

**NPA/26/10**

**Title of Proposal:** 5000 Series bi-annual up-issue

**RA(s) or Manual Chapter(s):** RA5103, RA5820, RA5850, RA5865.

**Organizations and / or business sectors affected:** Delivery Teams & Design Organizations.

**RFC Serial No:** MAA/RFC/2025/088, 2025/133, 2026/011, 2026/014, 2026/015, 2026/024, 2026/025.

*MAA Author*

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*MAA LegAd (if required)*

Post	Name	Rank	Signature
N/A	N/A	N/A	Choose an item.

**Cross-references to Other Documents or Relevant Sources**

**Other MRP Amendments:** N/A

**Service Inquiry Recommendations:** N/A

**AAIB Recommendations:** N/A

**Other Investigation Recommendations:** N/A

**Any Other Document:** N/A

**Feedback Notes for the Regulated Community**

The Regulated Community are invited to offer feedback about the proposed amendment in the following areas:

- Air or Flight Safety impact
- Operational impact
- Errors or omissions
- Timescale for implementation
- Cost of implementation
- Amendment to internal processes/orders

- Resourcing the outcome of change
- (Contract amendments because of the change)

The format for feedback is available within a single Excel Template file on both internal and external MAA websites; it is important to use this format to ensure that your responses are considered and answered correctly.

**Summary of Proposed Amendment**

**Objective:** Enhance clarity and update terminology.

**Changes made:**

RA 5103 - Enhanced clarity wrt privileging. New para 15. Para numbering changed from para 15 (1 paragraph).

RA 5820 - Terminology updates. Enhanced clarity wrt privileging. New para 5. Para numbering changed for paras 5 and 6 only.

RA 5850 - Terminology updates. Enhanced clarity wrt CVE. Para 1 deleted. New para 19 and Annex A paras 10 and 22 wrt CVE. Para numbering changed from para 19 and Annex A para 10.

RA 5865 - Better clarity wrt privileging. Para numbering unchanged.

**Impact Assessment:** Minor

**Consultation Period Ends:** 5 May 2026

The consultation period for this proposed amendment ends on the stated date. Please send your feedback, using the Response Form, via email to [DSA-MAA-MRPEnquiries@mod.gov.uk](mailto:DSA-MAA-MRPEnquiries@mod.gov.uk)

*MAA Approval*

<b>Post</b>	<b>Name</b>	<b>Rank</b>	<b>Signature</b>
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## RA 5103 – Certificate of Design

### Rationale

*Each Air System<sup>1</sup> (including related Products, Parts, Appliances, Airborne Equipment and Air Launched Weapons (ALW)) will be designed to meet the specification requirements. Any deviation from the specification requirements could have significant Airworthiness implications. The Certificate of Design (CofD) identifies the extent to which the requirements of the specification have been achieved and details any related exceptions and limitations.*

### Contents

#### 5103(1): Requirement and Scope for Certificate of Design

#### 5103(2): Management and Authorization of Certificates of Design

### Regulation 5103(1)

#### Requirement and Scope for Certificate of Design

5103(1) The Design Organization (DO) **shall** produce a CofD for new Air Systems, Products, Parts, Appliances, Airborne Equipment and ALW including changes and Repairs.

### Acceptable Means of Compliance 5103(1)

#### Requirement and Scope for Certificate of Design

##### DO AMC

1. The CofD **should** certify the extent to which the design satisfies the requirements of the specification issued by or on behalf of the MOD, including any exceptions or limitations.
2. The DO **should** issue a new CofD in any of the following circumstances<sup>2</sup>:
  - a. New Air Systems, Products, Parts, Appliances, Airborne Equipment and ALW.
  - b. Major Changes in Type Design<sup>3</sup>.
  - c. Major Repairs<sup>4</sup>.
  - d. Modification of a Product, Part, Appliance, Airborne Equipment or ALW which requires re-substantiation of specification compliance.
  - e. When deemed necessary by the Type Airworthiness Authority (TAA)<sup>5</sup>, Commodity Chief Engineer (CE) or Local Technical Committee<sup>6</sup> in consideration of the nature of change.
3. The DO **should** consider the need to repeat qualification tests (re-qualification), in whole or in part, when a change in process, manufacture, material or material source, including explosive materiel, would invalidate the current issue of a CofD.
4. The DO **should** ensure any exceptions or limitations affecting Products, Parts and Appliances supplied to them by a sub-contractor are replicated in the new CofD issued by them.

### Guidance Material 5103(1)

#### Requirement and Scope for Certificate of Design

##### DO GM

5. **Scope of CofD.** The CofD will cover the entirety of the specification. Therefore, it will cover both the Certification requirements from the agreed Type Certification Basis, together with other qualification requirements such as operational performance and maintainability. The CofD is a key element of the evidence required for

<sup>1</sup> For Uncrewed Air Systems (UAS) refer to RA 1600 Series – Uncrewed Air Systems.

<sup>2</sup> This list is not exhaustive and CofDs may be deemed appropriate for other circumstances.

<sup>3</sup> Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D) for definition of Major Changes.

<sup>4</sup> Refer to RA 5865 – Repairs (MRP Part 21 Subpart M).

<sup>5</sup> Refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems. Dependant on the agreed split of Type Airworthiness Responsibilities, Type Airworthiness Manager (TAM) may be read in place of TAA as appropriate throughout this RA.

<sup>6</sup> Refer to RA 5301 – Air System Configuration Management.

### Guidance Material 5103(1)

compliance with Phase 4 of the Military Air Systems Certification Process (MACP)<sup>7</sup>. Similarly, exceptions and limitations with the CofD will be considered within the TAA Release To Service Recommendations<sup>8</sup>.

6. If the DO decides that re-qualification testing is considered necessary, they will advise the TAA or Commodity CE and explain any effect this will have on the CofD of the component or equipment. The DO will advise the TAA or Commodity CE of any significant changes to test requirements specified in the relevant production contract.

7. Where a Modification is undertaken by an alternative DO<sup>9</sup> and intended for integration into an Air System it is generally expected that a single CofD be issued covering the complete installation.

8. **New or modified Air Systems, Products, Parts and Appliances – Use of existing evidence.** If evidence supplied by the DO is based on civil-certificated designs, the DO may discuss with the TAA or Commodity CE to what extent the requirement for a CofD is satisfied by appropriately recognized Artefacts such as Civil Aviation Authority / European Aviation Safety Agency (EASA) / Federal Aviation Administration Type Certificates and (European) Technical Standard Order<sup>10</sup>.

9. **UAS.** The CofD requirements for new UAS are dependent on the UAS category ▶◀<sup>1</sup>.

### Regulation 5103(2)

#### Management and Authorization of Certificates of Design

5103(2) The TAA, Commodity CE and DO **shall** appropriately manage the CofD.

### Acceptable Means of Compliance 5103(2)

#### Management and Authorization of Certificates of Design

##### DO AMC

10. The CofD **should** be signed by the responsible DO to certify the Air System, Part, Appliance, Airborne Equipment or ALW complies with the design and identifies any associated exceptions and limitations. DO signatories **should** be approved in accordance with (iaw) RA 5850<sup>11</sup>.

11. There is no prescribed format for the CofD. A CofD **should** contain the following, or reference to the following, as a minimum:

- a. Unique reference number.
- b. Item description.
- c. Organization name.
- d. Design Approved Organization Scheme (DAOS) approval reference number.
- e. Applicable Certification basis.
- f. Identification and brief description of the change or Repair ▶◀.
- g. Applicable Certification requirements and methods of compliance.
- h. Change / Repair classification<sup>12</sup>.
- i. Compliance documents and independent checking function.
- j. Any exceptions or limitations.
- k. Structural Integrity Artefacts in support of the integrity baseline<sup>13</sup> if applicable.

<sup>7</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

<sup>8</sup> Refer to the RA 1300 Series – Release To Service.

<sup>9</sup> Refer to RA 5305 – In-Service Design Changes.

<sup>10</sup> Refer to RA 5875 – (European) Technical Standard Order (MRP Part 21 Subpart O).

<sup>11</sup> Refer to RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).

<sup>12</sup> Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D) and ▶ RA 5865 ◀ – Repairs (MRP Part 21 Subpart ▶ M ◀).

<sup>13</sup> Refer to RA 5726 – Integrity Management.

### Acceptable Means of Compliance 5103(2)

- l. Configuration Status Record or equivalent.
- m. ALW Structural Design Record<sup>14</sup> (if applicable).
- n. A Safety Assessment iaw Defence Standard 00-056<sup>15</sup> to demonstrate that the design is tolerably safe for the intended purpose.
- o. A statement that the change or Repair has been approved ►by the DO◄ under privilege<sup>11</sup> (if applicable).
- p. Date ►CofD issued.◄
- q. Approved DO design signature. ►This statement declares that the design is compliant with the applicable Certification basis after verifying the satisfactory completion of the Certification process.◄
- r. ►Approved DO release signature.◄ This statement confirms that the applicable DO procedures as specified in the Design Organization Exposition<sup>11</sup> have been followed ►and that no feature or characteristic has been identified during the design investigation that may make the Air System (including related Products, Parts, Appliances, Airborne Equipment and ALW) unsafe.◄
- s. TAA / Commodity CE acceptance signature ►<sup>16</sup> (only required if not approved by the DO under privilege).◄

12. When produced a CofD is a key element of the Design Records and **should** be managed iaw RA 5301<sup>6</sup>.

#### TAA / Commodity CE AMC

13. The CofD **should** be signed by the TAA, Commodity CE or their authorized representative ►(only required if not approved by the DO under privilege)◄ to signify their acceptance of the CofD including any exceptions and limitations.

14. When signed by the MOD, the CofD **should** be returned to the originating DO for retention.

### Guidance Material 5103(2)

#### Management and Authorization of Certificates of Design

##### ►Approved DO design and release GM

15. The Approved DO design signature and release signature may be signed by the same individual, combined into a single Signatory box on the CofD, providing that it is clear they are declaring fulfilment of both statements.◄

##### TAA / Commodity CE GM

16. Acceptance by the TAA or Commodity CE of the CofD does not imply acceptance of Responsibility for the design, which remains with the DO.

<sup>14</sup> Refer to Defence Standard 07-085 Part 2.

<sup>15</sup> Refer to Defence Standard 00-056 – Safety Management Requirements for Defence Systems.

<sup>16</sup> ►Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility.◄

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## RA 5820 - Changes in Type Design (MRP Part 21 Subpart D)

### Rationale

During the life of an Air System there will be changes (previously referred to as Modifications) in the Type Design. It is important that any such changes meet the appropriate Safety requirements to ensure the Airworthiness implications of the change are fully understood. Failure to complete a systematic, independent Certification process for Changes in the Type Design of UK military registered Air Systems may lead to design deficiencies which introduce unacceptable Hazards<sup>1</sup>. Such changes are subject to classification and Approval prior to the implementation of the change.

### Contents

**5820(1): Classification of Changes in Type Design (MRP Part 21.A.91)**

**5820(2): Application (MRP Part 21.A.93)**

**5820(3): Approval of Minor Changes (MRP Part 21.A.95)**

**5820(4): Approval of Major Changes (MRP Part 21.A.97)**

**5820(5): Designation of Applicable Certification Specifications for Airworthiness (MRP Part 21.A.101)**

**5820(6): Record Keeping (MRP Part 21.A.105)**

### Regulation 5820(1)

**Classification of Changes in Type Design (MRP Part 21.A.91)**

5820(1) Any change in Type Design **shall** be classified as 'Minor' or 'Major' by the Type Airworthiness Authority (TAA) or ►by a privileged◄ Design Organization (DO) within ►its◄ scope ►◄ as recorded in its terms of Approval<sup>2</sup>.

### Acceptable Means of Compliance 5820(1)

**Classification of Changes in Type Design (MRP Part 21.A.91)**

- For Civilian-Owned and Civilian Operated Air Systems, the Air System Sponsor has the opportunity to split Type Airworthiness (TAW) Responsibility, with regards to design changes, between the TAA and a Type Airworthiness Manager (TAM). The TAA **should** provide advice to the Sponsor on the most appropriate split of TAW design change Responsibilities<sup>3</sup>.
- A Minor Change has no appreciable effect on the mass, balance, structural strength, reliability, operational characteristics, ►Aircraft Armament System◄ or other characteristics affecting the Airworthiness of the Air System. All other changes **should** be classified as Major Changes.
- The classification decision and supporting justification of all changes to Type Design **should** be recorded in a manner that provides an auditable trail<sup>4</sup>.
- In case of any doubt over the classification of change, the TAA **should** seek advice from the Military Aviation Authority (MAA) Certification Division. The MAA reserves the authority to re-classify a change if deemed appropriate to do so.
- DOs without privileges **should** provide a recommended classification, with supporting justification, to the TAA for all changes in Type Design.◄

<sup>1</sup> ►Any impact on the environmental requirements of the Air System caused by the change in Type Design will be considered and managed in accordance with (iaw) the RA 1800 Series: Environmental Regulations.◄

<sup>2</sup> ►◄ For the DO scope of privileges ►and invoking of privileges◄ refer to RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).

<sup>3</sup> Where the Air System is not UK MOD-owned, TAW management regulatory Responsibility by either the TAA or TAM needs to be agreed within the Sponsor's approved model; refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems or refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems. Dependant on the agreed delegation of TAW Responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

<sup>4</sup> Refer to RA 1225 – Air Safety Documentation Audit Trail.

**Guidance  
Material  
5820(1)**

**Classification of Changes in Type Design (MRP Part 21.A.91)**

6. Refer to the Manual of Military Air System Certification (MMAC) ▶ ◀ for related Guidance Material.

**Regulation  
5820(2)**

**Application (MRP Part 21.A.93)**

5820(2) An application for a proposed Major Change in Type Design **shall** be made by the TAA using MAA Form 30.

**Acceptable  
Means of  
Compliance  
5820(2)**

**Application (MRP Part 21.A.93)**

7. Where Operational Suitability Data (OSD)<sup>5</sup> is available for the Air System, the application **should** include, or be supplemented after the initial application by, an assessment of the implications on the OSD resulting from military operation.

8. Where the TAA wishes to generate a Type Airworthiness Safety Assessment Report (TASAR) addendum for the Change, rather than a re-issue of the TASAR, this **should** be proposed, with justification, on the MAA Form 30 submission<sup>6</sup>.

9. As the individual Responsible for the Type Design of the Air System, only the TAA **should** apply for Approval of a Major Change in Type Design. The TAA **should** propose, with justification<sup>7</sup>, whether the change will be assured by the MAA or TAA. The MAA will determine, upon review, whether MAA Certification Assurance is required or the Major Change can proceed under TAA Assurance with MAA oversight.

10. The Type Certification Basis (TCB) for a Major change to Type Design **should** be effective for 5 years from the date of Military Type Certificate (MTC) or Approved Design Change Certificate (ADCC) application. If the change to the MTC, Restricted MTC (RMTC), ADCC or Restricted ADCC is not achieved within this timescale, the TAA **should** undertake a review of the Certification Specifications used to define the TCB to assess any shortfalls against Airworthiness Requirements in the latest issue.

**Guidance  
Material  
5820(2)**

**Application (MRP Part 21.A.93)**

11. Refer to the MMAC ▶ ◀ for related Guidance Material.

**Regulation  
5820(3)**

**Approval of Minor Changes (MRP Part 21.A.95)**

5820(3) A Minor Change in a Type Design **shall** be approved by the TAA or an approved DO within the scope of its privileges as recorded in its terms of Approval<sup>8</sup> when it has been demonstrated that the change and areas affected by the change comply with the requirements of the Military Air System Certification Process (MACP).

**Acceptable  
Means of  
Compliance  
5820(3)**

**Approval of Minor Changes (MRP Part 21.A.95)**

12. A Minor Change to a Type Design **should** only be approved when all the following conditions are met:

- a. When it has been demonstrated that the Type Design change and areas affected by the change comply with the Certification Specifications, as specified in RA 5820(5), through satisfactory completion of the MACP.
- b. When compliance with the TCB has been declared and the justifications of compliance have been recorded in the compliance documents.
- c. When any Airworthiness provisions not complied with are compensated for by controls, factors or mitigations that provide an Equivalent Level of Safety (ELoS).

<sup>5</sup> Refer to RA 5810(3): Application (MRP Part 21.A.15).

<sup>6</sup> Refer to RA 5012 – Type Airworthiness Safety Assessment.

<sup>7</sup> ▶ Refer to MMAC Chapter 3 – Changes to Type Design (MRP Part 21 Subpart D). ◀

<sup>8</sup> Refer to RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).

**Acceptable Means of Compliance 5820(3)**

- d. When no feature or characteristic has been identified that may make the product unsafe for the uses for which Certification is requested.
13. An Approval of a Minor Change to a Type Design **should** be limited to the specific Configuration(s) in the Type Design to which the change relates.
14. The DO **should** provide to the TAA the Instructions for Sustaining Type Airworthiness amendments for the Product, on which the change will be installed, prepared iaw the applicable TCB.
15. Where Operational Suitability Data is available for the Air System, the TAA, or an approved DO within the scope of its privilege(s) **should** assess the implications on the Operational Suitability Data resulting from the change to Type Design.
16. The TAA or approved DO under privilege procedure **should** ensure that the proposed Minor Change has undergone a thorough evaluation process in line with the MACP<sup>9</sup>. The appropriate classification and Approval of changes in Type Design will be subject to routine MAA oversight activity.
17. The Approval of Minor Changes by either the TAA or an approved DO under the privilege procedure **should** be predicated on there being no non-compliances with the applicable TCB requirements and comply with following conditions:
- An approved DO acting under privilege procedure **should** inform the TAA if a TCB non-compliance is identified.
  - Where there is no appreciable effect on Airworthiness, TAAs can approve Equivalent Safety Finding (ESF) for Minor changes and **should** subsequently notify the MAA.
  - Where an appreciable effect on Airworthiness is identified and an ELoS cannot be demonstrated, the TAA **should** seek MAA acceptance of the non-compliance, via a Military Certification Review Item (MCRI) before the change is approved. The MAA will then consider whether the Approval of a Deviation and / or re-classification of the change as Major is appropriate.
18. When a Minor Change is approved by an approved DO under the privilege procedure<sup>2</sup> invoked by the TAA, the DO **should** inform the TAA to ensure that Configuration Control is maintained.

**Guidance Material 5820(3)**

**Approval of Minor Changes (MRP Part 21.A.95)**

19. Refer to the MMAC  for related Guidance Material.

**Regulation 5820(4)**

**Approval of Major Changes (MRP Part 21.A.97)**

- 5820(4) A Major Change to a Type Design **shall** only be approved when it has been demonstrated that the change and areas affected by the change comply with the requirements of the MACP.

**Acceptable Means of Compliance 5820(4)**

**Approval of Major Changes (MRP Part 21.A.97)**

20. The TAA **should** demonstrate that the Type Design change and areas affected by the change comply with the Certification Specifications, as specified in RA 5820(5), through satisfactory completion of the MACP<sup>9</sup>.
21. Any non-compliances and proposed Alternative Means of Compliance (AltMoC), Special Conditions, ESFs or Deviations encountered during the MACP **should** be staffed to the MAA through MCRI(s) for agreement prior to Approval of the Change.
22. Where compliance with the TCB, including appropriate ESFs and Deviations, has not been fully demonstrated, but the Certification evidence has been assessed, by the MAA to demonstrate a level of Safety which is adequate with regard to the

<sup>9</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

**Acceptable Means of Compliance 5820(4)**

intended use, the TAA **should** be issued with a Restricted Approved Design Change Certificate or RMTC by the MAA.

23. Where a TAA proposes to request credit for Certification activities undertaken by another Certification Authority, the TAA **should** document their approach in a Certification Strategy for agreement with the MAA Certification Division. If not completed during initial Certification, the Strategy **should** detail arrangements to complete a structured 2-part Type Design Examination process to agree the scope of the credit to be awarded.

24. For Major Changes under TAA Assurance, the TAA **should** approve a Type Certification Exposition (TCE) that references the TCB, compliance evidence and the statements detailed in RA 5810(7) AMC<sup>10</sup>.

25. For Major Changes under TAA Assurance, the TAA **should** notify the MAA when the MACP has been completed and, when applicable, Release To Service Recommendations (RTSR) have been submitted. This notification **should** reference the TAA-approved TCE and, if applicable, RTSR. The MAA will then issue or update the ADCC or MTC as appropriate. These changes in Type Design will be subject to routine MAA Oversight activity.

26. An ADCC or MTC **should not** be issued or updated until the Type Design Change is brought Under Ministry Control (UMC)<sup>11</sup>.

**Impact on the Air System Safety Case (ASSC)**

27. The TAA **should** inform the relevant Aviation Duty Holder / Accountable Manager (Military Flying) of the Major Changes to enable a review of the Air System Safety Case<sup>12</sup>.

**Guidance Material 5820(4)**

**Approval of Major Changes (MRP Part 21.A.97)**

28. Refer to the MMAC  for related Guidance Material.

**Regulation 5820(5)**

**Designation of Applicable Certification Specifications for Airworthiness (MRP Part 21.A.101)**

5820(5) The TAA **shall** ensure that the application for the change in Type Design complies with the Certification Specifications applicable to the changed product on the date of application for the change unless Certification Specifications of later amendments are chosen, or Certification Specifications of earlier amendments are agreed under the Changed Product Rule (CPR).

**Acceptable Means of Compliance 5820(5)**

**Designation of Applicable Certification Specifications for Airworthiness (MRP Part 21.A.101)**

29. Where the TAA elects to use CPR, any of the following **should** apply:

- a. A change is Minor<sup>13</sup>.
- b. A change is Not Significant<sup>14</sup>.
- c. An area, System, Part or Appliance is not affected by the change.
- d. Compliance with the latest amendment for a Significant change<sup>15</sup> does not contribute materially to the level of Safety.
- e. Compliance with the latest amendment would be impractical.

<sup>10</sup> Refer to RA 5810(7): Compliance with the Type Certification Basis (MRP Part 21.A.20).

<sup>11</sup> Refer to RA 5301 – Air System Configuration Management.

<sup>12</sup> Refer to RA 1205(2): Ownership of the Air System Safety Case.

<sup>13</sup> Refer to 5820(1) paragraph 2.

<sup>14</sup> A change is considered Not Significant if it is neither Significant nor Substantial.

<sup>15</sup> Refer to the MMAC for definition.

**Acceptable  
Means of  
Compliance  
5820(5)**

30. If the TAA chooses to use requirements from an earlier amendment of the Certification Specifications, they **should** show that the changed product complies with these requirements and any other requirement the MAA finds is directly related. The earlier amended Certification Specifications **should** be no earlier than the corresponding Certification Specifications of the original Type Design.

31. If the TAA elects to comply with requirements that are derived from an amendment to the Certification Specifications that is effective after the filing of the application for a change to a Type, the TAA **should** also comply with any other requirements that the MAA finds are directly related.

32. If the MAA finds that the Certification Specifications referenced in the TCB do not provide adequate standards with respect to the proposed change, the TAA **should** also comply with any Special Conditions, and amendments to those Special Conditions, prescribed under the provisions of RA 5810<sup>5</sup>, in order to provide a level of Safety equivalent to that established in the Certification Specifications in effect at the date of the application for the change.

**Guidance  
Material  
5820(5)**

**Designation of Applicable Certification Specifications for Airworthiness (MRP Part 21.A.101)**

33. Refer to the MMAC ▶◀ for related Guidance Material.

**Regulation  
5820(6)**

**Record Keeping (MRP Part 21.A.105)**

5820(6) The TAA **shall** ensure that all documents supporting Certification of changes are retained and are available to the MAA in order to provide an Audit trail of evidence supporting Air Safety decision-making.

**Acceptable  
Means of  
Compliance  
5820(6)**

**Record Keeping (MRP Part 21.A.105)**

34. Record keeping procedures **should** be iaw RA 5810(16)<sup>16</sup>.

**Guidance  
Material  
5820(6)**

**Record Keeping (MRP Part 21.A.105)**

35. ▶ Nil. ◀

<sup>16</sup> Refer to RA 5810(16): Record Keeping (MRP Part 21.A.▶55◀).

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## RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J)

### Rationale

*The Design Approved Organization Scheme (DAOS) is a mechanism by which the Competence of a Design Organization (DO) can be assessed. The use of a non-DAOS organization for design services may introduce design errors to the Design. Approval under DAOS is subject to adherence with the established procedures and rules governing the Responsibilities and privileges for Military Design Approved Organizations.*

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- 5850(1): Responsibilities of a Design Organization
- 5850(2): Scheme Inclusion and Approval Award
- 5850(3): Design Management System (MRP Part 21.A.239)
- 5850(4): Design Organization Exposition ► (MRP Part 21.A.243) ◀
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- 5850(8): Failures, Malfunctions and Defects
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- 5850(10): Validity of Approval (MRP Part 21.A.259)
- 5850(11): Privileges (MRP Part 21.A.263)
- 5850(12): Designs using Government Furnished Equipment
- 5850(13): Record Keeping

### Regulation 5850(1)

#### Responsibilities of a Design Organization

5850(1) A DO or Co-ordinating DO (CDO) **shall** fulfil the defined design and development Responsibilities under their Terms of Approval.

### Acceptable Means of Compliance 5850(1)

#### Responsibilities of a Design Organization

1. ►◀
2. The DO **should** review this Regulatory Article (RA) in its entirety, noting the term DO throughout includes DO, CDO and Air System CDO. Therefore, CDO and Air System CDO may be read in place of DO as appropriate throughout this RA.
3. The DO **should**:
  - a. Meet the Responsibilities as defined<sup>1</sup>.
  - b. Maintain its DO Exposition (DOE) in conformity with the Design Management System (DMS).
  - c. Ensure that the DOE references the basic working documents within the organization.
  - d. Determine that the design of Products, Parts, Appliances, Airborne Equipment (AE) and Air Launched Weapons (ALW) or changes or Repairs thereof, comply with applicable Airworthiness requirements or Contracted specifications and have no feature that can lead to an Unsafe Condition.
  - e. Provide to the Type Airworthiness Authorities (TAA) or Commodity Chief Engineer (CE) associated documentation confirming compliance, and when applicable a Certificate of Design (CofD)<sup>2, 3, 4</sup>.

<sup>1</sup> Refer to RA 1014 – Design Organizations and Co-ordinating Design Organizations – Airworthiness Responsibilities.

<sup>2</sup> Refer to RA 5103 – Certificate of Design.

<sup>3</sup> Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D).

<sup>4</sup> Refer to RA 5865 – Repairs (MRP Part 21 Subpart M).

**Acceptable Means of Compliance 5850(1)**

- f. Ensure TAA or Commodity CE is provided access to the Design data, including instructions associated with Unsafe Conditions such as Airworthiness Directives<sup>5</sup> (AD), Service Bulletins<sup>5</sup> (SB) for civil-derived Air Systems, or Special Instructions (Technical) (SI(T))<sup>6</sup> for military designed Air Systems.

**Guidance Material 5850(1)**

**Responsibilities of a Design Organization**

4. The role of the DO, CDO or Air System CDO to meet the Airworthiness Responsibilities of RA 1014<sup>1</sup> will be established by the TAA<sup>7</sup>.

**Regulation 5850(2)**

**Scheme Inclusion and Approval Award**

- 5850(2) An organization **shall** be included in the DAOS and awarded Approval for a defined range of Products, Parts, Appliances, AE and ALW, only when the organization has been assessed and approved by the Military Aviation Authority (MAA).

**Acceptable Means of Compliance 5850(2)**

**Scheme Inclusion and Approval Award**

5. An organization seeking inclusion in the scheme **should** apply using MAA DAOS Form 80, which can be found on the MAA website under Approval Schemes<sup>8</sup>, through the MOD sponsor to the MAA.
6. Before a review of the organization's design, development and post-design support arrangements is undertaken, the DO **should** satisfy the MAA that:
- It is in the interests of MOD to include the organization in the Scheme.
  - The organization holds Quality Management System (QMS) Certification to AS/EN 9100, or to ISO 9001 providing the scope of the Certification covers the proposed DO Terms of Approval.

**Guidance Material 5850(2)**

**Scheme Inclusion and Approval Award**

7. Inclusion in DAOS is normally an essential pre-requisite for the award of design and development contracts for Air Systems<sup>9</sup>. Although it is understood that an organization may wish to bid for a contract, it is the TAA or Commodity CE's Responsibility to consider whether, in this case, the organization is capable of holding a DAOS Approval. The DAOS Approval is recognition that the MOD accepts that an organization has demonstrated an appropriate standard of compliance and that a specified performance attribute or objective has been achieved.
8. When evidence presented by the organization demonstrates that it satisfies the requirements of RA 5850, a DAOS Approval will be issued by the MAA.
9. A list of organizations that have been granted Approval is published by the MAA<sup>10</sup>.

**Terms of Approval**

10. The Terms of Approval will identify the types of design work, categories of Air Systems<sup>9</sup> for which the designer can operate as a DO, and the functions and duties that the organization is approved to perform. Those terms will be issued as part of the DO Approval.
11. The Terms of Approval encompass the Certificate and Schedule issued by the MAA:

<sup>5</sup> Refer to RA 5805 – Airworthiness Directives and Service Bulletins (MRP Part 21 Subpart A).

<sup>6</sup> Refer to RA 5405 – Special Instructions (Technical).

<sup>7</sup> ►Where the Air System is not UK MOD-owned, Type Airworthiness (TAW) management regulatory Responsibility by either the TAA or Type Airworthiness Manager (TAM) needs to be agreed within the Sponsor's approved model; refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems, or refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems. Dependant on the agreed delegation of TAW Responsibilities TAM may be read in place of TAA as appropriate throughout this RA. ◀

<sup>8</sup> Refer to <https://www.gov.uk/government/publications/design-approved-organization-scheme-daos>.

<sup>9</sup> ►This ◀ use of 'Air System' includes, but is not limited to, Airborne Equipment, Air Launched Weapons, Survival Equipment, and Aircrew Equipment Assemblies.

<sup>10</sup> Refer to <https://www.gov.uk/government/publications/list-of-maa-approved-organisations>.

**Guidance  
Material  
5850(2)**

- a. The Certificate identifies the approved organization and its primary design location.
- b. The Schedule includes:
  - (1) The scope of work (development, design changes and / or Repair and Post Design Services unless otherwise stated), with any appropriate limitations against which the Approval has been granted.
  - (2) The categories of Products, Parts, Appliances, AE and ALWs.
  - (3) Airworthiness and design signatories.
  - (4) Military Permit to Fly (MPTF) signatories.
  - (5) Approved TAM.
  - (6) Privileges that can be invoked by the relevant TAA or Commodity CE by contract.
  - (7) TAM Responsibilities.
  - (8) Reference to the DOE, provided in accordance with (iaw) RA 5850(4).

**Changes to the Terms of Approval**

12. An application for a change to the Terms of Approval will be made on MAA DAOS Form 82, which can be found on the MAA website under Approval Schemes<sup>8</sup>.
13. Approval of a change in the Terms of Approval will be confirmed by an appropriate amendment of the Certificate and Schedule as appropriate.

**Regulation  
5850(3)**

**Design Management System (MRP Part 21.A.239)**

- 5850(3) The DO **shall** demonstrate that it has established and is able to maintain a DMS for the control and supervision of the design, and of design changes, of Products, Parts and Appliances, AE and ALWs covered by the application.

**Acceptable  
Means of  
Compliance  
5850(3)**

**Design Management System (MRP Part 21.A.239)**

14. The DO **should** establish, implement and maintain a DMS ► iaw Annex A of this RA ◀ that includes a Safety Management System and a design Assurance system with clear lines of Responsibility and Accountability throughout the organization.
15. The DMS **should**:
  - a. Correspond to the size of the organization and the nature and complexity of its activities, taking into account the Hazards and the associated Risks that are inherent in these activities; and
  - b. Be established under the direct Accountability of a single manager according to Annex A of this RA.
16. The DMS **should** be such as to enable the organization:
  - a. To ensure that the design of the Products, Parts and Appliances, AE and ALWs or the design change or Repair solution thereof, comply with the applicable Airworthiness requirements or Contracted specifications and establish the extent of compliance with the requirements by Inspection, Demonstration, Analysis and Test.
  - b. To ensure that its Responsibilities are properly discharged iaw the RA 5000 series as required by the organization's contract with MOD, and in particular:
    - (1) The appropriate provisions of RA 5800 series.
    - (2) The Terms of Approval issued under RA 5850(2).
    - (3) CofD<sup>2</sup>.

**Acceptable Means of Compliance 5850(3)**

- (4) Defence Air Safety Management<sup>11</sup>.
- (5) Configuration Management of design<sup>12</sup>.
- c. To independently monitor the compliance with, and adequacy of, the documented procedures of the system. This monitoring **should** include a feedback system to a person or a group of persons having the Responsibility to ensure corrective actions are resolved.
17. The DO **should** hold regular design reviews to validate the design proposals, completion of which needs to be checked as part of the DMS.
18. The DMS **should** include an independent ►compliance◀ verification function to validate that the compliance evidence meets Certification requirements, on the basis of which the organization submits a CofD and associated documentation to the TAA or Commodity CE.
19. ►A record **should** be retained by the DO where an assigned Compliance Verification Engineers (CVE) has challenged the contents of a test report or the subsequent compliance outcome.◀
20. The DMS **should** ensure that complete Instructions for Sustaining Type Airworthiness (ISTA)<sup>13</sup> and operating instructions (as required), are provided to the TAA or Commodity CE for the Air System<sup>9</sup>. The DMS **should** ensure that support and updated ISTA and operating instructions are provided, as required, throughout the life cycle of the Air System.
21. The DO **should** specify and document the manner in which the DMS accounts for the acceptability of the Products, Parts or Appliances, AE and ALWs designed and / or the tasks performed by partners or subcontractors.

**Guidance Material 5850(3)**

**Design Management System (MRP Part 21.A.239)**

22. The system monitoring function may be undertaken by the existing Quality Assurance organization when the DO is part of a larger organization. For an explanation of the terms used within a DMS refer to Annex A.
23. The independent ►compliance◀ verification function is undertaken by CVE, as detailed within Annex A; this is a DO focussed role to ensure compliance with the applicable Certification requirements. This is not the same as the role of the Independent Technical Evaluator (ITE), who is appointed by the TAA or Commodity CE, independent of the DO and will provide independent analysis of the DO evidence.
24. However, when the approved DO is introducing a Minor Change<sup>3</sup> to the Air System under privilege<sup>14</sup> the role of the ITE may, in agreement with the TAA, be satisfied by the independent assessment conducted by the CVE.

**Regulation 5850(4)**

**Design Organization Exposition ►(MRP Part 21.A.243)◀**

- 5850(4) As part of the DMS the DO **shall** furnish a DOE to the MAA describing, directly or by cross-reference, the organization, the relevant procedures and the Products, Parts, Appliances, AE and ALWs to be designed, changed or Repaired.

**Acceptable Means of Compliance 5850(4)**

**Design Organization Exposition ►(MRP Part 21.A.243)◀**

25. The DOE **should** be produced and include the content detailed in Annex B. The DOE **should** be concise with sufficient information that is relevant to the Terms of Approval sought by the DO. If the DOE is completely or partially integrated into the company organization manual, identification of the information required by RA 5850(4) **should** be provided by giving appropriate cross references and these documents made available to the MAA.

<sup>11</sup> Refer to RA 1200 – Air Safety Management.

<sup>12</sup> Refer to RA 5301 – Air System Configuration Management.

<sup>13</sup> Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

<sup>14</sup> Refer to RA 5850(11): Privileges (MRP Part 21.A.263).

**Acceptable  
Means of  
Compliance  
5850(4)**

26. Where any Products, Parts, Appliances, AE or ALWs or any changes to these are designed by partner organizations or subcontractors, the DOE **should** articulate how the DO is able to give, for all Products, Parts, Appliances, AE and ALWs, the Assurance of compliance required by RA 5850(3) above. The statement **should** contain, directly or by cross-reference, descriptions and information on the design activities and organization of those partners or subcontractors, as necessary to establish this statement.
27. To maintain DAOS Approval, the DOE **should** remain an accurate reflection of the organization with significant<sup>15</sup> amendment submitted to the MAA for Approval. Amendment submission **should not** be taken to confer that Approval for the DAOS change is in place.
28. To demonstrate compliance with RA 5850(4), a DO with a European Union Aviation Safety Agency (EASA) or a UK Part 21 Subpart J Approval can use this in support of obtaining a DAOS Approval. In these instances, the DO **should** submit the handbook used in their civil Approval providing it covers the required Terms of Approval. In addition, the DO **should** provide the MAA with a supplementary Exposition that identifies the additional measures that have been put in place over and above those set down in its extant civil handbook and associated procedures, to account for the differences in complying with the MAA Regulatory Publications (MRP). For a DO with other civil Approvals, a justification **should** be submitted identifying why this is considered appropriate, and advice and agreement needs to be sought from the DAOS branch prior to submission of an application. This **should** demonstrate that the supplemental Exposition route is appropriate for the associated Products, Parts, Appliances, AE or ALW.
29. To obtain and maintain Approval of a TAM, a DO **should** submit a Type Airworthiness Management Supplement using the template hosted on the MAA Website.

**Organization**

30. The DOE **should** show that:
- a. The Head of the DO (HDO) for which an application for Approval has been made, has the direct or functional Responsibility for all departments of the organization which are responsible for the design of the Products, Parts and Appliances, AE and ALWs. If the departments responsible for design are functionally linked, the HDO still carries the ultimate Responsibility for compliance of the organization with this RA.
  - b. The HDO has the direct or functional Responsibility for all departments of the organization which are involved in the design of changes to design or Repairs to Products, Parts, Appliances, AE and ALWs.
  - c. An Office of Airworthiness, or equivalent function, has been established and staffed on a permanent basis to act as the focal point for co-ordinating Airworthiness matters; it reports directly to the HDO or is integrated into an independent Quality Assurance organization reporting to the HDO.
  - d. Person(s) have been nominated to liaise with the Authority and to co-ordinate Airworthiness matters. Their position in the organization **should** allow direct reporting to the manager responsible for design.
  - e. Responsibilities for all tasks related to the design and Approval of changes to design or Repairs to Products, Parts, Appliances, AE and ALWs are assigned to ensure that all areas are covered.
  - f. Responsibilities for all tasks related to Design Investigations are assigned in such a way that gaps in authority are excluded.
  - g. The process for tailoring of the design system is dependent on complexity of design activities.
  - h. Co-ordination between technical departments and the Head of Independent System Monitoring (HISM) has been established:

<sup>15</sup> Refer to paragraph ►48.◄

**Acceptable  
Means of  
Compliance  
5850(4)**

- (1) To ensure quick and efficient reporting and resolution of difficulties encountered using the DO handbook and associated procedures.
- (2) To maintain the DMS.
- (3) To optimize auditing activities.

**Guidance  
Material  
5850(4)**

**Design Organization Exposition ► (MRP Part 21.A.243) ◀**

31. A template Design Organization Exposition and Type Airworthiness Management Supplement are provided on the MAA website.

**Regulation  
5850(5)**

**Approval Requirements (MRP Part 21.A.245)**

- 5850(5) The DO **shall** demonstrate that:
- a. Staff in all technical departments are of sufficient numbers and experience and have been given appropriate authority to discharge their allocated Responsibilities.
  - b. There is full and efficient coordination between departments and within departments in respect of Airworthiness.

**Acceptable  
Means of  
Compliance  
5850(5)**

**Approval Requirements (MRP Part 21.A.245)**

**General**

32. The DO **should** ensure that the accommodation, facilities and equipment are adequate to enable the staff to satisfy the Airworthiness requirements or Contracted specifications for the Product, Part, Appliance, AE and ALWs.

33. The data submitted iaw RA 5850(4) **should** show that sufficient skilled personnel are available and suitable technical and organizational provisions have been made for carrying out the Design Investigation<sup>16</sup> defined under RA 5850(3).

**Personnel**

34. The DO **should** show that the personnel available to comply with this RA are, due to their special qualifications and number, able to provide Assurance of the design, design change or Repair of Products, Parts, Appliances, AE and ALWs, as well as the compilation and Verification of all data needed to meet the applicable Certification Specifications.

35. Evidence of their qualifications and experience **should** be documented for the persons who accept the duties defined by the following roles:

- a. Chief Executive. A statement of the qualification and experience of the Chief Executive is normally not required unless they are also filling one of the other specified roles (paragraphs ► 35b-e ◀).
- b. HDO. The position of HDO, due to the nature of the role in the DO, can also hold additional roles such as the TAM where clear independence, sufficient capacity and clear separation of the Responsibilities can be demonstrated.
- c. Head of Airworthiness (HoA).
- d. HISM. The position of the HISM, due to the nature of the role in independent system monitoring, **should not** be permitted to hold additional roles such as TAM, HDO, HoA or CofD Signatory.
- e. CVE.
- f. TAM.

36. The credentials of the, HDO, HoA, HISM and TAM **should** be provided to MAA using MAA DAOS Form 4.

<sup>16</sup> The term 'Design Investigation' means the tasks of the organization in support of the Military Type Certificate (MTC) or other Design Approval processes necessary to show and verify and to maintain compliance with the applicable Certification Specifications.

**Acceptable  
Means of  
Compliance  
5850(5)**

37. Anyone who has authority to sign the CofD, or MPTF (Development) within the DO **should** also provide the MAA with a MAA DAOS Form 4.
38. For the CVE, no individual statement is needed. CVEs **should** be selected by the DO based on their knowledge, background and experience as defined in the DOE. When necessary, complementary training **should** be established to ensure that CVEs have sufficient background and knowledge in the scope of their Authorization.
39. The DO **should** maintain a record of the CVE personnel, which includes details of the scopes of their Authorizations. The CVE personnel **should** be given reasonable access on request to their own records. As part of its investigations, MAA **should** have the right to access the data held in such a system.
40. Where a TAM holds other roles in the DO, independence **should** be demonstrated.
41. The DO **should** maintain a record of anyone who has authority to sign the Flight Clearance Note for Non-Production Standard Propulsion Systems in support of a MPTF (Development)<sup>17</sup>. As part of its investigations, the MAA **should** be given access to the data held in such a system.

**Technical**

42. The Chief Executive **should** provide the necessary resources for the proper functioning of the DO.
43. The DO **should** have access to:
- a. Workshops and production facilities which are suitable for manufacturing prototype models and test specimens.
  - b. Accommodation and test facilities which are suitable for carrying out tests and measurements needed to demonstrate compliance with the applicable Certification Specifications.

**Guidance  
Material  
5850(5)**

**Approval Requirements (MRP Part 21.A.245)**

**Technical**

44. The test Facilities may be subjected to additional technical conditions related to the nature of the tests performed.
45. Staff will be suitably qualified and with commensurate levels of experience appropriate for the role they have been assigned.
46. For smaller DOs, certain roles within the DO may be combined. Combinations of Responsibilities are acceptable where:
- a. The role of the HDO may be fulfilled by the Chief Executive of the legal entity;
  - b. The HDO and the HoA are the same person, provided that the person has the Competence to fulfil both functions;
  - c. The role of the HISM is an external person for all or part of the role;
  - d. A part-time HoA, provided that the person is directly involved in the DO, and not by an agreement between two DOs, and provided that the availability of the person ensures that response times will be adequate.

**Regulation  
5850(6)**

**Changes in Design Management System (MRP Part 21.A.247)**

- 5850(6) After the issue of a DO Approval, each change to the DMS that is significant to the showing of compliance or to the Airworthiness of the Product, Part, Appliance, AE and ALWs **shall** require Approval by the MAA.

<sup>17</sup> Refer to RA 5880 – Military Permit to Fly (Development) (MRP Part 21 Subpart P).

**Acceptable  
Means of  
Compliance  
5850(6)**

**Changes in Design Management System (MRP Part 21.A.247)**

47. An application for Approval of a change to the DO **should** be made using MAA DAOS Form 82 and submitted to the MAA. Before implementation of the change the DO **should** demonstrate to the MAA, on the basis of submission of proposed changes to the DOE, that it will continue to comply with this RA after implementation.

**Guidance  
Material  
5850(6)**

**Changes in Design Management System (MRP Part 21.A.247)**

**Significant changes in the DMS**

48. In addition to a change in ownership ►or Terms of Approval,◀ the following changes to the DMS will be considered as 'significant' to the showing of compliance or to the Airworthiness of the Products, Parts, Appliances, AE and ALWs:

- a. **Organization**
  - (1) Change in the industrial organization (partnership, suppliers, design work-sharing) unless it can be shown that the independent checking function of the showing of compliance is not affected.
  - (2) Change in the parts of the organization that contribute directly to the Airworthiness (independent checking function, Office of Airworthiness (or equivalent)).
  - (3) Change to the independent monitoring principles.
- b. **Responsibilities.** Change of the management staff assessed for Airworthiness Competence:
  - (1) HDO;
  - (2) HoA;
  - (3) HISM;
  - (4) Change of CofD or MPTF Signatory;
  - (5) Or new distribution of Responsibilities affecting Airworthiness.
- c. **Procedures.** Change to the principles of procedures related to:
  - (1) The design Certification.
  - (2) The classification of changes and Repairs as Major or Minor<sup>3</sup>.
  - (3) The management of Major Changes and major Repairs.
  - (4) The Approval of the design of Minor Changes and minor Repairs<sup>14</sup>.
  - (5) The issue of information and instructions.
  - (6) Documentary changes to the Aircraft Flight Manual.
  - (7) Type Airworthiness.
  - (8) The Configuration Control, when Airworthiness is affected.
  - (9) The acceptance of design tasks undertaken by partners or subcontractors iaw RA 5850(4).
  - (10) MPTF (Development).
- d. **Resources.** Substantial change in the number and / or experience of staff.

**Regulation  
5850(7)**

**Investigations and Inspections (MRP Part 21.A.257)**

5850(7) The DO **shall** make arrangements that allow the MAA to make any investigations, inspections, including investigations of partners and subcontractors, or review any report necessary to determine compliance with this RA.

**Acceptable  
Means of  
Compliance  
5850(7)**

**Investigations and Inspections (MRP Part 21.A.257)**

49. Arrangements **should** be made to allow the MAA to make investigations of the DO including partners, subcontractors and suppliers. This includes assisting and co-operating with the MAA in performing inspections and Audits conducted during initial assessment and subsequent Assurance.

**Guidance  
Material  
5850(7)**

**Investigations and Inspections (MRP Part 21.A.257)**

50. Assistance to the MAA includes all appropriate means associated with the facilities of the DO to allow the MAA to perform these inspections and Audits, such as a meeting room and office support.

**Regulation  
5850(8)**

**Failures, Malfunctions and Defects**

5850(8) The DO **shall** ensure that a robust process is in place for collecting, investigating and analysing reports of and information related to failures, malfunctions and defects, as identified by themselves, their partners or subcontractors.

**Acceptable  
Means of  
Compliance  
5850(8)**

**Failures, Malfunctions and Defects**

**Failures, Malfunctions and Defect Reporting**

51. The DO **should** make appropriate arrangements to report to the TAA or Commodity CE any failure, malfunction, defect or other occurrence related to an Air System<sup>9</sup> and which has resulted in or may result in an Unsafe Condition.
52. The DO **should** ensure they have a system in place for the management and tracking of failure, malfunction and defect reporting for their Air System<sup>9</sup> that is agreed with the TAA or Commodity CE.
53. The DO **should** notify the TAA or Commodity CE of any potential need for a restriction on flying limitations (or Special Flying Instruction) arising from any reported failure, malfunction or defect.
54. The DO **should** raise and distribute a Narrative Fault Report when:
- a. A failure, malfunction or defect occurs which could affect the Safety of personnel, or materiel, or operational effectiveness, or availability of materiel, and which is not of sufficient urgency to require an urgent report being sent but is nevertheless sufficiently important to justify a detailed investigation.
  - b. When required by a Service Inquiry or as directed by the TAA or Commodity CE.

**Failures, Malfunctions and Defect Investigation and Closure**

55. The DO **should** ensure they have a system in place for the investigation of failures, malfunctions and defects for their Air System<sup>9</sup>, that is agreed with the TAA or Commodity CE.
56. In the case of a failure, malfunction or defect arising from a design or production deficiency, the relevant DO or Production Organization, as appropriate, **should** investigate the Cause and report the results to the TAA or Commodity CE.
57. When failures, malfunctions and defects are reported on materiel which has been procured as both Contractor Furnished Equipment and Government Furnished Equipment, a common investigation and reporting procedure **should** be used.
58. On receipt of a request for an investigation, the DO **should** call forward all faulty materiel required for investigation.
59. The DO **should** ensure they have a system in place for the rectification and closure of reported failures, malfunctions and defects, that is agreed with the TAA or Commodity CE.

**Acceptable Means of Compliance 5850(8)**

**Quarantine**

60. The DO **should** ensure that when they are in possession or control of material that is reported as faulty, it is quarantined and protected to prevent deterioration or disturbance which may hamper investigation and is disposed of in a controlled manner.

**Guidance Material 5850(8)**

**Failures, Malfunctions and Defects**

61. A Narrative Fault Report may be made on a MOD Form 760 Narrative Fault Report or equivalent.

62. Failure, malfunction and defect investigation priorities may be determined by the TAA or Commodity CE.

63. The DO will agree with the MOD individual authorizing the request the format and distribution of investigation reports resulting from data analysis requests.

**Regulation 5850(9)**

**Findings (MRP Part 21.A.258)**

5850(9) After receipt of notification of findings, the DO **shall** demonstrate corrective action appropriate to the level of the finding.

**Acceptable Means of Compliance 5850(9)**

**Findings (MRP Part 21.A.258)**

64. After receipt of notification of findings under the administrative procedures established by the MAA, the DO **should** demonstrate corrective action to the satisfaction of the MAA within the agreed period<sup>18</sup>.

65. In the case of a significant finding resulting in the suspension or revocation of their DO Approval<sup>19</sup>, the DO **should** provide confirmation of receipt of this notice in a timely manner.

**Guidance Material 5850(9)**

**Findings (MRP Part 21.A.258)**

66. In case of a significant finding, the DO may be subject to a partial or full suspension or revocation of its Approval.

67. Details of Findings levels and Observations can be found in MAA03<sup>18</sup>.

68. The MAA will inform the relevant TAA(s) or Commodity CE and sponsor of any findings and Corrective Action Requirements (CAR).

**Regulation 5850(10)**

**Validity of Approval (MRP Part 21.A.259)**

5850(10) A DAOS Approval **shall** be issued for an unlimited duration and remain valid subject to:

- a. The DO remaining in compliance with applicable RAs;
- b. The MAA or its nominated representative being granted access to the organization to determine continued compliance with applicable RAs; and
- c. The Approval Certificate not being surrendered, suspended or revoked.

**Acceptable Means of Compliance 5850(10)**

**Validity of Approval (MRP Part 21.A.259)**

69. The DO **should** confirm in writing prior to any formal MAA assessment or not later than every 3 years from the last notification that the contents of their Approval Certificate and DOE remain valid. Failure to provide the required confirmation can result in the suspension of the Approval.

<sup>18</sup> Refer to MAA03: MAA Regulatory Processes, Annex F – MAA Assurance.

<sup>19</sup> Refer to MAA01: MAA Regulatory Principles.

**Guidance  
Material  
5850(10)**

### Validity of Approval (MRP Part 21.A.259)

70. Nil.

**Regulation  
5850(11)**

### Privileges (MRP Part 21.A.263)

5850(11) A DO **shall** operate privileges only when they have been invoked by the appropriate TAA or Commodity CE.

**Acceptable  
Means of  
Compliance  
5850(11)**

### Privileges (MRP Part 21.A.263)

#### Invoking specific privileges

71. The DO **should** only operate privileges when they have had their Competence assessed by the MAA, their Terms of Approval contain the relevant provision, and the privileges are invoked in writing by the TAA or Commodity CE.

72. Once invoked, the DO **should** be entitled, within its Terms of Approval and under the relevant procedures of the DMS, to operate the privilege to:

- a. Classify changes to design<sup>20</sup> and Repairs<sup>21</sup> as Minor or Major.
- b. Approve Minor Changes<sup>22</sup> and minor Repairs<sup>23</sup>.
- c. Issue information and instructions, containing the following statement: "The technical content of this documentation is approved under the authority of MAA DAOS ref. [UK.MAA.DAOS.xxxx]," where 'xxxx' represents the reference number. NB: This privilege **should not** be used for instructions relating to an Unsafe Condition<sup>24</sup>, including ADs<sup>5</sup> and SI(T)s<sup>6</sup>.
- d. To approve the flight conditions under which a MPTF (Development) can be issued<sup>17</sup>, except for initial flights of:
  - (1) A new type of Air System; or
  - (2) An Air System modified by a change that is, or would be, classified as a Significant or Substantial Major Change<sup>25</sup>; or
  - (3) An Air System whose flight and / or piloting characteristics have been modified; or
  - (4) An Air System dedicated to expanding the agreed flight envelope, as defined within an extant Release To Service<sup>26</sup> (RTS).
- e. Issue a MPTF (Development)<sup>17</sup> for an Air System it has designed or modified, or for which it has approved the conditions under which the MPTF (Development) can be issued and when the DO itself is controlling the Configuration of the Air System under its scope of DO Approval, noting that the Privileged DO cannot issue the initial MPTF (Development).

73. The DO **should** develop its own internal procedures for the relevant privileges identified in paragraph ▶72, ◀ based on the requirements of Annex C.

74. The DO **should** assure the TAA or Commodity CE that any changes approved under the provision of any privilege that has been invoked are accurately classified.

75. The DO **should** assure the TAA or Commodity CE that there is a robust mechanism for managing the Configuration Control of the Air System or equipment for any changes approved under the provisions of any privilege that has been invoked.

76. The DO **should** provide the TAA or Commodity CE or their authorized representative a declaration that the change or Repair has been approved.

<sup>20</sup> Refer to RA 5820(1): Classification of Changes in Type Design (MRP Part 21.A.91).

<sup>21</sup> Refer to RA 5865(3): Classification of Repairs (MRP Part 21.A.435).

<sup>22</sup> Refer to RA 5820(3): Approval of Minor Changes (MRP Part 21.A.95).

<sup>23</sup> Refer to RA 5865(5): Issue of a Repair Design Approval (MRP Part 21.A.435).

<sup>24</sup> Refer to RA 5825 – Fault Reporting and Investigation.

<sup>25</sup> Refer to the Manual of Military Air System Certification (MMAC).

<sup>26</sup> Refer to RA 1300 – Release To Service.

**Acceptable Means of Compliance 5850(11)**

77. The TAA or Commodity CE or their authorized representative **should** acknowledge receipt of declaration of Approval.
78. The TAA or Commodity CE **should** make appropriate arrangements for Configuration Management in conjunction with the DO, to ensure that the application of design changes, including any SI(T) or SB to the same Air System or equipment, is managed effectively and is transparent to the Operating Duty Holder.
79. The privileges invoked **should** remain valid until such time as they are surrendered, suspended or revoked. In the situation where the individual invoking the privileges departs their post, the privileges invoked **should** remain valid for a maximum period of 3 months until such time as the new incumbent can re-assess the award of privileges. The privileges **should** be automatically revoked if not re-awarded within the 3 month period.

**Guidance Material 5850(11)**

**Privileges (MRP Part 21.A.263)  
Invoking Specific Privileges**

80. Whilst the TAA or Commodity CE has the ability to revoke privileges, the MAA holds the ultimate sanction of limiting the scope of an organization's Approval if it is deemed the DT, DO or organization is not fully compliant with the MRP.
81. The information and instructions, including the necessary data, are issued by the DO to the TAA or Commodity CE to implement a change, a Repair, or an inspection. Some are also issued to provide Maintenance organizations with all necessary Maintenance data for the performance of Maintenance, including implementation of a change, a Repair, or an inspection.
82. The preparation of this data involves design, production and inspection. As the overall Responsibility, through the privilege, is allocated to the DO, these aspects will be properly handled by the DO to obtain the privilege "to issue information and instructions containing a statement that the technical content is approved", and a procedure will exist.
83. In derogation to para ▶72◀ sub-paras a to d, for a military Air System derived from a civil type certified Air System, the holder of a MAA DAOS Approval may be entitled to declare to the TAA the applicability, through Validation of no impact to the military Certification basis and the intended use, of the following when it is has already been approved by an MAA agreed civil aviation authority or a DO<sup>27</sup> utilizing its civil-Approval privilege:
- a. A Minor design change; or
  - b. An ISTA; or
  - c. Revisions to the flight manual.

**Regulation 5850(12)**

**Designs using Government Furnished Equipment**

- 5850(12) The DO **shall** obtain the authority of the MOD before altering the design of any Government Furnished Equipment (GFE).

**Acceptable Means of Compliance 5850(12)**

**Designs using Government Furnished Equipment**

84. If the DO has any doubt about the design suitability of any item, or has proposals for design changes, they **should** advise the MOD at the earliest opportunity.

<sup>27</sup> Where an Alternative Acceptable Means of Compliance has been approved by the MAA for use of the civil Approval under RA 1005 – Contracting with Competent Organizations or RA 1014 – Design Organizations and Co-ordinating Design Organizations - Airworthiness Responsibilities.

**Guidance  
Material  
5850(12)**

**Designs using Government Furnished Equipment**

85. The installation, functional and environmental interface definitions documentation may be formally referred to as the Interface Control Documentation (ICD).

86. Where GFE is provided without the appropriate supporting Design Records (eg CofD, ICD), the DO will communicate the omission to the relevant TAA or Commodity CE for their decision to proceed with the design change.

**Regulation  
5850(13)**

**Record Keeping**

5850(13) All relevant design information, drawings, test reports, including inspection records and Type Airworthiness Management information **shall** be held by the appropriate DO, and available if required.

**Acceptable  
Means of  
Compliance  
5850(13)**

**Record Keeping**

87. Such documentation **should** be held in order to provide the information necessary to ensure the Type Airworthiness of an Air System and be retained<sup>28</sup>.

**Guidance  
Material  
5850(13)**

**Record Keeping**

88. International or collaborative programmes will be required to co-ordinate custodianship of appropriate documentation.

Draft for NPA

<sup>28</sup> Refer to RA 1225 – Air Safety Documentation Audit Trail.

## Annex A

### Design Management System (DMS)

#### Definitions

1. The system monitoring function may be undertaken by the existing Quality Assurance organization when the DO is part of a larger organization.
2. The DMS is the organizational structure, Responsibilities, procedures and resources to ensure the proper functioning of the DO.
3. The DMS includes a Safety Management System and a design Assurance system with clear lines of Responsibility and accountability throughout the organization. Design Assurance means all those planned and systematic actions necessary to provide adequate confidence that the organization has the capability:
  - a. To design Products, Parts or Appliances iaw the applicable Certification Specifications.
  - b. To show and verify the compliance with the applicable Certification Specifications, or Product, Part, Appliance, AE and ALW specifications.
  - c. To demonstrate to the MAA this compliance for the purposes of DAOS Approval and to the TAA when required.

#### Design Management System

4. The complete process starts with the Certification Specifications and Product, Part and Appliance specifications that culminates in Type Certification. It establishes the relationship between the design, the Design Investigation and design Assurance processes.
5. Effective design Assurance demands a continuing evaluation of factors that affect the adequacy of the design for intended applications, in particular that the Product, Part or Appliance, complies with applicable Certification Specifications and will continue to comply after any change. Such changes include amendment to place of manufacture, manufacturing methods or material sources<sup>29</sup>.
6. Two main aspects **should** therefore be considered:
  - a. How the planned and systematic actions are defined and implemented, from the very beginning of design activities up to Type Airworthiness activities;
  - b. How these actions are regularly evaluated and corrective actions implemented as necessary.

#### Design Management System - Independent checking function of the showing of compliance

7. The independent ►compliance verification function **should verify that the compliance evidence meets the certification requirements.** ◀ Verification ► **should be** ◀ by a person not creating the compliance data. Such person may work in conjunction with the individuals who prepare compliance data.
8. The Verification **should** be shown by signing compliance documents, including test programmes and data.
9. There is normally only one CVE nominated for each Certification Specification, or Product, Part and Appliance specifications for a given design activity.
10. ► **An individual can be a CVE for more than one discipline where they can demonstrate appropriate competence.** ◀
11. A procedure **should** cover the non-availability of nominated persons and their replacement when necessary.

#### Planned and Systematic Actions

12. For the DO carrying out Design Investigation of Products, Parts, Appliances, AE and ALW, the subsequent tasks and procedures will be defined and put in place to cover the planned and systematic actions.

#### General

13. To issue or, where applicable, supplement or amend the DOE iaw RA 5850(6), in particular to indicate the initiation of design activities on a Product, Part, Appliance, AE and ALW.
14. To assure that all instructions of the DOE are adhered to.

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<sup>29</sup> A change in place or method of manufacture or a change of explosive material or source of explosive material will require Independent Ordnance, Munitions and Explosives Safety Advisor advice; refer to DSA 02.OME(2) – Appointment of an Independent OME Safety Advisor.

15. To nominate staff as CVEs responsible to approve compliance documents.
16. To nominate personnel belonging to the Office of Airworthiness with appropriate Responsibilities.
17. To ensure full and complete liaison between the DO and related organizations having Responsibility for Products, Parts and Appliances manufactured to the specification.
18. To provide the Assurance to the TAA or Commodity CE that prototype models and test specimens adequately conform to the design.

#### Chief Executive and HDO (or their Deputy)

19. The Chief Executive will provide the necessary resources for the proper functioning of the DO.
20. The HDO, or an authorized representative, **should** sign a CofD<sup>2</sup> stating compliance with the applicable Certification Specifications, or Product, Part, Appliance, AE and ALW specifications, after Verification of satisfactory completion of the Design Investigation. law RA 5810<sup>30</sup> and RA 5820<sup>3</sup>, their signature on the CofD confirms that the procedures as specified in the DOE have been followed.
21. The functions of Chief Executive and HDO may be performed by the same person.

#### Compliance Verification

22. **► The CVE should be involved throughout the Design Investigation including:**
  - a. **Project Definition in support of the Head of the Office of Airworthiness:**
    - (1) Supporting the Classification of changes to Design or Repair as Major or Minor.
    - (2) Agree the Certification basis through identifying the Airworthiness Requirements eg Def Stan 00-970 or contracted specification. This will include the determination if legacy / 'grandfather rights' can be used.
    - (3) Agree the Means of Compliance including the Test Requirements.
    - (4) Approve the Test Plan.
    - (5) Endorse the project to move to the next phase.
  - b. **Testing**
    - (1) The CVE **should** determine their level of involvement in the testing to satisfy their need to demonstrate compliance, for example to gain confidence that a Test House has conducted the test appropriately or to deal with any issues that arise during the test that need interpretation on compliance. The level of involvement of the CVE will take into consideration the criticality of the system, maturity of the technology, type of testing etc. Note: the CVE does not conduct the testing.
    - (2) The CVE will agree the Test Programme and sign the subsequent Test Report to confirm they are content that compliance with the Certification Programme has been demonstrated and that any exceptions or limitations are recorded. Alternatively, the CVE may sign a Compliance Check List (CCL) confirming compliance has been demonstrated. Note: The Test Report or CCL may have multiple CVE signatures covering different disciplines.
    - (3) A record **should** be retained where the CVE has challenged the test report and the subsequent outcome.
  - c. **Verification**
    - (1) The CVE **should** review all compliance data and make a statement to confirm that verification of compliance has been demonstrated with the applicable Certification basis, in accordance with the agreed Means of Compliance and that where there have been any exceptions or limitations these have been declared. ◀

23. **►◀**

#### Office of Airworthiness

24. Liaison between the DO and the TAA or Commodity CE with respect to all aspects of the Certification Programme.
25. Ensuring that a DOE is prepared and updated as required in RA 5850(4).

<sup>30</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

26. Co-operation with the MAA in developing procedures to be used for the design Certification process.
27. Issuing of guidelines for documenting compliance.
28. Co-operation in issuing guidelines to ensure compliance with the Regulations for the preparation of the manuals, SB, SI(T), design changes, drawings, specifications and standards.
29. Ensuring distribution of applicable Certification Specification and other specifications.
30. Co-operating with the TAA or Commodity CE in proposing the Type Certification Basis.
31. Interpretation of Certification Specification and requesting decisions of the TAA or Commodity CE.
32. Advising of all departments of the DO in all questions regarding Airworthiness Approvals and Certification.
33. Preparation of the Certification Programme and co-ordination of all tasks related to Design Investigation in concurrence with the TAA or Commodity CE.
34. Regular reporting to the TAA or Commodity CE about Design Investigation progress and announcement of scheduled tests in due time.
35. Ensuring co-operation in preparing inspection and test programmes needed for demonstration of compliance.
36. Establishing and maintaining the compliance checklist to provide evidence underpinning the Compliance Statement.
37. Checking that all compliance documents are prepared as necessary to show compliance with all Certification Specifications, as well as for completeness, and signing for release of the documents.
38. Checking the required design definition documents described in RA 5810 and ensuring that they are provided to the TAA or Commodity CE for Approval when required.
39. Preparation, if necessary, of a draft for a Type Certificate Data Sheet and / or Type Certificate Data Sheet Modification.
40. Providing Verification to the HDO that all activities required for Design Investigation have been properly completed.
41. Approving the classification of changes<sup>3</sup> and granting the Approval for Minor Changes when appropriately privileged to do so.
42. Monitoring of significant events on other aeronautical Products, Parts, Appliances, AE and ALW as far as relevant to determine their effect on Airworthiness of Products, Parts, Appliances, AE and ALW being designed by the DO.
43. Ensuring co-operation in preparing SB, SI(T) and the Structural Repair Manual and subsequent revisions, with special attention being given to the manner in which the contents affect Certification Specifications for subsequent Approval by the TAA or Commodity CE.
44. Ensuring the initiation of activities as a response to failure (Air Safety Occurrences) evaluation and complaints from the operation and providing of information to the TAA or Commodity CE in case of Airworthiness impairment.
45. Advising the TAA or Commodity CE with regard to the issue of SI(T).
46. Ensuring that the manuals to be approved by the TAA or Commodity CE, including any subsequent revisions are checked to determine that they meet the respective requirements and that they are provided to the TAA or Commodity CE for Approval.

#### **Maintenance and Operating Instructions**

47. Ensuring the preparation and updating of all Maintenance and operating instructions needed to maintain Airworthiness iaw relevant Certification Specifications. For that purpose, the DO will:
  - a. Establish the list of all documents it is producing; and
  - b. Define procedures and organization to produce and issue these documents to the TAA or Commodity CE.

#### **Continued Effectiveness of the Design Management System**

48. The organization **should** establish the means by which the continuing evaluation (system monitoring) of the DMS will be performed in order to ensure that it remains effective.

## Annex B

## Design Organization Exposition Requirements

## Part 1 - Organization

1. Document title and Organizations document reference number.
2. Organization name, address, telephone, telex, facsimile numbers, e-mail address.
3. Index.
4. List of effective pages with revision / date / amendment identification for each page.
5. Distribution list.
6. Objective of DOE and binding statement.
  - a. The DOE **should** be signed by the Chief Executive and the HDO and declared as a binding instruction for all personnel charged with the development and Design Investigation of Products, Parts, Appliances, AE and ALW.
7. Responsible person(s) for administration of the DO handbook.
8. Amendments.
  - a. Amendment record sheet.
  - b. A system **should** be clearly laid down for carrying out amendments to the DOE, including how amendments are identified within the document.
9. Presentation of DO (including locations).
  - a. An introduction, or foreword, explaining the purpose of the document for the guidance of the organization's own personnel. Brief general information concerning the history and development of the organization and, if appropriate, relationships with other organizations which can form part of a group or consortium, **should** be included to provide background information for the MAA.
10. Scope of work (with identification of type and models of Products, Parts, Appliances, AE and ALW) according to the following classification:
  - a. General areas, eg type of Air Systems.
  - b. Technologies handled by the organization (composite, wood or metallic construction, electronic systems, software, etc).
  - c. A list of types and models for which the design Approval has been granted and for which privileges can be exercised, supported by a brief description for each Products, Parts, Appliances, AE and ALW.
  - d. For Repair design, classification and (if appropriate) Approval activities it is necessary to specify the scope of activity in terms of Products, Parts, Appliances, AE and ALW.
11. Organization structure.
  - a. A description of the organization, its departments, their functions and the names of those in charge: a description of the line management.
  - b. A description of functional relationships between departments, including assigned Responsibilities and delegated authority of all parts of the organization which, taken together, constitute the organization's DMS.
  - c. A general description of the way in which the organization performs its functions in relation to the Airworthiness and continued operational suitability of the product it designs, including co-operation with the Production Organization when dealing with any Airworthiness actions that are related to production of the Product, Part, Appliance, AE and ALW as deemed applicable by the TAA or Commodity CE.
  - d. A chart indicating the functional and hierarchical relationship of the DMS to Management and to other parts of the organization within the DMS and the control of the work of all partners and subcontractors.
12. Human resources.
  - a. A description of the human resources, facilities and equipment, which constitutes the means for design and where appropriate, for ground and flight testing.

- b. An outline of the system for controlling and informing the Staff of the organization of current changes in engineering drawings, specifications and design Assurance procedures.
13. Management staff.
- a. A description of assigned Responsibilities and delegated authority of all parts of the organization which, taken together constitute the organization's DMS; also, the chains of Responsibilities within the DMS, and the control of the work of all partners and subcontractors.
14. Record Keeping.
- a. A description of the recording system for:
- (1) The design, including relevant design information, drawings and test reports, including inspection records of test specimens.
  - (2) The means of compliance.
  - (3) The compliance documentation (compliance check list, reports).
15. Certifying personnel.
- a. The names of the DO authorized signatories. Nominated persons with specific Responsibilities **should** be listed.
- b. A clear definition of the tasks, Competence and areas of Responsibility of the Office of Airworthiness.
- c. A statement of Suitably Qualified and Experienced Person(s) (SQEP) Responsible for making decisions affecting Airworthiness in the organization.
16. Independent system monitoring.
- a. A description of the means by which the continuing evaluation (system monitoring) of the DMS will be performed in order to ensure that it remains effective.
17. Evidence of a QMS Certification (as defined by the Defence Authority for Technical and Quality Assurance Mandatory Requirement for Appropriate Certification) to AS/EN 9100, or to ISO 9001 providing the scope of Certification covers the proposed DO Terms of Approval.
18. A description of the means by which the organization monitors and responds to problems affecting the Airworthiness or operational suitability of its product during design, production and In-Service.
19. A description of the procedures for the establishment and the control of the Maintenance and operating instructions as instructed by the TAA.

## Part 2 - Procedures

20. A general description of the way in which the organization performs all the design functions in relation to Airworthiness, operational Approvals including:
- a. The procedures followed and forms used in the design investigation process to ensure that the design of, or the change to the design of, the product as applicable is identified and documented and complies with the applicable Certification Specifications, including Contracted requirements.
  - b. The procedures for classifying design changes as 'Major' or 'Minor' and for the Approval of Minor Changes, if appropriately privileged to do so.
  - c. The procedures for classifying and approving unintentional deviations from the approved design data occurring in production (Concessions or non-conformances), if appropriate to do so<sup>31</sup>.
  - d. The procedures for re-establishing a Type Design definition for Parts and Appliances of orphaned Products or for obsolete Parts and Appliances, for which the original design drawings or data no longer exist.
  - e. The procedure for classifying and obtaining Approval for Repairs, if appropriately privileged to do so.
  - f. The procedures for the establishment and the control of the Maintenance and operating instructions.
  - g. The procedures for the establishment and the control of the MPTF (Development).

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<sup>31</sup> Refer to Def Stan 05-061 Part 1 – Quality Assurance Procedural Requirements – Concessions.

- h. The procedures and controls related to the utilization of Artificial Intelligence within the design and development process. The DOE **should** make clear where and how this is utilized in relation to the DOs Approval scope.
21. In addition, the organization controls and records the design documentation and means of compliance for:
- a. The basic Product, Part, Appliance, AE and ALW.
  - b. Design changes to the Product, Part, Appliance, AE and ALW.
  - c. The design schemes for Product, Part, Appliance, AE and ALW Repairs.
  - d. The reporting and response to Product, Part, Appliance, AE and ALW failures / malfunctions and defects.
22. The organization **should** identify (by reference or explicit description) the procedures it uses to select subcontractors and manage the design of Products, Parts, Appliances, AE and ALW produced.
23. The organization **should** identify (by reference or explicit description) the procedures it uses to control design production, including production by subcontractors charged with the design and production of Products, Parts, Appliances, AE and ALW and subcontractors charged with production of the approved design. Procedures **should** include:
- a. Changes in manufacturing location, method, source material.
  - b. Where novel production processes such as additive manufacturing are utilized.
24. Control of design subcontractors.
25. Co-ordination with production.
26. Sustained Airworthiness.
- a. A description of the way in which the organization performs its functions in relation to the Sustained Airworthiness of the Product, Part, Appliance, AE and ALW it designs.
27. Collecting / Investigating failures, malfunctions and defects.
- a. A description of the means by which the organization monitors and responds to problems affecting the Airworthiness of its Product, Part, Appliance, AE and ALW.

#### **Guidance Material - Statement of Qualifications and Experience**

28. Three different types of functions are named or implicitly identified, using qualified and experienced personnel:
- a. The Chief Executive.
  - b. The other management staff:
    - (1) HDO.
    - (2) HoA.
    - (3) The HISM.
  - c. Personnel making decisions affecting Airworthiness:
    - (1) CVE.
    - (2) Personnel of the Office of Airworthiness making decisions affecting Airworthiness, especially those linked with the privileges identified in RA 5850(11) approving the classification of changes, Repairs and granting the Approval of Minor Changes.

#### **Chief Executive**

29. The Chief Executive **should** provide the necessary resources for the proper functioning of the DO. A statement of the qualification and experience of the Chief Executive is normally not required.

#### **Other Management Staff**

30. The person or persons nominated **should** represent the management structure of the organization and be responsible through the HDO to the Chief Executive for the execution of all functions as specified in RA 5850. Depending on the size of the organization, the functions can be subdivided under individual managers.

31. The nominated managers **should** be identified and their credentials furnished to the MAA on MAA DAOS Form 4 in order that they can be seen to be appropriate in terms of relevant knowledge and satisfactory experience related to the nature of the design activities as performed by the organization.

32. The Responsibilities and the tasks of each individual manager **should** be clearly defined, in order to prevent uncertainties about the relations, within the organization. Responsibilities of the managers **should** be defined in a way that all Responsibilities are covered.

#### **Personnel making decisions affecting Airworthiness**

33. For personnel making decisions affecting Airworthiness, no individual statement is required. The applicant **should** show to the MAA that there is a system to select, train, maintain and identify them for all tasks where they are necessary. The following guidelines for such a system are proposed:

a. These personnel **should** be identified in the DO handbook, or in a document linked to the DO handbook. This and the corresponding procedures are there to enable them to carry out the assigned tasks and to properly discharge associated Responsibilities.

b. The needs, in terms of quantity of these personnel to sustain the design activities, **should** be identified by the organization.

c. These personnel **should** be chosen based on their knowledge, background and experience.

d. When necessary, complementary training **should** be established, to ensure sufficient background and knowledge in the scope of their Authorization. The minimum standards for new personnel to qualify in the functions **should** be established. The training **should** lead to a satisfactory level of knowledge of the procedures relevant for the role.

e. Training policy forms part of the DMS and its appropriateness forms part of the investigation by the MAA within the organization Approval process and subsequent surveillance of persons proposed by the organization.

f. This training **should** be adapted in response to experience gained within the organization. The organization **should** maintain a record of these personnel which includes details of the scope of their Authorization. The personnel concerned **should** be provided with evidence of the scope of their Authorization. ► The personnel concerned **should** formally accept this Authorization. ◀

34. The following minimum information **should** be kept on record:

a. Name.

b. Experience and training.

c. Position in organization.

d. Scope of the Authorization.

e. Date of first issue of the Authorization.

f. If appropriate, date of expiry of the Authorization.

g. Identification number of the Authorization.

35. The record can be kept in any format and **should** be controlled:

a. Persons authorized to access the system **should** be kept to a minimum to ensure that records are not altered in an unauthorized manner or that such confidential records do not become accessible to unauthorized persons.

b. Personnel can be given access to their own record.

c. Under the provision of RA 5850(7) the MAA **should** have access to the data held in such a system.

d. The organization **should** keep the record for at least 2 years after a person has ceased employment with the organization or revocation of the Authorization, whichever is the sooner.

**Annex C****Internal Procedures for Operating Specific Privileges****Classify changes to Design and Repairs as Minor or Major (refer to RA 5850 paragraph ►72.a◄)****Intent**

1. The DO **should** develop its own internal procedure for the classification of changes to design and Repairs as Minor or Major in order to obtain the associated privilege.

**Content**

2. The procedure **should** address the following points:
- The identification of changes to design or Repairs.
  - Classification.
  - Justification of the classification.
  - Authorized signatories.
  - Supervision of changes to design or Repairs initiated by subcontractors.
3. For changes to design, criteria used for classification **should** be in compliance with RA 5820.
4. For Repairs, criteria used for classification **should** be in compliance with RA 5865<sup>4</sup>.

**Identification of changes to design or Repairs**

5. The procedure **should** indicate how the following are identified:
- Major Changes to design or major Repairs.
  - Those Minor Changes to design or minor Repairs where additional work is necessary to show compliance with the applicable Certification Specifications.
  - Other Minor Changes to design or minor Repairs requiring no further showing of compliance.

**Classification**

6. The procedure **should** show how the effects on Airworthiness are analysed, from the very beginning, by reference to the applicable Certification requirements.
7. If no specific Certification Specifications are applicable to the change or Repairs, the above review **should** be carried out at the level of the Product, Part, Appliance or system where the change or Repair is integrated and where specific Certification Specifications are applicable.

**Justification of the classification**

8. All decisions of classification of changes to design or Repairs as Major or Minor **should** be recorded. These records **should** be easily accessible to the TAA for sample check.

**Authorized signatories**

9. All classifications of changes to design or Repairs **should** be accepted by an appropriate authorized Signatory.
10. The procedure **should** indicate the authorized signatories for the various Products, Parts, Appliances, AE and ALW listed in the Terms of Approval.
11. For those changes or Repairs that are handled by subcontractors, it **should** be described how the DO manages its classification Responsibility.

**Supervision of changes to design or Repairs initiated by subcontractors**

12. The procedure **should** indicate, directly or by cross-reference to written procedures, how changes to design or Repairs **should** be initiated and classified by subcontractors and are controlled and supervised by the DO.

**Approve Minor Changes to design and minor Repairs (refer to RA 5850 paragraph ►72.b◄)****Intent**

13. The DO **should** develop its own internal procedure for the Approval of Minor Changes to design or minor Repairs in order to obtain the associated privilege.

**Content**

14. The procedure **should** address the following points:
- a. Compliance documentation.
  - b. Approval under the DO privilege.
  - c. Authorized signatories.
  - d. Supervision of Minor Changes to design or minor Repairs handled by subcontractors.

**Compliance documentation**

15. For those Minor Changes to design or minor Repairs where additional work to show compliance with the applicable Certification Specifications is necessary, compliance documentation **should** be established and independently checked as required by RA 5850(3).

16. The procedure **should** describe how the compliance documentation is produced and checked.

**Approval under the DO privilege**

17. For those Minor Changes to design or minor Repairs where additional work to show compliance with the applicable Certification Specifications is necessary, the procedure **should** define who the change is approved by under the DO privilege.

18. This document **should** include at least:
- a. Identification and brief description of the change or Repair and reasons for change or Repair.
  - b. Applicable Certification Specifications and methods of compliance.
  - c. Reference to the compliance documents.
  - d. Effects, if any, on limitations and on the approved documentation.
  - e. Evidence of the independent checking function of the showing of compliance.
  - f. Evidence of the Approval under the privilege of RA 5850(11) by an authorized Signatory.
  - g. Date of the Approval.

19. For the other Minor Changes to design or minor Repairs, the procedure **should** define a means to identify the change or Repair and reasons for the change or Repair and to formalise its Approval by the appropriate Engineering Authority under an authorized Signatory. This function can be delegated by the Office of Airworthiness but **should** be controlled by the Office of Airworthiness, either directly or through appropriate procedures of the DO Design Management System.

**Authorized signatories**

20. The persons authorized to sign for the Approval under privilege **should** be identified (name, signature and scope of authority) in appropriate documents that are linked to the DO handbook.

**Supervision of Minor Changes to design or minor Repairs handled by subcontractors**

21. For the Minor Changes to design or minor Repairs that are handled by subcontractors, the procedure **should** indicate, directly or by cross-reference to written procedures how these Minor Changes to design or minor Repairs are approved at the subcontractor level and the arrangements made for supervision by the DO.

**Issue of information and instructions (refer to RA 5850 paragraph ►72.c◄)****Intent**

22. The DO **should** develop its own internal procedure for the issue of information and instructions.

**Content**

23. For the information and instructions issued under this privilege, the DO **should** establish a procedure addressing the following points:
- a. Preparation.
  - b. Verification of technical consistency with corresponding approved change(s), Repair(s) or Approved Data, including effectivity, description, effects on Airworthiness, especially when limitations are changed.
  - c. Verification of the feasibility in practical applications.

d. Authorized signatories.

24. The procedure **should** include the information and instructions prepared by subcontractors or vendors and declared applicable to its Products, Parts, Appliances, AE and ALW by the DO.

#### Statement

25. The statement provided in the information and instructions **should** also cover the information and instructions prepared by subcontractors or vendors and declared applicable to its Products, Parts and Appliances by the DO.

26. The technical content **should** be related to the Design Records and accomplishment instructions and its Approval **should** mean that:

- a. The Design Records has been appropriately approved.
- b. The instructions provide for practical and well-defined installation / inspection methods and, when accomplished, the Products, Parts, Appliances, AE and ALW are in conformity with the approved Design Records.

27. Where appropriate, this technical data **should** be clearly identified within the CofD for the TAA or Commodity CE.

28. Information and instructions related to required actions issued under an AD or SI(T) **should** be submitted to the TAA to ensure compatibility with the AD or SI(T) content and contain a statement that they are, or soon to be, subject to an AD or SI(T) issued.

**To approve the flight conditions under which a MPTF (Development) can be issued (refer to RA 5850 paragraph ▶72.d ◀)**

#### Intent

29. The DO **should** develop its own internal procedure to determine and approve that an Air System can fly under the appropriate restrictions compensating for the lack of an extant RTS.

#### Content

30. The procedure **should** address the following points:

- a. Decision to use the privilege.
- b. Management of the Air System Configuration.
- c. Determination of the conditions that **should** be complied with to perform safe flight.
- d. Documentation of flight conditions substantiations.
- e. Approval under the approved DO privilege, when applicable.
- f. Authorized signatories.

31. The procedure **should** include a decision to determine:

- a. Flights for which this privilege can be exercised.
- b. Flights for which the Approval of flight conditions by the TAA are required.

32. The procedure **should** indicate:

- a. How the Air System, for which an application for a MPTF (Development) is made, is identified and how changes to the Air System **should** be managed.

#### Determination of the conditions that should be complied with to perform safe flight

33. The procedure **should** describe the process used by the DO to justify that an Air System can perform the intended flight. The process **should** include:

- a. Identification of deviations from the extant RTS or applicable Airworthiness requirements.
- b. Analysis, calculations, tests or other means used to determine the conditions or restrictions under which the Air System can perform safe flight.
- c. The establishment of specific Maintenance instructions and conditions to perform these instructions.

- d. Independent technical Verification of the analysis, calculations, tests or other means used to determine under which conditions or restrictions the Air System can perform the intended flight(s) safely.
- e. Statement by the Office of Airworthiness (or equivalent), that the determination has been made iaw the procedure and that the Air System has no features and characteristics making it unsafe for the intended operation under the identified conditions and restrictions.
- f. Approval by an authorized Signatory.

#### **Documentation of flight conditions substantiations**

34. The analysis, calculations, tests, or other means used to determine the conditions or restrictions under which the Air System can perform in flight safely, **should** be compiled in compliance documents. These documents **should** be signed by the author and by the person performing the independent technical Verification.
35. Each compliance document **should** have a number and issue date. The various issues of a document **should** be controlled.

#### **Authorized signatories**

36. The person(s) authorized to sign the Approval form **should** be identified (name, signature and scope of authority) in the procedure, or in an appropriate document linked to the DOE.

#### **Issue a MPTF (Development) iaw RA 5880 (refer to RA 5850 paragraph ▶72.e◀)**

##### **Intent**

37. The DO **should** develop its own internal procedure for the issue of a MPTF (Development)<sup>17</sup> for an Air System it has designed or modified, or for which it has approved under privilege the conditions under which the MPTF (Development) can be issued and when the DO itself is controlling under its DO Terms of Approval the Configuration of the Air System and is attesting conformity with the design conditions approved for the flight.

##### **Content**

38. The procedure **should** address the following points:
  - a. Conformity with approved conditions.
  - b. Issue of the MPTF (Development) under privilege in the scope of the DO Approval.
  - c. Authorized signatories.
  - d. Interface with the TAA for the flight.

##### **Conformity with approved conditions**

39. The procedure **should** indicate how conformity with approved conditions is made, documented and attested by an authorized person.

##### **Issue of the MPTF (Development) under the DO privilege**

40. The procedure **should** describe the process to prepare the MPTF (Development) and how compliance is established before signature of the MPTF (Development).

##### **Authorized signatories**

41. The person(s) authorized to sign the MPTF (Development) under the privilege in the scope of the DO Approval **should** be identified (name, signature and scope of authority) in the procedure, or in an appropriate document linked to the DOE.

##### **Interface with the TAA for the flight**

42. The procedure **should** include provisions describing the communication with the TAA for compliance with the local requirements which are outside the scope of the flight conditions.

## RA 5865 – Repairs (MRP Part 21 Subpart M)

### Rationale

*During the design and development of Air Systems, consideration will be given to the possible need for Repairs. It is important that only approved organizations undertake the design of such Repairs. Failure to correctly control the Repair process may result in unforeseen outcomes. Design Organizations (DO) whose terms of Approval covers the classification or the design of Repairs are subject to certain obligations relating to those Approvals.*

### Contents

- 5865(1): Scope (MRP Part 21.A.431A)
- 5865(2): Demonstration of Capability (MRP Part 21.A.432B)
- 5865(3): Classification of Repairs (MRP Part 21.A.435)
- 5865(4): Repair Design (MRP Part 21.A.433)
- 5865(5): Issue of a Repair Design Approval (MRP Part 21.A.435)
- 5865(6): Production of Repair Parts (MRP Part 21.A.439)
- 5865(7): Repair Embodiment (MRP Part 21.A.441)
- 5865(8): Limitations (MRP Part 21.A. ▶ 443 ◀)
- 5865(9): Unrepaired Damage (MRP Part 21.A.445)
- 5865(10): Record Keeping (MRP Part 21.A.447)

### Regulation 5865(1)

#### Scope (MRP Part 21.A.431A)

5865(1) The term “Repair” **shall** be understood to mean the elimination of damage and / or restoration to an airworthy condition and approved configuration.

The elimination of damage by replacement of Parts or Appliances without the necessity for design activity **shall** be considered as a Maintenance task and therefore require no approval under this Regulation.

### Acceptable Means of Compliance 5865(1)

#### Scope (MRP Part 21.A.431A)

1. Standard Repairs that follow design data published in the Instructions for Sustaining Type Airworthiness (ISTA)<sup>1</sup>, containing acceptable methods, techniques and practices for carrying out and identifying standard Repairs, **should** require no additional approval under this Regulation.

### Guidance Material 5865(1)

#### Scope (MRP Part 21.A.431A)

2. Nil.

### Regulation 5865(2)

#### Demonstration of Capability (MRP Part 21.A.432B)

5865(2) The Type Airworthiness Authority (TAA) or Commodity Chief Engineer (CE) **shall** ensure that the DO holds an extant approval from the MAA under the Design Approved Organization Scheme (DAOS) covering the relevant scope of activities<sup>2</sup>.

<sup>1</sup> Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

<sup>2</sup> Refer to RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).

**Acceptable Means of Compliance 5865(2)**

**Demonstration of Capability (MRP Part 21.A.432B)**

3. For Civilian-Owned / Civilian Operated Air Systems the Air System Sponsor has the opportunity to split Type Airworthiness (TAW) responsibility, with regards to Repairs, between the TAA and a Type Airworthiness Manager (TAM), the TAA **should** provide advice to the Sponsor on the most appropriate split of TAW Repair responsibilities<sup>3</sup>, noting that a TAM **should not** authorize major Repairs.
4. The TAA or Commodity CE **should** enable a direct interface between the Product, Part, Appliance, Airborne Equipment and Air Launched Weapons DO and the DO designing the Repair for the availability of appropriate Design Records and the timely provision of Design advice when requested by the DO designing the Repair.
5. The DO **should** have the appropriate Design Records and staff to Design and conduct airworthy Repair schemes.

**Guidance Material 5865(2)**

**Demonstration of Capability (MRP Part 21.A.432B)**

6. Nil.

**Regulation 5865(3)**

**Classification of Repairs (MRP Part 21.A.435)**

- 5865(3) A Repair **shall** be classified major or minor either by the TAA or by a privileged DO ► **within its scope as recorded in its terms of Approval** ◀<sup>4</sup>.

**Acceptable Means of Compliance 5865(3)**

**Classification of Repairs (MRP Part 21.A.435)**

7. A new repair **should** be 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.
8. A Repair **should** be 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 (ie unusual material selection, heat treatment, material processes, jiggling diagrams, etc).
9. Repairs that require a re-assessment and re-evaluation of the original certification substantiation data to ensure that the Air System still complies with all the relevant requirements **should** be considered major Repairs.
10. ► **DOs without privileges** ◀ **should** provide a recommended classification, with supporting justification, to the TAA for all ► ◀ Repairs.
11. For major Repairs, the TAA **should** consider if a Change to the Type Design<sup>5</sup> is a better solution than repairing the Air System.

**Guidance Material 5865(3)**

**Classification of Repairs (MRP Part 21.A.435)**

**Clarification of the term's major / minor**

12. It is understood that not all the Certification substantiation data will be available to those persons / organizations 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.

<sup>3</sup> Where the Air System is not UK MOD-owned, Type Airworthiness (TAW) management regulatory responsibility by either the TAA or TAM needs to be agreed within the Sponsor's approved model; refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems, or refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems. Dependant on the agreed delegation of TAW responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

<sup>4</sup> ► **For the DO scope of privileges, and the invoking of privileges refer to** ◀ RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).

<sup>5</sup> Refer to RA 5820 – Changes in Type Design.

**Guidance  
Material  
5865(3)**

**Airworthiness concerns for major / minor classification**

13. The following ►need◄ to be considered for the significance of their effect when classifying Repairs. If the effect is considered to be significant then the Repair ►will◄ be classified major. The Repair may be classified as minor where the effect is known to be without appreciable consequence. Considerations for classifying Repairs major / minor are not limited to those listed below:

- 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 ►need◄ to be assessed for their effect upon the structural performance.
- b. **Weight and Moment.** The weight of the Repair may have a greater effect upon smaller Air Systems as opposed to larger Air System's. The effects to be considered are related to overall Centre of Gravity (CofG) and 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.
- c. **Systems.** Repairs to any elements of a System ►need◄ to 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 are also to be considered as above, (for example: airframe Repair in the area of a static port).
- d. **Operational characteristics** Changes may include:
  - (1) Stall characteristics.
  - (2) Handling.
  - (3) Performance and drag.
  - (4) Vibration.
- e. **Other characteristics**
  - (1) Changes to load path and load sharing.
  - (2) Change to noise and emissions.
  - (3) Fire protection / resistance.

14. Examples of major Repairs:

- a. A Repair that requires a permanent additional inspection to the approved Maintenance schedule, necessary to ensure the TAw of the product.
- b. A Repair to life limited or critical parts.
- c. A Repair that introduces a change to the Aircraft Flight Manual<sup>6</sup>.

**Note:**

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 TAw do not cause classification as major of the associated Repair.

**Regulation  
5865(4)**

**Repair Design (MRP Part 21.A.433)**

5865(4) The applicant for approval of a Repair Design shall demonstrate its compliance with the Type Certification Basis (TCB) plus any amendments to the TCB.

<sup>6</sup> The Aircraft Flight Manual contains the limitations within which the Air System ►will◄ be considered airworthy, and instructions and information necessary to the flight crew for the safe operation of the Air System ie the Aircrew Manual in military terms.

**Acceptable  
Means of  
Compliance  
5865(4)****Repair Design (MRP Part 21.A.433)**

15. A Repair to a (European) Technical Standard Order ((E)TSO)<sup>7</sup> article **should** be treated as a change to the (E)TSO design and **should** be processed in accordance with (iaw) the issuing authority procedures.

16. The applicant for approval of a Repair design **should** submit all necessary substantiation data (eg analysis, calculations or tests) to the TAA<sup>8</sup>.

17. The TAA **should** consider the implications of a Repair scheme embodied that does not restore static strength, stiffness, fatigue life, functionality and Airworthiness to the original design levels, in order that consideration can be given to the need for an amendment to the Air System Release To Service (RTS).

18. Any Repair not meeting design limitations **should** be recorded and agreed with the TAA.

**Repair schemes**

19. The DO **should** respect any extant design limits and comply with the following requirements:

a. The DO **should** notify the TAA where an RTS limitation may be necessary following the incorporation of an approved Repair scheme.

b. Where there is a Repair, any limitations prescribed by the Air System DO or TAA for structure, aerodynamics, weight, CofG, and Systems (including software) **should** be respected. Designs **should not** transgress such limitations without the written technical agreement of the Air System DO for the Air System concerned.

c. Arrangements **should** exist for all Repair schemes, where technical advice or written technical agreement is required, as defined by paragraph 19b above, to be passed to the Air System DO. The Air System DO **should** provide advice as to whether or not the proposed Repair transgresses the prescribed design limitations.

d. The DO **should** seek the written approval of the TAA to design any Repair where the Air System DO advise that prescribed design limitations will be transgressed.

20. In designing Air System Repairs the DO **should** comply with the following requirements:

a. The Air System DO **should** be consulted by the DO designing the Repair when there is no valid precedent, principle, DO Repair Instruction or sufficient evidence to prove restoration with the TCB.

b. A complete list of all Repair schemes, and consequently changes to the Air System build standard, **should** be forwarded to the TAA for the Air System affected, for configuration management purposes and Maintenance of any Design Records.

c. Consideration **should** be given to whether the approved Repair scheme has a sufficiently wide application to be included in the ISTA<sup>1</sup>.

21. Repair schemes **should** individually identify the designing DO.

**Repair Design substantiation data**

22. Relevant substantiation data associated with the design of a new major Repair and record keeping **should** include:

a. Damage identification and reporting source.

b. Major Repair design approval sheet identifying applicable specifications and references of justifications.

c. Repair drawing and / or instructions and scheme identifier.

<sup>7</sup> The (E)TSO abbreviation **should** be taken to mean a TSO from the USA or a European TSO.

<sup>8</sup> Note not applicable for minor Repairs approved under privilege.

**Acceptable Means of Compliance 5865(4)**

- d. Correspondence with the TAA, DO or (E)TSO approval holder, if its advice on the design has been sought.
  - e. Structural justification (static strength, fatigue, damage tolerance, flutter etc) or references to this data.
  - f. Effect on the Air System, engines and / or Systems (performance, flight handling, etc as appropriate).
  - g. Effect on the Maintenance schedule.
  - h. Effect on Airworthiness limitations, the Flight Manual and the Operating Manual.
  - i. Weight and balance change.
  - j. Special test requirements.
23. Relevant minor Repair documentation **should** include paragraphs 22a and 22c. Other points of paragraph 22 **should** be included where necessary. If the Repair is outside the approved Type Design, justification for classification **should** be provided.

**Guidance Material 5865(4)**

**Repair Design (MRP Part 21.A.433)**

24. The term 'Repair scheme' will be taken to include 'Repair instructions'.
25. When manuals and other instructions for TAw are 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.

**Repair schemes**

26. Repair schemes which restore the original structural designer's intent inherently meet the full load spectrum of the Air System design. A Repair scheme is not a Modification and therefore a full Safety Assessment (SA), iaw Defence Standard (Def Stan) 00-056<sup>9</sup>, is not required in order to substantiate the Repair's Structural Integrity (SI) and Airworthiness.
27. A list of DO approved Repair schemes which have not been included in the ISTA will be retained in a master list forming part of the Design Records.

**Regulation 5865(5)**

**Issue of a Repair Design Approval (MRP Part 21.A.435)**

- 5865(5) The TAA **shall** ensure that the Repair design complies with the applicable TCB prior to approval.

**Acceptable Means of Compliance 5865(5)**

**Issue of a Repair Design Approval (MRP Part 21.A.435)**

28. The approval for major Repair designs **should** be issued only:
  - a. By the TAA.
  - b. For minor Repairs by the TAA or by an appropriately privileged DO.
29. In order for the TAA to approve Repair designs the following **should** be applicable:
  - a. The TCB for the Product, Part or Appliance to be repaired has been identified together with all other relevant requirements.
  - b. All records and substantiation data including documents showing compliance with all relevant Certification Specifications are held for review by the MAA.
30. All major Repairs **should** be accompanied with a Certificate of Design (CofD) and installation instructions<sup>10</sup>.

<sup>9</sup> Refer to Def Stan 00 – 056 – Safety Management Requirements for Defence Systems.

<sup>10</sup> Note: A minor Repair has no appreciable effect on Airworthiness as it is returning the item to the approved certification basis, a CofD will not be required for a minor Repair.

**Acceptable  
Means of  
Compliance  
5865(5)**

31. A summary list of all Repair approvals **should** be provided to the TAA on a regular basis as agreed.

**Air Systems Type Certified by the MAA**

32. The TAA **should** seek MAA approval in cases of major Repairs proposed by DO approval holders, if the major Repair is:
- Related to new interpretation of the Certification Specifications as used for Type Certification.
  - Related to different means of compliance from that used for Type Certification.
  - Related to the application of Certification Specifications different from that used for Type Certification.

**Guidance  
Material  
5865(5)**

**Issue of a Repair Design Approval (MRP Part 21.A.435)**

33. **Approval by DO.** Approval of Repairs through the use of privileges invoked by the TAA<sup>1</sup>, means an approval issued by the DO without requiring TAA involvement. The MAA will monitor application of this procedure within the surveillance plan for the relevant organization. When the organization exercises this privilege, the Repair release documentation ►will◄ clearly state that the privilege has been identified under their DAOS approval.

34. **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 DO. 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.

35. **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 ►will◄ be classified under RA 5865(3) and the service period defined at the approval of the Repair and recorded in the Technical Log.

36. **Fatigue and damage tolerance.** When the repaired Product is released into service before the fatigue and damage tolerance evaluation has been completed, the release ►will◄ be for a limited period, defined at the issue of the Repair.

**Regulation  
5865(6)**

**Production of Repair Parts (MRP Part 21.A.439)**

- 5865(6) Parts and Appliances to be used for the Repair **shall** be manufactured iaw production data based upon all the necessary Design data as provided by the DO:
- By an appropriately recognized<sup>11</sup> Production Organization (PO); or
  - By an Approved Maintenance Organization (AMO)<sup>12</sup>, or a Military Maintenance Organization (MMO)<sup>13</sup>.

**Acceptable  
Means of  
Compliance  
5865(6)**

**Production of Repair Parts (MRP Part 21.A.439)**

37. Parts or Appliances used for the Repair **should** be appropriately marked<sup>14</sup>.

<sup>11</sup> Refer to RA 5835 – Production Organizations (MRP Part 21 Subpart G).

<sup>12</sup> Refer to RA 4800 to RA 4821 (MRP Part 145).

<sup>13</sup> Refer to RA 4809 – Acceptance of Components (MRP 145.A.42).

<sup>14</sup> Refer to RA 5885 – Identification of Products, Parts and Appliances (MRP Part 21 Subpart Q).

<b>Guidance Material 5865(6)</b>	<b>Production of Repair Parts (MRP Part 21.A.439)</b> 38. Nil.
<b>Regulation 5865(7)</b>	<b>Repair Embodiment (MRP Part 21.A.441)</b> 5865(7) The embodiment of a Repair <b>shall</b> be made: a. By an appropriately recognized <sup>11</sup> PO; or b. By an AMO <sup>15</sup> or MMO using the necessary installation instructions issued by the TAA or a privileged DO <sup>16</sup> .
<b>Acceptable Means of Compliance 5865(7)</b>	<b>Repair Embodiment (MRP Part 21.A.441)</b> 39. The TAA or a privileged DO <b>should</b> transmit to the organization performing the Repair all the necessary installation instructions.
<b>Guidance Material 5865(7)</b>	<b>Repair Embodiment (MRP Part 21.A.441)</b> 40. Nil.
<b>Regulation 5865(8)</b>	<b>Limitations (MRP Part 21.A.443)</b> 5865(8) The instructions and any limitations for a Repair design <b>shall</b> be submitted by the Repair design approval holder to the TAA.
<b>Acceptable Means of Compliance 5865(8)</b>	<b>Limitations (MRP Part 21.A.443)</b> 41. Any limitations associated with major Repairs <b>should</b> be identified in the CofD <sup>17</sup> .
<b>Guidance Material 5865(8)</b>	<b>Limitations (MRP Part 21.A.443)</b> 42. Nil.
<b>Regulation 5865(9)</b>	<b>Unrepaired Damage (MRP Part 21.A.445)</b> 5865(9) When a damaged Product, Part or Appliance is left unrepaired and is not covered by previously approved data, the TAA or a privileged DO <b>shall</b> approve its continued use.
<b>Acceptable Means of Compliance 5865(9)</b>	<b>Unrepaired Damage (MRP Part 21.A.445)</b> 43. When the DO evaluates the unrepaired damage for its Airworthiness consequences, they <b>should</b> inform the TAA. 44. When the organization evaluating the unrepaired damage is neither the TAA nor the DO, this organization <b>should</b> justify that the information on which the evaluation is based is adequate either from its own resources or through an arrangement with the original DO. 45. The TAA <b>should</b> evaluate the unrepaired damage for Airworthiness consequences and if in any doubt, <b>should</b> consult with the DO.

<sup>15</sup> Appropriately approved iaw RA 4800 – RA 4821 (MRP Part 145).

<sup>16</sup> Where there is a Continuing Airworthiness Management Organization, these instructions ►need◄ to be transmitted through them to the AMO or MMO.

<sup>17</sup> Refer to RA 5103 – Certificate of Design.

**Guidance  
Material  
5865(9)****Unrepaired Damage (MRP Part 21.A.445)**

46. This is not intended to supersede the normal Maintenance practices defined by the DO, (eg blending out corrosion and re-protection, stop drilling cracks, etc), but addresses specific cases not covered in the ISTA.

47. A damaged Product, Part or Appliance that is left unrepaired can be approved for its continued use by a TAA.

**Regulation  
5865(10)****Record Keeping (MRP Part 21.A.447)**

5865(10) For each Repair, all relevant design information, drawings, test reports, instructions and limitations issued iaw RA 5865, 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 TAA.

b. Be retained by the Repair design approval holder in order to provide the information necessary to ensure the TAW of the repaired Products, Parts or Appliances.

**Acceptable  
Means of  
Compliance  
5865(10)****Record Keeping (MRP Part 21.A.447)**

48. Nil.

**Guidance  
Material  
5865(10)****Record Keeping (MRP Part 21.A.447)**

49. Nil.

Draft for NPA