps, steps) of the procedures is changed;
 - (ii) the introduction of novel technology for inspection purposes related to an ALS task;
 - (iii) changes that adversely affect the certification assumptions: e.g. some specific inspection procedures, such as inspection procedures for use after a hard landing, may include a decision-making chart based on the level of exceedance of the load in comparison with the certified limit loads; such criteria, and adverse changes, need to be agreed with the CAA of the State of Design.

Classification process



Appendix B Flight Conditions for a Permit to Fly – Approval Form (CAA Form 18B)



MALDIVES CIVIL AVIATION AUTHORITY
REPUBLIC OF MALDIVES

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

CAA Form 18B

FLIGHT CONDITIONS FOR A PERMIT TO FLY – APPROVAL FORM

<p>1. Applicant Approval No:</p> <p><i>[Name and organisation approval number of the organisation providing the flight conditions and associated substantiations]</i></p>	<p>2. Approval Form No: Issue:</p> <p><i>[Number and issue, for traceability purposes]</i></p>
<p>3. Aircraft manufacturer/type</p>	<p>4. Serial number(s)</p>
<p>5. Purpose</p> <p><i>[Purpose in accordance with point 21.A.701(a)]</i></p>	
<p>6. Aircraft Configuration</p> <p>The above aircraft, for which a permit to fly is requested, is defined in <i>[add reference to the document(s) identifying the configuration of the aircraft]</i></p> <p><i>[For change(s) affecting the initial approval form: a description of the change(s). This form must be reissued]</i></p>	
<p>7. Substantiations</p> <p><i>[References to the document(s) justifying that the aircraft (as described in block 6) can perform the intended flight(s) safely under the defined conditions or restrictions.]</i></p> <p><i>[For change(s) affecting the initial approval form: reference(s) to additional substantiation(s). This form must be reissued]</i></p>	
<p>8. Conditions/Restrictions</p> <p>The above aircraft must be used with the following conditions or restrictions:</p> <p><i>[Details of these conditions/restrictions, or reference to relevant document, including specific maintenance instructions and conditions to perform these instructions]</i></p>	
<p>9. Statement</p> <p>The flight conditions have been established and justified in accordance with point 21.A.708. The aircraft as defined in block 6 above has no features and characteristics making it unsafe for the intended operation(s) under the identified conditions and restrictions</p>	
<p><i>[when approved under a privilege of an approved organisation]</i></p> <p>10. Approved under: [ORGANISATION APPROVAL NUMBER]</p>	
<p>11. Date of issue</p>	<p>12. Name and signature <i>[Authorised signatory]</i></p>
<p><i>[CAA Approval. When not approved under a privilege of an approved organisation]</i></p> <p>13. Approval and date</p>	

CAA Form 18B, Issue 4, 15 January 2025

Appendix C Application for a Permit to Fly (CAA Form 21)



MALDIVES CIVIL AVIATION AUTHORITY
REPUBLIC OF MALDIVES

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

CAA Form 21

APPLICATION FOR A PERMIT TO FLY

1. Applicant	[Name of applicant]
2. Aircraft nationality and identification marks:	
3. Aircraft owner:	
4. Aircraft manufacturer/type	
5. Serial number(s)	
6. Purpose of Flight [Use terminology of 21.A.701(a) and add any additional information for accurate description of the purpose, e.g. place, itinerary, duration...] [For an application due to a change of purpose (ref. 21.A.713): reference to initial request and description of new purpose]	
7. Expected target date(s) for the flight(s) and duration	
8. Aircraft configuration as relevant for the permit to fly 8.1 Description of the non-compliance with the applicable airworthiness requirements [Describe non-compliance] 8.2 The above aircraft for which a permit to fly is requested is defined in [add reference to the document(s) identifying the configuration of the aircraft. Same as required in AMC1 21.A.709(b) application approval form 18A or 18B, box 6] 8.3 The aircraft is in the following situation related to its maintenance schedule: [Describe status]	
8b. Substantiations [References to the document(s) justifying that the aircraft (as described in block 6) can perform the intended flight(s) safely under the defined conditions or restrictions.]	
8c. Flight Conditions/Restrictions The above aircraft will be used with the following conditions or restrictions: [Details of these conditions/restrictions, or reference to relevant document, including specific maintenance instructions and conditions to perform these instructions. Include persons operating the flight.]	
9. Applicant's Declaration I declare that I have the legal capacity to submit this application to CAA and that all information provided in this application form is correct and complete.	
10. Date	12. Name and signature [Authorised signatory]

CAA Form 21, Issue 4, 15 January 2025