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

RA 5320 - Air System Maintenance Schedule – Design and Validation

Rationale

Maintenance schedules are a key component of the Instructions for Sustaining Type Airworthiness (ISTA)[1]. Failure to implement an appropriate Maintenance schedule regime, such as Reliability Centred Maintenance (RCM), could potentially jeopardize Airworthiness. Maintenance schedules need to be maintained and validated throughout the life of the Air System, to account for changes in operating usage, environment, configuration, Ageing and Maintenance regime. This RA details the protocols for implementing an Air System Maintenance schedule through life in order to sustain Airworthiness.

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Air System Maintenance Schedule – Design and Validation

5320(1) The Type Airworthiness Authority (TAA)[2] **shall** ensure Air System Maintenance schedules are designed in accordance with an appropriate protocol and remain valid throughout the life of the Air System.

Acceptable Means of Compliance 5320(1)

Air System Maintenance Schedule – Design and Validation

1. The Air System Maintenance schedule **should** be a complete and overarching Preventive Maintenance regime for maintaining the TAw of an Air System throughout its designed and certified life. The Maintenance schedule **should** be based on forecast usage, reliability performance and include the task content and metric or events that trigger the tasks.

2. The Maintenance schedule, with supporting evidence, **should** be in place to support Air System Certification[3]. The Maintenance schedule **should** be detailed in the ISTA[1].

3. Any preventive Maintenance schedule **should** be derived and reviewed in conjunction with the Design Organization (DO) and the Military Continuing Airworthiness Manager.

4. The Air System Maintenance schedule **should** be subject to periodic review and validation. These activities **should** consider operating experience[4] and any changes to the Maintenance regime proposed by the DO and promulgated by the TAA, resulting in amendment to the Maintenance schedule when necessary. DO design data and assumptions **should** be utilized to validate the effectiveness of the Maintenance schedule in mitigating the failure modes and failure rates anticipated during Certification and the development of the initial Maintenance schedule. The periodicity **should** be dictated to preserve Airworthiness but **should not** exceed 5 years.

5. During design, review and validation either of the following Maintenance protocols **should** be utilized:

   a. JAP(D)100C-22[5].

   b. Air Transport Association Maintenance Steering Group-3 (MSG-3).

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[1] Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.
[2] For Civilian-Owned / Civilian Operated Air Systems the Air System Sponsor has the opportunity to split Type Airworthiness (TAw) responsibility between a TAA and a Type Airworthiness Manager (TAM); however due to the non-delegable responsibilities detailed in RA 1162 - Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems, TAM is not applicable to this RA.
[3] Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).
[4] Refer to Manual of Air System Integrity Management (MASIM).
[5] Refer to JAP(D)100C-22 – Guide to Developing and Sustaining Preventative Maintenance Programmes.

Acceptable Means of Compliance 5320(1)

6. If the Air System is a civil derivative design then the TAA **should** attend or send a representative to the Maintenance Review Board, or the appropriate civil Maintenance Review Meeting for the type.

Guidance Material 5320(1)

Air System Maintenance Schedule – Design and Validation

7. The procedures for the preparation and amendment of Maintenance schedules are identified in JAP(D)100C-20[6].

[6] Refer to JAP(D)100C-20 – Preparation and Amendment of Maintenance Schedules.