

**NPA/24/50**

**Title of Proposal:** MRP 5000 Series Bi-ennial up-issue

**RA(s) or Manual Chapter(s):** RA5010, RA5013, RA5301, RA5724, RA5726, RA5805, RA5820, RA5850 DAOS Form 4, RA5850 DAOS Form 82.

**Organizations and / or business sectors affected:** DE&S DTs and DOs.

**RFC Serial No:** RFC\_2018\_095, 2023\_117, 2023\_241, 2024\_065, 2024\_076, 2024\_098, 2024\_111, 2024\_130, 2024\_138, 2024\_164, 2024\_165, 2024\_185, 2024\_186, 2024\_189.

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N/A	N/A	N/A	N/A

**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 5010 : Para 2.f – reverted to original text (as was in Initial Issue). No change in para numbering.
- RA 5013 : Deletion of Commodity Chief Engineer definition (para 2) – now defined within MAA02. Para 2 split in to 2 paras - new para 3 . Para numbering from para 4 onwards unchanged.
- RA 5301 : Update in terminology. Para numbers changed from para 17 onwards.
- RA 5724 : Minor Textual updates. Re-written para 4 – Air System life extension (OSD extension) to be treated as a Major Change to the Type Design. No change in para numbering.
- RA 5726 : Re-written para 19.g. Minor update to para 44. Minor textual update to para 52.
- RA 5805 : Removal of the term ‘unsafe condition’ from the regulation paragraph. No change in para numbering.
- RA 5820 : Deletion of para 6. Para 6 contents were transferred in to the Form 30 during the last 5000 series up-issue (May 24). New para 10 - TCB for a Major Type Design change limited to 5 years before the change is made to the MTC / RMTC. Para numbers change from para 10 onwards.
- RA 5850 DAOS Form 4 : Instructions for Use and standard form header inserted.
- RA 5850 DAOS Form 82 : Change of wording in 2.1, 2.3, 2.4, 2.6.

**Impact Assessment:** Minor

**Consultation Period Ends:** 1st Nov 2024

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*

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## RA 5010 - Type Airworthiness Strategy

### Rationale

A Type Airworthiness (TAW) Strategy is required for each Air System type to set down the intended approach to Type-related Air Safety and the demonstration and sustainment of TAW through life. Not having the TAW Strategy in place may result in key stakeholders not being sufficiently aware of the TAW management details for each Air System, resulting in the lack of evidence necessary to support TAW decision making. This Regulatory Article (RA) sets out the requirements and processes necessary to support the TAW Strategy.

### Contents

### 5010(1): Type Airworthiness Strategy

### Regulation 5010(1)

### Type Airworthiness Strategy

5010(1) The TAW Authority (TAA) or TAW Manager (TAM)<sup>1</sup> **shall** produce and maintain a through life TAW Strategy for an Air System<sup>2</sup> that supports the Air System Safety Case (ASSC)<sup>3</sup>.

### Acceptable Means of Compliance 5010(1)

### Type Airworthiness Strategy

1. Under arrangements for Civilian Operated Air Systems which invoke a TAA and TAM, the TAA **should** prepare a TAW Strategy. Under arrangements for Special Case Flying<sup>1</sup>, the TAM **should** prepare a TAW Strategy.
2. The TAW Strategy **should** be:
  - a. Approved by the Defence Equipment and Support (DE&S) Operating Centre Director (OCD) or Sponsor at project initiation.
  - b. Updated as the project matures in line with ASSC<sup>3</sup> requirements and to support initial Release To Service, ► **Military Permit To Fly (MPTF) (Development)**, ◀ MPTF (In-Service) or MPTF (Special Case Flying) issue.
  - c. Reviewed on the succession of the TAA, TAM, OCD or Sponsor, or on the requirement to undertake significant TAW Strategy updates. The review **should** ensure that the TAW strategy remains valid and continues to support the ASSC<sup>3</sup> argument(s).
  - d. Reviewed in line with the ASSC.
  - e. Updated by the TAA or TAM and approved by the OCD or Sponsor.
  - f. Signed by TAA or TAM, and approved by the OCD or Sponsor, within 6 months of ► **any change of incumbent**. ◀
3. The TAA or TAM **should** ensure that:
  - a. Key stakeholders<sup>4</sup> are invited to comment on initial issue of the TAW Strategy and on significant update<sup>5</sup>, prior to approval.
  - b. Key stakeholders are informed of routine updates<sup>5</sup> to the TAW Strategy when approved by OCD or Sponsor.

<sup>1</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.

<sup>2</sup> Open Category and Specific S1 sub-category Remotely Piloted Air Systems (RPAS) do not require a TAW Strategy. Specific S2 sub-category and Certified Category RPAS require a TAW Strategy. Refer to RA 1600 Series – Remotely Piloted Air Systems.

<sup>3</sup> Refer to RA 1205 – Air System Safety Cases.

<sup>4</sup> Key stakeholders include (but are not limited to) the Senior Responsible Owner (SRO), Aviation Duty Holders (ADH), Accountable Manager (Military Flying) (AM(MF)), the relevant Release To Service Authority (RTSA), DE&S Airworthiness Team and the ► **Military Aviation Authority (MAA) via [DSA-MAA-OA-ACC@mod.gov.uk](mailto:DSA-MAA-OA-ACC@mod.gov.uk)**. ◀

<sup>5</sup> The definition of significant and routine update to TAW Strategy is at the discretion of the OCD or Sponsor, as described in the Guidance Material of this RA.

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4. The TAA or TAM **should** ensure that the TAw Strategy includes:
- a. A clearly defined context, scope and boundary, including a declaration of the In-Service Date, Out of Service Date, and the intended military use of the Air System<sup>6</sup> ▶ ◀.
  - b. The delegation of Responsibilities between the TAA and TAM, if applicable.
  - c. The approach to establishing and sustaining an effective Air Safety Management System (ASMS)<sup>7</sup> with appropriate interfaces.
  - d. Detail on the approach to establishing the Type Design<sup>8</sup> and managing in-Service design changes<sup>9, 10</sup>.
  - e. The approach for ensuring the use of Airworthiness competent organizations and persons<sup>11, 12</sup>.
  - f. The approach to assurance and review of TAw management activities, including Quality Management Systems, Independent Technical Evaluation ▶<sup>13</sup> ◀, Independent Safety Auditing ▶<sup>13</sup> ◀ and independent review of publications.
  - g. Detail on the approach to delivering and sustaining the Air System TAw through proactive Integrity Management<sup>14</sup>, reactive Fault and Occurrence investigation<sup>15</sup> and Hazard Management activity<sup>16</sup>.
  - h. Identification and approach to integration of equipment and systems that are included within the Type Airworthiness Safety Assessment (TASA)<sup>16, 17</sup> but are managed or supplied by other TAw organizations<sup>18</sup>.
  - i. The approach to Configuration Management<sup>19</sup> and Air System Document Set management<sup>20, 21</sup>.
  - j. The approach to Airworthiness Information Management<sup>22</sup> and Data Exploitation<sup>23</sup>.
  - k. The approach to production acceptance, including an overview of oversight and how production concessions and Waivers will be managed<sup>24</sup>.
  - l. The approach for assessing and ensuring sufficient human and capital resource to conduct the required tasks.

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**Type Airworthiness Strategy**

5. The TAw Strategy facilitates the following management elements:
- a. Identification and development of project-specific TAw and Safety-related standards, guidelines, procedures and training, including addressing all Airworthiness related standards that the TAA or TAM expects to employ to demonstrate compliance with the Type Certification Basis<sup>8, 9</sup>. Where a Military

<sup>6</sup> Including sufficient Air Safety consideration of the integration of equipment to support Air System operation. Refer to RA 1340 – Equipment Not Basic to the Air System.

<sup>7</sup> Refer to RA 1200 – Air Safety Management and RA 5011 – Type Airworthiness Safety Management System.

<sup>8</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

<sup>9</sup> Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D).

<sup>10</sup> Refer to RA 5305 – In-Service Design Changes.

<sup>11</sup> Refer to RA 1002 – Airworthiness Competent Persons.

<sup>12</sup> Refer to RA 1005 – Contracting with Competent Organizations.

<sup>13</sup> ▶ Refer to the [Knowledge In Defence \(KiD\) website](#). ◀

<sup>14</sup> Refer to RA 5726 – Integrity Management.

<sup>15</sup> Refer to RA 5825 – Fault Reporting and Investigation.

<sup>16</sup> Refer to RA 5011 – Type Airworthiness Safety Management System.

<sup>17</sup> Refer to RA 5012 – Type Airworthiness Safety Assessment.

<sup>18</sup> Refer to RA 5013 – Air Safety Management of Equipment and Commodity Items.

<sup>19</sup> Refer to RA 5301 – Air System Configuration Management.

<sup>20</sup> Refer to RA 1310 – Air System Document Set

<sup>21</sup> Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

<sup>22</sup> Refer to RA 1223 – Airworthiness Information Management

<sup>23</sup> Refer to RA 1207 – Air Safety Data Management and Exploitation

<sup>24</sup> Refer to RA 5835 – Production Organizations ▶ (Part 21 Subpart G). ◀

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Type Certificate is not awarded, the approach is likely to be based on Defence Standard (Def Stan) 00-970<sup>25</sup> unless otherwise agreed with the MAA.

- b. Ensuring that resource provision is sufficient to produce and sustain an airworthy design by carrying out necessary engineering and Safety Management activities.
- c. Articulating the relationship (contractual or otherwise) with, and requirements placed upon, stakeholder organizations for the generation of the TASA. These may include the Front Line Command (FLC), Capability SRO, current or future ADH or AM(MF), the Design and Production Organizations, the appropriate Test and Evaluation (T&E) organization<sup>26</sup>, the Military Continuing Airworthiness Manager (Mil CAM), Defence Aircrew Publications Squadron, and other relevant contractors and other defence equipment organizations (eg Commodity Delivery Teams<sup>18</sup>).
- d. Where the TAA or TAM proposes either using evidence supporting a civil Type Certificate or claiming credit for the certification activities of another military regulator, details will be provided in the TAw Strategy, along with a statement of intent to use MAA recognition if applicable.

**Users of the TAw Strategy**

6. The TAA or TAM will generate their TAw Strategy to guide their planning of the acquisition of and support to the Air Systems under their Responsibility. The TAA or TAM will use the Strategy to lay out how they will satisfy their Airworthiness Responsibilities.
7. The associated OCD or Sponsor will use the document to approve the TAA or TAM approach to delivering airworthy Air Systems. The OCD or Sponsor's Approval of the TAw Strategy represents their endorsement that TAw aspects of the programme are viable.

**The Airworthiness Strategy through the CADMID/T<sup>27</sup> Cycle**

8. The TAw Strategy is particularly important in the early stages of the CADMID/T cycle. The first issue of the TAw Strategy will be available before Outline Business Case (OBC). Thereafter it will evolve throughout the life of the project, remaining relevant through to disposal.
9. At OBC, the TAw Strategy is expected to indicate basic details of the policies and approach that the TAA or TAM intends to adopt throughout the life of the Air System. By Full Business Case (FBC), the TAw Strategy is expected to be further refined to accurately provide the context, policies and processes adopted by the TAA or TAM.
10. The TAA or TAM requirement to review the TAw Strategy in line with ASSC review will need to be an auditable review, but may conclude that an update to the TAw strategy is not required at time of review.
11. The definition of a significant update to TAw Strategy (which therefore requires stakeholder comment before approval) is at the discretion of the OCD or Sponsor, but is likely to include any of the following circumstances:
  - a. Changes in scope or approach to the delivery of TAw (perhaps because the assumptions that were made in the original TAw Strategy proved to be incorrect).
  - b. Changes in commercial arrangements that have the potential to impact Air Safety.
  - c. Significant changes in the Air System operating environment and / or usage.

<sup>25</sup> Refer to Def Stan 00-970 – Certification Specifications for Airworthiness.

<sup>26</sup> Refer to RA 2370 – Test and Evaluation.

<sup>27</sup> The Concept, Assessment, Demonstration, Manufacture, In-Service and Disposal (CADMID) Cycle. In some cases, Termination of service is more appropriate than Disposal.

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- d. Planning the delivery of Airworthiness in a new stage of the CADMID/T cycle.
- e. Significant changes in legislation, Regulation or policy.

Draft for NPA

## RA 5013 - Air Safety Management of Equipment and Commodity Items

### Rationale

Equipment may be provided to support operation of an Air System. The organization providing the equipment is required to operate a Safety Management System (SMS)<sup>1</sup> which specifically supports the Type Airworthiness Safety Assessment (TASA)<sup>2</sup> and / or Air System Safety Case (ASSC)<sup>3</sup> and which interfaces with adjoining Air Safety Management Systems (ASMS). An ineffective SMS and incomplete Safety Assessment are likely to compromise safe operation and Hazard management, which may undermine the ASSC and thus Air Safety. This Regulatory Article (RA) sets out the requirements for an independently assured equipment-specific SMS and Safety Assessment in support of a TASA and / or ASSC.

### Contents

#### Definitions Relevant to this RA

#### 5013(1): Air Safety Management of Equipment and Commodity Items

#### 5013(2): Air Safety Assessment of Equipment and Commodity Items

### Definitions

#### Definitions Relevant to this RA

- ▶◀

### Regulation 5013(1)

#### Air Safety Management of Equipment and Commodity Items

5013(1) The Commodity Chief Engineer (CE) **shall** be responsible for the Air Safety Management of the equipment.

### Acceptable Means of Compliance 5013(1)

#### Air Safety Management of Equipment and Commodity Items

- The Commodity CE ▶◀ **should** hold a Letter of Air Safety Notification (LoAN) ▶◀<sup>5</sup>◀.
- ▶ The Commodity CE **should** develop, own and manage an SMS which is described in a Safety Management Plan (SMP) and articulates the requirements of RA 1200<sup>1</sup>. ◀
- During the generation and management of the SMP, the Commodity CE **should** consult with all relevant stakeholders<sup>6</sup>.
- The SMP **should** include:
  - Description of the Safety requirements, targets and attributes.
  - Detail on the scope and boundaries between the DT and all interfacing DTs and organizations.
  - Detail on the approach to establishing and maintaining safe equipment design.
  - Detail on the arrangements for effective integration and coordination with relevant TAw SMS<sup>7</sup> or ASSC requirements.

<sup>1</sup> Refer to RA 1200 – Air Safety Management.

<sup>2</sup> Refer to RA 5012 – Type Airworthiness Safety Assessment.

<sup>3</sup> Refer to RA 1205 – Air System Safety Cases.

<sup>4</sup> Where the Air System is not UK MOD-Owned, ownership of regulatory responsibility by either the Type Airworthiness Authority (TAA) or Type Airworthiness Manager (TAM) needs to be agreed within the Sponsor's approved model for Type Airworthiness (TAw) management; 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 the TAM or Competent organization supporting the TAM may be read in place of Delivery Team (DT) as appropriate throughout this RA.

<sup>5</sup> Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility.

<sup>6</sup> ▶◀ Stakeholders, ▶ dependent ◀ on the phase of the project and approach to delivery, are likely to include the Senior Responsible Officer (SRO), Aviation Duty Holder (ADH), Accountable Manager (Military Flying) (AM(MF)), Defence Equipment and Support (DE&S) Operating Centre Director (OCD), Sponsor, ▶◀ relevant TAAs, TAMs and Commodity CEs.

<sup>7</sup> Refer to RA 5011 – Type Airworthiness Safety Management System.

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- e. Detail on the arrangements for effective integration and coordination with relevant Safety Management documentation generated by the Design Organization (DO)<sup>8</sup> to cover their activities<sup>9</sup>.
- f. Detail on the approach to delivering and sustaining equipment Safety through proactive Integrity Management<sup>10</sup> and reactive Fault and Occurrence investigation.
- g. The approach to Configuration Management, Air System Document Set management<sup>11</sup>, Air Safety Data Management and Exploitation<sup>12</sup>.
- h. The approach to Assurance and review of Safety Management activities, including Quality Management Systems, Independent Technical Evaluation<sup>13</sup>, Independent Safety Auditing<sup>13</sup> and independent review of publications.

**Hazard Management Process**

- 6. As part of the SMP, the Commodity CE **should** implement a process to identify and review all Hazards within scope of the SMP.
- 7. The Hazard management process **should** account for Hazards identified through certification activity, in-service civil or military usage, and any emerging Hazards.
- 8. The Hazard management process **should** be conducted in conjunction with the relevant TAA / TAM, in line with the recognized principles of Risk Management<sup>14</sup>.
- 9. As a subset of this Hazard management process<sup>15</sup>, when a Hazard is identified that may lead to a Risk to Life (RtL)<sup>16</sup>, the Commodity CE **should** communicate this to the relevant TAA / TAM<sup>17</sup> and / or the ADH / AM(MF). In either case, formal acknowledgement **should** be obtained.

**Safety Panel**

- 10. The Commodity CE **should** establish and chair a Safety Panel every 6 months, with the appropriate stakeholder attendance, to coordinate and manage the SMS. The Safety Panel **should** review the continued validity of the Safety Assessment Report and the sufficiency of supporting products<sup>18</sup>.
- 11. The Commodity CE **should** ensure that the Safety Panel:
  - a. Reviews Hazard management activities and ensures ADH / AM(MF) agreement that Hazards which may lead to a RtL have been communicated.
  - b. Reviews relevant design changes<sup>19</sup> for impact on activities within the SMP.
  - c. Provides advice, depending on the phase of the project, to the appropriate SRO, Operating Duty Holder (ODH), AM(MF), TAA, TAM and their staff in support of the ASSC.
  - d. Reviews independent evaluation and Assurance activity.
  - e. Reviews Fault Reporting<sup>20</sup>, Occurrence Reporting<sup>21</sup>, Data Exploitation<sup>12</sup> and Air System Integrity Management activity<sup>17</sup>, including the impact of changes to the Air system Statement of Operating Intent and Usage (SOIU).

<sup>8</sup> The DO is required to develop an SMP in accordance with (iaw) Def Stan 00-056.

<sup>9</sup> Refer to RA 1014 – Design Organizations and Co-ordinating Design Organizations – Airworthiness Responsibilities.

<sup>10</sup> ▶ Refer to RA 5726 – Integrity Management. ◀

<sup>11</sup> Refer to RA 1310 – Air System Document Set.

<sup>12</sup> Refer to RA 1207 – Air Safety Data Management and Exploitation.

<sup>13</sup> ▶ Refer to – <https://www.gov.uk/guidance/knowledge-in-defence-kid>. ◀

<sup>14</sup> Refer to Manual of Air Safety (MAS), Figure 4 – The Risk Management Cycle.

<sup>15</sup> RA 1210 specifically excludes damage to assets where no injury results, but Hazards leading to such damage still require management.

<sup>16</sup> Refer to RA 1210 – Ownership and Management of Operating Risk (Risk to Life).

<sup>17</sup> Where the Safety Assessment supports the TASA.

<sup>18</sup> Refer to RA 5013(2): Air Safety Assessment of Equipment and Commodity Items.

<sup>19</sup> Refer to RA 5305(2): In-Service Design Changes – Safety.

<sup>20</sup> Refer to RA 5825 – Fault Reporting and Investigation.

<sup>21</sup> Refer to RA 1410 – Occurrence Reporting and Management.



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- f. Reviews the Support Policy Statement (SPS) or information contributing to the Air System SPS<sup>22</sup>.
- g. Co-ordinates the SMP.

12. Regardless of whether equipment or commodity items are discussed within the Type Airworthiness Safety Panel associated with the organization receiving the equipment, the Commodity CE **should** still conduct their own Safety Assessment review through a separate Safety Panel.

13. To support the Safety Panel, the Commodity CE **should** ensure they are suitably represented at equivalent DO Safety Management meetings<sup>23</sup>.

14. The Commodity CE **should** ensure either that a Commodity SPS<sup>22</sup> is produced, or that the required information is provided to support the Air System SPS.

**Independent Audit**

15. The Commodity CE **should** ensure that the SMS and its outputs are subjected to Audit iaw Def Stan 00-056, by a Competent and suitably qualified Independent Safety Auditor (ISA), independent of the outcome or processes they are reviewing.

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**Air Safety Management of Equipment and Commodity Items**

16. A Commodity DT SMS **▶ must ◀** appropriately address the requirements of RA 1200<sup>1</sup>. RA 5013(1) contains specific requirements for a Commodity DT SMS, which augment and complement the standing requirements of RA 1200.

17. Where the TAM has regulatory responsibility for the Air System, they are expected to ensure appropriate SMS arrangements, including the management of Hazards, are in place to meet the requirements of RA 1200 for commodity items not provided by a DE&S Commodity DT.

18. A TAW Strategy is not mandated for equipment and commodity items, but there is a requirement for the SMP to detail how it interfaces with the Air System TAW SMS<sup>7</sup> and / or the ASSC<sup>3</sup>.

**Hazard Management Process**

19. The Commodity CE is expected to manage a variety of Hazards. A subset of this Hazard management activity is the management of Hazards associated with RtL, which require management at ADH / AM(MF) level. In these cases, the Commodity CE will communicate this to the TAA / TAM<sup>17</sup> or ADH / AM(MF) for formal acknowledgement and a decision on Tolerability.

20. The recording of Commodity DT Hazards is best achieved through a Hazard Log that supports the legal requirement for an ADH / AM(MF) to ensure that Risk Assessments are carried out<sup>16</sup>. Hazard attributes will, therefore, need to complement their standardized approach to managing RtL.

21. A Hazard Log accounts for Hazards, a subset of which contribute to RtL. It is expected to incorporate information from a number of Hazard data sources.

22. Where Hazards are managed by external organizations, the Hazard Log will need to incorporate information resulting from clear and robust interfaces with these organizations.

23. The Hazard Log may need to absorb information on transient / emerging Hazards, due to DE&S driven Occurrence / Fault investigations, global Faults which have not yet been addressed by appropriate mandatory, advisory and deferred instructions, or proactive investigations identified through Integrity Management activity. This allows the transient Hazard to be assessed and communicated to the TAA / TAM<sup>17</sup>, SRO, ADH or AM(MF).

<sup>22</sup> Refer to RA 5407 – Support Policy Statement.

<sup>23</sup> Such as a DO Project Safety Committee (PSC).

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5013(1)****Safety Panel**

24. A Commodity CE may choose to group multiple similar equipment types into one Safety Panel or hold standalone Safety Panels, providing each equipment or commodity item is reviewed every 6 months.
25. The Safety Panel will include representatives from the following areas as appropriate:
- a. The Commodity DT (technical, contracts and finance officers as required).
  - b. Other relevant TAA, TAM or Commodity CE.
  - c. Front Line Command Capability Organization.
  - d. Continuing Airworthiness Management Organization.
  - e. Release To Service Authority.
  - f. ADH and AM(MF).
  - g. Co-ordinating Design Organization (CDO) / DO.
  - h. The appropriate Test and Evaluation organization.
  - i. Defence Aircrew Publications Squadron (DAPS) or Competent appointed contractor.
  - j. ISA.
  - k. DE&S Operating Centre Safety Team.
  - l. Specialist advisers where appropriate.
26. SRO, ADH, AM(MF), TAA or TAM involvement with the Safety Panel will vary dependant on project phase; for each phase the relative role of the Commodity CE, TAA, TAM, SRO, ADH or AM(MF) will need to be described in the SMP, and when appropriate, in an Internal Business Agreement.
27. To support the Safety Panel the Commodity CE may establish one or more Working Groups (WGs) (proportionate to the scale of the Project). Possible examples include a WG to assess Hazards or review the integrity of specific systems.

**Independent Audit**

28. ISA Assurance will cover such activities as (but not limited to) the Safety Panel and supporting products, Commodity DT organizational processes, and DO Safety Management documentation.
29. Care will need to be taken to ensure that independent auditing of the SMS is undertaken by demonstrably Suitably Qualified and Experienced Person(s) or organization(s) that are not unduly influenced by commercial, peer or rank / status pressures.
30. Def Stan 00-056 states that the appointment of an ISA will be at the sole discretion of the MOD. Early appointment will allow the ISA to engage with the DO and better assess early versions of the SMP, assist with tendering and provide Safety advice throughout the project's life. The ISA could also provide generic Safety advice about the SMS to the DT, the DO and other stakeholders.
31. It is acceptable for the ISA and Independent Technical Evaluator (ITE)<sup>18</sup> to be involved in the joint working environment between the Commodity DT and DO; for example, in a Hazard Log WG or in a Combined Test Team approach. Duplication of effort will be avoided if the ISA and ITE work collaboratively with the MOD and DO so that their assessments can be incorporated in the overall project schedule.
32. It is important that the ISA and ITE work is conducted on behalf of the Commodity CE and that any advice they may have about the design and / or Safety is directed to them.

**Regulation  
5013(2)**

**Air Safety Assessment of Equipment and Commodity Items**  
5013(2) The Commodity CE **shall** own and manage a Safety Assessment.

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**Air Safety Assessment of Equipment and Commodity Items**

33. The Commodity CE **should** initiate and maintain a Safety Assessment for each equipment or commodity item they are responsible for<sup>24</sup>.

34. The scale of Commodity CE Safety Assessments **should** be proportionate to the Hazards and the level of RtL presented by the particular equipment.

35. Each Safety Assessment **should** consist of a claim (or number of claims), a structured and explicit argument, and supporting body of evidence, that together provide a compelling, comprehensible and valid case which supports the host Air System TASA and / or the ODH / AM(MF) ASSC.

36. The Commodity CE **should** ensure that the Safety Assessment:

- a. Defines the approved Configuration and operating environment for the equipment to which it applies, referencing the appropriate Air System SOIU where applicable<sup>11</sup>.
- b. Describes the Safety requirements, targets and attributes.
- c. Provides a justification for the design standards chosen for use, and demonstration of compliance, supported by Safety analysis iaw the Def Stan<sup>25</sup>.
- d. Identifies the limitations and procedures<sup>26</sup> necessary to achieve the required level of Safety for the subject Configuration.

**Safety Assessment Reports**

37. The Safety Assessment **should** be summarized periodically in a Safety Assessment Report, communicated to and acknowledged by the TAA / TAM and / or ODH / AM(MF) accordingly.

38. The Safety Assessment Report **should** be produced to support the initial Approval of the relevant TASA and / or ASSC<sup>3</sup>.

39. The Safety Assessment Report **should** be updated as a complete new issue:

- a. At least every 5 years.
- b. Following a change which drives a Major Type Design Change (TDC) to the Air System<sup>27</sup>.
- c. Additionally, as determined by the Commodity CE or requested by the related TAA and / or TAM.

40. For all other equipment changes, the Safety Assessment Report **should** be reviewed and updated with an Addendum to the previous Report, ensuring that the content of the addendum does not alter the validity of the claims, arguments and evidence within the Safety Assessment Report main body.

41. The Commodity CE **should** make a declaration regarding the validity of the Safety Assessment and any addenda at the Safety Panel. If this declaration cannot be made, then a new issue of the Safety Assessment Report **should** be produced.

**Independent Evaluation and Audit**

42. The Commodity CE **should** ensure that the Safety Assessment is subjected to evaluation by a Competent and suitably qualified ITE, independent of the outcome or

<sup>24</sup> These include items being installed in the Air System as part of the Type Design (see RA 5810 – Military Type Certificate (MRP Part 21 Subpart B) / RA 5305 – In-Service Design Changes), Aircrew Equipment Assemblies etc that are required to be worn to comply with Type Design requirements, and items which may be carried on to support delivery of the capability (see RA 1340 – Equipment Not Basic to the Air System).

<sup>25</sup> Refer to Def Stan 00-056 – Safety Management Requirements for Defence Systems.

<sup>26</sup> Including where appropriate reference to the Support Policy Statement. Refer to RA 5407 – Support Policy Statement.

<sup>27</sup> Agreement for the use of the addendum procedure can be gained from the MAA as part of the Form 30 process. Refer to RA 5820 – Changes in Type Design (MRP 21 Subpart D).

**Acceptable Means of Compliance 5013(2)**

processes they are reviewing, and recognized by the Commodity CE as a SME in the field which is being reviewed.

43. The Commodity CE **should** ensure that the Safety Assessment is subjected to Audit iaw Defence Standard (Def Stan) 00-056, by a Competent and suitably qualified ISA, independent of the outcome or processes they are reviewing.

**Guidance Material 5013(2)**

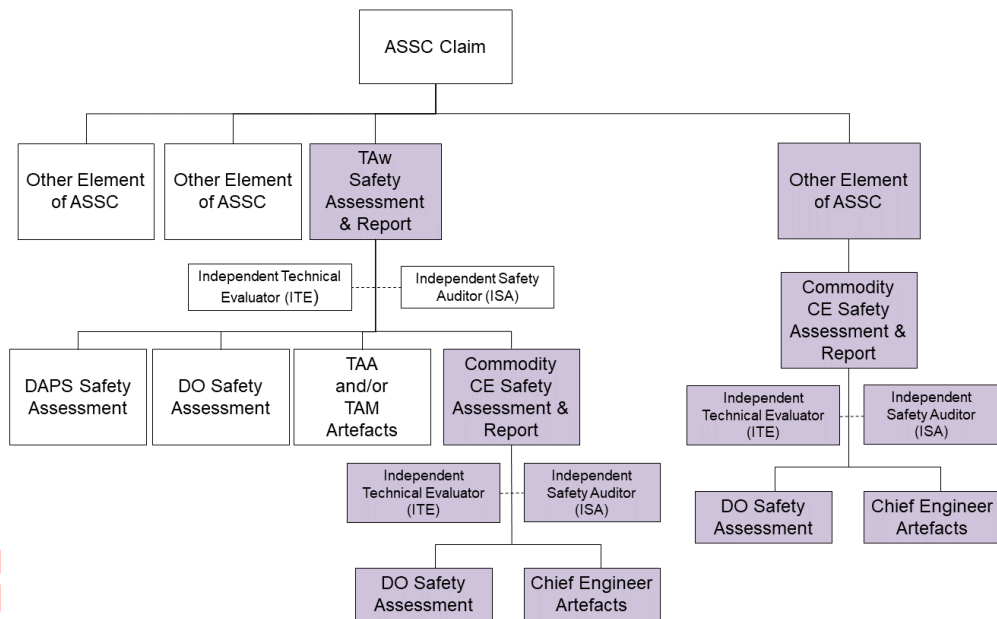
**Air Safety Assessment of Equipment and Commodity Items**

44. The Safety Assessment will need to be treated as Airworthiness information<sup>28</sup>.

45. Before completing the Safety Assessment, the Commodity CE will need to understand the context in which the assessment will be used by the TAA / TAM or ODH / AM(MF). The TAA / TAM may use the Safety Assessment to support the Type Design assessment or to enable the use of Equipment Not Basic to the Air System (ENBAS).

46. The Commodity Safety Assessment, such as for a life raft, may be incorporated within the TASA alongside a number of Commodity items, in addition to integration information and Configuration Control activity. However, some Commodity DTs may provide assets directly to the ODH / AM(MF), such as a Portable Electronic Device (PED). In these cases, the Safety Assessment, integration and Configuration Control activity is provided to the ODH / AM(MF) and incorporated directly in the ASSC. This relationship of artefacts is shown in Figure 1<sup>29</sup>.

Figure 1. Relationship of ASSC



47. A Safety Assessment may be produced for an individual equipment or commodity item, or may be provided as combined Safety Assessment for multiple items, in order to be appropriate and proportionate to the level of RtL presented by the particular equipment.

48. When scaling the proportionality of a Safety Assessment, any assessment on the level of RtL will be made in consultation with all relevant TAA / TAM and ADH / AM(MF) accordingly.

49. Whether a Safety Assessment is for one or more item, there is a requirement for clear articulation on the extent of the clearance, and the limitations for use relating to specific Air Systems or roles.

<sup>28</sup> Refer to RA 1223 – Airworthiness Information Management.

<sup>29</sup> A Safety Assessment provided by DAPS is an example of an appropriate independent operator evaluation.

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Material  
5013(2)**

**Safety Assessment Report**

50. The scale of a Commodity CE Safety Assessment Report will be proportionate to the Hazards and the level of RtL presented by the particular equipment.
51. The initial Safety Assessment Report supports the ASSC (in some cases via the TASA) to enable activation on the military register. The Safety Assessment Report does not then require reissue prior to each ASSC review, but a valid Safety Assessment Report, reviewed at the Safety Panel, provides the basis for the input to the TASA and / or ASSC.
52. When an existing equipment or commodity item is being provided to a new Air System, the Commodity CE may choose (or be requested) to update an existing Safety Assessment Report as a complete new issue, to demonstrate current Safety Assessment activity to the TAA and / or TAM.
53. In addition to the requirements listed in this RA, the Commodity CE may choose to update the Safety Assessment Report with an Addendum, including a declaration that the content of the Addendum does not alter the validity of the claims, arguments or evidence within the Safety Assessment main body. Such an update may be required following counter-evidence identified through Fault Reporting and Data Exploitation activities<sup>12</sup>, or a change of information from Safety Panel review or other source of evidence, as long as the circumstances are not listed in this RA as requiring a complete new issue.
54. If a proposed change drives a Major TDC to the Air System, but has minimal impact to the Safety Assessment Report, the Commodity CE may request the Safety Assessment for the change is captured in an addendum rather than a re-issue of the report. This request will be submitted by the relevant TAA / TAM as part of the Form 30 process<sup>27</sup>.
55. The guidance provided within Def Stan 00-056 may be regarded as one method of achieving a suitable Safety Assessment Report structure.

**Safety Analysis**

56. The Commodity CE will need to ensure that, where applicable, the Safety Assessment:
- a. Addresses any differences in the operating environment and usage from those in the certification basis of the Competent certifying body.
  - b. Addresses the Risks and mitigations of not complying with UK legislation and standards.
57. Safety analysis will be carried out on new equipment and subsequent changes, in support of claims and arguments within a Safety Assessment, by the equipment DO, or by specialist agencies contracted by the Commodity DT.

**Commercial Off The Shelf (COTS) Systems and Software**

58. The Commodity CE for projects involving the use of COTS systems or software will need to ensure that the Safety Assessment contains an adequate Safety justification for the COTS components.
59. Guidance on the Safety Assessment of COTS systems is contained in Def Stan 00-056<sup>25</sup>. Guidance on the assessment of Programmable Elements of Unknown Pedigree is available within the Knowledge in Defence portal<sup>13</sup>. Ultimately, Def Stan 00-970<sup>30</sup> refers to acceptable standards for Programmable Elements.

**Independent Evaluation and Audit**

60. ITE Assurance will consist of independent analysis of the evidence supporting the Safety Assessment, including, where appropriate<sup>31</sup>, a qualitative assessment of Air System handling, Human Machine Interface (HMI) and crew workload.
61. Care will need to be taken to ensure that independent Auditing of the Safety Assessment is undertaken by demonstrably Suitably Qualified and Experienced

<sup>30</sup> Refer to Def Stan 00-970 – Certification Specifications for Airworthiness.

<sup>31</sup> As decided by the SRO or receiving ODH.

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5013(2)**

Person(s) or organization(s) that are not unduly influenced by commercial, peer or rank / status pressures.

62. Multiple ITEs may be employed to provide evaluation of different aspects of a Safety Assessment.

63. Where a contractor is employed as ITE, it is important that this is exclusively by the Commodity CE to act on their behalf and not via the Prime Contractor and / or DO; with any advice the ITE may have about the design and / or Safety directed to the Commodity CE. It is noted that if the MOD has the required Competence, and based on the level of acceptable Risk, then this independent technical evaluation could be provided from within the MOD.

64. It is acceptable for the ISA and ITE to be involved in the joint working environment between the DT and DO; for example, in a Hazard Log WG or in a Combined Test Team approach. Duplication of effort will be avoided if the ISA and ITE work collaboratively with the MOD and DO so that their assessments can be incorporated in the overall project schedule.

Draft for NPA

## RA 5301 – Air System Configuration Management

### Rationale

*During the development and In-Service life of an Air System (and related Products, Parts, Appliances), Airborne Equipment and Air Launched Weapons (ALW) there will be changes in design. ► Failure to control the configuration of the Air System (and related Products, Parts and Appliances) may compromise Type Airworthiness (TAw). ◀ In order to preserve TAw and ensure the Air System remains safe to operate, it is necessary to implement strict management of the design configuration. This is achieved by carrying out Configuration Management (CM) in accordance with (iaw) a defined plan under the supervision of a management board. This is a joint endeavour between Industry and MOD stakeholders, with the lead for specific responsibilities moving from Industry to MOD during the project lifecycle. This Regulatory Article (RA) details the regulatory requirements that facilitate the management of design Configuration and records, through the life of the design.*

### Contents

**5301(1): Configuration Management Principles**

**5301(2): Configuration Management under Contractor Control**

**5301(3): Configuration Management under Ministry Control**

### Regulation 5301(1)

#### Configuration Management Principles

5301(1) The Type Airworthiness Authority (TAA)<sup>1</sup> **shall** manage the Configuration of their Air System (and related Products, Parts, Appliances), Airborne Equipment and ALW iaw an agreed Configuration Management Plan (CMP) under the oversight of an established design Configuration governance system.

### Acceptable Means of Compliance 5301(1)

#### Configuration Management Principles

1. CM activities **should** be conducted iaw a CMP prepared to the applicable requirements of Defence Standard (Def Stan) 05-057<sup>2</sup>.
2. A CMP **should** be maintained throughout the life of the Air System (including related Products, Parts, Appliances), Airborne Equipment and ALW.
3. As a minimum, a CMP **should**:
  - a. Reference the Configuration Status Record (CSR) management process to enable the Configuration of an item to be established at any time during its life cycle.
  - b. Detail the principal CM activities of planning, identifying, changing, accounting, ► ◀ Auditing and ► **verifying** ◀ an item's Configuration.
4. A governance system **should** be established comprising of Configuration Control Boards (CCB)<sup>3</sup> and supporting committees as required to review and make decisions on changes to design and to ensure the effective delivery of the agreed change programme.
5. The procedures for a CCB, its chairpersonship and mandatory attendees **should** be included in the CMP. In order to provide the necessary support, and input appropriate recommendations, a CCB **should** consist of, as a minimum, the following members each of whom will have executive authority<sup>4</sup>:

<sup>1</sup> Refer to RA 5301(2) for the TAA / Design Organization (DO) relationship when Under Contractor Control (UCC).

<sup>2</sup> Refer to Def Stan 05-057 – Configuration Management of Defence Materiel.

<sup>3</sup> DOs may use different terminology but CCB is used throughout this Regulation for convenience to describe the management board responsible for dispositioning design changes.

<sup>4</sup> The TAA or Commodity Chief Engineer (Commodity CE) will require appropriate delegations to make the required commercial commitments or be supported by staff with the required authority.

**Acceptable  
Means of  
Compliance  
5301(1)**

- a. TAA<sup>5</sup> or Commodity CE (Chair<sup>6</sup>).
  - b. Representative(s) of the DO(s) affected (Chair<sup>7</sup>).
  - c. TAM (if applicable).
  - d. Specialist adviser(s) (if required)<sup>8</sup>.
  - e. Representative(s) of the Service user(s) and Military Continuing Airworthiness Manager (Mil CAM).
  - f. Representative(s) of the Production Organization (PO)<sup>9</sup> (if not the DO).
  - g. Representative of the Release To Service Authority (RTSA) when discussing changes which could necessitate an update of the extant Release To Service (RTS)<sup>10</sup>.
6. Generic CCB Responsibilities **should** include the need to:
- a. Consider and make decisions on proposed changes to design which affect project performance, cost, timescale or delivery.
  - b. Define and approve the limits of delegated authority to any subordinate committees.
  - c. Review and improve CM processes as required.
  - d. Ensure compliance with CM processes.
7. A CSR **should** be prepared by the DO and maintained through life in accordance with the requirements of Def Stan 05-057 to enable effective management of design Configuration and Design Records<sup>11</sup>.
8. The TAA or Commodity CE **should** ensure that the DO retains the Design Records and manufacturing data relating to the articles supplied or the work performed under the contract for a minimum of 5-years beyond the Product's, Part's, Appliance's, Airborne Equipment's and ALW's Out-of-Service date<sup>12</sup>. The master copy of any Design Record **should not** be altered during this period without the written permission of the TAA or Commodity CE.
9. The TAA or Commodity CE **should** ensure that the DO tasking arrangements facilitate provision of copies of particular CSR and Design Records in an agreed format when requested.
10. The outcome from the CCB **should** be recorded in **▶ a manner that provides an Auditable trail. ◀**
- CM of Flight Simulation Training Devices (FSTD)**
11. The TAA **should** consider possible effects of Air System Design Changes on the CM of associated FSTD. Any Design Changes that are considered to affect this parity **should** be passed to the relevant FSTD Senior Responsible Owner (SRO)<sup>13</sup>.

<sup>5</sup> Where the Air System is not UK MOD-owned, TAA 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 TAA Responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

<sup>6</sup> The TAA or Commodity CE will chair the CCB when the design is Under Ministry Control – see RA 5301(3).

<sup>7</sup> The DO will chair the CCB when the design is Under Contractor Control – see RA 5301(2).

<sup>8</sup> Specialist roles may include Safety, Environmental, Quality, Commercial or Finance.

<sup>9</sup> Refer to RA 5835 – Production Organizations (MRP Part 21 Subpart G).

<sup>10</sup> Refer to RA 1300 – Release To Service.

<sup>11</sup> Refer to MAA02 – MAA Master Glossary.

<sup>12</sup> Refer to RA 1225 – Air Safety Documentation Audit Trail.

<sup>13</sup> Where an SRO is not appointed the Operating Duty Holder (ODH), Accountable Manager (Military Flying) (AM(MF)) or In-Service Capability Manager, on behalf of the ODH or AM(MF), **should** fulfil this responsibility, ie In-Service Modification where an SRO is not appointed or Contractor Flying Approved Organization Scheme.



**Guidance  
Material  
5301(1)**

## Configuration Management Principles

12. Initial Configuration Control of the design is vested in the DO who manages the CSR. This contains the indexes to drawings, documentation, specifications and design changes, including ancillary equipment, packaging and Service-supply items. It is to be kept up to date through-life on behalf of the TAA or Commodity CE by the DO. The CSR provides a baseline for defining the Configuration state through-life. Normally a CSR is produced for each item of equipment<sup>14</sup> for which a Certificate of Design (CofD)<sup>15</sup> is required upon delivery of the equipment to the TAA or Commodity CE.
13. The DO is responsible for the design of equipment to meet the specification based on a development programme, within the constraints imposed by the contract.
14. CM will need to be applied by the DO and TAA or Commodity CE in order to:
- Maintain effective control of the approved Configuration.
  - Ensure that change proposals are processed in a timely manner and are appropriately justified with a documented Audit trail.
  - Apply an embodiment priority classification<sup>16</sup> based on the urgency and applicability of the change.
  - Enable the implementation of authorized changes and make use of Configuration Status Accounting<sup>2</sup> to track progress from concept through to completion.
  - Ensure that the impact of individual design changes are assessed across the whole Air System (and related Products, Parts, Appliances), Airborne Equipment and ALW and that a review process maintains the agreed progress of embodiment.
  - Ensure that a focal point for the Maintenance of CM is appointed and individual authorities and responsibilities for CM are identified within a DO / Delivery Team (DT)<sup>17</sup>.
  - Ensure that all relevant supporting information for CM is included during the UCC / Under Ministry Control (UMC)<sup>18</sup> transition. This will include the plan and supporting information (eg Configuration baseline, control system, data, decision histories and Audit trail records).
15. The Knowledge in Defence<sup>19</sup> and the DE&S Air Engineers Toolkit Design Configuration Management Tools websites provides governing policy that outlines the CM principles to be applied by a DO, TAA, Commodity CE and their suppliers to ensure that equipment design is effectively managed through life.

### Configuration Management Plan

16. The CMP will be used to define how the CM requirements of an item will be managed throughout the life cycle of the item. An overview of the main requirements is provided below with further detail in Def Stan 05-057.
- Purpose, scope and programme milestones.
  - Organization structures, committees and Responsibilities.
  - Configuration change management procedures.
  - Change control of the CM documentation.

<sup>14</sup> For convenience, 'equipment' refers to the Air System, Product, Part, Appliance, Airborne Equipment or ALW which is being managed by the TAA or Commodity CE within the context of the relevant paragraph.

<sup>15</sup> Refer to RA 5103 – Certificate of Design.

<sup>16</sup> This is the classification of the Modification as detailed in Def Stan 05-057; it must not be confused with classification as Major or Minor iaw RA 5820 – Changes in Type Design (MRP Part 21 Subpart D). Input will be required from the end users of the modified item.

<sup>17</sup> ► Where the term DT or Commodity DT is used in this RA, this may include the TAM and organizations supporting the TAM. ◄

<sup>18</sup> During development, and before designs are brought UMC, the DO is free to alter the design, without reference to the MOD, within the constraints of the specification.

<sup>19</sup> Refer to <https://www.gov.uk/guidance/knowledge-in-defence-kid> and Defence Equipment & Support (DE&S) Air Engineers Toolkit Design Configuration Management Tools.

**Guidance  
Material  
5301(1)**

- e. Interfaces with other plans.
- f. Procedures for auditing compliance with CM requirements.

**Regulation  
5301(2)**

**Configuration Management Under Contractor Control**

5301(2) Whilst the design is UCC, the DO **shall** lead CM activities.

**Acceptable  
Means of  
Compliance  
5301(2)**

**Configuration Management under Contractor Control**

17. A CMP **should** be developed by the DO and agreed with the TAA or Commodity CE at the commencement of the contract and **should** be subject to review and revision ►◀ as the design progresses.
18. Within the CMP, the DO **should** establish the CCB to bring ► the design under formal control. ◀ At this phase of the project the CCB **should**:
- a. Prepare and maintain a provisional CSR.
  - b. Record and control the standard of design to be manufactured.
  - c. Make available to the TAA or Commodity CE the record of its decisions.
19. The TAA or Commodity CE **should** be invited to the CCB when the schedule to bring the design(s) UMC is to be discussed. Interim arrangements **should** be agreed by which the TAA or Commodity CE will gain sufficient knowledge and control over the Air System, Product, Part, Appliance, Airborne Equipment or ALW Configuration to accept transfer to UMC.
20. Prior to the Design Records being brought UMC, the TAA or Commodity CE **should** establish the Local Technical Committee (LTC), ensuring that Terms of Reference are agreed by the CCB and detailed in the CMP.
21. The DO **should** make the CSR available for issue to the TAA or Commodity CE before the design transitions to UMC unless alternative arrangements have been made via the CCB.
22. If the design is not brought UMC by the time of initial RTS, the TAA **should** set out the plan within the RTS Recommendations for achieving UMC and how CM for In-Service Air Systems will be managed.

**Guidance  
Material  
5301(2)**

**Configuration Management under Contractor Control**

23. The design will be UCC during the project development phase which would typically end at acceptance of the CofD when the design will normally transition to UMC. The transition to UMC does not necessarily mean that the design fully meets the specification.
24. Formal control of the design will be required as a lead-in to the process of bringing the design UMC. It may also be required when long lead-time items need to be ordered. Formal control will normally be progressive as each group of designs becomes sufficiently stable.
25. The CofD will be produced when the TAA or Commodity CE and the DO agree, via the CCB, that the design adequately meets the requirements of the specification within the limits and exceptions stated.

**Regulation  
5301(3)**

**Configuration Management under Ministry Control**

5301(3) Whilst the design is Under Ministry Control, the TAA or Commodity CE **shall** lead CM activities.

**Acceptable  
Means of  
Compliance  
5301(3)**

**Configuration Management under Ministry Control**

26. The TAA **should** ensure that the approved Air System Configuration is accurately documented in the Air System Document Set<sup>20</sup>.
27. The TAA or Commodity CE **should** ensure that their CMP describes the CM dependencies with the DO and interfacing Products, Parts, Appliances, Airborne Equipment and ALW.
28. The CCB **should** be chaired by the TAA or Commodity CE who **should** ensure the required attendance. In addition to the generic CCB ► **Responsibilities** ◄ listed in paragraph 6, the CCB **should**:
- Approve the development of Modifications based on LTC recommendations.
  - Authorize the DO<sup>21</sup> to proceed with approved changes iaw the agreed commercial arrangements.
  - Approve the recommended Modification classification<sup>16</sup> and roll-out plan from the LTC<sup>22</sup>.
  - Set requirements for monitoring compliance with the DO's CMP so that UMC can be assured.
29. After the design is brought UMC, the TAA or Commodity CE **should** authorize any change to the Design Records using the procedures detailed in the agreed CMP.
30. The TAA or Commodity CE **should** chair ►<sup>23</sup>◄ the LTC and ensure the required mandatory attendance as detailed in the CMP.
31. The LTC **should** make recommendations to the CCB based on technical scrutiny of design change proposals.
32. The outcome of the LTC **should** be recorded in ► **a manner that provides an Auditable trail.** ◄

**Guidance  
Material  
5301(3)**

**Configuration Management under Ministry Control**

33. A TAA ►<sup>17</sup>◄ will have a CMP for each Mark or Type for which they hold Responsibility. A Commodity CE will have a CMP for Products, Parts, Appliances, Airborne Equipment and ALW that may be subject to design changes. The relationship between an Air System and its ► **support organizations** ◄ will be recorded in the Air System Airworthiness Strategy<sup>24</sup> and Support Policy Statement<sup>25</sup>, and managed via appropriate business agreements.
34. The TAA or Commodity CE will ensure that, where items are shared across multiple DTs, CM is strictly maintained and duplicated activities are avoided.
35. For smaller and more simple programmes it may be appropriate to combine the CCB and LTC into a suitable single forum, but the CMP will clearly articulate how the intent of this Regulation is met.

**Local Technical Committee**

36. ►◄
37. An LTC will consist of the following members:
- TAA or Commodity CE (Chair).

<sup>20</sup> Refer to RA 1310 – Air System Document Set.

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

<sup>22</sup> Def Stan 05-057 Annex E describes potential embodiment considerations; the Mil CAM will manage embodiment by platform tail number.

<sup>23</sup> ► **It is only acceptable for the TAA or Commodity CE to delegate chairpersonship of LTC meetings to appropriate Letter of Airworthiness Authority (LoAA) or Letter of Air Safety Notification (LoAN) holders when formalized arrangements are in place for the TAA or Commodity CE to be fully informed of the outcomes of the LTC.** ◄

<sup>24</sup> Refer to RA 5010 – Type Airworthiness Strategy.

<sup>25</sup> Refer to RA 5407 – Support Policy Statement.

**Guidance  
Material  
5301(3)**

- b. TAM (if applicable).
  - c. Specialist ►◀ representatives as required<sup>8</sup>.
  - d. Representative(s) of the DO(s) affected.
  - e. Representative(s) of the PO<sup>9</sup> if not the DO.
  - f. RTSA representative when discussing changes which could necessitate an update of the extant RTS.
  - g. Additional representatives of ► organizations ◀ affected by the proposed changes.
  - h. Subject Matter Experts to advise on specialist technical aspects.
38. The members detailed in the CMP, or by exception deputies fully empowered to act on their behalf, will be present at all LTC meetings.
39. The LTC will provide a forum for dealing with technical and associated matters, including design changes, to make decisions and where necessary make recommendations to the CCB for Modification proposals and their classification. An LTC is the committee through which the Design Records are managed.
40. The LTC ► recorded outputs ◀ will reference any significant changes to the information given on a Modification Proposal Form<sup>2</sup> and the effects thereof.
41. Although the greater part of the activity of an LTC is devoted to design changes and associated Modifications, it is not intended that it be limited to such work. It can also officiate as a means of resolving, or referring to MOD, local questions which may arise in the implementation of specified technical requirements, such as whether a new CofD may be required<sup>26</sup>, or whether a change in a design, manufacture or supply process will necessitate requalification testing.
42. An LTC may deal with a range of equipment at a contractor's<sup>27</sup> premises, or more than one LTC may be established at a contractor's premises to deal with different types of equipment. The range of each LTC will be agreed by the TAA or Commodity CE setting up the LTC using the process detailed in the respective CMP.

<sup>26</sup> Refer to RA 5305(3): In-Service Design Changes – Modification Procedure.

<sup>27</sup> Contractor is used as a generic term to include industry organizations who may be involved in the design or production of relevant Products, Parts, Appliances, Airborne Equipment or ALW.

## RA 5724 - Life Extension Programme

### Rationale

Occasions may arise in which an Air System type is required to operate beyond its certified life. In such cases, Airworthiness Risks may increase if the Air System Products, Parts and Appliances exceed the life parameters against which they were tested and approved. A Life Extension Programme (LEP) can identify, mitigate and ultimately ► *manage* ◀ these Risks.

### Contents

#### 5724(1): Requirement for a Life Extension Programme

#### 5724(2): Development and Implementation of a Life Extension Programme

### Regulation

#### 5724(1)

#### Requirement for a Life Extension Programme

5724(1) The requirement to extend the certified life of any UK military Air System type, in any parameter, **shall** be identified by the Type Airworthiness Authority (TAA)<sup>1</sup>.

### Acceptable Means of Compliance

#### 5724(1)

#### Requirement for a Life Extension Programme

1. The TAA **should** undertake an LEP when it is identified that the operation of an Air System type needs to be extended beyond its current certified life (in terms of calendar time, flying hours, Fatigue Index, landings or pressure cycles).
2. Where the severity of In-Service usage is greater than that assumed in design, the implications upon service life **should** be assessed and any potential life extension requirement **should** be identified by the TAA.
3. The potential requirement for a life extension **should** be considered by the TAA no later than 10 years before the original Out of Service Date and **should** be reviewed annually thereafter.
4. ► A confirmed extension to an Air System's certified life **should** be treated as a Major Change to Type Design<sup>2</sup>. An application for a Major Change to Type Design **should** be made to the MAA by the TAA using a MAA Form 30<sup>2</sup>. ◀

### Guidance Material

#### 5724(1)

#### Requirement for a Life Extension Programme

5. Refer to the Manual of Air System Integrity Management (MASIM)<sup>3</sup> for related Guidance Material and other non-regulatory process.

### Regulation

#### 5724(2)

#### Development and Implementation of a Life Extension Programme

5724(2) When required to extend the certified life of a UK military Air System type, in any parameter, the TAA **shall** develop and implement an LEP to underwrite the Airworthiness of the Air System type for its extended life.

### Acceptable Means of Compliance

#### 5724(2)

#### Development and Implementation of a Life Extension Programme

#### LEP Scope

6. The TAA **should** determine the scope of the LEP using a Risk-based approach: all Structure, Systems components and propulsion components whose failure could compromise Airworthiness **should** be identified and considered for inclusion within the

<sup>1</sup> Where the Air System is not UK MOD-owned, Type Airworthiness 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.

<sup>2</sup> ► Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D). ◀

<sup>3</sup> Refer to MASIM Chapter 11: Life Extension Programme.

**Acceptable  
Means of  
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5724(2)**

LEP. The exclusion of any such components from the LEP **should** be identified and the rationale for their exclusion documented.

7. The TAA **should** ensure that an analysis of all components to be included in the LEP is undertaken, using appropriate evidence and inputs from all relevant stakeholders (including the Delivery Team (DT) and relevant Design Organization(s) (DO), maintainers and operators), to categorise each as either:

- a. 'Non-extendable', where the life cannot be extended to meet the new requirement. A Component Replacement Plan **should** be developed to address all such components.
- b. 'Extendable', where the life can be extended without further work. Revised life limits, including any associated caveats such as Maintenance actions, **should** be determined and promulgated for all such components.
- c. 'Subject to LEP', where the life can potentially be extended subject to further LEP work. Revised life limits, including any associated caveats such as Maintenance actions, **should** be determined and promulgated for all such components.

**Evidence Supporting an LEP**

8. The additional evidence necessary to support life extension of the LEP components **should** be identified and documented. The LEP evidence requirements **should** include ► a review ◀ of all Safety-relevant failure modes or mechanisms and reference to design, qualification and In-Service information sources.

9. The baseline LEP Configuration standard (or standards for different marks, block releases or 'fleets-within-fleets') **should** be identified for all 'Subject to LEP' components.

10. Validation **should** be undertaken of the Modification status of the fleet against the LEP baseline standards.

11. Validation **should** be undertaken of any Maintenance data used to make Airworthiness-related decisions within an LEP.

12. Information gained from Operational Loads Monitoring (OLM) / Operational Data Recording (ODR) programmes **should** be ► utilized ◀ within the LEP to ensure that significant Structures, Systems and propulsion loads and usage are adequately understood. Where there is no OLM / ODR capability within the fleet, initiation of an OLM / ODR programme **should** be ► reviewed ◀ as soon as possible to support the LEP.

13. A Widespread Fatigue Damage (WFD) assessment **should** be undertaken to identify areas of the Structure potentially susceptible to WFD and any remedial actions required to meet the proposed life extension.

14. A Repair Assessment Programme **should** be undertaken to identify any structural Repairs that require either additional fatigue substantiation or replacement to meet the proposed life extension.

15. A condition survey of a representative sample of fleet-leader Air System **should** be used to inform life extension activities.

16. The TAA **should** agree the DO's plans to meet the LEP evidence requirements. This evidence **should** be assembled, usually by the DO, as revised Certificates of Design (CofD)<sup>4</sup>, together with any recommended caveats. The revised CofD **should** be reviewed and endorsed by the TAA.

17. The TAA **should** compile a Type Airworthiness Safety Assessment Report (TASAR)<sup>5</sup> detailing the scope, assumptions and results of the LEP which **should** be evaluated by a Suitably Qualified and Experienced Person who is independent of the DT. The TAA **should** formally submit the TASAR to the Aviation Duty Holder /

<sup>4</sup> Refer to RA 5103 – Certificate of Design.

<sup>5</sup> Refer to RA 5012 – Type Airworthiness Safety Assessment.

**Acceptable  
Means of  
Compliance  
5724(2)**

Accountable Manager (Military Flying) for incorporation within the Air System Safety Case<sup>6</sup>.

18. A revised Release To Service<sup>7</sup> / Military Permit To Fly (In Service)<sup>8</sup> (and, where applicable, Military Type Certificate) **should** be produced to reflect the revised life limits for the fleet.

**Guidance  
Material  
5724(2)****Development and Implementation of a Life Extension Programme**

19. Refer to the MASIM<sup>3</sup> for related Guidance Material and other non-regulatory process.

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<sup>6</sup> ▶ Refer to RA 1205 – Air System Safety Cases.

<sup>7</sup> Refer to RA 1300 – Release To Service. ◀

<sup>8</sup> Refer to RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task).

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## RA 5726 – Integrity Management

### Rationale

*The technical and organizational uncertainties associated with military aviation contribute to a complex range of Hazards that may compromise Air System Integrity. A comprehensive, through-life, Integrity Management (IM) approach enables these potential Airworthiness threats to be managed. Whilst support from various stakeholders is needed for effective IM, the overall responsibility is assigned to the Type Airworthiness Authority's (TAA)<sup>1</sup>. This Regulatory Article (RA) details these TAA IM responsibilities and will be read in conjunction with the Manual of Air System Integrity Management (MASIM)<sup>2</sup>.*

### Contents

#### Definitions Relevant to this RA

#### 5726(1): Integrity Management

#### 5726(2): Establishing Integrity Management

#### 5726(3): Sustaining Integrity Management

#### 5726(4): Validating Integrity

#### 5726(5): Recovering Integrity

#### 5726(6): Exploiting Integrity

### Definitions

#### Definitions Relevant to this RA

1. **Integrity.** The ability of an Air System to retain its design intended properties and function throughout its service life when maintained and operated in accordance with (iaw) the Air System Document Set (ADS).
2. **Integrity Baseline.** The artefacts that define the Design Organization's (DO) contribution to the ADS for an Integrity discipline. In a Claim-Argument-Evidence approach, the Integrity Baseline (the 'Claim') is underpinned by Integrity Assertions (the 'Argument') of the Integrity Evidence (the 'Evidence'). Integrity Baselines are established prior to entry of the Air System to service and are updated through-life.
3. **Integrity Assertions.** Declarations made in the Integrity Baseline that a feature of the design has Integrity. The Integrity Assertions within the Integrity Baseline (the 'Claim') are the outcome of an assessment (the 'Argument') of the Integrity Evidence (the 'Evidence').
4. **Integrity Evidence.** The design and Certification products that underpin the Integrity assertions stated explicitly / implicitly in the Integrity baseline. In the first instance Integrity evidence is produced to support the Air System entering service and may be based upon design assumptions and / or service operating intent. When in-service, the Integrity evidence is continuously updated according to analysis of Service Data. It is captured in an Integrity Evidence record.
5. **Service Data.** The information relating to the usage, condition, failures or loads experienced by an Air System that, when collected and analyzed, needs to be tested against the Integrity Evidence to support the Integrity Baseline.
6. **IM Systems.** The IM programmes, tools and processes, established by the TAA, that are necessary to assure the Integrity of the Air System. These Systems capture and assess Service Data to better understand the usage of the Air System, the failures of systems, and / or the loads that it experiences. Programmes are established to better understand the condition of the Air System.
7. **Independent Airworthiness Advisor (IAA).** An IAA is a competent individual, independent of the DO, who provides independent Air System technical advice to the

<sup>1</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>2</sup> Refer to the Manual of Air System Integrity Management (MASIM).

**Definitions**

TAA<sup>3</sup>. To be considered a Suitably Qualified and Experienced Person (SQEP), they will be a Chartered Engineer, and have a minimum of 5 years' experience in Air System design, Safety Assessment, IM or Maintenance; relevant to both the Air System type and the specialization for which advice will be given.

**Regulation 5726(1)****Integrity Management**

5726(1) The TAA **shall** be responsible for IM, for all Air System types within their Area of Responsibility, to maintain Integrity.

**Acceptable Means of Compliance 5726(1)****Integrity Management**

8. As a key enabler of the Air System Safety Case<sup>4</sup>, the TAA **should** ensure an IM programme is in place prior to the Air System In-Service Date (ISD) and is maintained throughout the life of the Air System.

9. The Establish-Sustain-Validate-Recover-Exploit (ESVRE) management framework **should** be used to confirm the Integrity Assertions to provide confidence in the Integrity Baseline and counter threats to Integrity identified by evolving Integrity Evidence.

10. The TAA **should** consider the most effective and efficient strategy for managing IM activities. As a minimum, consideration **should** be given to the need for separate activities for the three most commonly used Integrity disciplines (Structural, Systems and Propulsion), including Integrity Working Groups (IWG). The overall approach **should** be recorded in the Air System Integrity Strategy Document (AISD).

11. Where threats to Integrity are identified, they **should** be managed, and continually reviewed in response to In-Service developments and Service Data.

12. All those with responsibilities which impact on, or which contribute to Integrity **should** identify to the TAA at the earliest opportunity any decision, activity or change in circumstances that has the potential to pose a threat to Integrity.

13. Delivery Team (DT) personnel with specific Integrity responsibilities **should** be identified by the TAA and attend the appropriate Integrity course<sup>5</sup>.

14. IM for Remotely Piloted Air Systems **should** be iaw RA 1600(2)<sup>6</sup>.

**Guidance Material 5726(1)****Integrity Management**

15. For guidance on all aspects of IM, refer to the MASIM<sup>2</sup>.

**Regulation 5726(2)****Establishing Integrity Management**

5726(2) The TAA **shall** establish IM to demonstrate that the Air System is airworthy to operate through all conditions detailed in the Release To Service (RTS), Military Permit To Fly (MPTF) (In-Service) or MPTF (Special Case Flying) and reflect the usage set out in the Statement of Operating Intent (SOI).

**Acceptable Means of Compliance 5726(2)****Establishing Integrity Management Integrity Governance**

16. The TAA **should** establish an IM Strategy that is:

- a. Communicated to stakeholders through the AISD prior to Full Business Case Approval of the project.

<sup>3</sup> The IAA is not to be confused with the Independent Technical Evaluator or Independent Safety Auditor.

<sup>4</sup> Refer to RA 1205 – Air System Safety Cases.

<sup>5</sup> For further training details see RA 1440 – Air Safety Training.

<sup>6</sup> Refer to RA 1600(2): Remotely Piloted Air System Regulatory Requirements.

**Acceptable  
Means of  
Compliance  
5726(2)**

- b. Managed through an IM Plan (IMP) initiated prior to ISD.
  - c. Implemented through a 6-monthly IWG initiated prior to the ISD.
  - d. Implemented with defined boundaries and interfaces between various IM disciplines.
  - e. Implemented with defined mechanisms for reporting on the status of Integrity of the Air System within Defence Equipment & Support (DE&S) and to the Aviation Duty Holder (ADH) / Accountable Manager (Military Flying) (AM(MF)).
17. The AISD **should** be owned by the TAA and endorsed on first release and following any significant amendment.
18. The IWG **should** be chaired by the TAA or a holder of a delegated Letter of Airworthiness Authority (LoAA) that refers specifically to the role of IWG Chair, who is at least OF4 (or equivalent).
19. The IWG Chair **should** ensure that the IWG comprises a quorum of SQEP stakeholders (identified below), and additional stakeholders as necessary.
- a. DO / Coordinating DO.
  - b. DT<sup>7</sup> member(s) responsible for IM.
  - c. Service provider / Support contractor (if applicable).
  - d. Continuing Airworthiness Management Organization (CAMO) member responsible for IM.
  - e. Civil Aviation Authority for military registered Aircraft subject to civil oversight<sup>8</sup>.
  - f. DT Safety Manager.
  - g. ► IAA.
    - (1) An Independent Structural Airworthiness Advisor (ISAA) **should** attend IWGs discussing Structural Integrity matters.
    - (2) IAAs for other disciplines **should** be considered where the TAA requires that SQEP<sup>9</sup>. ◀
  - h. Release To Service Authority (RTSA) or Sponsor representative.
  - i. MAA **should** be invited but will attend on a Risk-based basis although the MAA **should not** form part of the quorate SQEP stakeholders list.

**Integrity Evidence and Baseline**

20. The TAA **should** identify the Integrity Baseline, including the underpinning Integrity Evidence and Integrity Assertions.
21. The SOI (AP101X-XXXX-15S or equivalent) **should** be owned and authorized by the ADH or AM(MF) and **should** include requirements for all relevant disciplines, to be published in the ADS no later than the issue of the Type Certification Basis<sup>10</sup>. The TAA and ADH or AM(MF) **should** ensure that an SOI for all new Air System types and significant Marks, is developed in consultation with, and formally conveyed to, the Air System DO. In turn, the Air System DO **should** communicate this information to the Type Certified Product DOs (ie Propulsion System DO).
22. Where an Air System is operated, or intended to be operated, by multiple Operating Duty Holders (ODH) / AM(MF), the SOI **should** be owned and authorized by the lead end-user ADH or AM(MF) and **should** encompass the full scope of activities to be conducted by all ODH / AM(MF).

<sup>7</sup> Where the term DT or Commodity DT is used in this RA, this may include the TAM and organizations supporting the TAM where appropriate.

<sup>8</sup> Refer to RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered ► Aircraft.

<sup>9</sup> Recognizing the long-standing requirement for the ISAA role to support IM, an experienced ISAA may be regarded as SQEP in pan-discipline IM matters from a regulatory compliance perspective, but an IAA in the required field **should** address specific issues in disciplines other than structures where the TAA requires that SQEP. ◀

<sup>10</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

**Acceptable  
Means of  
Compliance  
5726(2)**

23. The TAA **should** ensure that all critical or significant items<sup>2</sup>, eg Structural Significant Items or Functionally Significant Items, have appropriate associated Maintenance activities derived by suitable methodology, in consultation with the DO, as part of the Integrity Baseline.

24. The TAA **should** authorize the component lives (Critical and Non-Critical) and, where applicable exchange rates identified by the DO, and promulgate these in AP101X-XXXX-5A1 or equivalent Maintenance schedule.

25. The TAA **should** ensure that Commodity DT Chief Engineers (DT CE) establish the lifing details and Continuing Airworthiness requirements of components for which they are responsible and present their Integrity Evidence and Integrity Assertions to the TAA for final authorization.

**IM Systems**

26. The TAA, in consultation with the DO, **should** identify any IM Systems requirements necessary to assure the Integrity of the Air System.

27. The TAA **should** establish:

- a. Health monitoring and usage monitoring systems and ensure that thresholds for acceptable capture rate of usage data are defined, to enable inspection and replacement of components to be scheduled with adequate confidence.
- b. A system to capture usage against sortie profiles throughout the life of the Air System and a means to quantify unmonitored sorties.
- c. An approach to validate the usage data through engagement with the DO during the design and introduction to service of the Air System.
- d. In consultation with the DO, an exceedance monitoring system in order to capture events that may be a threat to the Integrity of the Air System.
- e. An Air System Fault Reporting, Analysis and Corrective Action System.
- f. A Configuration Status Record (CSR)<sup>11</sup> for the Air System. The CSR **should** detail the Configuration of each Air System Type Design and its components in sufficient detail to maintain Configuration Control (CC) and to support Integrity decisions.

28. The TAA **should** ensure that IM programmes, or the capability to conduct them, are in place in order to understand the condition of the Air System In-Service. The nature of these programmes of activity are likely to be particular to an Integrity discipline.

29. The TAA **should** agree with the CAMO and DO stakeholder, access to, and the means of providing, Service Data from the Forward and Depth domains.

30. The TAA **should** define limits for investigation / urgent action on any data loss from monitoring systems and implement a process to monitor and react. Limits may differ depending on the complexity, reliability and criticality of the monitoring system.

31. The TAA **should** ensure that an Environmental Damage (ED) Prevention and Control (EDPC) programme, including measures to manage the Risk to Airworthiness arising from ED, is established in cooperation with the DO.

32. The TAA **should** ensure IM is supported by an Examination Programme (EP), established prior to the ISD, which **should** include:

- a. Classification of significant items as either At Risk (AR) or Not at Risk (NAR) from Accidental Damage (AD) or ED.
- b. Scheduled examinations based on this classification, and examination and retirement of components according to their fatigue clearances or component lives.

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

**Acceptable  
Means of  
Compliance  
5726(2)**

- c. A Sampling Programme (SP), for components not normally inspected during scheduled examinations, which includes any requirements for teardown<sup>12</sup> to inform the Maintenance schedule.
- d. An inspection of all critical or significant items, iaw the Preventive Maintenance and EP / SP programmes, before the fleet leader reaches 80% of its original design life (or revised life, if less).
33. The TAA or Commodity DT Leader (DTL) **should** ensure appropriate arrangements are in place for the SP with the DO. The DO **should**:
- a. Notify the TAA or Commodity DT CE of the date, time and location scheduled for the tests and / or strip examination of SP materiel subject to fault action.
- b. Submit a report to the TAA or Commodity DTL, covering the following points:
- (1) The deterioration in performance and / or the degree of wear which has occurred.
  - (2) The recommended future service life for this type of item and whether further sampling is required.
  - (3) Those features of design which limit life extension and whether Modification action is feasible and economic.
34. The TAA **should** ensure, where appropriate, that experience and data from other operators of the same Air System type, or Air Systems in similar roles, is used to inform the IM of their Air System.

**Guidance  
Material  
5726(2)**

**Establishing Integrity Management**

35. For guidance refer to the MASIM<sup>2</sup>.

**Regulation  
5726(3)**

**Sustaining Integrity Management**

- 5726(3) The TAA **shall** ensure that IM is sustained, and In-Service Data used, to continuously monitor and counter threats to Integrity.

**Acceptable  
Means of  
Compliance  
5726(3)**

**Sustaining Integrity Management  
Integrity Governance**

36. The TAA **should** review and monitor outputs from the IM Systems and report key issues to the IWG.
37. The AISD and the IMP **should** be reviewed by all stakeholders prior to every IWG and both **should** be ratified by the quorate members of the IWG.
38. The TAA **should** identify any unmitigated or unquantified Airworthiness Risks, associated with IM which have been accepted by the relevant IWG, and raise them to the Platform Safety and Environment Panel and / or the Air System Safety Working Group.

**Integrity Evidence and Baseline**

39. All changes to component lives, Maintenance thresholds or intervals **should** be:
- a. Supported by a Risk Assessment.
  - b. Conveyed to the IWG and reviewed periodically.
  - c. Considered within the Type Airworthiness Safety Assessment.

<sup>12</sup> Refer to Military Aircraft Structures Airworthiness Advisory Group (MASAAG) Paper 105 Guidance and Best Practice for Teardown Inspections.

**Acceptable  
Means of  
Compliance  
5726(3)**

d. Authorized by personnel with the appropriate delegated authority supported by independent assessment as required.

40. Stakeholders **should** report any significant changes in usage or operation to the IWG.

**IM Systems**

41. The TAA **should**:

a. Ensure that IM systems created in the Establishing phase are implemented correctly and periodically reviewed, with significant findings, including data loss, unmonitored sorties and CC issues, reported to the IWG.

b. Maintain IM systems in an effective condition in order to maximize the capture, use and monitoring of Service Data by the CAMO, the DT and the IWG, respectively.

c. Ensure that lost usage data is restored if possible; if not, a technical assessment of the loss **should** be carried out. The TAA / TAM **should** ensure that procedures, or appropriate fill-in rates for lost usage data, are in place and applied as required.

d. Ensure that the Air System Airworthiness Information<sup>13</sup> reflects the 'as flown' Configuration is maintained for the life of the Air System and is populated with all relevant arisings that have the potential to impact Integrity.

e. Ensure that any IM Programmes created in the Establishing phase are implemented correctly and periodically reviewed, and a summary of the results reported to each IWG.

**Guidance  
Material  
5726(3)**

**Sustaining Integrity Management**

42. For guidance refer to the MASIM<sup>2</sup>.

**Regulation  
5726(4)**

**Validating Integrity**

5726(4) The TAA **shall** ensure that Integrity Evidence, Assertions and Baseline are periodically validated.

**Acceptable  
Means of  
Compliance  
5726(4)**

**Validating Integrity**

**Integrity Governance**

43. The TAA **should** use the IWG to validate the Integrity Baseline against the most up to date Service Data and analysis available.

44. The TAA **should** ensure that the validity of the Integrity Baseline is confirmed **on** completion of the IWG.

**Integrity Evidence, Assertions and Baseline**

45. The Integrity Evidence and Baseline **should** be reviewed and updated, with the support of the DO, in response to findings occasioned by validating activities.

46. The TAA **should** ensure that cleared life is reviewed in response to changes to fleet planning assumptions.

47. The TAA **should** ensure that component lifing, recording processes and metrics, are periodically reviewed.

48. The TAA **should** ensure that the Maintenance schedule<sup>14</sup> is reviewed at least every 5 years.

**IM Systems**

49. The TAA, with the assistance of the Military Continuing Airworthiness Manager and DO, **should** review and validate Maintenance processes.

<sup>13</sup> Refer to RA 1223 – Airworthiness Information Management.

<sup>14</sup> Refer to RA 5320 – Air System Maintenance Schedule – Design and Validation.

**Acceptable  
Means of  
Compliance  
5726(4)**

50. The TAA **should** support the ADH or AM(MF) to ensure that the first usage data validation (conversion of the SOI into an SOI and Usage (SOIU)), which forms the baseline for comparison against future validation data, is undertaken once usage is considered to be stable or no later than 3 years after ISD. The ADH or AM(MF) **should** authorize the amendment to each issue of SOIU.
51. The TAA **should** support the ADH or AM(MF) review of the SOI / SOIU and make the results available to the IWG. These reviews **should** be undertaken by the ADH or AM(MF) as follows:
- a. A basic annual review by the appropriate ADH or AM(MF), to confirm that the SOI or SOIU (as appropriate) remains an accurate record.
  - b. A detailed qualitative and quantitative triennial review is conducted using Aircrew interviews, data obtained via the Aircraft log, on-board Systems and / or instrumented flights to confirm future intent and validate usage against the Design Usage Spectrum assumptions.
  - c. Establishing the 'so what' to anticipated changes.
  - d. The review confirms that the expected and validated usage is within the RTS, MPTF (In-Service) or MPTF (Special Case Flying) limits.
52. Following ►SOI / ◄SOIU reviews:
- a. The TAA **should** task DO support to determine the effect of any SOI / SOIU changes on the Integrity Baseline and their recommended operating limitations and Maintenance instructions.
  - b. The TAA **should** retain an Audit trail of all changes made to any of their TAw limitations, instructions or arrangements as a result of the SOI / SOIU review in current Regulations<sup>15</sup>.
  - c. The ADH or AM(MF) **should** make Aircrew familiar with the changes that have been made to Sortie Profile Codes (SPC) within the ►SOI / ◄SOIU and the need for both accurate recording and efficacy of reporting of any changes in usage.
53. The ADH or AM(MF) **should** ensure that the SOI / SOIU (AP101X-XXXX-15S or equivalent) is updated in the ADS.
54. The TAA **should** ensure that results from the EP (including scheduled examinations, and where necessary, the SP and teardown<sup>12</sup> and forensic examination) are collated, reviewed and subjected to trend analysis to inform Maintenance Schedule Reviews, update the IWG on the efficacy of the EP and permit the DO to update lifing predictions.
55. The TAA **should** verify the ability of a system or component to: retain its function within defined limits, function without undue frequency of failure and function without adverse effect on other Systems or components.
56. The TAA **should** ensure that where a Safety-critical system relies upon measurement of a parameter (such as temperature or pressure) this system **should** have an appropriate calibration policy and procedure defined in the ADS.
57. A programme for usage validation **should** be conducted through engagement with the DO, by means of a Structural Health Monitoring System (SHMS), Health and Usage Monitoring System (HUMS), Operational Loads Measurement (OLM) / Operational Data Recording (ODR) or other usage monitoring Systems, on a representative sample of In-Service Air Systems.
58. The TAA **should** ensure the timing of usage validation programmes is being determined by its aims. The requirement to carry out the validation **should** be reviewed at least every 6 years by the TAA (concurrently with a triennial SOIU review) with the decision and rationale supported by evidence and documented in the AISD.
59. The usage validation programme **should** be considered following any Major Change in usage or rate of life consumption or in conjunction with any plans for a Major Type Design change, significant change in usage or life extension, ie where re-

<sup>15</sup> Refer to RA 1225 – Air Safety Documentation Audit Trail.

**Acceptable  
Means of  
Compliance  
5726(4)**

validation of significant parameters is necessary, decisions on usage data validation requirements **should** be documented in the AISD.

60. The TAA **should** initiate an Ageing Air System Audit<sup>16</sup>.

**Guidance  
Material  
5726(4)**

**Validating Integrity**

61. For guidance refer to the MASIM<sup>2</sup>.

**Regulation  
5726(5)**

**Recovering Integrity**

5726(5) The TAA **shall** ensure that any loss or potential compromise of Integrity is recovered.

**Acceptable  
Means of  
Compliance  
5726(5)**

**Recovering Integrity**

**Integrity Governance**

62. The TAA **should** treat a loss or potential compromise of Integrity as an Airworthiness Issue and act to recover Integrity.

63. Any recommendations at an IWG to amend inspection intervals **should** be ratified by the LoAA holder prior to incorporation in the Maintenance schedule.

**Integrity Evidence, Assertions and Baseline**

64. The TAA **should** ensure that IM Systems are established and implemented where the Integrity Evidence and Assertions no longer supports the Integrity Baseline.

65. The TAA **should** ensure that the need for measures to conserve life is considered where life may be insufficient to reach the planned Out of Service Date.

66. The TAA **should** consider the need for design change, Reconditioning or component replacement to mitigate fatigue damage in order to meet fleet planning objectives.

67. The TAA **should** ensure that repairs are:

- a. Developed by an approved DO.
- b. Assessed against the appropriate Design Standard, with lifing and inspection requirements clearly established, and consideration given to the effect of adjacent and / or previous Repairs.
- c. Recorded in the Air System Airworthiness Information<sup>13</sup>.

68. Remedial action **should** be taken, and the IWG notified, if significant deviation in individual Air System weight and balance is identified by the CAMO.

**Guidance  
Material  
5726(5)**

**Recovering Integrity**

69. For guidance refer to the MASIM<sup>2</sup>.

**Regulation  
5726(6)**

**Exploiting Integrity**

5726(6) The TAA **shall** ensure that Integrity is exploited to make best use of the inherent capabilities of the Air System.

<sup>16</sup> Refer to RA 5723 – Ageing Air System Audit.



**Acceptable  
Means of  
Compliance  
5726(6)****Exploiting Integrity**

70. The TAA **should** ensure activities are put in place to record, report and, if required, act where the Service Data and analysis suggests there may be an opportunity to relax requirements within the Integrity Baseline without introducing new threats to Integrity.

71. Any recommendations at an IWG to relax requirements within the Integrity Baseline **should** be ratified by the LoAA holder prior to incorporation in the Maintenance schedule.

**Guidance  
Material  
5726(6)****Exploiting Integrity**

72. For guidance refer to the MASIM<sup>2</sup>.

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## RA 5805 – Airworthiness Directives and Service Bulletins (MRP Part 21 Subpart A)

### Rationale

► *Airworthiness Directives (AD), issued by National Airworthiness Authorities, and Service Bulletins (SB), issued by Design Organizations (DO), are used to promulgate information such as unsafe conditions and Maintenance or product improvement information for civil derived<sup>1</sup> Air Systems.* ◀ *Failure to take appropriate action in response to an AD or SB may impact the Airworthiness of the Air System. Type Airworthiness Authorities (TAA)<sup>2</sup> for civil derived<sup>1</sup> Air Systems need to ensure such ADs and SBs are reviewed and appropriate action is taken as required to maintain the Airworthiness of the Air System.*

### Contents

**5805(1): Airworthiness Directives and Service Bulletins (MRP Part 21.A.3B)**

### Regulation 5805(1)

**Airworthiness Directives and Service Bulletins (MRP Part 21.A.3B)**

5805(1) Following the issue of an AD or SB ►◀ on a civil derived Air System, the TAA **shall** review the relevance and take appropriate action<sup>3</sup>.

### Acceptable Means of Compliance 5805(1)

**Airworthiness Directives and Service Bulletins (MRP Part 21.A.3B)**

1. When an AD or SB has been received by the TAA ►◀, they **should** decide the appropriate corrective action and / or required inspections to be carried out within the timescale detailed in the AD or SB<sup>4</sup>.
2. If the TAA defers or rejects an AD or SB ► *regarding an unsafe condition* ◀, that is applicable to the operated Air System, they **should** seek Approval from the relevant Defence Equipment and Support (DE&S) Operating Centre Director<sup>5</sup> or Sponsor<sup>6</sup> and ►◀ ensure that the appropriate Aviation Duty Holder / Accountable Manager (Military Flying) is aware so that any impact on Risk to Life can be considered.

### Guidance Material 5805(1)

**Airworthiness Directives and Service Bulletins (MRP Part 21.A.3B)**

3. Promulgation of the required corrective action and / or inspection will be via an SI(T)<sup>7</sup> or Modification Leaflet<sup>8</sup> as applicable.

#### Airworthiness Directive

4. An AD is a document issued by a recognized civil authority (such as the EASA or the FAA) which mandates the actions to be performed on an Air System to restore an acceptable level of Safety<sup>9</sup>, when evidence shows that the Safety level of the Air System may otherwise be compromised.
5. An AD will contain at least the following information:

<sup>1</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B) – Where the Military Type Certificate is based on a Type Certificate issued by civil regulator (such as European Union Aviation Space Agency (EASA)).

<sup>2</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 Regulatory Article (RA), noting that a TAM may not approve Special Instruction (Technical) (SI(T))s.

<sup>3</sup> Refer to RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered ► *Aircraft*. ◀

<sup>4</sup> Law Para 4e of RA 5815 – Instructions for Sustaining Type Airworthiness - Military DOs can determine how they issue Instructions for Sustaining Type Airworthiness and this can include ADs / SBs. This RA is specifically for civil-derived Air Systems where the Civil Aviation Authority / Federal Aviation Administration (FAA) issue an AD / SB that needs to be considered for applicability to the Air System.

<sup>5</sup> Refer to RA 1013 – Air Systems Operating Centre Director – Provision of Airworthy and Safe Systems.

<sup>6</sup> Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.

<sup>7</sup> Refer to RA 5405 – Special Instructions (Technical).

<sup>8</sup> Refer to RA 5305 – In Service Design Changes.

<sup>9</sup> Refer to RA 1230 – Design Safety Targets.

**Guidance  
Material  
5805(1)**

- a. Identification of ►any◄ unsafe condition(s).
- b. Identification of the affected Air System operating and Maintenance associated documentation.
- c. The action(s) required.
- d. The compliance time / cycles for the required action(s).
- e. The date of entry into force.

**Service Bulletins**

6. It is common practice among civil DO to request actions to improve the Safety level of their Product, Part or Appliance by means of a SB. ►An◄ SB may or may not result in the introduction of a design change. The use of a SB will provide the recipient with information or advance instruction for corrective action.

7. ►◄ SB issued by a DO ►do◄ not carry a mandatory requirement for action, irrespective of whether the SB is published in anticipation of an AD, to be subsequently issued by a recognized Authority.

Draft for NPA

## 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. 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 an approved Design Organization (DO) within the scope of its privileges as recorded in its terms of Approval<sup>1</sup>.

### Acceptable Means of Compliance 5820(1)

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

1. 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>2</sup>.
2. A Minor Change has no appreciable effect on the mass, balance, structural strength, reliability, operational characteristics, armament system or other characteristics affecting the Airworthiness of the Air System. All other changes **should** be ► **classified as** ◀ Major Changes.
3. The classification decision and supporting justification of all changes to Type Design **should** be recorded ► **in a manner that provides an auditable trail.** ◀
4. 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.

### Guidance Material 5820(1)

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

5. Refer to the Manual of Military Air System Certification (MMAC)<sup>3</sup> for related Guidance Material.

<sup>1</sup> The DO privilege is restricted to Minor Changes only. For the DO scope of privileges refer to RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).

<sup>2</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>3</sup> Refer to MMAC Chapter 3 – Changes to Type Design (MRP Part 21 Subpart D).

**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)**

6. ▶◀
- a. ▶◀
- (1) ▶◀
- (2) ▶◀
- (3) ▶◀
- b. ▶◀
- c. ▶◀
7. Where Operational Suitability Data (OSD)<sup>4</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>5</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>6</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) application. If the change to the MTC or Restricted MTC (RMTC) 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<sup>3</sup> 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>7</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).

<sup>4</sup> Refer to RA 5810(3): Application (MRP Part 21.A.15).

<sup>5</sup> Refer to RA 5012 – Type Airworthiness Safety Assessment.

<sup>6</sup> Refer to the GM of RA 5820(1) for advice on assurance levels for Major Changes.

<sup>7</sup> Refer to RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).

**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:** ◀
- 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.
  - When compliance with the TCB has been declared and the justifications of compliance have been recorded in the compliance documents.
  - When any Airworthiness provisions not complied with are compensated for by controls, factors or mitigations that provide an Equivalent Level of Safety (ELoS).
  - 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>8</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:
- 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>1</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<sup>3</sup> 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.

<sup>8</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

**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>8</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 intended use, the TAA **should** be issued with a Restricted Approved Design Change Certificate (ADCC) 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>9</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>10</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>11</sup>.

**Guidance  
Material  
5820(4)**

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

28. Refer to the MMAC<sup>3</sup> 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).

<sup>9</sup> Refer to RA 5810(7): Compliance with the Type Certification Basis (MRP Part 21.A.20).

<sup>10</sup> Refer to RA 5301 – Air System Configuration Management.

<sup>11</sup> Refer to RA 1205(2): Ownership of the Air System Safety Case.



**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, the following **should** apply: ◀
- A change is Minor<sup>12</sup>.
  - A change is Not Significant<sup>13</sup>.
  - An area, System, Part or Appliance is not affected by the change.
  - Compliance with the latest amendment for a Significant change ▶<sup>14</sup> ◀ does not contribute materially to the level of Safety.
  - Compliance with the latest amendment would be impractical.
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>4</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<sup>3</sup> 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>15</sup>.

**Guidance  
Material  
5820(6)**

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

35. Record keeping procedures will be iaw RA 5810(16).

<sup>12</sup> Refer to 5820(1) paragraph 2.

<sup>13</sup> A change is considered Not Significant if it is neither Significant nor Substantial.

<sup>14</sup> ▶ Refer to the MMAC for definition. ◀

<sup>15</sup> Refer to RA 5810(16): Record Keeping (MRP Part 21.A.105).

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To ensure use of the latest version of this form, please download from the MAA website.

## Design Approved Organization Scheme

### Nomination Form for Design Postholders and Design Signatories

This form must be completed and submitted for each nominated Postholder and each proposed Design Signatory so that the MAA DAOS Branch can review the individuals previous experience and Competence to determine their suitability and endorsement for the position requested.

When submitting this Form, please ensure that it is accompanied by a corresponding MAA DAOS Form 82, to request the corresponding amendment to your Design Approval Schedule. The Form 82 is used to specify the information needed to process the requested changes and its submission enables the commencement of the MAA DAOS Branch activities required.

For new applicant Design Organizations that have submitted a Form 80 and are under consideration for inclusion under DAOS, a corresponding Form 82 submission is not required with any submitted Form 4.

Details of personnel required to be accepted as specified in RA 5850 - paragraph 11.b, and Annex B paragraphs 15 and 16:

1. Organization Name: [ ]
2. Organization Reference: [ ]
3. Name of Nominee: [ ]
4. Contact Number: [ ]
5. E-mail Address: [ ]
6. Position within Organization (Please include which Post if this is not clear): [ ]
7. Relevant Qualifications and Training undertaken for the position at Item 6:
  - a. [ ]
  - b. [ ]
  - c. [ ]
  - d. [ ]



8. Relevant experience for the position at Item 6: (Please use a continuation sheet if necessary)

[ ]

9. Applicants Signature: [ ]

10. Date: [ ]

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11. On completion, please send this form to:

Military Aviation Authority  
Assurance Co-ordination Cell  
Juniper 1, Wing 4, # 5104  
MOD Abbey Wood (North)  
BRISTOL  
BS34 8QW

Email: [DSA-MAA-OA-ACC@mod.gov.uk](mailto:DSA-MAA-OA-ACC@mod.gov.uk)

12. List any supporting copies of documents submitted with this Form 4 (please do not send any original documents):

- a. [ ]
- b. [ ]
- c. [ ]
- d. [ ]
- e. [ ]
- f. [ ]

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**Application for Changes to:  
 Design Approved Organization Scheme (DAOS) Approval**

**1. Design Organization**

<b>Organization DAOS Reference No.</b>	UK.MAA.DAOS.[ ]
<b>Organization Name</b> <i>[and trading name if applicable]</i>	[ ]
<b>Address</b> <i>[registered business &amp; postal address, if different]</i>	[ ]
<b>Contact Person</b>	[ ]
<b>Telephone</b>	[ ]
<b>E-mail</b>	[ ]
<b>Location(s)</b>	[ ]
<b>MOD Sponsor<sup>1</sup> Name</b> <i>[For changes at field 2.4, 2.5 or 2.6 only]</i>	[ ]
<b>MOD Sponsor Contact Address</b> <i>[For changes at field 2.4, 2.5 or 2.6 only]</i>	[ ]
<b>Telephone</b>	[ ]
<b>E-mail</b>	[ ]

**2. Details of Revision(s) to DAOS Approval**

<p><b>2.1 Identification of changes to key Signatories.</b>                  Please clearly identify <b>each</b> signatory that requires removal, addition and / or update within the Approved Schedule.                  Please include full name, post title, limitations and which type of signatory addition or change is required for each requested change.</p> <p>A MAA DAOS Form 4 <b>should</b> be submitted for any new proposed Approved Signatories and Approved Postholders.</p>	[ ]
<p><b>2.2 Identification of changes to the Organization or Facilities.</b></p>	[ ]

<sup>1</sup> The MOD Sponsor may be a Delivery Team.

<p><b>2.3 Identification of changes to the Design Organization Exposition (DOE).</b>                  Please provide a copy of the updated DOE for assessment and where possible, please highlight the changes within the DOE.</p>	[ ]
<p><b>2.4 Identification of significant changes to the Design Management System.</b>                  A list of significant changes can be found within the Guidance Material of RA 5850(6).                   MOD sponsor endorsement is required for significant Organization changes found in RA 5850(6) para 47. a</p>	[ ]
<p><b>2.5 Identification of changes to the Scope of Approval.</b>                  Please provide copies of any associated documentation for assessment.  <i>[Requires MOD sponsor Endorsement]</i></p>	[ ]
<p><b>2.6 Identification of Privilege requested.</b>                  Please specify which privileges are being requested in accordance with RA 5850(11) and provide copies of any related processes and procedures for assessment.  <i>[Requires MOD sponsor Endorsement]</i></p>	[ ]

### 3. Additional information

[ ]
-----

### 4. Applicant's Declaration

I confirm, to the best of my knowledge, that the information on this form is correct.

Date	Name	Signature
[ ]	[ ]	[ ]

### 5. MOD Sponsor's<sup>2</sup> Declaration

*[Required for changes at field 2.4, 2.5 or 2.6]*

I confirm sponsorship of the changes detailed at fields 2.4, 2.5 and / or 2.6 above.

Date	Name	Signature
[ ]	[ ]	[ ]

This signed application should be sent by e-mail or regular mail to:

**Military Aviation Authority**  
 Assurance Co-ordination Cell  
 Juniper 1, Wing 4, #5104  
 MOD Abbey Wood (North),  
 Bristol, BS34 8QW

Email: [DSA-MAA-OA-ACC@mod.gov.uk](mailto:DSA-MAA-OA-ACC@mod.gov.uk)

<sup>2</sup> "Sponsor" here is NOT as described in RA 1019 – Sponsor of Military Registered Civilian-Owned and Civilian Operated Air Systems – Air Safety Responsibilities.