

► This RA has been substantially re-written; for clarity no change marks are presented – please read RA in entirety ◀

## RA 1015 - Type Airworthiness Management - Roles and Responsibilities

### Rationale

*The Type Design of an Air System will be managed through-life. Losing control of the Type Design may result in a compromised level of Airworthiness. In order to maintain Airworthiness, a responsible individual is to be appointed and held personally accountable for the Air System Type Design. This RA sets out the roles and responsibilities for personnel appointed to principal Type Airworthiness (TAw) management positions<sup>1</sup>.*

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#### 1015(1): Type Airworthiness Management

### Regulation 1015(1)

#### Type Airworthiness Management

1015(1) Personnel appointed to principal TAw management positions **shall** be responsible for the TAw of an Air System throughout its life from development to disposal.

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#### Type Airworthiness Management

##### General

1. Within Defence Equipment & Support (DE&S) each Air System Delivery Team (DT) **should** have a senior Project Engineer who is nominated as the TAA for each Air System type or group of Air System types. The TAA **should** be at least OF5 (or equivalent)<sup>2</sup>. The TAA **should** hold an appropriate Letter of Airworthiness Authority (LoAA)<sup>3</sup> from the Operating Centre Director (OCD)<sup>4</sup>.
2. For Civilian-Owned / Civilian Operated Air Systems, the Air System Sponsor can delegate<sup>5</sup> TAw responsibility between a TAA and a TAM<sup>6, 7, 8</sup>. The TAM **should** hold an appropriate Letter of Appointment (LoA)<sup>3</sup> from the Sponsor.

##### Organizational

3. Personnel appointed to principal TAw management positions, in line with their delegation, **should**:
  - a. Ensure that appropriate action is taken in response to Airworthiness issues including, but not limited to, informing the Aviation Duty Holder (ADH)<sup>9</sup> / Accountable Manager (Military Flying) (AM(MF))<sup>10</sup> when there has been a change in Airworthiness risk<sup>11, 12, 13</sup>.
  - b. Actively support the ADH / AM(MF), who is responsible for Air Safety within their defined Area of Responsibility (AoR), by managing the TAw of the Air System.

<sup>1</sup> The term "personnel appointed to principal TAw management positions" refers to the Type Airworthiness Authority (TAA) and / or Type Airworthiness Manager (TAM).

<sup>2</sup> This grade is to be reduced to OF4 (or equivalent) for certain categories of Remotely Piloted Air Systems (RPAS) (refer to RA 1605 – Remotely Piloted Air Systems Specific S2 sub-category).

<sup>3</sup> Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility.

<sup>4</sup> Refer to RA 1013 – Air Systems Operating Centre Director – Provision of Airworthy and Safe Systems.

<sup>5</sup> Refer to RA 1160 – The Defence Air Environment Operating Framework.

<sup>6</sup> When deciding upon a model for TAw management, and the level to which responsibilities are shared between a TAA and a TAM, the Sponsor is recommended to seek advice and guidance from an appropriate OCD 2\*.

<sup>7</sup> Refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems.

<sup>8</sup> Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.

<sup>9</sup> Refer to RA 1020 – Aviation Duty Holder and Aviation Duty Holder-Facing Organizations – Roles and Responsibilities.

<sup>10</sup> Refer to RA 1024 – Accountable Manager (Military Flying).

<sup>11</sup> Refer to RA 5405 – Special Instructions (Technical).

<sup>12</sup> Refer to RA 5805 – Airworthiness Directives and Service Bulletins (MRP Part 21 Subpart A).

<sup>13</sup> Refer to RA 1220 – Delivery Team Airworthiness and Safety.

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- c. Ensure that signed formal agreements<sup>14</sup> are in place with all organizations supporting TAw activity<sup>13</sup>. Where the personnel appointed to principal TAw management positions have a contract in place with an MAA Approved Co-ordinating DO (CDO), then the personnel appointed to principal TAw management positions **should** assure themselves that the CDO has arrangements in place with its sub-contractors to support TAw activities<sup>15</sup>.

**Safety / Strategy / Policy**

4. Personnel appointed to principal TAw management positions, in line with their delegation, **should**:
- a. Produce an Airworthiness Strategy for an Air System consistent with the project Through Life Management Plan<sup>13</sup>.
  - b. Be responsible for the Safety Management of the Project<sup>13</sup>.
  - c. Develop, maintain and enhance a Safety Management System (SMS)<sup>16</sup>, compliant with the OCD / Sponsor approved project Airworthiness Strategy<sup>13</sup>, which will contribute to the Operating Duty Holder's / AM(MF)'s Air System Safety Case<sup>17</sup>, for each Air System type.
  - d. Initiate and maintain an up-to-date Type Airworthiness Safety Assessment (TASA)<sup>13</sup>.
  - e. Ensure the TASA and Project SMS is subject to independent evaluation and audit<sup>13</sup>.
  - f. Conduct assurance of contracted organizations, including where appropriate Defence Contractor Flying, Design, Production, Maintenance, Continuing Airworthiness, and Continuing Airworthiness management; assurance of compliance to the contract.
  - g. Support the DT in promulgating and maintaining a Support Policy Statement for their Air Systems / equipment<sup>13</sup>.
  - h. Support the DT in promulgating a Topic 2(N/A/R), or equivalent, for their Air Systems<sup>18</sup>.
  - i. Conduct assurance of the DT and Commodity DT / support teams / organizations<sup>16</sup>.

**Personnel**

5. Personnel appointed to principal TAw management positions, in line with their delegation, **should**:
- a. Identify those posts within their AoR that require LoAAs / LoA. These posts **should** be limited to those that require authority to alter the Air System Document Set (ADS) without reference to higher authority.
  - b. Ensure that all persons involved in TAw activities are competent and Suitably Qualified and Experienced Person.
  - c. Delegate LoAAs / LoAs to subordinate staff and ensure that all sub-delegations are reviewed at least annually.
  - d. Undertake a Training Needs Analysis in relation to the differences between the civil-type course requirements for the issue of a European Union Aviation Safety Agency Part 66 type rating and any government training for the equipment fitted to its Air Systems<sup>19</sup>.

<sup>14</sup> Includes arrangements such as: Internal Business Agreements, Joint Business Agreements, Service Level Agreements, Foreign Military Sales agreements, contracts, etc.

<sup>15</sup> Refer to RA 1014 – Design Organizations and Co-ordinating Design Organizations – Airworthiness Responsibilities.

<sup>16</sup> Refer to RA 1200 – Air Safety Management.

<sup>17</sup> Refer to RA 1205 – Air System Safety Cases.

<sup>18</sup> Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

<sup>19</sup> Refer to RA 1165 – Civil Aviation Authority Oversight of Military Registered Air Systems.

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**Type Design**

6. Personnel appointed to principal TAw management positions, in line with their delegation, **should**:
- a. Ensure that the Air System Type Design complies with all applicable Certification Airworthiness Regulatory requirements, through-life; this includes appropriate civil mandatory, advisory and deferred instructions (eg Airworthiness Directives (AD) and Service Bulletins (SB)).
  - b. Approve each change to the Air System Type Design; except where the privilege to approve Minor Changes<sup>20</sup> has been conferred upon the DO<sup>21</sup>.
  - c. Ensure that the Certificate of Design is signed in accordance with (iaw) RA 5103<sup>22</sup>.
  - d. Agree the need for installation of instrumentation and a crashworthy Flight Data Recorder for the purposes of the flight trial programme, in consultation with the Design Organizations (DOs) or selected Test and Evaluation Organization<sup>23</sup>.
  - e. Be responsible for Integrity Management, for all Air System types within their AoR, to ensure an acceptable and demonstrable level of integrity<sup>24</sup>.
  - f. Ensure that the Air System is designed to approved Certification Specifications for Airworthiness<sup>25</sup>.
  - g. Endorse the Statement of Acceptance if requested by the ADH / AM(MF)<sup>26</sup>.
  - h. Ensure that each part or appliance is permanently and legibly marked iaw the applicable design data<sup>27</sup>.
  - i. Develop and implement a Life Extension Programme<sup>28</sup> when required to extend the certified life of a UK military registered Air System.
  - j. Develop and implement an Out of Service Date Extension Programme<sup>29</sup> when required to extend the operational life of a UK military registered Air System.
  - k. Ensure that technical data capture and analysis<sup>30</sup> validates design assumptions about usage rates, failure modes and failure rates.
  - l. Ensure the certification of new military Air Systems is iaw Military Air Systems Certification Process (MACP)<sup>25</sup>.
  - m. For Air Systems that have been awarded a Military Type Certificate (MTC)<sup>25</sup> by the MAA, the TAA **should** be the MTC Holder<sup>12</sup>. For those Air Systems undergoing a Major Change in Type Design, which have not previously been issued with a MTC, the TAA **should** be the holder of the Approved Design Change Certificate<sup>20</sup> when issued.

**Airworthiness Occurrences**

7. Personnel appointed to principal TAw management positions **should** ensure that all applicable stakeholders (eg DO, other operators, MAA, etc) are included in the distribution of all Occurrence Reports<sup>31</sup>.

<sup>20</sup> Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D)

<sup>21</sup> Refer to RA 1005 – Contracting with Competent Organizations.

<sup>22</sup> Refer to RA 5103 – Certificate of Design.

<sup>23</sup> Refer to RA 5219 – Instrumentation and Flight Data Recorder Requirements for Flight Trials of Aircraft.

<sup>24</sup> Refer to RA 5726 – Integrity Management.

<sup>25</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

<sup>26</sup> Refer to RA 4970 – Baseline Military Airworthiness Review – MRP Part M Sub Part I.

<sup>27</sup> Refer to RA 5885 – Identification of Products, Parts and Appliances (MRP Part 21 Subpart Q).

<sup>28</sup> Refer to RA 5724 – Life Extension Programme.

<sup>29</sup> Refer to RA 5725 – Out of Service Date Extension Programme.

<sup>30</sup> Refer to RA 1140 – Air System Technical Data Exploitation.

<sup>31</sup> Refer to RA 1410 – Occurrence Reporting and Management.

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8. Personnel appointed to principal TAW management positions, in line with their delegation, **should** ensure a system is in place for reporting and investigating occurrences that warrant specific attention due to their potential impact on Air Safety<sup>32</sup>.
9. Where appropriate, the data trends **should** be evaluated<sup>30</sup> to ensure the Airworthiness and integrity<sup>24</sup> of Air Systems are maintained.

**Configuration Control**

10. Personnel appointed to principal TAW management positions, in line with their delegation, or Commodity Chief Engineer **should**:
- a. Develop and maintain a Configuration Management Plan to cover all items of materiel that may be subject to Modification<sup>33</sup>.
  - b. Ensure a system is used to record and maintain the configuration management and technical history of an individual Air System and related Products, Parts and Appliances<sup>34</sup>.
  - c. Authorize and manage procedures for Modifications<sup>35</sup>.
  - d. Make an appropriate response following the issue of an AD or a SB for an unsafe condition on a civil derived Air System.
  - e. Manage, through Chairmanship of the Local Technical Committee (LTC)<sup>33</sup> and submission to the Configuration Control Board (CCB)<sup>33</sup>, the configuration of the Air System Type Design including the provision of Modifications necessitated by In-Service experience or as requested by ADHs for safety, operational, or economic reasons.
  - f. Initiate an appropriate independent Ageing Air System Audit for each ageing Air System fleet under their control<sup>36</sup>.
  - g. Ensure that on delivery or transfer of any new or industry modified Air System, original copies of all relevant Maintenance Records are despatched to the receiving unit.

**Air Systems Flight Release and Limitations Documentation**

11. Personnel appointed to principal TAW management positions, in line with their delegation, **should**: prepare, approve, and review the Air System's Flight Release and Limitations Documentation<sup>37</sup>.

**Design Organizations**

12. Personnel appointed to principal TAW management positions, in line with their delegation, **should**:
- a. Ensure that only competent DOs<sup>21</sup> are contracted in support of their Air Systems, and that they have access to the Air System Type Design data in order to provide expert interpretation of this data.
  - b. Ensure that the DO holds an extant approval from the MAA under Design Approved Organization Scheme covering the relevant scope of activities, including modifications and repairs<sup>38</sup>.
  - c. Ensure that they only invoke specific privileges, in writing, to a DO that has been assessed and accepted by the MAA to operate such privileges<sup>39</sup> and that are consequently identified in their Terms of Approval as a DO. The TAA / TAM **should** inform MAA-OpAssure-Eng-DepHd and the applicable Military Continuing Airworthiness Management Organizations (Mil CAMO(s)) which

<sup>32</sup> Refer to RA 5825 – Fault Reporting and Investigation.

<sup>33</sup> Refer to RA 5301 – Air System Configuration Management.

<sup>34</sup> Refer to RA 1223 – Airworthiness Information Management.

<sup>35</sup> Refer to RA 5305 – In-Service Design Changes.

<sup>36</sup> Refer to RA 5723 – Ageing Air System Audit.

<sup>37</sup> Refer to RA 1300 – Release To Service; RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task); and RA 5880 – Military Permit To Fly (Development) (MRP Part 21 Subpart P).

<sup>38</sup> Refer to RA 5865 – Repairs (MRP Part 21 Subpart M).

<sup>39</sup> Refer to RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).

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privileges have been invoked or revoked, for what Air Systems and to what organizations.

d. Ensure that the Production Organization's Quality Management System is 3<sup>rd</sup> party accredited to an acceptable standard<sup>40</sup>.

e. Agree the list of all Parts, prepared for inclusion in the Design Records by the DO, and conduct regular reviews of it in the light of service experience and changes in design<sup>27</sup>.

13. The TAA, in line with their delegation, **should** ensure that there is one overall DO or CDO appointed as the Air System CDO to manage the overall design or through-life configuration of each Air System. The TAA **should** establish and maintain a contractual relationship with the Air System CDO.

**Privileging**

14. Personnel appointed to principal TAw management positions, in line with their delegation, **should**:

a. When invoking privileges, inform all key stakeholders (eg DO, Mil CAMO, the MAA, etc).

b. Assure any changes approved under the provision of any privilege that has been invoked are accurately classified.

c. Ensure that there is a robust mechanism for managing the configuration control of the Air System or equipment for any changes approved under the provisions of any privilege that has been invoked.

15. When personnel appointed to principal TAw management positions departs their post, all privileges issued by that individual remain valid for a maximum period of 3 months, during which time their successor **should** re-assess the award of privileges.

**Air System Document Set**

16. Personnel appointed to principal TAw management positions, in line with their delegation, **should** ensure:

a. The completeness and accuracy of the Approved Data, including all elements of the ADS, and the upkeep of the Air System Type Design; ensuring the provision of Approved Data to the Mil CAMO<sup>41</sup>.

b. That quality assured Technical Information is supplied<sup>42</sup>.

c. That they are provided with the complete set of Instructions for Sustaining TAw, comprising descriptive data and accomplishment instructions prepared, iaw the Type Certification Basis, by the DO<sup>39</sup>.

d. Communication of changes to the ADS is carried out in a timely manner.

**Support to Mil CAMO**

17. Personnel appointed to principal TAw management positions, in line with their delegation, **should** ensure:

a. That, if applicable, a relevant Certificate of Airworthiness is made available to the Military Continuing Airworthiness Manager.

b. The protocols of an Aircraft Maintenance Schedule are implemented throughout the life of the project<sup>43</sup>.

c. They undertake the Mil CAMO tasks formally accepted by, and sub-contracted to, them.

<sup>40</sup> Refer to RA 5835 – Production Organizations (MRP Part 21 Subpart G).

<sup>41</sup> Refer to RA 1310 – Air System Document Set.

<sup>42</sup> Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

<sup>43</sup> Refer to RA 5320 – Air System Maintenance Schedule – Design and Validation.

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**Civil Aviation Authority Oversight**

18. Personnel appointed to principal TAW management positions, in line with their delegation, **should** be responsible for the TAW arrangements of military Air Systems subject to Civil Aviation Authority oversight, ensuring compliance with the MRP<sup>19</sup>.

**RPAS**

19. Personnel appointed to principal TAW management positions, in line with their delegation, **should** ensure that all RPAS intended to be operated in the Specific S2 sub-category and Certified Category RPAS are categorized<sup>44</sup>.

Note:

The TAA / TAM is not responsible for ensuring Open Category and Specific S1 sub-category RPAS are categorized iaw RA 1600.

**Embarked Air Systems**

20. Personnel appointed to principal TAW management positions, in line with their delegation, **should** be responsible for providing equipment which is safe and suitable for Air Systems required to conduct embarked aviation activities in the maritime environment in Her Majesty's / MOD Ships<sup>45</sup>.

21. Personnel appointed to principal TAW management positions, in line with their delegation, and Ship Platform Authority **should** jointly prepare the Ship-Air Release Recommendation for each Air System / Ship combination to the satisfaction of the Royal Navy Release To Service Authority / Sponsor<sup>46</sup>.

**Type Airworthiness Management Supplement**

22. Where TAW management responsibilities are held by a TAM, the DO **should** furnish the MAA a TAW Management Supplement to the Design Organization Exposition describing, directly or by cross-reference, how the TAW requirements are to be managed.

23. To maintain TAM approval, the TAW Management Supplement **should** remain an accurate reflection of the organization with any amendment submitted to the MAA for approval. Amendment submission **should not** be interpreted as MAA approval being in place.

24. The TAW Management Supplement **should** be produced and include the content detailed in the template held on the MAA's websites<sup>47</sup>.

25. The TAW Management Supplement **should** be reviewed by the Sponsor as part of the TAM delegation process.

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26. Nil.

<sup>44</sup> Refer to RA 1600 Series – Remotely Piloted Air Systems.

<sup>45</sup> Refer to RA 1029 – Ship-Air Release – Roles and Responsibilities.

<sup>46</sup> Refer to RA 1395 – Authorization to Permit Embarked Aviation in Her Majesty's / MOD Ships.

<sup>47</sup> Refer to RA 5850(4): Design Organization Exposition.