

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

RA 1602 – Remotely Piloted Air Systems Open A2 sub-category (Fly ‘Close To’ People)

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. This Regulatory Article (RA) defines the regulatory framework for those RPAS operating in the Open A2 sub-category. The regulatory framework is structured to specifically permit appropriate operating freedom to ‘non-traditional’ aviation units (who are the prevalent users of RPAS in the Open A2 sub-category).

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Regulation 1602(1)

Regulatory Requirements

- 1602(1) Organizations operating RPAS in the Open A2 sub-category **shall** ensure that the requirements of RA 1600 and RA 1602 are complied with.

Acceptable Means of Compliance 1602(1)

Regulatory Requirements

1. Organizations **should** hold an appropriate MAA RPAS Letter of Endorsed Categorization (LEC) prior to operation of RPAS in the Open A2 sub-category.
2. RPAS **should**:
 - a. Have a Maximum Take Off Weight (MTOW), including Stores, of less than 4 kg.
 - b. Carry a European Union (EU) / UK conformity marking of **C0-C2**² or be designed to similar standards. If the RPAS does not hold a UK / EU conformity marking, the RPAS manufacturer **should** be endorsed by the Defence Equipment & Support (DE&S) RPAS Delivery Team (DT)^{3, 4}.
 - c. Have a maximum speed of 19 m/s if the RPAS has an EU / UK conformity marking of **C0-C1**, or be designed to similar standards.
 - d. Be registered on the UK Military Aircraft Register by type⁵.
 - e. Be equipped with a low-speed mode which limits the maximum speed to 3 m/s when selected by the Remote Pilot (RP) if the RPAS has an EU / UK conformity marking of **C2**, or is designed to similar standards.

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 Refer to [Commission Delegated Regulation \(EU\) 2019/945](#), [Commission Delegated Regulation \(EU\) 2020/1058](#), and [CAP2037A00](#).

³ This will provide Assurance that the RPAS meets basic Airworthiness requirements and that it is “Safe to Operate” in the Defence Air Environment (DAE).

⁴ Refer to 2023DIN03-030 – DES Remotely Piloted Air System (RPAS) Delivery Team Commercial Off The Shelf (COTS) Endorsed Manufacturers List (EML).

⁵ Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.

Acceptable Means of Compliance 1602(1)

- f. Adhere to noise limits, height limits and requirements for remote identification and geo-awareness systems and additional requirements if being used during tethered flight⁶.
 - g. Operate under the DAE Operating Framework and be assigned to a DAE Operating Category^{7, 8}.
3. RPAS Occurrences **should** be reported, investigated, and recorded^{9, 10}.

Guidance Material 1602(1)

Regulatory Requirements

- 4. Only those MAA Regulatory Publication (MRP) documents detailed in this RA, including relevant Regulatory Instructions and Regulatory Notices, are applicable to RPAS operating in Open A2 sub-category.
- 5. Contractor Flying Approved Organization Scheme (Basic RPAS) (CFAOS (BR)) organizations must also comply with RA 1031¹¹.
- 6. RPAS Responsible Officers (RPAS RO) / RPAS Accountable Managers (RPAS AM) may waive the requirement for an Occurrence Safety Investigation (OSI) down to a Local Occurrence Investigation (LOI) for an Accident where the loss is consistent with the intended concept of operating use of the RPAS. Ultimately it is for the RPAS RO / RPAS AM to decide that there is nothing to be gained from a formal OSI. As a minimum the subsequent LOI still requires codification by the Incident Manager prior to being closed.
- 7. Where the requirement for an RPAS to be operated from a His Majesty's / MOD Ship exists, the combination must be Authorized through an appropriate Ship Air-Release process¹².

Regulation 1602(2)

Responsibilities

- 1602(2) RPAS in the Open A2 sub-category **shall** be operated under the authority of a RPAS RO / RPAS AM and supported by appropriate persons.

Acceptable Means of Compliance 1602(2)

Responsibilities

- 8. Non-MOD organizations operating military registered RPAS in the Open A2 sub-category **should**:
 - a. Be appropriately approved in accordance with (iaw) the CFAOS(BR)¹¹.
 - b. Nominate an RPAS AM iaw RA 1031¹¹.
- 9. MOD organizations responsible for operating RPAS **should** either:
 - a. Nominate:
 - (1) A Capability Owner (minimum OF5 or equivalent), and
 - (2) A RPAS RO (minimum OF4 or equivalent).
 - b. Or ensure that operations are carried out by an organization appropriately approved iaw the CFAOS(BR).
- 10. RPAS ROs **should**:

⁶ Defined as: "An RPAS that remains securely attached (tethered) via a physical link to a person, the ground or an object at all times while it is flying. The tether normally takes the form of a flexible wire or a cable and may also include the power supply to the Remotely Piloted Aircraft." (derived from Civil Air Publication (CAP) 722).

⁷ Refer to RA 1160 – The Defence Air Environment Operating Framework.

⁸ The DAE Operating Category relates to the ownership and Safety governance of the Air System, whereas the RPAS Category relates to the regulatory framework which is set by the MAA according to the Risk posed by the RPAS and the manner in which it is operated.

⁹ Refer to RA 1410 – Occurrence Reporting and Management.

¹⁰ Refer to the Manual of Aircraft Post Crash Management, Chapter 1: The Aircraft Post Crash Management (APCM) Task, paragraph 8; Applicability.

¹¹ Refer to RA 1031 – Contractor Flying Approved Organization Scheme (Basic Remotely Piloted Air Systems).

¹² Refer to RA 1395 – Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships.

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1602(2)**

- a. Be responsible and accountable for the operation of RPAS within their Area of Responsibility (AoR) and answerable to a designated Capability Owner within the chain of command.
 - b. Ensure that Risks to RPs, operating personnel, other organization / MOD personnel, and the general public through the operation of RPAS are acceptable, and cease operations if not.
 - c. Hold appropriate Terms of Reference (ToR).
 - d. Ensure that the RPAS is operated in line with the RA 1600 Annex B Categorization Safety Checklist, Manufacturer's User or Operating Manual, RA 1602(4) and LEC.
 - e. Attend an MAA RPAS RO / AM briefing day¹³ prior to commencement of RPAS operations if required to do so by the MAA¹⁴.
 - f. Nominate a Senior Operator (SO).
11. The RPAS RO **should** issue a Letter of Delegation when delegating supervisory day-to-day operating responsibilities to a Suitably Qualified and Experienced Person (SQEP) (minimum OF3) within their AoR. The appointed RPAS RO and delegated individual **should** attend the MAA RPAS RO / AM briefing day. Whilst day to day supervisory responsibility may be delegated by the RPAS RO, accountability will remain with the RPAS RO.
12. RPAS AMs **should**:
- a. Be appointed iaw RA 1031¹¹.
 - b. Be responsible and accountable for the operation of RPAS within their AoR.
 - c. Ensure that Risks to RPs, operating personnel, other organization / MOD personnel, and the general public through the operation of RPAS are acceptable, and cease operations if not.
 - d. Hold appropriate ToRs.
 - e. Ensure that the RPAS is operated in line with the RA 1600 Annex B Categorization Safety Checklist, Manufacturer's User or Operating Manual, RA 1602(4) and LEC.
 - f. Attend an MAA RPAS RO / AM briefing day prior to commencement of RPAS operations if required to do so by the MAA¹⁴.
 - g. Nominate a Flight Operations Post Holder (FOPH)¹¹ in order to provide the RPAS AM with appropriate specialist support¹⁵.
13. RPAS SOs and FOPHs **should**:
- a. Support and be answerable to the respective RPAS RO / RPAS AM.
 - b. Have completed an approved RPAS training package provided by a Civil Aviation Authority (CAA) approved Recognized Assessment Entity (RAE)¹⁶ that includes a flying assessment, or an equivalent Defence Systems Approach to Training (DSAT) compliant MAA approved RPAS course. Where the training provided does not include flying under MRP rules, the RP **should** receive additional local training on MRP RPAS flying by an RPI as approved by the RPAS RO.
 - c. Ensure that all RPs within their AoR have successfully completed a flying assessment under the supervision of the RPAS SO / FOPH, and document accordingly.

¹³ Refer to RA 1440 – Air Safety Training.

¹⁴ This requirement will be reviewed by the MAA during the Categorization process; and any requirement / dispensation articulated in the LEC.

¹⁵ To include Test and Evaluation (T&E) when in the organization's CFAOS(BR) Approval and the RPAS AM is not appropriately T&E qualified.

¹⁶ The list of CAA approved RAEs is found in the Unmanned Aircraft section of the CAA website.

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- d. Ensure that RPs are medically fit to operate the Categorized RPAS¹⁷.
- e. Ensure the RP Instructor (RPI) complies with RA 1602(6).
- f. Specify SQEP individuals (eg RPIs) to award RPAS flying privileges.

**Guidance
Material
1602(2)**

Responsibilities

14. **RPAS RO / RPAS AM.** It is anticipated that, in many instances, RPAS will be operated by organizations with either limited or no prior aviation experience. In such cases, the Unit Commander or civilian middle manager (who may have limited or no previous aviation experience) may be appointed as the RPAS RO / RPAS AM. Therefore, the MAA will provide appropriate RPAS RO / AMs briefings¹³ to those assessed as requiring further training in order that they may be considered competent to manage the RtL associated with operation of the RPAS.

15. **RPAS SO and FOPH.** Training provided by a CAA approved RAE that includes a flying assessment or an equivalent DSAT compliant MAA approved RPAS course has been assessed as appropriate by the MAA to provide suitable training and assessment for RPAS SOs and FOPHs.

16. The RPAS SO / FOPH may also hold a dual role as an RPI.

**Regulation
1602(3)**

Remote Pilot Competence

1602(3) RPs operating RPAS in the Open A2 sub-category **shall** be qualified and competent.

**Acceptable
Means of
Compliance
1602(3)**

Remote Pilot Competence

17. RPAS RPs **should**:
- a. Conduct an RPAS operating training package and flying assessment under the supervision of the RPAS SO / FOPH.
 - b. Maintain a level of competence appropriate to the tasks being conducted.
 - c. Maintain an auditable record of RPAS training and flying activity.
 - d. Be familiar with all publications and processes required to safely operate the RPAS.
 - e. Be fully conversant with the RA 1600 Annex B Categorization Safety Checklist and local orders.
 - f. Maintain a log of the inspections and Maintenance carried out on their RPAS.

**Guidance
Material
1602(3)**

Remote Pilot Competence

18. RPs will be appropriately trained and competent. RPs are required to understand and be fully conversant with all appropriate publications and RA 1602(4), to ensure that their RPAS are safe to operate and are being operated safely.

19. RPAS training will not be conducted while undertaking formal tasking.

20. RPAS SOs / FOPHs will ensure that all RPs receive Conversion To Type (CTT) training from an RPI.

¹⁷ The baseline minimum Joint Medical Employment Standard for Military RPs of Open A2 Category RPAS is A-4. There is no baseline minimum Medical Employment Standard for Civilian RPs of Open A2 Category RPAS. There are no Initial or Periodic Medical Examination requirements (both Military and Civilian) to operate RPAS in the Open Category and S1 sub-category. However, these baseline requirements may be further restricted via the LEC and / or the endorsed RA 1600 Annex B Categorization Safety Checklist.

**Regulation
1602(4)**

Safe Operation and Limitations

1602(4) RPAS operating in the Open A2 sub-category **shall** be operated in a manner that minimizes Risks and Hazards to other airspace users or any other person, vessel, vehicle or Structure near where the RPAS is being flown.

**Acceptable
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Compliance
1602(4)**

Safe Operation and Limitations

21. RPAS ROs and RPAS AMs **should** detail in Orders the operating limitations and regulatory requirements applicable to operations in their AoR.
22. RPAS ROs **should** ensure that RPAS operations within another sovereign nation's territorial Airspace are conducted either:
- a. For operations conducted with the nation's consent, iaw relevant local, national, and international legal requirements, and satisfy diplomatic clearance requirements¹⁸, or
 - b. For operations conducted without the nation's consent (ie conducted lawfully under the Law of Armed Conflict, UN Security Council resolution or other legal mandate), outside Controlled Airspace²¹; unless the Controlled Airspace has been created or assigned for the purposes of the Operation.
23. RPAS AMs **should** ensure that RPAS operations within another sovereign nation's territorial Airspace and with that nation's consent are conducted iaw relevant local, national, and international legal requirements and satisfy diplomatic clearance requirements¹⁹.
24. RPs **should** be responsible for the safe operation of the RPAS and not present undue Risk or Hazard to other airspace users or any person, vessel, vehicle or Structure.
25. When flying in the UK, RPs **should** notify the Low Flying Booking Cell (LFBC)²⁰ in advance of any flying above 50 ft Above Ground Level, unless in Segregated Airspace activated for their use.
26. RPs **should** adhere to:
- a. Orders promulgated by the RPAS RO / RPAS AM.
 - b. The RPAS Manufacturer's User or Operating Manual.
 - c. The operating parameters and procedures detailed in the RA 1600 Annex B Categorization Safety Checklist and LEC.
27. RPs **should** conduct flight planning and Risk Assessments iaw the most restrictive of Orders and adhere to the following operating limitations:
- a. Operated within Visual Line Of Sight (VLOS)²¹ of the RP up to a maximum range of 500 m²².
 - b. Operated with a minimum safe horizontal distance of 30 m from any person, vessel, vehicle or structure not under the control of the RP²³.
 - c. Any conditions stipulated in the LEC.
28. RPAS operating in the Open A2 sub-category **should not** be:
- a. Intentionally operated over uninvolved persons.
 - b. Operated higher than 120 m (400 ft) above the surface (land or sea).

¹⁸ Refer to RA 2305 – Supervision of Flying.

¹⁹ Refer to AP1158 – Approval and Diplomatic Clearance for Flights to Destinations Abroad.

²⁰ Refer to RA 2330 – Low Flying. The LFBC can be contacted by telephone 01489 887 000 or 0800 515 544. RPs **should** be aware that Military Fixed Wing Aircraft may operate between 100 ft and 250 ft; and Rotary Wing Aircraft may operate below 100 ft. The LFBC will be able to offer information on potential pre-planned conflicting activity in the area.

²¹ Refer to MAA02: Military Aviation Authority Master Glossary.

²² In 'follow-me' mode (the Remotely Piloted Aircraft (RPA) will automatically follow the Remote Pilot Station (RPS)), the RPA may be flown up to a maximum distance of 50 m from the RP, even if this means that the RPA is no longer VLOS.

²³ Or down to 5 m horizontally if its 'low speed mode' is fitted and selected by the RP.

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- c. Operated over or within 50 m of any Congested Area²¹.
- d. Operated in the flight restriction zone of a protected Aerodrome²⁴, unless in receipt of appropriate permission from the Airspace Controlling Authority.

29. **Management of RPAS data link loss.** Suitable lost link procedures **should** be implemented to maintain safe flight (or safe termination), safe separation from other Aircraft, and to enable Aircraft recovery. In the event of an emergency in the RPS that requires abandonment, or the loss of Return feed data link that precludes safe control, lost link procedures **should** be followed.

Guidance Material 1602(4)

Safe Operation and Limitations

30. An RPAS RO may be required to employ Open A2 sub-category RPAS outside limitations contained within their LEC, when there is an unplanned or unexpected operational imperative to do so²⁵. When such situations arise, the RPAS RO (or their representative when the RPAS RO is not deployed) needs to inform the operational commander²⁶ of the increased Risk associated with operating outside of the LEC. Although the urgency of a given situation may preclude formal process, an RPAS RO needs to demonstrate in retrospect a Risk analysis suitable to the context. There needs to be an assessment of the impact on third-parties (for example crewed aviation or civilian population in the area)²⁷. The operational commander needs to agree to accept the Risk and record the decision to do so. Operations outside of the LEC have to cease immediately once the operational requirement has been met.

31. When operating with reduced visibility (eg at night, sandstorm, etc) over or in proximity to uninvolved people, the RPAS RO / RPAS AM will need to ensure the ability to operate safely (eg Night Vision Devices, etc).

32. RPAS publications are likely to include:

- a. The RA 1600 Annex B Categorization Safety Checklist for the RPAS.
- b. Manufacturer's User or Operating Manual.
- c. Specific Orders or Instructions from the RPAS RO / RPAS AM.
- d. Local orders such as those published by a Head of Establishment or Head of Unit.

33. The requirement to Authorize operations in the Open A2 sub-category is not mandated; however, RPAS ROs / RPAS AMs may elect to implement an authorization process to formalize and account for any tasking conducted²⁸.

Regulation 1602(5)

Handing over Control of Remotely Piloted Aircraft

1602(5) Handing over or taking over control of an RPA **shall** be conducted formally.

Acceptable Means of Compliance 1602(5)

Handing over Control of Remotely Piloted Aircraft

34. When a planned RPA sortie necessitates the handing over of control of the RPA, the associated RPs **should** plan the timings and other requirements in advance of the sortie.

35. When it is necessary to hand over control of an RPAS, a formal instruction to take control and to accept control **should** be made. In some cases (eg during instruction) it is necessary to take control in the first instance - this **should** also be formally declared and accepted. Formal statements of 'I have control' and 'You have control' **should** be made and acknowledged as appropriate.

²⁴ Details of UK Aerodromes that fall into the 'protected' category can be found within the [NATS eAIS Package](#). For Government Aerodromes see the [UK Mil AIP](#).

²⁵ Where Safety, Environmental Protection or operational imperatives demand, the Regulations may be deviated from provided that a convincing case can be offered in retrospect.

²⁶ The empowered individual at the time with tactical awareness of the current operation or task.

²⁷ Bounded by the Laws of Armed Conflict, superior command direction, Rules of Engagement and RtL to own forces.

²⁸ If RPAS ROs choose to implement the Authorization process, they are advised to use the principles of RA 2306 – Authorization of Flights.

**Acceptable
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Compliance
1602(5)**

36. The RPAS RO / RPAS AM **should** produce orders or instructions detailing actions in the event that verbal communication becomes impossible (eg intercom failure or suspected incapacitation).

**Guidance
Material
1602(5)**

Handing over Control of Remotely Piloted Aircraft

37. Nil.

**Regulation
1602(6)**

Remote Pilot Instructors

1602(6) RPIs **shall** be trained and competent.

**Acceptable
Means of
Compliance
1602(6)**

Remote Pilot Instructors

38. RPAS RO and RPAS AM **should** detail in orders:

- a. The types of RPI within their AoR;
- b. The experience level and course(s) required by personnel in their AoR to become an RPI.
- c. The required currencies and competencies required for an RPI qualification to remain valid.

39. RPIs are required to possess skills that enable the effective transfer of knowledge to their students, and **should** be trained to achieve the following baseline competences:

- a. Plan, prepare and deliver appropriately structured theoretical and practical teaching events.
- b. Manage trainees, students and instructional resources.
- c. Deliver specialist instruction to incorporate a range of differing learning styles.
- d. Integrate Human Factors training¹³ into all serials.
- e. Confirm / check learning has taken place, using appropriate practical techniques on the ground and in the air.
- f. Monitor and review trainee or student progress across the full range of RP training events.
- g. Produce comprehensive written reports on individual training outcomes.

40. RPIs **should**:

- a. Have qualified as an RPAS operator following successful completion of an approved MAA DSAT compliant course or a National Qualified Entity / RAE civilian course that includes a flying assessment.
- b. Be qualified as a Defence Trainer²⁹.
- c. Achieve Practitioner Level of the Defence Trainer²⁹ prior to awarding an MAA approved DSAT course qualification / competency for a RP to fly RPAS in this sub-category.

41. All RPIs **should** undertake an instructional competence check on an annual basis. This check **should** be conducted by a Defence Training Supervisor²⁹ who meets the criteria to be an Independent Assessor²¹ and who is qualified on the same or a similar RPAS type. It **should** include the following baseline competencies:

- a. Ability to impart skill and knowledge, utilizing effective analysis and debriefing.

²⁹ Refer to JSP 822 – Defence Direction and Guidance for Training and Education.

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- b. Proficiency in flying or airborne operating skills, and knowledge of the Air System on which tested.
- c. Standardization of current training practice.
- d. Knowledge of subjects allied to flying / Air System operation.
- e. Review a sample of comprehensive written reports on individual training outcomes.

**Guidance
Material
1602(6)**

Remote Pilot Instructors

- 42. Nil.