

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

RA 1350 - Air Launched Weapon Release

Rationale

The Carriage, Release and Jettison (CR&J) of Air Launched Weapons¹ (ALW) from Aircraft presents equipment Risk and Risk to Life (RtL), additional to those from the Air System. Not having all ALW limitations and clearances identified and understood could result in the Air System's stakeholders incorrectly utilizing the ALW. The ALW Release (ALWR) allows the stakeholders to understand all the limitations and clearances applicable to the use of the ALW.

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1350(1)

Air Launched Weapon Release

1350(1) The ALW Delivery Team (DT) Letter of Air Safety Notification (LoAN) holder^{2, 3} **shall** authorize all ALWs for Aircraft CR&J for acceptance by the Air System Type Airworthiness Authority (TAA)⁴.

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Air Launched Weapon Release

1. The ALWR **should** be provided by the ALW DT LoAN Holder and is the body of evidence that supports the relevant Safety Assessment in the Military Permit To Fly (Development) (MPTF (Dev))⁵ and / or Type Airworthiness Safety Assessment (TASA)⁶, and Air System Safety Case (ASSC)⁷. The ALWR **should** be tailored and proportionate to the complexity of the ALW and the associated Hazards.

2. The ALWR **should** encompass CR&J and refer directly to all the limitations and clearances required by the Safety and Environmental Case Report (SECR) and the "Ordnance, Munitions and Explosives" (OME) Safety Review Panel Assurance Statement (OAS)⁸ for the ALW.

Note:

Where an OAS is not achievable in the required timescales, but the ALW DT can demonstrate continued Safety, a Demonstrably Safe Statement (DSS), which provides 1st party Assurance, may be acceptable as an interim solution to obtaining an OAS as per DSA03.OME Defence Code of Practice 117(f)⁹. DSSs **should not** normally be longer than 6 months.

Development of Air Launched Weapons

3. Where the ALW is authorized for inclusion in MPTF (Dev) to conduct Test and Evaluation (T&E) activity¹⁰ it **should** be supported by issue of an Interim ALWR by the ALW DT LoAN holder to an appropriate level of maturity.

¹ Refer to MAA02: Military Aviation Authority Master Glossary.

² Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility.

³ Where there is no ALW DT LoAN holder, the TAA **shall** contact the MAA (DSA-MAA-Cert-ES4-ArmSys@mod.gov.uk) to ensure an appropriate regulatory framework (see paragraph 8).

⁴ 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.

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

⁶ Refer to RA 5012 – Type Airworthiness Safety Assessment.

⁷ Refer to RA 1205 – Air System Safety Cases.

⁸ Refer to DSA 02.OME – Defence Ordnance, Munitions and Explosives (OME) Regulations.

⁹ Refer to DSA 03.OME – Part 1 Acquisition Defence Code of Practice (DCOP) 117 – OME Safety Review Panel and Assurance Statement.

¹⁰ Refer to RA 2370 – Test and Evaluation.

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In-Service Air Launched Weapons

4. Where the ALW is authorized for inclusion in the Release To Service (RTS)¹¹, MPTF (In-Service) or MPTF (Special Case Flying)¹² it **should** be by issue of an ALWR by the ALW DT LoAN Holder prior to any RtL being incurred from in-service operations. Integration of the ALW **should** be addressed by the TAA through the Military Air System Certification Process¹³.

ALW DT LoAN Holder responsibilities

5. The ALW DT LoAN holder **should** ensure:
- a. The Air System TAA is provided with the applicable ALWR, SECR and OAS (See paragraph 2 Note)¹⁴.
 - b. The ALWR conforms to the ALWR template held on the MAA website.
 - c. The Air System TAA and Aviation Duty Holder (ADH) / Accountable Manager (Military Flying) (AM(MF)) are informed of all emergent Hazards or equipment changes that might affect Air Safety.
 - d. The ALWR documents the ALW's limitations, and the information required (eg interface control documentation) to allow its safe integration and operation on the specified Aircraft.
 - e. The ALWR states unambiguously the applicability of various marks or variants of the ALW on each Aircraft type¹⁵.
 - f. The ALWR is reissued when any change affecting the ALWR is identified.
 - g. Robust Safety Management^{16, 17} processes fully supporting the Safety Panel reviews are employed.
 - h. Configuration Management activities are conducted in accordance with a Configuration Management Plan prepared to the applicable requirements of Defence Standard 05-057¹⁸.
 - i. The ALWR is reviewed on an annual basis or when there are changes to the supporting documentation (eg Statement of Operating Intent / Statement of Operating Intent and Usage¹⁹, SECR, OAS (See paragraph 2 Note), Certificate of Design²⁰, etc).

Air System TAA responsibilities

6. The Air System TAA **should**:
- a. Ensure the SECR and OAS (See paragraph 2 Note) are robust, correctly reflect the Air System operating environment, recorded, and accepted.
 - b. Review the ALWR for suitability for their Air System and:
 - (1) If acceptable, formally accept and acknowledge receipt (template held on the MAA websites) to the ALW DT LoAN holder²¹.
 - (2) If unacceptable, formally reject with an explanation to the ALW DT LoAN holder.
 - c. Ensure that the TASA addresses CR&J of all ALW(s) and any associated Hazards⁶.

¹¹ Refer to RA 1300 – Release To Service.

¹² Refer to RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task).

¹³ Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B) and RA 5820 – Changes in Type Design (MRP Part 21 Subpart D).

¹⁴ Where a separate trials authority is developing the Declaration of Compliance (DofC) to apply for an MPTF(Dev) from the TAA, they **should** be provided with this information; refer to RA 5880 – Military Permit to Fly (Development) (MRP Part 21 Subpart P).

¹⁵ If the ALW is utilized on multiple Aircraft types, then there **should** be a single ALWR for the ALW, with separate Part 3s (eg Part 3 – Typhoon, followed by Part 3 – Lightning II, followed by Part 3 – Reaper, etc) for each Aircraft type it is applicable to.

¹⁶ Refer to RA 5013 – Air Safety Management of Equipment and Commodity Items.

¹⁷ Refer to RA 5011 – Type Airworthiness Safety Management System.

¹⁸ Refer to Defence Standard 05-057 – Configuration Management of Defence Materiel.

¹⁹ Refer to RA 5726 – Integrity Management.

²⁰ Refer to RA 5103 – Certification of Design.

²¹ Formal acceptance of the Interim ALWR is not required since it will form part of the MPTF(Dev) application.

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d. Ensure the RTS Recommendations¹¹ (RTSR), MPTF (In-Service) Recommendations, MPTF (Special Case Flying) Recommendations or MPTF (Development) include all ALW limitations and clearances.

7. Ensure that the ALW DT LoAN holder is provided with all information which may affect the Airworthiness of the ALW for CR&J.

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8. Where the ALW is being provided by a supplier other than an ALW DT LoAN Holder the MAA will identify the route to clearance, evidence requirements and equivalent acceptable alternatives.

9. The ALWR is a living body of evidence and will be updated to reflect changes in any of the relevant information or evidence affecting the safe use of, or the limitations and clearances applied to, the Air Systems which utilize the ALW.

10. For initial development of the ALWR or subsequent changes, information provided by the TAA includes, but not limited to, Radio Frequency environment, vibration spectrum, configuration change, usage change, change of environment for which the Air System or ALW is cleared, any Air System limitations or clearances applying to the ALW for CR&J of the ALW, etc.

11. The chapter headings in the ALWR template are mandatory. The lower-level topics and headings will be considered by the ALW DT LoAN holder, only those appropriate to the ALW need be presented in the final document. The Interim ALWR will only have limited information in some chapters depending on the maturity of ALW development so the ALWR status of Interim will need to be clearly identified.

12. The ALWR will be used to support acceptance of the ALW and the generation of the Air System RTS or appropriate MPTF by providing evidence in support of required Safety Assessments.

13. An ALWR supplements the Air System RTS or appropriate MPTF:

a. It covers all aspects of an ALW build standard and operation in the Manufacture to Target / Disposal Sequence (MTDS), thus providing a link between the ALW SECR and OAS and the ASSC.

b. It records the build standard that has been assessed for safe CR&J on each Air System with its associated Air System specific limitations and clearances.

c. Informs and / or restricts the Air System RTS or appropriate MPTF for each Aircraft that is cleared to carry the ALW. Limitations and clearances are unlikely to be the same for different Air Systems or Air System variants.

14. The ALWR can provide details of what has been met (eg Compliance with Regulations, standards and processes) to confirm the ALW can be operated safely to the Air System TAA and ADH / AM(MF).

Development of Air Launched Weapons

15. Where flight trials are being conducted to develop further ALWR detail, the Interim ALWR will be at a level of maturity appropriate to the activity being undertaken and will feed the Safety Assessment required by the MPTF(Dev) Declaration of Compliance. Where there are gaps in information or evidence and additional limitations these need to be clearly identified within the ALWR.

ALW Limitations

16. The ALW limitations and clearances apply only while the ALW is carried on its host Aircraft, and up to a defined safe separation distance²² after Release or Jettison (ie not all the way to target) from the host Aircraft and to other Aircraft in close proximity.

²² Defined in Allied Administrative Publication (AAP)-06 as: "The distance from the delivery system or launcher to the munition beyond which the hazards to the users and / or the delivery system resulting from functioning of the munition system are acceptable".

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17. The CR&J design envelope applicable to an ALW (eg the max / min speed, “g”, altitude, etc) might be considerably different from that of the Aircraft it is carried on.

Sources of advice

18. Weapons Engineering Centre of Excellence (WESCOE)²³, Weapons Technical Services (WTS)²⁴, and MAA²⁵ armament specialists may be consulted in the preparation of the ALWR and Air System RTSR, MPTF (In-Service) Recommendations, MPTF (Special Case Flying) Recommendations or MPTF (Development) to ensure that all ALW aspects have been addressed as described in this RA and DSA 02.OME. Advice and assistance may also be needed from independent organizations.

**Regulation
1350(2)****Air Launched Weapons not requiring an Air Launched Weapon Release Certificate**

1350(2) Withdrawn Content Incorporated into RA 1350(1).

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1350(2)****Air Launched Weapons not requiring an Air Launched Weapon Release Certificate**

19. Withdrawn Content Incorporated into RA 1350(1).

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1350(2)****Air Launched Weapons not requiring an Air Launched Weapon Release Certificate**

20. Withdrawn Content Incorporated into RA 1350(1).

²³ DESWpnsWES-Tasking@mod.gov.uk.

²⁴ DESWpnsEng-PMO@mod.gov.uk.

²⁵ DSA-MAA-Cert-ES4-ArmSys@mod.gov.uk.