

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

RA 1605 – Remotely Piloted Air Systems Specific S2 sub-category

Rationale

There is a requirement to determine and apply an appropriate regulatory framework to Remotely Piloted Air Systems (RPAS) to ensure they are safe to operate and are being operated safely. Failure to appropriately address RPAS specific Hazards could lead to an increased Risk to Life (RtL). This regulatory framework will be proportionate to the RPAS Category and its physical attributes¹. RPAS operations conducted Beyond Visual line of Sight (BVLOS) and / or with remote air vehicles with a Maximum Take-Off Weight (MTOW) greater than 25 kg, pose additional RtL not only to those directly involved in launch and recovery, but also uninvolved persons and other air users. This Regulatory Article (RA) defines the regulatory framework for those RPAS operating in the Specific S2 sub-category.

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1605(1): Regulatory Requirements

1605(2): Withdrawn – Incorporated into RA 1605(1) and the Remotely Piloted Air Systems Manual

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Regulation 1605(1)

Regulatory Requirements

1605(1) The regulatory framework to be applied to RPAS in the Specific S2 sub-category **shall** be agreed by the MAA and adhered to by the Aviation Duty Holders (ADH) / Accountable Managers (Military Flying) (AM(MF)) responsible for their operation.

Acceptable Means of Compliance 1605(1)

Regulatory Requirements

1. Organizations² responsible for RPAS in the Specific S2 sub-category **should** comply with all applicable RAs.
2. ADH / AM(MF) **should**:
 - a. Ensure an appropriate MAA RPAS Letter of Endorsed Categorization (LEC) is in place prior to operation of RPAS in the Specific S2 sub-category.
 - b. Ensure that RPAS are operated in compliance with the LEC.
3. ADHs / AM(MF)s **should** be accountable for the operation of RPAS in the Specific S2 sub-category within their Area of Responsibility (AoR).
4. Derogations additional to those listed in this RA and the RPAS Manual **should** be applied for through the Categorization submission supported by a Safety claim, argument, and evidence; culminating in a coherent and robust Safety Assessment³.
5. The MAA **should** approve the regulatory framework and stipulate all agreed derogations in the LEC, including the agreed Safety Target.
6. RPAS **should** be registered on the UK Military Aircraft Register⁴.
7. Categorization submission information **should** as a minimum include:
 - a. A statement detailing why the RPAS belong in the proposed RPAS Category.

¹ For definitions of RPAS Categories, RPAS sub-categories, and RPAS physical attributes (eg Sub 250 g, Sub 4 kg etc), refer to RA 1600 – Remotely Piloted Air Systems.

² ie those organizations responsible for design, Maintenance, Airworthiness, operation.

³ Following LEC issue, requests for Alternative Acceptable Means of Compliance, Waiver or Exemption to the MRP are to be formally applied for and authorized by the MAA.

⁴ Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.

Acceptable Means of Compliance 1605(1)

- b. A technical description of the RPAS⁵.
- c. A description of the organization's operating intent and environment.
- d. The aggravating and / or mitigating factors affecting or likely to affect the proposed RPAS Category.
- e. Key stakeholders' details (eg ADH / AM(MF), Type Airworthiness Authority (TAA)⁶, etc).
- f. A proposed Safety Target⁷.
- g. The Type Airworthiness Strategy⁸.
- h. A statement detailing which MAA RAs are considered not applicable in the context of the Categorization Submission, or where an AAMC approach is required to meet the intent. Each identified RA **should** be accompanied by a justification for the MAA to review.
- i. A statement that all Categorization submission documentation has been reviewed and accepted by the TAA.
- j. A statement that all Categorization submission documentation has been reviewed and accepted by the ADH / AM(MF).
- k. Approach to Release To Service Recommendations (RTSR) / Military Permit To Fly (MPTF) Recommendation or MPTF (Development).
- l. Detail of any proposed kinetic, directed energy weapons or other effectors intended to alter target properties, to include munition type and deployment method⁹.
- m. Strategy for approval of any ordnance and how its interaction / integration with the RPAS will be safely managed (refer to DSA Ordnance Safety Regulator (DOSR)).
- n. Planned operating areas when armed and unarmed (for example, designated aviation Danger Areas and / or Ranges)¹⁰.

Guidance Material 1605(1)

Regulatory Requirements

8. The applicant is required to state how the RPAS is Safe to Operate and can be Operated Safely for the proposed context. The Categorization submission will state how this will be achieved. Applicants are advised to engage with the MAA at the earliest opportunity to discuss the Categorization strategy.
9. The LEC may stipulate actions for completion prior to commencement of flying.
10. The level of technical and operating Assurance required to support the Air System Safety Case (ASSC) will be proportionate to the RtL posed by the operations. This RtL will depend on multiple factors, including, but not limited to, Remote Air Vehicle dimensions, MTOW, speed, range of operations and airspace. Applicants will need to make the case that the proposed levels of Assurance are appropriate for the RtL associated with the RPAS operations using a structured argument.
11. **Specified Derogations from the MRP.** Suggested derogations that may be appropriate for Specific S2 sub-category RPAS are detailed in the RPAS Manual Annex B.
12. For the avoidance of doubt:

⁵ To include Make and Model if Commercial Off The Shelf (COTS), or a broad description if agreed already within the Concept, Assessment, Development, Manufacturing, In-Service, and Disposal (CADMID) cycle for the Development of Air Systems.

⁶ Where the Air System is Civilian-Owned, ownership of regulatory responsibility by either the 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 TAM may be read in place of TAA as appropriate throughout this RA.

⁷ Refer to RA 1230 – Design Safety Targets.

⁸ Refer to RA 5010 – Type Airworthiness Strategy.

⁹ Only required for RPAS designed or intended to be weaponized.

¹⁰ Refer to MAA02 – MAA Master Glossary; and DSA 03.OME Part 3 (Formerly JSP 403 Volume 2) - Defence Code of Practice (DCOP) for Ranges.

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1605(1)**

- a. Accountability for operating Rtl is owned by:
- (1) Either an ADH chain (ie Senior Duty Holder, Operating Duty Holder and Delivery Duty Holder) or;
 - (2) An AM(MF).

13. **Alternative approach to Categorization Submissions.** The Joint Authorities for Rulemaking of Unmanned Systems (JARUS)¹¹ guidelines on Specific Operations Risk Assessment (SORA) are considered a valid methodology for assessing the Rtl and provide a framework to argue the associated levels of Assurance required for operations in the Specific S2 Category. Consideration will include the range of Type Airworthiness Management responsibilities and the competency required of a TAA when considering alternate Assurance methods¹². For alternative approaches to Categorization submissions, the ADH / AM(MF) chain may be responsible for submitting the categorization request.

Note:

This methodology does not cater for armed or swarming RPAS, or those that involve dropping materiel. For such operations, additional Safety arguments will be required to justify operation in the Specific S2 Category.

**Regulation
1605(2)**

Equipment Safety

1605(2) Withdrawn – Incorporated into RA 1605(1) and the RPAS Manual.

**Acceptable
Means of
Compliance
1605(2)**

Equipment Safety

14. Withdrawn – Incorporated into RA 1605(1) and the RPAS Manual.

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Equipment Safety

15. Withdrawn – Incorporated into RA 1605(1) and the RPAS Manual.

**Regulation
1605(3)**

Airworthiness / Air Safety Strategy

1605(3) Withdrawn – Incorporated into RA 1605(1) and the RPAS Manual

**Acceptable
Means of
Compliance
1605(3)**

Airworthiness / Air Safety Strategy

16. Withdrawn – Incorporated into RA 1605(1) and the RPAS Manual.

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1605(3)**

Airworthiness / Air Safety Strategy

17. Withdrawn – Incorporated into RA 1605(1) and the RPAS Manual.

¹¹ <http://jarus-rpas.org/>.

¹² Refer to RA 1015 – Type Airworthiness Management - Roles and Responsibilities.

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