

DEFENCE AVIATION SAFETY AUTHORITY NOTICE OF PROPOSED AMENDMENT FOR DASR CHANGE PROPOSAL 2022-017

# AMENDMENTS TO DASR 21 SUBPART M (REPAIRS) BASED ON EMAR 21 EDITION 2.0

# INTRODUCTION

# **References:**

- A. EMAR 21 Edition 2.0 Certification of Military Aircraft and Related Products, Parts and Appliances, and Design and Production Organisations of 31 Mar 21
- B. DASR 21 Aircraft Design, Production and Certification of 29 Apr 22
- C. EASA Part 21 Easy Access Rules for Airworthiness and Environmental Certification (Regulation (EU) No 748/2012) Published May 2022
- D. EASA Opinion No 07/2016 Embodiment of Lol requirements into Part-21 of 23 May 16

# Applicability

1. This proposal is applicable to Military Type Certificate Holders, Military Design Organisation Approval holders, and other organisations involved in applying for repair certification approvals under DASR 21 Subpart M.

### Purpose

2. The purpose of this NPA is to enable community input into updating repair certification regulations within DASR 21 Subpart M, as a result of the release of EMAR 21 Edition 2.0 (Reference A).

3. The main objective is to strengthen the DASR 21 repair certification process, so that safety goals are met in an effective and efficient manner. This will be achieved by introducing into DASR 21 the requirements accommodating a risk-based approach to repair certification, through the embodiment of improved Level of Involvement (LoI) processes by DASA in the repair certification process.

4. The risk-based Lol concept is in line with the safety risk management standards of International Civil Aviation Organization (ICAO) Annex 19, and will help enable DASA better identify the areas of product repairs more prone to risk than others with regard to safety. This will also provide an opportunity to enhance the oversight system of design organisations to become more 'performance-based'.

5. The main mechanism to achieve this is through incorporation of Reference A 21.A.432C *Application for a repair design approval* into DASR 21 (Reference C) which will include additional contents in the application for approval of a repair design for DASA to review.

6. The improved LoI approach will also improve the effectiveness, efficiency, transparency and predictability of the repair certification process, allowing for better planning with fewer delays and better allocation of both DASA's and the applicant's repair certification staff resources.

7. The regulatory burden of such a proposal is considered neutral. This NPA will merely formalise the process and provide better support and means to render the process more efficient and effective. The overall DASA Lol is expected to remain the same. The applicant should always have, irrespective of DASA submission requirements, a certification planning document for every project.



# Background

8. European Defence Agency released a new edition of EMAR 21 (Reference A) in March 2021, which incorporated updates originating from several EASA Part-21 releases. This NPA to DCP 2022-017 represents the second package of work related to this edition, which aligns DASR 21 Subpart M – Repairs to the recent changes to Subparts B, D & E incorporated in Reference B via DCP 2021-048 on 29 Apr 22. Note that, as AMC/GM has not been released for EMAR 21 Edition 2.0, the EASA Part-21 AMC/GM (Reference C) has been leveraged as the basis for the AMC/GM updates in this NPA.

9. **Rationale for underpinning EMAR and EASA changes.** It is implicit in today's Part 21 equivalent regulations globally that the certification activities of an Authority are non-exhaustive, as a result of the imbalance between the overall volume of certification work and the available human resources of the Authority. This imbalance does not allow an Authority to perform an exhaustive indepth investigation of every compliance demonstration detail in every certification project. There is a risk that some safety issues embedded in the product design may not be identified through the safety assurance process.

10. The problem of non-exhaustiveness was not previously recognised by EASA in Part-21 Initial Airworthiness regulation (Reference C). However, in Reference D, EASA recognised this issue and consequently developed a risk-based approach to certification to help provide criteria with which they could conduct their risk assessments and determine their involvement in certification projects. This opinion and subsequent NPAs were incorporated as Regulation (EU) 2019/897 on 12 Mar 19 and were subsequently reviewed and incorporated by the Military Airworthiness Authorities (MAWA) Design and Production Advisory Group for Reference A.

11. **Applicability of change to DASRs.** According to DASR 21, the applicant has responsibility to ensure and demonstrate full compliance of the product, part or appliance and changes/repairs with the applicable airworthiness requirements. The compliance demonstration obligation of the applicant will remain intact with this proposal. DASA has a safety assurance role, using the expertise of its repair certification staff, to assure that the applicant has demonstrated compliance of repairs to applicable airworthiness requirements. The problem of non-exhaustiveness applies equally to DASA, as a result of its safety assurance role.

# **Proposed Amendments**

12. **Overview.** The main objective of this proposal is to improve the effectiveness of the DASA's certification process, by applying a risk-based approach to determine DASA's involvement in repair certification activities, in a formal and transparent manner. The main mechanism to address this is through incorporation of 21.A.432C *Application for a repair design approval* of Reference A, which requires the submission of a certification programme for major repair designs and specifies the content of such a programme.

13. Adding 21.A.432C *Application for a repair design approval* requires submission to the Authority of a detailed certification programme, this is to provide the Authority a basis to determine its Lol in major repairs. Of note, this new requirement has not invalidated previous AMC1 21.A.433(a) provisions for 'simplified' certification programmes being submitted as part of the application (now at AMC 21.A.432C(a)).

14. A summarised list of changes and their rationale is contained in Table 1 below. The full detail of proposed amendments are covered in Annex A. A draft Regulation Impact Statement (RIS) is included at Annex B, which provides further detail on the rationale, costs and benefits of the proposed changes.

15. **Non incorporation of certain EMAR 21 Edition 2.0 elements: Standard Repairs.** Reference A also includes the introduction of a definition for standard repairs which don't require approval under EMAR 21 Subpart M. Initial assessment by DASA suggest that this change is not suitable for adoption into the Australian Defence context. This is because standard repairs can only be undertaken in accordance with certification specifications strictly eligible for aeroplanes that are not complex motor-powered aircraft, and any ELA2 aircraft. An "ELA2 aircraft" means the following manned European Light Aircraft: an aeroplane with a Maximum Take-off Mass (MTOM) of 2000 kg.



Standard repairs are generally useful for civil operators of simple aircraft (General Aviation) that do not have an approved Structural Repair Manual (SRM), therefore have no applicability in the Australian Defence context and will not be adopted as part of this NPA.

16. **Australian unique AMC/GM.** Some Australian unique AMC/GM has been updated and some removed, as per Table 1 below.

Existing DASR 21 Reference	NPA 2022-017 reference	Type of Change	Rationale
21.A.431A(a) to (e)	21.A.431A(a) to (e)	Amended	Point (a) is amended (editorial changes). Concept of Standard Repairs introduced Point (b) but not adopted (reserved).
N/A	21.A.431A(f)	New	Point (f) has been added to indicate that the MTCs requirements of Subpart M are also applicable to MRTCs.
GM 21.A.431(a)	GM 21.A.431A	Amended	Editorial Changes. Flow charts removed as they are not contemporary, new Australian unique wording is used to explain DASA recognition process.
GM 21.A.431(d)	GM 21.A.431A(e)	Amended	Minor editorial change in the title.
			DASR 145 / DASR M removed and replaced with generic 'organisation' term.
N/A	21.A.431B	New	Standard Repairs regulation introduced but not adopted (reserved).
N/A	GM 21.A.431B	New	Standard Repairs introduced in Point (b), guidance not adopted (reserved).
21.A.432A	21.A.432A	No change	N/A
21.A.432B	21.A.432B	Amended	Point (c) is amended by deleting the incorrect reference to point (b). Some editorial changes are also introduced.
N/a	21.A.432C	New	Major addition - 21.A.432C Application for a repair design approval has been added to include a (missing) requirement for submission of the application for approval of a repair design as well as requirements for the content of such an application. The certification programme is the only basis for DASA to determine its Lol in a certification project for a major repair design. 21.A.432C Application for a repair design approval has been added to include a (missing) requirement for submission of the application for approval of a repair design as well as requirements for the content of such an application. The certification programme is the only basis for DASA to determine its Lol in a certification project for a major repair design.
N/a	AMC 21.A.432C(b)(1)	New	Supporting AMC to new 21.A.432C clause on the content of the certification programme.
N/a	AMC 21.A.432C(b)(3)	New	Supporting AMC to new 21.A.432C clause on the content of the certification programme.
N/a	AMC 21A.432C(b)(6)	New	Supporting AMC to new 21.A.432C clause on characteristics that should be taken into consideration for LoI.
AMC1 21.A.433(a)	AMC 21.A.432C(a)	Amended	Form and manner to reflect current AUS unique green text in AMC1 21.A.433(a). Additional information added.

 Table 1 - Overview of changes to DASR 21 Subpart M



Existing DASR 21 Reference	NPA 2022-017 reference	Type of Change	Rationale
21.A.433(a)	21.A.433(a)	Amended	Section amended. No longer talks about application. Now specifies all the necessary requirements for approval of a major and/or minor repair design.
			According to Reference D the requirements for demonstration of compliance with environmental protection requirements have been removed since the certification practice showed that environmental protection levels are not affected by repairs.
N/A	GM 21.A.433(a)(1)	New	Incorporating EMAR 21.B.450 comments in as AUS unique GM, also wording changed from "shall" to "may".
AMC 21.A.433(a)	GM 21.A.433(b) and 21.A.447	Amended	Minor editorial changes for consistency and to reflect new structure.
AMC1 21.A.433(a)	N/A	Removed	Captured in AMC to DASR 21.A.432C(a)
21.A.433(a)(2)	21.A.433(b)	Amended	Reference Amended
21.A.433(a)(3)	21.A.433(a)(2)	Amended	Reference Amended
21.A.433(b)	21.A.433(a)(4)	Amended	Reference Amended
N/A	21.A.433(a)(3)	New	No feature or characteristic has been identified that may make the product unsafe clause added.
21.A.435	21.A.435(a)	Amended	Editorial changes.
GM 21.A.435(a)	GM 21.A.435(a)	Amended	Minor editorial change in the re-numbering of sub-paras.
21.A.437	21.A.435(b)	Removed and Amended	Point (b) has been amended such to specify who can classify and approve a repair design. The text now incorporates the information currently contained in 21.A.437.
GM 21.A.437	GM 21.A.435(b)	Removed and Amended	The text now incorporates the information currently contained in GM 21.A.437.
AMC 21.A.437(b)	GM 21.A.435(b)	Removed and Amended	The text now incorporates the information currently contained in GM 21.A.437.
AMC1 21.A.437(b)	N/A	Removed	Already covered in AMC 21.A.263(c)(5)
21.A.439	21.A.439	No change	N/A
GM 21.A.439	GM 21.A.439	Removed	GM does not provide any additional clarification of the requirement it refers to, and that it is only a repetition of it.
21.A.441	21.A.441	Amended	Minor editorial change
GM 21.A.441	GM 21.A.441	Removed	GM does not provide any additional clarification of the requirement it refers to, and that it is only a repetition of it.



Existing DASR 21 Reference	NPA 2022-017 reference	Type of Change	Rationale
21.A.443	21.A.443	No Change	
GM 21.A.443	GM 21.A.443	Removed	GM not applicable to DASR 21
21.A.445	21.A.445	Amended	Minor editorial
AMC 21.A.445	AMC 21.A.445	No change	N/A
GM 21.A.445(b)	GM 21.A.445(b)	No change	N/A
21.A.447	21.A.447	No change	N/A
AMC 21.A.447	GM to DASR 21.A.433(b) and 21.A.447	Amended	Minor editorial changes for consistency and to reflect new structure.
AMC1 to 21.A.447	AMC 21.A.447	Amended	Title amended to reflect new structure
AMC 21.A.449 (AUS)	AMC 21.A.449 (AUS)	No Change	N/A
GM 21.A.449 (AUS)	GM 21.A.449 (AUS)	No Change	N/A
21.A.451	21.A.451	No change	N/A

# **Implementation Strategy**

17. Following the end of the NPA public consultation period, DASA will review all comments and consult with design organisations and industry stakeholders as required to finalise the changes. The changes in this NPA are intended to be promulgated in the October 2022 DASR release. The new regulations will become effective immediately upon DASR release.

# HOW TO SUBMIT COMMENTS ON THIS NPA

#### Format

18. Responses to this NPA are to be recorded and submitted using the NPA Response Sheet included at Annex C.

19. Responses are to be submitted by email to <u>DASA</u>, Hardcopies of the NPA Comment Sheet are not required.

# Timing

20. Comments on NPA to DCP 2022-017 are to be forwarded to DASA by close of business 02 Sep 22.



# **Additional Information**

21. Additional information concerning this NPA is available from Ms Kylie Mikkor, OIC Initial Airworthiness Regulation and Promotion, at <u>kylie.mikkor@defence.gov.au</u>.

# **DISPOSITION OF RESPONSES RECEIVED**

22. A Comment Response Document will be prepared and published on the <u>DASA Website</u>. DASA will not individually acknowledge or respond to comments or submissions.

# **DM Grosse**

EL2 Director of Initial Airworthiness Defence Aviation Safety Authority Tel: (03) 9200 756

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#### Annexes:

- A. NPA to DCP 2022-017 Proposed Changes to DASR 21 Subpart M Repairs
- B. Draft Regulation Impact Statement for DCP 2022-017
- C. NPA to DCP 2022-017 Response Sheet



# NPA FOR DCP 2022-017

# PROPOSED CHANGES TO DASR 21 SUBPART M – REPAIRS

# Notes to readers:

The text of the amendment is arranged to show deleted text, new or amended text as shown below:

- a. deleted text is marked with strike through;
- b. text highlighted in green is Australian unique text; and
- c. new or amended text is highlighted in grey;

d. EMAR 21 Edition 2.0 (Reference A) and EASA (Reference C) changes that are proposed but not adopted by the DASR is marked with grey strike through.

# DASR 21 SUBPART M — REPAIRS

# 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. Reserved.
- (c) (b) A 'repair' means elimination of damage and/or restoration to an airworthy condition following initial release to service by the manufacturer of any product, part or appliance.
- (d) The Eelimination 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 DASR.
- (e) A repair to an AUSMTSO article other than an Auxiliary Power Unit (APU) shall be treated as a change to the AUSMTSO design and shall be processed in accordance with DASR 21.A.611.
- (f) In this Subpart, the references to type-certificates include type-certificates and restricted typecertificates.

# GM to DASR 21.A.431A - 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 AUSMTSO 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 Authority, or by an appropriately approved design organisation.

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NB: Flow Chart 1 addresses the procedures that should be followed for products where the State of design is a participating Member State.

Flow Chart 2 addresses procedures that should be followed for products where the State of design is not a participating Member State.



When specific repair data is approved within the participating Member States (pMS), conditions for acceptance may be defined in the respective recognition agreement in accordance with EMAD-R.

When specific repair data is approved outside of the Community, conditions for acceptance may be defined in the bilateral arrangements between the Community and the competent authority of a third country. In the absence of such arrangement, the repair data shall follow the approval route as if it was designed and approved within the Community.

Repairs approved under the framework of a recognised N/MAA may be implemented subject to the conditions in the relevant recognition certificate IAW DASR M.A.304(d) and without further approval under DASR 21 Subpart M.

<u>GM 21.A.431A(e)(d)</u> Repairs to Australian military technical standard order (AUSMTSO) articles other than auxiliary power units (APUs)

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

1. Under 21.A.611 in the context of an AUSMTSO 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, and 21.A.611 in particular, should be followed; or



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2. When a DASR 145 / DASR M 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'.

# 21.A.431B Standard repairs

#### (Reserved)

- (a) Standard repairs are repairs:
  - 1. in relation to products, as accepted by the Authority; and
  - that follow design data included in airworthiness codes or equivalent standards issued or accepted by the Authority, 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 type-certificate holders data.

#### (b) DASR 21.A.432A to 21.A.451 are not applicable to standard repairs.

# GM to DASR 21.A.431B – Standard repairs

CS-STAN contains the certification specifications referred to in 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 Part-M.

#### 21.A.432A Eligibility

- (a) Any person or organisation that has demonstrated, or is in the process of demonstrating, its capability according to DASR 21.A.432B shall be eligible as an applicant for a major repair design approval under the conditions laid down in this Subpart.
- (b) Any person or organisation shall be eligible to apply for approval of a minor repair design.

## 21.A.432B Demonstration of capability

- (a) An applicant for a major repair design approval shall demonstrate its capability by holding a design organisation approval, issued by the Authority in accordance with DASR 21 Subpart J.
- (b) By way of derogation from paragraph (a), as an alternative procedure to demonstrate its capability, an applicant may seek Authority agreement for the use of procedures setting out the specific design practices, resources and sequence of activities necessary to comply with this Subpart.
- (c) Reserved.
- (d) (c) By way of derogation from paragraph (a) and (b), any government organisation applying for a major repair design approval may demonstrate its capability by having an agreement in place, accepted by the Authority, in accordance with DASR 21.A.2 and DASR 21.A.14(c) with a design organisation which has access to the type design data. The agreement shall include detailed statements how the actions and obligations are delegated to enable the government organisation, in cooperation with the contracted organisation, to comply with the requirements of DASR 21 Subpart J, including demonstration of compliance with DASR 21.A.451.

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#### GM to DASR 21.A.432B – Alternative procedures

#### See AMC to DASR 21.A.14(b) for the details of alternative procedures.

#### AMC 21.A.432B(cd) - Alternative Demonstration

In some countries a government organisation is approved by the Authority to execute the Repair Approval Holder responsibilities. This government organisation may apply for a repair approval from its Authority, without being the original design organisation. In this case the government organisation should, in accordance with DASR 21.A.2, enter an agreement with a DASR 21.A.14(a) compliant design organisation to ensure the undertaking of specific actions and obligations. The Authority acknowledges some extant platform procurement/ support arrangements will preclude availability of a DASR 21.A.14(a) compliant organisation to provide execution of holder functions. In these cases any alternative procedures for establishing a Design Assurance System or Safety Management System should be acceptable to the Authority in fulfilling the obligations required under DASR 21.A.451.

#### 21.A.432C Application for a repair design approval

- (a) An application for a repair design approval shall be made in a form and manner established by the Authority.
- (b) An application for a major repair design approval shall include, or be supplemented after the initial application by, a certification programme containing:
  - 1. a description of the damage and repair design identifying the configuration of the type design upon which the repair is made;
  - 2. an identification of all areas of the type design and the approved manuals that are changed or affected by the repair design;
  - an identification of any reinvestigations necessary to demonstrate compliance of the repair design and areas affected by the repair design with the type-certification basis incorporated by reference in, as applicable, either the type-certificate, the supplemental type-certificate or the APU MTSO authorisation;
  - any proposed amendments to the type-certification basis incorporated by reference in, as applicable, either the type-certificate, the supplemental type-certificate or the APU MTSO authorisation;
  - a proposal for a breakdown of the certification programme into meaningful groups of compliance demonstration activities and data, including the means and process proposed to be followed to demonstrate compliance with DASR 21.A.433(a)(1) and references to related compliance documents;
  - 6. a proposal for the assessment of the meaningful groups of compliance demonstration activities and data, addressing the likelihood of an unidentified non-compliance with the type-certification basis and the potential impact of that non-compliance on product safety. The proposed assessment shall take into account at least the elements set out in (1) to (4) of DASR 21.B.100(a). Based on this assessment, the application shall include a proposal for the Authority's involvement in the verification of the compliance demonstration activities and data; and
  - 7. the specification whether the certification data is prepared completely by the applicant or on the basis of an arrangement with the owner of the type-certification data.

#### AMC to DASR 21.A.432C(a) – Form and manner

Notification of an intended 'MAJOR' Repair requiring Authority approval can be made using DASR Form 31 – Notification of MAJOR Change / MAJOR Repair. Submission of DASR Form 31 initiates



dialogue that enables the Authority to guide the applicant through the 'MAJOR' Repair approval process. Application for approval of a major repair design should be made using DASR Form 31b.

Showings of compliance may leverage prior certification by a recognised NAA / MAA in accordance with AMC to DASR 21.A.20. The requirement for a detailed CP is determined in consultation with the Authority. In the case of major repairs, if long and complex compliance demonstration activities are deemed to not be required, the CP can be submitted in simplified form as part of the application.

# AMC to DASR 21.A.432C(b)(1) – Description

The description of the repair should consist of:

- the pre- and post-repair configuration;
- a drawing or outline of the repair;
- a list of the detailed features;
- a description of the type and extent of the inspection; and
- an outline of the damage.

# AMC to DASR 21.A.432C(b)(3) – Identification of reinvestigations

The identification of reinvestigations does not refer to the demonstration of compliance itself, but to the list of the affected airworthiness requirements, together with the means of compliance.

# AMC to DASR 21.A.432C(b)(6) - Level of involvement (AUS)

The proposed assessment shall take into account at least the following elements:

- 1. novel or unusual features of the certification project, including operational, organisational and knowledge management aspects;
- 2. complexity of the design and/or demonstration of compliance;
- criticality of the design or technology and the related safety and environmental risks, including those identified on similar designs; and
- performance and experience of the design organisation of the applicant in the domain concerned.

Based on this assessment, the application shall include a proposal for the involvement of the Authority in the verification of the compliance demonstration activities and data.

#### 21.A.433 Requirements for a repair design

- (a) The applicant for approval of a A repair design shall only be approved:
  - when it has been Ddemonstrated, following the certification programme referred to in DASR 21.A.432C(b), that the repair design compliesance with the type-certification basis and environmental protection requirements (where applicable) incorporated by reference in, as applicable, either the type-certificate, the or-supplemental type-certificate or the APU AUSMTSO authorisation, as well as with any amendments established and notified by the Authority in accordance with DASR 21.B.450; applicable, or those in effect on the date of application (for repair design approval), plus any amendments to the type-certification basis the Authority finds necessary to establish a level of safety equal to that established by the type-certification basis incorporated by reference in the type-certificate or supplemental type-certificate or APU AUSMTSO authorisation;
  - 2. Submit all necessary substantiation data, when requested by the Authority; when compliance with the type-certification basis that applies in accordance with (a)(1) has been



declared and the justifications of compliance have been recorded in the compliance documents;

- Declare compliance with the type-certification basis and environmental protection requirements (where applicable) of paragraph a.1 when no feature or characteristic has been identified that may make the product unsafe for the uses for which certification is requested; and
- 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 with DASR 21.A.432C(b)(7):
  - (i) when the holder has indicated that it has no technical objection to the information submitted under (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 through compliance with DASR 21.A.451.
- (b) Where the applicant is not the type-certificate or supplemental type-certificate or APU AUSMTSO authorisation holder, as applicable, the applicant may comply with the requirements of paragraph (a) through the use of its own resources or through an arrangement with the typecertificate or supplemental type-certificate or APU AUSMTSO authorisation holder as applicable. The applicant shall submit to the Authority the declaration referred to in (a)(2) and, on request by the Authority, all necessary substantiation data.

#### GM to DASR 21.A.433(a)(1) – Notification by the Authority (AUS)

The Authority may designate any amendments to the type-certification basis incorporated by reference in, as applicable, either the type-certificate, the supplemental type-certificate or the APU AUSMTSO authorisation, which the Authority considers necessary for maintaining a level of safety equal to that previously established and notify them to the applicant for a repair design.

#### AMC-to DASR 21.A.433(a) and 21.A.447 – Repair design and record keeping

- 1. Relevant substantiation data associated with a new major repair design and record keeping should include:
  - a. the identification of the damage identification and the reporting source;
  - b. the major repair design approval sheet identifying the applicable specifications and references of justifications;
  - c. the repair drawing and/or instructions and scheme identifier;
  - the correspondence with the holder of the military type certificate (MTC), military supplemental type certificate (MSTC), or auxiliary power unit Australian military technical standard order (APU AUSMTSO) authorisation holder, if its advice on the design has been sought;
  - e. the structural justification (static strength, fatigue, damage tolerance, flutter, etc.) or references to this data;
  - f. the effect on the aircraft, engines and/or systems (performance, flight handling, etc., as appropriate);
  - g. the effect on the maintenance programme;
  - h. the effect on Aairworthiness Limitations, the Eflight Mmanual and the Ooperating manual;
  - i. any weight and moment changes; and



j. special test requirements.

- 2. Relevant minor repair documentation includes paragraphs 1(a) and (c). Other points of paragraph 1 may be included where necessary. If the repair is outside the approved data, a justification for the classification is required.
- 3. 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, oversizing of fastener holes, etc.).
- Special consideration should also be given to Life-Limited parts and Coritical Pparts, notably with the involvement of the military type-certificate MTC or MSTC holder, when deemed necessary under 21.A.433(b)(a)(4).
- 5. Repairs to engine or APU critical parts would normally only be accepted with the involvement of the MTC holder.

#### AMC1 21.A.433(a) - Repair Design (AUS)

Notification of an intended 'MAJOR' Repair requiring Authority approval can be made using DASR Form 31 – Notification of MAJOR Change / MAJOR Repair. Submission of DASR Form 31 initiates dialogue that enables the Authority to guide the applicant through the 'MAJOR' Repair approval process. Application for approval of a 'MAJOR' repair design should be made using DASR Form 31B – Application for Approval of MAJOR Repair Design.

Compliance demonstration evidence may use prior certification by an NAA / NMAA, whose certification is recognised by the Authority, in accordance with AMC to DASR 21.A.20 – Demonstration of compliance with the type-certification basis and environmental protection requirements (AUS).

## 21.A.435 Classification and approval of repair designs

- (a) A repair may design shall be classified as either "major" or "minor". The classification shall be made in accordance with the criteria set out in of DASR 21.A.91 for a change in to the type design type-certificate.
- (b) A repair design shall be classified 'major' or 'minor' under paragraph (a) either and approved by:
  - 1. By the Authority; or
  - By an appropriately approved design organisation under a procedure agreed with the Authority within the scope of its privileges provided for in (1), (2) and (5) of DASR 21.A.263(c), as recorded in the terms of approval.

#### GM to DASR 21.A.435(a) – Classification of repairs

1. <u>Clarification of the terms Major/Minor</u>

In line with the definitions given in 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, jigging 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) (a) 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) (b) 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) (c) 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) (d) Operational characteristics

Changes may include:

- i. stall characteristics
- ii. handling
- iii. performance and drag
- iv. vibration

# (v) -(e) Other characteristics

i. changes to load path and load sharing

#### change to noise and emissions Reserved

- ii. fire protection / resistance
- Note: Considerations for classifying repairs 'Major/Minor' should not be limited to those listed above.



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- 3. Examples of 'Major' repairs
  - (i) -a) 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) -b) A repair to life limited or critical parts.
  - (iii) -c) A repair that introduces a change to the Aircraft Flight Manual.

#### GM to DASR 21.A.435(b) – Repair design approval

# (a) REPAIR DESIGN APPROVAL BY DASA

DASA approval is required in cases of major repair designs proposed by military design organisation approval (MDOA) holders that do not hold the necessary privilege as per DASR 21.A.263(c)(5) to approve certain major repair designs, as well as in cases of minor repair designs proposed organisations that do not hold an MDOA. In response to applications (DASR Form 31B – Application for Approval of MAJOR Repair Design), the Authority shall issue all 'MAJOR' repair design approvals to the relevant government MTC holder.

DASA may grant the applicant relief from some or all showings of compliance if the repair design has been previously approved by a recognised NAA / MAA and is suitable for the Defence CRE.

#### (b) REPAIR DESIGN APPROVAL BY THE MDOA HOLDER

#### (1) Approval by the MDOA holder

Approval of repairs through the use of procedures agreed with DASA implies that the MDOA holder issues the approval without DASA's involvement. DASA will monitor the application of this procedure within the surveillance plan for the relevant organisation. When the organisation exercises this privilege, the repair release documentation should clearly show that the approval is issued on the basis of its privilege.

#### (2) Previously approved data for other applications

When it is intended to use previously approved data for other applications, it is expected that an appropriately approved design organisation has checked the applicability and effectiveness of this data. 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 previously approved repair design (structural justifications still valid, possible airworthiness limitations unchanged), the solution may be considered to be approved and may be used again.

#### (3) <u>Temporary repairs</u>

These are life-limited repairs to be removed and replaced by permanent repairs after a limited service period. These repairs should be classified under point 21.A.435, and the service period should be defined when the temporary repair is approved.

(4) Fatigue and damage tolerance

An approved design issued before the fatigue and damage-tolerance evaluation has been completed, should specify the limited service period.

#### 21.A.437 - Issue of a repair design approval



When it has been declared and has been shown that the repair design meets the applicable typecertification basis and environmental protection requirements (where applicable) of DASR 21.A.433(a)1, it shall be approved:

#### (a) the Authority; or

(b) By an appropriately approved organisation that is also the type-certificate or the supplemental type-certificate or APU AUSMTSO authorisation holder, under a procedure agreed with the Authority; or

(c) For minor repairs only, by an appropriately approved design organisation under a procedure agreed with the Authority.

#### GM 21.A.437 - Issue of repair design approval

#### 1. Approval by MDOA holder

Approval of repairs through the use of procedures agreed with the Authority, means an approval issued by the MDOA holder without requiring Authority involvement. The Authority will monitor application of this procedure within the surveillance plan for the relevant organisation. When the organisation exercises this privilege, the repair release documentation should clearly show that the approval is under their MDOA privilege.

#### 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 DASR 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.

#### GM 21.A.437(a) - Issue of repair design approval (AUS)

In response to applications (DASR Form 31B – Application for Approval of MAJOR Repair Design), the Authority shall issue all 'MAJOR' repair design approvals to the relevant government MTC holder.

#### AMC 21.A.437(b) - Issue of repair design approval

In order for the approved design organisation that is also the type-certificate, supplemental typecertificate or APU AUSMTSO authorisation holder to approve 'MAJOR' repair design the following should be considered applicable:

a. The type-certificate, supplemental type-certificate or APU AUSMTSO authorisation holder being approved under DASR 21 Section A Subpart J;

b. Procedures having been established that comply with DASR 21 Section A Subpart M as agreed with the Authority;

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c. The type-certification basis for the product, part or appliance to be repaired having been identified together with all other relevant requirements;

d. All records and substantiation data including documents demonstrating compliance with all relevant airworthiness requirements being held for reviews by the Authority;

e. A summary list of all 'MAJOR' repair approvals being provided to the Authority on a regular basis as agreed with the Authority:

f. Whether the repair design is affected by the presence of any supplemental type-certificate.

<u>AMC1 to 21.A.437(b) - Issue of a design approval - by an organisation that is the type-certificate</u> <u>holder (AUS)</u>

An MDOA holder executing the obligations of a type-certificate holder on their behalf, as described by DASR 21.A.44 - Obligations of the holder, shall also be entitled to seek an Authority privilege to include the approval of designs for 'MAJOR' repairs.

#### 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) under DASR 21 Subpart F; or
- (b) by an organisation appropriately approved in accordance with DASR 21 Subpart G; or
- (c) by an appropriately approved maintenance organisation.

#### GM 21.A.439 - Production of repair parts

A maintenance body, (organisation or person), may manufacture parts for repair purposes when approved under DASR 21 Section A Subpart G. In addition, a maintenance organisation may manufacture parts for its own repair purposes when expressly authorised by the Authority.

# 21.A.441 Repair embodiment

- (a) The embodiment of a repair shall be made by an appropriately approved maintenance in accordance with DASR 145, or by a production organisation appropriately approved in accordance with DASR 21 Subpart G, under in accordance with the privilege provided for in DASR 21.A.163(d) privilege.
- (b) The design organisation shall transmit to the organisation performing the repair all the necessary installation instructions.

#### GM 21.A.441(a) - Repair Embodiment

Repairs should be accomplished by an organisation or person in accordance with the relevant airworthiness requirements.

The holder of a production organisation approval under DASR 21 Section A Subpart G may accomplish repairs to new aircraft, within its terms of approval, under the privilege of DASR 21.A.163(d).



# 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 transmitted by the repair design approval holder to the operator in accordance with a procedure agreed with the Authority.

#### GM 21.A.443 - Limitations

Instructions and limitations associated with repairs should be specified and controlled by those procedures required by the applicable procedures.

#### 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 Authority; or
  - 2. by an appropriately approved design organisation under a procedure agreed with the Authority.

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

(b) Where the organisation evaluating the damage under paragraph (a) is neither the Authority nor the type-certificate or supplemental type-certificate or APU MTSO 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 or supplemental type-certificate or APU MTSO authorisation holder, or manufacturer, as applicable.

#### GM to DASR 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.

#### [DIAGRAM]





# AMC to DASR 21.A.445 - Unrepaired damage (AUS)

A repair design approval using the provisions of DASR 21.A.445 can be used to establish the aircraft is in an airworthy condition provided compliance with the applicable type-certification basis can be demonstrated. Showings of compliance can be subject to limitations such as additional inspections or a limit on the duration of the approval.

For damage to aircraft structure left unrepaired and not covered by previously approved data, the evaluation of the damage should ensure:

- (a) The full extent of the damage is known (especially important for corrosion and composite materials).
- (b) Compliance with the strength requirements of the TCB.
- (c) The limitations account for anticipated damage growth and potential for inflation for secondary damage or failures.

# 21.A.447 Record-keeping

For each repair, all relevant design information, drawings, test reports, instructions and limitations possibly issued in accordance with DASR 21.A.443, justification for classification and evidence of the repair design approval, shall:

- (a) be held by the repair design approval holder at the disposal of the Authority; and
- (b) be retained by the repair design approval holder in order to provide the information necessary to ensure the continued airworthiness of the repaired products, parts or appliances.

#### AMC1 to DASR 21.A.447 – Record keeping (AUS)

Records should be retained for at least two years after the removal of service of the last aircraft of the type certified.

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# AMC to DASR 21.A.433(a) and 21.A.447 - Repair design and record keeping

- 1. Relevant substantiation data associated with a new major repair design and record keeping should include:
  - a. the identification of the damage identification and the reporting source;
  - b. the major repair design approval sheet identifying the applicable specifications and references of justifications;
  - c. the repair drawing and/or instructions and scheme identifier;
  - the correspondence with the holder of the military type certificate (MTC), military supplemental type certificate (MSTC), or auxiliary power unit Australian military technical standard order (APU AUSMTSO) authorisation holder, if its advice on the design has been sought;
  - e. the structural justification (static strength, fatigue, damage tolerance, flutter, etc.) or references to this data;
  - f. the effect on the aircraft, engines and/or systems (performance, flight handling, etc., as appropriate);
  - g. the effect on the maintenance programme;
  - h. the effect on Aairworthiness Limitations, the Eflight Mmanual and the Opperating manual;
  - i. any weight and moment changes; and

j. special test requirements.

- 2. Relevant minor repair documentation includes paragraphs 1(a) and (c). Other points of paragraph 1 may be included where necessary. If the repair is outside the approved data, a justification for the classification is required.
- 3. 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, oversizing of fastener holes, etc.).
- Special consideration should also be given to Life-Limited parts and Coritical Pparts, notably with the involvement of the military type-certificate MTC or MSTC holder, when deemed necessary under 21.A.433(b)(a)(4).
- 5. Repairs to engine or APU critical parts would normally only be accepted with the involvement of the MTC holder.

## 21.A.449 Instructions for continuing airworthiness

(a) The holder of the repair design approval shall furnish at least one complete set of those changes to the instructions for continuing airworthiness which result from the design of the repair, comprising descriptive data and accomplishment instructions prepared in accordance with the applicable requirements, to each operator of aircraft incorporating the repair. The repaired product, part or appliance may be released back into service before the changes to those instructions have been completed, but this shall be for a limited service period, and in agreement with the Authority. Those changes to the instructions shall be made available on request to any other person required to comply with any of the terms of those changes to the instructions. The availability of some manual or portion of the changes to the instructions for continuing airworthiness, dealing with overhaul or other forms of heavy maintenance, may be delayed until after the product has entered into service, but shall be available before any of the products reaches the relevant age or flight - hours/cycles.



(b) If updates to those changes to the instructions for continuing airworthiness are issued by the holder of the repair design approval after the repair has been first approved, these updates shall be furnished to each operator and shall be made available on request to any other person required to comply with any of the terms of those changes to the instructions. A programme showing how updates to the changes to the instructions for continuing airworthiness are distributed shall be submitted to the Authority.

## AMC to 21.A.449 - Instructions for Continuing Airworthiness (AUS)

Instructions for Continuing Airworthiness (ICA) shall be distributed in accordance with DASR AMC 21.A.57 – Manuals (AUS).

The system for distributing ICA and their amendments to users shall ensure that:

- (a) details of the authorised distribution of ICA to each user is recorded; and
- (b) ICA are accessible to organisations and personnel.

#### GM to 21.A.449 - Instructions for Continuing Airworthiness (AUS)

Instructions for Continuing Airworthiness (ICA) details the methods, inspections, processes, and procedures necessary for the air operator to keep aircraft and / or engine, propeller, parts and appliances airworthy during its intended life.

The contents of ICA can be divided into two categories:

(a) an approved airworthiness limitations (AwL) section as defined by the applicable airworthiness codes during the certification process, which forms part of the type design / type-certificate (DASR 21.A.31(a)(3) and DASR 21.A.41):

i. any limitations determined through the certification of the product, and instructions on how to determine that these limits have been exceeded.

ii. any inspection, servicing or maintenance actions determined to be necessary by the certification process.

(b) sections that do not contain approved data from the certification process and are not considered as part of type design/type-certificate:

i. any inspection or troubleshooting actions determined to be necessary to establish the nature of faults and the necessary remedial actions.

ii. sufficient general information on the operation of the product to enable an understanding of the instructions in paragraphs (a)(i), (a)(ii), and (b)(i) above.

#### 21.A.451 Obligations and MPA marking

- (a) Each holder of a major repair design approval shall:
  - 1. undertake the obligations:
    - (i) laid down in DASR 21.A.3A, 21.A.3B, 21.A.4, 21.A.439, 21.A.441, 21.A.443, 21.A.447 and 21.A.449;
    - (ii) implicit in the collaboration with the type-certificate or supplemental type-certificate and with the APU MTSO authorisation holder under DASR 21.A.433(b), as appropriate.
  - 2. specify the marking, including AUSMPA ('Australian Military Part Approval') letters, in accordance with DASR 21.A.804(a).



- (b) Except for type-certificate holders or APU AUSMTSO authorisation holders for which DASR 21.A.44 applies, the holder of a minor repair design approval shall:
  - 1. undertake the obligations laid down in DASR 21.A.4, 21.A.447 and 21.A.449; and
  - 2. specify the marking, including AUSMPA letters, in accordance with DASR 21.A.804(a).



# DRAFT REGULATION IMPACT STATEMENT for DCP 2022-017 AMENDMENTS TO DASR 21 SUBPART M (REPAIRS) BASED ON EMAR 21 EDITION 2.0

**Reference:** 

A. DASR 21 – Aircraft Design, Production and Certification of 29 Apr 22

# What is the issue DASA is trying to address?

1. The main objective is to strengthen the DASR 21 repair certification process, so safety goals are met in an effective and efficient manner.

2. This will be achieved by introducing into DASR 21 the requirements to accommodate a riskbased approach to certification through the embodiment of improved Level of Involvement (LoI) processes by DASA in the repair certification process.

3. The risk-based Lol concept is in line with the safety risk management standards of International Civil Aviation Organization (ICAO) Annex 19, and will help enable the Authority to better identify the areas of product repairs more prone than others to risk with regard to safety. This will also provide an opportunity to enhance the oversight system of design organisations to become more 'performance-based'.

4. DCP 2021-048 introduced Lol changes to certification processes of Subparts B, D & E of DASR 21 (Reference A). The Subpart M changes in DCP 2022-17 are a natural extension of DCP 2021-048 to incorporate the latest EMAR/EASA knowledge to help better mitigate any safety risks using selective investigations to improve the effectiveness, transparency and predictability of the type certification and repair process.

5. Globally, it is implicitly known that an authority's involvement in the verification of compliance demonstration is not exhaustive. The authority varies the extent of its activities by applying different methods, which can be risk-based, random sampling or similar.

6. A better calibrated risk-based approach allows the Authority to focus resources primarily on areas that need a direct and high Lol in order to thoroughly certify that compliance has been demonstrated by applicants in areas of greatest safety risk.

7. Implementation of DCP 2022-017 will affect:

a. DASA's product repair certification team;

b. DASA's design organisation approval team; and

c. Applicants and holders of DASR 21 design approvals and their design organisations demonstrating to DASA compliance of their products, parts and appliances with the established type-certification basis (TCB). (Note: there is no change to the compliance demonstration obligation of the applicant as a result of changes in this proposal).

8. The current DASR 21 provides a high level of safety by ensuring the compliance of certificated products, parts and appliances, including changes/repairs thereto, with all the applicable requirements.

9. However, products are becoming increasingly sophisticated and complex, including: automated systems, novel technologies and materials (for example: the indigenous MQ-28A Ghost Bat uncrewed aerial system). As a result, the complexity of certification projects is expected to grow, and with it the demands on DASA's certification staff. The inefficient allocation of DASA resources in such an environment is identified as a potential issue. If DASA takes no measures now, the current level of safety assurance could become difficult to maintain or could be compromised.

10. Introducing a risk-based Lol concept will help maintain and increase the effectiveness and efficiency of DASA's safety assurance, by providing better data and criteria to certification staff when

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Defending Australia and its National Interests www.defence.gov.au they are conducting their risk assessments and LoI determination. Better defined criteria also creates a more transparent process, clearer expectations and an improved relationship with the applicant.

11. Of course, this does not mean DASA intends to lower the overall level of its involvement in repair certification projects. The new Lol concept will not substantially change the way repair certification staff work. It will merely formalise the process and provide better support and means to render the process more efficient and effective. The overall Lol is expected to remain the same.

# Why is DASA action needed?

12. **EMAR alignment.** The Edition 2.0 update to EMAR 21 released in March 2021 incorporated 8 years of updates to the EASA Part-21 regulations which were developed to provide improvements based on EASA's experience and feedback from their regulated community. DASA action is required to take advantage of these improvements developed by EASA and EDA, and to maintain alignment with EMAR as the basis for the DASR.

13. Due to the scope of changes in EMAR 21 Edition 2.0, DASA has separated the updates into discrete bodies of work to be managed through separate DASR change proposals, to ensure the blocks of changes can be appropriately assessed within DASA and by the regulated community.

14. The first body of work DCP 2021-048 has been completed, which introduced an improved Lol concept in DASR 21 Subparts B, D and E. With the introduction of similar regulatory content contained in the current DCP 2022-017 within Subpart M, DASA's oversight and the continued surveillance of design organisations will be strengthened. This will allow DASA's design organisation oversight and certification staff to focus more attention on poor performing and/or inexperienced design organisations.

15. To implement future regulatory changes contained within Edition 2.0 to EMAR 21, related to awarding of new privileges to Military Design Organisation Approval (MDOA) holders, DASA must develop a better understanding of individual MDOA holders' performance. The proposed changes implementing the Lol concept for major repairs, as well as those previously implemented through DCP 2021-048 for certification, will support the gathering of this information.

# What options are DASA considering to address the issue?

16. **Option 1: Rulemaking action**. Rulemaking action to implement the Lol concept into DASR 21 Subpart M.

17. **Option 2: No rule change.** Baseline option (no change in rules; risks remain as outlined above). Continue to introduce efficiencies through internal DASA instructions and training material, and external engagement with applicants directly.

18. **Option 1 Assessment.** This option provides the greatest benefit, allowing DASA to gain improvements provided through the EMAR and EASA updates. This will improve the clarity of the regulations, introduce the LoI concept into Subpart M and will keep DASR 21 aligned with EMAR. The repair certification process is a two-party exercise, the rule change will clearly communicate policy intent of the rule change to applicants and provide a more transparent process in their dealings with DASA.

19. **Option 2 Assessment.** DASA's intent is to remain in alignment with EMAR so far as reasonably practicable, so non-implementation of the EMAR derived changes is not considered a viable option. Lack of update will create misalignment with the existing changes in Subpart B, D and E and with our alignment to EMAR. As mentioned, the repair certification process is a two-party exercise, creating internal DASA instructions on Lol policy without clearly defined criteria to the applicant does not allow the process to be as transparent. The Authority is required to ascertain certain data to enable proper risk assessment and to determine a proper Lol.

# What is the likely net benefit of each option?

20. The affected stakeholders are contained in paragraph 7.



21. **Cost Benefit – Option 1.** This option provides the greatest benefit, allowing DASA to gain the improvements provided through the EMAR updates. This will improve clarity of the regulations and keep DASR 21 aligned with EMAR. The new LoI approach will also improve the effectiveness, efficiency, transparency and predictability of the repair certification process, allowing for better planning with fewer delays and better allocation of both DASA's and the applicant's repair certification staff resources.

22. In Option 1 there will be new tasks for the DASA's certification staff to exchange more safety-related information both internally, with design organisation oversight staff, and externally with design organisations. It will become necessary to identify safety data and to collect this safety data to build up an appropriate database, in order to conduct the safety risk assessments in a more formal way, and to improve evaluations of MDOA holders' performance. This will eventually enable a sound basis to progress regulatory changes related to the granting major change and repair privileges to MDOA holders.

23. The cost implication in the introduction of the new Lol concept in Subpart M is expected to be neutral. While there is a likelihood of a change in internal demand on DASA human resources in product repair certification and design organisation oversight, it is not expected that this will increase the overall workload of the existing staff in place.

24. On the regulated community side, the increased predictability of the DASA's involvement will contribute to more efficient project planning processes. Although there is a new requirement for submission of certification programmes for major repairs, there has always been an inherent requirement to have such a certification planning document in place in order to meet the approval requirements for major repairs. Therefore, the regulatory burden of such a proposal is considered neutral.

25. **Cost Benefit – Option 2.** This option may reduce the effectiveness and efficiency of DASA's safety assurance activities. Further, DASA's intent is to remain in alignment with EMAR so far as reasonably practicable, so non-implementation of the EMAR cannot be compensated by internal procedures and training. Overall, there is no benefit to this approach and it may negatively impact DASA's safety assurance.

# Who will DASA consult and how will DASA consult them?

26. Consultation with the regulated community will be targeted at MDOA holders, and Military Type Certificate Holders (MTCH). This will occur IAW DASA(I) REG 01-002 DASR Amendment Management, via a Notice of Proposed Amendment (NPA).

27. The NPA is expected to be released August 2022.

# What is the best option of those DASA has considered?

28. Option 1: Rulemaking action to implement the Lol concept into DASR 21 Subpart M is considered the best option.

# How will DASA implement and evaluate this option?

29. Experienced personnel working in DIA will evaluate the EMAR 21 Edition 2.0 Subpart M changes and draft the associated DASR 21 updates with any required 'green text' contextualisation. Additional checks of other parts of DASR will be conducted to ensure that any required referencing updates as a result of the changes in DASR 21 Subpart M are identified and included.

30. Internal review by members of DIA and DAVENG will be conducted to confirm the accuracy and appropriateness of the proposed changes.

31. The draft regulations will then be presented to the regulated community via NPA, with an aim for implementation in the October 2022 DASR release. The new regulations will become effective immediately upon DASR release.



# NPA for DCP 2022-017 Response Sheet

# AMENDMENTS TO DASR 21 SUBPART M (REPAIRS) BASED ON EMAR 21 EDITION 2.0

Please forward this sheet as an email attachment to <u>DASA</u> by 02 Sep 22. A word version of this response sheet can be found via obj no: <u>BO3960659</u> or alternatively contact <u>DASA</u>.

Please indicate your acceptance or otherwise of this proposal by ticking the appropriate box below. Additional comments, suggested amendments or alternative action are welcome and may be provided on this response sheet or by separate correspondence.

- [] The proposal is <u>acceptable without change</u>.
- [] The proposal is acceptable but would be improved if the following changes were made:
- [] The proposal is not acceptable but would be acceptable if the following changes were made:

LSN	NPA Reference: (i.e. Regulation number, NPA paragraph etc.)	Comment or suggested change	Explanation
1			
2			
3			
4			
5			

# **RESOURCE IMPLICATIONS**

Please provide specific comment on any significant resource implications that this proposal may have for your organisation, for both its implementation and ongoing compliance. Your comments should address both financial and human resource considerations.

Resource implications – Proposal	
Implementation	
Resource implications – Proposal sustainment	

# **RESPONDENT DETAILS**

Your name:	
Submission date:	
Your organisation:	
Email address:	
Postal address:	
Phone:	
Whose views are represented in your response? i.e. Is your response the authoritative response from your organisation?	Responding on behalf of : Individual [ ] Regulated Military entity [ ] Regulated Commercial entity [ ] Wing HQ [ ] Group HQ [ ] ADF Regulatory, Technical or Logistics policy agency [ ] Other commercial entity [ ], Other [ ] Please describe:
Do you consent to your name being published as an NPA respondent within the NPA Summary of Responses:	YES[] NO[]

