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.

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5010(1) The TAw Authority (TAA) or TAw Manager (TAM)[1] **shall** establish and maintain a through life TAw Strategy for an Air System[2] that supports the Air System Safety Case (ASSC)[3].

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Type Airworthiness Strategy

1. Under arrangements for Civilian Operated Air Systems which invoke a TAA and TAM[4], the TAA **should** establish a TAw Strategy. Under arrangements for Special Case Flying[1], 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[3] requirements and to support the Release To Service, Military Permit To Fly (MPTF) (Development)►[5]◄, MPTF (In-Service)►[6]◄ or MPTF (Special Case Flying)►[6]◄ 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[3] argument(s).

   d. Reviewed in line with the ASSC.

   e. Updated by the TAA or TAM and approved by the OCD or Sponsor.

   f. Authorized by TAA or TAM[4], and approved by the OCD or Sponsor, within 6 months of any change of these personnel.

3. The TAA or TAM **should** ensure that:

   a. Key stakeholders[7] are invited to comment on initial issue of the TAw Strategy and on significant update[8], prior to Approval.

   b. Key stakeholders are informed of routine updates[8] to the TAw Strategy when approved by OCD or Sponsor.

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[1] 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.

[2] Open Category and Specific S1 sub-category ►Uncrewed Air Systems (UAS)◄ do not require a TAw Strategy. Specific S2 sub-category and Certified Category ►UAS◄ require a TAw Strategy. Refer to RA 1600 Series – ►Uncrewed◄ Air Systems.

[3] Refer to RA 1205 – Air System Safety Cases.

[4] Where both a TAA and TAM exist, both **should** sign the TAw Strategy.

[5] ►Refer to RA 5880 – Military Permit to Fly (Development) (MRP Part 21 Subpart P).

[6] Refer to RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task).◄

[7] 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.

[8] 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[9].

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)[10, ►11◄] with appropriate interfaces.

d. Detail on the approach to establishing the Type Design[12] and managing In-Service design changes[13, 14].

e. The approach for ensuring the use of Airworthiness Competent organizations and persons[15, 16].

f. The approach to Assurance and review of TAw management activities, including Quality Management Systems, Independent Technical Evaluation[17], Independent Safety Auditing[17] and independent review of publications.

g. Detail on the approach to delivering and sustaining the Air System TAw through proactive Integrity Management[18], reactive Fault and occurrence investigation[19] and Hazard Management activity[20].

h. Identification and approach to integration of equipment and Systems that are included within the Type Airworthiness Safety Assessment (TASA)[11, 20] but are managed or supplied by other TAw organizations[21].

i. The approach to Configuration Management[22] and Air System Document Set management[23, 24].

j. The approach to Airworthiness Information Management[25] and Data Exploitation[26].

k. The approach to production acceptance, including an overview of oversight and how production concessions and Waivers will be managed[27].

l. The approach for assessing and ensuring sufficient human and capital resource to conduct the required tasks.

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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►◄. Where a Military

[9] 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.
[10] Refer to RA 1200 – Air Safety Management ►◄.
[11] ►Refer to RA 5011 – Type Airworthiness Safety Management System.◄
[12] Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).
[13] Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D).
[14] Refer to RA 5305 – In-Service Design Changes.
[15] Refer to RA 1002 – Airworthiness Competent Persons.
[16] Refer to RA 1005 – Contracting with Competent Organizations.
[17] Refer to the Knowledge In Defence (KiD) website.
[18] Refer to RA 5726 – Integrity Management.
[19] Refer to RA 5825 – Fault Reporting and Investigation.
[20] Refer to RA 5012 – Type Airworthiness Safety Assessment.
[21] Refer to RA 5013 – Air Safety Management of Equipment and Commodity Items.
[22] Refer to RA 5301 – Air System Configuration Management.
[23] Refer to RA 1310 – Air System Document Set
[24] Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.
[25] Refer to RA 1223 – Airworthiness Information Management
[26] Refer to RA 1207 – Air Safety Data Management and Exploitation
[27] 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[28] 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[29], the Military Continuing Airworthiness Manager (Mil CAM), Defence Aircrew Publications Squadron, and other relevant Contractors and other defence equipment organizations (eg Commodity Delivery Teams◄◄).

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[30] 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.

[28] Refer to Def Stan 00-970 – Certification Specifications for Airworthiness.
[29] Refer to RA 2370 – Test and Evaluation.
[30] 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.