



Defence
Safety
Authority

GENERAL (GEN) 1000 SERIES REGULATORY ARTICLES

Military Aviation
Authority

Military Aviation Authority

MAA

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1000 SERIES (GEN) REGULATORY ARTICLES

1. The GEN series of RA support over-arching regulations. It is split into 8 sub-streams as outlined below:

- a. The 1000 series covers competence, roles and responsibilities for Regulated Entities.
- b. The 1100 series covers general regulations and information, such as Military Aviation Governance, Military Aircraft Registration, etc.
- c. The 1200 series covers Air Safety Management.
- d. The 1300 series covers the Release to Service process.
- e. The 1400 series covers Flight Safety, Occurrence Reporting, Post Crash Management, etc.
- f. The 1600 series covers Remotely Piloted Air Systems (RPAS)
- g. The 1900 series covers Logistics.

2. The RA above are supported by 3 reformatted manuals and one aide-memoire as outlined below:

- a. Manual of Air Safety.
- b. Manual of Post-Crash Management.
- c. Post-Crash Management aide-memoire
- d. Manual of Air System Safety Cases

3. The 1000 Series (GEN) RA are jointly owned by D MAA and D (Tech). Table 1 below shows the current documents, along with the associated Regulation titles.

4. Table 2 below shows the withdrawn documents, along with the associated Regulation titles. The Rationale for withdrawal stated in these documents was correct at point of publish and it is incumbent on the user to check the references remain valid prior to use.

Table 1: 1000 Series (GEN) Regulatory Articles

RA NUMBER	RA DESCRIPTION	SUB RA
RA 1002	Airworthiness Competent Persons	1002(1): Airworthiness Competent Persons
RA 1003	Delegation of Airworthiness Authority and Notification of Air Safety Responsibility	1003(1): Delegation of Airworthiness Authority within DE&S
		1003(2): Notification of Air Safety Responsibility within DE&S
		1003(3) Delegation of Airworthiness Authority within a Design Organization holding Type Airworthiness Management responsibilities
RA 1005	Contracting with Competent Organizations	1005(1): General Principles
		1005(2): Design Organizations
		1005(3): Maintenance Organizations
		1005(4): Contractor Flying Organizations
		1005(5): Air Traffic Management Equipment Organizations
RA 1006	Delegation of Engineering Authorizations	1006(1): Delegation of Engineering Authorizations

RA NUMBER	RA DESCRIPTION	SUB RA
RA 1010	Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities	1010(1): Classification Tier of Establishment
		1010(2): Head of Establishment - Aviation Responsibilities for All Tiers
		1010(3): Tier 1 and Tier 2 (where Recreational Flying is not the Primary Activity) Head of Establishment Responsibilities
		1010(4): Tier 2 Recreational Flying Only Head of Establishment Responsibilities
		1010(5): Tier 3 and Tier 4 Head of Establishment Responsibilities
		1010(6): Aviation Duty Holder / Accountable Manager (Military Flying) Safe Operating Environment Responsibilities
RA 1011	Military Continuing Airworthiness Manager Responsibilities	1011(1): Responsibilities of the Military Continuing Airworthiness Manager
RA 1012	Director General (Air) – Air Safety Responsibilities	1012(1): Provision of Airworthiness and Safety Assurance
RA 1013	Air Systems Operating Centre Director – Provision of Airworthy and Safe Systems	1013(1): Provision of Airworthy and Safe Air Systems
RA 1014	Design Organizations and Co-ordinating Design Organizations – Airworthiness Responsibilities	1014(1): Design Organization or Co-ordinating Design Organization
		1014(2): Air System Co-ordinating Design Organization
RA 1015	Type Airworthiness Management – Roles and Responsibilities	RA 1015(1) – Type Airworthiness Management
RA 1016	Military Continuing Airworthiness Management	1016(1): Withdrawn – Not deemed a regulatory requirement.
		1016(2): Establishment of a Military Continuing Airworthiness Management Organization
		1016(3): Requirement for a valid Military Airworthiness Review Certificate
RA 1019	Sponsor of Military Registered Civilian-Owned and Civilian Operated Air Systems – Air Safety Responsibilities	1019(1): Air Safety Responsibilities of the Sponsor
RA 1020	Aviation Duty Holder - Roles and Responsibilities	1020(1): Role and Responsibilities of the Aviation Duty Holder
		1020(2): Aviation Duty Holder Nomination
		1020(3): Withdrawn – Incorporated into RA 1032

RA NUMBER	RA DESCRIPTION	SUB RA
RA 1021	Release to Service Authorities Roles and Responsibilities	1021(1): Roles and Responsibilities
RA 1022	Senior Operator - Air Safety Responsibilities	1022(1): Senior Operators
RA 1023	Chief Air Engineer – Air Safety Responsibilities	1023(1): Chief Air Engineers
RA 1026	Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities	1026(1): Withdrawn – Incorporated into RA 1010(3)
		1026(2): Aerodrome Operator Responsibilities
		1026(3): Aerodrome Operator Qualifications and Experience
		1026(4): Management of a Defence Aerodrome Manual and Defence Aerodrome Assurance Framework
		1026(5): Withdrawn – Incorporated into RA 1010(6)
		1026(6): Withdrawn – Incorporated into RA 1010(5)
		1026(7): Withdrawn – Incorporated into RA 1010(4)
		1026(8): Aerodrome Supervisor (Recreational Flying) Responsibilities
		1026(9): Aerodrome Supervisor (Recreational Flying) Qualifications and Experience
		1026(10): Management of an Aerodrome Safe Operating Environment Manual
RA 1027	Air Traffic Management Equipment Organizations – Responsibilities of Contracted Organizations	1027(1): Responsibilities
RA 1028	Contractor Flying Approved Organization Scheme ▶◀	1028(1): ▶ Organization
		▶1028(2): Accountable Manager (Military Flying)
		▶1028(3): Application and Approval
		▶1028(4): Contractor Flying Organization Exposition ◀
RA 1029	Ship-Air Release - Roles and Responsibilities	1029(1): Aviation Duty Holder / Accountable Manager (Military Flying) and Ship Duty Holder / Accountable Person: Roles and Responsibilities
		1029(2): Ship Platform Authority: Roles and Responsibilities
		1029(3): Air System Type Airworthiness : Roles and Responsibilities

RA NUMBER	RA DESCRIPTION	SUB RA
		1029(4): Foreign Air System Sponsor: Roles and Responsibilities 1029(5): Royal Navy Release to Service Authority: Roles and Responsibilities 1029(6): Ship-Air Release - Stakeholder Engagement 1029(7): Remotely Piloted Air System Trial Sponsor: Roles and Responsibilities
RA 1030	Defence Aeronautical Information Management	1030(1): Defence Aeronautical Information Authority 1030(2): Aeronautical Information Service Provider 1030(3): Aeronautical Information Management
RA 1031	Contractor Flying Approved Organization Scheme (Basic Remotely Piloted Air Systems)	1031(1): Organization 1031(2): Remotely Piloted Air Systems Accountable Manager 1031(3): Approval
RA 1032	Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations - Roles and Responsibilities	1032(1): Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (Internal) 1032(2): Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (External)
▶ RA 1033 ◀	▶ Air Traffic Services Senior Officer – Air Safety Responsibilities ◀	▶ 1033(1): Air Traffic Services Senior Officer Nomination ◀ ▶ 1033(2): Role and Responsibilities of the Air Traffic Services Senior Officer ◀
RA 1150	Airborne Equipment and Airborne Forces	1150(1): Application of Regulations
RA 1160	The Defence Air Environment Operating Framework	1160(1): Defence Air Environment Operating Categories 1160(2): Responsibilities of the Sponsor of Civilian-Owned and / or Civilian Operated Military Registered Air Systems 1160(3): Certificate of Usage
RA 1161	Military Registration of Air Systems Operating within the Defence Air Environment	1161(1): Military Air System Registration 1161(2): Application for Approval in Principle

RA NUMBER	RA DESCRIPTION	SUB RA
		1161(3): Request for Activation on the UK Military Aircraft Register
		1161(4): Indemnity
RA 1162	Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems	1162(1): Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems
		1162(2): Assurance of the Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems
RA 1163	Air Safety Governance Arrangements for Special Case Flying Air Systems	1163(1): Air Safety Governance Arrangements for Special Case Flying Air Systems
		1163(2): Assurance of the Air Safety Governance Arrangements for Special Case Flying Air Systems
RA 1164	Transfer of UK Military Registered Air Systems	1164(1): Permanent Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities
		1164(2): Temporary Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities
		1164(3): Allocation of UK Military Registered Air Systems within an Aircraft Operating Authority
RA 1165	UK Civil Aviation Authority Oversight of UK Military Registered Air Systems	1165(1): UK Civil Aviation Authority Oversight of UK Military Registered Air Systems
RA 1166	UK Civil-Registered Aircraft Utilized and Piloted by the Ministry of Defence	1166(1): UK Civil-Registered Aircraft Utilized and Piloted by the Ministry of Defence
RA 1200	Air Safety Management	1200(1): Air Safety Management
RA 1202	Cyber Security for Airworthiness and Air Safety	1202(1): Cyber Security for Airworthiness and Air Safety
RA 1205	Air System Safety Cases	1205(1): The Air System Safety Case and Air System Safety Case Report(s)
		1205(2): Ownership of the Air System Safety Case
		1205(3): The Safety Statement
		1205(4): Responsibilities of Organizations supporting an Air System Safety Case
		1205(5): Assurance, Endorsement and Scrutiny of the Air System Safety Case
RA 1207	Air Safety Data Management and Exploitation	1207(1): Air Safety Data Exploitation Strategy

RA NUMBER	RA DESCRIPTION	SUB RA
		1207(2): Air Safety Data Exploitation Procedures
RA 1208	Flight Data Monitoring	1208(1): The Flight Data Monitoring Programme
		1208(2): Flight Data Monitoring Effectiveness
RA 1210	Ownership and Management of Operating Risk (Risk to Life)	1210(1): Risk Ownership
		1210(2): Risk Management
		1210(3): Standardized Approach to Risk
		1210(4): Emerging Hazards and Risks
RA 1223	Airworthiness Information Management	1223(1): Establishment of Airworthiness Information Management
		1223(2): Airworthiness Information Management
RA 1225	Air Safety Documentation Audit Trail	1225(1): Air Safety Documentation Audit Trail
RA 1230	Design Safety Targets	1230(1): Design Safety Target Criteria
RA 1240	Chartering of Civilian Air Systems for Military Purposes	1240(1): Chartering of Civilian Air Systems for Military Purposes
RA 1300	Release To Service	1300(1): Requirement
		1300(2): Release To Service Recommendation
		1300(3): Limitations
		1300(4): Operational Emergency Clearance
		1300(5): Clearance with Limited Evidence
		1300(6): Authorization
		1300(7): Configuration Control and Audit Trail
RA 1305	Military Permit to Fly (In-Service), (Special Case Flying) and (Single Task)	1305(1): Requirement for a Military Permit to Fly (In-Service)
		1305(2): Military Permit to Fly (In-Service) Recommendation
		1305(3): Military Permit to Fly (In-Service) Preparation and Authorization
		1305(4): Military Permit to Fly (Single Task)
		1305(5): Military Permit to Fly (Special Case Flying)
RA 1310	Air System Document Set	1310(1): The Air System Document Set
		1310(2): Validation of the Air System Document Set

RA NUMBER	RA DESCRIPTION	SUB RA
		1310(3): Verification of the Air System Document Set
RA 1340	Equipment Not Basic to the Air System	1340(1): Equipment Not Basic to the Air System
RA 1345	The Compendium of Airborne Equipment Release Certificates	1345(1): The Compendium of Airborne Equipment Release Certificates
RA 1350	Air Launched Weapon Release	1350(1): UK MOD In-Service Air Launched Weapons
		1350(2): Air Launched Weapons not requiring an Air Launched Weapon Release Certificate
RA 1380	Performance Based Navigation	1380(1): Performance Based Navigation
RA 1390	Reduced Vertical Separation Minimum	1390(1): Reduced Vertical Separation Minimum
RA 1395	Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships	1395(1): Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships
		1395(2): Ship-Air Release
		1395(3): Ship-Air Release Recommendation
		1395(4): Ship-Air Special Releases
		1395(5): Ship-Air Release Remotely Piloted Air Systems
RA 1400	Flight Safety	1400(1): Flight Safety
		1400(2): Withdrawn – Content incorporated in RA 1400(1)
RA 1410	Occurrence Reporting and Management	1410(1): Occurrence Reporting and Management
RA 1420	Service Inquiries and Non-Statutory Inquiries	1420(1): Service Inquiries and Non-Statutory Inquiries
RA 1430	Aircraft Post Crash Management and Significant Occurrence Management	1430(1): Aviation Duty Holders and Heads of Establishment
		1430(2): Accountable Managers (Military Flying)
RA 1440	Air Safety Training	1440(1): Air Safety Training
RA 1600	Remotely Piloted Air Systems	1600(1): Remotely Piloted Air System Categorization
		1600(2): Remotely Piloted Air System Regulatory Requirements
RA 1601	Remotely Piloted Air Systems Open A1 sub-category (Fly 'Over' People)	1601(1): Regulatory Requirements
		1601(2): Responsibilities
		1601(3): Remote Pilot Competence

RA NUMBER	RA DESCRIPTION	SUB RA
		1601(4): Safe Operation and Limitations
RA 1602	Remotely Piloted Air Systems Open A2 sub-category (Fly 'Close To' People)	1602(1): Regulatory Requirements
		1602(2): Responsibilities
		1602(3): Remote Pilot Competence
		1602(4): Safe Operation and Limitations
		1602(5): Handing over Control of Remotely Piloted Aircraft
		1602(6): Remote Pilot Instructors
RA 1603	Remotely Piloted Air Systems Open A3 sub-category (Fly 'Far From' People)	1603(1): Regulatory Requirements
		1603(2): Responsibilities
		1603(3): Remote Pilot Competence
		1603(4): Safe Operation and Limitations
		1603(5): Handing over Control of Remotely Piloted Aircraft
		1603(6): Remote Pilot Instructors
RA 1604	Remotely Piloted Air Systems Specific S1 sub-category	1604(1): Regulatory Requirements
		1604(2): Responsibilities
		1604(3): Remote Pilot Competence
		1604(4): Safe Operation and Limitations
		1604(5): Special Purpose Clearances
		1604(6): Handing over Control of Remotely Piloted Aircraft
		1604(7): Remote Pilot Instructors
RA 1605	Remotely Piloted Air Systems Specific S2 sub-category	1605(1): Regulatory Requirements
		1605(2): Withdrawn – Incorporated into RA 1605(1) and the Remotely Piloted Air Systems Manual
		1605(3): Withdrawn – Incorporated into RA 1605(1) and the Remotely Piloted Air Systems Manual
RA 1606	Remotely Piloted Air Systems – Certified Category	1606(1): Regulatory Requirements
▶ RA 1800 ◀	▶ Aerodrome and Air Weapon Range Aviation Activity - Management of Environmental Impacts and Risks ◀	▶ 1800(1): Aerodrome and Air Weapon Range Aviation Activity - Management of Environmental Impacts and Risks ◀
▶ RA 1801 ◀	▶ Air System Environmental Cases ◀	▶ 1801(1): The Air System Environmental Case and Air System Environmental Case Report ◀

RA NUMBER	RA DESCRIPTION	SUB RA
		▶1801(2): Ownership of the Air System Environmental Case ◀
▶ RA 1802 ◀	▶ Aviation Greenhouse Gas Emissions ◀	▶1802(1): Aviation Greenhouse Gas Emissions ◀
RA 1910	Quality Assurance of Aviation Fuel from non-UK MOD Sources	1910(1): Quality Assurance of Aviation Fuel from non-UK MOD Sources
RA 1920	Aviation Arrangements in His Majesty's / MOD Ships – Equipment Standards	1920(1): Aviation Arrangements in HM / MOD Ships – Equipment Standards

Table 2: Withdrawn 1000 Series (GEN) Regulatory Articles (not included in the 1000 Series combined document)

RA NUMBER	RA DESCRIPTION	SUB RA
RA 1017	Maintenance Organizations – Airworthiness Responsibilities	1017(1): Withdrawn – See Rationale.
RA 1018	Production Organization - Airworthiness Responsibilities	1018(1): Withdrawn – Incorporated into RA 5835
RA 1024	Accountable Manager (Military Flying)	1024(1): ► Withdrawn – Incorporated into RA 1028 ◀
		1024(2): ► Withdrawn – Incorporated into RA 1028 ◀
		1024(3): ► Withdrawn – Incorporated into RA 1028 ◀
RA 1120	Military Air System Registration	1120(1): Withdrawn – Incorporated into RA 1161
RA 1121	Air Safety Arrangements for Military Registration of Civil-Owned Air Systems not Operated in the Service Environment	1121(1): Withdrawn – Incorporated into RA 1161
		1121(2): Withdrawn – Incorporated into RA 1019 and RA 1163
		1121(3): Withdrawn – Incorporated into RA 1163
		1121(4): Withdrawn – Incorporated into RA 1161
		1121(5): Withdrawn – Incorporated into RA 1163 and RA 1305
		1121(6) Withdrawn – Incorporated into RA 1161
RA 1122	Air Safety Arrangements for Military Registered Civil-Owned Development Air Systems	1122(1): Withdrawn – Incorporated into RA 1162 and RA 1163
RA 1123	Certificate of Usage for Military Registered Civil-Owned Aircraft	1123(1): Withdrawn – Incorporated into RA 1160 and RA 1305
RA 1124	Civil Aviation Authority Oversight of Military Registered Air Systems	1124(1): Withdrawn – Incorporated into RA 1165
RA 1125	Military Registered Air Systems Transferred to Contractors	1125(1): Withdrawn – Incorporated into RA 1164
RA 1127	UK Civil Registered Air Systems Operated by the MOD	1127(1): Withdrawn - Content incorporated into RA 1166 – UK Civil-Registered Aircraft Utilized by the Ministry of Defence
RA 1130	Corporate Memory and Standards	1130(1): Withdrawn – Not deemed regulatory material
		1130(2): Withdrawn – Not deemed regulatory material
RA 1140	Air System Technical Data Exploitation	1140(1): Withdrawn – Incorporated into RA 1207
RA 1220	Delivery Team Airworthiness and Safety	1220(1): Withdrawn – Incorporated into RA 5010
		1220(2): Withdrawn – Incorporated into RA 5011 and RA 5013
		1220(3): Withdrawn – Incorporated into RA 5012 and RA 5013
		1220(4) Withdrawn – Incorporated into RA 5011, RA 5012 and RA 5013

RA NUMBER	RA DESCRIPTION	SUB RA
		1220(5): Withdrawn – Incorporated into RA 5407
RA 1320	Project Team Leader-Stakeholder Interfaces	1320(1): Withdrawn – Not deemed regulatory material
RA 1325	Release To Service Limitations	1325(1): Withdrawn – Incorporated into RA 1300
RA 1330	Release To Service Special Clearances	1330(1): Withdrawn – Incorporated into RA 1300
		1330(2) Withdrawn – Incorporated into RA 1300
RA 1335	The RTS Audit Trail	1335(1): Withdrawn – Incorporated into RA 1225
RA 1360	Release To Service Recommendations Preparation and Authorization	1360(1): Withdrawn – Incorporated into RA 1300
		1360(2): Withdrawn – Incorporated into RA 1300
		1360(3): Withdrawn – Incorporated into RA 1300
		1360(4): Withdrawn – Incorporated into RA 1300
RA 1370	Release To Service Configuration Control and Audit Trail	1370(1): Withdrawn – Incorporated into RA 1300
RA 1500	Certification of UK Military Registered Air Systems	1500(1): Withdrawn – Incorporated into RA 5810 and RA 5820

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RA 1002 - Airworthiness Competent Persons

Rationale

A successful Airworthiness strategy requires personnel who are assessed as competent and are Suitably Qualified and Experienced Persons (SQEP). The lack of such personnel may result in inappropriate advice or decisions and a potentially compromised level of Airworthiness. Whilst Aviation Duty Holders (ADH), Accountable Managers (Military Flying) (AM(MF)), Accountable Managers (AM)¹, and Heads of ADH-Facing Organizations ▶² are personally, ▶ or contractually, ◀ accountable for their responsibilities, it is important that they are supported by expert advisers. ▶ This RA ◀ details the requirement to demonstrate that personnel are competent and suitable to provide Airworthiness advice.

Contents

1002(1): Airworthiness Competent Persons

Regulation 1002(1)

Airworthiness Competent Persons

1002(1) ADHs, AM(MF)s, AMs, and Heads of ADH-Facing Organizations ▶ ◀ **shall** ensure that all persons involved in Airworthiness activities are competent and SQEP.

Acceptable Means of Compliance 1002(1)

Airworthiness Competent Persons

1. ADHs, AM(MF)s, AMs, and Heads of ADH-Facing Organizations ▶ ◀ **should** assure themselves that representatives at meetings, working groups, panels etc where Airworthiness matters are discussed or an agenda item, are competent and SQEP.
2. ADHs, AM(MF)s, AMs, and Heads of ADH-Facing Organizations ▶ ◀ **should** ensure that the training, experience and qualifications of personnel involved in Airworthiness activity are assessed and documented.
3. Individuals **should** only exercise Airworthiness authority in areas where they have been assessed and measured as being competent.

Professional Registration

4. The following posts **should** be filled by Engineering Council ▶ CEng ◀ registered Crown Servants:
 - a. Chief Air Engineers (CAE) in support of ADHs at each level.
 - b. ▶ Mil CAMs and Deputy Mil CAMs who are employed within a construct supporting ADHs in accordance with RA 4945³. ◀
 - c. All engineers holding appointed Level J and Level K authorizations⁴ ▶ at OF4 (or equivalent) and above, or OF3 (or equivalent) where they are the senior engineering specialists. ◀
 - d. Defence Equipment & Support (DE&S) engineers holding formal Letters of Airworthiness Authority⁵ ▶ at OF4 (or equivalent) and above, or OF3 (or equivalent) where they are the senior engineering specialists.
5. The following posts, where they do not meet the criteria at paragraph 4 above, **should** be filled by Engineering Council IEng registered Crown Servants (as a minimum):
 - a. All engineers holding appointed Level J and Level K authorizations⁴.
 - b. Defence Equipment & Support (DE&S) engineers holding formal Letters of Airworthiness Authority⁵.

¹ Those AMs within: ▶ ◀ ADH-Facing Organizations; ▶ ◀ Maintenance Approved Organizations; ▶ Air Traffic Equipment Approved Organizations; or Design Approved Organizations. ◀

² 'Heads of ADH-Facing Organizations' ▶ includes but is not limited to: Aviation Delivery Team Leaders, Commodity Chief Engineers, Heads of Establishment (HoE), Military Continuing Airworthiness Managers (Mil CAMs). ◀

³ Refer to RA 4945 – Personnel Requirements – MRP Part M Sub Part G.

⁴ Refer to RA 1006 – Delegation of Engineering Authorizations; and RA 1023 – Chief Air Engineers – Air Safety Responsibilities.

⁵ Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility.

**Acceptable
Means of
Compliance
1002(1)**

6. The appropriate Operating Duty Holder (ODH) CAE and DE&S Operating Centre Director **should** personally authorize any non-compliance for Crown Servant posts on a case-by-case basis, inform the MAA⁶, and maintain a record for audit by the MAA. Details of all non-compliances **should** be provided to the ODH / AM(MF) for inclusion in the Air System Safety Case, managed via the Air Safety Management System.
7. The following posts **should** be filled by Engineering Council CEng registered industry personnel:
- Type Airworthiness Managers (TAM)⁷.
 - Mil CAMs who are employed within a construct supporting a Defence Contractor Flying Organization. In derogation, personnel who hold a European Union Aviation Safety Agency (EASA) Form 4 / UK Civil Aviation Authority (CAA) Form SRG 1769 as a CAM, are not required to be Engineering Council registered.
8. Non-compliance for industry posts **should** be accepted by the applicable AM and endorsed by the MAA⁶ as part of the relevant organizational approval process. Details of all non-compliances **should** be provided to the ODH / AM(MF) for inclusion in the Air System Safety Case, managed via the Air Safety Management System. ◀

**Guidance
Material
1002(1)**

Airworthiness Competent Persons

Development and Assessment of Competence

9. When assessing the competence of personnel to carry out their duties the following factors will be considered:
- Engineering knowledge appropriate to the application area.
 - Engineering, including Airworthiness engineering, knowledge appropriate to the technology.
 - Knowledge of the legal and safety regulatory framework.
 - The consequences of failure of systems that affect Airworthiness. The greater the consequences, the more rigorous the specification and assessment of competence need to be.
 - The safety categorization (eg Risk Class) of the systems or component. The higher the category the more rigorous the specification and assessment of competence need to be.
 - The novelty of the design, design procedures or application. The newer or more untried the designs, design procedures or application, the more rigorous the specification and assessment of competence need to be.
 - Personal characteristics such as leadership, strength of character, ability to communicate, give presentations, and literacy.
 - Previous experience and its relevance to the specific duties to be performed and the technology employed. The greater the required competence levels, the closer the fit between the competencies developed from previous experience, and those required for the specific duties to be undertaken needs to be.
 - The relevance of qualifications to specific duties.

Note:

Detailed guidance on the assessment of Airworthiness competence is available within the Knowledge in Defence portal⁸.

10. When assessing the competence requirements of a particular task, the following aspects need to also be addressed:
- How effectively the task is communicated.
 - Workload.

⁶ ▶ Contact via ◀ DSA-MAA-OA-ACC@mod.gov.uk.

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

⁸ <http://aof.uwh.diif.r.mil.uk/index.htm> or <https://www.gov.uk/guidance/knowledge-in-defence-kid>.

**Guidance
Material
1002(1)**

- c. Support and communication available within a peer group.
 - d. Support for feedback and learning mechanisms within the organization.
 - e. Review and verification processes within the organization.
11. Competence requirements will need to be assessed at all levels; individual, team, organization, or Service.
12. The need to develop and maintain competence will be read across to:
- a. Recruitment and placement procedures.
 - b. The identification of training needs particularly in the presence of organizational change, staff turnover, and technological developments.
 - c. The delivery of training.
 - d. The need for general health promotion and surveillance schemes⁹.

Personnel Changes

13. ADHs, AM(MF)s, AMs, and Heads of ADH-Facing Organizations ►◄ need to recognize the significance of changes of personnel and:
- a. Ensure that appointments are made only to personnel who will be able to acquire the necessary level of competence within a reasonable period of time.
 - b. Ensure that new personnel acquire necessary Airworthiness knowledge to carry out their tasks.
 - c. Allow new staff time to assimilate the safety culture and sources of corporate memory on Airworthiness matters before delegating authority to them.
 - d. ►Ensure that where an MAA approval is required there is sufficient time to enable assessment and approval to be completed prior to the nominee assuming authority. ◄

⁹ Refer to DSA01.1 – Defence Policy for Health, Safety and Environmental Protection.

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RA 1003 - Delegation of Airworthiness Authority and Notification of Air Safety Responsibility

Rationale

The responsibility for the Air Safety and, consequently, the Airworthiness of Air Systems is vested in the Secretary of State (SoS) for Defence, who delegates ►◄ authority in this matter to each Service Chief of Staff and Chief Executive Officer (CEO) for onward delegation to competent individuals.

Within Defence Equipment and Support (DE&S), ► or an MAA approved Design Organization (DO), ◄ where an individual requires Airworthiness Authority to amend the Air System Document Set (ADS), formal delegation of such authority is required. A formal record of the notification of Air Safety responsibility is also required to ensure that individuals are aware of the impact on safety of their aviation-related activity; such notification is required to be clear, unambiguous and auditable.

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1003(1): Delegation of Airworthiness Authority ► within DE&S ◄
1003(2): Notification of Air Safety Responsibility ► within DE&S ◄
1003(3): ► Delegation of Airworthiness Authority within a Design Organization holding Type Airworthiness Management responsibilities ◄

Regulation 1003(1)

Delegation of Airworthiness Authority ► within DE&S ◄

1003(1) Delegation of the Airworthiness Authority to approve changes to the ADS within DE&S **shall** be by Suitably Qualified and Experienced Person (SQEP) Crown Servants, in nominated posts, in the form of a Letter of Airworthiness Authority (LoAA).

Acceptable Means of Compliance 1003(1)

Delegation of Airworthiness Authority ► within DE&S ◄ Airworthiness Authority

1. The authority to approve changes to the ADS, granted to individuals through the issue of LoAAs, **should** be delegated to Type Airworthiness Authorities (TAA).

Delegation principles

2. A clear, unbroken chain of delegation from CEO to the respective TAA **should** exist, through 2* Operating Centre Directors (OCD) and including intermediate line managers as necessary, with each receiving the appropriate level of delegation:

- a. CEO **should** issue a LoAA to ► Director General (Air) (DG(Air)) ◄ containing, as a minimum, the Air Safety responsibilities and Airworthiness Authorities detailed in RA 1012¹.
- b. ► DG(Air) ◄ **should** issue LoAAs to those OCDs with responsibilities for Air Systems and equipment, containing as a minimum, the relevant Air Safety responsibilities and Airworthiness Authorities detailed in RA 1013².
- c. OCDs **should** issue LoAAs to subordinate TAAs, via intermediate line managers where necessary. These LoAAs **should** contain, as a minimum, the Airworthiness Authorities detailed in RA 1015³.
- d. Subordinate Delivery Team (DT) staff requiring LoAAs **should** receive such delegation directly from the respective TAA.

3. LoAAs **should**:

¹ Refer to RA 1012 – ► Director General ◄ (Air) - Air Safety Responsibilities.

² Refer to RA 1013 – Air Systems Operating Centre Director - Provision of Airworthy and Safe Systems.

³ Refer to RA 1015 – Type Airworthiness Authority – Roles and Responsibilities.

Acceptable Means of Compliance 1003(1)

- a. Only be issued to those individuals in the delegation chain from ► DG(Air) ◀ to TAAs, and sub-delegated from the TAA where required.
 - b. Only be granted to competent individuals meeting established criteria to be ► ◀ SQEP, as detailed below.
 - c. Be in the form of a letter personal to the individual receiving it; they **should not** be transferred between individuals.
 - d. Be of an unambiguous scope and be consistent with other delegations to prevent omissions or duplication.
 - e. Be accepted formally in writing by the recipient; LoAAs **should** only be accepted when the recipient has made an assessment that the responsibilities and authorities delegated can be discharged within the resource that has been allocated.
4. Copies of all LoAAs, received and issued, **should** be retained for no less than 5 years beyond the active life of the Air System type or equipment. Scanned copies held electronically are permitted.

Delegations

5. OCDs, TAAs and any intermediate line managers requiring delegation of Airworthiness Authority **should** apply to the MAA for endorsement⁴ of their suitability to hold a LoAA, using the process detailed in MAA03⁵. The applicant **should not** be awarded a LoAA before their LoE is received.
6. LoAAs delegating the authority to approve amendments or re-issues of a Release To Service Recommendation (RTSR) **should** only be issued to individuals holding at least the rank / grade of OF5 (or equivalent).
7. The TAA **should** identify those posts within their Area of Responsibility (AoR) that require LoAAs. These posts **should** be limited to those that require authority to alter the ADS without reference to higher authority.
8. When sub-delegating LoAAs, the TAA has discretion over the nature and extent of delegation, under the following constraints:
 - a. LoAAs delegating the authority to amend the ADS **should** only be issued to individuals who have successfully completed the Airworthiness for Military Aircraft Course (AMAC) – either at Practitioner (AMAC-P) level or Fundamentals (AMAC-F) level, including passing the course assessment.
► See RA 1440⁶ Annex A for further details. ◀
 - b. The TAA **should** assess the competency and knowledge of all staff requiring delegation using an auditable, evidence-based process and determine which the more appropriate course is for the individual, considering the scope of their delegation. The AMAC-P is considered to be the preferred course for LoAA holders at OF3 level (or equivalent) and above. The AMAC-F is considered a suitable course for LoAA holders below OF3 (or equivalent). ► See RA 1440⁶ Annex A for further details. ◀
 - c. When issuing the LoAA, the TAA **should** specify any limitations applicable to the delegation and the LoAA holder **should** be made aware of the boundaries within which they are permitted to operate.
9. All LoAA holders **should** meet the relevant minimum SQEP criteria, as contained in Table 1 below, with the following notes:
 - a. Any intermediate line manager (as described in paragraph 2c) between the OCD and a TAA requiring a LoAA **should** meet the minimum SQEP criteria established for OCDs.

⁴ Once satisfied, the MAA ► is to ◀ issue a personal Letter of Endorsement (LoE) recognizing the suitability of the applicant.

⁵ Refer to MAA03: Military Aviation Authority Regulatory Processes.

⁶ ► Refer to RA 1440 – Air Safety Training. ◀

Acceptable Means of Compliance 1003(1)

- b. Where Air System Type Specific Managers' Courses are not available, an appropriate level of technical familiarization **should** be achieved for each Air System type. This **should** be recorded in the relevant LoAA and LoE.

Table 1. LoAA Holder Minimum SQEP Criteria.

Minimum SQEP Criteria	DT staff ⁷	TAA	OCD
Crown Servant	X	X	X
Engineering Council Professionally Registered, as detailed in RA 1002 ⁸	X	X	X
Has previous DT delegated responsibility to approve changes to the ADS		X	X
Successfully completed AMAC-P (5 day)	X	X	
Successfully completed AMAC-F (3 day)	X		
Successfully completed the relevant Air System Type Specific Managers' Course	X	X	

10. TAAs **should** be assessed as at least "Practitioner" level across ACS001, ACS201, ACS301 (excluding ACS301/06) and ACS401 in the Airworthiness Competence Set (available on the **▶ MAA's websites⁹ ◀**) before receiving their LoAA.

Review of delegations

11. All LoAAs **should** be reviewed by the issuer at least annually.
12. When the **▶ issuer ◀** of a LoAA departs their post, all LoAAs issued by that individual **should** remain valid for a maximum period of 3 months from when **▶ their ◀** replacement receives their own LoAA. During this period, all sub-delegations **should** be reviewed and renewed as appropriate by the new incumbent.
13. Reviews **should** ensure that:
- The functional responsibility and, where appropriate, authority being delegated remains appropriate.
 - The content and references in the LoAA remain up to date.

Training

14. OCDs, TAAs, and 1* LoAA holders **should** comply with the Air Safety Training requirements detailed in RA 1440⁶.

Guidance Material 1003(1)

Delegation of Airworthiness Authority ▶ within DE&S ◀

15. The content of the ADS is detailed in RA 1310(1)¹⁰. For clarification, Special Instructions (Technical) (SI(T)s), regulated by RA 5405¹¹, are considered to be part of the ADS when they direct on-Aircraft work. The issue of such SI(T)s can therefore only be authorized by a LoAA holder.
16. The simplicity of a single TAA within a Platform DT is highly preferable but, where multiple Air System types are supported by a single DT, additional TAAs may be appointed for each Air System type.
17. Although not contained in the currently mandated SQEP criteria, relevant Air System Maintenance experience in the Forward air domain can be extremely valuable to an individual in exercising Airworthiness Authority. When sub-delegating LoAAs to DT staff who do not have such experience, the TAA may wish to take measures to ensure that such staff have access to suitable advice. Appropriate measures may

⁷ ▶ Refer to RA 1440 Annex A for further details. ◀

⁸ Refer to RA 1002 – Airworthiness Competent Persons.

⁹ ▶ <https://www.gov.uk/government/publications/letter-of-endorsement-loe-airworthiness-competence>. ◀

¹⁰ Refer to RA 1310 – Air System Document Set.

¹¹ Refer to RA 5405 – Special Instructions (Technical).

**Guidance
Material
1003(1)**

include (but are not limited to) ensuring suitably experienced individuals are employed in support of the LoAA holder.

► **Applicability to non-DE&S organizations**

18. Individuals inside non-DE&S organizations will not be allowed to hold LoAAs, as these are DE&S specific authorization approvals, and the DG(Air) only provides LoAAs to individuals within their AoR and governance chain.

19. Organizations that transfer out of DE&S will:

- a. For organizations remaining in MOD: Ensure that the SoS for Defence delegates their Airworthiness authority through the appropriate management chain (through the appropriate Service Chief of Staff or CEO for onward delegation) to competent individuals.
- b. For organizations leaving MOD: Ensure that the MOD contracting organization, who has been appropriately delegated through their management chain from the SoS for Defence provides the appropriate Airworthiness delegation to the Head of the transferred organization (eg CEO). Ensure that the Head of the transferred organization (eg CEO) delegates the Airworthiness responsibilities through the appropriate management chain (through the appropriate Accountable Manager (AM) for onward delegation) to competent individuals.
- c. Create Letters of Authority / Delegation covering as a minimum the LoAA / Letter of Air Safety Notification (LoAN) requirements (that were held whilst the organization was in DE&S) for their personnel.
- d. Ensure that responsibilities, that were covered by the LoAAs / LoANs of their personnel, are detailed within the formal agreements (eg Internal Business Agreements, Joint Business Agreements, Service Level Agreements, etc) they have with the aviation organizations they support (eg Aviation Duty Holders, Front Line Commands, DE&S aviation Delivery Teams, etc).

Training course validities

20. Training course validities are prescribed to ensure that individuals are kept as up-to-date as possible with the latest legal, policy, regulatory, best practise direction available. It is the responsibility of individuals and their chain of command to ensure the individuals remain in-date for all applicable training courses.

21. Once an individual goes beyond a course validity timeframe (ie AMAC-P validity is 5 years) the individual is no longer deemed to be SQEP and becomes ineligible to hold an LoAA. Training course validities are not related to individuals remaining in a specific [type of] post (ie an individual can successfully complete the AMAC-P, then change posts away from Airworthiness (eg into a Finance post), then return to an Airworthiness post, and (if still within the course validity of 5 years) still be deemed as SQEP for AMAC-P). ◀

**Regulation
1003(2)**

Notification of Air Safety Responsibility ► within DE&S ◀

1003(2) Individuals within DE&S responsible for providing equipment (excluding Air System platforms) and / or services in the ► **Defence** ◀ Air Environment **shall** receive formal notification of their Air Safety responsibilities, promulgated through a system of formal letters.

**Acceptable
Means of
Compliance
1003(2)**

Notification of Air Safety Responsibility ► within DE&S ◀

22. **Air Safety Responsibility.** The notification of Air Safety Responsibility **should not** authorize the individual to approve changes to the ADS. For the purpose of this regulation, this form of notice ► **is** ◀ named a Letter of Air Safety Notification (LoAN) ►◀.

Acceptable Means of Compliance 1003(2)

Notification principles

23. A clear, unbroken chain of notification from ►DG(Air)◄ to the respective ►Ship Platform Authorities (PA) or Commodity Chief Engineer (CE)◄ **should** exist, through 2* OCDs and including intermediate line managers as necessary, with each receiving a notification appropriate to their level and project responsibilities:
- DG(Air)◄ **should** issue LoANs to those OCDs who are not required to hold LoAAs but have responsibilities for providing services and / or equipment for use in, or in support of, the Air Domain.
 - OCDs **should** identify those ►Ship PAs or Commodity CEs◄ within their operating centres who have formal responsibility for the Air Safety of the equipment and / or services they provide, but not Airworthiness Authority to approve changes to the ADS; such individuals **should** receive LoANs, issued through intermediate line managers if necessary.
 - Appropriate subordinate staff with formal responsibility for the safety of goods and services delivered to Air System DTs **should** receive suitably tailored LoANs from their ►Ship PA or Commodity CE.◄
24. LoAA ►and LoAN◄ holders **should** issue LoANs, but LoAN holders **should not** issue LoAAs.
25. In all instances LoANs **should**:
- Be in the form of a letter personal to the individual receiving it; they **should not** be transferred between individuals.
 - Be of an unambiguous scope and be coherent with any other letters of notification or delegation to prevent omissions or duplication.
 - Contain specific reference to the regulations and standards applicable to achieving the Air Safety requirements for the equipment and / or services that the recipient is responsible for.
26. Copies of all LoANs, received and issued, **should** be retained for no less than 5 years beyond the active life of the related Air System type or equipment. Scanned copies held electronically are permitted.

Review of notifications

27. All LoANs **should** be reviewed by the issuer or their replacement at least annually.
28. ►When the issuer of a LoAN departs their post, all LoANs issued by that individual **should** remain valid for a maximum period of 3 months from when their replacement receives their LoAA or LoAN. During this period, all sub-delegations **should** be reviewed and renewed as appropriate by the new incumbent.◄

Guidance Material 1003(2)

Notification of Air Safety Responsibility ►within DE&S◄

29. The purpose of the formal letter for notification of responsibility for Air Safety without Airworthiness Authority is to ensure that individuals are formally made aware of their responsibilities for Air Safety so that they may effectively apply Air Safety regulation and principles in the conduct of their duties.
30. While RA 1003(2) does not define specific SQEP criteria for LoAN holders, this does not remove the requirement to ensure that all individuals are competent to hold the responsibilities associated with their respective appointment.
- Applicability to non-DE&S organizations
31. Individuals inside non-DE&S organizations will not be allowed to hold LoANs, as these are DE&S specific authorization approvals, and the DG(Air) only provides LoANs to individuals within his AoR and governance chain.
32. Organizations that transfer out of DE&S will:
- Ensure that the MOD contracting organization, who has been appropriately delegated through their management chain from the SoS for

**Guidance
Material
1003(2)**

Defence provides the appropriate notification of Air Safety Responsibility to the Head of the transferred organization (eg CEO).

- b. Ensure that the Head of the transferred organization (eg CEO) delegates the Airworthiness responsibilities through the appropriate management chain (through the appropriate AM for onward delegation) to competent individuals.
- c. Create Letters of Notification covering as a minimum the LoAA / LoAN requirements (that were held whilst the organization was in DE&S) for their personnel.
- d. Ensure that responsibilities, that were covered by the LoAAs / LoANs of their personnel, are detailed within the formal agreements (eg Internal Business Agreements, Joint Business Agreements, Service Level Agreements, Contracts, etc) they have with the aviation organizations they support (eg Aviation Duty Holders, Front Line Commands, DE&S aviation Delivery Teams, etc).

**Regulation
1003(3)**

Delegation of Airworthiness Authority within a Design Organization holding Type Airworthiness management responsibilities

1003(3) Delegation of the Airworthiness Authority to approve changes to the ADS within a DO **shall** be by SQEP in nominated posts, in the form of a Letter of Appointment (LoA)¹².

**Acceptable
Means of
Compliance
1003(3)**

Delegation of Airworthiness Authority within a Design Organization holding Type Airworthiness management responsibilities

Airworthiness Authority

- 33. For Civilian-Owned or Civilian Operated Air Systems the Air System Sponsor¹³ can delegate TAw responsibility between the TAA and a TAM, the TAA **should** provide advice to the Sponsor on the most appropriate delegation of responsibilities.
- 34. The authority to approve changes to the ADS, granted to individuals through the issue of LoAs, **should** be delegated to the TAM.

Delegation principles

- 35. A clear, unbroken chain of delegation from the Sponsor to the respective TAM **should** exist:
 - a. LoAs **should** contain, as a minimum, the Airworthiness Authorities detailed in RA 1015¹⁴.
 - b. Subordinate DO staff requiring LoAs **should** receive such delegation directly from the respective TAM.
- 36. LoAs **should**:
 - a. Only be issued by the Sponsor to the TAM, and sub-delegated from the TAM where required.
 - b. Only be granted to competent individuals meeting established criteria to be SQEP, as detailed below.
 - c. Be in the form of a letter personal to the individual receiving it; they **should not** be transferred between individuals.

¹² ► 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.

¹³ Refer to RA 1019 - Sponsor of Military Registered Civilian-Owned and Civilian Operated Air Systems - Air Safety Responsibilities.

¹⁴ Refer to RA 1015 – Type Airworthiness management – Roles and Responsibilities. ◀

**Acceptable
Means of
Compliance
1003(3)**

- d. Be of an unambiguous scope and be consistent with other delegations to prevent omissions or duplication.
- e. Be accepted formally in writing by the recipient; LoAs **should** only be accepted when the recipient has made an assessment that the responsibilities and authorities delegated can be discharged within the resource that has been allocated.

37. Copies of all LoAs, received and issued, **should** be retained for no less than 5 years beyond the active life of the Air System type or equipment. Scanned copies held electronically are permitted.

Delegations

38. TAMs requiring delegation of Airworthiness Authority **should** apply to the Sponsor. If content the Sponsor **should** apply to the MAA for endorsement⁴ of the TAM's suitability to hold a LoA, using the process detailed in MAA03⁵. The applicant **should not** be awarded a LoA before their LoE is received.

39. The TAM **should** identify those posts within their AoR that require LoAs. These posts **should** be limited to those that require authority to alter the ADS without reference to higher authority.

40. When sub-delegating LoAs, the TAM has discretion over the nature and extent of delegation, under the following constraints:

- a. LoAs delegating the authority to amend the ADS **should** only be issued to individuals who have successfully completed the AMAC – either at Practitioner (AMAC-P) level or Fundamentals (AMAC-F) level, including passing the course assessment.
- b. The TAM **should** assess the competency and knowledge of all staff requiring delegation using an auditable, evidence-based process and determine which the more appropriate course is for the individual, considering the scope of their delegation. The AMAC-P is considered to be the preferred course for LoA holders at OF3 level (or equivalent) and above. The AMAC-F is considered a suitable course for LoA holders below OF3 (or equivalent).
- c. When issuing the LoA, the TAM **should** specify any limitations applicable to the delegation and the LoA holder **should** be made aware of the boundaries within which they are permitted to operate.

41. All LoA holders **should** meet the relevant minimum SQEP criteria, as contained in Table 2 below, with the following notes:

- a. Where Air System Type Specific Managers' Courses are not available, an appropriate level of technical familiarization **should** be achieved for each Air System type. This **should** be recorded in the relevant LoA and LoE.

Table 2. LoAA Holder Minimum SQEP Criteria.

Minimum SQEP Criteria	DO staff	TAM
Engineering Council Professionally Registered, as detailed in RA 1002 ⁸	X	X
Successfully completed AMAC-P (5 day)	X	X
Successfully completed AMAC-F (3 day)	X	
Successfully completed the relevant Air System Type Specific Managers' Course	X	X

42. TAMs **should** be assessed as at least "Practitioner" level across ACS001, ACS201, ACS301 (excluding ACS301/06) and ACS401 in the Airworthiness Competence Set (available on the MAA's websites⁹) before receiving their LoAA.

Review of delegations

43. All LoAs **should** be reviewed by the issuer at least annually.

**Acceptable
Means of
Compliance
1003(3)**

44. When the issuer of a LoA departs their post, all LoAs issued by that individual **should** remain valid for a maximum period of 3 months from when their replacement receives their own LoA. During this period, all sub-delegations **should** be reviewed and renewed as appropriate by the new incumbent.

45. Reviews **should** ensure that:

- a. The functional responsibility and, where appropriate, authority being delegated remains appropriate.
- b. The content and references in the LoA remain up to date.

Training

46. Sponsors, TAMs, and LoA holders **should** comply with the Air Safety Training requirements detailed in RA 1440⁶.

47. Non-compliance for industry posts **should** be accepted by the applicable AM, where appropriate, and endorsed by the MAA⁵ as part of the relevant organizational approval process. Details of all non-compliances **should** be provided to the Operating Duty Holder or Accountable Manager (Military Flying) for inclusion in their Air System Safety Case, managed via the Air Safety Management System.

**Guidance
Material
1003(3)**

Delegation of Airworthiness Authority within a Design Organization holding Type Airworthiness management responsibilities

48. The content of the ADS is detailed in RA 1310(1)¹⁵. For clarification, SI(T)s, regulated by RA 5405¹¹, are considered to be part of the ADS when they direct on-Aircraft work. The issue of such SI(T)s can therefore only be authorized by a LoAA or LoA holder. This is a delegable function in accordance with (iaw) RA 1163¹⁶ and a non-delegable function iaw RA 1162¹⁷.

49. The simplicity of a single TAM within an MAA approved DO is highly preferable but, where multiple Air System types are supported by a single DO, additional TAMs may be appointed for each Air System type.

50. Although not contained in the currently mandated SQEP criteria, relevant Air System Maintenance experience in the Forward air domain can be extremely valuable to an individual in exercising Airworthiness Authority. When sub-delegating LoAs to DO staff who do not have such experience, the TAM may wish to take measures to ensure that such staff have access to suitable advice. Appropriate measures may include (but are not limited to) ensuring suitably experienced individuals are employed in support of the LoA holder.

Training course validities

51. Training course validities are prescribed to ensure that individuals are kept as up-to-date as possible with latest legal, policy, regulatory, best practise direction available. It is the responsibility of individuals and their chain of command to ensure the individuals remain in-date for all applicable training courses.

52. Once an individual goes beyond a course validity timeframe (ie AMAC-P validity is 5 years) the individual is no longer deemed to be SQEP and becomes ineligible to hold an LoA. Training course validities are not related to individuals remaining in a specific [type of] post (ie an individual can successfully complete the AMAC-P, then change posts away from Airworthiness (eg into a Finance post), then return to an Airworthiness post, and (if still within the course validity of 5 years) still be deemed as SQEP for AMAC-P). ◀

¹⁵ ▶ Refer to RA 1310(1): The Air System Document Set.

¹⁶ Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.

¹⁷ Refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems. ◀

RA 1005 – Contracting with Competent Organizations

Rationale

Organizations within the Defence Air Environment (DAE) may be contracted¹ to carry out specified **Type and Continuing Airworthiness management**, Contractor Flying, and Air Traffic Management Equipment activities. Not having competent organizations contracted to carry out these activities may result in a compromised level of Air Safety. To assure the Secretary of State for Defence that organizations contracted to provide Air Safety related products and services to the UK MOD are competent to do so, the MAA provides a number of approval schemes. Moreover, correctly contracting to the MAA Regulatory Publications (MRP) is of vital importance to ensure the latest regulatory standards and practices are adhered to.

Contents

- 1005(1): General Principles**
- 1005(2): Design Organizations**
- 1005(3): Maintenance Organizations**
- 1005(4): Contractor Flying Organizations**
- 1005(5): Air Traffic Management Equipment Organizations**

Regulation 1005(1)

General Principles

1005(1) Organizations that let contracts in the DAE **shall** ensure that activities are carried out by competent organizations.

Acceptable Means of Compliance 1005(1)

General Principles

1. Contracts **should** be let against the latest issue of each applicable Regulatory Article and / or other MRP. The contract **should** allow provision for:
 - a. The contracted organization to support on-site access for the MAA or its appointed agents to undertake oversight and assurance activities.
 - b. Changes in the MRP to be addressed through contract amendment.
2. Air Safety risk assessments **should** be conducted by the contracting organization to assess the effects of changes in the MRP when they occur, and an auditable trail of risk management **should** be maintained.
3. Where an MAA approval scheme exists and activity falls within its scope, the approval scheme **should** be contracted to.
4. Where the contracted organization is required to hold but has yet to gain MAA approval the contracting organization **should**:
 - a. Have a contracted route to achieving approval.
 - b. Ensure that an application has been submitted to the MAA for assessment against the relevant scheme.
5. Where no MAA approval scheme exists, or activity is beyond the scope of the MAA approval scheme, the contracting organization **should** assure themselves of the competency of the contracted organization and record their decision-making process and assumptions. Any associated Risk to Life **should** be communicated to and addressed by the appropriate Aviation Duty Holder (ADH) or Accountable Manager.
6. The MOD may contract with intermediate organizations, which do not hold an MAA approval, to manage or deliver products or services; in these cases the organization performing the activity that is covered by an MAA approval scheme **should** hold the relevant MAA approval, noting the requirements of paragraphs 4 and 5. **The intermediate organization should flow down MRP regulations that are relevant to the organization performing the activity.**

¹ **Contracting includes other arrangements such as: Internal Business Agreements, Joint Business Agreements, Service Level Agreements, Foreign Military Sales agreements, etc.**

Acceptable Means of Compliance 1005(1)

7. The contracted organization **should** have a nationally accredited Quality Management System with an appropriate scope for the contracted activity ► (eg ISO 9001 and AS 9100, accredited by the UK Accreditation Service). ◀
8. If a Type Airworthiness Authority (TAA) ►² ◀ wishes to contract with an organization that does not hold an appropriate Airworthiness organizational approval from the MAA but instead holds a relevant Airworthiness organizational approval from a foreign Military Airworthiness Authority, they **should** check if that foreign Regulator is currently Recognized³ by the MAA⁴.
9. If this Recognition, the scope of which includes the type of organizational approval required, does exist, the TAA **should** submit a request for Alternative Acceptable Means of Compliance (AAMC) to utilize the organizational approval from the foreign Military Airworthiness Authority. A contract **should** only be awarded if this AAMC has been approved by the MAA.
10. If a Recognition with the required scope does not exist, ► the ◀ TAA **should** approach ► the MAA⁵ ◀ to request ► ◀ the ► ◀ undertaking ► of ◀ Recognition activity with the foreign Military Airworthiness Authority. This request **should** include a clearly articulated Business Need that details the TAA's understanding of the applicability of the other Military Airworthiness Authority's organizational approval. The Business Need **should** also contain details of the expected duration of use of that organizational approval and the TAA's intended actions if that foreign Military Airworthiness Authority approval be withdrawn or the MAA Recognition expires.
11. ► Contracting organizations **should** ensure that the responsibilities for the appropriate development, management, upkeep of, or contribution to, the Air System Safety Case⁶ are clearly articulated and contracted for. ◀

Guidance Material 1005(1)

General Principles

12. The MAA or its appointed agents will assess the suitability of a contractor's personnel, processes and facilities to conduct their contracted activities for inclusion in the relevant MAA approval scheme. Approval will only be granted following a successful assessment by the MAA.
13. Contracting organizations are advised to engage with the MAA at the earliest opportunity because the time required to gain an MAA approval can vary considerably. Contributing factors can include: the scope of the activity, the familiarity of the contracted organization with the MRP, the quality of the evidence submitted to the MAA and MAA workload and priorities.
14. Recognition is a process by which the MAA can make an informed and auditable judgement on the extent to which the Airworthiness outputs of a foreign Military Airworthiness Authority could be accepted for use within the MRP. Airworthiness outputs, including Airworthiness organizational approvals, from a Recognized foreign Military Airworthiness Authority are not automatically accepted by the MAA. TAAs will need to assure themselves that they understand the source, scope and applicability of any such Airworthiness output before submitting the AAMC.
15. Costs of periodic MAA assurance activities cannot be recovered from the MAA.
16. ► ◀

² ► 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. ◀

³ Refer to MAA/RN/2015/08 (D Tech) – Recognition of Other Military Airworthiness Regulators.

⁴ This information is available from the following MAA webpage (<https://www.gov.uk/government/publications/maa-recognition>) and additional guidance can be obtained from the Defence Equipment & Support (DE&S) Airworthiness Team.

⁵ ► Contact via DSA-MAA-MRPEnquiries@mod.gov.uk.

⁶ Refer to RA 1205 – Air System Safety Cases. ◀

Regulation 1005(2)

Design Organizations

1005(2) For the procurement of Air Systems (including their Products, Parts and Appliances), Airborne Equipment⁷, ►◄ Air Launched Weapons⁷ (ALW), ►TAW management◄ and Post-Design Services (PDS), the contracting organization **shall** only contract with a competent Design Organization (DO).

Acceptable Means of Compliance 1005(2)

Design Organizations

17. The DO **should** be approved under the Design Approved Organization Scheme (DAOS)⁸.

18. ►Any requirement for TAW management **should** be approved specifically under the TAW Management Supplement⁹ and only be undertaken within an Air System Co-ordinating DO.◄

Guidance Material 1005(2)

Design Organizations

19. Where a DO holds a European Aviation Safety Agency (EASA) ►/ Civil Aviation Authority (CAA)◄ Part 21 Subpart J approval, the EASA ►/ CAA◄ approved DO Handbook (DOH) may be submitted together with supporting evidence addressing the differences in regulation. As these are not insignificant, DOs are advised to seek guidance from the MAA DAOS Branch as early as possible to assist with the regulatory differences and advising the documentary evidence needed to demonstrate compliance¹⁰. The Approved DOH and agreed supporting evidence may be considered as acceptable to support the organization's application for inclusion in the DAOS.

20. There are cases where DAOS is not required, specifically:

a. For PDS contracts, where the proposed design element of such contracts is limited to holding engineering drawings of equipment or where changes to legacy equipment configuration are not anticipated. If design changes are subsequently required, DAOS approval must be sought⁸.

b. For equipment contracts involving manufacture and supply, where there is no change to the original design produced by a DAOS approved organization. If design changes are subsequently required these will be referred back to the original designer.

Regulation 1005(3)

Maintenance Organizations

1005(3) For the Maintenance of Air Systems (including their Products, Parts and Appliances) and ALW⁷, the contracting organization **shall** only contract with competent Maintenance organizations.

Acceptable Means of Compliance 1005(3)

Maintenance Organizations

21. For all Contractor-run on-Aircraft Maintenance, and for Contractor-run off-Aircraft Maintenance that is carried out on UK Government Property►7◄, contracting organizations **should** only contract with Maintenance organizations approved under the Maintenance Approved Organization Scheme (MAOS).

22. MAOS approval **should** be achieved by demonstration of full compliance with ►MRP Part 145.◄

a. ►◄

⁷ As defined in MAA02: Military Aviation Authority Master Glossary.

⁸ Refer to RA 5850 – Military Design Approved Organization (MRP ►Part◄ 21 Subpart J).

⁹ ►The TAW Management Supplement is available on the MAA websites.

¹⁰ Refer to◄ MAA03: Military Aviation Authority Regulatory Processes.

Acceptable Means of Compliance 1005(3)

- b. ▶◀
23. For Maintenance activities out of the scope of MAOS, the contracting organization **should** refer to paragraph 5.

Guidance Material 1005(3)

Maintenance Organizations

24. Contractor-run off-Aircraft Maintenance carried out off of UK Government Property is beyond the scope of MAOS.
25. The MAA recognizes that, where on-Aircraft Maintenance activity is carried out by a civil organization accredited with the appropriate scope, approved under EASA ▶/CAA◀ Part 145, and where CAA oversight under CAA Civil Aviation Publication (CAP) 562 Leaflet B-40 is invoked, then the EASA ▶/CAA◀ Part 145 approval may meet the majority of MAOS requirements. In this case, all differences must be addressed and MAOS approval obtained ▶◀ as detailed in RA 4800¹¹.

Regulation 1005(4)

Contractor Flying Organizations

- 1005(4) For the delivery of UK military registered Air System flying operations, the contracting organization **shall** only contract with competent flying organizations.

Acceptable Means of Compliance 1005(4)

Contractor Flying Organizations

26. Contracting organizations **should** only contract with flying organizations that are either:
- Approved under the Contractor Flying Approved Organization Scheme¹² (CFAOS), or:
 - ▶ Operating under the governance of a military Aircraft Operating Authority (AOA) and ◀ ADH.

Guidance Material 1005(4)

Contractor Flying Organizations

27. ▶ Documented systems and processes in support of other aviation operations regulatory approvals may be used and credited towards CFAOS approval, using the Contractor Flying Organization Exposition¹³, to show cross-linkages.
28. CFAOS organizations contracting non-UK military registered Air System support (such as for trials support or chase Aircraft) in support of CFAOS activity are responsible for ensuring that correct regulatory approvals are in place based on Air System registration. Appropriate due diligence would be expected to be enacted through the CFAOS organization's Air Safety Management System¹⁴. ◀

Regulation 1005(5)

Air Traffic Management Equipment Organizations

- 1005(5) For the provision and / or installation of Air Traffic Management (ATM) Equipment, and / or the provision of technical services that support ATM Equipment, contracting organizations **shall** only contract with competent ATM Equipment Organizations.

Acceptable Means of Compliance 1005(5)

Air Traffic Management Equipment Organizations

29. Contracting organizations **should** only contract with ATM Equipment organizations approved under the ATM Equipment Approved Organization Scheme (AAOS)¹⁵ when contracting for the provision and / or installation of ATM Equipment, and / or the provision of technical services that support ATM Equipment.

¹¹ Refer to RA 4800 – General Requirements (MRP Part 145).

¹² Refer to RA 1028 – Contractor Flying Approved Organization Scheme - Responsibilities.

¹³ ▶ Refer to RA 2501 – Contractor Flying Approved Organization Scheme.

¹⁴ Refer to RA 1200 – Air Safety Management. ◀

¹⁵ Refer to RA 1027 – Air Traffic Management Equipment Organizations - Responsibilities of Contracted Organizations.

**Guidance
Material
1005(5)**

Air Traffic Management Equipment Organizations

30. Nil.

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RA 1006 - Delegation of Engineering Authorizations

Rationale

Engineering authorizations are required to permit competent staff to manage, supervise and undertake a range of Air System and Air System component Maintenance ► and Continuing Airworthiness (CAW) management activities ◀ within the Defence Air Environment. An Air System's Airworthiness could be compromised without the use of a robust, auditable system of cascaded engineering authorizations that formally prescribes the Maintenance ► and CAW management activities ◀ an individual can undertake. ► This RA ◀ requires that each engineering authorization is granted to competent Maintenance ► and Continuing Airworthiness Management Organization (CAMO) ◀ staff, which can be traced back to an individual holding executive responsibility for Airworthiness.

Contents

1006(1): Delegation of Engineering Authorizations

Regulation

1006(1)

Delegation of Engineering Authorizations

1006(1) Engineering authorizations **shall** be cascaded by competent and authorized individuals in an auditable manner, originating from individuals holding posts with executive responsibility for Airworthiness.

Acceptable Means of Compliance

1006(1)

Delegation of Engineering Authorizations

1. Within Military Maintenance Organizations (MMOs)¹ ► and Military CAMOs ◀ the Manual of Airworthiness Maintenance – Processes (MAM-P) authorization system **should** be used.
2. The identification of “appointed Level K” and “appointed Level J” posts **should** only be made by an individual with executive responsibility for Airworthiness, defined for the purpose of this Regulation as one of the following:
 - a. **For Defence Equipment and Support (DE&S) and Command engineering posts:** The Chief Air Engineer (CAE) to the relevant-Operating Duty Holder (ODH), on behalf of the ODH².
 - b. **For Defence Accident Investigation Branch (DAIB) (Air) posts:** Director (Technical) MAA, limited to those personnel within the DAIB (Air) who require MAM-P authorizations in the course of their investigations.
3. Appointed Level K and appointed Level J posts **should** be identified in a manner that is auditable, for example, in mid-level orders. When publishing this information, any restrictions imposed on the scope of authorization associated with the post **should** be detailed.
4. The individual identifying appointed Level K and appointed Level J posts **should** ensure that personnel filling such positions are competent to do so and are therefore granted appropriate engineering authorizations on appointment.
5. In order to ensure that the Aviation Duty Holder (ADH) is cognisant of the risk ► they ◀ hold, engineering authorizations which enable the holder to defer Maintenance **should** only be granted by individuals within that ADH's Area of Responsibility unless agreement to do so has been received from the relevant ADH's ► Military Continuing Airworthiness Manager (Mil CAM). ◀ Where such authorizations are granted to individuals that operate across ADH boundaries, all affected ADHs, through their ► Mil CAM ◀, **should** formally agree to the extent of authorization granted.
6. While contractors may hold Level K and Level J authorizations, the authorizations “appointed Level K” and “appointed Level J” **should** only be granted to Crown Servants.

¹ The term MMO is used to describe military-run organizations that conduct Maintenance on Air Systems, Air System equipment and / or Air System components. This term does not include those contractor-run organizations that require approval under MRP Part 145; such organizations are known as Approved Maintenance Organizations (AMOs).

² Refer to RA 1023 – Chief Air Engineer – Air Safety Responsibilities.

**Acceptable
Means of
Compliance
1006(1)**

7. Level K, Level J, Level H or Level G authorizations may be granted to contractors subject to the relevant requirements³, which includes the requirement for an individual's competency to be assessed prior to them receiving an authorization. In addition, the following criteria apply:

- a. The scope of authorizations granted **should** be restricted to permit only those activities that the respective ADH requires the contractor to undertake.
- b. A list of the names of those contractors holding authorizations allowing Maintenance and / or flight servicing activities to be waived or deferred **should** be maintained in an auditable manner.

**Guidance
Material
1006(1)**

Delegation of Engineering Authorizations

8. This Regulation must be read in conjunction with other applicable MRP requirements⁴ concerning the assessment of competence and the recording and distribution of engineering authorizations. Although this Regulation includes content on the granting of authority to defer Maintenance, the granting of such authority through a Letter of Airworthiness Authority is outside the scope of this Regulation and exempt from its requirements.

9. The ► **Maintenance and CAw management** ◀ engineering authorization systems break individual authorizations into Authority Levels with authorizations granted by holders of specific Level K or Level J authorizations. The appointed Level K and appointed Level J authorizations grant the holder the full range of authorizations within that respective Authority Level, except where specific restrictions have been imposed.

10. As detailed in this Regulation, engineering authorizations are normally cascaded from the appointed Level K or appointed Level J. However, by virtue of holding executive responsibility for Airworthiness, the individuals described in Paragraph 2 of this Regulation may also grant an individual any subordinate authorization³. This satisfies those occasions where there is no appointed Level K in the authorization chain.

11. In relation to Paragraph 5, the term 'authorizations which enable the holder to defer Maintenance' includes those that permit the holder to defer corrective Maintenance and extend scheduled Maintenance.

► **Military CAMOs and Part M Authorizations**

12. **Military CAMOs are to use Part M authorizations in accordance with (iaw) RA 4945(3)⁵.** ◀

Authority Level K and Level J on deployed and embarked operations

13. In order to provide adequate management of Maintenance activities, ADHs may wish to establish engineering posts that hold a range of Level K and / or Level J authorizations in a particular Operational Theatre or for embarked operations. This is permitted provided that the delegation principles detailed in this Regulation are met. Where such posts require authority over Air System types belonging to multiple ADHs, particular attention must be given to the requirements at Paragraph 5.

Use of MAM-P engineering authorizations by contractors

14. While the use of the MAM-P engineering authorization system is required for MMOs, AMOs ► **and contracted CAMOs** ◀ may utilize an alternative system of granting engineering authorizations, subject to meeting the requirements of ► **both** ◀ MRP Part 145 ► **and Part M.** ◀

15. Where the MAM-P engineering authorization system is adopted by an AMO ► **or contracted CAMO** ◀ as a framework for cascading engineering authorizations, the organization will be able to propose that a nominated individual (normally the

³ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

⁴ Refer to RA 1002 – Airworthiness Competent Persons; RA 4806 – Personnel Requirements (MRP 145.A.30); and RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

⁵ ► **Refer to RA 4945(3): Personnel Competence and MRP Part M Authorization.** ◀

**Guidance
Material
1006(1)**

Quality Manager⁶) holds a limited range of Authority Level K and / or Authority Level J authorizations using the MAA MAOS CAMO Form 4 process⁷. However, the scope of such authorization will be limited to the minimum MAM-P engineering authorizations necessary to enable the organization to undertake the scope of Maintenance for which it has been approved for, within the constraints of MRP Part 145 ►and Part M.◄

16. Where an ADH CAE ►or Mil CAM◄ identifies the need for a contractor to hold authorizations in addition to those that have been allowed through MAA approval of a contractor-run Maintenance organization's authorization system, contractors may be granted such authorizations iaw this Regulation and RA 4806⁷.

17. When granting MAM-P engineering authorizations to contractors, it is important to understand that the full scope of privileges available in the authorization system may not be appropriate, in particular those authorizations providing engineering managers latitude to waive or defer Maintenance. Many of these activities are either unlikely to be necessary in an AMO, or it may be more suitable for them to be controlled by a Crown Servant.

⁶ Refer to RA 4807(9): Responsibility for Issuing Certification Authorization (MRP 145.A.35(i)).

⁷ Refer to RA 4806 – Personnel Requirements (MRP 145.A.30).

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

RA 1010 - Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities

Rationale

The Head of Establishment (HoE¹) is responsible for providing a Safe Operating Environment (SOE) for Air Systems in order to meet their Aviation Duty Holder-Facing / Accountable Manager (Military Flying) Facing (AA-Facing Organizations) responsibilities². Failure to provide a SOE could present Hazards that introduce new or increased Risk to Life (RtL) into an Aviation Duty Holder's (ADH's) / Accountable Manager's (Military Flying) (AM(MF)'s) operation, which is likely to affect their Air System Safety Case (ASSC)³. This RA defines the classification tiers a HoE will comply with to ensure that the correct regulatory framework is applied and that they meet their legal duty of care responsibilities in supporting aviation activities. In addition, this RA also ensures that ADHs / AM(MF)s assess the suitability of all MOD and non-MOD establishments used by Air Systems for which they have a responsibility for RtL.

Contents

Definitions Relevant to this RA

1010(1): Classification Tier of Establishment

1010(2): Head of Establishment - Aviation Responsibilities for All Tiers

1010(3): Tier 1 and Tier 2 (where Recreational Flying is not the Primary Activity) Head of Establishment Responsibilities

1010(4): Tier 2 Recreational Flying Only Head of Establishment Responsibilities

1010(5): Tier 3 and Tier 4 Head of Establishment Responsibilities

1010(6): Aviation Duty Holder / Accountable Manager (Military Flying) Safe Operating Environment Responsibilities

Definitions

Definitions Relevant to this RA

1. **SOE.** An environment within which any Aircraft operating in the air or on the ground is not exposed to undue Hazards, danger or Risk of harm. A SOE will be achieved through appropriate and effective management of factors within and influencing the environment such as airspace, Aircraft operating surfaces, infrastructure, facilities, personnel, equipment, procedures and services.

Regulation

1010(1)

Classification Tier of Establishment

- 1010(1) The HoE **shall** determine the classification tier of their establishment in accordance with (iaw) the aviation activity that is undertaken.

¹ Refer to MAA02 – MAA Master Glossary. Note that the MAA02 definition of HoE requires all MOD establishments to have a HoE and, for the context of this regulation, where a Defence Contractor Flying Organization is also the operator of an unlicensed non-MOD Aerodrome then by definition a HoE will be in place. Additionally, the term HoE also includes Commanding Officers of aviation capable His Majesty's (HM) / MOD Ships.

² Refer to RA 1032 – Aviation Duty Holder Facing Organizations and Accountable Manager (Military Flying) Facing Organizations – Roles and Responsibilities.

³ Refer to RA 1205 – Air System Safety Cases.

**Acceptable
Means of
Compliance
1010(1)**

Classification Tier of Establishment

Tier 1 Establishment

2. Any MOD Aerodrome, or unlicensed non-MOD Aerodrome⁴ where permanently based ADH / AM(MF) aviation activity is undertaken, or HM Aircraft Carrier, **should** be classified as a Tier 1 Establishment.

Tier 2 Establishment

3. Any MOD Aerodrome, except a Temporary Landing Zone (TLZ), used for casual ADH / AM(MF) Fixed-Wing (FW) aviation activity and / or where recreational flying⁵ is the primary activity **should** be classified as a Tier 2 Establishment.

Note:

If also used for casual ADH / AM(MF) Rotary Wing (RW) aviation activity, Tier 3 requirements **should** also be complied with.

Tier 3 Establishment

4. Any MOD Aerodrome (including HLS) or aviation capable⁶ HM / MOD Ship that is only used for casual ADH / AM(MF) RW aviation activity **should** be classified as a Tier 3 Establishment.

Tier 4 Establishment

5. Any MOD establishment at which aviation activity takes place, but where the purpose of the activity or receipt of aviation service is not directly related to landing or take-off⁷ **should** be classified as a Tier 4 Establishment. If the establishment can facilitate the landing of FW or RW Aircraft then para 3 and / or 4, whichever is applicable, **should** also be complied with.

General – All Tiers

6. When a TLZ is located at an establishment iaw RA 3550⁸, the ADH / AM(MF) **should** co-ordinate the duty of care and SOE responsibility in conjunction with the HoE⁹ for the duration of the activity. The ADH / AM(MF) **should** also produce and record a formalized agreement for HoE approval.

7. Any MOD establishment or aviation capable HM / MOD Ship considering the use of a Remotely Piloted Air System (RPAS) as the only activity, **should** consult the MAA¹⁰ to discuss the regulatory requirements with regards to the provision of a SOE.

8. This Regulation also applies to any MOD Aerodrome at which operations involve only civil registered Aircraft that are being used for MOD activity. Where this is applicable, the HoE **should** consult the MAA¹⁰ to confirm the appropriate classification tier.

9. For non-MOD Aerodromes, this RA **should** only apply to those that are operated by, or are the direct concern of a Contractor Flying Approved Organization Scheme (CFAOS) organization (whether owned or otherwise), or where the AM(MF) has a direct / individual responsibility (through contract or otherwise). ADH / AM(MF)s **should** contact the MAA for advice regarding the regulatory framework for any other unlicensed non-MOD Aerodromes where permanently based ADH / AM(MF) activity is undertaken.

10. The HoE **should** ensure that the classification tier for their establishment is promulgated to the relevant ADHs and / or AM(MF)s, Front Line Commands (FLC) and / or ADH-Facing / AM(MF)-Facing organizations.

⁴ In the context of this RA, unlicensed non-MOD aerodromes includes Heliports and Helicopter Landing Sites (HLS) and in addition, refer to RA 1010(1) paragraph 9.

⁵ In the context of this RA, recreational flying is considered to be flight in privately-owned civil registered Aircraft, such as at flying clubs, etc, operated by civilian personnel or MOD personnel outwith their MOD duties.

⁶ Aviation capable Ships are defined as those which can be categorized as Applicability Level A, B or C in Defence Standard 00-133.

⁷ For example, Air / Sea / Land Weapon Ranges and Electronic Warfare Ranges.

⁸ Refer to RA 3550 – Temporary Landing Zone.

⁹ The HoE **should** retain legal accountability of the establishment; however, the ADH / AM(MF) **should** provide an aviation Suitably Qualified and Experienced Person (SQEP) to support.

¹⁰ Via DSA-MAA-MRPEenquiries@mod.gov.uk.

**Guidance
Material
1010(1)**

Classification Tier of Establishment

11. If required, the HoE can refer to Annex A, Figure 1 to assist in determining the appropriate classification tier of their establishment.
12. RA 1010(1-5) does not apply to any Aerodrome, including Heliports and HLS that is licensed or certified by another recognized body (such as the UK Civil Aviation Authority (CAA), European Union Aviation Safety Agency (EASA), Federal Aviation Administration (FAA) etc).

**Regulation
1010(2)**

Head of Establishment - Aviation Responsibilities for all Tiers

- 1010(2) The HoE **shall** provide a SOE to support aviation activity that is reliant on the aviation services provided by the establishment.

**Acceptable
Means of
Compliance
1010(2)**

Head of Establishment - Aviation Responsibilities for all Tiers

13. Prior to appointment, and iaw the classification tier of their establishment, the HoE **should** complete:
 - a. The Duty Holders Air Safety Course¹¹, or the Contractor Flying Air Safety Course¹¹, whichever is applicable (Tier 1 and Tier 2 Establishments only).
 - b. The Aerodrome Operators Study Period¹² (Tier 3 and Tier 4 Establishments only¹³).
14. The HoE **should** ensure:
 - a. They have an effective knowledge and understanding of the MAA Regulatory Publications (MRP) that prescribe relevant Safety standards, practices and the principles of Risk Management. In addition, the HoE **should** know how they are applied and understand the importance of maintaining effective relationships with all relevant stakeholders at their establishment.
 - b. An Air Safety Management System is established and maintained iaw RA 1200¹⁴.
 - c. Assurance is conducted to provide evidence to the ADH / AM(MF) that a SOE is in place and being maintained, in support of the ADH / AM(MF) ASSCs³.
 - d. Alternate safe operating practices are in place when / where aviation activity occurs at establishments that do not require an Aerodrome Operator (AO) or Aerodrome Supervisor (Recreational Flying) (AS(RF)).
15. Before approving civil RPAS activity at their establishment the HoE¹ **should** be content that the security and safety Risks relating to the proposed activity have been assessed, that there are appropriate controls in place and that the RPAS operator has any necessary CAA Operational Authorization, Flyer Identification (ID) and Operator ID¹⁵.
16. Prior to granting permission for civil registered, non-military Aircraft¹⁶ to utilize their establishment, the HoE **should** assure themselves that the operators are compliant with the ANO or if operating overseas, the relevant national civil aviation Regulations.
17. The HoE **should** ensure any Modifications or work carried out within their establishment, that could affect the SOE, are conducted by an appropriate and competent organization¹⁷ and are completed iaw the relevant regulatory and policy documents.

¹¹ Refer to RA 1440 – Air Safety Training.

¹² Or Royal Navy equivalent.

¹³ Applicable only if arrived in post after June 2022 when AOSP was implemented but, this does not preclude a HoE that falls outside this bracket from attending.

¹⁴ Refer to RA 1200 – Air Safety Management.

¹⁵ Refer to 'The Drone and Model Aircraft Code' on the CAA website (<https://register-drones.caa.co.uk/drone-code>) for further details on Flier ID and Operator ID and CAP 722 – Unmanned Aircraft System Operations in UK Airspace – Policy and Guidance.

¹⁶ Excluding Operations under RA 1166 - UK Civil-Registered Aircraft Utilized by the Ministry of Defence.

¹⁷ Refer to RA 1005(1): General Principles.

Acceptable Means of Compliance 1010(2)

18. The HoE **should** inform the ADH, AM(MF) and / or other Aircraft operators when a new Hazard or change is identified that might affect the provision of a SOE and where applicable, the associated ASSC³.

Guidance Material 1010(2)

Head of Establishment - Aviation Responsibilities for all Tiers

19. The HoE may find useful information regarding civil flying through national governing bodies for light Aircraft, microlighting and gliding.

20. Detailed instructions for the use of military airfields, including any insurance requirements and charges to be raised against civil Aircraft operators, are contained in JSP 360¹⁸.

Regulation 1010(3)

Tier 1 and Tier 2 (where Recreational Flying is not the Primary Activity) Head of Establishment Responsibilities

1010(3) The HoE **shall** ensure an AO is appointed for all Aerodromes classified as Tier 1 and Tier 2 (where recreational flying⁵ is not the primary activity) Establishments.

Acceptable Means of Compliance 1010(3)

Tier 1 and Tier 2 (where Recreational Flying is not the Primary Activity) Head of Establishment Responsibilities

21. To ensure a SOE is provided the HoE **should** comply with the Regulations in Annex B¹⁹ Table 1 or 2, whichever is applicable.

22. The HoE **should**:

- a. Appoint an AO.
- b. Provide the nominated AO with a Letter of Authority (LoA).

23. At MOD Aerodromes the AO **should** be a Crown Servant.

24. At unlicensed non-MOD Aerodromes⁴ the AO **should** be an individual of appropriate status and standing, suitably empowered and competent to execute their AO responsibilities²⁰.

25. The HoE **should** ensure that a Defence Aerodrome Manual (DAM) is developed and maintained by the AO²¹.

Guidance Material 1010(3)

Tier 1 and Tier 2 (where Recreational Flying is not the Primary Activity) Head of Establishment Responsibilities

26. The HoE may nominate an AO from outside their Chain of Command or Line Management, subject to the agreement of all parties concerned. In such circumstances, the HoE will ensure that the necessary authority and resources are made available to the AO.

27. The nomination of an AO at some Aerodromes will involve the overlap of HoE, ADH / AM(MF), ADH-Facing organizations, AM(MF)-Facing organizations and FLC Area of Responsibility. In these circumstances the nomination and empowerment of the appropriate individual as AO will require co-ordination and agreement between some or all of these agents, as well as the individual's chain of command.

28. The list of AO responsibilities²¹ does not preclude the HoE from assigning the AO additional responsibility that supports the safe operation of Air Systems.

¹⁸ JSP 360 – Use of Military Aerodromes by Civil Aircraft.

¹⁹ Commanding Officers of aviation capable HM / MOD Ships **should** comply with BRd 766 where the MRP (1000 or 3000 series Regulation) is not relevant.

²⁰ Refer to RA 1026 – Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities.

²¹ Refer to RA 1026(2): Aerodrome Operator Responsibilities.

**Guidance
Material
1010(3)**

29. Where doubt exists regarding the compliance requirements of the Regulations in Annex B, HoEs may seek advice from the MAA¹⁰.

**Regulation
1010(4)**

Tier 2 Recreational Flying Only Head of Establishment Responsibilities

1010(4) The HoE **shall** ensure an AS(RF) is appointed at Tier 2 Establishments where recreational flying⁵ is conducted as the primary activity.

**Acceptable
Means of
Compliance
1010(4)**

Tier 2 Recreational Flying Only Head of Establishment Responsibilities

30. To ensure a SOE is provided the HoE **should** comply with the Regulations in Annex B¹⁹ Table 2²².

31. The HoE **should**:

- a. Appoint an AS(RF).
- b. Provide the nominated AS(RF) with a LoA.

32. The AS(RF) **should** be a Crown Servant

33. The HoE **should** ensure that an Aerodrome Safe Operating Environment Manual (ASOEM) is developed and maintained by the AS(RF)²³.

**Guidance
Material
1010(4)**

Tier 2 Recreational Flying Only Head of Establishment Responsibilities

34. The list of AS(RF) responsibilities²³ does not preclude HoE from assigning the AS(RF) additional responsibility that supports the safe operation of Aircraft.

35. Where doubt exists regarding the compliance requirements of the Regulations in Annex B, HoEs may seek advice from the MAA¹⁰.

36. In lieu of appointing an AS(RF) to develop and maintain an ASOEM, the HoE may elect to appoint an AO to develop and maintain either an ASOEM or a DAM. The HoE may consult the MAA¹⁰ as to which document would be the most appropriate.

**Regulation
1010(5)**

Tier 3 and Tier 4 Head of Establishment Responsibilities

1010(5) The HoE **shall** ensure that provisions are in place to actively manage the SOE at Tier 3 and Tier 4 establishments.

**Acceptable
Means of
Compliance
1010(5)**

Tier 3 and Tier 4 Head of Establishment Responsibilities

37. To ensure a SOE is provided the HoE **should** comply with the Regulations in Annex B¹⁹ Table 3 or 4, whichever is applicable.

**Guidance
Material
1010(5)**

Tier 3 and Tier 4 Head of Establishment Responsibilities

38. There is no requirement to establish an AO²¹ at a Tier 3 or Tier 4 Establishment but the HoE is not prevented from doing so if it is considered appropriate.

39. To assist with managing the SOE at a Tier 3 or 4 Establishment, the HoE may consider appointing a suitable individual to create and maintain an ASOEM²⁴.

40. Where doubt exists regarding the compliance requirements of the Regulations in Annex B, HoEs may seek advice from the MAA¹⁰.

²² Where an Air Traffic Service (ATS) is provided, the ATS Regulations within Annex B Table 1 **should** also be complied with.

²³ Refer to RA 1026(8): Aerodrome Supervisor (Recreational Flying) Responsibilities.

²⁴ Refer to RA 1026(10): Management of an Aerodrome Safe Operating Environment Manual.

**Regulation
1010(6)**

Aviation Duty Holder / Accountable Manager (Military Flying) Safe Operating Environment Responsibilities

1010(6) ADHs / AM(MF)s **shall** assess the suitability of any establishment and Aerodrome from which UK Military Registered Air Systems will operate.

**Acceptable
Means of
Compliance
1010(6)**

Aviation Duty Holder / Accountable Manager (Military Flying) Safe Operating Environment Responsibilities

41. At a tiered establishment ADHs and AM(MF)s²⁵ **should** ensure via the HoE, or other relevant personnel or agencies, that a SOE is being provided^{26,27} and appropriate Assurance is taking place to support their ASSC³.

42. For all other establishments and Aerodromes, ADHs and AM(MF)s²⁵ **should** consider, via their respective ASSC(s), whether a SOE is being provided prior to commencing operations.

**Guidance
Material
1010(6)**

Aviation Duty Holder / Accountable Manager (Military Flying) Safe Operating Environment Responsibilities

43. Where an establishment or Aerodrome is licenced / certified by another regulatory body (such as EASA), ADHs / AM(MF)s may consider such licencing / certification as potential evidence towards their ASSC argument that a SOE is being provided.

44. ADHs / AM(MF)s may consider the creation and maintenance of a DAM²⁸ or ASOEM²⁴ at establishments or Aerodromes where one does not otherwise exist (whichever is deemed most appropriate, in order to support the ASSC³).

²⁵ Refer to RA 3049 – Defence Contractor Flying Organization responsibilities for UK Military Air System Operating Locations.

²⁶ Refer to RA 1020 – Aviation Duty Holder - Roles and Responsibilities.

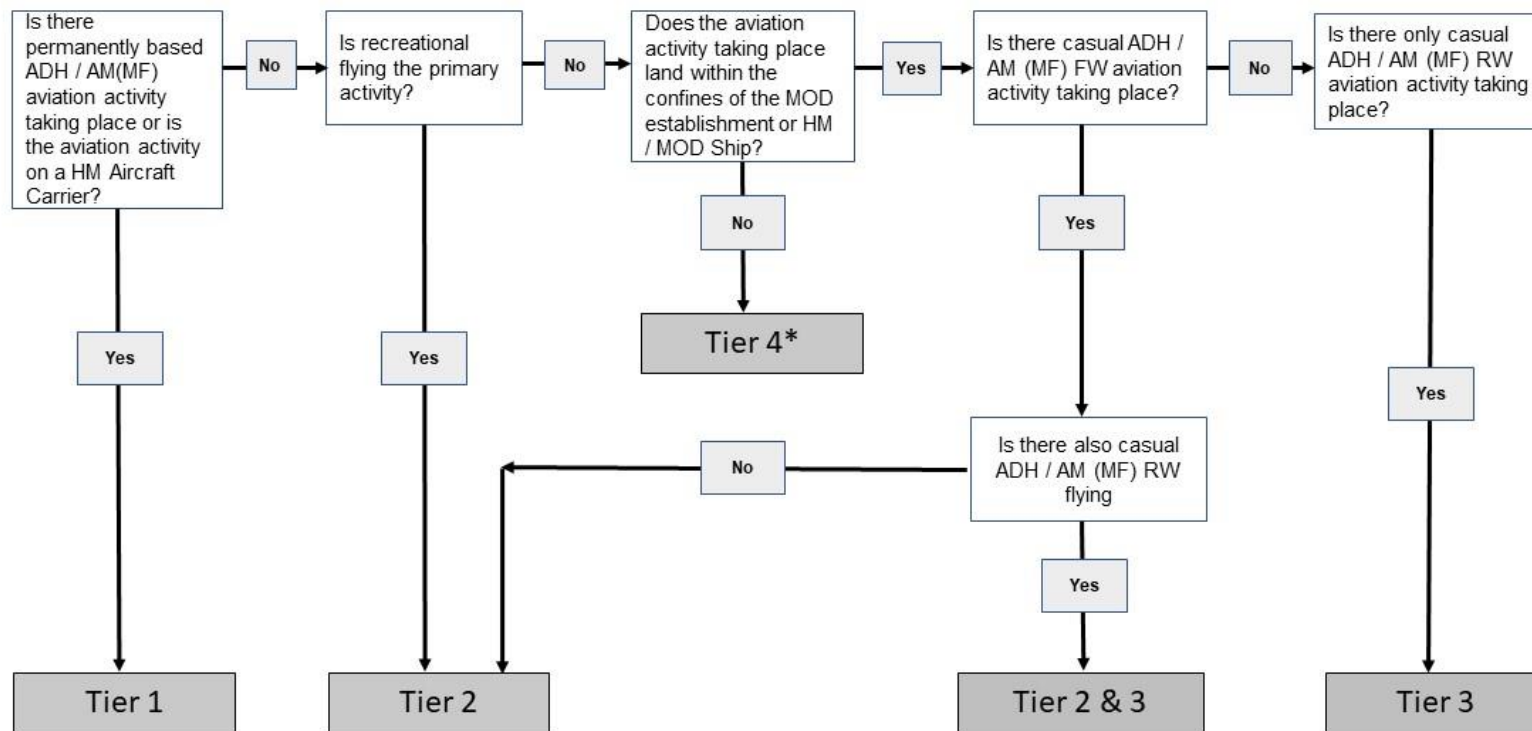
²⁷ Refer to RA 1024 – Accountable Manager (Military Flying).

²⁸ Refer to RA 1026(4): Management of a Defence Aerodrome Manual and Defence Aerodrome Assurance Framework.

ANNEX A

CLASSIFICATION TIER OF ESTABLISHMENT

Figure 1 – Classification Tier of Establishment Flow Chart (for illustrative purposes only – refer to RA 1010(1) for definitive applicability)



*Refer to RA 1010(1) Para 5 to confirm if other classification tiers are also applicable.

ANNEX B

HEAD OF ESTABLISHMENT REGULATORY ARTICLE REFERENCES

Table 1. Tier 1 HoE Regulations.

Regulation	Title
RA 1026	Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities
RA 1030	Defence Aeronautical Information Management
RA 1200	Air Safety Management
RA 1205	Air System Safety Cases (4): Responsibilities of Organizations supporting an Air System Safety Case
RA 1240	Chartering of Civilian Air Systems for Military Purposes
RA 1400	Flight Safety
RA 1410	Occurrence Reporting and Management
RA 1430	Aircraft Post Crash Management and Significant Occurrence Management
RA 1440	Air Safety Training
RA 1600 Series	Remotely Piloted Air Systems
RA 2335	Flying Displays, Display Flying, Role Demonstrations and Flypasts
RA 3136	Air Traffic Management Equipment Technical Safeguarding
RA 3201	Military Air Traffic Management
RA 3203	Military and MOD Contracted Civilian Controller Medical Requirements
RA 3204	Air Traffic Management Records
RA 3207	Controller Fatigue Management
RA 3221	Enhanced Air Traffic Services Units
RA 3222	Autonomous Radar Units
RA 3237	Royal Low Level Corridors
RA 3240	Contingency Operations for Simultaneous Failure of Surveillance Radars and / or Air Traffic Management Communication Systems
RA 3241	Secondary Surveillance Radar Alone Operations
RA 3261	Aerodrome Service
RA 3262	Aerodrome Access
RA 3263	Aerodrome Classification
RA 3264	Aerodrome Inspections
RA 3268	Aircraft Arresting Systems
RA 3270	Aerodrome Wildlife Control
RA 3274	Low Visibility Procedures
RA 3293	Surveillance Radar Approach
RA 3500	Aerodrome Design and Safeguarding
RA 3510	Permanent Fixed Wing Aerodrome - Reference Information
RA 3511	Permanent Fixed Wing Aerodrome - Physical Characteristics
RA 3512	Permanent Fixed Wing Aerodrome - Obstacle Environment
RA 3513	Permanent Fixed Wing Aerodrome - Indicators and Signalling Devices
RA 3514	Permanent Fixed Wing Aerodrome - Markings
RA 3515	Permanent Fixed Wing Aerodrome - Lighting
RA 3516	Permanent Fixed Wing Aerodrome - Signs
RA 3517	Permanent Fixed Wing Aerodrome - Markers
RA 3518	Permanent Fixed Wing Aerodrome - Visual Aids for Denoting Obstacles
RA 3519	Permanent Fixed Wing Aerodrome - Visual Aids for Denoting Restricted Use Areas
RA 3520	Permanent Fixed Wing Aerodrome - Aerodrome Electrical Systems
RA 3521	Permanent Fixed Wing Aerodrome - Facilities
RA 3530	Helicopter Landing Sites - Reference Information
RA 3531	Helicopter Landing Sites - Physical Characteristics
RA 3532	Helicopter Landing Sites - Obstacle Environment
RA 3533	Helicopter Landing Sites - Indicators and Signalling Devices
RA 3534	Helicopter Landing Sites - Markings
RA 3535	Helicopter Landing Sites - Lighting

Regulation	Title
RA 3536	Domestic Helicopter Landing Site - Services, Equipment and Installations
RA 3590	Maintenance and Safeguarding

Table 2. Tier 2 HoE Regulations.

Regulation	Title
RA 1026	Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities
RA 1030	Defence Aeronautical Information Management
RA 1200	Air Safety Management
RA 1205	Air System Safety Cases (4): Responsibilities of Organizations supporting an Air System Safety Case
RA 1240	Chartering of Civilian Air Systems for Military Purposes
RA 1400	Flight Safety
RA 1410	Occurrence Reporting and Management
RA 1430	Aircraft Post Crash Management and Significant Occurrence Management
RA 1440	Air Safety Training
RA 1600 Series	Remotely Piloted Air Systems
RA 2335	Flying Displays, Display Flying, Role Demonstrations and Flypasts
RA 3261	Aerodrome Service (2): Aerodrome Emergency Services
RA 3262	Aerodrome Access
RA 3263	Aerodrome Classification
RA 3264	Aerodrome Inspections
RA 3268	Aircraft Arresting Systems
RA 3270	Aerodrome Wildlife Control
RA 3274	Low Visibility Procedures
RA 3500	Aerodrome Safeguarding
RA 3510	Permanent Fixed Wing Aerodrome - Reference Information
RA 3511	Permanent Fixed Wing Aerodrome - Physical Characteristics
RA 3512	Permanent Fixed Wing Aerodrome - Obstacle Environment
RA 3513	Permanent Fixed Wing Aerodrome - Indicators and Signalling Devices
RA 3514	Permanent Fixed Wing Aerodrome - Markings
RA 3515	Permanent Fixed Wing Aerodrome - Lighting
RA 3516	Permanent Fixed Wing Aerodrome - Signs
RA 3517	Permanent Fixed Wing Aerodrome - Markers
RA 3518	Permanent Fixed Wing Aerodrome - Visual Aids for Denoting Obstacles
RA 3519	Permanent Fixed Wing Aerodrome - Visual Aids for Denoting Restricted Use Areas
RA 3520	Permanent Fixed Wing Aerodrome - Aerodrome Electrical
RA 3521	Permanent Fixed Wing Aerodrome - Facilities
RA 3590	Maintenance and Safeguarding

Table 3. Tier 3 HoE Regulations.

Regulation	Title
RA 1026	Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities
RA 1030	Defence Aeronautical Information Management
RA 1200	Air Safety Management
RA 1205	Air System Safety Cases (4): Responsibilities of Organizations supporting an Air System Safety Case
RA 1240	Chartering of Civilian Air Systems for Military Purposes
RA 1400	Flight Safety
RA 1410	Occurrence Reporting and Management
RA 1430	Aircraft Post Crash Management and Significant Occurrence Management
RA 1440	Air Safety Training
RA 1600 Series	Remotely Piloted Air Systems
RA 2335	Flying Displays, Display Flying, Role Demonstrations and Flypasts
RA 3263	Aerodrome Classification

Regulation	Title
RA 3500	Aerodrome Safeguarding
RA 3516	Permanent Fixed Wing Aerodrome - Signs
RA 3530	Helicopter Landing Sites - Reference Information
RA 3531	Helicopter Landing Sites - Physical Characteristics
RA 3532	Helicopter Landing Sites - Obstacle Environment
RA 3533	Helicopter Landing Sites - Indicators and Signalling Devices
RA 3534	Helicopter Landing Sites - Markings
RA 3535	Helicopter Landing Sites - Lighting
RA 3536	Domestic Helicopter Landing Sites - Services, Equipment and Installations
RA 3590	Maintenance and Safeguarding

Table 4. Tier 4 HoE Regulations.

Regulation	Title
RA 1026	Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities
RA 1030	Defence Aeronautical Information Management
RA 1200	Air Safety Management
RA 1205	Air System Safety Cases (4): Responsibilities of Organizations supporting an Air System Safety Case
RA 1240	Chartering of Civilian Air Systems for Military Purposes
RA 1400	Flight Safety
RA 1410	Occurrence Reporting and Management
RA 1430	Aircraft Post Crash Management and Significant Occurrence Management
RA 1440	Air Safety Training
RA 1600 Series	Remotely Piloted Air Systems
RA 2335	Flying Displays, Display Flying, Role Demonstrations and Flypasts
RA 3136	Air Traffic Management Equipment Technical Safeguarding
RA 3201	Military Air Traffic Management
RA 3203	Military and MOD Contracted Civilian Controller Medical Requirements
RA 3204	Air Traffic Management Records
RA 3207	Controller Fatigue Management
RA 3237	Royal Low Level Corridors
RA 3240	Contingency Operations for Simultaneous Failure of Surveillance Radars and / or Air Traffic Management Communication Systems
RA 3241	Secondary Surveillance Radar Alone Operations
RA 3263	Aerodrome Classification
RA 3590	Maintenance and Safeguarding

RA 1011 – Military Continuing Airworthiness Manager Responsibilities

Rationale

To maintain their Airworthiness, military registered Air Systems are required to be managed by an MAA approved Military Continuing Airworthiness Management Organization (Mil CAMO)¹. Failure to lead and manage the Mil CAMO, including any delegated responsibilities, may compromise the Airworthiness of an Air System and undermine Air Safety. ► **This RA** ◀ requires a Military Continuing Airworthiness Manager² (Mil CAM) to be the head of the Mil CAMO and details the Mil CAM's responsibilities for managing all Continuing Airworthiness (CAw) activity for the military registered Air System(s) operated within their Area of Responsibility (AoR).

Contents

1011(1): Responsibilities of the Military Continuing Airworthiness Manager

Regulation 1011(1)

Responsibilities of the Military Continuing Airworthiness Manager

- 1011(1) The Mil CAM **shall** lead the Mil CAMO and **shall** retain Responsibility for:
- All MRP Part M Sub Part C - CAw requirements.
 - All MRP Part M Sub Part G - Mil CAMO requirements.
 - All MRP Part M Sub Part I - Military Airworthiness Review Certificate (MARC) requirements.
 - CAw Assurance activity as detailed elsewhere in the MRP.

Acceptable Means of Compliance 1011(1)

Responsibilities of the Military Continuing Airworthiness Manager

1011(1)a - MRP Part M Sub Part C - CAw requirements

- For all Air Systems identified in the Continuing Airworthiness Management Exposition (CAME)³ the Mil CAM **should**:
 - Establish and sustain an Aircraft Maintenance Programme⁴ to ensure all corrective and Preventive Maintenance is carried out before flight.
 - Utilize the data produced by a Reliability Programme⁴ to maintain or improve Safety and operational performance.
 - Ensure ► **the requirements of** ◀ all Special Instructions (Technical)⁵ (SI(T)) are ► **fulfilled** ◀ as required by the Type Airworthiness Authority (TAA) or Commodity Delivery Team (DT).
 - Ensure all Modifications and Repairs⁶ are correctly embodied in accordance with their Technical Instructions.
 - Manage CAw records⁷ in order to enable the completion and Assurance of Mil CAMO responsibilities⁸.

1011(1)b - MRP Part M Sub Part G - Mil CAMO requirements

- The Mil CAM **should** manage and oversee all CAw activity conducted by the Mil CAMO including:

¹ Refer to RA 1016 – Military Continuing Airworthiness Management.

² Refer to RA 1020 – Aviation Duty Holder ► ◀ - Roles and Responsibilities Para ► **1f.** ◀

³ Refer to RA 4943 – Continuing Airworthiness Management Exposition – MRP Part M Sub Part G.

⁴ Refer to RA 4961 – Aircraft Maintenance Programme and Military Continuing Airworthiness Management Organization Responsibilities for Air System Release – MRP Part M Sub Part C.

⁵ Refer to RA 4962 – Special Instructions (Technical) – MRP Part M Sub Part C and RA 5405 – Special Instructions (Technical).

⁶ Refer to RA 4963 – Modifications and Repairs – MRP Part M Sub Part C.

⁷ Refer to RA 4964 – Continuing Airworthiness Management Records – MRP Part M Sub Part C.

⁸ Refer to RA 4947 – Continuing Airworthiness Management – MRP Part M Sub Part G.

**Acceptable
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1011(1)**

- a. The application for initial Mil CAMO approval, and thereafter monitoring its continual compliance with MRP Part M, Sub Parts C⁹ and G¹⁰.
 - b. Ensuring that the CAME³ contains: all relevant platform and organization information; CAW ► **processes** ◀; a detailed description of its Quality ► **Management** ◀ System (QMS); contracted Maintenance arrangements and a comprehensive understanding of its Military Airworthiness Review (Mil AR) process.
 - c. The analysis of Mil CAMO tasks, resources and training requirements¹¹.
 - d. The assignment of responsibilities to Suitably Qualified and Experienced Persons whilst assuring their Competence¹¹.
 - e. Establishing an independent ► **QMS** ◀ to verify the efficacy of the Mil CAMO's CAW processes¹². The ► **QMS** ◀ **should** also assure the standards and practices of all Maintenance activity, including the output and satisfactory completion of work packages from Maintenance organization(s), within its AoR⁸.
 - f. Devising Corrective Action Plans following the notification of Level 1 or 2 findings by the MAA¹³.
 - g. Ensuring that Technical Information¹⁴, MAA requirements or standards, and any applicable data¹⁵ held by the Mil CAMO or Maintenance organization(s) is current, relevant, accessible and correctly maintained.
 - h. The planning and co-ordination of all Maintenance activity⁸, including ► **fulfilling the requirements** ◀ of SI(T)s⁵, and that the Mil CAMO uses a Maintenance organization with appropriately authorized personnel for all work packages and Corrective Maintenance⁸.
 - i. Directing appropriate follow-up activity highlighted by Occurrence reports and keeping the Delivery Duty Holder (DDH) / Accountable Manager (Military Flying) AM(MF) appraised of significant Airworthiness issues⁸, and exploiting technical data¹⁶ where appropriate.
 - j. Ensuring that the weight and moment statements of all Air Systems identified in the CAME reflect their current status⁸.
 - k. Taking Responsibility for all active Air Systems identified in their CAME, inclusive of those in storage. For the avoidance of doubt, Air Systems in storage **should** have a nominated Mil CAMO.
 - l. Any tasks carried out on behalf of the Mil CAMO by other parties¹⁷, including delegated responsibilities to a DT or commercially contracted organization.
3. Mil CAMs operating under the ► **UK** ◀ Civil Aviation Authority (CAA) oversight construct **should** adhere to the additional requirements:
- a. Ensuring that a Training Needs Analysis has been undertaken by the TAA in relation to the differences between a European Aviation Safety Agency (EASA) ► **/ UK CAA** ◀ Part 66 type rating and ► **the need for additional training for the equipment fitted in order to undertake military operations.** ◀¹⁸ ► ◀.
 - b. Ensuring that all MRP requirements are complied with, regarding CAW arrangements, despite the use of an approved EASA ► **/ UK CAA** ◀ Part M Sub Part G CAMO^{17,18}.

⁹ Refer to RA 4941 – Application – MRP Part M Sub Part G.

¹⁰ Refer to RA 4954 – Continued Validity of Approval – MRP Part M Sub Part G.

¹¹ Refer to RA 4945 – Personnel Requirements – MRP Part M Sub Part G.

¹² Refer to RA 4951 – Quality System – MRP Part M Sub Part G.

¹³ Refer to RA 4955 – Findings – MRP Part M Sub Part G.

¹⁴ Refer to RA 4948 – Documentation – MRP Part M Sub Part G.

¹⁵ Refer to RA 4810 – Technical Information (MRP 145.A.45).

¹⁶ Refer to ► **RA 1207 – Air Safety Data Management and Exploitation.** ◀

¹⁷ Refer to RA 4956 – Military Continuing Airworthiness Management Organization Tasks Performed by Other Organizations – MRP Part M Sub Part G.

¹⁸ Refer to ► **RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered Air Systems.** ◀

**Acceptable
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1011(1)**

- c. The establishment of robust communications between the approved EASA ►/ UK CAA ◄ Part M Sub Part G CAMO and the approved Mil CAMO, including the exchange of CAMEs¹⁸.
- d. Assuring the DDH / AM(MF) that supporting Maintenance organizations hold current and relevant EASA ►/ UK CAA ◄ Part 145 and MRP Part 145 approvals¹⁸, for the scope of work carried out.
- e. Agreeing the application for a Rectification Interval Extension for items listed in the Minimum Equipment List¹⁸.

1011(1)c - MRP Part M Sub Part I - MARC

- 4. In order to initially establish and maintain the required level of platform Airworthiness and Configuration for all Air Systems identified in the CAME, the Mil CAM **should** oversee and manage the Mil CAMO by:
 - a. Ensuring all Air Systems have undergone a Baseline Military Airworthiness Review¹⁹ before any flight within the Defence Air Environment.
 - b. Issuing a MARC²⁰ following a satisfactory Mil AR with positive recommendations.
 - c. Revoking a MARC if the Air System is believed to be not airworthy²⁰, is no longer required or directed to by the MAA²¹.
 - d. Authorizing Mil AR Surveyors following an assessment of their Competence and ensuring that they are referenced in the CAME²².
 - e. Ensuring that the Mil AR process is documented in the CAME and contains a physical and Airworthiness records review²³.
- 5. Mil CAMs operating under the CAA oversight construct **should** adhere to the additional requirement:
 - a. Utilizing the civil Airworthiness Review as the basis for recommending a MARC¹⁸.

1011(1)d - Other CAw Assurance Activity

- 6. The Mil CAM **should** comply with all CAw Assurance activities detailed elsewhere in the MRP.

**Guidance
Material
1011(1)**

Responsibilities of the Military Continuing Airworthiness Manager

- 7. This RA is not the definitive list of a Mil CAM's responsibilities and must be read in conjunction with the MRP 1000, 4000, elements of the 5000 and the entirety of the 4900 series suite of RAs concerning CAw management.

¹⁹ Refer to RA 4970 – Baseline Military Airworthiness Review – MRP Part M Sub Part I.

²⁰ Refer to RA 4971 – Military Airworthiness Review and Certification – MRP Part M Sub Part I.

²¹ Refer to RA 4974 – Circumstances when Military Airworthiness Review Certificates become invalid – MRP Part M Sub Part I.

²² Refer to RA 4972 – Military Airworthiness Review Surveyors – MRP Part M Sub Part I.

²³ Refer to RA 4973 – Military Airworthiness Review Process – MRP Part M Sub Part I.

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RA 1012 - ► Director General (Air) ◀ - Air Safety Responsibilities

Rationale

Within Defence Equipment & Support (DE&S) ► Director General (Air) (DG(Air)) ◀ has been delegated an Airworthiness role, via the Chief Executive Officer (CEO), from the Secretary of State for Defence. To ensure continuity in the responsibility for the provision of safe products and Air Systems, ► DG(Air) ◀ is responsible for the Airworthiness delegation chain supporting the CEO.

Contents

1012(1): Provision of Airworthiness and Safety Assurance

Regulation 1012(1)

Provision of Airworthiness and Safety Assurance

1012(1) ► DG(Air) ◀ shall provide assurance to CEO that DE&S is delivering and supporting safe and airworthy Air Systems.

Acceptable Means of Compliance 1012(1)

Provision of Airworthiness and Safety Assurance

1. ► DG(Air) ◀ should provide Subject Matter Expert (SME) advice and assurance to CEO on Airworthiness matters and the DE&S Air Safety Management System.
2. ► DG(Air) ◀ should ensure that all delegations of Airworthiness Authority within DE&S are cascaded to competent crown servants through a system of personal Letters of Airworthiness Authority (LoAAs)¹.
3. ► DG(Air) ◀ should issue LoAAs to the 2* Operating Centre Directors (OCD) containing, as a minimum, their Airworthiness responsibilities as detailed in RA 1003¹ and RA 1013².

Guidance Material 1012(1)

Provision of Airworthiness and Safety Assurance

4. In providing Airworthiness and safety assurance to CEO, ► DG(Air) ◀:
 - a. Sets the Airworthiness framework and governance structure within DE&S.
 - b. Oversees and audits the Airworthiness delegation process within DE&S.
 - c. Assures the Airworthiness competence of personnel employed within DE&S.
 - d. Ensures that cross cutting Airworthiness issues are highlighted and addressed.
 - e. Develops Airworthiness metrics and measures Airworthiness performance to provide an effective assessment of DE&S responsiveness.
 - f. Chairs the DE&S Air Safety Committee (DASC).
 - g. Is a member of the MAA Operators' Council (MOC).

¹ Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility.

² Refer to RA 1013 – Air Systems Operating Centre Director – Provision of Airworthy and Safe Systems.

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RA 1013 - Air Systems Operating Centre Director - Provision of Airworthy and Safe Systems

Rationale

Defence Equipment and Support (DE&S) Air Systems Operating Centre Directors (OCD) are the pivotal senior Airworthiness managers who approve a project's Airworthiness strategy for achieving Military Type Certification and Release To Service (RTS) ► or Military Permit To Fly (MPTF)(Development)¹ ◀ and also for subsequent Type Airworthiness (TAW) arrangements. ► For Civilian Operated Air Systems, the OCD also has a key role in supporting the Sponsor² for Type Airworthiness management³. ◀ Not having competent and Suitably Qualified and Experienced Persons (SQEP)⁴ in the OCD roles may result in a compromised level of Airworthiness oversight and Airworthiness Strategy approval. Their specific responsibilities will be detailed in their Letter of Airworthiness Authority (LoAA)⁴ issued from ► Director General (Air) (DG(Air)). ◀

Contents

1013(1): Provision of Airworthy and Safe Air Systems

Regulation 1013(1)

Provision of Airworthy and Safe Air Systems

1013(1) OCDs **shall** ensure that the Air Systems provided are airworthy and safe to operate through-life.

Acceptable Means of Compliance 1013(1)

Provision of Airworthy and Safe Air Systems

1. In ensuring the provision of safe and airworthy Air Systems the OCD **should**:
 - a. Assess and, if content, approve each project's strategy for achieving and maintaining Airworthiness. Ensure that plans are in place to monitor progress against the approved strategy and that all Air System TAW risks are reduced to a level acceptable to the Operating Duty Holder (ODH) ► or, where appropriate, the Accountable Manager (Military Flying) (AM(MF)). ◀
 - b. Assess and, if content, approve the submission to the Release To Service Authority (RTSA), via the MAA, of the initial Release To Service Recommendations (RTSR) for a new Air System or the RTSR for Major Changes⁵, ► that result in a new Mark Number, ◀ to existing Air Systems.
 - c. Propose to the MAA the requirements for organizational approvals, and the ► Type ◀ Certification Basis for new Air Systems and capabilities.
 - d. Assess and, if content, approve any decision to reject significant Airworthiness related advice from an appointed competent design or Maintenance organization, or an appointed independent advisor.
 - e. Assess and, if content, approve any recommendation to a RTSA, ► the ODH or AM(MF) ◀ for a stoppage of, or major restriction to, flying.
2. OCDs **should** issue ► the nominated TAA with appropriate LoAA⁴ for each Air System type within their Areas of Responsibility containing, as a minimum, the Airworthiness roles and responsibilities detailed in the MAA Regulatory Publications. ◀
3. The OCD **should** assure that appropriate Airworthiness arrangements are in place, (ie appropriate organization approvals, valid MPTF ► (Development) ◀ etc), while the Air Systems are undergoing Flight Test and / or Test and Evaluation (T&E)⁶ by Industry.

¹ Refer to RA 5880 – Military Permit to Fly ► (Development) ◀ (MRP ► Part ◀ 21 Subpart P).

² ► Refer to RA 1019 – Sponsor of Military Registered Civilian-Owned and Civilian Operated Air Systems – Air Safety Responsibilities.

³ Where the Air System is Civilian-Owned, ownership of regulatory responsibility by either the Type Airworthiness Authority (TAA) or Type Airworthiness Manager needs to be agreed within the Sponsor's approved model for TAW management; refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems. ◀

⁴ Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility.

⁵ Refer to RA 5820 – Changes in Type Design (MRP ► Part ◀ 21 Subpart D).

⁶ Refer to RA 2370 – Test and Evaluation.

**Acceptable
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Compliance
1013(1)**

4. ▶ For the elements of TAw management for which the TAA is accountable, the OCD **should** conduct appropriate assurance of the TAA.
5. For Civilian Operated Air Systems; the OCD **should** assess and, if content, approve the submission to the Sponsor, via the MAA, of the initial MPTF (In-Service)⁷ Recommendation or major change evidence. ◀

**Guidance
Material
1013(1)**

Provision of Airworthy and Safe Air Systems

6. ▶ For Civilian Operated Air Systems, it is recommended the OCD 2* provides advice to the Sponsor prior to developing the TAw management model for delegation of responsibility between the TAA and the TAM. ◀

⁷ ▶ Refer to RA 1305 – Military Permit to Fly (In-Service), (Special Case Flying) and (Single Task). ◀

RA 1014 - Design Organizations and Co-ordinating Design Organizations - Airworthiness Responsibilities

Rationale

►◀ *Airworthiness responsibilities* ► *may be held by* ◀ Design Organizations (DO), Co-ordinating Design Organizations (CDO), ► *or Air System CDO* ◀ involved in the design of Products, Parts or Appliances installed in Air Systems. ► *A lack of clarity could lead to* ◀ a gap in the work to sustain an airworthy and safe Air System occurring between the DOs and the Type Airworthiness Authority (TAA)¹ ◀ or Commodity ► *Chief Engineer (CE)*. To mitigate this, ◀ the responsibilities of DO, CDO, ► *or Air System CDO* ◀ need to be clearly defined to ensure they have auditable processes and competent people to enact the Airworthiness duties required by the TAA or Commodity ► *CE*. ◀

Contents

1014(1): ►◀ **Design Organization or Co-ordinating Design Organization**

1014(2): ►◀ **Air System Co-ordinating Design Organization**

Regulation 1014(1)

►◀ **Design or Co-ordinating Design Organization**

1014(1) The relevant DO or CDO **shall** be responsible for the through-life configuration management of the design of each Product, Part or Appliance installed in an Air System.

Acceptable Means of Compliance 1014(1)

►◀ **Design or Co-ordinating Design Organization**

1. A DO or CDO **should** be approved through the Design Approved Organization Scheme (DAOS), as detailed in RA 5850², by the MAA.
2. The approved DO or CDO responsibilities **should** include, as appropriate:
 - a. Demonstrating to the TAA or Commodity ► *CE* ◀ that the initial design of a particular Product, Part or Appliance is in compliance with the contract specification, and is airworthy and that independent Airworthiness scrutiny of the design has been undertaken.
 - b. The preparation and custody of specifications, drawings and instructions for maintaining the design of the Product, Part or Appliance, and other supporting data associated with the design.
 - c. The preparation of, and supply of, information for the development and upkeep of the Air System Document Set, including Release To Service Recommendations ►³, *Military Permit To Fly (MPTF) (In-Service) Recommendation*⁴, *MPTF (Special Case Flying)*⁵, ◀ and all Aircrew Publications and Technical Information.
 - d. Making appropriate arrangements to report to the TAA or Commodity ► *CE* ◀ in a timely manner any failure, malfunction, defect or other occurrence related to a Product, Part or Appliance which has resulted in or may result in an unsafe condition.
 - e. Ensuring that any notified design-related occurrence is investigated with provision of advice to the TAA or Commodity ► *CE* ◀ in a timely manner detailing appropriate recovery action (eg modifications, repair schemes, Technical Instructions) to restore TAW. ► *Subsequent review and release of*

¹ ► 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. ◀

² Refer to RA 5850 – Military Design Approved Organization (MRP ► Part ◀ 21 Subpart J).

³ ► Refer to RA 1300(2): Release To Service Recommendation.

⁴ Refer to RA 1305(2): Military Permit To Fly (In Service) Recommendation.

⁵ Refer to RA 1305(5): Military Permit to Fly (Special Case Flying). ◀

Acceptable Means of Compliance 1014(1)

Special Instructions (Technical)⁶ applicable to an Air System **should** be by the TAA. ◀

f. In agreement with the ▶ Air System ◀ TAA, the scheming, design, development and preparation of modifications and repairs to maintain ▶ TAw. ◀ Subsequent clearance and approval **should** be by the TAA¹, Commodity ▶ CE ◀ or by a privileged DO.

g. Contributing towards the equipment elements of the ▶ Air System Safety Case⁷ ◀ in support of the TAA or Commodity ▶ CE. ◀

h. Ensuring that, where the organization's DAOS approval scope does not adequately cover a sub-system, the relevant competent sub-contracted organization is consulted in respect of Airworthiness decisions regarding that sub-system.

i. Providing appropriate sub-system and interface data in the form of specifications and drawings for those aspects of the system or equipment that are designed by another DO.

j. ▶ Having arrangements in place with its sub-contractors to support TAw activities. ◀

3. In addition, the DO or CDO **should** prepare a Certificate of Design⁸ for each Product, Part or Appliance, in accordance with ▶ the ◀ DAOS approval, and submit it to the TAA or Commodity ▶ CE. ◀

4. In the case when a CDO is dependent on design work by another DO, then either that DO **should** be approved under RA 5850², or the work **should** be within the scope of the CDO's DAOS approval.

Guidance Material 1014(1)

▶ ◀ **Design or Co-ordinating Design Organization**

5. A DO may be appointed the CDO for a Product, Part or Appliance; in this context 'co-ordinating' means that the organization is dependent on other DO(s) for some or all of the design work. When an organization is appointed as the CDO, it is noted that some or all of the responsibilities listed at AMC Para 2 may be discharged by other DOs or CDOs.

6. ▶ For Air Systems conducting development activity, RA 5880⁹ contains the DO and TAA MPTF (Development) requirements. ◀

Regulation 1014(2)

▶ ◀ **Air System Co-ordinating Design Organization**

1014(2) There **shall** be one overall DO or CDO appointed by the TAA as the Air System CDO to manage the overall design or through-life configuration of each Air System.

Acceptable Means of Compliance 1014(2)

▶ ◀ **Air System Co-ordinating Design Organization**

7. When an organization is appointed by the TAA as the Air System CDO, in addition to the responsibilities of a DO or CDO, it **should** also:

a. Be responsible for the overall design or through-life configuration management of the design of the Air System, and for co-ordinating the design and integration of the Products, Parts and Appliances designed by other DO(s) and CDO(s).

b. Provide support to the TAA in maintaining Structural, Propulsion and Systems Integrity of the Air System type design through-life, as detailed within

⁶ ▶ Refer to RA 5405 – Special Instructions (Technical).

⁷ Refer to RA 1205 – Air System Safety Cases. ◀

⁸ Refer to RA 5103 – Certificate of Design.

⁹ ▶ Refer to RA 5880 – Military Permit to Fly (Development) (MRP Part 21 Subpart P). ◀

**Acceptable
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1014(2)**

► **RA 5726¹⁰** ◀ These activities include, but are not limited to, attendance at Integrity Working Groups, review of lifing and usage data and the triennial review of the Statement of Operating Intent and Usage.

**Guidance
Material
1014(2)**

► ◀ **Air System Co-ordinating Design Organization**

8. It is understood that there may exist different models which reflect the various arrangements between the Air System CDO and TAA. The diagram in Figure 1 is an illustration of the multiple relationships that could exist between the TAA and an Air System CDO, a CDO and respective DOs.

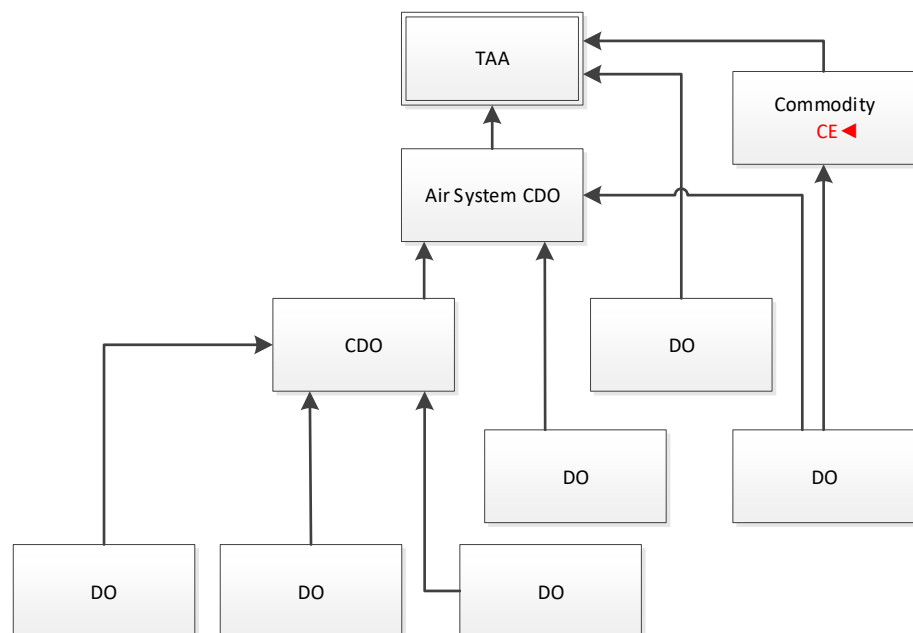
9. In particular, it is recognized that some Air System CDOs will have an emphasis on the overall design of the Air System, whereas some will have an emphasis on the through-life configuration management of the Air System.

10. When an organization is appointed as the Air System CDO, it is possible that some or all of the responsibilities listed in AMC Sub-para 7.b may be discharged by other DOs and CDOs. The responsibilities will be defined for each DO and CDO under the scope of their DAOS approval and are accounted for in contractual terms under the direction of the TAA.

11. The Air System CDO is expected to have a direct contractual relationship established¹¹ with the TAA with the provision for regular engagement, such that the TAA can discharge ► **their** ◀ responsibilities as laid down in RA 1015¹².

12. It is noted that a Commodity ► **CE** ◀ may contract directly with a DO; some DOs (often the propulsion system DO) are not subcontracted by the CDO or Air System CDO, nonetheless they ► **need to** ◀ provide interface information to the relevant CDO or Air System CDO.

Figure 1. Illustration of multiple relationships.



¹⁰ Refer to ► **RA 5726** ◀ – Integrity Management.

¹¹ ► Refer to **RA 1005 – Contracting with Competent Organizations**. ◀

¹² Refer to RA 1015 – Type Airworthiness ► **Management** ◀ – Roles and Responsibilities.

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► 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 positions¹.

Contents

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.

Acceptable Means of Compliance 1015(1)

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)². The TAA **should** hold an appropriate Letter of Airworthiness Authority (LoAA)³ from the Operating Centre Director (OCD)⁴.
2. For Civilian-Owned / Civilian Operated Air Systems, the Air System Sponsor can delegate⁵ TAW responsibility between a TAA and a TAM^{6, 7, 8}. The TAM **should** hold an appropriate Letter of Appointment (LoA)³ 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)⁹ / Accountable Manager (Military Flying) (AM(MF))¹⁰ when there has been a change in Airworthiness risk^{11, 12, 13}.
 - 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.

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

² 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).

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

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

⁵ Refer to RA 1160 – The Defence Air Environment Operating Framework.

⁶ 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*.

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

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

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

¹⁰ Refer to RA 1024 – Accountable Manager (Military Flying).

¹¹ Refer to RA 5405 – Special Instructions (Technical).

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

¹³ Refer to RA 1220 – Delivery Team Airworthiness and Safety.

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- c. Ensure that signed formal agreements¹⁴ are in place with all organizations supporting TAw activity¹³. 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 activities¹⁵.

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 Plan¹³.
 - b. Be responsible for the Safety Management of the Project¹³.
 - c. Develop, maintain and enhance a Safety Management System (SMS)¹⁶, compliant with the OCD / Sponsor approved project Airworthiness Strategy¹³, which will contribute to the Operating Duty Holder's / AM(MF)'s Air System Safety Case¹⁷, for each Air System type.
 - d. Initiate and maintain an up-to-date Type Airworthiness Safety Assessment (TASA)¹³.
 - e. Ensure the TASA and Project SMS is subject to independent evaluation and audit¹³.
 - 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 / equipment¹³.
 - h. Support the DT in promulgating a Topic 2(N/A/R), or equivalent, for their Air Systems¹⁸.
 - i. Conduct assurance of the DT and Commodity DT / support teams / organizations¹⁶.

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 Systems¹⁹.

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

¹⁵ Refer to RA 1014 – Design Organizations and Co-ordinating Design Organizations – Airworthiness Responsibilities.

¹⁶ Refer to RA 1200 – Air Safety Management.

¹⁷ Refer to RA 1205 – Air System Safety Cases.

¹⁸ Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

¹⁹ 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 Changes²⁰ has been conferred upon the DO²¹.
 - c. Ensure that the Certificate of Design is signed in accordance with (iaw) RA 5103²².
 - 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 Organization²³.
 - e. Be responsible for Integrity Management, for all Air System types within their AoR, to ensure an acceptable and demonstrable level of integrity²⁴.
 - f. Ensure that the Air System is designed to approved Certification Specifications for Airworthiness²⁵.
 - g. Endorse the Statement of Acceptance if requested by the ADH / AM(MF)²⁶.
 - h. Ensure that each part or appliance is permanently and legibly marked iaw the applicable design data²⁷.
 - i. Develop and implement a Life Extension Programme²⁸ when required to extend the certified life of a UK military registered Air System.
 - j. Develop and implement an Out of Service Date Extension Programme²⁹ when required to extend the operational life of a UK military registered Air System.
 - k. Ensure that technical data capture and analysis³⁰ 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)²⁵.
 - m. For Air Systems that have been awarded a Military Type Certificate (MTC)²⁵ by the MAA, the TAA **should** be the MTC Holder¹². 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 Certificate²⁰ 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 Reports³¹.

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

²¹ Refer to RA 1005 – Contracting with Competent Organizations.

²² Refer to RA 5103 – Certificate of Design.

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

²⁴ Refer to RA 5726 – Integrity Management.

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

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

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

²⁸ Refer to RA 5724 – Life Extension Programme.

²⁹ Refer to RA 5725 – Out of Service Date Extension Programme.

³⁰ Refer to RA 1140 – Air System Technical Data Exploitation.

³¹ 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 Safety³².
9. Where appropriate, the data trends **should** be evaluated³⁰ to ensure the Airworthiness and integrity²⁴ 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 Modification³³.
 - 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 Appliances³⁴.
 - c. Authorize and manage procedures for Modifications³⁵.
 - 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)³³ and submission to the Configuration Control Board (CCB)³³, 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 control³⁶.
 - 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 Documentation³⁷.

Design Organizations

12. Personnel appointed to principal TAW management positions, in line with their delegation, **should**:
- a. Ensure that only competent DOs²¹ 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 repairs³⁸.
 - 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 privileges³⁹ 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

³² Refer to RA 5825 – Fault Reporting and Investigation.

³³ Refer to RA 5301 – Air System Configuration Management.

³⁴ Refer to RA 1223 – Airworthiness Information Management.

³⁵ Refer to RA 5305 – In-Service Design Changes.

³⁶ Refer to RA 5723 – Ageing Air System Audit.

³⁷ 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).

³⁸ Refer to RA 5865 – Repairs (MRP Part 21 Subpart M).

³⁹ 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 3rd party accredited to an acceptable standard⁴⁰.

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 design²⁷.

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 CAMO⁴¹.

b. That quality assured Technical Information is supplied⁴².

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 DO³⁹.

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 project⁴³.

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

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

⁴¹ Refer to RA 1310 – Air System Document Set.

⁴² Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

⁴³ 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 MRP¹⁹.

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 categorized⁴⁴.

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 Ships⁴⁵.

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 / Sponsor⁴⁶.

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 websites⁴⁷.

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

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Material
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Type Airworthiness Management

26. Nil.

⁴⁴ Refer to RA 1600 Series – Remotely Piloted Air Systems.

⁴⁵ Refer to RA 1029 – Ship-Air Release – Roles and Responsibilities.

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

⁴⁷ Refer to RA 5850(4): Design Organization Exposition.

RA 1016 – Military Continuing Airworthiness Management

Rationale

Maintaining the Airworthiness of an Air System is a complex undertaking that requires clear procedures and competent personnel to accomplish. Failures in the management of the Continuing Airworthiness (CAW) of an Air System could invalidate Risk to Life assessments conducted as part of the Air System Safety Case¹. This RA outlines the requirement for a MAA approved Military Continuing Airworthiness Management Organization (Mil CAMO) to manage all CAW tasks, in order to ensure that military registered Air Systems within their Area of Responsibility (AoR)² are operated safely and with a valid Military Airworthiness Review Certificate (MARC).

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Accountable Manager (Continuing Airworthiness)

1016(1) Withdrawn – Not deemed a regulatory requirement.

Acceptable Means of Compliance 1016(1)

Accountable Manager (Continuing Airworthiness)

1. Withdrawn – Not deemed a regulatory requirement.

Guidance Material 1016(1)

Accountable Manager (Continuing Airworthiness)

2. Withdrawn – Not deemed a regulatory requirement.

Regulation 1016(2)

Establishment of a Military Continuing Airworthiness Management Organization

1016(2) Delivery Duty Holders (DDH) and Accountable Managers (Military Flying) (AM(MF)) **shall** ensure that the tasks associated with CAW of the military registered Air Systems **▶³◀** in their AoR² are managed by an approved⁴ Mil CAMO.

Acceptable Means of Compliance 1016(2)

Establishment of a Military Continuing Airworthiness Management Organization

3. Each DDH / AM(MF) **should** appoint a Suitably Qualified and Experienced Person (SQEP)⁵ as the Military Continuing Airworthiness Manager (Mil CAM)⁶ to manage and control all CAW activity for the military registered Air System(s) for which they have CAW responsibility². **▶⁷◀**.

¹ Refer to RA 1205 – Air System Safety Cases.

² AoR includes all active Air Systems on the UK Military Aircraft Register (MAR) identified in their Continuing Airworthiness Management Exposition (CAME), inclusive of Air Systems held in storage or within sustainment fleets. Where there is more than one Mil CAM, against a given Air System, they are to come to agreement as to who is responsible for each Air System.

³ **▶ For CAW requirements of Remotely Piloted Air System (RPAS) platforms refer to RA 1600 - Remotely Piloted Air Systems and RPAS Manual – Regulatory Process Categorization and Compliance. ◀**

⁴ Refer to RA 4941 – Application – MRP Part M Sub Part G.

⁵ Refer to RA 4945 – Personnel Requirements – MRP Part M Sub Part G.

⁶ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

⁷ **▶ Refer to RA 1164 – Transfer of UK Military Registered Air Systems. ◀**

Acceptable Means of Compliance 1016(2)

4. The Mil CAM⁸ **should** meet the SQEP criteria detailed in RA 4945⁵.
 - a. **For Persons supporting an Aviation Duty Holder, the relevant Operating Duty Holders' Chief Air Engineer (CAE) should authorize non-compliance on a case-by-case basis, informing the MAA⁹.**
 - b. **For Persons supporting an AM(MF), the applicable AM(MF) should endorse non-compliances, and submit them to the MAA for authorization via a waiver application.**
5. The Mil CAM **should** ensure all staff, managing CAw tasks, are trained, assessed as Competent and authorized¹⁰.
6. The Mil CAMO and Mil CAM **should** work in support of the DDH / AM(MF) and either:
 - a. Be co-located with the DDH / AM(MF) or;
 - b. If geographically separated from the DDH / AM(MF), employ rigorous and demonstrable standards of communication **that are** detailed in the CAME¹¹.
7. Where the Mil CAMO supports more than one DDH / AM(MF), then **the DDH / AM(MF)s should establish a written agreement between them** to manage and control all CAw activity for the military registered Air System(s) that the DDH / AM(MF)s operate.

Guidance Material 1016(2)

Establishment of a Military Continuing Airworthiness Management Organization

8. The terms Mil CAMO and Mil CAM are intended to provide clarity in differentiating between those organizations approved in accordance with (iaw) MRP Part M and those that are approved iaw European Union Aviation Safety Agency (EASA) **/ UK Civil Aviation Authority Regulations (CAA)**. It applies equally to those organizations headed by a Crown Servant Mil CAM, and those organizations supporting an AM(MF) where the Mil CAM may not be a Crown Servant.
9. CAw Management Regulations are detailed in MRP Part M Regulation¹².
10. In respect of Mil CAMOs supporting DDHs, **often** the CAE¹³ to that DDH will be the Mil CAM. If both roles are filled by the same person, the Mil CAM is to have a clear understanding of their CAw responsibilities⁶.
11. Where a particular support strategy includes a contracting arrangement with an EASA **/ UK CAA** approved Part M Sub Part G organization with a civilian CAw Manager, this in no way obviates the requirement for a Mil CAM, who will retain overarching Responsibility for CAw. In such cases, the Mil CAM may utilize the contracted arrangements, but is to be able to demonstrate adequate control of the activity.
12. Where Mil CAMO activity is undertaken on the Mil CAMO's behalf by another MOD organization, eg a Delivery Team, and that organization carries out Assurance activities, then this may provide the Mil CAMO with the necessary Assurance without the need for duplication. This does not remove the requirement for the Mil CAM to be satisfied that the scope of the Assurance activity is adequate.
13. In pursuance of managing and controlling the CAw of Air Systems within their AoR², Mil CAMs, whether Crown Servants or **not**, do not need to be directly subordinate to the Air Systems' DDH / AM(MF). This is particularly relevant for those Mil CAMs who support Defence Contractor Flying Organizations; in such cases they may be part of a different organization working under a contract or bespoke agreement. It is also acceptable for the Mil CAM to have duties other than direct

⁸ **Any nominated Deputy Mil CAM (DCAM) who is expected to personally exercise delegated Mil CAM authorizations should also meet the SQEP criteria detailed in RA 4945 – Personnel Requirements – MRP Part M Sub Part G.**

⁹ DSA-MAA-OA-ACC@mod.gov.uk

¹⁰ Refer to RA 4945(3): Personnel Competence and MRP Part M Authorization.

¹¹ Refer to RA 4943 – Continuing Airworthiness Management Exposition – MRP Part M Sub Part G.

¹² Refer to the RA 4900 series: Continuing Airworthiness Management Organization (CAMO) Regulation.

¹³ Refer to RA 1023 – Chief Air Engineers – Air Safety Responsibilities.

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support to a specified DDH / AM(MF), if they have the capacity to do so. In all cases, the Accountability for compliance with this Regulation remains with the relevant DDH / AM(MF) directing the flying activity and if they are not satisfied with their Mil CAMO arrangement(s), then they are to consider an alternative solution to meet the Regulatory requirements.

14. Where a military registered Air System is operated as an activity for a period less than 6 months then a Mil CAMO may not be required. In such a case the DDH / AM(MF) is to make an application by way of a Waiver¹⁴, detailing the arrangements in place for ensuring the CAw of their military registered Air Systems.

15. ► **The position of the Mil CAM, due to the nature of the role in CAw decisions (ie: ensuring the Air System is compliant with the applicable Airworthiness requirements and is in a condition for safe operation), may also hold additional roles such as the Type Airworthiness Manager, the Head of Independent System Monitoring, and the Head of the Design Organization where clear independence, sufficient capacity and clear separation of the responsibilities can be demonstrated.** ◀

**Regulation
1016(3)**

Requirement for a valid Military Airworthiness Review Certificate

1016(3) For military registered Air Systems, the accountable DDH / AM(MF) **shall** ensure that the Air System is not flown without a valid MARC.

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1016(3)**

Requirement for a valid Military Airworthiness Review Certificate

16. The DDH / AM(MF) **should** be able to adequately demonstrate how they control flying to ensure that the Air System has a valid MARC before the Air System is released for flight ► ◀.

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Material
1016(3)**

Requirement for a valid Military Airworthiness Review Certificate

17. The Regulation, Acceptable Means of Compliance (AMC) and Guidance Material (GM) for MARCs is located in the MRP Part M Sub Part I¹⁵.

18. In derogation to the above Regulation, Air Systems flown under a Military Permit to Fly (MPTF) ► **(Single Task) and (Development)** ◀¹⁶ may be flown without a valid MARC, if permitted by the Type Airworthiness Authority.

19. The Military Airworthiness Review (Mil AR)¹⁷ is deemed the best possible process for establishing an Air System's Airworthiness and current configuration, therefore, every effort is to be made by Air System operators to utilize the Mil AR and the subsequent issuance of a MARC.

¹⁴ Refer to MAA03: MAA Regulatory Processes.

¹⁵ Refer to the RA 4970 series - Airworthiness Review.

¹⁶ Refer to RA 1305 – Military Permit to Fly (In-Service), (Special Case Flying) and (Single Task) and to RA 5880 – Military Permit to Fly (development) - MRP Part 21 Subpart P.

¹⁷ Refer to RA 4971 – Military Airworthiness Review and Certification - MRP Part M Sub Part I.

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

RA 1019 - Sponsor of Military Registered Civilian-Owned and Civilian Operated Air Systems - Air Safety Responsibilities

Rationale

For operational and technical reasons, the Defence Air Environment may need to utilize Civilian-Owned and / or Civilian Operated UK military registered Air Systems. Not having the flexibility to utilize Civilian-Owned and / or Civilian Operated UK military registered Air Systems may impact on the ability to deliver core activities. For an Applicant to obtain military registration of a Civilian-Owned Air System they are to have the endorsement of an appropriate Sponsor, who will be responsible for assuring themselves that appropriate Air Safety arrangements are in place.

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1019(1): Air Safety Responsibilities of the Sponsor

Regulation 1019(1)

Air Safety Responsibilities of the Sponsor

1019(1) The Sponsor **shall** assure themselves that appropriate Air Safety arrangements are in place for Civilian-Owned and / or Civilian Operated UK military registered Air Systems.

Acceptable Means of Compliance 1019(1)

Air Safety Responsibilities of the Sponsor

1. The Sponsor of Civilian-Owned and / or Civilian Operated UK military registered Air Systems **should** be at 2* level or above with an appropriate delegation from the relevant service Chief of Staff¹ or Defence Equipment and Support (DE&S) Chief Executive Officer.
2. The Sponsor **should**:
 - a. Approve and issue the Certificate of Usage (CofU)².
 - b. Submit the Application for Approval in Principle for entry onto the UK Military Aircraft Register (MAR)³.
 - c. Ensure that an appropriate model for Type Airworthiness (TAW) management is in place dependent on the Air System's Operating Category and define the delegation of TAW responsibilities between the Type Airworthiness Authority (TAA)⁴ and TAW Manager (TAM)⁵.
 - d. Ensure that Air Safety governance arrangements are in place for Civilian Operated (Development), (In-Service)⁵ and (Special Case Flying)⁶ Air Systems.
 - e. Ensure that appropriate assurance of Air Safety arrangements for Civilian Operated (Development), (In-Service)⁷ and (Special Case Flying)⁸ Air Systems is conducted.
 - f. Ensure an appropriate level of independent scrutiny is conducted of an Air System's Military Permit to Fly (MPTF) (In-Service) recommendation⁹, MPTF (In-Service)¹⁰ and MPTF (Special Case Flying)¹¹.

¹ Chief of Air Staff, Chief of General Staff, Chief of Naval Staff.

² Refer to RA 1160(3): Certificate of Usage.

³ Refer to RA 1161(2): Application for Approval in Principal.

⁴ Refer to RA 1015 – Type Airworthiness Authority - Roles and Responsibilities.

⁵ Refer to RA 1162(1): Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems.

⁶ Refer to RA 1163(1): Air Safety Governance Arrangements for Special Case Flying Air Systems.

⁷ Refer to RA 1162(2): Assurance of the Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems.

⁸ Refer to RA 1163(2): Assurance of Air Safety Governance Arrangements for Special Case Flying Air Systems.

⁹ Refer to RA 1305(2): Military Permit to Fly (In-Service) Recommendation.

¹⁰ Refer to RA 1305(3): Military Permit to Fly (In-Service) Preparation and Authorization.

¹¹ Refer to RA 1305(5): Military Permit to Fly (Special Case Flying).

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- g. Submit the Request for Activation onto the UK MAR¹².
- h. Authorize and issue the Air System's MPTF (In-Service)¹⁰.
- i. Issue the Certificate for Commencement of Flight for Civilian Operated (Special Case Flying) Air Systems¹¹.
- j. Review an AM(MF)'s annual Safety Statement¹³.

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Material
1019(1)****Air Safety Responsibilities of the Sponsor**

3. If the Sponsor is not in DE&S, the agreement of a DE&S Operating Centre Director¹⁴ will be required to appoint an appropriate TAA. For Special Case Flying a TAA might not be required and a Sponsor may, instead, appoint a TAM⁶ for all TAw management.
4. When deciding upon a model for TAw management, and the level to which responsibilities are delegated between a TAA and a TAM, the Sponsor is recommended to seek advice and guidance from an appropriate OCD 2*.
5. The regulatory requirements of paragraph 2c do not apply to Open and Specific S1 Category RPAS.

¹² Refer to RA 1161(3): Request for Activation on the UK Military Aircraft Register.

¹³ Refer to RA 1205(3): The Safety Statement

¹⁴ Refer to RA 1013 – Air Systems Operating Centre Director - Provision of Airworthy and Safe Systems.

RA 1020 - Aviation Duty Holder ►◄ - Roles and Responsibilities

Rationale

Aviation Duty Holders (ADH)¹ are responsible for Air Safety and ensuring that associated Risk to Life (RtL) is As Low As Reasonably Practicable (ALARP) and Tolerable for the aviation activities within their Area of Responsibility. ►◄ A compromised level of accountability for operations may result from not having ADHs ►◄ in place. Clearly defined roles and responsibilities are required so that legally accountable individuals can effectively carry out their duties in mitigating and making judgements on Air Safety Risk.

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1020(1): Role and Responsibilities of the Aviation Duty Holder

1020(2): Aviation Duty Holder Nomination

1020(3): ► Withdrawn – Incorporated into RA 1032 ◄

Regulation

1020(1)

Role and Responsibilities of the Aviation Duty Holder

1020(1) ADHs **shall** actively manage Air Safety for each Air System within their Area of Responsibility (AoR) via an Air System Safety Case (ASSC) which is managed by an Air Safety Management System (ASMS), to ensure that RtL is ALARP and Tolerable.

Acceptable Means of Compliance 1020(1)

Role and Responsibilities of the Aviation Duty Holder

1. ADHs are legally accountable for the safe operation, Continuing Airworthiness and Maintenance of Systems in their AoR and for ensuring that RtL is ALARP and Tolerable. They **should**:

- a. Cease routine aviation operations if RtL are identified that are not demonstrably ALARP and Tolerable.
- b. Establish and maintain an effective ASMS that, wherever possible, exploits the MOD's existing aviation regulatory structures, publications and management practices, to demonstrate an Acceptable Means of Compliance with the requirements in RA 1200².
- c. Own and manage a robust ASSC³ for each Air System which demonstrates the Air System is, or is capable of being, safe to operate and operated safely for a given application in a given operating environment.
- d. Promote and lead by example an Engaged Air Safety culture.
- e. Identify ADH-Facing Organizations and inform them of their responsibilities detailed in ► RA 1032⁴ ◄, and challenge any option or action that is proposed or implemented by ADH-Facing Organizations that can undermine the ASSC and result in the activities for which they are responsible not being ALARP and Tolerable.
- f. Appoint a Senior Operator (SO)⁵, a Chief Air Engineer (CAE)⁶, and a Military Continuing Airworthiness Manager (Mil CAM)⁷.

¹ The term ADH encompasses Senior Duty Holder (SDH), Operating Duty Holder (ODH) and Delivery Duty Holder (DDH); interpret accordingly; the different levels are referred to separately where specifically required. Defined in MAA02: MAA Master Glossary.

² Refer to RA 1200 – Air Safety Management.

³ Refer to RA 1205 – Air System Safety Cases; the ODH owns the ASSC, but the SDH and DDH **should** own their contributions to the ASSC.

⁴ ► Refer to RA 1032 – Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations - Roles and Responsibilities. ◄

⁵ Refer to RA 1022 – Senior Operator – Air Safety Responsibilities.

⁶ Refer to RA 1023 – Chief Air Engineers – Air Safety Responsibilities.

⁷ Refer to RA 1016 – Military Continuing Airworthiness Management.

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2. ODHs **should** have access to all the levers necessary to manage RtL effectively for all Air Systems in their AoR.
3. Where operational imperatives exist, excursions from the ADH defined capability envelope, declared to the Operational Commander, **should** endure for the shortest time possible⁸, before being resolved through expansion of the ADH defined capability envelope or cessation of the activity.
4. The Operational Commander **should** ensure that where operational imperatives preclude ADH authorization, the Operational Commander authorizes the excursion from the ASSC defined operating envelope and provides retrospective justification to the ADH at the earliest opportunity.

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Role and Responsibilities of the Aviation Duty Holder

5. ADHs have a personal legal duty of care for:
 - a. Personnel under their command,
 - b. Those who, by virtue of their temporary involvement in aviation activities, come within an ADH's AoR,
 - c. The wider public who may be affected by their operations.
6. By design, the Air Safety Duty Holder (DH) chain sits in parallel with the full Command chain but does not mirror it. In doing so, it minimizes delegations and provides necessary separation, coupled with a degree of beneficial tension between Air Safety and delivery. Nonetheless, the Air Safety ADH governance model does not absolve commanders at any level of their broader, enduring duty of care responsibilities under Common Law and the Health and Safety at Work Act (1974).
7. In the execution of their specific ADH responsibilities, ADHs are accountable and answerable to the Secretary of State for Defence (SofS), via their superior DH chain. The conventional chain of command will continue to command and control the delivery of capability outputs, but will not direct, nor attempt to influence, nominated ADHs within that chain in the execution of their accountable Air Safety responsibilities.
8. While ADHs are personally accountable for RtL and will ultimately determine for themselves the level of Air Safety Risk they are willing to accept, they will be supported by expert advisers. By virtue of their qualifications, training and experience, ADHs will be conversant with managing operating Risk. In the Continuing Airworthiness and Maintenance domain, the ADH will appoint a Mil CAM responsible for the Continuing Airworthiness Management of an Air System. A CAE is also nominated who is responsible for ensuring engineering standards and practices throughout their AoR and providing advice on strategic cross Air System type engineering and support issues⁶. The ADH will also be supported by a Type Airworthiness Authority (TAA)⁹, who is personally accountable for the Type Airworthiness of the Air System.
9. ADHs must also appoint a SO to support them and be responsible for self-regulation and providing internal Assurance of operating standards and procedures and Flight Safety. SDHs may or may not appoint an ODH as their SO, depending on circumstances and their preference⁵.
10. ADHs must ensure that a safe operating environment and appropriate Assurance is being provided at all tiered establishments and non-MOD Aerodromes¹⁰.
11. The first line of defence in Air Safety is the establishment of an Engaged Air Safety Culture, underpinned by the application of common sense. The ADH has a key role to play in establishing and sustaining such a culture. An ADHs' responsibilities apply when any person interacts with an Air System within their AoR. They also have a personal level duty of care to all others, including the wider public, who may be

⁸ 72 hours is considered the maximum reasonable period for the ADH defined envelope to be expanded, save in the most exceptional of circumstances.

⁹ Refer to RA 1015 – Type Airworthiness Management - Roles and Responsibilities.

¹⁰ Refer to RA 1010 – Head of Establishment - Aviation Responsibilities ► and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities. ◀

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affected by their operations. On any occasion when the responsibility for an ASSC is handed over between individuals, a pan-Defence Lines of Development (DLoD) review of the ASSC must be completed³.

ADH Engagement

12. It is imperative that ADHs lead by example in nurturing and developing an Engaged Air Safety Culture. The detailed governance mechanisms employed by ADHs can be tailored to the scale and nature of the aviation activity being supervised, but the following elements will be considered as the minimum requirement:

- a. **Air Safety Steering Group (ASSG).** A not less than annual forum, chaired by the ODH, to evaluate Air Safety Risk across their AoR and to prioritize available resources and requirements. To be supported by a unified ODH Risk Register and Subject Matter Experts (SME) from ADH-Facing Organizations, when required.
- b. **Air System Safety Working Group (ASSWG).** A regular, Type-specific forum, chaired by the ODH to scrutinize the validity of the live ASSC argument and supporting evidence across the DLoDs.
- c. **Programme Boards.** Ownership of the ASSC is with the SRO from Concept phase until transfer to the end-user ODH. As such, ODHs will be appropriately represented at Programme Boards by senior, informed and empowered representatives. Objections, on Air Safety grounds, to any actual or proposed course of action will be submitted formally by the ODH, in person or in writing, and the objection(s) minuted accordingly.
- d. **Budgetary Planning.** During routine budgetary planning, ADHs will be afforded the opportunity to seek additional resources to mitigate all RtL so that they are ALARP and Tolerable. They will be given full and timely visibility of any measures that potentially affect Air Safety adversely, to ensure authoritative and appropriate impact statements inform auditable planning process decision making.

ADH Responsibilities in Operations

13. **Operating Envelope.** An ADH is personally legally responsible for ensuring that RtL from the activities associated with the generation and sustainment of Force Elements (FE)¹¹ is ALARP and Tolerable. The operating envelope is bounded by, among other things: declared role(s); competency, currency and readiness of personnel; the Release To Service (RTS); defined Tactics, Techniques and Procedures (TTP); and Regulations. The boundaries of the operating envelope will be defined by the ADH in the ASSC and limit the scope of operations which can be demonstrated to be ALARP and Tolerable. The ADH may adjust and redefine the boundary as changes in capability or Operational context occur. For example, an envelope may be expanded leading up to deployment on or during, an operation to accommodate capability increments, such as Urgent Capability Requirements (UCR).

14. **ADH and Operational Commander Responsibilities with respect to Operational Employment.** Aviation FEs are allocated to an Operational Commander when authorized under a Chief of Defence Staff's (CDS) directive to employ subordinate FEs in pursuit of operational objectives. The ADH is responsible to the Operational Commander for their operational readiness in their declared role(s), and for the continuing management of all operating RtL so that they remain ALARP and Tolerable within the operating envelope defined in the ASSC (ie for RtL other than that arising from hostile action¹²). An Operational Commander has the authority to employ allocated FEs in operational tasks at their discretion, bounded by the Laws of Armed Conflict, CDS's Directive, the accompanying Rules Of Engagement (ROE), superior command direction, the FE's defined operating envelopes and due regard to RtL of the forces under their command.

¹¹ Components of capability comprising, among other things; personnel, training, platforms, their serviceability and sustainment.

¹² Survivability in a hostile environment and associated balance of Risk will be addressed by the operational command chain when considering the deployment of Air Systems on operations, in consultation with the ADH and ADH chain (as appropriate).

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15. **Operational Imperative to exceed Operating Envelope.** The limit of an ADH's responsibility and accountability for managing operating RtL in the operational domain is defined as the point at which an Operational Commander directs any relevant activity (operating and / or support) that transcends the operating boundary set by the ADH. In doing so, the Operational Commander will be prepared to justify their actions in retrospect, preferably via a context based auditable Risk analysis. It is acknowledged that the urgency of a particular situation may preclude such a process being carried out formally. Nevertheless, the principles of such a process will inform the Operational Commander's judgements and will be seen to have done so.

16. **Premeditated Change to Operating Envelope**¹³. Where employment of aviation FEs outside of the ASSC defined operating envelope is premeditated:

- a. The Operational Commander will make every effort to understand the residual Risk to properly assess tolerability. Therefore, they will seek advice of the relevant ADH (or their deployed senior representative¹⁴ in Theatre) on the level of Risk, potential mitigations and, if appropriate, alternative courses of action. If direct consultation with the ADH is not achieved, the Operational Commander will make the ADH aware at the earliest opportunity.
- b. RTS excursions will be kept to a minimum and are only to be undertaken when time has precluded the ADH requesting an amendment to the RTS. In any event, such excursions will be notified to the Release To Service Authority.
- c. When, following due consideration and the application of any caveats or controls, an ADH determines that the RtL is ALARP and Tolerable and endorses such an excursion, the operating envelope will be considered redefined and the ADH thereby accepts and owns the associated Risk.
- d. If it is not prudent or practical for the ADH chain to expand the ASSC defined operating envelope, the Operational Commander will accept the RtL, following full ADH consultation. In such cases, the Operational Commander will justify and record the decision to operate outside the envelope described by the ASSC.
- e. Where it is identified that the required operational effect cannot be achieved while maintaining compliance with the MRP, the Operational Commander will consult with the ADH chain as soon as possible. If no compliant solution can be identified, and the Operational Commander judges that the residual Risk is justified by the potential operational benefit, the Operational Commander will accept the RtL before operations continue. Operational Commander and ADH will consult with the MAA in such cases as soon as practicable.
- f. Where a substantive and significant difference of opinion between an ADH and an Operational Commander arises, the ADH has the option to elevate their concerns to the National Contingent Commander (NCC) or the Chief of Joint Operations (CJO). The ADH, NCC and CJO all have the option to refer the issue to CDS.

17. **Deployed SO and CAE.** ADHs may appoint deployed SO and CAE to assist in developing and implementing the associated processes. They are responsible to their parent ADHs for providing internal Assurance of deployed operating procedures, standards and Flight Safety, and Engineering standards and practices. Deployed SO or CAE are responsible directly to the relevant ADH, but need not necessarily be exclusive to them assuming roles in the operational command chain.

18. **Support Structures and Processes.** The implementation of the above principles will require exploitation of existing structures and processes, some of which may need to be adapted. Additional supporting mechanisms may need to be developed, that will need to integrate and be coherent with extant arrangements such

¹³ Refer to RA 1210 – Ownership and Management of Operating Risk (Risk to Life).

¹⁴ The nomination of a deployed senior representative is in the context of managing RtL and at the discretion of the ADH, and is not necessarily the same individual as the Deployed SO (see paragraph 17), which is a different and specifically defined role. Though deployed senior representatives provide advice on behalf of the relevant ADH, this need not necessarily be exclusive to their assuming roles in the operational command chain.

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as the ADH's ASSC, including Risk Register, ASSG and ASSWG processes. Establishment of working dialogues between operational command and ADH chains will ensure that respective responsibilities and constraints on the deployed air systems are thoroughly understood.

**Regulation
1020(2)**

Aviation Duty Holder Nomination

1020(2) Each Service Chief **shall** be an SDH by virtue of position, and personally appoint by name ODHs and DDHs within their AoRs.

**Acceptable
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1020(2)**

Aviation Duty Holder Nomination

19. SDHs **should** ensure that all Air Systems in their AoR are operated under the accountability of appropriate ADHs.
20. SDHs **should** ensure that the ODHs and DDHs that they appoint are operators that are Suitably Qualified and Experienced Persons (SQEP) (see paragraph 23 and 26).
21. Names of ODH and DDH nominees **should** be submitted for endorsement by the MAA Director (Dir MAA) in accordance with MAA 03 Annex G¹⁵.
22. ODHs, DDHs, SOs¹⁶, CAEs¹⁶, and Mil CAMs **should** attend the Duty Holder Air Safety Course (DHASC)¹⁷. ODHs and DDHs **should** complete the DHASC prior to assuming their appointments. Bespoke training **should** be provided for SDHs on appointment.

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Aviation Duty Holder Nomination

23. **ADH Levels.** The SDH appoints by name ODHs and DDHs who are SQEP and appointees are required to acknowledge and accept formally their ADH responsibilities. In the execution of their specific ADH responsibilities, ADHs are accountable and answerable to the SofS, via their superior ADH chain. ADHs are nominated at three levels in each Service:

- a. **Senior.** SDHs are personally legally responsible and accountable for ensuring that: an effective, end-to-end ASMS is resourced, implemented and appropriately managed in their AoRs; and that those personnel under their command who are engaged directly in Defence Aviation are suitably qualified, trained, experienced and equipped.
- b. **Operating.** ODHs are 2* operators who are personally legally responsible and accountable for the safe operation, Continuing Airworthiness and Maintenance¹⁸ of the Air Systems in their defined AoR. An ODH owns and is responsible for the management and upkeep of the ASSC for each of their Air Systems. ODHs are accountable to their respective SDH for Air Safety, provide the SDH with relevant subject matter advice, and have right of direct access.
- c. **Delivery**¹⁹. DDHs are personally legally responsible and accountable for the safe operation, Continuing Airworthiness and Maintenance¹⁹ of the Air Systems in their defined AoR. DDHs are accountable to their designated ODH for Air Safety, provide the ODH with relevant subject matter advice, and have right of direct access. Where units of one DDH operate from the estate, or are supported by the resources of another, suitable arrangements will be in place to

¹⁵ Refer to MAA03: Military Aviation Authority Regulatory Processes.

¹⁶ At all ADH levels.

¹⁷ For further training details see RA 1440 – Air Safety Training.

¹⁸ Where the Maintenance of an Air System is in whole, or in part, conducted by a Mil Part 145 accredited organization, ADH responsibilities in this regard will be limited to oversight activities via their CAE and TAA, including validation of output standards, and the meeting of any contractual obligations.

¹⁹ DDHs will routinely be appointed at OF5 / air station Command level, but their responsibilities may extend over several sites / sub-units. Lower levels of appointment may be appropriate in certain specialist areas, such as Test & Evaluation and certain categories of Remotely Piloted Air Systems.

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delineate clearly Air Safety responsibilities – the ADH providing support is acting as an ADH-Facing Commanding Officer.

24. **Joint Organizations.** An ODH of a Joint organization may be accountable to multiple SDHs. This will not conflict with an ODH's ability to discharge their responsibilities.

25. **Endorsement.** ODH and DDH appointments need to be endorsed by the MAA on the basis of evidence provided demonstrating that they are suitably qualified, experienced and trained for the role.

26. **SQEP.** Utilizing the ODH and DDH submission template contained within MAA 03 Annex G¹⁵, Service workforce agencies will provide detailed Terms of Reference for the nominated ADH and an evidence-based argument as to why the nominee is deemed SQEP.

**Regulation
1020(3)**

Responsibilities of Aviation Duty Holder-Facing Organizations

1020(3) ▶ **Withdrawn – Incorporated into RA 1032.** ◀

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Responsibilities of Aviation Duty Holder-Facing Organizations

27. ▶ **Withdrawn – Incorporated into RA 1032.** ◀

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Material
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Responsibilities of Aviation Duty Holder-Facing Organizations

28. ▶ **Withdrawn – Incorporated into RA 1032.** ◀

RA 1021 - Release To Service Authorities - Roles and Responsibilities

Rationale

On behalf of the Senior Duty Holder (SDH), the Release To Service Authority (RTSA) assures an Air System's Release To Service Recommendations (RTSR)¹ and ensures that identified Risks to Life (RtL) have been brought to the attention of the Operating Duty Holder (ODH), before issuing the Release To Service (RTS)¹. When an Air System enters service or is subject to a Design Change or change in limitation, it is important that the ODH understands the Risks associated with operating the Air System within the defined envelope and puts in place appropriate mitigation to manage RtL to an As Low As Reasonably Practicable and Tolerable level before acceptance of said Risks. This Regulation details the roles and responsibilities of the RTSA to ensure that this communication and acceptance of Risk is rigorously undertaken and that the integrity² of the RTS is maintained.

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1021(1): Roles and Responsibilities

Regulation 1021(1)

Roles and Responsibilities

1021(1) The RTSA shall authorize, issue, and maintain the integrity of the RTS through-life to provide the Aviation Duty Holder (ADH) chain with independent Air Safety Assurance of the Air Systems for which the SDH is responsible.

Acceptable Means of Compliance 1021(1)

Roles and Responsibilities

1. The RTSA should:
 - a. Authorize and issue an initial RTS and subsequent RTS amendments.
 - b. Provide Assurance of the RTSR including that all RtL apparent at the point of RTS issue and subsequent amendments, have been identified and brought to the attention of the ODH.
 - c. Provide independent Assurance to the SDH that Defence Lines of Development (DLoD) and the Air System Safety Case (ASSC) are sufficiently mature for the RTS to be issued.
 - d. Have an Air Safety Management System (ASMS) that describes how the RTSA assesses changes to an Air System, and any associated limitations and procedures. The RTSA ASMS interfaces with those of the Type Airworthiness Authority and the ODH.
 - e. Be engaged with an ODH's ASSC governance structure (including the Air System Safety Working Group (ASSWG) process) and provide Assurance to the SDH that the integrity² of the RTS is maintained.

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Roles and Responsibilities

2. The RTSA for each Service's Air Systems will receive appropriate letters from their Service SDH delegating the authority to issue and amend the Air System RTS documents for their Service.
3. Delegation of any aspect of responsibility to Delegated RTSA (DRTSA) will be via a Letter of Delegation (LoD) specifying clearly the limits of authority. The LoD from RTSA to DRTSA will include the terms of the delegation by which the DRTSA is empowered to authorize Operational Emergency Clearances and Clearances with Limited Evidence.
4. The RTSA has a responsibility to maintain the integrity of the Air System RTS.

¹ Refer to RA 1300 – Release To Service.

² Assure correctness, completeness and consistency.

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1021(1)**

5. Where a platform is operated by more than one Service a single RTSA may be identified to issue and amend the Air System's RTS on behalf of the other Service(s). This will be agreed by the relevant SDHs and underpinned by a Service Level Agreement (SLA) which will include the periodicity of review of the SLA. For Remotely Piloted Air Systems (RPAS) requiring an RTS³, the single RTSA to issue and amend the Air System's RTS will be agreed by the relevant DRTSAs and underpinned by a DRTSA letter, which will specify the limits of authority and the review timings.

6. Any amendments to the RTS will require active and close consultation between the interested parties to ensure that any RtL is being appropriately captured and managed. This will form part of the ODH's ASSC governance. In considering amendments to an RTS, the RTSA will ultimately act in the interests of the SDH.

Operating and support elements

7. The RTSA will need to assure the DLoD assessment ►◄⁴ covers as a minimum:

- a. A statement from DLoD owners describing the degree to which each DLoD is ready to support the operation of the Air System.
- b. Evidence of analysis that identifies gaps in DLoD requirements.
- c. Evidence of analysis that identifies RtL associated with such gaps or lack of appropriate evidence.
- d. Evidence of analysis that identifies measures to mitigate RtL.
- e. Evidence that appropriate levels of Test and Evaluation⁵ have taken place.

8. The MOD Knowledge in Defence⁶ provides guidance on the responsibilities of Project and Programme Boards. Programme / Project Boards will have the authority to ensure that Capability Integration Working Groups (CIWG) are established to take the lead in pan-DLoD integration activity. Implicit in this integration task is a requirement to ensure that the work and outputs of CIWGs benefit from the inclusion of Air Safety expertise and scrutiny.

9. By including a Risk Assessment as part of the formal DLoD declaration, the DLoD owner provides to the RTSA and ODH the necessary evidence to allow them to assure themselves that the Air System ► is safe to operate and ◄ can be operated safely ►◄.

³ Open category and Specific S1 sub-category RPAS do not require an RTS. Specific S2 sub-category and Certified Category RPAS require an RTS.

⁴ Refer to RA 1205 – Air System Safety Cases.

⁵ Refer to RA 2370 – Test and Evaluation.

⁶ ► <https://www.gov.uk/guidance/knowledge-in-defence-kid> ◄, see "Programme Governance and Management Roles".

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

RA 1022 – Senior Operator – Air Safety Responsibilities

Rationale

Aviation Duty Holders (ADH)¹ are responsible for implementing effective Air Safety Management Systems (ASMS) and ensuring that Risk to Life (RtL) of their air operations are at all times As Low As Reasonably Practicable (ALARP) and Tolerable. The absence of independent review of Air Safety issues may result in poor risk management and Air Safety decision making. To support ADHs in discharging their responsibilities they will appoint a Suitably Qualified and Experienced Person (SQEP) Crown Servant Senior Operator (SO)² to provide independent Air Safety oversight, assurance and operator support.

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1022(1): Senior Operators

Regulation 1022(1)

Senior Operators

1022(1) Each ADH **shall** be supported by a SQEP Crown Servant SO.

Acceptable Means of Compliance 1022(1)

Senior Operators

1. Each ADH **should** issue their SO with a Letter of Authority (LoA) detailing their responsibilities.
2. When the issuer of a LoA departs their post, all LoAs issued by that individual **should** remain valid for a maximum of 3 months or until a new LoA is issued.

SDH SO

3. Each SDH **should** select and appoint a SQEP SO³ to provide them with advice on operating RtL and Air Safety assurance. Where an appointed SDH SO does not meet these criteria in Table 1, the SDH **should** inform MAA Head of Operating Assurance (DSA-MAA-Operating-Assurance-Hd).
4. SDH SOs **should** provide their SDH with Assurance that:
 - a. ODH ASMS and Air System Safety Cases (ASSC) properly support the ODH Air System ALARP and Tolerable assessments.
 - b. Operating practices across their appropriate Service are to the appropriate standard.
5. SDH SOs **should** provide their SDH with advice on:
 - a. Operating and operational RtL. While the Operational Commander (Op Comd) is responsible for operational risk, the SO **should** be aware of operational considerations to ensure operating aspects within the purview of the ODHs are appropriately considered.
 - b. Operating issues associated with changes to the operating environment or context and the acquisition of new Air Systems or air capabilities.
 - c. Air Safety measures, such as new equipment, procedures or Air System modifications, proposed by ODHs in support of their ALARP and Tolerable position.

ODH SO

6. Each ODH **should** select and appoint a suitably experienced Aircrew as a SO to provide them with independent specialist operator support in delivering their Air

¹ Consists of three levels of coverage: Senior Duty Holder (SDH), Operating Duty Holder (ODH) and Delivery Duty Holder (DDH).

² See Table 1 – SO SQEP Criteria.

³ SDHs may or may not appoint an ODH as their SO, depending on circumstances and their preference in accordance with RA 1020 – Aviation Duty Holder and Aviation Duty Holder-Facing Organizations – Roles and Responsibilities.

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1022(1)**

Safety responsibilities. Where the selected ODH SO does not meet the criteria in Table 1, the ODH **should** inform the SDH SO and, additionally for essential criteria, the MAA (DSA-MAA-Operating-Assurance-Hd).

- a. To ensure independent Air Safety oversight and assurance the SO **should** be as separate as possible from the direct chain of command charged with delivery.
- b. ODH SOs are not required to have been qualified on all types operated by the ODH but **should** be suitably experienced Aircrew able to critically review operating proposals raised by DDHs and Force Commanders (FC).
7. ODH SOs **should** provide their ODH with Air Safety assurance that:
 - a. ODH and DDH ASMSs and their contributions to the ODH ASSCs are fully supported by DDH determinations that Air System operations remain ALARP and Tolerable.
 - b. Operating RtL Air Safety assessments are valid.
 - c. Operating standards are being maintained at an appropriate level.
8. ODH SOs **should** provide their ODH with the following:
 - a. Independent scrutiny of DDH and FC proposals that concern Air Safety issues such as risk elevation, Duty Holder Advice Notes (DHAN) or equivalent, and Air Safety related Annual Budgetary Cycle (ABC) options.
 - b. Advice on operating and operational RtL. While the Op Comd is responsible for operational risk, the SO **should** be aware of operational considerations to ensure operating Air Safety aspects within the purview of the ODH are appropriately covered.
 - c. Independent Air Safety assessment of DDH assurance, including Air Safety practice and safety culture.
 - d. Where appropriate, advice on operating issues associated with acquisition of new Air Systems and their developing ASSC.

DDH SO

9. Each DDH **should**:
 - a. Select and appoint a SQEP² SO to provide them with independent specialist operator support in delivering their Air Safety responsibilities. Where the selected DDH SO does not meet the criteria in Table 1, the DDH **should** inform the ODH and MAA (DSA-MAA-Operating-Assurance-Hd).
 - (1) For DDH Area of Responsibility (AoR) with a single Air System, the DDH SO **should** either be currently or previously qualified on type.
 - (2) For DDH AoRs with multiple Air Systems, DDH SOs **should** be currently or previously qualified on one type, but are not required to be currently or previously qualified on all types. Additionally, they **should** be suitably experienced Aircrew able to critically review operating proposals raised by Squadron Commanders or equivalent for Air Systems within the DDH's AOR.
 - b. To ensure independent Air Safety oversight and assurance the SO **should** be as separate as possible from the direct chain of command charged with delivery.
10. DDH SOs **should** provide their DDH with Assurance that:
 - a. DDH ASMS and DDH contribution to ASSCs are fully supported by DDH determinations that Air System operation remains ALARP and Tolerable.
 - b. Operating RtL assessments are valid.
 - c. Operating standards are being maintained at an appropriate level.
11. DDH SOs **should** provide their DDH with the following:

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- a. Independent scrutiny of Force Element Air Safety issues such as risk elevation, DHAN or equivalent, and Air Safety based ABC options.
- b. Advice on operating and operational RtL. While the Op Comd is responsible for operational risk, the SO **should** be aware of operational considerations to ensure operating Air Safety aspects within the purview of the DDH are appropriately covered.
- c. Independent assessment of DDH assurance including Air Safety practice and safety culture.
- d. Where appropriate, advice on operating issues associated with acquisition of new Air Systems and their developing ASSC.

Table 1 SO SQEP Criteria

SQEP Criteria	DDH SO	ODH SO	SDH SO
Essential			
Previous aviation command and/or supervisory experience (minimum level of experience)	OF3	OF4	OF5
Complete Duty Holders Air Safety Course (DHASC)	X	X	X
Certificate of Qualification on Type (CQT) (SO for single Air System)	X		
CQT on at least one type within AoR (SO for multiple Air Systems)	X		
Desirable			
Assurance activity experience	X	X	
CQT on at least one type within AoR (SO for multiple Air Systems)		X	
Central Flying School accredited Q-Qualification	X		
Joint HQ staff experience	X	X	X
Resource planning/Delivery Team/Financial Military Capability staff experience		X	X
Deployed (exercise or operations) command experience	X	X	X

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Senior Operators

- 12. It is not expected that ADH SOs will personally complete the actions that are detailed in the AMC above. It is expected that ADH SOs will direct working arrangements using suitable staff, such as Air Safety and Standards, to provide the necessary information to enable an independent (derived from outwith the direct delivery chain) view to be formed.
- 13. The SO plays a key role supporting the ADH in discharging their Air Safety responsibilities. This is not about being the most SQEP on type but is about being experienced enough to undertake critical analysis of Air Safety related operating issues. Separated from the pressures of delivery, the experienced Aircrew SO, specifically selected by the ADH, provides independent oversight of flying operations.
- 14. For single type ADH Organizations the SO would ideally be qualified and current on type but where this is impracticable, a previous qualification on type may be considered by an ADH, set against the prospective SO's time away from flying.
- 15. Similarly, for multi-type ADH Organizations, the SO would ideally be qualified and current on one or more of the types in the AoR, but where this is impractical, a previous qualification on one or more of the types may be considered by an ADH, set against the SO's time away from flying. Additionally, ADHs may need to assess whether a potential multi-type SO has the breadth of military aviation experience pertinent to the range of Air Systems within the AoR.
- 16. Removed from the direct pressures of delivery, the SO's value is in forming a view of unit Air Safety culture and the performance of the ADH's ASMS. Through

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oversight of unit operating and Air Safety assurance (1st Party Assurance and 2nd Party Assurance) the SO can assure the ADH that the appropriate operating standards are being met and that operating procedures⁴ are fit for purpose, or, when this is not the case, highlight any areas of deficiency and suggest action to rectify identified shortfalls.

17. The SO plays an important role in guarding against groupthink through their challenging of existing norms and use of a questioning culture. It is important that the SO critically considers contributions to decisions that elevate or inform higher level ADHs of emerging Air Safety operating RtL.

⁴ Such as Aircraft Operating Authority and unit Flying Orders, Aircrew elements of Air System Document Set and Standard Operating Procedures / Tactics Techniques and Procedures.

RA 1023 – Chief Air Engineers – Air Safety Responsibilities

Rationale

Aviation Duty Holders (ADHs) are personally Accountable¹ for ensuring the safe operation of Air Systems within their Area of Responsibility (AoR) and for ensuring that the associated Risks to Life (RtL) are As Low As Reasonably Practicable and Tolerable. Without appropriate specialist support, from a Suitably Qualified and Experienced Person (SQEP), technical aspects of an ADH's RtL assessments could become inaccurate and this would undermine their Air Safety Management System (ASMS). ► **This RA** ◀ requires ADHs to be supported by a Chief Air Engineer (CAE) who is a SQEP Crown Servant.

Contents

1023(1): Chief Air Engineers

Regulation 1023(1)

Chief Air Engineers

1023(1) Each ADH **shall** be supported by a SQEP Crown Servant CAE.

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Chief Air Engineers

1. ADH CAEs **should** hold a Letter of Authority.
2. When the issuer of a Letter of Authority departs their post, all Letters of Authority issued by that individual **should** remain valid for a maximum period of 3 months from when their replacement receives their own Letter of Authority. During this period, all sub-delegations **should** be reviewed and renewed as appropriate by the new incumbent.

Senior Duty Holder (SDH) CAE

3. Each SDH **should**:
 - a. Appoint a SQEP Crown Servant CAE to provide them with specialist technical support in delivering their Air Safety responsibilities.
 - b. Issue the SDH CAE with a personal Letter of Authority detailing their responsibilities ► ◀.
4. SDH CAEs **should** provide their SDH with Assurance that:
 - a. Air Systems, Airborne Equipment, ► ◀ Airfield Support Equipment, ► **Aircrew Equipment Assemblies and Survival Equipment** ◀ across the appropriate Service are being maintained in accordance with (iaw) extant Regulations, procedures, orders, the Air System Document Set (ADS), Approved Data and higher level instructions.
 - b. Engineering practices across their appropriate Service are to the appropriate standard.
5. SDH CAEs **should** provide their SDH with the following:
 - a. Technical advice on RtL.
 - b. Advice on technical issues associated with the Acquisition of new Air Systems or air capabilities.
6. SDH CAEs **should** ensure that:
 - a. ► **Operating** ◀ Duty Holder (ODH) CAEs meet the SQEP criteria in Table 1 below. Where an appointed ODH CAE does not meet these criteria, the SDH CAE **should** personally authorize non-compliance on a case-by-case basis and inform the MAA² of such decisions.

¹ Refer to RA 1020 – Aviation Duty Holder ► ◀ – Roles and Responsibilities.

² DSA-MAA-OA-ACC@mod.gov.uk.

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- b. They issue ODH CAEs with personal Letters of Authority detailing their responsibilities, including the requirement for identifying appointed Level J and ► appointed ◀ Level K ► ◀ posts within the ODH's AoR³
- c. ODH CAEs are effective in the conduct of their role.

Table 1 – CAE SQEP Criteria

SQEP Criteria	DDH CAE	ODH CAE	SDH CAE
Engineering Council professional registration as a Chartered Engineer (CEng)	X	X	X
Has previous Level J experience	X	X	X
Has previous Level K experience		X	X
Has previous engineering experience in ► Capability and Acquisition / Project Delivery Career Field ⁴ aligned roles within the Defence Air Environment (DAE) ◀		X	X
Has successfully completed the Airworthiness of Military Aircraft Course - Practitioner (AMAC-P) ⁵	X	X	
Has successfully completed the relevant Air System type-specific managers course – see para 17	X		
Has successfully completed the Duty Holder Air Safety Course (DHASC) ⁵	X	X	X

ODH CAE

7. Each ODH **should** appoint a SQEP Crown Servant CAE to provide them with specialist technical support in delivering their Air Safety responsibilities.
8. ODH CAEs **should** provide the ODH and SDH CAE with Assurance that:
- Air Systems, Airborne Equipment, ► ◀ Airfield Support Equipment, ► Aircrew Equipment Assemblies and Survival Equipment ◀ are being maintained iaw extant Regulations, procedures, orders, the ADS, Approved Data and higher level instructions.
 - Engineering practices across all ODH Air Systems and organizations are to the appropriate standard.
9. ODH CAEs **should** provide the ODH with the following:
- Technical advice on RtL.
 - Advice on technical issues associated with the Acquisition of new Air Systems or air capabilities.
10. ODH CAEs **should** ensure:
- Delivery Duty Holder (DDH) CAEs meet the SQEP criteria in Table 1. Where an appointed DDH CAE does not meet these criteria, the ODH CAE **should** personally authorize non-compliance on a case-by-case basis and inform the MAA² of such decisions.
 - That they issue DDH CAEs with personal Letters of Authority, detailing their responsibilities. ► ◀
 - DDH CAEs are effective in the conduct of their role.
 - Military Continuing Airworthiness Managers⁶ are effective in the conduct of their role.

³ Refer to RA 1006 – Delegation of Engineering Authorizations ► and Manual of Airworthiness Maintenance - Process (MAM-P) Chapter 2.1 – Engineering Authorizations.

⁴ Refer to the Capability, Acquisition and Project Delivery: Functional Knowledge Skills Experience Framework, via the Defence Intranet: Project delivery Hub, Directorate of Acquisition and Project Delivery, Head Office and Corporate Services (HOCS). ◀

⁵ Course validities are detailed in RA 1440 – Air Safety Training.

⁶ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

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e. That when multiple DDHs are operating from the same Station / Ship / Unit or Site, engineering activity is coordinated between all DDH CAEs.

f. ▶ They identify any and all appointed Level K and appointed Level J³ posts within their AoR and ensure that personnel filling such positions are Competent to do so. ◀

11. ODH CAEs **should**:

a. Act as the Engineering lead for the ODH engineering Quality Management System (QMS)⁷.

b. Act as the Engineering lead for the ODH ASMS⁸, including for all support activities, ensuring that their AoR is adequately supported, resourced and managed in order to be safe to operate.

DDH CAE

12. Each DDH **should** appoint a SQEP Crown Servant CAE to provide them with specialist technical support in delivering their Air Safety responsibilities within their AoR.

13. DDH CAEs **should** provide the DDH with the following:

a. Technical advice on Rtl.

b. Advice on technical issues associated with the Acquisition of new Air Systems or air capabilities.

14. DDH CAEs **should** ensure that:

a. Air Systems, Airborne Equipment, ▶ ◀ Airfield Support Equipment, ▶ Aircrew Equipment Assemblies and Survival Equipment ◀ are being maintained iaw extant Regulations, procedures, orders, the ADS, Approved Data and higher level instructions.

b. Engineering practices across all DDH Air Systems and organizations are to the appropriate standard.

c. An effective DDH level engineering QMS ▶⁷ ◀ is in place.

d. An effective process for the delegation³ of engineering authorizations is in place.

e. When multiple DDHs operate from the same Station / Ship / Unit or Site, all engineering activity is coordinated.

15. The DDH CAE **should** act as the engineering lead for the DDH ASMS⁸, including all support activities and ensure that their AoR is adequately resourced to support the DDH's ASMS.

16. DDH CAEs **should** provide the DDH and ODH CAE with Assurance of para 14.

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Chief Air Engineers

17. Where Air System type-specific managers courses are not available, or a DDH CAE is responsible for several Air System types, an appropriate level of technical familiarisation is required for each Air System type.

18. It is understood that due to extant contractual arrangements, DDH CAEs may not be able to ensure that all Air Systems, Airborne Equipment and Airfield Support Equipment within their AoR are being maintained iaw extant Regulations and procedures, or engineering practices and Maintenance organizations are to the appropriate standard. In such circumstances, DDH CAEs need to conduct robust Assurance activity in order to provide the DDH with an equivalent level of specialist engineering support.

19. ▶ ◀

⁷ ▶ Refer to MAM-P Chapter 11.1 – Defence Air Environment Quality Policy, RA 4815 – Maintenance Procedures and Safety and Quality Policy and RA 4951 – Quality System MRP Part M Sub Part G. ◀

⁸ Refer to RA 1200 – ▶ ◀ Air Safety Management.

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

RA 1026 – Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities

Rationale

The Head of Establishment (HoE)¹ is responsible for providing a Safe Operating Environment (SOE)² in accordance with (iaw) RA 1010³. Inappropriate management and supervision of Aerodrome operations could result in an unsafe operating environment. To support the HoE in discharging their responsibility to provide a SOE, a Suitably Qualified and Experienced Person (SQEP) is required to manage and supervise Aerodrome operations iaw the classification tier of the establishment⁴.

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Regulation 1026(1)

Aerodrome Operator Nomination

1026(1) Withdrawn – Incorporated into RA 1010(3)⁵.

Acceptable Means of Compliance 1026(1)

Aerodrome Operator Nomination

1. Withdrawn – Incorporated into RA 1010(3).

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Aerodrome Operator Nomination

2. Withdrawn – Incorporated into RA 1010(3).

¹ In addition to MAA 02 – Master Glossary, in the context of this Regulation HoE also includes Commanding Officers of aviation capable His Majesty's (HM) / MOD Ships (aviation capable Ships is defined in Def-Stan 00-133 Part 1).

² Refer to RA 1010 – Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities for the definition of a SOE.

³ Refer to RA 1010 – Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities.

⁴ Refer to RA 1010(1): Classification Tier of Establishment.

⁵ Refer to RA 1010(3): Tier 1 and Tier 2 (where Recreational Flying is not the Primary Activity) Head of Establishment Responsibilities.

**Regulation
1026(2)**

Aerodrome Operator Responsibilities

1026(2) An Aerodrome Operator⁶ (AO) **shall** be responsible for the management of an Aerodrome environment to support the safe operation of Air Systems at Aerodromes classified as Tier 1 and Tier 2 (where recreational flying⁷ is not the primary activity) Establishments.

**Acceptable
Means of
Compliance
1026(2)**

Aerodrome Operator Responsibilities

3. The AO **should** support the HoE to ensure that appropriate Assurance is conducted to provide evidence to the Aviation Duty Holder (ADH) / Accountable Manager (Military Flying (AM(MF))) that a SOE is in place and being maintained³, in support of the ADH / AM(MF) associated Air System Safety Cases⁸. Specifically, the AO **should**:

- a. Establish and maintain formal mechanisms for the management and Assurance of all Aerodrome activities, operating procedures, standards, Flight Safety and regulatory compliance within their Area of Responsibility (AoR), through the production and maintenance of a Defence Aerodrome Manual (DAM)⁹.
- b. Establish and maintain a programme of 1st Party Assurance of the DAM, ensuring that Aerodrome Assurance activities are carried out iaw the Military Aviation Authority Regulatory Publications (MRP) and reference documents referred to in the DAM Notes for Completion.
- c. Identify and monitor any decision, activity or change in circumstances that results in a Hazard or change to the Aerodrome or the services / facilities provided. These Hazards or changes **should** be communicated through effective formal relationships with the HoE and appropriate stakeholders.
- d. Promulgate Aerodrome operating Hazards through the AO Hazard Log (AOHL), to facilitate the conduct of timely Risk and change management. The AOHL is a live document within the DAM and **should** be subject to formal review at least quarterly. It **should** be an agenda item at monthly Air Safety meetings to ensure any amendments are captured and discussed in order that the HoE and ADHs / AM(MFs) can discharge their duties iaw RA 1200¹⁰.
- e. Ensure that an appropriate Aerodrome wildlife Risk Management programme is established and implemented iaw RA 3270¹¹.
- f. Ensure that all personnel who need to enter the Movement Area or other operational areas are both trained and qualified and that movements of personnel and vehicles are coordinated with movements of Aircraft iaw RA 3262¹².
- g. Develop and maintain Low Visibility Procedures to ensure that all measures required to protect Aircraft operations in poor weather conditions are in place iaw RA 3274¹³.
- h. Ensure that Aerodrome management and operations activity is fully integrated into all relevant Air Safety Management Systems¹⁰ (ASMS) and that effective Safety Management arrangements are established with all interfacing AoRs and relevant organizations (such as Air System operators, air navigation service providers and ground handling service providers).

⁶ On HM Aircraft carriers, Commander (Air) will assume the role of AO and **should** comply with Book of Reference (BRd) 766 where the MRP (1000 or 3000 series Regulation) is not relevant.

⁷ In the context of this RA, recreational flying is considered to be flight in privately-owned civil registered Aircraft, such as at flying clubs, etc, operated by civilian personnel or MOD personnel out with their MOD duties.

⁸ Refer to RA 1205 – Air System Safety Cases.

⁹ Refer to RA 1026(4): Management of a Defence Aerodrome Manual and Defence Aerodrome Assurance Framework.

¹⁰ Refer to RA 1200 – Air Safety Management.

¹¹ Refer to RA 3270 – Aerodrome Wildlife Control.

¹² Refer to RA 3262 – Aerodrome Access and where applicable, Royal Navy (RN) personnel **should** comply with BRd 761 and BRd 766.

¹³ Refer to RA 3274 – Low Visibility Procedures.

**Acceptable
Means of
Compliance
1026(2)**

- i. Ensure that the Maintenance of Aerodrome Communication, Navigation and Surveillance equipment covers repair instructions, servicing information, troubleshooting and inspection procedures iaw extant support policy statements¹⁴.
 - j. Schedule Aerodrome inspections and surveys to ensure the Maintenance of Aerodrome lighting, Aerodrome operating surfaces and Aircraft arresting equipment iaw the MRP. Orders **should** cover repair instructions, servicing information and troubleshooting.
 - k. Ensure that adequate Aerodrome Rescue and Fire-Fighting services (ARFF) are provided¹⁵, and an Aerodrome emergency plan is developed and maintained iaw the Manual of Aircraft Post Crash Management, RA 1430¹⁶, RA 3261¹⁷ and DSA 02 Defence Fire Safety Regulator (DFSR).
 - l. Assure the accuracy of Aerodrome data and aeronautical information iaw RA 1030¹⁸.
 - m. Ensure that the Aerodrome physical characteristics are managed iaw the RA 3500 series¹⁹.
 - n. Ensure that Incidents or Occurrences are reported and investigated iaw RA 1410²⁰.
4. The Aviation facilities for aviation capable HM / MOD Ships **should** comply with the requirements of Def Stan 00-133 and BRd 766²¹.
5. Where host nation or multi-national relationships exist, the AO **should** ensure a formal agreement is produced to facilitate the safe operation of Air Systems within the relevant AoR.

**Guidance
Material
1026(2)**

Aerodrome Operator Responsibilities

- 6. There is no requirement for the AO to be based at the Aerodrome. Day-to-day management of the Aerodrome may be delegated, but the AO retains full responsibility.
- 7. Relevant HM / MOD Ship aviation data is published in BRd 766²¹ maintained by Navy Command.

**Regulation
1026(3)**

Aerodrome Operator Qualifications and Experience

1026(3) An AO **shall** be a SQEP.

**Acceptable
Means of
Compliance
1026(3)**

Aerodrome Operator Qualifications and Experience

- 8. To be considered a SQEP an AO **should** meet the following criteria:
 - a. Relevant OF3 command or Flying Supervisor experience, within either:
 - (1) A flying squadron; or
 - (2) Air Operations at a Standard Aerodrome²² as a minimum; or
 - (3) Air Operations on a HM Aircraft carrier.

¹⁴ Maintenance policy information for technical equipment, including software, is detailed in AP600, King's Regulations Chapter 11 and specialist APs Support Policy Statement (SPS) or equivalent Naval Ship Support Publication.

¹⁵ For MOD Aerodromes where ARFF provision is via the Defence ARFF Service Provider, this is laid out in the Joint Business Agreement (JBA) or Internal Business Agreement (IBA) between the Defence ARFF Service Provider and the TLBs and **should** be contained within Annex E of the DAM.

¹⁶ Refer to RA 1430 – Aircraft Post Crash Management and Significant Occurrence Management.

¹⁷ Refer to RA 3261 – Aerodrome Service.

¹⁸ Refer to RA 1030 – Defence Aeronautical Information Management.

¹⁹ Refer to RA 3500 Series – Aerodrome Design and Safeguarding.

²⁰ Refer to RA 1410 – Occurrence Reporting and Management.

²¹ Refer to BRd 766 – Embarked Aviation Orders.

²² Refer to RA 3263 – Aerodrome Classification.

**Acceptable
Means of
Compliance
1026(3)**

- b. Completed the Aerodrome Operators Study Period²³ prior to appointment or no later than 6 months from taking up post²⁴.

**Guidance
Material
1026(3)**

Aerodrome Operator Qualifications and Experience

9. The following qualifications are desirable:
- a. Flight Safety Officers Course²⁵.
 - b. Aircraft Post Crash Management Incident Officers Course²⁵.

**Regulation
1026(4)**

Management of a Defence Aerodrome Manual and Defence Aerodrome Assurance Framework

- 1026(4) The AO **shall** develop and maintain a DAM and Defence Aerodrome Assurance Framework (DAAF) for their AoR.

**Acceptable
Means of
Compliance
1026(4)**

Management of a Defence Aerodrome Manual and Defence Aerodrome Assurance Framework

10. The AO **should** ensure that the DAM is accurate and up to date, with amendments made when changes occur²⁶. The current MAA DAM template²⁷ **should** be used as the standard format to produce the DAM.
11. The DAM **should** be reviewed:
- a. Prior to / following any change or new activity that may impact the SOE.
 - b. As a formal element to succession activities to ensure the incoming AO is personally content with their ADH / AM(MF)-Facing responsibilities.
 - c. Regularly, in line with relevant Risk Register reviews²⁸.
12. The DAM **should** be an open-source document to ensure it is available to all Aerodrome users unless considerations in the operational domain override the Air Safety function of the DAM.
13. The AO **should** ensure that a DAAF is established and maintained, in conjunction with the DAM, to collate all Assurance activity. The DAAF **should** cover all activities within the DAM to form a full record of Assurance at 1st, 2nd and 3rd party levels.
14. The production of a bespoke DAM is not required for aviation capable HM / MOD Ships. SO1 Aviation Policy within Navy Command **should** ensure that the BRd 766²¹ process is adhered to.

**Guidance
Material
1026(4)**

Management of a Defence Aerodrome Manual and Defence Aerodrome Assurance Framework

15. The purpose of the DAM is to provide, in a standardized format, a mechanism to inform military and civilian operators of the Aerodrome facilities, services, operating procedures and any known Aerodrome Hazards. It will be easily accessible on the Aerodrome MOD Intranet and Internet sites. The DAM, when used in conjunction with the DAAF, also provides reference material for the AO to ensure that all Aerodrome management requirements are being met and assured correctly.

²³ Only applicable to land based Aerodromes, Commander (Air) **should** complete the RN equivalent.

²⁴ Only applicable if arrived in post after June 2022 when Aerodrome Operators Study Period (AOSP) was implemented, but this does not preclude an AO that falls outside this bracket from attending.

²⁵ Refer to RA 1440 – Air Safety Training.

²⁶ Where applicable, the Military Aeronautical Information Publication (AIP) and Civilian AIP **should** be amended at the same time and a Notice to Aviation (NOTAM) submitted, if required, to cover the interim period resulting from the Aeronautical Information Regulation and Control (AIRAC) cycle.

²⁷ The DAM template is available on the MAA website as a Microsoft Word file.

²⁸ Refer to RA 1210 – Ownership and Management of Operating Risk (Risk to Life).

**Guidance
Material
1026(4)**

16. It is acceptable for the DAM to contain hyperlinks to other documents, for example an Air Traffic Control Order Book, provided that the hyperlinks are accessible to all DAM readers.
17. The DAAF is the tool by which 1st, 2nd and 3rd Party Assurance is captured so that the AO can provide assurance that the Aerodrome is being managed in a way that accommodates the safe operation of Air Systems.
18. There is no requirement to publish the DAAF as an open-source document. However, the DAAF will be made available to 2nd and 3rd Party Assurance organizations on request.

**Regulation
1026(5)**

Non-MOD Aerodrome Assurance

- 1026(5) Withdrawn – Incorporated into RA 1010(6)²⁹.

**Acceptable
Means of
Compliance
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Non-MOD Aerodrome Assurance

19. Withdrawn – Incorporated into RA 1010(6).

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Material
1026(5)**

Non-MOD Aerodrome Assurance

20. Withdrawn – Incorporated into RA 1010(6).

**Regulation
1026(6)**

Tier 3 Site Assurance

- 1026(6) Withdrawn – Incorporated into RA 1010(5)³⁰.

**Acceptable
Means of
Compliance
1026(6)**

Tier 3 Site Assurance

21. Withdrawn – Incorporated into RA 1010(5).

**Guidance
Material
1026(6)**

Tier 3 Site Assurance

22. Withdrawn – Incorporated into RA 1010(5).

**Regulation
1026(7)**

Recreational Flying – MOD Aerodrome Assurance

- 1026(7) Withdrawn – Incorporated into RA 1010(4)³¹.

**Acceptable
Means of
Compliance
1026(7)**

Recreational Flying – MOD Aerodrome Assurance

23. Withdrawn – Incorporated into RA 1010(4).

**Guidance
Material
1026(7)**

Recreational Flying – MOD Aerodrome Assurance

24. Withdrawn – Incorporated into RA 1010(4).

²⁹ Refer to 1010(6): Aviation Duty Holder / Accountable Manager (Military Flying) Safe Operating Environment Responsibilities.

³⁰ Refer to 1010(5): Tier 3 and Tier 4 Head of Establishment Responsibilities.

³¹ Refer to 1010(4): Tier 2 Recreational Flying Only Head of Establishment Responsibilities.

**Regulation
1026(8)**

Aerodrome Supervisor (Recreational Flying) Responsibilities

1026(8) An Aerodrome Supervisor (Recreational Flying) (AS(RF)) **shall** be responsible, on behalf of the HoE, for the supervision of a MOD Aerodrome environment where recreational flying⁷ is conducted as the primary activity.

**Acceptable
Means of
Compliance
1026(8)**

Aerodrome Supervisor (Recreational Flying) Responsibilities

25. An AS(RF) enables the HoE to discharge their responsibilities regarding the provision of a SOE³¹. The AS(RF) **should** ensure that Aerodrome management and operations activity is fully integrated with all appropriate stakeholders.

26. Specifically, the AS(RF) **should**:

- a. Establish and maintain formal mechanisms for the management and Assurance of all Aerodrome activities, operating procedures, standards, flight safety and regulatory compliance within their AoR, through the production and maintenance of an Aerodrome Safe Operating Environment Manual (ASOEM)³².
- b. Identify and monitor any decision, activity or change in circumstances that results in a Hazard or change to the Aerodrome or its facilities. These Hazards or changes **should** be communicated through effective formal relationships with the HoE and appropriate stakeholders.
- c. Promulgate Aerodrome operating Hazards through the ASOEM Hazard Log, to facilitate the conduct of timely Risk and change management. The ASOEM Hazard Log **should** be subject to formal review at least quarterly and be included as an agenda item at Air Safety meetings. The AS(RF) **should** ensure amendments are captured, discussed and forwarded to the HoE and appropriate stakeholders.
- d. Ensure that an appropriate Aerodrome wildlife Risk Management programme is considered in consultation with the HoE iaw RA 3270¹¹.
- e. Ensure that all personnel who need to enter the Movement Area or other operational areas are both trained and qualified and that movements of personnel and vehicles are coordinated with movements of Aircraft iaw RA 3262¹².
- f. Ensure that appropriate Safety Management arrangements are established with all other Aerodrome users, to maintain safe operating practices.
- g. Schedule Aerodrome inspections and surveys to ensure that the Aerodrome remains safe and compliant iaw RA 3264³³.
- h. Consider the requirement for Rescue and Fire-Fighting provision and ensure that an Aerodrome emergency plan is developed and maintained to the satisfaction of the HoE.
- i. Where applicable, assure the accuracy of Aerodrome data and aeronautical information iaw RA 1030¹⁸.
- j. Inform the HoE of any Incidents or Occurrences and ensure that they are reported iaw RA 1410²⁰ and Civil Air Publication (CAP) 382³⁴.

**Guidance
Material
1026(8)**

Aerodrome Supervisor (Recreational Flying) Responsibilities

27. Nil.

³² Refer to RA 1026(10): Management of an Aerodrome Safe Operating Environment Manual.

³³ Refer to RA 3264 – Aerodrome Inspections.

³⁴ Refer to CAP 382 – Occurrence Reporting Scheme.

**Regulation
1026(9)****Aerodrome Supervisor (Recreational Flying) Qualifications and Experience**

1026(9) An AS(RF) **shall** be a SQEP.

**Acceptable
Means of
Compliance
1026(9)****Aerodrome Supervisor (Recreational Flying) Qualifications and Experience**

28. To be considered a SQEP, an AS(RF) **should** meet the following criteria:
- a. Relevant command or Flying Supervisor experience, within either:
 - (1) Air Operations at a Standard Aerodrome²²; or
 - (2) Air Operations on a HM Aircraft carrier; or
 - (3) A flying Squadron; or
 - (4) RAF Sport Association – affiliated flying school / club; or
 - (5) Be, or have been, a civilian Chief Flying Instructor at a recognized Declared Training Organization / Approved Training Organization.
 - b. Completed the Aerodrome Operators Study Period prior to appointment or no later than 6 months from taking up post³⁵.

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Material
1026(9)****Aerodrome Supervisor (Recreational Flying) Qualifications and Experience**

29. The following qualifications are desirable:
- a. Flight Safety Officers Course²⁵.
 - b. Aircraft Post Crash Management Incident Officers Course²⁵.

**Regulation
1026(10)****Management of an Aerodrome Safe Operating Environment Manual**

1026(10) The AS(RF)³⁶ **shall** develop and maintain an Aerodrome Safe Operating Environment Manual (ASOEM) for their AoR.

**Acceptable
Means of
Compliance
1026(10)****Management of an Aerodrome Safe Operating Environment Manual**

30. The AS(RF)³⁶ **should** ensure that the ASOEM is accurate and up to date, with amendments made when changes occur²⁶.
31. The ASOEM **should** be reviewed:
- a. Prior to / following any change or new activity that may impact the SOE.
 - b. As a formal element to succession activities to ensure the incoming HoE or AS(RF) is content with their responsibilities.
 - c. At least 6 monthly.
32. The ASOEM **should** be an open-source document to ensure it is available to all Aerodrome users unless considerations in the operational domain override the Air Safety function of the ASOEM.

**Guidance
Material
1026(10)****Management of an Aerodrome Safe Operating Environment Manual**

33. The ASOEM Template³⁷ is recommended to be used as a 'handrail' to ensure that all elements of operating from the MOD Aerodrome are considered. Where existing documents cover the information required in the ASOEM, the information need not be duplicated and a simple reference to the source document may be inserted. The compiler may add additional categories or annexes as they see fit.

³⁵ Only applicable if arrived in post after June 2022 when AOSP was implemented, but this does not preclude an AS(RF) that falls outside this bracket from attending.

³⁶ Or a suitably nominated individual iaw RA 1010(4): Tier 2 Recreational Flying Only Head of Establishments Responsibilities para 30 or RA 1010(5): Tier 3 and Tier 4 Head of Establishment Responsibilities para 37.

³⁷ The ASOEM template is available on the MAA website as a Microsoft Word file.

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RA 1027 - Air Traffic Management Equipment Organizations - Responsibilities of Contracted Organizations

Rationale

Provision of Air Traffic Management (ATM)¹ is a mitigating factor against the operating Risk to Life² associated with military aviation and requires a variety of equipment. Inaccuracies or failures in the equipment supporting the ATM task may erode this barrier. ATM Equipment Organizations³ that are contracted by the UK MOD are required to operate under an appropriate approval scheme⁴, in order to demonstrate their competency and suitability to appropriately support the safe and efficient provision of ATM. This regulation defines the responsibilities of ATM Equipment Organizations that are contracted by the UK MOD.

Contents

1027(1): Responsibilities ▶ ◀

Regulation 1027(1)

Responsibilities ▶ ◀

1027(1) ATM Equipment Organizations that are contracted by the UK MOD **shall** be approved by the MAA and comply with the MAA Regulatory Publications (MRP).

Acceptable Means of Compliance 1027(1)

Responsibilities ▶ ◀

1. ATM Equipment Organizations that are contracted by the UK MOD **should** be approved Organizations in accordance with (iaw) the ATM Equipment Approved Organization Scheme (AAOS)⁵.
2. ATM Equipment Organizations that are contracted by the UK MOD and required to be part of the AAOS **should**:
 - a. Comply with the MRP to qualify for the issue and continuation of an AAOS Approval.
 - b. Operate iaw the scope of their AAOS Approval Certificate and Schedule.
 - c. Appoint an Accountable Manager (AM)⁶ who has organizational authority and accountability for all activities conducted within the scope of the Organization's ATM Equipment activities⁷.
 - d. Have in place:
 - (1) An Air Safety Management System (ASMS) iaw with RA 1200⁸.
 - (2) An effective Quality Management System (QMS) certified by a national accreditation body, with a scope appropriate to the Organization's ATM Equipment activities.
 - (3) An Occurrence Reporting and Error Management System iaw RA 1410⁹.

Guidance Material 1027(1)

Responsibilities ▶ ◀

3. In order to meet the requirements of the AAOS, ATM Equipment Organizations may have an integrated ASMS and QMS. The MAA Manual of Air Safety contains guidance material applicable to establishing and maintaining an effective ASMS.

¹ As defined in MAA02: Military Aviation Authority Master Glossary.

² Refer to RA 1210 – Ownership and Management of Operating Risk (Risk to Life).

³ In-scope ATM Equipment Organizations are those Organizations that are contracted by the UK MOD to provide and/or install ATM Equipment ▶ ◀, and/or provide technical services that support ATM Equipment.

⁴ Refer to RA 1005 – Contracting with Competent Organizations.

⁵ Refer to RA 3100 – Air Traffic Management ▶ Equipment ◀ Approved Organization Scheme.

⁶ Refer to RA 3102 – Air Traffic Management ▶ Equipment ◀ Approved Organization Scheme Accountable Manager.

⁷ For the purpose of the AAOS, this is limited to those ATM Equipment activities that are contracted by the UK MOD.

⁸ Refer to RA 1200 – ▶ ◀ Air Safety Management.

⁹ Refer to RA 1410 – Occurrence Reporting ▶ and Management. ◀

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

RA 1028 – Contractor Flying Approved Organization Scheme

Rationale

Civilian organizations are required to operate UK military registered crewed Aircraft and Specific S2 sub-category and Certified Category Remotely Piloted Air Systems (RPAS). Without appropriate regulatory oversight of such organizations; Aircrew, groundcrew, and third parties could be exposed to unnecessary Risk. This Regulatory Article (RA) details the requirements for the Contractor Flying Approved Organization Scheme (CFAOS)¹ which in turn ensures such organizations comply with the MAA Regulatory Publications (MRP) and are subjected to appropriate Regulatory oversight.

Contents

- 1028(1): Organization**
- 1028(2): Accountable Manager (Military Flying)**
- 1028(3): Application and Approval**
- 1028(4): Contractor Flying Organization Exposition**

Regulation 1028(1)

Organization

1028(1) Contractor flying organizations operating crewed Aircraft or Specific S2 sub-category or Certified Category RPAS **shall** hold a CFAOS² Approval to fly or operate UK military registered Air Systems.

Acceptable Means of Compliance 1028(1)

Organization

1. CFAOS organizations **should**:
 - a. Operate in accordance with (iaw) the scope of their CFAOS Approval Certificate and Schedule.
 - b. Comply with the MRP to qualify for the issue and continuation of a CFAOS Approval.
 - c. Establish and maintain a system for the control of all Air Systems operated under the terms of its CFAOS Approval.
 - d. Appoint an Accountable Manager (Military Flying)³ (AM(MF)), accountable for the operating Risk to Life (RtL) of those Air Systems operated under the terms of its CFAOS Approval, and who is appropriately empowered with:
 - (1) The freedom and authority to undertake the role.
 - (2) The resources to ensure that Air Safety is not compromised.
 - e. Have in place⁴:
 - (1) An Air System Safety Case⁵ (ASSC).
 - (2) An Air Safety Management System⁶ (ASMS).
 - (3) An Operations Manual which conveys how the organization meets the requirements of the MRP.
 - (4) A Flight Safety organization⁷.

¹ The CFAOS is the Assurance mechanism underpinning the competence of Defence Contractor Flying Organizations (DCFO) that operate crewed Aircraft and Specific S2 sub-category and Certified Category RPAS on the UK Military Aircraft Register. Organizations operating under the CFAOS may be referred to as CFAOS organizations.

² For Open Category and Specific S1 RPAS sub-categories, this RA does not apply. Refer to RA 1031 – Contractor Flying Approved Organization Scheme (Basic Remotely Piloted Air Systems).

³ Refer to RA 1028(2): Accountable Manager (Military Flying).

⁴ This list is not exhaustive.

⁵ Refer to RA 1205 – Air System Safety Cases.

⁶ Refer to RA 1200 – Air Safety Management.

⁷ Refer to RA 1400 – Flight Safety.

**Acceptable
Means of
Compliance
1028(1)**

- (5) An effective Quality Management System (QMS), certified by a national accreditation body, with a scope appropriate to the organization's aviation operations under its CFAOS Approval.
- (6) An Occurrence Reporting and Error Management System⁸.
- f. Ensure that:
- (1) Operating activities are iaw the Defence Air Environment (DAE) Operating Categories^{9, 10} assigned by the MOD Sponsor(s)¹¹.
- (2) Every flight is conducted iaw the provisions of the Organization's Operations Manual, and that the Operations Manual specifies as a minimum:
- (a) The procedures and instructions for the safe operation of each Air System type operated under the terms of its CFAOS Approval, describing Aircrew, Supernumerary Crew, and Supernumerary Support Crew duties and responsibilities in flight and on the ground.
- (b) The flight planning procedures and supporting activities to provide for safe flight based on considerations of Air System performance, other operating limitations and relevant expected conditions en route and at the Aerodromes and / or operating sites concerned.
- (3) Personnel assigned to, or directly involved in, flight and ground operations, are appropriately qualified, trained and equipped for their duties.
- (4) Adequate Support Services are available¹².
- (5) When contracting or purchasing any part of its activity, the contracted or purchased service or product conforms to MRP requirements¹³.
- g. Ensure that the MAA is:
- (1) Granted appropriate access to the organization for the purpose of determining initial and continued regulatory compliance.

**Guidance
Material
1028(1)**

Organization

2. The issue and continuation of a CFAOS Approval is subject to compliance with the relevant Regulations.
3. Reference is frequently made to the 'Operations Manual', which would normally follow the format of the template provided (on the MAA's websites), which aligns the structure of the Operations Manual with the MRP. However, this may be fulfilled by alternative means, such as orders or instructions. Where an alternative is used, a clarifying document has to be provided which clearly demonstrates how the requirements of the MRP are met.
4. If an organization contracts any part of its flying activity to another organization, it must do so iaw RA 1005.

Compliance

5. Compliance with the MRP requires compliance with the latest issues of all applicable RAs.
6. Organizations will be subject to compliance Assurance activities conducted by or on behalf of the MAA. MRP compliance will be assessed by the MAA using a Risk-

⁸ Refer to RA 1410 – Occurrence Reporting and Management.

⁹ Refer to RA 1160 – The Defence Air Environment Operating Framework.

¹⁰ Refer to RA 1162 – Air Safety Governance for Civilian Operated (Development) and (In-Service) Air Systems; and RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.

¹¹ Refer to RA 1019 – Sponsor of Military Registered Civilian-Owned and Civilian Operated Air Systems - Air Safety Responsibilities.

¹² Refer to RA 3049 – Defence Contractor Flying Organization responsibilities for UK Military Air System Operating Locations.

¹³ Refer to RA 1005 – Contracting with Competent Organizations.

**Guidance
Material
1028(1)**

based approach. Access will be required to personnel, facilities, Air Systems, documents, records, data, procedures and any other materials relevant to compliance.

7. Costs for periodic compliance Assurance activities conducted by or on behalf of MAA will not be recoverable from the MOD.
8. The MAA will withdraw CFAOS Approval from organizations that no longer meet compliance or any other stipulated requirements.

**Regulation
1028(2)**

Accountable Manager (Military Flying)

1028(2) CFAOS organizations **shall** appoint a Suitably Qualified and Experienced Person (SQEP) to be the AM(MF), who is appropriately empowered to undertake their role, and is supported by appropriate persons.

**Acceptable
Means of
Compliance
1028(2)**

Accountable Manager (Military Flying)

9. AM(MF)s **should**:
 - a. Be responsible and accountable for the operation of all Air Systems within their Area of Responsibility (AoR).
 - b. Own and manage an ASSC⁶ for each Air System within their AoR that demonstrates the Air System is safe to operate and being operated safely within a clearly defined context¹⁴.
 - c. Cease aviation operations if RtL are identified that are not demonstrably As Low As Reasonably Practicable (ALARP) and Tolerable.
 - d. Challenge any actions or measures that could undermine the ASSC, and might result in the RtL in activities for which the AM(MF) is responsible no longer being ALARP and Tolerable.
 - e. Actively promote, and demonstrate leadership commitment to, an Engaged Air Safety Culture (EASC)¹⁵.
 - f. Establish and maintain an Operations Manual which conveys how the organization meets the requirements of the MRP.
 - g. Appoint and approve post-holders to support them covering the following areas to provide them with specialist support in delivering their responsibilities¹⁶.
 - (1) Flight Operations¹⁷.
 - (2) Crew Training¹⁸.
 - (3) Ground Operations.
 - h. Appoint a Military Continuing Airworthiness Manager¹⁹.
 - i. Act as the organization's senior point of contact with the MAA.
10. AM(MF)s **should** ensure that:
 - a. Any significant changes to their operating responsibilities or to their supporting safety system / organization that might affect the discharge of their AM(MF) responsibilities are reported immediately to the MAA²⁰.

¹⁴ That is, for a given application(s) in a given operating environment(s).

¹⁵ Refer to the MAA Manual of Air Safety (MAS).

¹⁶ This list is the minimum requirement, it is not exhaustive. AM(MF)s **should** consider the appointment of further post-holders covering other areas as relevant to the air activities and / or structure of their organizations, particularly where those areas directly impact Air Safety.

¹⁷ Where Test and Evaluation (T&E) is included in the organization's CFAOS Approval schedule the Flight Operations post-holder's responsibilities are to include T&E, unless a dedicated T&E post-holder is deemed more appropriate for the structure of the organization iaw Footnote 16. Refer to RA 2370 – Test and Evaluation.

¹⁸ To cover Aircrew and Supernumerary Crew training provided by the organization.

¹⁹ Refer to RA 1016 – Military Continuing Airworthiness Management.

²⁰ Contact via DSA-MAA-OpAssure-CFAOS-GROUP@mod.gov.uk.

**Acceptable
Means of
Compliance
1028(2)**

- b. All operating activity remains in the appropriate DAE Operating Category^{9, 10} assigned by the MOD Sponsor(s), and is conducted in accordance with the limitations as articulated in RA 1160 Annex A Table A-1.
 - c. A safe operating environment is being provided appropriate to the organization's aviation operations under its CFAOS Approval^{21, 12}.
 - d. The inputs to and effects on their ASSC(s) from Aviation Duty Holder (ADH)-Facing Organizations and AM(MF)-Facing Organizations (Internal)²² are fully supported by rational arguments and appropriate evidence, through appropriate Service Level Agreements or other mechanisms.
 - e. They liaise with and share any pertinent Air Safety information with ADHs and other AM(MF)s, particularly with operators of the same or similar Air Systems.
 - f. The following have been established and are maintained:
 - (1) An ASMS⁶ relevant to the activities undertaken by the Air System types operated under the terms of the organization's CFAOS Approval.
 - (2) A Flight Safety organization⁷.
 - (3) An effective QMS, certified by a national accreditation body, with a scope appropriate to the organization's aviation operations under its CFAOS Approval.
 - (4) An Occurrence Reporting and Error Management System⁸.
11. AM(MF) nominees **should**:
- a. Apply to the MAA for endorsement of their suitability to undertake the role of AM(MF).
 - b. Expect to attend an MAA endorsement interview, normally with the Director MAA, at which they are required to provide evidence of suitability for role.

**Guidance
Material
1028(2)**

Accountable Manager (Military Flying)

12. AM(MF)s will meet with the MAA as required to allow the MAA to examine the higher-level Safety Management of the operation.
13. **Air Safety.**
- a. AM(MF)s have a personal level of Duty of Care (DofC) for:
 - (1) The personnel under their control; those who, by virtue of their temporary involvement in aviation activities, come within an AM(MF)'s AoR; and
 - (2) The wider public who may be affected by their operations.
 - b. AM(MF)s are thus accountable for the safe operation of Air Systems in their AoR and for ensuring that RtL is ALARP and Tolerable. The Air Safety AM(MF) governance model does not absolve managers at any level of their broader, enduring DofC responsibilities such as those under Common Law and the Health and Safety at Work Act (1974).
 - c. During the life cycle of an Air System, AM(MF) responsibilities apply to the following:
 - (1) First and / or second parties for whom an AM(MF) is made explicitly responsible, whether permanently or temporarily assigned, who are involved in the operation of the Air System.
 - (2) Third parties exposed to Risk as a result of operation of the Air System.

²¹ Refer to RA 1010 – Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities.

²² Refer to RA 1032 – Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations - Roles and Responsibilities.

**Guidance
Material
1028(2)**

14. **EASC.** The first line of defence in Air Safety is the establishment of an EASC as defined in the MAS. The AM(MF) has a key role to play in establishing and sustaining such a culture, and it is imperative that Accountable Managers at all levels lead by example in nurturing and developing an EASC.

15. **AM(MF) Appointment and Suitability.**

a. **Appointment.** An AM(MF) will be a Senior Manager within the organization who has formal responsibility for the delivery of safe aviation operations, and who is directly appointed at main Board level²³. The term Senior Manager will be taken to mean a manager who possesses the authority to make independent decisions on Air Safety without recourse to superiors or executives. The Senior Manager will normally sit at Board level (or equivalent divisional level) or, if reporting to a relevant Board, to have delegated authority. Where the organization wishes to nominate an alternative candidate to one at Board level the organization will be required to demonstrate that the candidate holds equivalent authority to execute Air Safety decisions. The MAA may recognize an individual as an organization's appointed AM(MF) prior to formal MAA endorsement (see also paragraph 16).

b. **Suitability.** 'Suitability' for the AM(MF) role means being able to demonstrate appropriate knowledge and understanding of the ASMS and relevant documents that prescribe Safety processes and standards. This includes, but is not limited to, the following:

- (1) MRP.
- (2) ASSC.
- (3) ASMS.
- (4) Operating Risk.
- (5) Air Safety.
- (6) Continuing Airworthiness (CAw), including the MAA Maintenance Approved Organization Scheme and CAw Management Organization.
- (7) Roles and responsibilities of the AM(MF).
- (8) Knowledge and understanding of subordinate post-holder roles and responsibilities.

Note:

Prior to appointment as an AM(MF), attendance at the Contractor Flying Air Safety Course²⁴ will greatly assist AM(MF) candidates unfamiliar with the above topics in understanding their applicability to their specific organization and operating context.

16. **Endorsement of AM(MF) by the MAA.**

a. **Application and Submission.** In the first instance, AM(MF) nominees will apply to the MAA for endorsement using an MAA CFAOS Form 4²⁵. Thereafter, and in consultation with the MAA, supporting evidence for interview will be provided to the MAA CFAOS Branch at least 10 working days prior to interview. The organization's Contractor Flying Organization Exposition²⁶ (CFOE), ASMS and Operations Manual, which communicate how the organization intends to meet the requirements of the MRP, will provide the foundation of the AM(MF) submission. Further evidence required in the AM(MF) submission will include, but is not limited to:

- (1) Organizational structure, to allow understanding of the AM(MF)'s position within the organization, including appropriate explanation of the powers held and relational links to post-holders.

²³ Upon which the Managing Director, Chief Executive Officer or equivalent usually sit.

²⁴ Refer to RA 1440 – Air Safety Training.

²⁵ The MAA CFAOS Form 4 can be found on the CFAOS Approvals page of the MAA website <https://www.gov.uk/government/publications/contractor-flying-approved-organization-scheme-cfaos>.

²⁶ Refer to RA 1028(4): Contractor Flying Organization Exposition.

Guidance Material 1028(2)

(2) Explanation of the AM(MF)'s independence, including access to adequate resource, to allow enactment of MRP requirements without hindrance.

(3) The organization's future aspirations, where applicable.

(4) A tailored CV detailing the AM(MF)'s professional background highlighting, where applicable, any involvement with aviation operations.

b. **Endorsement Interview.** The AM(MF) endorsement interview will be led by senior MAA staff and may last up to 2 hours. The preferred location is the MAA Bristol Headquarters; however, the interview may be conducted by other means, agreed on a case-by-case basis. The interview will cover 3 broad areas²⁷:

(1) A description of the AM(MF)'s roles and responsibilities.

(2) A discussion regarding how the AM(MF) intends to comply with RA 1028 and the wider MRP.

(3) A discussion of the evidence provided in the AM(MF) submission including, where applicable, the organization's performance at previous audits.

Note:

The MAA may recognize an individual as an organization's appointed AM(MF) prior to the Endorsement Interview, on receipt of the appropriate MAA CFAOS Form 4, a copy of the relevant appointment letter from the main Board, and a date agreed for transfer of accountability for operating RtL.

17. AM(MF) Change.

a. Following any significant change to an AM(MF)'s responsibilities, the MAA will review the relevant AM(MF) endorsement.

b. Arrangements for AM(MF) succession will include a formal pan-Defence Line of Development review of the ASSC.

Regulation 1028(3)

Application and Approval

1028(3) CFAOS Organizations **shall** be approved by the MAA.

Acceptable Means of Compliance 1028(3)

Application and Approval

Application

18. Organizations operating UK military registered crewed Aircraft or Specific S2 sub-category or Certified Category RPAS in the Civilian Operated (Development), Civilian Operated (In-Service) and Special Case Flying DAE Operating Categories **should** be approved under the CFAOS by the MAA.

19. To be considered for approval under the CFAOS an organization **should**:

a. Have the endorsement of an appropriate MOD Sponsor at 2* level or above²⁸.

b. Demonstrate that Approval is in either:

(1) The UK MOD Interest; or

(2) Satisfies a wider National interest.

20. Applications for CFAOS Approval **should** be:

a. Made using MAA CFAOS Form 2, hosted on the MAA's websites.

²⁷ A more detailed list of potential discussion topics will be provided by the MAA CFAOS Branch prior to interview.

²⁸ Note that an MOD Sponsor **should** be listed for each Air System type / mark, specified for each respective DAE Operating Category the Air Systems are to be operated within.

**Acceptable
Means of
Compliance
1028(3)**

- b. Supported by a CFOE, an Operations Manual and any other applicable documents.

Approval

21. A CFAOS Approval **should** be issued for an unlimited duration and remain valid subject to:

- a. The organization remaining in compliance with the MRP.
- b. The MAA being granted access to the organization to determine continued compliance with the MRP.
- c. The Approval Certificate not being surrendered, suspended or revoked.
- d. Continued endorsement of UK MOD Interest and / or National interest.

22. Revoked or surrendered CFAOS Approval Certificates **should** be returned to the MAA.

Approval Changes

23. Following award of CFAOS Approval, organizations **should**, at the earliest opportunity:

- a. Consult with the MAA on any issue that might affect their CFAOS Approval.
 - b. Notify the MAA of any factors likely to affect or influence the extant Approval such as:
 - (1) Changes in scope of its CFAOS Approval Certificate or Schedule.
 - (2) The applicability / pertinence of the assigned DAE Operating Categories, as assigned by the MOD Sponsor(s).
 - (3) Changes to key CFAOS personnel²⁹.
 - (4) Changes of any elements of its management system.
 - c. Ensure that:
 - (1) Any uplifts³⁰ or significant changes / variations to the Approval are:
 - (a) Formally applied for; and
 - (b) Only implemented on receipt of an appropriately amended CFAOS Approval Schedule, endorsed by the MAA.
 - (2) Any reductions³¹ are formally notified to the MAA at the earliest opportunity.
 - (3) Formal uplift / reduction applications and notifications are supported by:
 - (a) Documentation³² detailing the proposed changes.
 - (b) An updated³³ CFOE and / or Operations Manual.
 - d. Consult with the MAA CFAOS Branch where doubt exists as to whether a scope change is an uplift, reduction or otherwise.

²⁹ Principally the AM(MF), post-holders, Safety Manager, Quality Manager.

³⁰ Such as: addition of Air System type / change of Mark, change in DAE Operating Category / Categories, or the addition of further aviation activities.

³¹ Such as removal of Air System type.

³² For uplift the documentation required needs to be analogous to that required to support an initial application for that activity.

³³ Changes / updates from previous versions need to be immediately apparent and clearly marked using methods such as: track change notation; highlighting; sidebars.

**Guidance
Material
1028(3)**

Application and Approval

Application

24. Organizations seeking new approvals need to be aware that the timeline from application to approval typically takes at least 18 months. Early dialogue with the MAA is encouraged; however, organizations need to note that formal engagement cannot be initiated until an MAA CFAOS Form 2, endorsed by the relevant MOD Sponsor, is in place.

25. CFAOS applications may be phased (ie initial applications may be made via the MAA CFAOS Form 2 (endorsed by the relevant MOD Sponsor)), but with the CFOE and other documents being submitted at a later date.

26. Further guidance for CFAOS application may be found on the MAA websites.

27. While determination as to whether an application is justified in the National interest is a matter for the MOD Sponsor, the MAA interprets National interest in general terms to mean where the activity brings or realises benefit to the interests of either UK Government or UK Trade and Industry.

Approval

28. When it is considered that there is a case for an organization to be included in the CFAOS, a detailed appraisal will be carried out by the MAA. The appraisal will seek to establish long-term confidence in the organization's flight operations personnel and in the company structure relevant to the operations concerned. The organization will be audited via documentary and on-site inspections which will specifically scrutinize⁴:

- a. Scope of activity.
- b. Supporting company structure and facilities.
- c. Suitability, qualifications and experience of the relevant staff.
- d. Compliance with the MRP.
- e. The organization's processes, orders and instructions.

29. **CFAOS Approval Certificate.** When evidence presented by the organization demonstrates that it satisfies the MAA requirements, a CFAOS Approval Certificate will be issued listing:

- a. A unique identifying reference.
- b. The approved organization, including the operating and trading name if different.
- c. The organization's principal place-of-business address.
- d. The issue date (and date of revision if required).
- e. The title, name and signature of the MAA approving officer.

30. **CFAOS Schedule.** A CFAOS Schedule defining the scope of activity allowable within the CFAOS Approval will be issued listing:

- a. The Air System types and marks for which operation is approved.
- b. The DAE Operating Categories for which operation is approved.
- c. The aviation activities for which operation is approved.
- d. Any applicable special limitations (eg Visual Flight Rules-only, day-only, etc).
- e. The applicable CFOE reference, including Issue number and date.
- f. Name and details of the AM(MF).
- g. The title, name and signature of the MAA approving officer.

31. Both the CFAOS Approval Certificate and CFAOS Schedule will be in place prior to an organization operating under the CFAOS.

**Guidance
Material
1028(3)**

32. A CFAOS Approval may be made dormant³⁴ by the MAA as an alternative to formal suspension or withdrawal. Making an Approval dormant prohibits an organization from operating Air Systems for a temporary period and may be used in cases where an organization's operating activities are temporarily undefined or undergoing an as yet undetermined change (for example, where a contract expires or amendment is being negotiated).

33. A list of organizations who have been granted approval under the CFAOS is published on the MAA website.

Approval Changes

34. As a minimum, the MAA needs to be notified of any changes to:

- a. Name and details of the AM(MF).
- b. Names and details of post-holders, the Safety Manager or the Quality Manager.
- c. Air System types and marks to be operated.
- d. The DAE Operating Category / Categories, T&E categories³⁵, RPAS Categories³⁶ and any other aviation activities to be conducted.
- e. Ownership of the organization.
- f. The organization's official name, business name, address and / or mailing address.

35. Application to the MAA for a CFAOS Approval change does not constitute approval to operate to the proposed change.

**Regulation
1028(4)**

Contractor Flying Organization Exposition

1028(4) AM(MF)s **shall** submit a CFOE to the MAA.

**Acceptable
Means of
Compliance
1028(4)**

Contractor Flying Organization Exposition

36. AM(MF)s **should** ensure:

- a. Their CFOE is current and up-to-date.
- b. The MAA is provided with an electronic copy of the current and AM(MF) endorsed CFOE.

37. The CFOE **should**:

- a. Cover the following subject headings:
 - (1) Management.
 - (2) Safety Management.
 - (3) Quality Management.
 - (4) Procedures.
 - (5) Personnel and Training.
 - (6) Security Management.
- b. As a minimum contain the following:
 - (1) For the AM(MF):
 - (a) A description of AM(MF) functions and responsibilities.
 - (b) The qualifications, competencies, skill sets and experience required for appointment.

³⁴ Refer to MAA01 – MAA Regulatory Principles.

³⁵ For applicable T&E terms, refer to RA 2370 – Test and Evaluation.

³⁶ Refer to RA 1600 – Remotely Piloted Air Systems.

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1028(4)**

- (c) Any deputizing responsibilities and arrangements (noting that Rtl accountability cannot be transferred).
 - (d) The competencies, qualifications, skill sets and experience held by the specific individual appointed as AM(MF).
- (2) A statement signed by the AM(MF) confirming that the CFOE and any referenced documents define the organization's compliance with the MRP, and **should** be complied with at all times.
 - (3) The official name and business name, address and mailing address of the applicant.
 - (4) The name of the MOD Sponsor(s), listed for each Air System type / mark, specified against each respective DAE Operating Category the Air Systems are to be operated within.
 - (5) The scope of the organization including: the DAE Operating Category / Categories, Air System types and marks; T&E categories³⁵; RPAS Categories; other aviation activities; and, details of routine operating bases and requirements to undertake temporary detached operations.
 - (6) A description of the organization scale including: numbers of Aircrew, Supernumerary Crew and other personnel associated with the task; numbers of Air Systems; and expected flying rate.
 - (7) A statement of the operating environments expected to be included in the task, such as: embarked; night-vision / electro-optical; formation; unprepared strips; low level; ordnance, munitions and explosives.
 - (8) A statement of which MRP RAs are deemed applicable and the method of compliance³⁷.
 - (9) For post-holders:
 - (a) A description of the functions and responsibilities (Terms of Reference) for each post-holder role.
 - (b) The qualifications, competencies, skill sets and experience required for each post-holder role.
 - (c) Any deputizing responsibilities and arrangements.
 - (d) The names, competencies, qualifications, skill sets and experience held by the specific individuals appointed as post-holders.
 - (10) An organizational chart showing chains and lines of responsibility pertaining to operations under the CFAOS.
 - (11) The names of the Safety Manager and Quality Manager.
 - (12) The organization's Safety and Quality Management Systems and associated policy³⁸ pertaining to operations under the CFAOS.
 - (13) Evidence of experience in flying operations including, where applicable, activities such as training and T&E activities.
 - (14) Evidence of familiarity with UK MOD procedures applicable to the aviation activity to be conducted.
 - (15) The security procedures to be applied to ensure the Safety and Integrity of the Air System is not compromised.
 - (16) Evidence of a QMS certified by a national accreditation body, and that the QMS has an appropriate scope for the aviation activity to be conducted.

³⁷ This may be held in a separate document, referenced from the CFOE.

³⁸ Referencing out to other management systems, documents or processes is acceptable.

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(17) A list of contracted and subcontracted organizations where applicable.

(18) A procedure describing how changes³⁹ not requiring prior MAA approval are managed and notified to the MAA. Where doubt exists the MAA CFAOS Branch **should** be consulted as to whether a change requires prior MAA approval or otherwise.

(19) A CFOE amendment procedure.

(20) A statement that all documentation sent to the MAA has been verified by the applicant and found in compliance with the applicable requirements.

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Contractor Flying Organization Exposition

38. A CFOE is the document, or documents, that contain the material specifying the scope of activity deemed to constitute CFAOS Approval and showing how the organization intends to comply with the MRP.

39. Templates for the CFOE and Operations Manual are on the MAA websites.

Post-Holders

40. AM(MF)s may be post-holders, provided it can be clearly demonstrated that such appointments do not conflict with either their AM(MF) or post-holder responsibilities.

41. Individuals (including the AM(MF)) may be multiple post-holders; ie they may be appointed to more than one post-holder role.

42. Organizations may use any alternative titles for post-holders but will clarify the titles and responsibilities in the CFOE.

43. As a minimum post-holder responsibilities will include:

a. Flight operations post-holder as responsible for ensuring that all flying operations are in compliance with the MRP.

b. Crew training post-holder as responsible for ensuring that all Aircrew training provided by the organization is in compliance with the MRP.

c. Ground operations post-holder as responsible for ensuring that all ground operations conducted are in compliance with the MRP.

d. That all post-holders will possess and be able to demonstrate the relevant knowledge, background and experience applicable to their post-holder role, and hold an appropriately detailed knowledge of the MRP.

³⁹ Such as grammatical and typographical errors where the meaning of the wording remains unchanged.

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RA 1029 – Ship Air-Release - Roles and Responsibilities

Rationale

Operating embarked aviation requires the integration of two complex independent systems, Ship and Air System, which are operated through separate Ship Duty Holder (DH) ► / **Accountable Person (AP)** ◄ and Aviation DH (ADH) / Accountable Manager (Military Flying) (AM(MF)) constructs. With stakeholder engagement required across a pan Defence group, it is essential that the specific roles and responsibilities of these stakeholders are clearly defined and understood. The safe conduct of this embarked activity requires that the Risk to Life (RtL) associated with operating Air Systems from Ships are understood and that the scope and boundaries of such operations are clearly defined. The Ship Air-Release (SA-Release) is the document that authorizes a specified Class of His Majesty's (HM) / MOD Ship¹ and Air System Type / Mark to conduct embarked aviation activity. The SA-Release process requires reciprocal understanding between each of these stakeholders and enduring engagement to ensure the continued Safety of embarked aviation activity in HM / MOD Ships.

Contents

- 1029(1): Aviation Duty Holder / Accountable Manager (Military Flying) and Ship Duty Holder ► / **Accountable Person** ◄: Roles and Responsibilities
- 1029(2): Ship Platform Authority: Roles and Responsibilities
- 1029(3): Air System Type Airworthiness: Roles and Responsibilities
- 1029(4): Foreign Air System Sponsor: Roles and Responsibilities
- 1029(5): Royal Navy Release to Service Authority: Roles and Responsibilities
- 1029(6): Ship Air-Release - Stakeholder Engagement
- 1029(7): Remotely Piloted Air System Trial Sponsor: Roles and Responsibilities ◄

Regulation 1029(1)

Aviation Duty Holder / Accountable Manager (Military Flying) and Ship Duty Holder ► / **Accountable Person** ◄: Roles and Responsibilities

- 1029(1) For Ship / Air System combinations conducting embarked aviation in HM / MOD Ships, ADH / AM(MF) and Ship DH ► / **AP** ◄ **shall** identify and establish ownership for the RtL associated with the integration of their respective platforms.

Acceptable Means of Compliance 1029(1)

Aviation Duty Holder / Accountable Manager (Military Flying) and Ship Duty Holder ► / **Accountable Person** ◄: Roles and Responsibilities

1. For Ship / Air System combinations conducting embarked aviation activity in HM / MOD Ships, Ship DH ► / **AP** ◄ and ADH / AM(MF) **should** ensure that:
 - a. The Safety Cases for the Ship and Air System demonstrate that the platforms can be safely operated together for the proposed embarked aviation activities.
 - b. The RtL posed by the integration of the Ship and the Air System have been identified and their ownership determined and documented through engagement in accordance with (iaw) the requirements of RA 1029(6).
 - c. Any equipment hazards within ► **Ship Aviation Safety and Environmental Report** or ◄ Ship / Air System Type Airworthiness Safety Assessments which are mitigated by Defence Lines of Development (DLoD) for which the Ship DH ► / **AP** ◄ and ADH / AM(MF) are responsible, have been formally acknowledged

¹ As defined in the Defence Maritime Regulator (DMR) Master Glossary of Terms.

Acceptable Means of Compliance 1029(1)

by them to the Ship Platform Authority (PA)² and the Air System Type Airworthiness Authority (TAA)³.

d. Any change to the Ship / Air System intended usage which might require an amendment to the SA-Release ► **should** ◀ be communicated to the Ship PA, TAA³ and Royal Navy Release To Service Authority (RN RTSA) at the earliest opportunity.

2. The development and use of SA-Releases and / or clearances achieved through Operational or MPP-02⁴ routes, **should** comply with the orders set out in BRd 766⁵. Navy Command Headquarters Naval Aviation Division (NCHQ NAVn) as the embarked aviation Subject Matter Expert, **should** be a participant in routine SA-Releases but in the case of ► **expedious** ◀ releases, where processes might be shortened, DHs need to continue to ensure NCHQ NAVn engagement.

Guidance Material 1029(1)

Aviation Duty Holder / Accountable Manager (Military Flying) and Ship Duty Holder ► / Accountable Person ◀: Roles and Responsibilities

3. This Regulation is complementary to RA 1395⁶, the Ship DH ► / AP ◀ responsibilities set out in DSA02-DMR Regulations², and the ADH / AM(MF) responsibilities in RA 1020⁷, RA 1024⁸ and RA 1205⁹.

4. For embarked aviation activity in HM / MOD Ships the ADH / AM(MF), as a 'Ship-Facing ADH / AM(MF)', will assess the RtL posed to the Ship by their Air System and communicate these to the Ship DH ► / AP ◀ Chain. Likewise, the Ship DH ► / AP ◀ will communicate RtL posed to the Air System by the Ship, noting that the Ship's Commanding Officer (CO) and Delivery DH are responsible for approving aviation activity from their Ship and, as an Aerodrome Operator iaw RA 1026¹⁰, is also ADH / AM(MF)-Facing to ensure that the Ship remains a safe environment in which the Air System can operate.

5. The Ship DH ► / AP ◀ and ADH / AM(MF) constructs are 'DH / Accountable Manager (AM)-Facing' to each other and are required to be cognisant of additional implications of conducting embarked aviation operations in the maritime environment to their respective Safety Management Systems.

Regulation 1029(2)

Ship Platform Authority: Roles and Responsibilities

1029(2) The Ship PA for aviation capable HM / MOD Ships **shall** be responsible for ► **ensuring for all that the Equipment Contribution supports a safe aviation capability by providing Safety and environmental protection Assurance of the design, system and equipment integration and through-life support.** ◀

² Refer to DSA02-DMR – Defence Maritime Regulations for Health, Safety and Environmental Protection Introduction and Goal.

³ Where the Air System is ► **non-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 for Special Case Flying Air Systems. Dependant on the agreed split of TAW responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

⁴ ► **For crewed aviation, refer** ◀ to MPP-02: ► **Volume I** ◀ – Helicopter Operations from Ships Other Than Aircraft Carriers (HOSTAC); ► **Volume II – Multinational Through-Deck and Aircraft Carrier Crossdeck Operations (MTACCOPS).** ◀

⁵ Refer to BRd 766 – Embarked Aviation Orders.

⁶ Refer to RA 1395 – Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships.

⁷ Refer to RA 1020 – Aviation Duty Holder ► ◀ - Roles and Responsibilities.

⁸ Refer to RA 1024 – Accountable Manager (Military Flying).

⁹ Refer to RA 1205 – Air System Safety Cases.

¹⁰ Refer to RA 1026 – Aerodrome Operator and Aerodrome ► **Supervisor (Recreational Flying) Roles and Responsibilities.** ◀

**Acceptable
Means of
Compliance
1029(2)**

Ship Platform Authority: Roles and Responsibilities

6. Ship PAs in their ADH / AM(MF)-Facing capacity¹¹ **should**:
 - a. Hold a Letter of Air Safety Notification¹².
 - b. Ensure that adequate resource, including sufficient Suitably Qualified and Experienced Persons (SQEP) with appropriate Air Safety training^{5, 13, 14}, is apportioned to fulfil Air Safety related responsibilities.
 - c. Ensure that the aviation arrangements in all aviation capable Ships for which they are responsible conform to the following requirements through-life:
 - (1) They meet the design requirements specified in ► **Defence Standard 00-133**¹⁵ ◀¹⁶.
 - (2) All equipment risk is reduced As Low As Reasonably Practicable (ALARP)², culminating in the issue of Naval Authority Certification ►¹⁷ ◀.
 - (3) The design, construction, Modification and Maintenance of aviation arrangements in their Ships are conducted by organizations with appropriate expertise and experience.
7. ► Ship PAs **should** obtain a Certificate of Safety Aviation (CS-A) or MOD Ship Safety Certificate (Aviation) (MSSC(Aviation)) through demonstration of equipment Safety of their platform to support aviation iaw DSA.03-DMR. ◀
8. To support the production of a SA-Release Recommendation, Ship PAs **should** provide evidence to demonstrate the suitability of their platform (Equipment DLoD) for embarking aviation as defined in BRd 766⁵.
9. The Ship PA **should** inform the Ship DH ► / AP ◀, ADH / AM(MF), TAA, and the RN RTSA, of Modifications to the Ship or changes to the Ship's intended usage which might require the SA-Release to be amended.
10. This Regulation **should** be complementary to the Ship PA responsibilities set out in DSA02-DMR², Regulation Number 208.

**Guidance
Material
1029(2)**

Ship Platform Authority: Roles and Responsibilities

11. The Ship PA or delegated Air Safety representative(s) will have completed relevant and recognized Air Safety training^{5, 13, 14} and will demonstrate awareness of:
 - a. ► ◀ Military Aviation Authority (MAA) Regulatory Publications.
 - b. Aspects of Air System design which have an interface with the subject Ship.
12. The Ship PA will jointly establish, with the TAA, formal Equipment DLoD Working Groups (WG). Demarcation of Equipment DLoD responsibilities will be defined through provision of a joint Ship / Air System Interface Control Document (ICD).
13. BRd 766⁵ provides more detailed processes to be followed in the generation of SA-Releases.

¹¹ ► Refer to RA 1032 – Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations - Roles and Responsibilities. ◀

¹² Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility.

¹³ Refer to RA 1440 – Air Safety Training.

¹⁴ Refer to BRd 767 – Naval Aviation Orders.

¹⁵ ► Refer to Def Stan 00-133 – Aviation Arrangements in Surface Ships.

¹⁶ For further info, as RA 1920 explains the requirements for legacy equipment not detailed in Defence Standard 00-133, ◀ refer to RA 1920 – Aviation Arrangements in His Majesty's / MOD Ships – Equipment Standards.

¹⁷ ► <http://www.bmtdsl.r.mil.uk/NAS/Default.aspx>. As per DSA.03-DMR, the Naval Authority and Technology Group issue the Naval Authority Certification on behalf of the DMR as a Duly Authorized Organization. ◀

Regulation 1029(3)

Air System Type Airworthiness: Roles and Responsibilities

1029(3) For Air Systems required to conduct embarked aviation ►◄ in HM / MOD Ships, the TAA **shall** be responsible for providing equipment which is safe and suitable to conduct such aviation activities.

Acceptable Means of Compliance 1029(3)

Air System Type Airworthiness: Roles and Responsibilities

14. Dependant upon the Sponsor's¹⁸ agreed model for TAw management and the split of responsibilities, the TAA^{3, ►19◄} in their Ship DH-Facing ► / AP-Facing ◄ capacity **should**:

- a. Ensure that adequate resource, including sufficient SQEP with appropriate Ship Safety training^{5, ►14◄}, is apportioned to fulfil roles which support the SA-Release process.
- b. Through their delegated Airworthiness and Air Safety chains, ensure that the Air Systems for which they are responsible conform to the following requirements through-life:

(1) The TAw of the Air System is considered safe and suitable for the proposed embarked aviation activities at sea.

(2) All Air System equipment risks associated with embarked aviation operations in HM / MOD Ships are reduced ALARP.

15. To support the production of a SA-Release Recommendation for their Air System, the TAA **should** provide evidence to demonstrate the suitability of their platform (Equipment DLoD) for embarked aviation at sea as defined in BRd 766⁵.

16. The TAA **should** inform the Ship DH ► / AP ◄, Ship PA, ADH / AM(MF) and the RN RTSA, of Modifications to the Air System or to its intended usage which might require the SA-Release to be amended.

Guidance Material 1029(3)

Air System Type Airworthiness: Roles and Responsibilities

17. The TAA or delegated representative(s) will have completed relevant and recognized Ship Safety training^{5, ►14◄} and will demonstrate awareness of:

- a. DSA03-DMR²⁰.
- b. DSA02-DMR².
- c. Aspects of Ships' aviation arrangements design which have an interface with the subject Air System.

18. The TAA will jointly establish, with the Ship PA formal Equipment DLoD WG. Demarcation of Equipment DLoD responsibilities will be defined through provision of a joint Ship / Air System ICD.

19. BRd 766⁵ provides more detailed processes to be followed in the generation of SA-Releases.

Regulation 1029(4)

Foreign Air System Sponsor: Roles and Responsibilities

1029(4) A SA-Release **shall** be required for planned embarkations or enduring operations of Air Systems in HM / MOD Ships. An appropriate Foreign Air System²¹ Sponsor (FASS) **shall** be nominated to liaise with the relevant ► Foreign Air System operating authority ◄⁶.

¹⁸ Refer to RA 1019 – Sponsor of Military Registered Civilian-Owned and Civilian Operated Air Systems - Air Safety Responsibilities.

¹⁹ ► Refer to RA 1015 – Type Airworthiness Management – Roles and Responsibilities. ◄

²⁰ Refer to DSA03-DMR – Naval Authority Rules for Certification of MOD Shipping; which is hosted on the Naval Authority System.

²¹ The term "Foreign Air System" applies to civilian registered Air Systems and non-UK military registered Air Systems.

**Acceptable
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1029(4)**

Foreign Air System Sponsor: Roles and Responsibilities

20. The FASS **should** be ► a nominated individual, ◀ with appropriate knowledge of ► Air System and Ship ◀ Duty Holding and RtL management principles.
21. ► RA 1029, RA 1395, ◀ Embarked Aviation Order (EAO) 1029²² and EAO 1395²³ **should** be followed, however the amount of Assurance required **should** be ► proportional to ◀ the length and complexity of the embarkation.
22. The FASS **should** satisfy themselves, across all DLoDs, that the ► Foreign Air System ◀ is safe to operate from the Ship (the ► Foreign Air System operating authority ◀ is not required to sign the SA-Release documentation).
23. The FASS does not own the Safety Case or RtL for the Air System however, they **should** be responsible for:
- Assuring the RN RTSA that there has been a full exchange of pertinent Ship-Air Integration (SAI) Hazards and, when residual Risks ► exist with ◀ the Air System, the ► Foreign Air System operating authority ◀ acknowledge and ► endorses them ◀ appropriately.
 - Providing sufficient information on Air System integration Hazards, operating limitations and procedures, to ensure that the Ship ► DH ◀ can fulfil their responsibility iaw RA 1029(1).
 - Providing the ► Foreign Air System operating authority ◀ with information on Ship design factors and operating procedures. As a minimum this **should** include the Ship chapter of the BRd 766⁵ and the extant CS-A ► and MSSC(Aviation) ◀ as detailed on the Naval Authority System.
 - Acting as the Ship DH-Facing Organization ► / Ship AP-Facing Organization ◀, to assure the ► RN RTSA ◀ Ship DH ► / AP ◀ that the ► Foreign Air System operating authority ◀ is a competent organization capable of safely operating from the Ship, within the scope of the defined aviation activities.
24. The FASS **should** gather enough evidence to make the following top level claim:
- 'The ► Foreign Air System operating authority ◀ has assured me that the embarking organization is safe and competent to operate from the Ship, having understood all SAI Hazards, operating limitations and procedures.'
25. For Air Systems with ► MMP-02⁴ ◀ clearances, exchanges of pertinent SAI Hazards and information can be assumed to have taken place. Air Systems with equipment or capabilities not considered by ► MMP-02⁴ ◀, or intend to operate outside the ► MMP-02⁴ ◀ envelope, **should** be specifically analyzed.

**Guidance
Material
1029(4)**

Foreign Air System Sponsor: Roles and Responsibilities

26. The FASS may be assisted by a UK Technical Advisor, such as a Delivery Team (DT) serving similar Air System types, or with established links to the Foreign Aircraft engineering authority. These duties will need to be clearly defined and appropriately resourced.
27. When providing ► the Foreign Air System operating authority ◀ with Ship design factors and operating procedures, consideration may also be given to Electro-Magnetic Compatibility (EMC), motion limits, airwake modelling and the relevant Ship Aviation Safety Case Report.
28. At the discretion of the FASS; a flight clearance issued by the US military Naval Air Systems Command (NAVAIR) Airworthiness & Cybersafe Office (NACO - previously known as NAVAIR 4.OP), may be used as part of the minimum requirement

²² Refer to BRd 766 – EAO1029 – Roles and Responsibilities: Ship Air-Release – Stakeholder Roles Responsibilities and Deliverables.

²³ Refer to BRd 766 – EAO1395 – Authorization to Permit Embarked Aviation in HM/MOD Ships.

**Guidance
Material
1029(4)**

to provide Assurance to the Ship DH ► / AP ◀, providing a MAA Recognition²⁴ of NACO is extant and its scope includes use of the NACO Flight Release outputs. Defining the total minimum requirement for Assurance remains the responsibility of FASS.

**Regulation
1029(5)**

Royal Navy Release to Service Authority: Roles and Responsibilities

1029(5) The RN RTSA **shall** authorize, issue, and maintain the through-life integrity of the SA-Release, on behalf of Senior Duty Holders (SDH), and AM(MF), for their respective Ship / Air System combinations.

**Acceptable
Means of
Compliance
1029(5)**

Royal Navy Release to Service Authority: Roles and Responsibilities

29. The RN RTSA **should**:
- a. Authorize and issue an initial SA-Release and subsequent SA-Release amendments.
 - b. Provide ► **independent** ◀ Assurance that all relevant Equipment DLoD related RtL apparent at the point of SA-Release issue and subsequent amendments have been identified and addressed by the appropriate Ship DH ► / AP ◀ or ADH / AM(MF).
 - c. Provide independent Assurance that all ► **other** ◀ DLoDs are at an appropriate level of maturity such that their effects upon the Equipment DLoD can be verified, both prior to initial issue of a SA-Release and subsequently when there are Modifications (see Paragraphs ► 10 ◀ and ► 17 ◀) to the Ship, Air System or their intended usage which affect the issued SA-Release.
 - d. Include within their Air Safety Management System, procedures that describe how changes to the SA-Release ► **should** ◀ be managed.
 - e. Be engaged with the Ship DH's ► / AP's ◀ and ADH's / AM(MF)'s respective Ship and Air System Safety Case governance structure and provide Assurance to the SDH that the integrity of the SA-Release is maintained.

**Guidance
Material
1029(5)**

Royal Navy Release to Service Authority: Roles and Responsibilities

30. ► ◀ The RN RTSA acts as the SA-Release issuing authority on behalf of the SDH.
31. Delegation of any aspect of responsibility to a Delegated Release To Service Authority (DRTSA) must be conducted iaw RA 1021²⁵.
32. The RN RTSA will be responsible for the upkeep of the SA-Release documentation which may be amended to reflect any changes to the design, the operation of, or the conditions in which the Ship / Air System combination are used. The responsibility for considering the possible effect of these changes on the Ship and Air System Safety Assessments, and subsequent Safety Cases, remains with the appropriate Ship DH ► / AP ◀, Ship PA, ADH / AM(MF), or TAA.
33. Engagement with Safety Case governance structures will include Assurance that an embarked aviation requirement is adequately articulated within the Ship DH's ► / AP's ◀ Command Safety & Environmental Summary² and the ADH's / AM(MF)'s Safety Statement respectively.

²⁴ Certificate of Recognition of United States Department of the Navy (NAVAIR 4.0P) in the field of Airworthiness Assurance by the MAA, dated 24 Oct 18.

²⁵ Refer to RA 1021 – Release To Service Authorities - Roles and Responsibilities.

**Regulation
1029(6)**

Ship Air-Release - Stakeholder Engagement

1029(6) Engagement between the Ship DH ► / AP ◀, Ship PA, ADH / AM(MF), TAA and other required stakeholders **shall** be formally established, managed effectively and documented.

**Acceptable
Means of
Compliance
1029(6)**

Ship Air-Release - Stakeholder Engagement

34. The Ship DH ► / AP ◀, Ship PA, ADH / AM(MF), TAA and other stakeholders who provide an input to the production of a SA-Release **should** engage throughout the SA-Release process to ensure that pan-DLoD factors which affect the Safety of integrating the Ship / Air System combination are managed with responsibility for RtL established and owned by the appropriate DH / AM(MF). The following **should** be considered the minimum:

- a. Ship Air Release Steering Group (SA-Release Steering Group)²⁶.
- b. Ship-Air WG²⁷.
- c. Ship-Air Equipment WG (Ship-Air EWG)²⁸.

35. This engagement **should** be formally directed by the respective ADH / AM(MF) and Ship DH ► / AP ◀ and detailed within their respective Safety Management Systems. Routine management of this engagement **should** be conducted by the Ship DH ► / AP ◀, Ship PA, ADH / AM(MF), and TAA.

36. Where responsibility for Ship-Air engagement is delegated to an appropriate empowered representative, the Ship DH ► / AP ◀, Ship PA, ADH / AM(MF), or TAA **should** ensure that the delegated representative is SQEP.

**Guidance
Material
1029(6)**

Ship Air-Release - Stakeholder Engagement

37. Engagement between the Ship DH ► / AP ◀, Ship PA, ADH / AM(MF), TAA, NCHQ NAVn, the RN RTSA and other organizations involved in the SA-Release process is essential in ensuring the safe integration of an Air System and Ship. This engagement will commence as early as practicable once the embarked aviation requirement has been established. With the exception of the following minimum requirements, the scale of stakeholder engagement may be tailored to meet the complexity of the subject Ship / Air System.

SA-Release Steering Group

38. The function of the SA-Release Steering Group ► will ◀ determine the priority for the SA-Release effort, thereby directing the formation of the Ship-Air WG. Further details on the SA-Release Steering Group can be found in BRd 766 Annex 1029(5)A.

Ship-Air WG

39. The function of a Ship-Air WG ► will ◀ provide a means by which both Ship DH ► / AP ◀ and ADH / AM(MF) chains have the opportunity to manage Safety related Ship-Air issues. The Ship-Air WG will direct the formation of Ship-Air EWGs, thus informing SA-Release recommendation effort. Further details on the SA-Release Steering Group can be found in BRd 766 Annex 1029(5)B.

Ship-Air EWG

40. This is a subordinate forum to the Ship-Air WG which considers the integration of a particular Ship Class and Air System across the Equipment DLoD only. This WG is likely to deliver the majority of evidence necessary to generate the Equipment DLoD focussed SA-Release recommendation. Further details on the SA-Release Steering Group can be found in BRd 766 Annex 1029(5)D.

²⁶ Refer to BRd 766 Annex 1029(5)A.

²⁷ Refer to BRd 766 Annex 1029(5)B.

²⁸ Refer to BRd 766 Annex 1029(5)D.

**Regulation
1029(7)**

► Remotely Piloted Air System Trial Sponsor: Roles and Responsibilities

1029(7) An appropriate Remotely Piloted Air Systems (RPAS) Trial Sponsor (RPASTS) **shall** be nominated to coordinate the SA-Release activity for trial activity of RPAS in HM / MOD Ships⁶.

**Acceptable
Means of
Compliance
1029(7)**

Remotely Piloted Air System Trial Sponsor: Roles and Responsibilities

41. For Open Category and Specific S1 sub-category RPAS, the RPASTS **should** be the RPAS Responsible Officer / RPAS Accountable Manager. For Specific S2 sub-category and Certified Category RPAS, the RPASTS **should** be the ADH / AM(MF).
42. RA 1029, RA 1395, EAO 1029²² and EAO 1395²³ **should** be followed, however the amount of Assurance required **should** be proportional to the length, complexity and level of Risk of the trial.
43. The RPASTS **should** satisfy themselves, across all required DLoDs, that the organization operating the RPAS is safe to operate from the Ship.
44. For non-TAA supported RPAS²⁹, the RPASTS **should** ensure the organization operating the RPAS provides evidence, to the RN RTSA, to demonstrate the suitability of their RPAS (Equipment DLoD) for embarked aviation at sea as defined in BRd 766⁵.

**Guidance
Material
1029(7)**

Remotely Piloted Air System Trial Sponsor: Roles and Responsibilities

45. The RPASTS may be assisted by a Test and Evaluation (T&E) unit. These duties will need to be clearly defined and appropriately resourced. ◀

²⁹ ► Open Category and Specific S1 sub-category RPAS do not require a TAA, whereas Specific S2 sub-category and Certified Category RPAS require a TAA. Refer to the RA 1600 Series. ◀

RA 1030 – Defence Aeronautical Information Management

Rationale

The completeness and accuracy of Defence aeronautical data¹ and aeronautical information² is integral to the safe and expeditious conduct of aviation activity in the Defence Air Environment (DAE) and to a wide range of aviation end users³. Missing, out-of-date, or unreliable aeronautical data or aeronautical information ► could ◀ introduce ► ◀ Hazards, ► resulting in an increased ◀ Risk to Life (RtL). This regulation identifies the roles and responsibilities of those parties responsible for developing and maintaining aeronautical information policy; and for the origination, management, publication and assurance of aeronautical information to ensure Aviation RtL is minimized.

Contents

1030(1): Defence Aeronautical Information Authority

1030(2): Aeronautical Information Service ► Provider ◀

1030(3): Aeronautical Information Management

Regulation 1030(1)

Defence Aeronautical Information Authority

1030(1) The Defence Aeronautical Information Authority (DAIA) ►⁴ ◀ **shall** be responsible for the effective management of Defence aeronautical information.

Acceptable Means of Compliance 1030(1)

Defence Aeronautical Information Authority

1. The DAIA **should**:
 - a. Develop and maintain Defence aeronautical information policy and processes, which ► ◀ define the form, content and data quality standards of ► ◀ aeronautical ► data, ◀ information, ► and ◀ products ► used in the DAE⁵. ◀
 - b. Nominate Defence Aeronautical Information Service Providers (AISPs) ► to ◀ ensure that an effective Aeronautical Information Service (AIS) is provided to the DAE.
 - c. Ensure the maintenance of aeronautical data quality standards through effective Aeronautical Information Management (AIM).
 - d. Establish a process to conduct oversight and assurance of AIM and AIS.
 - e. Interface with the ► UK ◀ Civil Aviation Authority to provide assurance of Defence aeronautical information data quality standards.

Guidance Material 1030(1)

Defence Aeronautical Information Authority

2. The ► ◀ Military Aeronautical Information Publication (AIP), along with the Civilian AIP ► and the Defence Aerodrome Manual are ◀ the source documents for all DAE aeronautical information ► and must be amended concurrently in accordance with (iaw) RA 1026⁶. ◀

Regulation 1030(2)

Aeronautical Information Service ► Provider ◀

1030(2) ► An ◀ AISP **shall** ensure that aeronautical data and aeronautical information are available in a form suitable for Air System operations.

¹ A representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing.

² Information resulting from the assembly, analysis and formatting of aeronautical data.

³ Not solely Air System operators but other aviation-related functions.

⁴ ► Defence Airspace and Air Traffic Management (DAATM) act as the DAIA for Defence.

⁵ Refer to JSP 495 Part 1 – Defence Aeronautical Information Policy.

⁶ Refer to RA 1026 - Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities. ◀

**Acceptable
Means of
Compliance
1030(2)**

Aeronautical Information Service ► Provider ◀

3. ► An ◀ AISP **should** ► :
 - a. Deliver an AIS that is appropriately tasked, prioritized and funded.
 - b. Receive, collate or assemble, edit, format, publish / store and distribute aeronautical data and aeronautical information concerning the area for which they are responsible for the provision of AIS. Aeronautical data and aeronautical information **should** be provided as aeronautical information products.
 - c. Liaise with other national aeronautical information providers to achieve worldwide coverage for the DAE.
 - d. Ensure the integrity of data and confirm the level of accuracy of the information distributed for operations, including the source of such information, before such information is distributed.
 - e. Provide end to end assurance of the aeronautical data and aeronautical information it processes to assure the integrity of data from the point of receipt or origination, through publication, to the point of delivery to the end user.
 - f. Contract services which are otherwise unavailable through the MOD following the process laid out in RA 1005⁷. ◀
4. The aeronautical data and aeronautical information **should** be in a form suitable for flight operating personnel, including Aircrew; flight planning, flight management systems and flight simulators; and Air Traffic Service providers.
5. ► ◀
6. ► ◀
7. ► ◀
8. ► ◀
9. ► ◀
10. ► ◀
11. ► ◀
12. ► ◀
13. ► ◀

**Guidance
Material
1030(2)**

Aeronautical Information Service ► Provider ◀

14. ► AISPs will utilize the following publications to obtain additional information on the ◀ standards and practices ► to be employed: ◀
 - a. International Civil Aviation Organization (ICAO) Annex 15 – Aeronautical Information Services.
 - b. ICAO Doc 8168 Procedures for Air Navigation Services.
 - c. ► ICAO Doc 10066 Aeronautical Information Management. ◀
 - d. ► ◀ Regulation ► EU ◀ No 2017/373 (ATM-IR) ► as retained (and amended in UK domestic law) and under the European Union (Withdrawal) Act 2018. ◀
 - e. Civil Aviation Publication (CAP) 232: Aerodrome Survey Information.
 - f. ► CAP 785: Approvals Requirements for Instrument Flight Procedures for use in UK Airspace Description. ◀
 - g. CAP 779: Regulation of Aeronautical Information Services.
 - h. ► CAP 1054: Aeronautical Information Management.
 - i. CAP 1616: Airspace Change Process Guidance Document.

⁷ ► Refer to RA 1005 – Contracting with Competent Organizations. ◀

**Guidance
Material
1030(2)**

- j. CAP 1732: Aerodrome Survey Guidance.
- k. DefStan 00-102: Policy of the Application of Geospatial Information Standards. ◀

**Regulation
1030(3)**

Aeronautical Information Management

1030(3) ▶ **The DAIA** ◀ **shall** provide an AIM service.

**Acceptable
Means of
Compliance
1030(3)**

Aeronautical Information Management

- 15. ▶ **Data originators**⁸ **should** register with the DAIA prior to submitting aeronautical data and aeronautical information to an AISP.
- 16. **Heads of Establishment / Aerodrome Operators** **should** provide assured aeronautical data and aeronautical information to an AISP iaw RA 1010⁹ or RA 1026⁸.
- 17. **All originators**¹⁰ and providers of aeronautical data and aeronautical information to an AISP **should** ensure that the appropriate assurance checks have been completed before it is passed to an AISP.
- 18. **The DAIA** **should** establish verification and validation procedures⁵ which ensure that upon receipt of aeronautical data and aeronautical information, quality requirements are met. ◀
- 19. ▶ **The DAIA** **should** ensure that ◀ the information management resources and processes established by ▶ **an AISP** are ◀ adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality assured aeronautical data and aeronautical information within the scope of operations.
- 20. The following data quality specifications **should** be considered as a minimum:
 - a. Data accuracy.
 - b. Data completeness.
 - c. Data format.
 - d. Data integrity.
 - e. Data resolution.
 - f. Data timeliness.
 - g. Data traceability.
- 21. ▶ ◀
- 22. ▶ ◀

**Guidance
Material
1030(3)**

Aeronautical Information Management

- 23. An AIM service entails compiling data on ▶ **Aerodromes** ◀, airspace and other aviation aspects to generate aeronautical information products to support the DAE.
- 24. JSP 465⁸ outlines the MOD policy for the handling, publication and management of spatial data, including aeronautical information.

⁸ Refer to JSP 465 – Defence Geospatial Information Policy.

⁹ ▶ Refer to RA 1010 – Head of Establishment - Aviation Responsibilities.

¹⁰ Person or persons authorized to originate aeronautical information and data. ◀

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RA 1031 – Contractor Flying Approved Organization Scheme (Basic Remotely Piloted Air Systems)

Rationale

► *Civilian organizations are required to operate UK military registered Remotely Piloted Air Systems (RPAS) in the Open Category and Specific S1 RPAS sub-category. Without appropriate regulatory oversight of such organizations, persons could be exposed to unnecessary Risk. This Regulatory Article (RA) defines the regulatory framework required for the Contractor Flying Approved Organization Scheme (Basic RPAS) (CFAOS(BR))¹ which in turn ensures such organizations comply with the MAA Regulatory Publications (MRP) and are subjected to appropriate Regulatory oversight.*

► ◀ *It details the requirements for a supporting organization and the appointment of an accountable individual, the RPAS Accountable Manager (RPAS AM), to maintain Safety and standards, and the method / conditions to gain approval. The regulatory framework is structured to ► be proportionate to the Open Category and Specific S1 sub-category and their physical attributes, and ◀ to permit appropriate operating freedoms to 'non-traditional' civilian aviation organizations commensurate with the ► Risks ◀ presented.*

Contents

1031(1): Organization

1031(2): Remotely Piloted Air Systems Accountable Manager

1031(3): Approval

Regulation

1031(1)

Organization

1031(1) Civilian organizations operating UK military registered RPAS in the Open Category ► or ◀ Specific S1 sub-category **shall** be appropriately regulated, structured, and controlled.

Acceptable Means of Compliance 1031(1)

Organization

1. Civilian organizations that operate² UK military registered RPAS in the Open Category ► or ◀ Specific S1 sub-category **should** be an approved organization in accordance with (iaw) the CFAOS(BR)³.
2. CFAOS(BR) organizations **should**:
 - a. Comply with RA 1600⁴ and:
 - (1) RA 1601⁵ for RPAS operated in the Open A1 sub-category.
 - (2) RA 1602⁶ for RPAS operated in the Open A2 sub-category.
 - (3) RA 1603⁷ for RPAS operated in the Open A3 sub-category.
 - (4) RA 1604⁸ for RPAS operated in the Specific S1 sub-category.
 - b. Hold an appropriate MAA RPAS Letter of Endorsed Categorization⁹ (LEC) prior to operation of any UK military registered RPAS.
 - c. Operate iaw the scope of their CFAOS(BR) Approval Certificate.
 - d. Nominate an RPAS AM who is suitably experienced and empowered, with the appropriate freedom, authority and resource to undertake the role.

¹ ► Organizations operating under the CFAOS(BR) may be referred to as CFAOS(BR) organizations. ◀

² Civilian Operated (In-Service) and Civilian Operated (Development); refer to RA 1160 – The Defence Air Environment Operating Framework.

³ Refer to RA 1031(3): Approval.

⁴ Refer to RA 1600 – Remotely Piloted Air Systems.

⁵ Refer to RA 1601 – Remotely Piloted Air Systems Open A1 sub-category (Fly 'Over' People).

⁶ Refer to RA 1602 – Remotely Piloted Air Systems Open A2 sub-category (Fly 'Close To' People).

⁷ Refer to RA 1603 – Remotely Piloted Air Systems Open A3 sub-category (Fly 'Far From' People).

⁸ Refer to RA 1604 – Remotely Piloted Air Systems Specific S1 sub-category.

⁹ Refer to RA 1600(1): Remotely Piloted Air System Categorization.

Acceptable Means of Compliance 1031(1)

- e. Ensure that personnel assigned to, or directly involved in, RPAS flight and ground operations, are appropriately qualified and trained for their duties iaw paragraph 2a.
 - f. Ensure that the MAA is:
 - (1) Granted appropriate access to the organization for the purpose of determining initial and continued regulatory compliance.
 - (2) Notified of any change affecting or likely to affect the scope of the CFAOS(BR) Approval.
 - (3) Notified of any change regarding the RPAS AM.
3. In addition to the requirements above, CFAOS(BR) organizations conducting Test and Evaluation (T&E), ie Civilian Operated (Development)¹⁰ activity, **should** comply with the requirements of RA 2370¹¹.

Guidance Material 1031(1)

Organization

- 4. The issue and continuation of a CFAOS(BR) Approval is subject to compliance with the relevant Regulations.
- 5. CFAOS(BR) organizations will only be permitted to operate UK military registered RPAS in the Open Category and Specific S1 sub-category.
- 6. CFAOS(BR) organizations will not be permitted to operate UK military registered RPAS in the Specific S2 sub-category and Certified Category (these options are restricted to operation under the full Contractor Flying Approved Organization Scheme (CFAOS)¹², ►¹³◄ or to Military Operated RPAS).
- 7. CFAOS(BR) organizations will only be permitted to operate UK military registered RPAS in the MOD Interest (ie Civilian Operated (In-Service) and Civilian Operated (Development))¹⁰; therefore, Special Case Flying¹⁰ is not permitted under the CFAOS(BR).
- 8. CFAOS(BR) organizations conducting T&E may be required to comply with regulatory requirements beyond those of paragraphs 2 and 3. Discussion with the MAA CFAOS Branch will be required in order to determine any such applicable Regulations.
- 9. The regulatory requirements for an approval under the CFAOS(BR) is discrete and distinct from a full CFAOS approval under RA 1028¹² (the two schemes are exclusive). However, there may be benefits in facilitating organizations already holding a full CFAOS approval to address the requirements for CFAOS(BR) under their extant CFAOS approval. Therefore, an entity already approved ►to operate under the CFAOS◄ that subsequently requires to operate under the privileges of the CFAOS(BR) may not be required to possess a ►separate◄ CFAOS(BR) Approval ►◄, instead being required to progress an appropriate CFAOS scope uplift iaw ►RA 1028¹².◄ However, the regulatory requirement for the operation of RPAS in the Open Category and Specific S1 sub-category will always be that described by the CFAOS(BR). Discussion with the MAA CFAOS Branch will be required in order to determine the appropriate route to approval in such cases.

Regulation 1031(2)

Remotely Piloted Air Systems Accountable Manager

- 1031(2) RPAS operated under the CFAOS(BR) **shall** be under the authority of an RPAS AM and be supported by appropriate persons.

¹⁰ Refer to RA 1160 – The Defence Air Environment Operating Framework.

¹¹ Refer to RA 2370 – Test and Evaluation.

¹² Refer to RA 1028 – Contractor Flying Approved Organization Scheme - Responsibilities.

¹³ ►The CFAOS is the Assurance mechanism underpinning the competence of Defence Contractor Flying Organizations (DCFO) that operate crewed Aircraft and Specific S2 sub-category and Certified Category RPAS on the UK Military Aircraft Register.◄

**Acceptable
Means of
Compliance
1031(2)**

Remotely Piloted Air Systems Accountable Manager

10. RPAS AMs **should**:
- a. Be responsible and accountable for the operation of RPAS within their Area of Responsibility (AoR).
 - b. Establish and maintain:
 - (1) A system for the control and safe operation of all flights operated under the terms of the CFAOS(BR) Approval.
 - (2) Procedures and instructions describing personnel duties and responsibilities for all RPAS operation, in flight and on the ground.
 - c. Ensure that Risks to Life (RtL) to Remote Pilots (RP), RPAS launch crew, personnel working on supporting or supported systems, and the general public or other organizational / MOD personnel through operation of RPAS within their AoR are As Low As Reasonably Practicable (ALARP) and Tolerable, and cease operations if RtL are identified that are not demonstrably ALARP and Tolerable.
 - d. Ensure that RPAS are operated iaw:
 - (1) RA 1600⁴ and:
 - (a) RA 1601⁵ for RPAS operated in the Open A1 sub-category.
 - (b) RA 1602⁶ for RPAS operated in the Open A2 sub-category.
 - (c) RA 1603⁷ for RPAS operated in the Open A3 sub-category.
 - (d) RA 1604⁸ for RPAS operated in the Specific S1 sub-category.
 - (2) The LEC.
 - (3) The CFAOS(BR) Approval Certificate.
 - e. Where applicable, ensure compliance with RA 2370¹¹ for the conduct of T&E, ie Civilian Operated (Development), activity.
 - f. Ensure that any significant changes to their operating responsibilities or to the supporting systems that may affect the discharge of their RtL responsibilities are reported immediately to the MAA.
 - g. Hold appropriate Terms of Reference.
 - h. Be responsible and accountable for the Contractor Flying Organization Exposition (Basic RPAS)³ (CFOE(BR)).
 - i. Act as the ►◄ organization's senior point of contact with the MAA.
 - j. Nominate¹⁴ a ►◄ Flight Operations Post-Holder (FOPH) for RPAS operated in the Open A2, Open A3 and Specific S1 sub-categories^{15, 16}.
11. An RPAS AM **should** be:
- a. At least a Middle Manager within the organization;
 - b. Formally responsible for the delivery of safe RPAS operations;
 - c. Directly appointed by an appropriate management board.
12. RPAS AM nominees **should**:
- a. Apply to the MAA for endorsement to undertake the role of RPAS AM; and expect to attend an MAA endorsement interview at which they will be required to provide evidence of suitability to undertake the role.
 - b. Attend an MAA RPAS DH / AM briefing day prior to commencement of RPAS operations if required to do so by the MAA¹⁷.

¹⁴ The RPAS AM may, where appropriate, also hold the role of FOPH provided it can be clearly demonstrated that such a dual appointment does not conflict with either their RPAS AM or FOPH responsibilities.

¹⁵ An FOPH is not required for RPAS operated in the Open A1 sub-category.

¹⁶ The responsibilities required of the CFAOS(BR) FOPH are covered in detail within RA 1602, RA 1603 or RA 1604.

¹⁷ The requirement will be determined via the MAA RPAS AM Endorsement process.

**Guidance
Material
1031(2)**

Remotely Piloted Air Systems Accountable Manager

13. **Middle Manager.** The term Middle Manager will be taken to mean a manager who possesses the authority to make independent decisions on RPAS operations without recourse to superiors or executives. If they do not sit at Board level (or equivalent divisional level) they will have appropriately delegated authority, and the organization will be required to demonstrate that the individual holds the authority and freedom to execute decisions with respect to RPAS operated under the CFAOS(BR).

14. **Suitability.** 'Suitability' for the RPAS AM role means being able to demonstrate appropriate knowledge and understanding of the relevant RPAS operating principles and of the relevant regulations and documents that prescribe RPAS operating processes and standards. This includes, but is not limited to, the following:

- a. RA 1031.
- b. RA 1600⁴.
- c. RA 1601⁵, RA 1602⁶, RA 1603⁷, and / or RA 1604⁸.
- d. RA 2370¹¹ (for RPAS AMs responsible for T&E activity).
- e. Role and responsibilities of the RPAS AM.
- f. Operating Risk.
- g. Role and responsibilities of the FOPH.

15. **RPAS AM Endorsement**

a. **Application.** RPAS AM nominees are to apply to the MAA for endorsement using an MAA Form 4¹⁸. Thereafter, and in consultation with the MAA, supporting evidence for endorsement interview is to be provided to the MAA CFAOS Branch¹⁹ at least 10 working days prior to interview. The organization's CFOE(BR) will provide the foundation of the supporting evidence. Further evidence required will include, but is not limited to:

- (1) Organization structure, to allow understanding of the RPAS AM's position within the organization, including appropriate explanation of the powers / authority held and relational links to relevant areas.
- (2) Explanation of the RPAS AM's independence, including access to adequate resource, to allow enactment of regulatory requirements without hindrance.
- (3) For RPAS AMs intending to manage or conduct T&E how they intend to comply with RA 2370¹¹.
- (4) A tailored CV detailing the RPAS AM's professional background highlighting any involvement with aviation and / or RPAS operations.

b. **Interview.** The RPAS AM endorsement interview will be led by an MAA CFAOS Branch OF4 representative and will cover 4 broad areas as a minimum: a description of the RPAS AM's roles and responsibilities; their knowledge, skills and experience; how the RPAS AM intends to comply with this RA, RA 1600 and other applicable Regulations²⁰; and any wider points from the supporting evidence submitted.

c. **Endorsement.** RPAS AM endorsement will be in writing and at a minimum level of MAA Divisional Head (OF5).

16. **MAA Engagement.** RPAS AMs will allow the MAA to examine and / or Audit the organization with respect to the operation of RPAS under the CFAOS(BR), and to review the RPAS AM endorsement following any significant change to an RPAS AM's responsibilities.

17. **Duty of Care.** RPAS AMs have a personal level Duty of Care for personnel under their control (those who, by virtue of their involvement, temporary or otherwise,

¹⁸ The MAA Form 4 can be found on the MAA website <https://www.gov.uk/government/collections/military-aviation-authority-approvals>.

¹⁹ DSA-MAA-OpAssure-CFAOS-Group@mod.gov.uk.

²⁰ Such as RA 2370 – Test and Evaluation, for those RPAS AMs who intend to manage or conduct T&E activity.

**Guidance
Material
1031(2)**

in RPAS activities, come within an RPAS AM's AoR) and the wider public who may be affected. They are thus accountable for the safe operation of RPAS in their AoR and for ensuring that RtL is ALARP and Tolerable. However, the RPAS AM governance model does not absolve managers at any level of their broader, enduring Duty of Care responsibilities under Common Law and the Health and Safety at Work Act (1974).

**Regulation
1031(3)**

Approval

1031(3) CFAOS(BR) Organizations **shall** be approved by the MAA.

**Acceptable
Means of
Compliance
1031(3)**

Approval

18. To be considered for approval under the CFAOS(BR) an organization²¹ **should**:
- a. Have the endorsement of an appropriate ► Air System MOD ◀ Sponsor►²²◀ at 1* level►◀ or above.
 - b. Satisfy the MAA that it is in the MOD Interest¹⁰.
19. Applications for CFAOS(BR) Approval **should** be:
- a. Made using MAA ►CFAOS(BR)◀ Form 2²³ ►◀.
 - b. Supported by a CFOE(BR) and any other applicable documents.
20. Following award of CFAOS(BR) Approval the MAA **should** be notified of any factors likely to affect or influence the extant Approval. Furthermore:
- a. Any uplifts²⁴ or significant changes / variations to the Approval **should**:
 - (1) Be formally applied²⁵ for and;
 - (2) Only be implemented on receipt of an appropriately amended CFAOS(BR) Approval Certificate.
 - b. Any reductions²⁶ **should** be formally notified at the earliest opportunity.

CFOE(BR)

21. The CFOE(BR) **should** be:
- a. Current and up-to-date.
 - b. Under the accountability and signature of the RPAS AM.
 - c. Provided to the MAA in electronic copy.
22. The CFOE(BR)²⁷ **should** as a minimum contain the following:
- a. The official name and business name, address and mailing address of the ►◀ organization.
 - b. A statement signed by the RPAS AM confirming that the CFOE(BR) and any referenced documents:
 - (1) Are accurate and true.
 - (2) Define the ►◀ organization's compliance with the relevant Regulations, and will be complied with at all times.

²¹ See paragraph 9 for organizations already holding a CFAOS Approval iaw RA 1028 ►– Contractor Flying Approved Organization Scheme.

²² Refer to RA 1019 – Sponsor of Military Registered Civilian-Owned Air Systems or Civilian Operated Air Systems - Air Safety Responsibilities. ◀

²³ The MAA ►CFAOS(BR)◀ Form 2 can be found on the MAA Website <https://www.gov.uk/government/collections/military-aviation-authority-approvals>.

²⁴ Such as: change of RPAS Category, change or addition of an RPAS type / mark; the MAA CFAOS Branch may be consulted where doubt exists as to whether a change is an uplift or otherwise.

²⁵ For uplift the documentation required will be analogous to what was required to support the initial application and will, as a minimum, include a revised CFOE(BR).

²⁶ Such as removal of the requirement to operate under a ►particular◀ RPAS Category, removal of RPAS type; the MAA CFAOS Branch may be consulted where doubt exists as to whether a change is a reduction or otherwise.

²⁷ A template CFOE(BR) is at <https://www.gov.uk/government/collections/military-aviation-authority-approvals>.

**Acceptable
Means of
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1031(3)**

- c. The name of the RPAS AM.
- d. The name of the FOPH (for RPAS operated in the Open A2, Open A3 and Specific S1 sub-categories¹⁵).
- e. The position / role and name of the ►MOD◀ Sponsor(s).
- f. Detail of how the activity is in the MOD Interest.
- g. A description²⁸ of the CFAOS(BR) organization including:
 - (1) Organizational structure.
 - (2) Types / marks of RPAS operated.
 - (3) RPAS Categories and Physical Attributes⁴.
 - (4) Numbers of RPAS operated.
 - (5) Operating locations.
 - (6) Expected flying rate.
 - (7) Numbers of RPs and other ►workforce◀ resource associated with the task.
- h. A list of which RAs are deemed applicable.
- i. Copies²⁹ of:
 - (1) LEC(s) detailing confirmation of RPAS Category.
 - (2) Categorization Safety Checklist(s)³⁰.
- j. Details of any experience in flying operations or any wider aspects relevant to the activity such as training and T&E.
- k. Details of indemnity arrangements►◀.
- l. A list of contracted and subcontracted organizations if applicable.
- m. A CFOE(BR) amendment process (to include a procedure describing how minor changes³¹ not requiring prior MAA approval will be managed and notified to the MAA).

**Guidance
Material
1031(3)**

Approval

23. An MAA CFAOS(BR) Approval (ie a civilian company operating ►UK military registered◀ RPAS in the MOD Interest) may be viewed as comparable to a Civil Aviation Authority (CAA) Permission for Commercial Operations or CAA Operational Authorization (ie a civilian company operating small RPAS for commercial use).

24. Organizations seeking new CFAOS(BR) approvals are to be aware that the timeline from application to approval could be significant depending on the complexity of approval sought. Early dialogue with the MAA CFAOS Branch is encouraged. Organizations may initiate informal engagement with a view to understanding the route to CFAOS(BR) approval, the regulatory requirement, and wider challenges related to both the CFAOS(BR) and regulatory compliance. However, organizations are to note that informal engagement will be limited and without commitment until formal engagement is authorized via endorsement by an appropriate ►Air System MOD◀ Sponsor.

25. When it is considered that there is a case for an organization to be included in the CFAOS(BR) a detailed appraisal will be carried out by the MAA. The appraisal will seek to establish long-term confidence in the organization, and the RPAS AM, relevant to the operations concerned. The organization will be Audited via documentary and on-site inspections.

²⁸ Where appropriate, referencing directly to the Categorization Safety Checklist for this information is acceptable (refer to Annex B, RA 1600 – Remotely Piloted Air Systems).

²⁹ Referencing out to these documents is acceptable.

³⁰ Refer to Annex B, RA 1600 – Remotely Piloted Air Systems.

³¹ Such as grammatical and typographical errors where the meaning of the wording remains unchanged (where doubt exists the MAA CFAOS Branch may be consulted as to whether a change requires prior MAA approval or otherwise).

**Guidance
Material
1031(3)**

CFAOS(BR) Approval Certificate

26. When evidence presented by the organization demonstrates that it satisfies the MAA requirements, a CFAOS(BR) Approval Certificate will be issued listing:

- a. A unique identifying reference.
- b. The approved organization, including the operating and trading name if different.
- c. The organization's principal place-of-business address.
- d. Name and details of the RPAS AM.
- e. RPAS types / marks for which operation is approved.
- f. RPAS Categories and Physical Attributes⁴ for which operation is approved.
- g. Any applicable limitations.
- h. The issue date (and date of revision if required).
- i. The title, name and signature of the MAA approving officer.

27. A CFAOS(BR) Approval Certificate will normally be issued for an unlimited duration and will remain valid subject to:

- a. The ►◄ organization remaining in compliance with the applicable Regulations.
- b. The MAA being granted access to the ►◄ organization to determine continued compliance.
- c. The Approval Certificate not being surrendered, suspended or revoked.
- d. Continued endorsement by the ►MOD◄ Sponsor(s).

28. The MAA will withdraw from the CFAOS(BR) any organization that no longer meets the requirements.

29. A list of organizations who have been granted approval under the CFAOS(BR) may be published by the MAA.

Compliance

30. CFAOS(BR) organizations will be subject to compliance Assurance activities conducted by or on behalf of the MAA. Access may be required to personnel, facilities, RPAS, documents, records, data, procedures and any other materials relevant to compliance.

31. Costs for periodic compliance Assurance activities conducted by or on behalf of MAA will not be recoverable from the MAA.

Approval Changes

32. As a minimum, the MAA is to be notified of changes to:

- a. The RPAS AM.
- b. The FOPH.
- c. The ►MOD◄ Sponsor(s).
- d. Detail regarding how the activity is in the MOD Interest.
- e. Types / marks of RPAS operated.
- f. RPAS Categories and / or Physical Attributes⁴.
- g. The Categorization Safety Checklist(s).
- h. Ownership of the ►◄ organization.
- i. The ►◄ organization's official name, business name, address and / or mailing address.

**Guidance
Material
1031(3)**

33. Application to the MAA for a CFAOS(BR) Approval amendment will not constitute approval to operate to the proposed amendment.
34. Following receipt of an application for uplift or significant change the MAA will determine continuing regulatory compliance and will amend, if necessary, the CFAOS(BR) Approval Certificate.
35. The CFOE(BR) is the document that details the scope of activity deemed to constitute CFAOS(BR) Approval and demonstrates how the ►◄ organization intends to comply with the applicable Regulations.

RA 1032 – Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations - Roles and Responsibilities

Rationale

Many organizations, within and external to Defence Aviation (DA) and the Defence Air Environment (DAE)^{1,2}, deliver and supply aviation-related services and / or resource to Aviation Duty Holders (ADH) and / or Accountable Managers (Military Flying) (AM(MF)) in order that ADHs / AM(MF)s can deliver operating output. Such ADH-Facing Organizations and AM(MF)-Facing Organizations (AA-Facing Organizations) are responsible for delivering safe aviation services and actively supporting ADHs and / or AM(MF)s in their delivery of safe aviation and the management of Air Safety. Therefore, appropriate Assurance is required such that ADHs / AM(MF)s have a complete understanding of the Risks that such organizations may bring to their operations. Without this Assurance a compromised level of Air Safety may exist. This RA requires that ADHs, AM(MF)s and AA-Facing Organizations understand their responsibilities towards the Assurance of aviation-related services and / or resource provided by AA-Facing Organizations.

Contents

Definitions relevant to this RA

1032(1): Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (Internal)

1032(2): Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (External)

Definitions

Definitions relevant to this RA

1. **ADH-Facing Organization.** An ADH-Facing Organization is an organization that delivers or supplies aviation-related services³ and / or resource directly or indirectly to an ADH, and whose activities and decisions could affect the Air Safety of an ADH's operations and / or the ability of an ADH to mitigate associated operating Risk to Life⁴ (RtL) to As Low As Reasonably Practicable (ALARP) and Tolerable.
2. **AM(MF)-Facing Organization.** An AM(MF)-Facing Organization is an organization that delivers or supplies aviation-related services³ and / or resource directly or indirectly to an AM(MF), and whose activities and decisions could affect the Air Safety of an AM(MF)'s operations and / or the ability of an AM(MF) to mitigate associated operating RtL⁴ to ALARP and Tolerable.
3. **AA-Facing Organization.** For the purpose of this Regulation, an inclusive term that denotes an ADH-Facing Organization and / or an AM(MF)-Facing Organization, which has the following subsidiary definitions:
 - a. **AA-Facing Organization (Internal).** An AA-Facing Organization (Internal) is any AA-Facing Organization:
 - (1) That is part of the Ministry of Defence (MOD)⁵, or

¹ For definitions of DA and DAE, refer to MAA02: Military Aviation Authority Master Glossary.

² DA and the DAE encompasses the operation of all UK military registered Air Systems and the operation of civil registered Air Systems by the MOD.

³ This includes, but is not limited to, providers of aviation support and facilities such as: Aerodromes; aviation-capable Ships; Air Traffic Services (ATS) and other Air Traffic Management (ATM) Organizations; Medical / Occupational Health; Aeronautical Information; Fire & Rescue; Air System storage and Maintenance; Aerodrome landing aids and ground services; Heads of Establishment (HoE); Defence Equipment and Support; Design Organizations; Maintenance Organizations; Type Airworthiness Authorities / Managers; Military Continuing Airworthiness Managers; Delivery Teams; Defence Infrastructure Organization; Service career management agencies; and Top-Level Budget Capability and planning staffs.

⁴ Refer to RA 1210 – Ownership and Management of Operating Risk (Risk to Life).

⁵ Including those regulated by any other Regulatory body(s) (eg the Civil Aviation Authority (CAA), Defence Maritime Regulator, etc).

Definitions

- (2) That is part of a Contractor Flying Approved Organizations Scheme (CFAOS) organization⁵, or
- (3) Where there is a direct contract in place with an MOD / CFAOS organization and the MOD / CFAOS organization is the sole or primary recipient of services provided.
- b. **AA-Facing Organization (External).** An AA-Facing Organization (External) is any AA-Facing Organization that is not an AA-Facing Organization (Internal).

Regulation 1032(1)**Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (Internal)**

1032(1) AA-Facing Organizations (Internal) **shall** deliver and supply safe aviation-related services and / or resource to ADHs / AM(MF)s.

Acceptable Means of Compliance 1032(1)**Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (Internal)****AA-Facing Organizations (Internal)**

4. Heads of AA-Facing Organizations (Internal) **should**, actively support ADHs / AM(MF)s in their delivery of safe aviation and management of Air Safety, by:
- a. Identifying the ADHs / AM(MF)s that they support.
 - b. Establishing and maintaining an Air Safety Management System (ASMS)⁶ that:
 - (1) Interfaces appropriately with the ASMS(s) and Air System Safety Case(s) (ASSC)⁷ of the ADHs / AM(MF)s being supported and;
 - (2) Provides appropriate Assurance of the aviation-related services and / or resource delivered to supported ADHs / AM(MF)s^{8, 9}.
 - c. Establishing and maintaining formal and robust mechanisms and means of communication with supported ADHs / AM(MF)s.
 - d. Ensuring that they:
 - (1) Understand their inputs to and effects on the supported ADH's / AM(MF)'s ASSC(s), specifically the ASSC arguments they support, and the evidence they **should** provide.
 - (2) Are appropriately engaged with the supported ADH / AM(MF) ASSC governance structure.
 - e. Ensuring that they identify and formally communicate to relevant ADHs / AM(MF)s any decision, activity or change in the AA-Facing Organization's operating context that has the potential to introduce new or increased RtL into the ADH's / AM(MF)'s operations, or which could affect the ADH's / AM(MF)'s achievement of mitigating the operating RtL to ALARP and Tolerable.
 - f. Ensuring that their personnel are:

⁶ Refer to RA 1200 – Air Safety Management.

⁷ Refer to RA 1205 – Air System Safety Cases.

⁸ This **should** also include Assurance of any organizations commissioned by AA-Facing Organizations (Internal) to provide any aspect of these services / support (whether via commercial or other means / agreement such as a Memorandum of Understanding (MoU)).

⁹ Where Assurance activity is undertaken on behalf of an AA-Facing Organization (Internal) by another organization or Regulator, eg ATM Standards or the CAA on a unit's ATS, then this may provide the necessary Assurance without the need for duplication. However, this does not remove the requirement for the AA-Facing Organization (Internal) and the relevant ADH / AM(MF) to be satisfied that the scope of the Assurance activity is adequate.

**Acceptable
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- (1) Appropriately competent, qualified and current regarding Air Safety training¹⁰.
 - (2) Suitably qualified and experienced to deliver the expected aviation-related services to supported ADHs / AM(MF)s.
- g. Ensuring that any supporting equipment is adequately resourced, managed and maintained in accordance with relevant Regulations, Orders, and manufacturer's procedures / instructions.
 - h. Ensuring that all Air Safety reportable Occurrences are reported, managed and appropriate action taken¹¹.
 - i. Ensuring that they actively promote, and demonstrate leadership commitment to, an Engaged Air Safety culture.

ADH / AM(MF)s

- 5. ADHs / AM(MF)s **should**:
 - a. Identify the AA-Facing Organizations (Internal) that support them.
 - b. Establish formal and robust mechanisms and means of communication with all AA-Facing Organizations (Internal) that support them.
 - c. Ensure that AA-Organizations (Internal) that support them are aware they are supporting the ADH / AM(MF) and understand their responsibilities to them as detailed in paragraph 4.
 - d. Ensure that their ASMS:
 - (1) Interfaces appropriately with the ASMS(s) of AA-Facing Organizations (Internal).
 - (2) Provides appropriate Assurance of the aviation-related services and / or resource being delivered by AA-Facing Organizations (Internal).
 - e. Ensure that:
 - (1) They formally communicate to AA-Facing Organizations (Internal) any decision, activity or change in the ADH's / AM(MF)'s operating context (such as change in operating environment, the acquisition of new Air Systems or air capabilities) where that has the potential to affect either an AA-Facing Organization (Internal)'s operations, or its inputs to and effects on the ADH's / AM(MF)'s ASSC(s).
 - (2) The inputs to and effects on their ASSC(s) from AA-Facing Organizations (Internal) are fully supported by rational arguments and appropriate evidence.
 - f. Ensure that they assess the Risks introduced to their operations by AA-Facing Organizations (Internal) and that RtL remains ALARP and Tolerable^{12, 13}.

**Guidance
Material
1032(1)**

Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (Internal)

- 6. Heads of AA-Facing Organizations (Internal) are not ultimately responsible for ensuring that Air Safety RtL are ALARP and Tolerable; however, they are individually accountable to the ADH / AM(MF) for the requirements placed upon them as set out in this RA (and any other applicable RAs and / or Regulations).
- 7. Heads of AA-Facing Organizations (Internal) must ensure compliance with the relevant elements of the MAA Regulatory Publications (MRP) and the relevant Regulations of any other relevant Regulatory Bodies.

¹⁰ Refer to RA 1440 – Air Safety Training.

¹¹ Refer to RA 1410 – Occurrence Reporting and Management.

¹² Refer to RA 1020 – Aviation Duty Holder - Roles and Responsibilities.

¹³ Refer to RA 1024 – Accountable Manager (Military Flying).

**Guidance
Material
1032(1)**

8. Where organizations provide direct support to an ADH / AM(MF), it is likely readily apparent to the ADH / AM(MF), and the organization, that the organization is an AA-Facing Organization (Internal).
9. Where organizations provide indirect support to an ADH / AM(MF), it may not be clear whether the organization is an AA-Facing Organization. In such cases the ADH / AM(MF) is responsible for determining whether an organization is an AA-Facing Organization (Internal) or not. However, where an organization believes it may be supporting an ADH / AM(MF) it nonetheless needs to engage with the relevant ADH / AM(MF), whether or not the ADH / AM(MF) has initiated dialogue.
10. If doubt exists as to whether or not an AA-Facing Organization is an AA-Facing Organization (Internal), clarification can be sought from the MAA¹⁴.
11. In certain circumstances a context-based judgement may have to be made regarding whether an organization that theoretically delivers or supplies aviation-related services and / or resource (either directly or indirectly) to an ADH / AM(MF) actually does so in practice, and therefore is considered an AA-Facing Organization. To be considered an AA-Facing Organization under this RA, the organization's activities and decisions will have a direct or indirect effect on the Air Safety of an ADH's / AM(MF)'s aviation operations and / or the ability of an ADH / AM(MF) to mitigate associated operating RtL to ALARP and Tolerable. For example, it could be assessed that an organization solely supplying in-flight magazines for passengers has no impact on Air Safety, and therefore not an AA-Facing Organization; however, if the same organization were to supply Passenger Safety cards or aeronautical publications for the operating Aircrew then that aspect of its service provision would have an impact on Air Safety, and thus the organization would be considered an AA-Facing Organization. In any such cases the responsibility to determine whether an organization is an AA-Facing Organization is the responsibility of the affected ADH / AM(MF) based upon the arguments they have made, and the supporting evidence identified in their ASSC.
12. AA-Facing Organizations (Internal) do not need to be part of the same organization as the supported ADH / AM(MF) nor, when part of the same organization, are they required to be directly subordinate to or in the same chain-of-command / line management as the supported ADH / AM(MF).
13. Where an AA-Facing Organization (Internal) is supported by a distinct subsidiary or secondary AA-Facing Organization (Internal), it may be appropriate to consider the single or multiple AA-Facing Organization(s) (Internal) under the responsibility of the Head of the primary AA-Facing Organization (Internal). Such cases need to be formally documented between the ADH / AM(MF) and the Head of the primary AA-Facing Organization (Internal).
14. An ADH / AM(MF) may themselves be an AA-Facing Organization (Internal) to another ADH / AM(MF) through the provision of aviation-related service and / or resource to the other ADH / AM(MF)¹⁵.
15. It is likely that many Heads of AA-Facing Organizations (Internal) will also be a provider of aviation-related services and / or resource to recipient organizations outside DA and the DAE (eg to the Armed Forces of other nations' or to organizations neither part of the MOD or a CFAOS organization). While such cases are not regulated by this RA, Heads of AA-Facing Organizations (Internal) nonetheless must comply with all relevant national or international legal requirements, Regulations and procedures. Furthermore, in such situations Heads of AA-Facing Organizations that are part of the MOD are required to apply appropriate judgement and apply the principles of this RA so far as possible and / or practicable pertaining to the operating context.

¹⁴ Contact via DSA-MAA-MRPEnquiries@mod.gov.uk.

¹⁵ Such as when an ADH / AM(MF) delivers an airborne service (eg air-air refuelling or 'red air') to another ADH / AM(MF), or provides flying training to, or check flights on, another ADH's / AM(MF)'s Aircrew.

**Regulation
1032(2)**

Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (External)

1032(2) ADHs / AM(MF)s **shall** ensure that Air Safety is not compromised through the delivery and supply of aviation-related services and / or resource by AA-Facing Organizations (External).

**Acceptable Means of Compliance
1032(2)**

Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (External)

16. ADHs / AM(MF)s **should**:
- a. Identify AA-Facing Organizations (External) that support them and;
 - b. Where possible and practical, establish appropriate mechanisms and means of communication with such AA-Facing Organizations (External).
17. ADHs / AM(MF)s **should** ensure that their ASMS:
- a. Ensures their ASSC(s) address any RtL introduced through the delivery of aviation-related services and / or resource by AA-Facing Organizations (External).
 - b. Interfaces appropriately¹⁶ with the ASMS(s) of AA-Facing Organizations (External).
 - c. Provides appropriate Assurance of the aviation-related services and / or resource being delivered by AA-Facing Organizations (External)^{17, 18}, specifically that:
 - (1) Personnel are suitably competent, qualified and experienced to deliver the expected aviation-related services to supported ADHs / AM(MF)s.
 - (2) Supporting equipment is fit-for-purpose and appropriately maintained.
 - d. Provides appropriate Assurance that the AA-Facing Organization (External) is complying with all relevant national or international legal requirements, Regulations and procedures.
 - e. Requires that all Air Safety reportable Occurrences involving AA-Facing Organizations (External) that directly or indirectly affect the ADH's / AM(MF)'s operations are reported, managed and appropriate action taken^{11, 19}.
18. Where an AA-Facing Organization (External) supports an ADH's / AM(MF)'s operations then, where practicable, ADHs / AM(MF)s **should** ensure that:
- a. The AA-Facing Organization (External) is aware that it is supporting the ADH's / AM(MF)'s operations.
 - b. The AA-Facing Organization (External) understands its responsibilities to and effects on the ADH's / AM(MF)'s operations.
 - c. ADHs / AM(MF)s formally communicate to the AA-Facing Organization (External) any decision, activity or change in the ADH's / AM(MF)'s operating context (such as change in operating environment, the acquisition of new Air

¹⁶ Ideally any such interfaces **should** be via positive '2-way' engagement (to be expected where eg permanently based ADH / AM(MF) activity occurs at an Aerodrome operated by an AA-Facing Organization), but in many situations this may not be possible or practical; in such cases the ADH's / AM(MF)'s ASMS needs to ensure that it appropriately addresses all RtL introduced on the ADH's / AM(MF)'s operations through the services and / or resource provided by the AA-Facing Organization.

¹⁷ This **should** also include organizations commissioned by AA-Facing Organizations to provide any aspect of these services / support.

¹⁸ Where Assurance activity is undertaken on an AA-Facing Organization's behalf by another organization, eg the CAA on a unit's ATS, then this may provide the necessary Assurance without the need for duplication. However, this does not remove the requirement for the ADH / AM(MF) to be satisfied that the scope of the Assurance activity is adequate.

¹⁹ Responsibility for reporting, management and follow-up actions will rest with the ADH / AM(MF).

**Acceptable
Means of
Compliance
1032(2)**

Systems or air capabilities) where that has the potential to affect either the supporting organization's operations, or its responsibilities to the ADH / AM(MF).

d. Agreements / arrangements with AA-Facing Organizations (External) are recorded through formal documentation (such as an MoU).

**Guidance
Material
1032(2)**

Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (External)

19. There is a regulatory requirement on ADHs / AM(MF)s to identify AA-Facing Organizations (External) that support them; however, it may not be possible to identify all such organizations from the outset (eg a short-notice requirement may require support from previously unidentified AA-Facing Organizations (External)).

Nevertheless, ADHs / AM(MF)s will ensure that ASMS processes are in place to identify such AA-Facing Organizations (External) and that compliance with this RA is achieved.

20. Where organizations provide direct support to an ADH / AM(MF), it is likely readily apparent to the ADH / AM(MF), and the organization, that the organization is an AA-Facing Organization (External).

21. Where organizations provide indirect support to an ADH / AM(MF), it may not be clear whether the organization is an AA-Facing Organization. In such cases the ADH / AM(MF) is responsible for determining whether an organization is an AA-Facing Organization (External) or not. If an organization believes it may be supporting an ADH / AM(MF) it nonetheless needs to engage with the relevant ADH / AM(MF), whether or not the ADH / AM(MF) has initiated dialogue.

22. If doubt exists as to whether or not an AA-Facing Organization is an AA-Facing Organization (External), clarification can be sought from the MAA¹⁴.

23. In certain circumstances a context-based judgement may have to be made regarding whether an organization that theoretically delivers or supplies aviation-related services and / or resource (either directly or indirectly) to an ADH / AM(MF) actually does so in practice, and therefore is considered an AA-Facing Organization. To be considered an AA-Facing Organization under this RA, the organization's activities and decisions will have a direct or indirect effect on the Air Safety of an ADH's / AM(MF)'s aviation operations and / or the ability of an ADH / AM(MF) to mitigate associated operating RtL to ALARP and Tolerable. For example, it could be assessed that an organization solely supplying in-flight magazines for passengers has no impact on Air Safety, and therefore not an AA-Facing Organization; however, if the same organization were to supply Passenger Safety cards or aeronautical publications for the operating Aircrew then that aspect of its service provision would have an impact on Air Safety, and thus the organization would be considered an AA-Facing Organization. In any such cases the responsibility to determine whether an organization is an AA-Facing Organization is the responsibility of the affected ADH / AM(MF) based upon the arguments they have made, and the supporting evidence identified in their ASSC.

24. In cases where distinct subsidiary or secondary AA-Facing Organizations (External) logically sit under a primary AA-Facing Organization (External)¹⁶ it may be appropriate to consider the whole as a single AA-Facing Organization (External). Any such cases need to be formally documented by the affected ADH / AM(MF).

RA 1033 – Air Traffic Services Senior Officer – Air Safety Responsibilities

Rationale

Aviation Duty Holders (ADH) and Accountable Managers (Military Flying) (AM(MF)) are responsible for the safe operation of Air Systems within their Area of Responsibility (AoR) and for ensuring that the associated Risks to Life (RtL) are As Low As Reasonably Practicable (ALARP) and Tolerable. The receipt of effective Air Traffic Services (ATS) is a key mitigation when managing RtL. Without adequate oversight of, and Accountability for, ATS provision, an ADH's / AM(MF)'s RtL assessment could become inaccurate, and this would undermine their Air Safety Management System and the Operating Duty Holder's / AM(MF)'s Air System Safety Case (ASSC)¹. UK MOD is an ATS Provider and as such holds the responsibility of ensuring that the task is discharged appropriately. This RA requires the Royal Navy (RN) and Royal Air Force (RAF), as the organizations responsible for delivering UK MOD provided ATS (either via military Controllers or civilian Controllers operating under contract), to each appoint a Suitably Qualified and Experienced Person (SQEP) to be the Air Traffic Services Senior Officer (ATSSO).

Contents

1033(1): Air Traffic Services Senior Officer Nomination

1033(2): Role and Responsibilities of the Air Traffic Services Senior Officer

Regulation 1033(1)

Air Traffic Services Senior Officer Nomination

1033(1) RN Director Force Generation and RAF Air Officer Commanding 2 Group **shall** each appoint an ATSSO.

Acceptable Means of Compliance 1033(1)

Air Traffic Services Senior Officer Nomination

1. The ATSSO **should** be suitably qualified and experienced in the provision of ATS. The individual appointed **should** meet the following minimum criteria:

- a. Essential:
 - (1) Substantive OF4².
 - (2) Previous OF3 command experience in the delivery of ATS.
 - (3) Holder of an applicable Certificate of Competence or Air Traffic Control Officer Licence with previously validated Aerodrome Control (Visual) and / or Aerodrome Control (Surveillance) ratings.
 - (4) Completed the Duty Holders Air Safety Course prior to assuming their appointment³.
- b. Desirable:
 - (1) Substantive OF5.
 - (2) OF4 command experience.
 - (3) Previous experience in the provision of ATS in both terminal and upper air environments (area radar or air surveillance and control system).
 - (4) For the RN, hold a Joint Personnel Administration (JPA) competency related to the maritime Air Traffic Control environment⁴.
 - (5) Assurance activity experience.

¹ Refer to RA 1205 – Air System Safety Cases.

² OF4 is the minimum acceptable rank, an OF5 ATSSO **should** be considered if it would be more appropriate for the size and complexity of the AoR.

³ Refer to RA 1440 – Air Safety Training.

⁴ Refer to BRd 768 – Naval Air Traffic Management.

Acceptable Means of Compliance 1033(1)

- (6) Resource planning / Delivery Team / Financial Military Capability staff experience.
 - (7) Deployed experience related to the provision of ATS.
2. If an organization, other than the RN or RAF, plans to deliver UK Military provided ATS without utilizing RN / RAF Air Traffic Controllers or RN / RAF contracts for ATS provision, advice **should** be sought from the MAA on the requirement for an ATSSO.

Guidance Material 1033(1)

Air Traffic Services Senior Officer Nomination

3. Nil.

Regulation 1033(2)

Role and Responsibilities of the Air Traffic Services Senior Officer

- 1033(2) The ATSSO **shall** ensure that the ATS delivered by their organization are safe and compliant.

Acceptable Means of Compliance 1033(2)

Role and Responsibilities of the Air Traffic Services Senior Officer

4. The ATSSO **should**:
- a. Ensure that the routine level of ATS provision is in accordance with (iaw) UK MOD requirements. Where ATS are provided at Aerodromes⁵, the routine level of ATS provision **should** be iaw the Aerodrome classification⁶.
 - b. Ensure that ATS provision across their organization is to the appropriate standard.
 - c. Ensure that ATS are being provided iaw extant Regulations, procedures and orders.
 - d. Identify and manage any pan-organization Hazards to the provision of safe and compliant ATS.
 - e. Challenge any option or action that is proposed or implemented by an ADH / AM(MF) or ADH-Facing Organization / AM(MF)-Facing Organization (AA-Facing Organization) that could undermine the provision of safe and compliant ATS.
 - f. Provide advice and guidance to ATS providers.
 - g. Fulfil their responsibilities with regards to Air Traffic Management (ATM) Equipment Safety Cases as outlined in RA 3130(2)⁷ and RA 3132(2)⁸.
 - h. Act as the conduit to ATM Equipment programme Senior Responsible Owners (SRO) to highlight any concerns or issues with current or planned ATM Equipment.
 - i. Actively engage with capability staff to ensure that future programmes and projects related to ATS provision include accurate user requirements and factor in any operational considerations.
 - j. Carry out the ATSSO role and responsibilities for any non-military organization contracted by the RN / RAF to deliver ATS.
 - k. Ensure compliance with the AA-Facing Organization responsibilities detailed in RA 1032⁹.
5. Formal mechanisms **should** be established to enable the ATSSO to inform ADHs / AM(MF)s of:

⁵ Including at MAA regulated overseas bases.

⁶ Refer to RA 3263 – Aerodrome Classification.

⁷ Refer to RA 3130(2): User / Operator Responsibilities.

⁸ Refer to RA 3132(2): Responsibilities of Duty Holder-Facing Organizations.

⁹ Refer to RA 1032 – Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations – Roles and Responsibilities.

Acceptable Means of Compliance 1033(2)

- a. Changes in the operating environment or context that will affect ATS provision and are therefore likely to affect the related ASSC(s)¹.
 - b. Changes to, or new, ATM Equipment and procedures which are likely to affect the related ASSC(s)¹. This **should** be achieved through collaboration with the ATM Equipment programme SRO.
6. Formal mechanisms **should** be established with Heads of Establishment (HoE) and Aerodrome Operators (AO) to enable the ATSSO to:
- a. Inform HoE and AO of any issues that will affect the provision of ATS at their Aerodrome. As well as communicating issues with the provision of safe and compliant ATS, this **should** also include wider issues regarding the availability of ATS for example, significant resource or SQEP concerns.
 - b. Provide Subject Matter Expert (SME) advice to HoE and AO on the provision of ATS at their Aerodrome.
7. ATSSO's **should** hold appropriate Terms of Reference.

Guidance Material 1033(2)**Role and Responsibilities of the Air Traffic Services Senior Officer**

8. To enable the ATSSO to achieve the acceptable means of compliance above, they will require the support of relevant staff to provide the necessary information that will then enable the ATSSO to confirm that ATS provision is safe and compliant.
9. Through the provision of SME input, the ATSSO plays a key role supporting the ADH / AM(MF) chain in discharging their Air Safety responsibilities. This requires the individual to be experienced enough to undertake critical analysis of ATS related issues.
10. The ATSSO's value is in forming a holistic view of the effectiveness of ATS provision within their organization and how this could affect the ALARP and Tolerable status of the ADH / AM(MF) and / or an ASSC. Through oversight of unit ATS Assurance (1st Party Assurance and 2nd Party Assurance) the ATSSO can assure their command chain and ADHs / AM(MF)s that the appropriate standards are being met and that procedures and orders¹⁰ are fit for purpose, or, when this is not the case, highlight any areas of deficiency and suggest action to rectify identified shortfalls.

¹⁰ Such as RAF Battlespace Management Orders, Royal Navy BRd 768, Unit Orders.

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RA 1150 - Airborne Equipment and Airborne Forces ►◄

Rationale

When Airborne Equipment¹ (AE) is employed there is potentially an associated Risk to Life (RtL). The RtL can be mitigated by application of selected regulations designed for Air Systems to the AE itself and the Airborne Forces (AF) Community² that use it.

Contents

1150(1): Application of Regulations ►◄

Regulation 1150(1)

Application of Regulations ►◄

1150(1) As a minimum, the AF Community **shall** comply with MAA
►◄ Regulations detailed at Annex A ►◄.

Acceptable Means of Compliance 1150(1)

Application of Regulations ►◄

1. The AF Community **should** refer to the Acceptable Means of Compliance in the applicable Regulations listed at Annex A.

Guidance Material 1150(1)

Application of Regulations ►◄

2. AE is not defined as an Air System. The Regulations referenced in this RA were specifically written with respect to Air Systems; however, their intent is equally applicable to AE and also to the risk management framework necessary to allow Aviation Duty Holders (ADH) and other members of the AF Community to ensure RtL is managed appropriately.

3. Guidance regarding AE and AF Duty of Care and ADH responsibilities is contained in Annex B.

4. ►◄

¹ ► Refer to MAA02: Military Aviation Authority Master Glossary. ◄

² The AF community is defined as those organizations and personnel employed in the delivery of the UK's AF capability, as operators or in an engineering or other supporting role; it encompasses Aviation Duty Holders (ADH), Defence Equipment and Support and other AF Stakeholders.

ANNEX A

AE AND AF REGULATORY ARTICLE APPLICABILITY MATRIX

Applicable Regulatory Article	ADH	DE&S	Other AF Stakeholders
RA 1002 - ► Airworthiness ◀ Competent Persons	X	X	X
RA 1003 - Delegation of Airworthiness ► Authority ◀ and Notification of Air Safety Responsibility ► ◀		X	
RA 1005 - Contracting with Competent Organizations	X	X	X
RA 1006 - Delegation of Engineering Authorizations	X	X	X
RA 1012 - Chief of Materiel (Air) - Air Safety Responsibilities		X	
RA 1013 - ► ◀ Air Systems Operating Centre Director - Provision of Airworthy and Safe Systems		X	
RA 1014 - Design Organizations and Co-ordinating Design Organizations - Airworthiness Responsibilities		X	
RA 1015 - Type Airworthiness Authority - ► Roles and ◀ Responsibilities		X	
RA 1016 - ► Military ◀ Continuing Airworthiness ► Management ◀	X		
RA 1017 - Maintenance Organizations - Airworthiness Responsibilities	X	X	X
RA 1018 - Production Organization - Airworthiness Responsibilities		X	X
RA 1020 - ► ◀ Aviation Duty Holder and Aviation Duty ► Holder-Facing Organizations - Roles and Responsibilities ◀	X	X	X
RA 1021 - Release To Service Authorities – Roles and Responsibilities			X
RA 1022 - ► Senior Operator - ◀ Roles and Responsibilities ► ◀	X		
RA 1023 - Chief Air Engineer - Air Safety Responsibilities	X		
RA 1130 - Corporate Memory and Standards	X	X	X
RA 1140 - ► ◀ Air System Technical Data Exploitation	X	X	X
RA 1200 - Defence Air Safety Management	X	X	X
RA 1205 - Air System Safety Cases	X	X	X
RA 1210 - Ownership and Management of Operating Risk (Risk to Life)	X		
RA 1220 - ► Delivery ◀ Team Airworthiness and Safety		X	
RA 1225 - Air Safety Documentation Audit Trail	X	X	X
RA 1230 - Design Safety Targets	X	X	
RA 1240 - Chartering of Civilian ► Air Systems ◀ For Military Purposes	X	X	X
RA 1320 - ► Withdrawn ◀	► ◀	► ◀	► ◀
RA 1330 - Special Clearances	X	X	X
RA 1340 - Equipment Not Basic to the Air System	X	X	X
RA 1345 - The Airborne Equipment Release Certificates	X	X	X

Applicable Regulatory Article	ADH	DE&S	Other AF Stakeholders
RA 1370 - Release To Service Configuration Control and Audit Trail	X	X	X
RA 1400 - Flight Safety	X	X	X
RA 1410 - Occurrence Reporting	X	X	X
RA 1420 - Service Inquiries; Air Accident and Significant Occurrence Investigation	X	X	X
RA 1430 - Aircraft Post Crash Management and Significant Occurrence Management	X		X
RA 1440 - Air Safety Training	X	X	X

ANNEX B

AE AND AF DUTY OF CARE AND AVIATION DUTY HOLDER RESPONSIBILITIES

Parachutists ¹	Airborne Equipment ²	Aircraft Nationality ³	Risk and Duty Holder of parachuting activity
UK Armed Forces	UK cleared equipment	UK Armed Forces ⁴	Parachutists' Risk to Life Held by AE Operating Duty Holder (ODH)
UK Armed Forces	UK cleared equipment ⁵	Non-UK	Parachutists' Risk to Life Held by AE ODH
UK Armed Forces	No UK clearance	Non-UK	Duty of Care held by AF 2* Commander within Parachutists' Front Line Command (FLC) ⁶
UK Armed Forces	No UK clearance	UK Armed Forces	Duty of Care held by AF 2* Commander within Parachutists' FLC ⁷
Armed Forces personnel (non-UK)	UK cleared equipment	UK Armed Forces	Parachutists' RtL Held by AE ODH ⁸
Armed Forces personnel (non-UK)	No UK clearance	UK Armed Forces	ODH or FLC relates to ADH/Air System RtL ⁹ AE ODH SQEP to advise FLC
Armed Forces personnel (non-UK)	UK cleared equipment ⁵	Non-UK	Parachutists' RtL Held by AE ODH ¹⁰ AE ODH SQEP to advise FLC

¹ Parachutists are required to be trained on the AE which they will be using.

² UK cleared equipment refers to airborne equipment that is authorised for despatch from the ► Air System ◀ by an Airborne Equipment Release Certificate (AERC) or Operational Emergency Clearance or Cleared with Limited Evidence for British ► Air Systems ◀ and the appropriate means for NATO or non-NATO ► Air Systems. ◀ For the purposes of this RA, risk management and ► ADH ◀ responsibilities of AE undergoing Air Warfare Centre trials is to be treated in the same way as UK cleared AE.

³ It has been assumed that the AE has been cleared for use in the ► Air System, ◀ whether British, NATO or non-NATO.

⁴ This includes ► Air Systems ◀ chartered and assured in accordance with RA 1240. To offset for a paucity in the availability of military ► Air Systems, ◀ elements of MAB training, RAF Falcons Parachute Display Team activities and non-O₂ elements of Air Concentration Exercises are conducted by chartering ► Air Systems. ◀

⁵ If AE is to be used outside the scope and limitations of its AERC, MAA03 ► (Military Aviation Authority Regulatory Processes) ◀ will be consulted for direction on the application of Alternative Acceptable Means of Compliance, Waivers and Exemptions.

⁶ The 2* Commander within the Parachutist FLC will seek AE ODH Suitably Qualified and Experienced Person (SQEP) direction and guidance.

⁷ Variations in deployment type, equipment capabilities and, or, assessments of training requirements will seek AE ODH SQEP advise.

⁸ FLC responsibility includes ensuring the parachutist(s) have written approval and indemnity from their Government, are endorsed to undertake the task(s) they are presented for and are physical fit to do so.

⁹ There is additional expansion of policy regulation in this area within STANAG 7190 AT Ed. 2 (applicable to NATO nations only), Operations Director (Jt Cap) and in 2 Gp Air Staff Orders (ASO).

¹⁰ There is additional expansion of policy regulation in this area within STANAG 7190 AT Ed. 2 (applicable to NATO nations only), Operations Director (Jt Cap) and in 2 Gp ASO. The mechanism for AE ODH oversight and a process for understanding the division of responsibility between the ODH and FLCs is to be in place prior to conducting the activity as outlined in RA 2355.

RA 1160 - The Defence Air Environment Operating Framework

Rationale

In order to provide Defence with the required flexibility over how future capabilities are both procured and employed, Air Systems that qualify for military registration may be Military or Civilian-Owned and may be operated by Military or Civilian Aircraft Operating Authorities (AOA)¹. Additionally, an Air System that is not being operated in the interest of the MOD, but has the wider interest of the UK Government, may be granted UK military registration. Without a clear understanding of the correct governance framework, there is a risk that key responsibilities may be diluted or neglected entirely, with the result that the risks associated with operation of the Air System are not adequately managed. This RA introduces a coherent and consistent operating framework which has been developed to ensure that similar aviation activities within the Defence Air Environment (DAE) that result in a similar level of risk exposure, attract the same level of assurance and scrutiny, regardless of who owns or operates the Air System. All activities within the DAE will be assigned to an operating category which will define who is responsible for the execution and assurance of key functions including, Risk to Life (RtL) management, Continuing Airworthiness (CAw) and flight operations, as well as the balance of accountability between the MOD and the contractor for Type Airworthiness (TAw).

Contents

Definitions Relevant to this RA

Applicability of this RA

1160(1): Defence Air Environment Operating Categories

1160(2): Responsibilities of the Sponsor of Civilian-Owned and / or Civilian Operated Military Registered Air Systems

1160(3): Certificate of Usage

Definitions

Definitions Relevant to this RA

1. **Air Navigation Order (ANO) Definition of a Military Aircraft.** The ANO² defines a military Aircraft³ as: an Aircraft which is owned by the military; an Aircraft which is being constructed for the military; or “any aircraft for which there is in force a certificate⁴ issued by the Secretary of State that the aircraft is to be treated for the purposes of [the ANO] as a military aircraft.”
2. **DAE.** Activity within the DAE will fall into one of the following categories:
 - a. **In-Service.** Activity related to a UK military registered Air System being operated in the interest of the MOD, where the Air System itself and all Role Equipment and / or Equipment Not Basic to the Air System (ENBAS) required to deliver the capability have completed development activity and are being used to deliver the capability for which they were intended, be that training or operations.
 - b. **Development.** Activity related to a UK military registered Air System where the Air System itself or any Role Equipment and / or ENBAS required to deliver the capability is being tested, evaluated or assessed in order to generate evidence in support of the Air System Safety Case (ASSC).
 - c. **Special Case Flying.** Special Case Flying refers to any operation of an Air System which is UK military registered, but which is not being operated in the interest of the MOD.
3. **MOD Interest.** An activity on a UK military registered Air System is defined as being operated in the interest of the MOD when any one of the following criteria is satisfied:

¹ For the purposes of RA 1160, AOA also includes any organizations operating Open and Specific S1 Category Remotely Piloted Air System (RPAS).

² The Air Navigation Order 2016, Schedule 1 – Interpretation.

³ For the purpose of the MRP the MAA have expanded the term Aircraft to mean Air System.

⁴ For Civilian-Owned Air Systems operating on the UK Military Aircraft Register (MAR) the required certificate is the Certificate of Usage (CofU).

Definitions

- a. There is a direct contract in place between the MOD and the Operator of the Aircraft for the provision of the activity.
- b. MOD personnel are required to fly on or fly the Air System, as either Aircrew, RPAS operators, Supernumerary Crew or Passengers, in order to achieve the output from the activity.
- c. The MOD is liable for any losses associated with operation of the Air System whilst conducting the activity (including indemnification to sub-contractors).
- d. The Air System is owned by the MOD.

Where an activity on a UK military registered Air System does not satisfy any of the above criteria, the activity is defined as not being in the interest of the MOD.

4. **Direct Contract.** The criteria specified at Para 3.a relates to a direct contract between the MOD and the Operator for the provision of the activity itself (ie the MOD requires the capability delivered by the operation of the Air System); this does not relate to arrangements whereby the operation of the Air System is inconsequential to the MOD, but there is a contract in place for the provision of some enablers by the MOD to the contractor (eg use of MOD facilities, provision of fuel, documentation etc).

5. **MOD Personnel.** The criteria specified at Para 3.b relates to situations where MOD personnel are required to fly an Air System, to fly on the Air System or operate the Air System either as part of the operating crew to deliver the required capability, or to receive the service being provided (eg training or transportation); this does not include bespoke arrangement for MOD personnel to fly on 'one-off' flights, for example to allow the contractor to demonstrate a capability to the MOD, or for the contractor to utilize MOD instructors / Standards Evaluation personnel as part of their assurance activity. Whilst the MOD retains a duty of care for its personnel, such 'one-off' flights would not make the whole operation subject to MOD Interest.

Applicability**Applicability of this RA**

6. This RA applies to all Air Systems intending to operate within the DAE.

**Regulation
1160(1)****Defence Air Environment Operating Categories**

1160(1) All Air Systems operating within the DAE **shall** be assigned to an appropriate operating category and **shall** be subject to the governance arrangements defined by that operating category.

**Acceptable
Means of
Compliance
1160(1)****Defence Air Environment Operating Categories**

7. **Operating Categories.** Aviation Duty Holders (ADH)⁵ and, for Civilian-Owned or Civilian Operated Air Systems, the Sponsor⁶, **should** assign each Air System within their Area of Responsibility (AoR), and any activity relating to the operation of that Air System, into the following operating categories⁷:

- a. **Military Operated (Development).**
- b. **Military Operated (In-Service).**
- c. **Civilian Operated (Development).**
- d. **Civilian Operated (In-Service).**
- e. **Special Case Flying.**

⁵ This is the RPAS Duty Holder for: Open A2 Sub 4 kg; Open A3 Sub 4 kg and Sub 25 kg; and Specific S1 RPAS.

⁶ Refer to RA 1019 – Sponsor of Military Registered Civilian-Owned and Civilian Operated Air Systems - Air Safety Responsibilities.

⁷ Descriptions of the Operating Categories and further Guidance Material can be found at para 13.

**Acceptable
Means of
Compliance
1160(1)**

8. **Ownership.** The ANO requires Civilian-Owned Air Systems that operate on the UK MAR to be issued with a Certificate of Usage (CofU) issued on behalf of the Secretary of State (SofS)⁸. Therefore, the Sponsor **should** ensure that Civilian-Owned Air Systems are issued with a valid CofU in accordance with (iaw) RA 1160(3) and registered iaw RA 1161⁹.
9. **Governance Arrangements – Military Operated.** For Military Operated Air Systems, ADHs **should** actively manage Air Safety and comply with RA 1020¹⁰.
10. **Governance Arrangements – Civilian Operated.** For Civilian Operated Air Systems, the Sponsor **should** ensure that all activities relating to operation of the Air Systems are subject to the governance arrangements detailed in RA 1162¹¹.
11. **Governance Arrangements – Special Case Flying.** For Special Case Flying Air Systems, the Sponsor **should** ensure that all activities relating to operation of the Air Systems are subject to the governance arrangements detailed in RA 1163¹².
12. **Transfer of Air Systems between Operating Categories.** The transfer of Air Systems between Operating Categories may require formal transfer of Air Safety management arrangements, all transfers **should** meet the regulatory requirements as detailed in RA 1164^{13, 14}.

**Guidance
Material
1160(1)**

Defence Air Environment Operating Categories

13. **Operating Categories within the DAE.** All aviation activity within the DAE (ie activity on a military registered Air System and therefore regulated by the MAA) will fall into one of the following five operating categories (see Figure A-1 at Annex A):

a. **UK Military Registered Air Systems Operating for MOD Interest:**

(1) **Military Operated (Development).** All UK military registered Air Systems which are undergoing development activity, defined as Test and Evaluation (T&E) category activities 1 to 4¹⁵, and operated under a military AOA. The operation of Development Air Systems by the Air and Space Warfare Centre or the Air Test and Evaluation Centre are examples of such activity.

(2) **Military Operated (In-Service).** All UK military registered Air Systems which are being used to provide the capability for which they were intended and operated under a military AOA. Activities undertaken by military front line units or training organizations utilizing In-Service Air Systems fall into this category.

(3) **Civilian Operated (Development).** All UK military registered Air Systems which are still in development or undergoing modification and operated by a civilian AOA (Contractor Flying Approved Organization Scheme (CFAOS)). Activities associated with Air Systems which are in production for the MOD by industry, or transferred to industry for modification, will fall into this category.

(4) **Civilian Operated (In-Service).** All UK military registered Air Systems which are being used to provide the capability for which they were intended and operated by a civilian AOA (CFAOS). This category will include those operations where the MOD has placed a contract with a CFAOS organization for the provision of a capability utilizing a UK military registered Air System. Examples of these contracted capabilities include

⁸ A CofU is only required for Civilian-Owned RPAS in the Specific and Certified Categories. Civilian-Owned RPAS in Open A1, Open A2 and Open A3 are prohibited from being operated on the UK MAR.

⁹ Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.

¹⁰ Refer to RA 1020 – Aviation Duty Holder and Aviation Duty Holder-Facing Organizations – Roles and Responsibilities.

¹¹ Refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems.

¹² Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.

¹³ Refer to RA 1164 – Transfer of UK Military Registered Air Systems.

¹⁴ Open and Specific S1 RPAS are required to apply the Air Safety intent of RA 1164.

¹⁵ Refer to RA 2370(3): Test and Evaluation Activity.

**Guidance
Material
1160(1)**

the provision of training for UK personnel or the transport of UK personnel or equipment.

b. **UK Military Registered Air Systems NOT Operating for MOD Interest:**

(1) **Special Case Flying.** UK Military Registration may be granted to an Air System that is not operating in the interest of the MOD and is not eligible / suitable to achieve civil registration, if it is deemed to be in the interests of the wider UK Government; their operation is categorized as Special Case Flying. As Special Case Flying is not operating in the interest of the MOD, by definition, it will only be conducted on Air Systems which are not owned by the MOD and are operated under a civilian AOA (CFAOS). Special Case Flying may encompass Air Systems which are undergoing development, in production for export, or being used to deliver a service.

14. **Governance Arrangements.** The Air Safety governance arrangements as defined for a specific operating category determine how the management of RtL, TAw, CAw and flight operations are to be discharged and assured. The key responsibilities for the ensurance and assurance of these functions are summarised within Table A-1 at Annex A. Explicit responsibilities for Civilian Operated (Development) and (In-Service) Air Systems are detailed within RA 1162¹¹. Explicit responsibilities for Special Case flying are detailed within RA 1163¹². There is no bespoke RA for Military Operated Air Systems as the ADH's responsibilities for Air Safety Governance are as defined within the MAA Regulatory Publications. The structure of the RA 1160 series, and how the RAs apply to the operating categories, is depicted in Figure B-1 at Annex B.

15. It may be possible for an Air System to operate across multiple Operating Categories; eg a Civilian Operated Air System delivering to a Special Case Flying contract during one series of flights and then to a Civilian Operated (In-Service) contract during another series of flights. For this operating scenario the conditions of RA 1162 apply above that of RA 1163.

16. For the purposes of defining Military-Owned Air Systems within the RA 1160 series, foreign owned Military Air Systems are included.

**Regulation
1160(2)**

Responsibilities of the Sponsor of Civilian-Owned and / or Civilian Operated Military Registered Air Systems

1160(2) All Civilian-Owned and / or Civilian Operated Military Registered Air Systems **shall** have a Sponsor, who **shall** be a Crown Servant.

**Acceptable
Means of
Compliance
1160(2)**

Responsibilities of the Sponsor of Civilian-Owned and / or Civilian Operated Military Registered Air Systems

17. **Requirement.** Civilian-Owned and / or Civilian Operated Air Systems **should** have a nominated Sponsor once it has been established that either:

- a. The Air System is not eligible / suitable for registration by the Civilian Aviation Authority;
- b. The task is in the interest of the wider UK Government;
- c. The MOD as a Department of State has agreed that MOD resource is to be utilized to support the activity.

18. **Nomination.** The Sponsor **should** be an individual at 2* level or above, with appropriate competence, experience and delegation¹⁶ to discharge the legal responsibility of the SofS for the Air Safety of Air Systems on the UK MAR.

¹⁶ From the relevant service Chief of Staff or Chief Executive Officer.

**Acceptable
Means of
Compliance
1160(2)**

19. **Responsibilities.** Sponsor responsibilities are dependent upon Air System ownership and operating category, as follows:

a. **Civilian-Owned and Military Operated (Development or In Service).** For Civilian-Owned and Military Operated Air Systems, the Sponsor **should** be responsible for:

- (1) Approving the CofU iaw RA 1160(3).
- (2) Applying for Military Registration of the Air System iaw RA 1161⁹.
- (3) Nomination of an appropriate Operating Duty Holder (ODH) to be responsible for actively managing Air Safety and to comply with RA 1020¹⁰.

b. **Civilian-Owned and Civilian Operated (Development or In Service).** For Civilian-Owned and Civilian Operated Air Systems, the Sponsor **should** be responsible for:

- (1) Approving the CofU iaw RA 1160(3)
- (2) Applying for Military Registration of the Air System iaw RA 1161⁹.
- (3) Assuring themselves on behalf of the SofS that the appropriate Air Safety governance arrangements for RtL, flight operations, CAw and TAw management are at least equivalent to those within a Military Operated environment, as required by RA 1162¹¹. When assessing the level of activity required to assure that the Air Safety arrangements are appropriate, the Sponsor **should** consider the operating context in which the activity will be undertaken, the potential for conflict of loyalties and the level of risk exposure.
- (4) Approving the Air System's Military Permit to Fly (MPTF) (In-Service) iaw RA 1305¹⁷.

c. **Special Case Flying.** For Special Case Flying Air Systems, the Sponsor **should** be responsible for

- (1) Approving the CofU iaw RA 1160(3).
- (2) Applying for Military Registration of the Air System iaw RA 1161⁹.
- (3) Assuring themselves on behalf of the SofS that the appropriate Air Safety governance arrangements for RtL, flight operations, CAw and TAw management are in place, as required by RA 1163¹². When assessing the level of activity required to assure that the Air Safety arrangements are appropriate, the Sponsor **should** consider the operating context in which the activity will be undertaken, the potential for conflict of loyalties and the level of risk exposure.
- (4) Issuing the Certificate for Commencement of Flight for Civilian Operated (Special Case Flying) Air Systems.

**Guidance
Material
1160(2)**

Responsibilities of the Sponsor of Civilian-Owned and / or Civilian Operated Military Registered Air Systems

20. For Civilian-Owned and Military Operated Air Systems the MAA consider the relevant Release To Service Authority (RTSA) to be a Suitably Qualified and Experienced Person and independent to fulfil the role of the Sponsor.

21. Air Systems which are Military-Owned and Military Operated, but which are transferred to a CFAOS contractor for the conduct of post Maintenance test flights, will remain under the responsibilities of the original Sponsor; Sponsorship conditions do not transfer to that for Civilian Operation for the period of this type of activity. The specific requirements for the transfer of such Air Systems is detailed at RA 1164¹³.

¹⁷ Refer to RA 1305 - Military Permit to Fly (In-Service), (Special Case Flying) and (Single Task).

Guidance Material 1160(2)

22. For Civilian-Owned or Military-Owned Air Systems operating in the Civilian Operated (Development) Category, refer to RA 5880¹⁸ for approval of the MPTF (Development).
23. For Civilian-Owned Air Systems operating in the Special Case Flying Category, refer to RA 1305¹⁷ for approval of the MPTF (Special Case Flying). Special Case Flying Air Systems may also undertake developmental activity, under these circumstances the Air System will be operated iaw RA 5880 - MPTF (Development).
24. The MAA recognize that for Military-Owned and Civilian Operated (Development or In Service) Air System there will be a duality of Sponsor responsibilities; a Senior Responsible Owner (SRO) will fulfil the Sponsor responsibilities for registration of the Air System onto the UK MAR, iaw RA 1161⁹ yet, as a result of becoming Civilian Operated, a separate Sponsor will fulfil the responsibilities of RA 1162¹¹. A responsibility transfer will be required between SRO and the Sponsor, likely to occur prior to Air System Activation on the UK MAR, and the MAA can be contacted to provide bespoke clarifying guidance as and when this type of Operating Context is required.

Regulation 1160(3)

Certificate of Usage

- 1160(3) For all UK Military Registered Civilian-Owned Air Systems the Sponsor **shall** ensure there is a valid CofU¹⁹.

Acceptable Means of Compliance 1160(3)

Certificate of Usage

25. The CofU **should** be based upon the template hosted on the MAA's website.
26. The CofU **should** be produced by the Sponsor, on acceptance of the applicant's Application for Approval in Principle (AAiP), and **should** state the following:
- a. The designated type and mark of the Air System.
 - b. The unique serial number of the specific airframe(s)²⁰.
 - c. The agreed operating category(s) that the Air System is to be operated within.
 - d. A description of the proposed scope of activity to be conducted.
 - e. A description of the proposed ownership and management of Rtl, Operations, TAw and CAw.
27. The CofU **should not** include specific flight limitations; these **should** be captured in either a Release To Service (RTS), MPTF (In-Service), MPTF (Development) or MPTF (Special Case Flying).
28. The CofU **should** only be signed by the Sponsor when they are satisfied that the proposed Air Safety governance arrangements for the Air System are appropriate for the intended operating category.
29. The Sponsor **should** present the CofU to the MAA²¹ for review under the following circumstances:
- a. When applying for UK military registration accompanying the AAiP.
 - b. When requesting activation of the Air System on the UK MAR.
 - c. Following any change to, or renewal of, the CofU.

¹⁸ Refer to RA 5880 – Military Permit to Fly (MRP 21 Subpart P).

¹⁹ A CofU is only required for Civilian-Owned RPAS in the Specific and Certified Categories. Civilian-Owned RPAS in Open A1, Open A2 and Open A3 are prohibited from being operated on the UK MAR.

²⁰ See para 32.

²¹ DSA-MAA-OpAssure-MAR@mod.gov.uk.

**Acceptable
Means of
Compliance
1160(3)**

30. The Sponsor **should**:
- a. Conduct a regular review of the CofU to confirm that the scope of operation remains appropriate for UK military registration and confirm that the Air Safety governance arrangements for that Air System remain appropriate as defined by the agreed operating category.
 - b. Revoke the CofU if not satisfied with the Air Safety governance arrangements for that Air System as defined by the agreed operating category.
 - c. Inform the MAA²¹ immediately when the CofU is revoked or withdrawn for any reason.
 - d. Forward amended CofU documentation to the MAA²¹.

**Guidance
Material
1160(3)****Certificate of Usage**

31. The ANO requires that the military status of Military Registered Civilian-Owned Air Systems is recognized by the issue of a certificate signed on behalf of the SofS; this is the CofU.
32. The CofU is signed on behalf of the SofS by the Sponsor and serves to legally declare that the operation of the Air System does not have to comply with the ANO. This is the purpose of the CofU; it is neither a TAw release document nor a flight limitations document.
33. Whilst the CofU will bound the type of activity for which military registration is deemed appropriate by the Sponsor, the CofU will not be used to articulate specific flight limitations; these will be contained within either the RTS or MPTF as appropriate. As such, the application for, and signature of, a CofU for military registration of a Civilian-Owned Air System will occur at the start of the registration process and will be included in the AAiP.
34. When submitted as part of the AAiP, the CofU will reference the former civilian or non-UK military registration number, or the Manufacturer's Serial Number. Once a provisional UK military registration tail number has been allocated to the airframe the CofU will reference this tail number.
35. The CofU can refer to more than one airframe of an Air System type, providing that the scope of activity, operating category, and Air Safety governance arrangements are common for all airframes to which the CofU refers.

ANNEX A

Figure A-1: The Defence Air Environment Operating Framework

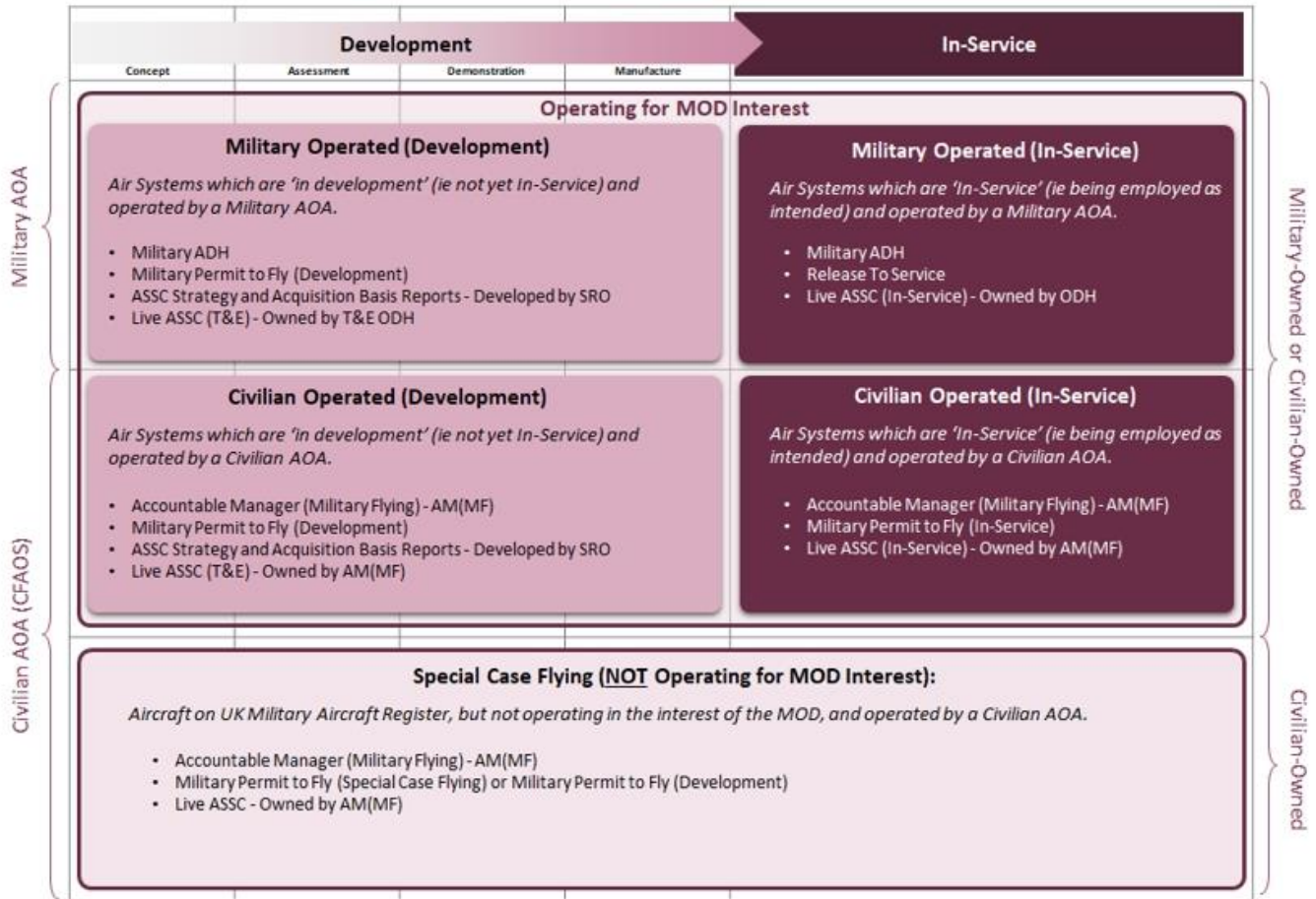


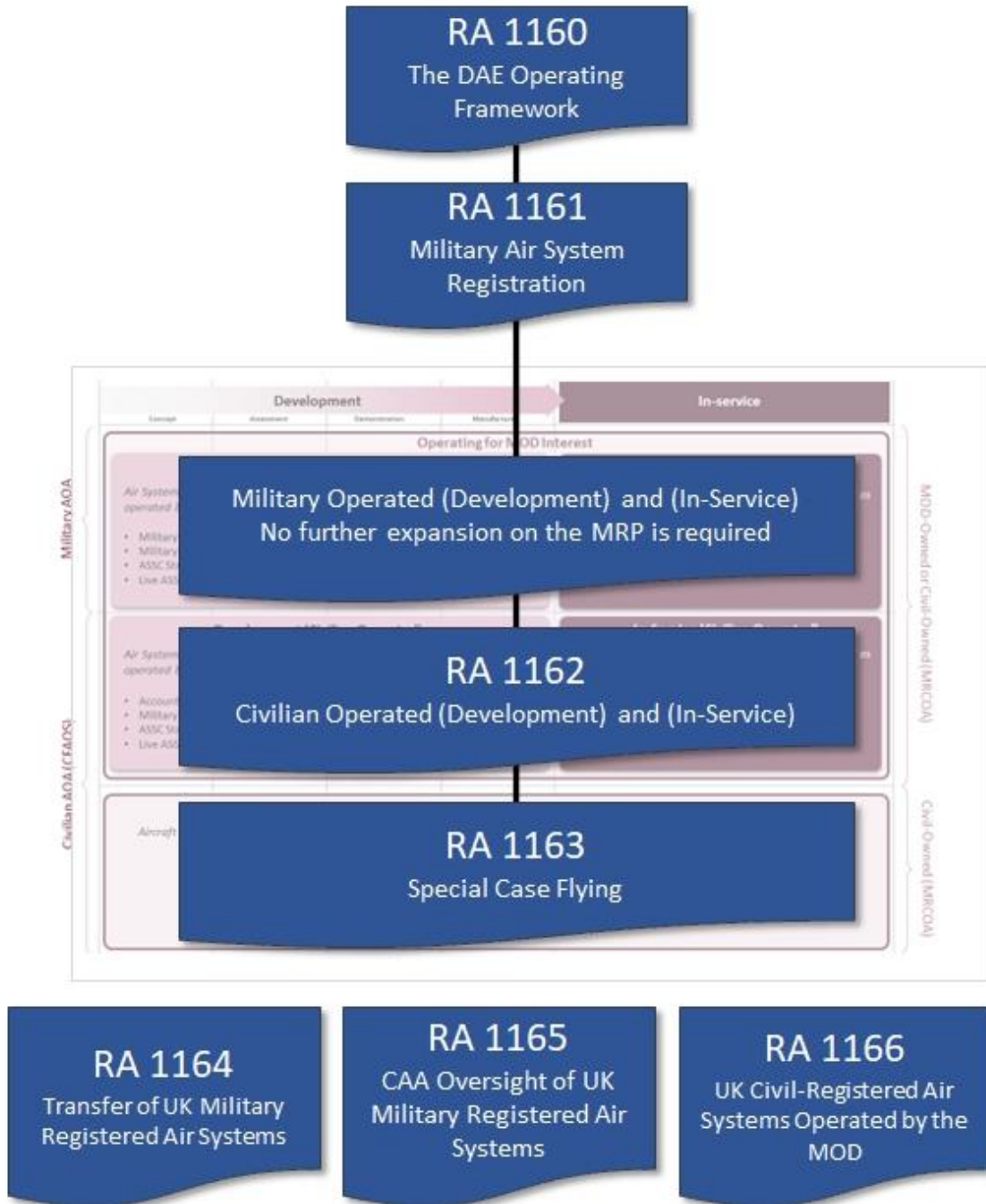
Table A-1: Defence Air Environment Operating Categories – Key responsibilities

Operating Category	ASSC and RtL Management	TAW Management	CAW Management	Flight Release and Limitations Document
Military Operated (Development)	A military ADH chain will be responsible for managing the RtL associated with the activity, with the ODH required to own and manage a Live ASSC for T&E flying.	The Type Airworthiness Authority (TAA) will be fully accountable for ensuring TAW.	Delivery Duty Holder (DDH) through Military Continuing Airworthiness Manager (Mil CAM) The DDH is accountable for ensuring that CAW is managed by a MAA approved Military Continuing Airworthiness Management Organization (Mil CAMO).	MPTF (Development) Flights will be conducted iaw a MPTF (Development), which will be signed by the Operator, Design Organization (DO) ²² and the TAA (or privileged DO)
Military Operated (In-Service)	A military ADH chain will be responsible for managing the RtL associated with the activity, with the ODH required to own and manage a Live ASSC for the In-Service flying.	The TAA will be fully accountable for ensuring TAW.	DDH through Mil CAM The DDH is accountable for ensuring that CAW is managed by a MAA approved Mil CAMO.	RTS Flights will be conducted iaw a RTS.
Civilian Operated (Development)	The AM(MF) will be responsible for managing the RtL associated with the activity and will be required to own and manage a Live ASSC for the T&E flying.	Military-Owned Air Systems. The TAA will be fully accountable for ensuring TAW. Civilian-Owned Air Systems. Dependent upon the Sponsor's chosen TAW management model, either:	AM(MF) through Mil CAM The AM(MF) is accountable for ensuring that CAW is managed by a MAA approved Mil CAMO.	MPTF (Development) Flights will be conducted iaw a MPTF (Development), which will be signed by the Operator, TAA (or privileged DO).
Civilian Operated (In-Service)	The AM(MF) will be responsible for managing the RtL associated with the activity and will be required to own and manage a Live ASSC for the In-Service flying.	<ol style="list-style-type: none"> 1. A TAA is fully accountable for ensuring TAW or, 2. A TAA and TAM share accountability for ensuring TAW; <ol style="list-style-type: none"> a. The TAA is, as a minimum, accountable for the mandated non-delegable TAW responsibilities, alongside a; b. MAA approved DO with a TAW management supplement and a nominated TAM, who is accountable for ensuring the remaining TAW responsibilities. 	AM(MF) through Mil CAM The AM(MF) is accountable for ensuring that CAW is managed by a MAA approved Mil CAMO.	MPTF (In-Service) Flights will be conducted iaw a MPTF (In-Service), which will be signed by the Operator, the TAM, TAA, and the Sponsor as a final signatory.
Special Case Flying	The AM(MF) will be responsible for managing the RtL associated with the activity and will be required to own and manage a Live ASSC for either the T&E or In-Service flying as appropriate.	A MAA approved DO , with a TAW Management Supplement and a nominated TAM, will be accountable for TAW.	AM(MF) through Mil CAM The AM(MF) is accountable for ensuring that CAW is managed by a MAA approved Mil CAMO.	MPTF (Special Case Flying) or (Development) The MPTF (Special Case Flying) will be signed by the Operator and TAM as final signatory

²² Where the term Design Organization (DO) is used this can be read as DO, Co-ordinating Design Organization (CDO) or Air System CDO as appropriate.

ANNEX B

Figure B-1: RA 1160 Series structure, superimposed on the framework of Defence Air Environment Operating Categories (See Annex A)



RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment

Rationale

Registration of an Air System, and its associated registration marking, is required to provide each Air System with a unique identity. To operate within the Defence Air Environment (DAE) military registration is required and registration markings must be displayed. Not having Air Systems appropriately marked introduces a risk that accountability and assurance of Air Safety will be diluted or neglected entirely. This RA details the military registration and activation process for all Air Systems operating within the DAE

Contents

1161(1): Military Air System Registration

1161(2): Application for Approval in Principle

1161(3): Request for Activation on the UK Military Aircraft Register

1161(4): Indemnity

Regulation 1161(1)

Military Air System Registration

1161(1) All Air Systems intending to operate in the DAE **shall** be registered on the UK Military Aircraft Register (MAR).

Acceptable Means of Compliance 1161(1)

Military Air System Registration

1. All Air Systems to be employed within a DAE Operating Category¹ **should** be registered following submission of a successful application by either the Senior Responsible Owner (SRO)² for Military-Owned or Sponsor for Civilian-Owned.
2. To qualify for military registration and operation within the DAE;
 - a. The Air System **should** meet the Air Navigation Order (ANO) definition of a 'military aircraft'³, or
 - b. The Air System **should not** be eligible / suitable for registration by the Civilian Aviation Authority (CAA); that is, it is required to be operated in a manner outside that permitted by the ANO, or the operation or design is outside CAA expertise.
3. The prerequisites for military registration and operation within the DAE are that;
 - a. A Civilian-Owned Air System **should** have a Certificate of Usage (CofU)⁴.
 - b. The Air System **should** be designed, maintained and operated by organizations that have been formally approved by the MAA. Air Systems not designed by a MAA approved organization **should** have a MAA approved Co-ordinating Design Organization (CDO) and be appointed as the Air System CDO by the relevant Type Airworthiness Authority (TAA), prior to the submission of the Application for Approval in Principle (AAiP). Where the Design Organization (DO) of the platform is not MAA approved, the TAA **should** request a waiver against RA 1005⁵ for the DO, prior to submission of the AAiP, and have a contracted route to achieving approval
 - c. The Air System's Type Certification Basis **should** consist of applicable certification specifications for airworthiness that have been shown to deliver a level of safety that is consistent with the intent of Def Stan 00-970 in accordance with (iaw) RA 5810⁶.
 - d. The Air System **should** be capable of controlled flight.

¹ Refer to RA 1160(1): Defence Air Environment Operating Categories.

² The SRO is the single individual with overall responsibility for ensuring that a programme meets its objectives and delivers the projected benefits.

³ Refer to RA 1160 – The Defence Air Environment Operating Framework paragraph 1.

⁴ A CofU is only required for Civilian-Owned Remotely Piloted Air Systems (RPAS) in the Specific and Certified Categories. Civilian-Owned RPAS in Open A1, Open A2 and Open A3 are prohibited from being operated on the UK MAR.

⁵ Refer to RA 1005 – Contracting with Competent Organizations.

⁶ Refer to RA 5810 – Military Type Certificate (MRP 21 Subpart B).

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- e. The Air System's operation **should** be intended to complete multiple flights.
4. An Air System **should** only be registered with one aviation authority at any one time, therefore before registration on the UK MAR, Air Systems transferring from another register **should** provide proof of de-registration. Similarly, UK military Air Systems transferring to another register require a UK military Certificate of De-Registration.
5. The status of an Air System's registration on the UK MAR **should** be one of the following;
- Provisional.** Provisional registration occurs prior to operation of the Air System and following successful AAiP.
 - Active.** Activation on the UK MAR, and registration of the Air System as Active, occurs prior to first flight of the Air System and following successful Request for Activation on the UK MAR.
 - Inactive.** Designation of an individual Air System by tail number as Inactive applies when the Air System is no longer being operated for a sustained period. This is likely to be for a period of Storage for the purposes of Inactive Fleet Management or when a military Air System is being sold to a Civilian Operator for continued use in the DAE and temporary in-activity is required.
 - Storage.** The Military Continuing Airworthiness Manager (Mil CAM) **should** notify the MAR Registrar⁷ when an Air System enters a period of storage, upon which the Registrar will identify the Air System as Inactive. The Mil CAM **should** notify the MAR Registrar when an Air System returns from Inactive to Active, no further application evidence is required.
 - Sale of an Air System to a Civilian Operator.** If an Air System is to be sold to a Civilian operator it may be entitled to remain registered on the UK MAR providing there is; a designated Sponsor for the future activity; a contract in place for the future activity; and the Air Safety management approvals remain in place with no gap in regulatory oversight. To maintain an Air System on the MAR, the Sponsor **should** inform the MAR Registrar⁷ of the intent to maintain the Air System on the MAR, at which point the Air System will be temporarily made Inactive. Prior to the operation of the Air System, the Sponsor **should** submit an AAiP and Request for Activation to DSA-MAA-Operating-Assurance-Hd.
 - De-Registered.** When military registration is no longer required (Out of Service Date, disposal or transfer to another regulating authority), and regulation under the MAA Regulatory Publications (MRP) is no longer appropriate, the Mil CAM **should** make the request to the MAA⁷ notifying the Sponsor, to de-register the Air System. On review by the MAA the Mil CAM will be issued a Certificate of De-Registration. All UK military markings **should** be removed from Air Systems once de-registered.
6. When operating on the UK MAR, registration markings **should** be appropriately displayed for the size and type of the Air System.

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Military Air System Registration

7. A flow chart providing guidance to meet the requirements for military Air System registration is at Annex A.
8. The registration of Air Systems provides a unique identity that enables the following essential actions:
- The certification of fitness for flight of individual airframes.
 - Identification in flight.

⁷ DSA-MAA-OpAssure-MAR@mod.gov.uk

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- c. Configuration control.
 - d. A record of usage and Maintenance.
9. If an Air System, having been de-registered from the UK MAR as an act of transfer and registration onto another Authority's register, returns to the UK MAR it will follow full AAiP and Request for Activation processes.
10. The regulatory requirements of paragraphs 3b and 3c do not apply to Open and Specific Category RPAS.
11. RPAS Remote Pilot Stations (RPS) are not registered on the MAR. As an element of the RPAS, a RPS may be allocated to a number of different RPAS. The administration and identification of RPAS RPS are to be locally controlled and managed.
12. The CAA may be unwilling to register Air Systems due to their design standards, their intended spectrum of operation or their end-use. Such Air Systems may be placed on the MAR, with the Secretary of State (SofS) regulating their Airworthiness and operation, but only where there is clear benefit to the UK Government in doing so.
13. Examples of Air Systems that may be suitable for military registration include:
- a. A Type developed from a military design that was originally procured by the MOD and designed by a DO approved under the MAA Design Approved Organization Scheme (DAOS).
 - b. A new Air System, not the subject of a MOD contract, but designed by a DO approved under the MAA DAOS.
 - c. A new Air System, subject of a MOD contract.
 - d. An Air System designed in a foreign country which is the subject of a Memorandum of Understanding (MOU) between the UK Government and the country of origin government, agreeing the further development of the design, and flight testing in UK airspace, under the auspices of a DO approved under the MAA DAOS.
 - e. Air Systems returning for operation in the UK that have previously been registered prior to export. Foreign-Owned Air Systems returning to the UK for Maintenance, modification may be considered for registration.
 - f. Air Systems sponsored by a UK Government Department, supported by an authoritative statement to the effect that the proposal is in the wider UK national interest.
14. For the purposes of defining Military-Owned Air Systems within the RA 1160 series, foreign-Owned Military Air Systems are included.

Civil Registered, Civilian-Owned Historic Military-Type Air Systems

15. Historic military type Air Systems, that have been awarded a CAA Certificate of Airworthiness or a CAA Permit to Fly, may be granted permission, in the interests of aviation history, to display original, historically accurate military livery and 'applicable to type' military registration numbers in lieu of a civil registration number.
16. Applications to display historic military markings and liveries are made to the appropriate Front Line Command (FLC) iaw the procedures detailed on the CAA web page entitled 'Exemptions from the need to display markings on UK Registered Aircraft'. The FLC will assess the application and its supporting documentation and, if satisfied, will forward the request to the DSA-MAA-Operating-Assurance-Hd.
17. Providing the historic military registration number is not already in use it will be authorized. DSA-MAA-Operating-Assurance-Hd will authorize the Registrar to annotate the MAR. The Registrar will maintain a separate section within the MAR to identify UK military registration numbers that have been authorized for display on Civilian-Owned historic military type Air Systems.
18. A letter of permission to operate with historic markings and liveries will be issued by the FLC to the applicant, copied to the Registrar. In order for the applicant to gain CAA exemption from Article 32 and Schedule 4 Part 2 of the ANO 2016 they are

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to send their letter of permission to the CAA Aircraft Registration Section iaw the guidance provided on the CAA website.

19. **Registration Markings.** For the purpose of Air System registration markings, and in consultation with the Delivery Team where applicable, guidance can be taken from Digital Air Publication (DAP) 119A-0601-0B Chapter 9⁸ and CAP 523⁹. Where RPAS are either too small to physically accommodate registration markings or are unable to have them applied in the standard positions, guidance can be taken from CAA guidance on labelling drones and model aircraft. When Operational considerations are required for applying registration markings the Camouflage Working Group is to be consulted.

20. **Non-applicability for registration on the UK MAR.** RA 1166 and RA 1240¹⁰, offer defence the ability to contract for the utilization of civilian registration and thus these Air Systems do need to be registered on the UK MAR.

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Application for Approval in Principle

1161(2) When applying to register an Air System on to the UK MAR an AAiP **shall** be submitted.

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Application for Approval in Principle

21. For Civilian-Owned Air Systems the AAiP **should** be prepared by the Applicant for the Sponsor using the template hosted on the MAA's website.

22. When satisfied that the Air System has qualified for military registration and met the registration principles, the SRO² (for Military-Owned) or Sponsor (for Civilian-Owned) **should** submit the completed application (whose template is hosted on the MAA website), the CofU for Civilian-Owned, and the associated Air System Safety Case (ASSC) Report¹¹, to DSA-MAA-Operating-Assurance-Hd.

23. In addition to the requirements of RA 1205¹², submission of the ASSC Report¹³ as part of the AAiP¹⁴ **should** explicitly;

- a. Detail Claims / Arguments that summarise the organizational approvals for the design, Maintenance and operation of the Air System.
- b. Detail Claims / Arguments that summarise the approach taken to develop the Equipment Safety Assessment¹⁵ and Airworthiness Strategy.
- c. Detail Claims / Arguments that summarise the proposed arrangements for the upkeep of Type and Continuing Airworthiness while the Air System is registered on the MAR.
- d. Detail Claims / Arguments that summarise the approach to develop the Maintenance policy.

24. **Special Case Flying.** For military registration of Air Systems not operating in the MOD interest, the Sponsor **should** ensure the AAiP;

- a. Appropriately argues that it is in the interest of the UK Government to place the Air System on the MAR.
- b. Details that the Applicant will bear all MOD costs associated with the project throughout its life.
- c. Details that the Applicant will indemnify the MOD against any costs that might be incurred as a result of an accident or incident.

⁸ Refer to DAP 119A-0601-0B – Surface Finishing Processes, Procedures, Materials and Equipment. Additional guidance with regards to identification markings on small RPAS can be sought independently through DSA-MAA-MRPEenquiries@mod.gov.uk.

⁹ Refer to CAP 523 – Display of Nationality and Registration Marks on Aircraft: Guidance for Owners.

¹⁰ Refer to RA 1166 – UK Civil-Registered Aircraft Utilized by the Ministry of Defence and RA 1240 – Chartering of Civilian Air Systems for Military Purposes.

¹¹ For Open and Specific S1 Category RPAS refer to RA 1600 for the alternative requirements to the ASSC Report.

¹² Refer to RA 1205 – Air System Safety Cases.

¹³ Dependent on the juncture at which registration of an Air System is sought, this could be either the ASSC Strategy Report or ASSC Acquisition Basis Report.

¹⁴ Submission of the ASSC Report replaces the Air Safety Strategy.

¹⁵ Refer to RA 1220(3): Equipment Safety Assessment.

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Application for Approval in Principle

25. The end-to-end process for registering an Air System typically takes 6 months. It is highly recommended that the SRO (for Military-Owned Air Systems) or the Applicant (for Civilian-Owned Air Systems) holds a launch meeting at the start of a project to register an Air System with the Military Aircraft Registration section of the MAA⁷, so that timescales are clear and expectations are managed. This is especially important in cases where the Air System is unfamiliar to the MOD or there will be a significant difference in the design and / or usage of the Air System compared with an equivalent In-Service Type.

26. At the point of submission of the AAiP the associated ASSC Report will not be the fully substantiated ASSC Report; this is required through submission of the Live ASSC Report as part of the request for Activation on the UK MAR to support flying operations. For the AAiP, an appropriately mature ASSC Report that summarises the developing ASSC is to be submitted.

27. On review of the AAiP, along with the CofU for Civilian-Owned Air Systems, the MAA Registrar will provisionally enter the Air System details onto the UK MAR and notify the SRO / Sponsor of the provisional tail numbers.

28. The AAiP template requires the following information, each to be supplemented by a detailed narrative where appropriate.

- a. **Purpose of Military Registration:** eg Export support, service provision, training.
- b. **Intended Operating Category(s):** Declaration of the endorsed operating category(s) for the activity, highlighting if the activity will be undertaken in one of more Operating Categories. Is the proposed activity for the Air System:
 - (1) For MOD Interest or not for MOD Interest.
 - (2) Military or Civilian Operated.
 - (3) Military or Civilian-Owned.
 - (4) Development or In-Service.
- c. **Proposed Types of Flying:**
 - (1) Test and Evaluation (T&E) Activity:
 - (a) Cat 1. Experimental / Developmental.
 - (b) Cat 2. Flight Safety-Critical.
 - (c) Cat 3. Production.
 - (d) Cat 4. Non-Flight Safety-Critical.
 - (e) Cat 5. Operational.
 - (2) T&E Support Activity:
 - (a) Trial Workup Flying.
 - (b) Trial Support Flying.
 - (c) Test Pilot Training.
 - (d) QualEval Flying.
 - (e) Demonstration Flying.
 - (3) Non-Test and Evaluation Activity:
 - (a) Continuation Training.
 - (b) Tasked Flying.
 - (c) Conversion Training.
 - (d) Maintenance Test Flying.
 - (e) Customer Flying Training.

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- d. **Intended route to Type Certification.** Details the proposed Type Certification Basis (TCB) and summary of the Type Certification programme.
- e. **Proposed programme of flying:** Supporting detail to para 28c, confirming the proposed air activities to be undertaken, such as: air-ground weapons trials, air-air refuelling, formation, low flying, and dates from which first flight will take place.
- f. **Previous Registration Number(s):** Registration numbers that a previous authority may have used prior to de-registration.
- g. **Operating, Type and Continuing Organization arrangements:** Details of the Contractor Flying Approved Organization Scheme, DAOS (incl Type Airworthiness Management supplement if required), Continuing Airworthiness Management Organization (CAMO) and Maintenance Approved Organization Scheme (MAOS) approvals within which operations will be conducted.
- h. **ASSC Report:** Reference to appropriate ASSC report.
- i. **Geographical Area:** The area where the flying is to take place. Air Systems may be flown outside of the UK, but such plans will need to consider requirements for diplomatic clearance.
- j. **Indemnity arrangements:** iaw RA 1161(4)¹⁶.

**Regulation
1161(3)**

Request for Activation on the UK Military Aircraft Register

1161(3) Prior to operation of the Air System, the Air System **shall** be registered as Active on the UK MAR.

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Request for Activation on the UK Military Aircraft Register

Military-Owned Air Systems

29. The SRO **should** submit a request for activation for the required Air System tail numbers, along with the Live ASSC Report (T&E or In-Service) and appropriate documentary evidence of the Air Safety Management System (ASMS)¹⁷, to DSA-MAA-Operating-Assurance-Hd.

30. Submission of the Live ASSC Report (T&E) or (In-Service) **should** explicitly include Claims / Arguments that summarise:

- a. The arrangements for the management of flying Operations, Type Airworthiness, and Continuing Airworthiness.
- b. The Air System's Type Certification Basis and Airworthiness Strategy.
- c. Proposal for the Air System Document Set (ADS).
- d. Either Military Permit To Fly (MPTF) (Development or In-Service) or Release To Service (RTS).
- e. The proposed livery.

Civilian-Owned Air Systems

31. For Civilian-Owned Air Systems a request for activation for the required Air System tail numbers **should** be prepared by the Applicant for the Sponsor.

32. When satisfied with the arrangements for the management of Air Safety, as appropriate for the Air System's operating category, the Sponsor **should** submit the request for activation for the required Air System tail numbers, along with the Live ASSC Report (T&E or In-Service), the CofU and appropriate documentary evidence of the Aviation Duty Holder / Accountable Manager (Military Flying)'s ASMS, to DSA-MAA-Operating-Assurance-Hd.

¹⁶ Refer to RA 1161(4): Indemnity.

¹⁷ Refer to RA 1200 – Air Safety Management.

**Acceptable
Means of
Compliance
1161(3)**

33. The Sponsor **should** also provide;
- a. Identification of the Sponsor's nominated Crown Servant(s) undertaking assurance of the arrangements; refer to the respective operating category RAs for detail of these requirements.
 - b. Details of the arrangements for meeting MOD costs and a nominated point of contact within the company.
34. Submission of the Live ASSC Report (T&E or In-Service) **should** explicitly include Claims / Arguments that summarise:
- a. The arrangements for the management of flying Operations, Type Airworthiness, and Continuing Airworthiness.
 - b. The Air System's Type Certification Basis and Airworthiness Strategy.
 - c. Proposal for the ADS.
 - d. Either MPTF (Development or In-Service) or RTS.
 - e. The proposed livery.

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Request for Activation on the UK Military Aircraft Register

35. The request for Activation is to be considered well in advance of the proposed first flight, the Sponsor may wish to review and seek independent advice on particular aspects of the submission.
36. It is also highly recommended that the MAA is engaged well in advance of the proposed first flight to ensure that timescales for review of the Live ASSC are clear and expectations managed.
37. The MAA will review the request for Activation, along with the Live ASSC Report (In-Service or T&E) and the ASMS Plan, to assure itself that the arrangements for Air Safety management and assurance by the Sponsor's nominated Crown Servant(s), specific to the Air System's Operating Category, have been identified. The MAA will then issue the Sponsor a Certificate of Registration (Active).

**Regulation
1161(4)**

Indemnity

- 1161(4) The Sponsor **shall** ensure that appropriate contractual or deed of indemnity arrangements are established for all Civilian Operated Air Systems.

**Acceptable
Means of
Compliance
1161(4)**

Indemnity

38. **Civilian Operated (Development) and (In-Service).** Where a Civilian Operated (Development) or (In-Service) Air System is operated under the terms of a contract, the Sponsor **should** either; agree arrangements to ensure that the conditions of Def Stan 05-100 and DEFCON 638 are written into the contract, or **should** ensure that the Applicant enters into a deed of indemnity to indemnify the SofS¹⁸.
39. When a deed of indemnity is arranged, the Sponsor **should** ensure that the Operator's arrangements to indemnify the SofS, his servants or agents, cover:
- a. All liabilities, costs and expenses in respect of any injury (including injury resulting in death) loss or damage whatsoever suffered by the SofS, his servants or agents; and
 - b. All liabilities, costs and expenses in respect of any claims for injury (including injury resulting in death) loss or damage whatsoever suffered by any person and made against the SofS, his servants or agents which may arise out of or in the course of the use or operation of the Air System whilst it is registered on the MAR.

¹⁸ Defence Equipment and Support (DE&S) Quality and Configuration Management Policy team offer the necessary specialist advice in support of this RA.

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40. **Special Case Flying.** For Special Case Flying, where there is no contract with the UK MOD, the Sponsor **should** ensure that the Operator's arrangements to indemnify the SofS, his servants or agents, cover:

- a. All liabilities, costs and expenses in respect of any injury (including injury resulting in death) loss or damage whatsoever suffered by the SofS, his servants or agents; and
- b. All liabilities, costs and expenses in respect of any claims for injury (including injury resulting in death) loss or damage whatsoever suffered by any person and made against the SofS, his servants or agents which may arise out of or in the course of the use or operation of the Air System whilst it is registered on the MAR.

41. For all RPAS the necessary conditions to indemnify the SofS are not applicable. The Sponsor in this case, **should** ensure that the Operator has provisioned the necessary level of insurance or the Sponsor **should** establish alternative contractual arrangements to indemnify the SofS¹⁸.

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Material
1161(4)****Indemnity**

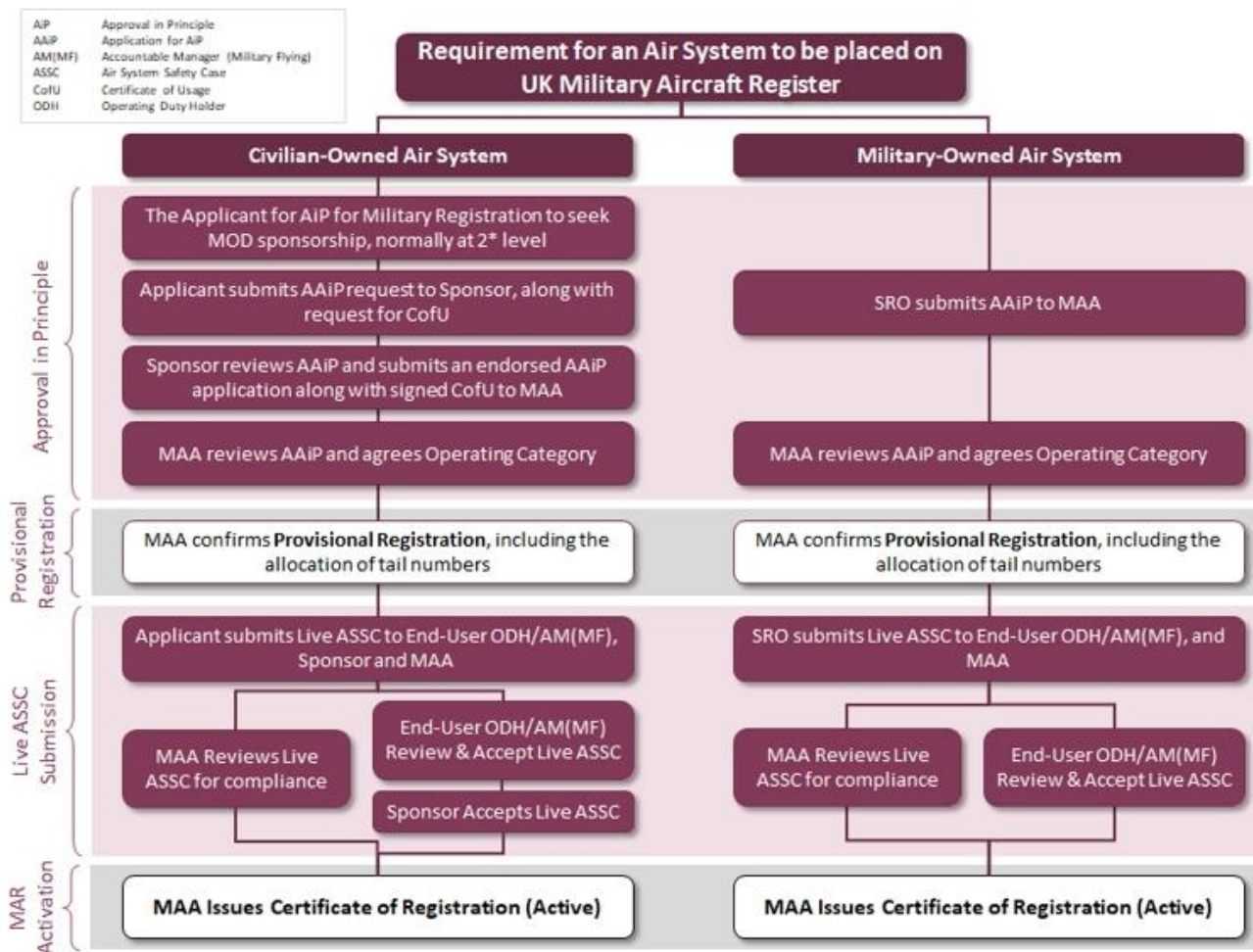
42. The SofS is at liberty in such circumstances as he may think fit to settle any claims made against the Crown or the SofS or any officer, servant or agent of the Crown and coming within the scope of the above indemnity (applied and extended as aforesaid) by the payment as a matter of grace of any sum by way of compensation, and the said indemnity is extend to cover any payment so made.

43. The SofS, his servants or agents will consult with the operator throughout the conduct of any claim and, whilst reserving the right to agree settlement, will attempt to agree terms of the settlement with the operator and / or his insurer. The agreement of the operator and / or his insurer is not to be unreasonably withheld.

44. Advice on the form and wording of the deed of indemnity can be obtained from the Directorate of Commercial Law.

Annex A

Figure 1: Military Air System Registration Flow Chart



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RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems

Rationale

To provide Defence with the required flexibility over how new capabilities are introduced, the aviation industry may be required to operate UK military registered Air Systems. However, without a clear understanding of the governance framework for this activity, there is a risk that key Air Safety responsibilities may be diluted or neglected entirely, with the result that the risks associated with operation of the Air System are not adequately managed. This RA details the Air Safety governance arrangements for Contractor Flying Approved Organization Scheme (CFAOS) Approved Defence Contractor Flying Organizations (DCFO) that are operating in the interest of the MOD; such activities are conducted within the Civilian Operated (Development) and (In-Service) operating categories¹.

Contents

Definitions Relevant to this RA

1162(1): Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems

1162(2): Assurance of the Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems

Definitions

Definitions Relevant to this RA

1. **Type Airworthiness Manager.** A Type Airworthiness Manager (TAM) is a role within a Design Approved Organization Scheme (DAOS) approved organization with an approved TAW Management Supplement, for a named individual who has been assessed by the MAA as competent to hold the MAA Regulatory Publications (MRP) delegable TAW responsibilities and has been appointed by the Air System's Sponsor. The TAM's responsibilities, once formalized by the Sponsor and directed to the Accountable Manager (Military Flying) (AM(MF)), are to be detailed in a TAW supplement to the respective DAOS approval exposition.

Regulation 1162(1)

Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems

- 1162(1) Prior to operation of the Air System, the Sponsor **shall** ensure that Air Safety governance arrangements are in place for all Civilian Operated (Development) or (In-Service) Air Systems.

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Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems

2. Prior to operation of the Air System, the Sponsor **should** ensure that the Accountable Manager (Military Flying) (AM(MF)):
 - a. Is supported by competent organizations in accordance with (iaw) RA 1005².
 - b. Will operate the Air System within the flight conditions as defined and permitted by the Military Permit to Fly (MPTF) (In-Service)³ or MPTF (Development)⁴.

¹ Refer to RA 1160 – The Defence Air Environment Operating Framework. The RA 1160 Series defines a coherent and consistent operating framework which has been developed to ensure that similar aviation activities within the Defence Air Environment (DAE) that result in a similar level of risk or risk exposure, attract the same level of regulation, assurance and scrutiny, regardless of who owns, or who is operating, the specific Air System. All activities within the DAE will be assigned to an operating category which will define who is responsible for the execution and assurance of key functions including Type Airworthiness (TAW), Continuing Airworthiness (CAw) and Flight Operations, as well as the balance of accountability between the MOD and the contractor.

² Refer to RA 1005 – Contracting with Competent Organizations.

³ Refer to RA 1305 – Military Permit to Fly (In-Service), (Special Case Flying) and (Single Task).

⁴ Refer to RA 5880 – Military Permit to Fly (Development) (MRP Part 21 Subpart P).

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- c. Is supported for the management of CAw by an MAA approved Continuing Airworthiness Management Organisation (CAMO) iaw RA 1016⁵.
- d. Can actively manage Air Safety and Operating Risk to Life (RtL) as detailed in RA 1024⁶.
- e. Owns and manages the Live Air System Safety Case (ASSC) (In-Service) prior to commencing In-Service flying, or a Live ASSC (Trials and Evaluation (T&E)) prior to commencing T&E flying activity as detailed in RA 1205⁷.

3. **TAW Management - Military-Owned Air Systems.** For a Military-Owned Air System, the Sponsor **should** ensure that the Defence Equipment and Support (DE&S) Operating Centre Director (OCD) nominates a Type Airworthiness Authority (TAA) to be accountable for ensuring TAW management.

4. **TAW Management - Civilian-Owned Air Systems.** For Civilian-Owned Air Systems, the Sponsor **should** decide upon which TAW task will be conducted by the TAA and which are to be delegated to a MAA approved TAM, the level of which depends upon the complexity of the activity and inform the AM(MF) of their chosen construct for managing TAw. The MAA have mandated four areas of non-delegable TAw responsibilities, detailed at Table 1, that the Sponsor **should** ensure remain the responsibility of a TAA.

Table 1. Non-Delegable TAw responsibilities

TAW Functions	Applicable RAs	Non-Delegable responsibilities
Major Modifications and Aircraft Repairs	RA 5820 ⁸ RA 5865 ⁹	Approval of Major Modifications and Repairs, Signing to Accept the Certificate of Design for Major Modifications and Repairs and Approving Service Modifications.
Military Type Certificate (MTC)	RA 5810 ¹⁰	Responsibility to hold a MTC
MPTF	RA 1305 ³ RA 5880 ⁴	Approve the initial issue of the MPTF (Development), Certify the initial issue of MPTF (In-Service) Recommendations, Review TAM proposed amendments to MPTF (In-Service), Approve the issue of the MPTF (Single Task).
Air System Document Set (ADS) and Technical Information	RA 1310 ¹¹ RA 5220 ¹² RA 5405 ¹³ RA 5815 ¹⁴	Approve the initial issue of the ADS, Review ADS and Service Bulletins and approve Special Instruction (Technical)s (SI(T)), evaluate and approve changes to Master Maintenance Schedule, issue Special Flying Instructions.

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Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems

5. **Model for TAW management.** The Sponsor determined model for the management of TAw could range from:

- a. The appointment of a TAA who is fully accountable for ensuring TAW and complying with all TAW regulations, or,
- b. The appointment of a;
- (1) TAA who, as a minimum, is accountable for the MAA mandated non-delegable TAw responsibilities, and;

⁵ Refer to RA 1016 – Military Continuing Airworthiness Management.

⁶ Refer to RA 1024 – Accountable Manager (Military Flying).

⁷ Refer to RA 1205 – Air System Safety Cases.

⁸ Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D).

⁹ Refer to RA 5865 – Repairs (MRP Part 21 Subpart M).

¹⁰ Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

¹¹ Refer to RA 1310 – Air System Document Set.

¹² Refer to RA 5220 – Special Flying Instructions and Restrictions on Flying.

¹³ Refer to RA 5405 – Special Instructions (Technical).

¹⁴ Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

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(2) MAA approved TAM, within an MAA Approved DAOS Organization holding a TAw Management Supplement, who is accountable for ensuring the remaining TAw responsibilities as detailed by the Sponsor.

6. **TAw Management - Non-Delegable Responsibilities.** Operation of an Air System in MOD interest, for which there is in force a Certificate of Usage issued on behalf of the Secretary of State (SofS), creates a duty on the SofS to ensure safe use of the Air System. Whilst responsibility for this liability can be appropriately discharged to non-crown servants, dependent on the particular operating context, the MAA has determined a set of non-delegable TAw responsibilities that have to be retained by a crown servant TAA. These responsibilities will be identified as 'TAA non-delegable responsibilities'. All other TAw management responsibilities can be undertaken either by a TAA or a TAM, as determined by the Sponsor.

7. **TAM Responsibilities.** Prior to endorsing the responsibilities to which the Sponsor will delegate to the TAM it is recommended they consult an appropriate DE&S OCD 2* and TAA for advice. The TAM's responsibilities, once formalized by the Sponsor in writing to the TAM, copied to the AM(MF), are to be detailed in the respective TAw management supplement of the DAOS approval exposition.

**Regulation
1162(2)**

Assurance of the Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems

1162(2) The Sponsor **shall** ensure that appropriate Assurance of Air Safety arrangements for Civilian Operated Air Systems is conducted.

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Assurance of the Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems

8. The Sponsor **should** nominate appropriate crown servants who are competent and suitably qualified and experienced to provide appropriate assurance that all aspects of Air Safety, including flying operations, TAw and CAw are equivalent to that of a Military Operated Air System.

RtL and ASSC Management

9. The Sponsor **should** ensure that appropriate assurance is conducted of:
- a. The management of RtL within an Air Safety Management System (ASMS) and;
 - b. The management of the Live ASSC within the ASMS.

Operations Management

10. The Sponsor **should** ensure that appropriate assurance is conducted of flying operations.

TAw Management

11. **TAw Management - Military-Owned Air Systems.** The Sponsor **should** ensure that the DE&S OCD conducts appropriate assurance of the TAA.

12. **TAw Management - Civilian-Owned Air Systems.**

- a. For the elements of TAw management for which the TAA is accountable, the sponsor **should** ensure that the DE&S OCD conducts appropriate assurance of the TAA.
- b. For the elements of TAw management for which a TAM is accountable, the Sponsor **should** ensure that appropriate assurance of the TAM is conducted.

CAw Management.

13. The Sponsor **should** ensure that appropriate assurance of CAw management is conducted.

**Guidance
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1162(2)****Assurance of the Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems**

14. The Sponsor, and his assurance personnel, will take a RtL based approach in determining the appropriate oversight applied to the operating arrangements, which could be done by MOD organizations (such as an Aviation Duty Holder (ADH), "Safety, Training Assurance and Regulatory" (STAR) teams, Central Flying School (CFS), Standards units or, potentially, by the Delivery Team itself if it retains Suitability Qualified and Experience Person (SQEP) or by suitably competent and experienced civilian organizations.

15. When undertaking assurance of Air System operations, it is important to assure that;

a. The MAA issued CFAOS approval continues to cover the scope of the intended activity, and;

b. The Air System continues to be operated within the flight conditions as defined and permitted by the MPTF (Development) or MPTF (In-Service).

16. The assurance personnel are to assure that the AM(MF) has sought appropriate advice on the operating aspects of the Air Safety arrangements from appropriate SQEP. Particular attention may be necessary for those activities which are not normally within the capability of the flying organization and where SQEP external to the organization is being utilized. The complexity of the arrangements and the activity being assured (novel and complex or inherently military in style) will dictate the level of SQEP.

RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems

Rationale

UK Military Registration may be granted to a Civilian-Owned or foreign Military-Owned Air System that is not operated in MOD Interest and is not eligible for Civil Registration, if it is deemed to be in the interests of the wider UK Government; their operation is categorized as Special Case Flying. Although Special Case Flying is not in the MOD Interest, the issue of a Certificate of Usage (CofU) by the Sponsor creates a legal liability for the oversight of Air Safety to ensure that Air Safety arrangements are being appropriately managed for the defined operating context. This RA details the Air Safety governance arrangements for the Special Case Flying of UK military registered Air Systems.

Contents

Definitions Relevant to this RA

1163(1): Air Safety Governance Arrangements for Special Case Flying Air Systems

1163(2): Assurance of the Air Safety Governance Arrangements for Special Case Flying Air Systems

Definitions

Definitions Relevant to this RA

1. **Type Airworthiness Manager.** A Type Airworthiness Manager (TAM) is a role within a Design Approved Organization Scheme (DAOS) approved organization with an approved Type Airworthiness (TAW) Management Supplement, for a named individual who has been assessed by the MAA as competent to hold the MAA Regulatory Publications (MRP) delegable TAW responsibilities and has been appointed by the Air System's Sponsor. The TAM's responsibilities, once formalized by the Sponsor and directed to the Accountable Manager (Military Flying) (AM(MF)), are to be detailed in a TAW supplement to the respective DAOS approval exposition.

Regulation 1163(1)

Air Safety Governance Arrangements for Special Case Flying Air Systems

1163(1) Prior to operation of the Air System, the Sponsor **shall** ensure that Air Safety governance arrangements are in place for Special Case Flying Air Systems.

Acceptable Means of Compliance 1163(1)

Air Safety Governance Arrangements for Special Case Flying Air Systems

1. Prior to operation of an Air System, the Sponsor **should** ensure that the AM(MF):

- a. Is supported by competent organizations in accordance with (iaw) RA 1005¹.
- b. Is supported by a MAA approved TAM for the management of TAW.
- c. Will operate the Air System within the flight conditions as defined and permitted by the Military Permit to Fly (MPTF) (Special Case Flying)² or MPTF (Development)³.
- d. Is supported by a MAA approved Continuing Airworthiness Management Organization (CAMO), iaw RA 1016⁴.
- e. Can actively manage Air Safety and Operating Risk to Life (RtL) iaw RA 1024⁵.

¹ Refer to RA 1005 – Contracting with Competent Organizations.

² Refer to 1305(5): Military Permit to Fly (Special Case Flying).

³ Refer to RA 5880 – Military Permit to Fly (Development) (MRP 21 Subpart P).

⁴ Refer to RA 1016 – Military Continuing Airworthiness Management.

⁵ Refer to RA 1024 – Accountable Manager (Military Flying).

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Compliance
1163(1)**

- f. Owns and manages the appropriate Live Air System Safety Case (ASSC) as detailed in RA 1205⁶.

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1163(1)**

Air Safety Governance Arrangements for Special Case Flying Air Systems

2. For Civilian-Owned and Civilian Operated Air Systems⁷, the Sponsor approves an appropriate model for TAw management between a TAA and a TAM. For Special Case Flying it is appropriate that TAw management is undertaken solely by a TAM.
3. For Civilian-Owned and Civilian Operated Air Systems, the MAA mandated four areas of non-delegable TAw responsibilities. For Special Case Flying, these non-delegable TAw stipulations do not apply.

**Regulation
1163(2)**

Assurance of the Air Safety Governance Arrangements for Special Case Flying Air Systems

- 1163(2) The Sponsor **shall** ensure that appropriate assurance of the Air Safety arrangements for Special Case Flying Air Systems is conducted.

**Acceptable
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Compliance
1163(2)**

Assurance of the Air Safety Governance Arrangements for Special Case Flying Air Systems

4. The Sponsor **should** nominate a crown servant who is competent and Suitably Qualified and Experienced Person (SQEP) to provide an appropriate level of assurance, dependent upon the operating context, of all Air Safety arrangements; including Operating, TAw, Continuing Airworthiness (CAw) and the management of RtL and an ASSC within an Air Safety Management System (ASMS).
5. The Sponsor **should** ensure that all activities associated with the management of Air Safety and operation of the Air System are compliant with the MRP.

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1163(2)**

Assurance of the Air Safety Governance Arrangements for Special Case Flying Air Systems

6. The level of assurance required is dependent upon the nature, frequency and location of flying operations. The Sponsor determines the level of assurance required of the Air Safety arrangements, and the decision-making activity that is being undertaken to support those arrangements, as appropriate for the activity.
7. When undertaking assurance, it is important to assure that, as a minimum;
- Arrangements are in place for the management of RtL within an ASMS and Live ASSC.
 - Arrangements are in place for the management of Flying Operations.
 - Arrangements are in place for the management of CAw.
 - Arrangements are in place for Maintenance of the Air System.
 - Arrangements in place for management of TAw.
 - The Air System is being operated within the flight conditions as defined and permitted by the MPTF (Special Case Flying). Where the Air System is undertaking developmental activity, under the MPTF (Development)³, assurance will be appropriate to enable oversight of the TAM's authorization process and not re-occurring assurance of every MPTF (Development) event.
8. The nominated Crown Servant is to ensure that the AM(MF) has sought appropriate advice on the operating aspects of the Air Safety arrangements from

⁶ Refer to RA 1205 – Air System Safety Cases.

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

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appropriate SQEP. The complexity of the arrangements and the activity being assured (novel and complex or inherently military in style) will dictate the level of SQEP. They are to pay particular attention to those activities which are not normally within the capability of the flying organization and where SQEP external to the organization is being utilized.

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RA 1164 – Transfer of UK Military Registered Air Systems

Rationale

Air System transfers, occurring either by Allotment or Allocation, provide Defence with the flexibility to effectively manage an Air System Fleet and maximise Operational Capability. However, without a clear framework for the continued ownership of Air Safety governance arrangements, there is a risk that the management of Air Safety responsibilities may be ineffective or neglected entirely, with the result that the risks associated with operation of the Air System are not adequately managed. This RA details the required oversight of Air Safety governance arrangements for all Air System transfers.

Contents

Definitions Relevant to this RA

1164(1): Permanent Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities

1164(2): Temporary Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities

1164(3): Transfer of UK Military Registered Air Systems by Allocation

Definitions

Definitions Relevant to this RA

1. **Allotment.** Transfer of UK Military Registered Air Systems by Allotment occurs between Aircraft Operating Authorities (AOA), or to / from the Air and Space Warfare Centre (ASWC) for trials activity, either on a Permanent, Temporary or Chock-to-Chock Basis. The accountability and responsibility for the governance of the Air System's Air Safety arrangements are transferred to the receiving Aviation Duty Holder (ADH) / Accountable Manager (Military Flying) (AM(MF)).
2. **Allocation.** Transfer of UK Military Registered Air Systems by Allocation occurs for the purpose of Air System fleet management and / or Allocation to a specific task / event. Transfer occurs within an AOA and accountability and responsibility for the governance of the Air System's Air Safety arrangements are bespoke to the transfer context and are to be retained by the ADH / AM(MF).

Regulation 1164(1)

Permanent Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities

- 1164(1) When permanently transferring an Air System on the UK Military Aircraft Register (MAR) between AOAs (Military or Civilian) via Allotment, the receiving Operating Duty Holder (ODH) / AM(MF) **shall** ensure that Air Safety arrangements are in place.

Acceptable Means of Compliance 1164(1)

Permanent Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities

3. The permanent transfer of an Air System by Allotment **should** transfer accountability to the receiving organization for:
 - a. The management of Risk to Life (RtL) and ownership of an Air System Safety Case (ASSC).
 - b. Flying operations governance through the utilization of the receiving AOAs Operating Orders, Authorizations and Supervision processes.
 - c. The management of Continuing Airworthiness (CAw) and Maintenance of the Air System.
4. Accountability for Type Airworthiness (TAw) **should** remain with the ►◄ nominated Type Airworthiness Authority (TAA) ►and / or Type Airworthiness

Acceptable Means of Compliance 1164(1)

Manager¹ (TAM), dependent upon the Sponsor's endorsed model for TAW management. However, where the accountability of TAW changes, the receiving TAA / TAM **should** ensure that they fully understand the configuration of the Air System. ◀

5. ▶ For Civilian-Owned or Civilian Operated Air Systems ◀, the Sponsor, once notified of an Air System Allotment, **should** review the Air Safety Governance arrangements, ▶ any change in Operating Category² ◀ and submit a request to update the Certificate of Usage (CofU) as appropriate.

6. The Military Continuing Airworthiness Manager (Mil CAM) **should** produce orders / procedures ▶ ◀ to detail the process and general conditions of transfer ▶³ ◀. These orders **should** explicitly require:

- a. The dispatching organization to be responsible for compliance with the directed conditions of transfer.
- b. The receiving organization to report where an Air System is received in an unsatisfactory condition, in accordance with (iaw) RA 4815⁴.
- c. The transfer to be documented using the Allotment Order / Receipt templates hosted on the MAA's websites.

Guidance Material 1164(1)

Permanent Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities

7. ▶ RA 1161(4)⁵ ◀ and Def Stan 05-100 are to be checked to ensure that appropriate indemnity arrangements are in place.

8. Guidance for Mil CAMs in the production of orders / procedures is detailed at Annex A.

Regulation 1164(2)

Temporary Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities

1164(2) When an Air System on the UK MAR is temporarily transferred to the Air & Space Warfare Centre (ASWC)⁶ or between AOAs (Military or Civilian) via Allotment, the receiving ODH / AM(MF) **shall** ensure that Air Safety arrangements are in place.

Acceptable Means of Compliance 1164(2)

Temporary Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities

9. The temporary transfer of an Air System by Allotment **should** transfer accountability to the receiving organization for:

- a. The management of RtL and ownership of an ASSC.
- b. Flying operations governance through the utilization of the receiving AOAs Operating Orders, Authorizations and Supervision processes.

10. Responsibility for CAW **should** remain with the Air System's nominated Mil CAM.

11. Accountability for TAW **should** remain with the ▶ nominated ◀ TAA ▶ and / or TAM¹, dependent upon the Sponsor's endorsed model for TAW management. ◀

¹ ▶ Where the Air System is Civilian-Owned, ownership of regulatory responsibility by either the TAA or TAM needs to be agreed within the Sponsor's approved model for 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.

² Refer to RA 1160 – The Defence Air Environment Operating Framework. ◀

³ Refer to RA 4009 – Aviation Engineering Orders and Procedures.

⁴ Refer to RA 4815 - Maintenance Procedures and Safety and Quality Policy (MRP 145.A.65).

⁵ ▶ Refer to RA 1161(4): Indemnity. ◀

⁶ A temporary allotment to ASWC includes the Air Test and Evaluation Collaboration (ATEC).

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Means of
Compliance
1164(2)**

12. Temporary Allotment of Air Systems **should** be supported by a formal documented agreement / Memorandum of Understanding (MOU) between ODHs / AM(MF)s, which explicitly addresses the following:
- The governance arrangements under which Flying Operations will be undertaken; including Flying Orders, Authorizations and Supervision processes, stating the relevant MAA Contractor Flying Approved Organization Scheme (CFAOS) approval.
 - The AOA within which supervision of the transfer flight will take place, if different from AMC para 12a.
 - The principles for agreeing, and subsequently resolving, any activity on the Air System that would make the Air System potentially unfit for return to the original AOA.
 - The governance arrangements for TAW management, ► **noting the TAW management model as detailed by the Sponsor.** ◀
 - The governance arrangements for the management of CAw, stating the relevant MAA Continuing Airworthiness Management Organizations (CAMO) Approval.
 - Agree the conditions of transfer, including receipt and dispatch, that are not detailed within Mil CAM Orders and procedures.
 - The period of transfer or the notice of termination to be given.
 - Any support required by the receiving organization.
13. For Air Systems being allotted on a Chock-to-Chock basis, the process **should** be captured in the documented formal agreement between ODH / AM(MF)s and, for each sortie, the Authorization Record **should** be annotated with: the organization that the Air System has been allotted to; which orders are being followed; and who the Delivery Duty Holder (DDH) / AM(MF) is for the activity. Eg *Air System ► Allotted◀ to the AWC; ASWC Event flown iaw ASWC Air Staff Orders (ASWCASOs); DDH for the event Chief Test Pilot.*
14. If the Authorization Record is not appropriate for use, for example during ground trials, the MOD Form 700 or equivalent **should** be used.
15. The Mil CAM **should** produce orders / procedures to detail the process and general conditions of transfer.
16. Mil CAMs **should** document the transfer using the Allotment of Air Systems / Receipt templates hosted on the MAA's websites.
17. ► **For Civilian-Owned Air Systems, the Sponsor, once notified of an Air System Allotment, should review the Air Safety Governance arrangements, any change in Operating Category¹ and update the CofU as appropriate.** ◀

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Material
1164(2)**

Temporary Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities

18. In derogation to paragraph 9, when an Air System transfer occurs between a Military Operator and Civilian Operator (eg where a CFAOS approved organization is undertaking post Maintenance test flights) the transferring AOA may, due to the short duration conditions of the Air System's post Maintenance test flights, elect to retain accountability for the responsibilities at Paras 9a and 9b within their AOA Air Safety governance process.
19. If the AOA determines that the temporary Allotment is for an extended duration, then the accountability for CAw may benefit from transfer to the receiving ODH / AM(MF)'s Mil CAM.
20. Guidance for Mil CAMs in the production of orders / procedures is detailed at Annex A.
21. ► **RA 1161(4)⁵** ◀ and Def Stan 05-100 are to be checked to ensure that appropriate indemnity arrangements are in place.

**Regulation
1164(3)**

Transfer of UK Military Registered Air Systems by Allocation

1164(3) When transferring an Air System on the UK MAR within an AOA by Allocation, the ODH / AM(MF) **shall** ensure that appropriate Air Safety arrangements remain in place.

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Compliance
1164(3)**

Transfer of UK Military Registered Air Systems by Allocation

22. Transfer by Allocation **should** only occur for the purpose of specific tasking, storage, or arrangements to satisfy a Fleet Management plan.
23. Accountability for the management of RtL, ownership of an ASSC, supervision of flying operations, CAw **should** remain with the ODH / AM(MF).
24. Accountability for TAw **should** remain with the ► **nominated** ◀ TAA ► **and / or TAM¹**, dependent upon the Sponsor's endorsed model for TAw management. ◀
25. The Mil CAM **should** produce orders / procedures to detail the process and general conditions of transfer.
26. For Air Systems transferred into Storage, a Mil CAMO **should** be nominated to maintain management of CAw⁷.

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Transfer of UK Military Registered Air Systems by Allocation

27. Guidance for Mil CAMs in the production of orders / procedures is detailed at Annex A.

⁷ ► Refer to ◀ RA 1016 – Military Continuing Airworthiness Management.

ANNEX A**GUIDANCE MATERIAL FOR MIL CAM IN THE PRODUCTION OF ORDERS / PROCEDURES FOR ALLOTMENT / TRANSFER****Standard of Transfer**

1. The Air System will be transferred in a serviceable condition unless agreed by all stakeholders, or a concession has been granted by the TAA or delegated authority.
2. Consideration will be given to the following during the production of the standard of transfer:
 - a. Preventive Maintenance forecast⁸.
 - b. Outstanding and embodied modifications⁹.
 - c. Outstanding and completed Special Instructions (Technical)¹⁰.
 - d. Current MOD Form 703 and MOD Form 704 (or Technical Log equivalent) entries.
 - e. The remaining life of components.
 - f. Special fits and role equipment.
 - g. Baseline Airworthiness Review Certificate and Military Airworthiness Review Certificate requirements¹¹.
 - h. Certificate of Airworthiness (where applicable).

Transfer of Air Systems between Forward / Line and Depth/Base

3. When an Air System is transferred between Forward / Line and Depth / Base for Maintenance or storage, a Statement of Work (SOW) will be raised. The SOW will incorporate, as a minimum, the following information / requirements:
 - a. Air System details:
 - (1) Custodian.
 - (2) Air System type / mark / serial number.
 - (3) Current airframe hours / life used.
 - b. Transfer details:
 - (1) Date task to commence.
 - (2) Maintenance organization.
 - c. Maintenance requirements (examples):
 - (1) Preventive Maintenance requirements.
 - (2) Component replacements.
 - (3) Modifications to be embodied, including those issued during the maintenance period.
 - (4) Special Instructions (Technical) to be satisfied, including those issued during the maintenance period / Storage requirement.
 - (5) MOD Form 703, MOD Form 704 and variants, rectification, repairs and other corrective Maintenance.
 - (6) Surface finish.
 - (7) Aircraft weigh.
 - (8) Compass swing.
 - (9) Maintenance Test Flight requirements.
 - (10) The requirement for a period of Maintenance-free operation on return to Forward / Line.

⁸ Refer to RA 4961 – Aircraft Maintenance Programme and Military Continuing Airworthiness Management Organization Responsibilities for Air System Release - MRP Part M Sub Part C.

⁹ Refer to RA 4963 – Modifications and Repairs - MRP Part M Sub Part C.

¹⁰ Refer to RA 4962 – Special Instructions (Technical) - MRP Part M Sub Part C.

¹¹ Refer to RAs 4970 to 4974: Airworthiness Review (AR) Regulation.

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RA 1165 – ►UK◄ Civil Aviation Authority Oversight of ►UK◄ Military Registered Air Systems

Rationale

There may be a requirement to use common spares with civilian operators and have the requirement to transition an Air System back to the ►UK◄ Civil Aircraft Register. As the ►UK◄ Civil Aviation Authority (►UK◄ CAA) have no regulatory authority for Air Systems on the UK Military Aircraft Register (►UK◄ MAR), not having the oversight arrangements in place may incur configuration control issues, impact Continuing Airworthiness (CAw) arrangement, contravene national agreements and impact the ability of the Air System to return to the ►UK◄ Civil Aircraft Register. This RA sets out the minimum oversight arrangements required if the Sponsor elects to invoke CAA Oversight of a ►UK◄ Military Registered Air System.

Contents

1165(1): ►UK◄ Civil Aviation Authority Oversight of ►UK◄ Military Registered Air Systems

Regulation 1165(1)

►UK◄ Civil Aviation Authority Oversight of ►UK◄ Military Registered Air Systems

1165(1) The Type and Continuing Airworthiness arrangements for ►UK◄ Military Registered Air Systems subject to ►UK◄ CAA oversight **shall** comply with the MAA Regulatory Publications (MRP) and follow the policy and principles detailed in the ►UK◄ CAA Civil Aviation Publication (CAP) 562¹ Leaflet B-40.

Acceptable Means of Compliance 1165(1)

►UK◄ Civil Aviation Authority Oversight of ►UK◄ Military Registered Air Systems

1. The Type Airworthiness Authority² (TAA) **should** ensure that an assessment of the intended operation of the Air System has been undertaken, and that the Type Airworthiness (TAW) and CAw arrangements in particular reflect the difference in configuration, environment and usage compared to operating the Air System in a civil environment. The TAA **should** make this assessment available to the ►UK◄ CAA.
2. In consultation with the Aviation Duty Holder (ADH) or Accountable Manager (Military Flying) (AM(MF)) and Release To Service Authority or Sponsor, the TAA **should** endorse a draft Minimum Equipment List (MEL). The MEL **should** be based on the Master MEL (MMEL) and any ►UK◄ CAA or European Aviation Safety Agency (EASA) MMEL policy documents that reflect the Air System equipment configurations and intended usage. The TAA **should** forward this to the ►UK◄ CAA who will carry out an assessment to establish if it satisfies the civil requirements before approval by the TAA.
3. The TAA and / or TAM, depending on the TAW management model as defined by the Sponsor, **should** assess the applicability of all civil mandatory, advisory and deferred instructions (eg Airworthiness Directives and Service Bulletins). A record of the assessment for applicability **should** be kept as an Airworthiness record.
4. The TAA and / or TAM, **should** ensure that all modifications are certified in accordance with (iaw) RA 5810³ and RA 5820⁴, and all repairs are certified iaw RA 5865⁵.
5. The TAA or TAM, **should** ensure the management of TAW activity is detailed in the Airworthiness Strategy⁶ and conducted by competent organizations⁷. This **should** include up-to-date lists of those with Civil Type Certificate Holder (CTCH) or Civil

¹ Refer to CAP 562 – Civil Aircraft Airworthiness Information and Procedures (CAAIP).

² For Special Case Flying Air Systems the term 'TAA' may be read as 'Type Airworthiness Manager (TAM)' throughout this RA.

³ Refer to RA 5810 – Military Type Certificate (MRP 21 Subpart B).

⁴ Refer to RA 5820 – Changes in Type Design (MRP 21 Subpart D).

⁵ Refer to RA 5865 – Repairs (MRP 21 Subpart M).

⁶ Refer to RA 1220 – Delivery Team Airworthiness and Safety.

⁷ Refer to RA 1005 – Contracting with Competent Organizations.

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Supplemental Type Certificate Holder (CSTCH) obligations and records of engagement during any transfer of such obligations⁸ in the event of the cessation of trading of a CTCH or CSTCH.

6. The TAA or TAM, **should** undertake a Training Needs Analysis in relation to the differences between the civil-type course requirements for the issue of an EASA Part 66 type rating and the need for additional training for the equipment fitted in order to undertake military operations.

7. The Military Continuing Airworthiness Manager (Mil CAM) **should** ensure, on behalf of the ADH / AM(MF), that the training derived from the requirement at paragraph 6 is completed, prior to the issuance of certifying privileges by the Approved Maintenance Organization.

8. The Mil CAM **should** ensure that the CAw arrangements⁹ comply with the MRP. The Mil CAM **should** ensure there is an exchange of exposition and sharing of information with the EASA Part M Subpart G Continuing Airworthiness Management Organization (CAMO) and, upon request, with the ►UK◄ CAA¹⁰.

9. The Mil CAM **should** assure the Delivery Duty Holder or AM(MF) that all Maintenance is carried out by organizations that hold current EASA Part 145 approvals for the scope of work undertaken, in addition to MRP Part 145 approvals achieved through the supplement route.

10. The Mil CAM **should** approve the initial Rectification Interval Extension (RIE) and apply to the MAA for any further RIE requests iaw MAA03¹¹.

11. The TAA or TAM **should** ensure that contracts placed for the conduct of EASA Part M and EASA Part 145 activity includes that ►UK◄ CAA audit reports are forwarded to the appropriate MAA CAw Desk Officer within 10 working days of receipt.

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►UK◄ Civil Aviation Authority Oversight of ►UK◄ Military Registered Air Systems

12. The ►UK◄ CAA has agreed to support the MOD in providing oversight of civil-type military Air Systems. This support is covered under the joint ►UK◄ CAA / MAA policy and principles for ►UK◄ CAA Oversight of ►UK◄ Military Registered Air Systems described in CAP 562 Leaflet B-40¹⁰ and the detailed arrangements are set down in contracts between the ►UK◄ CAA and relevant MOD Delivery Team.

13. When the TAw and CAw of ►UK◄ Military Registered Air Systems are subject to oversight by the ►UK◄ CAA, the following is to be considered:

a. The TAA is to consider the implications of any deviations between the intended full standard Statement of Operating Intent and Usage and the Design Usage Spectrum assumed in the civil Type Certification Basis. Any deviations are to be quantified through liaison with the ►UK◄ CAA, and the CTCH or CSTCH. In consultation with the Mil CAM, the TAA is to also consider any implications of the deviations for the TAw and CAw arrangements. The implications of operating outside the limitations and assumptions applied by the CTCH or the CSTCH and / or the State of Design is to always be fully discussed with the CAA and CTCH or CSTCH as soon as possible. Any implications for CAw is to be discussed with the ADH through the Mil CAM.

b. Whilst the MOD retains the right to vary the limitations within which these ►UK◄ Military Registered Air Systems are operated without the agreement of the ►UK◄ CAA, the TAA is to take into account that such deviations may have an effect on the right to use common spares and the ultimate return of the Air Systems to the ►UK◄ Civil Aircraft Register.

c. Where a Design Organization is to be employed to modify the Air System, the TAA or TAM must ensure full liaison between the organization approved to meet the requirements of EASA Part 21 Subpart J and the ►UK◄

⁸ As defined in EASA Part 21 B, D or E: specifically, those obligations detailed within 21.A.44, 21.A.109 or 21.A.118 respectively.

⁹ Refer to RA 1016 – Military Continuing Airworthiness Management.

¹⁰ CAP 562 Leaflet B-40 paragraph 3.3.1.d details the information expected to be within the Continuing Airworthiness Management Exposition for CAA oversight arrangements that **should** be shared with the Civil CAMO and, upon request, the ►UK◄ CAA.

¹¹ Refer to MAA03: MAA Regulatory Processes.

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CAA. CAP 562 Leaflet B-40 requires that for Air System operating under ►UK◄ CAA oversight, any modifications must be approved by EASA or reviewed by the ►UK◄ CAA following the EASA modification statement of satisfaction process.

d. EASA manages all Civil Type Certificates and Civil Supplementary Type Certificates. When entering the construct of ►UK◄ CAA oversight of a ►UK◄ Military Registered Air System, the ►UK◄ CAA does not provide oversight of the TAw of modifications provided with a statement of satisfaction. It is for the TAA or TAM to ensure that suitable instructions for CAw are in place and being updated (by contract if required).

14. In order to give the ►UK◄ CAA confidence to permit the use of common spares with civilian operators, and to allow smooth transition of the Air System back to the ►UK◄ Civil Aircraft Register, the TAA or the TAM is to afford the ►UK◄ CAA:

- a. Full visibility of the type of flying, and the details of repair, overhaul, Maintenance and modification of each Air System.
- b. The opportunity to evaluate and decide if the Air System remains a candidate for an International Civil Aviation Organization compliant Certificate of Airworthiness.
- c. The opportunity to audit as required.

15. If during any work carried out to assess and validate MOD clearances¹², the TAA identifies any anomalies, contradictions or abnormal risks in the civil clearances, they are to draw them to the attention of the ►UK◄ CAA for guidance and action. If the ►UK◄ CAA decides to take no action, the TAA is to consider whether the risks are such that MOD specific action is necessary.

16. Basic Regulation (EU) 2018/1139 applies as law in the UK and allows Air Systems to be released under EASA Part 145 (and other Parts as appropriate). This law (and associated Implementing Rules) does not apply to ►UK◄ Military Registered Air Systems as they are 'State Aircraft'. The treatment of State Aircraft has been clarified by EASA in its note: Cologne/Jan/kgu/R(4)2013(D) 51397 dated 20 Mar 13 – Rulemaking interpretation on "Maintenance release of aircraft not covered by the Basic Regulation". Accordingly, CAP 562 Leaflet B-40 obliges maintenance providers to hold an EASA Part 145 approval to ensure that the organization meets the EASA Part 145 standards and enables access to civil spares, but does not authorize them to release the Air System to service using this approval for the reasons described above. The MAA accepts the release statement made iaw CAP 562 Leaflet B-40. In order for the Air System to remain subject to ►UK◄ CAA oversight iaw CAP 562 Leaflet B-40, it will be necessary for the Contractors to continue to hold EASA Part 145 and / or EASA Part M Subpart G with Subpart I privilege approvals. In addition, the MAA requires EASA Part 145 organizations to hold an MRP Part 145 approval achieved through the supplement route.

17. For Air Systems subject to CAP 562 Leaflet B-40 arrangements the Military Airworthiness Review Certificate (MARC), generated by the requirements of RA 4971¹³, includes the civil Airworthiness Review (AR), undertaken by an EASA Part M Subpart G with Subpart I privileges. The civil AR certificate cannot be released, as the EASA regulation does not apply to State Aircraft, as described above. The civil AR is undertaken to meet the requirements of providing evidence to the Mil CAM that the Air System has remained within the civil "controlled environment" for the previous 12 months. In order to remain within the limits of the civil framework, such that the Air System does not fall out of civil oversight, the MARC extensions of up to 90 calendar days detailed within RA 4971¹³ are not to be applied to Air Systems subject to this RA.

18. The TAM will be approved within a MAA approved DAOS organization and, for generation of an Airworthiness Strategy and the management of TAw, will have the organizational resource and process support of a competent organization.

¹² MOD clearances refer to MOD modifications / repairs (non-civil approved) or limitations.

¹³ Refer to RA 4971 – Military Airworthiness Review and Certification - MRP Part M Sub Part I.

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Material
1165(1)****Guidance on MEL**

19. MELs are a necessary component of the fixed risk management construct operated by the civil Airworthiness system, providing operators and maintainers authoritative guidance, as approved data, on the fault tolerance limits¹⁴ of the Air System. Air Systems operated under this regulation will require MELs to provide operational flexibility to the users within the Service Environment. In addition to the MEL derived from the MMEL for the civilian type certified Air System, the MOD may wish to provide a MEL Military Supplement (MELMS) for those items used for military purposes not already specified (such as military communications equipment). All MELMSs is to follow the style and layout of the ►UK◄ CAA assessed MEL and is to be derived from a documented assessment of the impact on safe operation of the Air System in the event of one or multiple failures. It is to also specify that, if deferred, the items contained within the MELMSs pose no hazard to the overall Airworthiness of the Air System.

Rectification Interval Extensions

20. Latitudes for extending the deferral of items listed within the MEL are known within the civil system as RIE. An RIE is a single 100% extension to the rectification interval for the acceptance of faults to the item or system as specified within the MEL. As an example, an item that has been deferred for 3 days iaw the MEL rectification interval may only be granted a maximum deferral of 3 further days using the RIE process. A further extension, in the form of a time limited waiver or exemption, may only be granted by the MAA, in consultation with the ►UK◄ CAA, and must be applied for through the MAA03¹¹ exemptions and waivers process. A deferred fault may not be reviewed and re-deferred outside of this process (ie it is not acceptable for the licenced engineer to review a deferred fault and continually defer it outside of the RIE process). Application of RIE is to be agreed by the Mil CAM.

¹⁴ Such as tolerable avionic failures or redundancy of multiple systems.

RA 1166 – UK Civil-Registered Aircraft Utilized ► and Piloted ◀ by the Ministry of Defence

Rationale

The Military Aviation Authority (MAA) certifies, regulates and assures Air Systems that are military registered and therefore governed by the MAA's Regulatory Publications (MRP). However, there may be occasions where the Ministry of Defence (MOD) wish to utilize ► and pilot ◀ UK civil-registered Aircraft, contracted to the MOD, to achieve its task without placing them on the Military Aircraft Register (MAR). In such situations, the regulatory responsibilities of the MAA and UK Civilian Aviation Authority (CAA) require unambiguous and defined boundaries to ensure the provision of appropriate regulatory oversight and prevent the development of complicated and confusing regulatory structures. The MOD User¹ and Contractor also require clarity of the regulatory and Assurance framework they will adhere to and which Regulations they are expected to comply with. This Regulatory Article (RA) therefore outlines the process by which the MAA and CAA will agree a regulatory framework for the utilization ► and piloting ◀ of civil-registered Aircraft for MOD tasks or activity.

Contents

1166(1): UK Civil-Registered Aircraft Utilized ► and Piloted ◀ by the Ministry of Defence

Regulation 1166(1)

UK Civil-Registered Aircraft Utilized ► and Piloted ◀ by the Ministry of Defence

1166(1) The regulatory framework to be applied when a UK civil-registered Aircraft is utilized ► and piloted ◀ by the MOD **shall** be agreed by the MAA and CAA and adhered to by the MOD User and Contractor.

Acceptable Means of Compliance 1166(1)

UK Civil-Registered Aircraft Utilized ► and Piloted ◀ by the Ministry of Defence

1. Before entering into any contractual agreement, MOD organizations planning to use UK civil-registered Aircraft for MOD tasks / activities **should** contact the MAA² to discuss the requirement for a joint MAA / CAA regulatory framework.
2. When requested to by the MAA and CAA, the MOD User and Contractor **should** submit a joint submission to the MAA detailing the planned use of the civil-registered Aircraft and any other information required by the MAA and CAA.
3. The MOD User and Contractor **should** provide representation at a joint MAA / CAA working group to determine the applicable regulatory and Assurance framework for the task / activity.
4. When the regulatory framework is agreed by the CAA and MAA, it **should** be formalized in a document and issued to the MOD User and the Contractor. In response, and prior to start of flying activity, the MOD User and Contractor **should** provide the MAA and CAA with a joint exposition that describes as a minimum:
 - a. ► The individual(s) assigned to hold accountability for operating Risk to Life (RtL); ◀
 - b. The application of agreed responsibilities to the task / activity, particularly at the boundaries between the MAA and CAA Regulations;
 - c. The application of the agreed regulatory framework to the task / activity;
 - d. Any remaining areas of the task / activity that require regulatory clarity, and;

¹ ► The MOD User requirement will be endorsed by an individual at 2* level or above, with appropriate air competence and air experience. ◀

² Initial contact **should** be made by email to DSA-MAA-MRPEquiries@mod.gov.uk.

**Acceptable
Means of
Compliance
1166(1)**

- e. Provision of 1st and 2nd party Assurance to the task / activity.
5. ▶ Based on the provided exposition the MAA and CAA will jointly issue a final Approval and associated Air Navigation Order (ANO) exemption. ◀ The MOD User and Contractor **should** abide by the ▶ provisions of the Approval and ANO exemption.
6. For continued oversight and interim Assurance of the operation, the CAA and MAA **should** carry out an annual review of the Approval and associated ANO exemption. The outcome **should** be formally communicated to the MOD User and Contractor.
7. With a view to renewing and in advance of the expiry date of the Approval and ANO exemption, a review of the operation **should** be instigated by the MAA and CAA. This review will be biennial following initial Approval and triennial thereafter. The MOD User and Contractor **should** engage with this process to ensure the operation remains fit for purpose, appropriately Assured and regulated. ◀

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UK Civil-Registered Aircraft Utilized ▶ and Piloted ◀ by the Ministry of Defence

8. The term 'MOD User' refers to the organization within the MOD that wishes to utilize a civil-registered Aircraft to achieve its task or conduct an activity. As the applicable regulatory framework is developed, the terminology used will become more specific ▶ during the exposition process.
9. This RA is not intended to apply to operations conducted under an organization's Air Operator Certificates (AOC) or civil Approved Training Organization's (ATO) Approvals. ◀
10. The term 'Contractor' refers to the organization that is providing the Aircraft and supporting services under contract to the MOD.
11. This Regulation applies to the utilization of civil-registered Aircraft by the MOD where the Aircraft is not brought onto the MAR. For such situations, a Memorandum of Understanding (MoU) ▶³◀ has been established between the MAA and CAA that details the process by which a regulatory framework is developed to ensure the activity is regulated and Assured appropriately, responsibilities are understood and RtL associated with the activity remains As Low As Reasonably Practicable and Tolerable.
12. To ensure the MAA and CAA properly understand the proposed activity, the MOD User and Contractor will be required to provide a joint submission that details how the Aircraft will be employed. In response, and following a joint working group ▶ (if required), ◀ the MAA and CAA will provide the MOD User and Contractor with a regulatory framework document that details the agreed regulatory and Assurance arrangements.
13. ▶ At this point ◀ the MOD User and Contractor will be expected to provide an exposition that details how the agreed framework and responsibilities will be applied to the task or activity. The exposition will include specific detail of any mitigations to be applied at the boundaries of interaction between CAA and MAA Regulations to avoid ambiguity.
14. ▶ ◀
- a. ▶ ◀
- b. ▶ ◀
- c. ▶ ◀
15. ▶ The final Approval and ANO exemption will be issued jointly by the MAA and CAA and will detail the specific circumstances of the operation in respect of Assurance and Regulation. This action concludes the initial RA 1166 process.
16. Prior to the 2 year point following initial Approval or the 3 year point thereafter, a review will be instigated by either the CAA or the MAA to confirm that the operating

³ ▶ Annex A to MoU made between the Military Aviation Authority and the Civil Aviation Authority Safety and Airspace Regulation Group, Version 4.0, dated September 2022. ◀

**Guidance
Material
1166(1)**

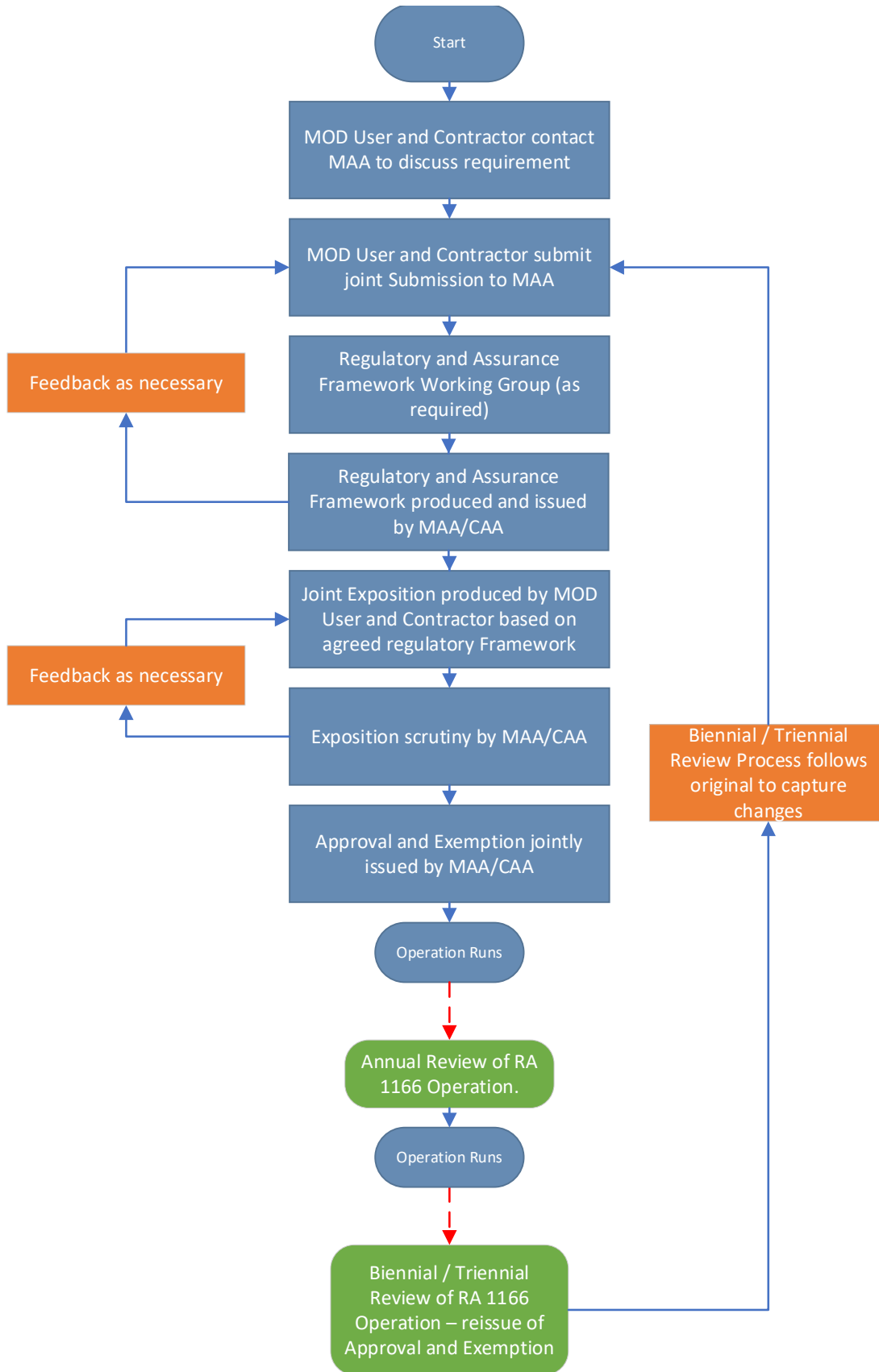
premise has not changed, or that any changes have been captured, and that the regulatory and Assurance framework ultimately remains valid. The initial Approval process is repeated, albeit in an expedited manner, and a renewed Approval and ANO exemption will be issued.

17. MOD Users and Contractors can refer to Annex A for a pictorial representation of the RA 1166 process. ◀

► This Annex is new; for clarity no change marks are presented – please read Annex A in its entirety ◀

Annex A

Figure 1 – RA 1166 Process



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

RA 1200 - Air Safety Management

Rationale

Effective Air Safety Management (ASM) enhances operational capability. Complex systems in the Defence Air Environment present foreseeable and credible Risk to Life (RtL) and therefore require a rigorous and systematic management approach to avoid personnel being exposed to unnecessarily high Risk. An effective Air Safety Management System (ASMS), in conjunction with an Air System Safety Case (ASSC), will ensure that RtL is mitigated to As Low As Reasonably Practicable (ALARP) and Tolerable. The ASMS comprises the entirety of all documented and undocumented processes, procedures, tools and methodologies that exist to manage Air Safety. It is underpinned by Leadership, Assurance, and an Engaged Air Safety Culture.

Contents

1200(1): Air Safety Management

Regulation 1200(1)

Air Safety Management

1200(1) All Aviation Duty Holders (ADH), Accountable Managers (Military Flying) (AM(MF)), Accountable Managers (AM)¹, Heads of ADH-Facing Organizations² and Heads of Establishment (HoE) involved in Defence Aviation **shall** establish and maintain an effective ASMS.

Acceptable Means of Compliance 1200(1)

Air Safety Management

1. ADH and AM(MF) ASMSs **should** manage their respective ASSC(s) to ensure that the Safety claims, arguments, and their supporting evidence are routinely reviewed and challenged for continued validity, in order to ensure associated RtL remain ALARP and Tolerable.
2. The ASMS of ADH-Facing Organizations, AMs and HoEs supporting Defence Aviation **should** enable those organizations to actively support ADH and AM(MF) in their management of Air Safety and respective ASSC(s). It **should** identify any decision, activity or change in circumstances that has the potential to introduce or modify RtL in ADH and AM(MF) operations, or which could undermine the ALARP and Tolerable status.
3. Where organizations employ a holistic or 'Total Safety' approach to managing Safety (potentially encompassing health and Safety, environmental Safety, functional Safety, and Air Safety) as a single system, these systems **should** address and document the approach to complying with this regulation.
4. Each organization **should** demonstrate an appropriate level of separation between Assurance and delivery such that its activities are not unreasonably influenced by operating or commercial pressures.
5. An ASMS **should** be proportional to the size, complexity and activities of the organization and consider the Hazards and associated Risks. It **should** comprise the 4 key pillars:
 - a. **Safety Policy and Objectives.**
 - b. **Safety Risk Management.**
 - c. **Safety Assurance.**

¹ Those AMs within: ADH-Facing Organizations, Contractor Flying Approved Organizations, Maintenance Approved Organizations, Air Traffic Management Equipment Approved Organizations, and Design Approved Organizations.

² Examples are 'Heads of ADH-Facing Organizations' include Type Airworthiness Authorities (TAA), Commodity Chief Engineers, Type Airworthiness Managers (TAM), Commodity Delivery Team Leaders, Military Continuing Airworthiness Managers (Mil CAMs). for definition of ADH-Facing (Refer to RA1020(4): Responsibilities of Aviation Duty Holder-Facing Organizations).

**Acceptable
Means of
Compliance
1200(1)**

- d. **Safety Promotion.**
6. Utilizing the 4 key pillars as a framework, an ASMS **should**, as a minimum:
- a. **Safety Policy and Objectives**
- (1) **Leadership, Commitment, Accountabilities and Responsibilities.** Clearly define lines of responsibility and accountability throughout the organization including the direct Safety accountability of the ADH, AM(MF), AM, HoEs and ADH-Facing Organizations and make a clear commitment to the adequate resourcing of Air Safety.
- (2) **Engaged Air Safety Culture.** Clearly articulate how the organization engenders a positive Safety culture and assesses its ongoing effectiveness and ensure that a set of enduring values and attitudes regarding Air Safety is shared by every member of an organization.
- (3) **Air Safety Priority, Objectives and Targets.** Clearly articulate the leadership's Air Safety priorities, set the targets to be achieved and define the objectives that will deliver them.
- (4) **Organization, Key Safety Personnel, Air Safety Competencies.** Describe the Safety organization and be structured in a way that is easily communicated, such that it is clearly understood throughout the organization.
- (5) **Defined Interfaces with Adjacent Safety Management System.** Identify all interactions between adjacent organizations' management systems, describe the information flows across them and how they will be managed.
- (6) **Emergency Response Planning.** Detail contingency plans that clearly document the actions to be taken following emergencies to limit the initial impact, control the situation and enable return to normality at the earliest practicable opportunity.
- (7) **ASMS Documentation.** Produce appropriate documentation which describes required processes, procedures, tools, and methodologies, that will facilitate effective performance of the ASMS.
- b. **Safety Risk Management**
- (1) **Reporting and Investigation.** Detail processes and resources to enable the effective reporting and investigation of Occurrences.
- (2) **Hazard Identification.** Detail processes and resources to enable effective Hazard Identification, which will include causal and consequence analysis.
- (3) **Safety Risk Assessment and Mitigation.** Detail processes and resources to analyze and control or mitigate the associated Safety Risks within an organization, and ensure the effectiveness of these actions have been verified.
- c. **Safety Assurance**
- (1) **Compliance Monitoring and Safety Performance Measurement.**
- (a) Detail the process and resources to provide Assurance that the organization is compliant with relevant requirements³ (see para 7 for further detail).
- (b) Include suitable Safety Performance Indicators (SPI) to measure performance against the defined Air Safety Objectives and Targets and ensure their routine review.

³ MAA regulatory publications, legislation, internal process.

Acceptable Means of Compliance 1200(1)

- (2) **Management of Change.** Detail a proactive approach to change management that assesses proposed changes before implementation such that undesirable consequences can be avoided or mitigated.
- (3) **Continuous Improvement of the ASMS.** Include processes to monitor and evaluate the effectiveness of the ASMS and act upon findings to facilitate continuous improvement.
- (4) **Retention, Evaluation and Feedback of Information.** Provide an auditable information trail that can be used to review, revise and justify the Risk management and associated decision-making processes.

d. Safety Promotion

- (1) **Training and Education.** Have processes in place that identify how the organization trains and educates people in the ASMS, including competence assessment and continuation training.
- (2) **Safety Communication.** Have processes in place that identify how communication of Safety information is conducted, and the effectiveness is assured.

Safety Assurance

7. The ADH, AM(MF), AM, HoEs and ADH-Facing Organizations **should**:

- a. Ensure that the ASMS operates a comprehensive and documented Safety Assurance⁴ programme covering the entirety of the organization's own activities and, where appropriate, those of interfacing organizations⁵. The programme **should** be routinely reviewed to ensure an appropriate focus is maintained.
- b. Ensure that when responsible for conducting 2nd Party Assurance (2PA) on subordinate organizations, the requirements detailed in MAA01⁶ are met.
- c. Nominate an individual to have overall responsibility for compliance monitoring management. Where the same individual fulfils the role of both Safety and Compliance Manager, the ASMS **should** clearly define how independence is maintained between the roles.

Guidance Material 1200(1)

Air Safety Management

8. The Air Safety Management Assessment Tool (ASMAT) is an optional tool that has been produced to facilitate the Assurance of ASMS by 1st, 2nd, and 3rd party organizations⁷. The ASMAT and the associated report form are available for download from the MAA website⁸.

Safety Policy and Objectives.

9. An effective ASMS may be a hierarchy of connected ASMSs for parent, subordinate and supporting organizations which integrate effectively via defined interfaces to support relevant ASSCs. ADH-Facing Organizations have a significant role in enabling the ADH and AM(MF) to manage RtL by communicating effectively via interfaces and stakeholders.
10. The Air Safety Targets and SPIs can be expressed in quantitative or qualitative terms and will help facilitate the measurement of ASMS effectiveness.
11. Organizational arrangements will include the ASMS scope, the roles, and responsibilities of the organization with a focus on Air Safety, and the structure, composition and aim of Air Safety meetings, working groups and decision-making

⁴ Safety Assurance encompasses both the functions of detailed compliance monitoring and Safety Audits (see MAA02: Military Aviation Authority Master Glossary). Whilst performance of the ASMS needs to be constantly monitored, periodic discrete Assurance activities **should** be planned based on perceived Risk.

⁵ Where an organization is reliant upon another one for delivery of a product or service to enable effective operation or delivery of their ASSC element, appropriate Assurance arrangements **should** be made. This may be via direct Assurance, or by reviewing Assurance reports from other trusted agencies; ASMS documentation **should** describe how such assurance reports are exploited.

⁶ MAA01: Military Aviation Authority Regulatory Principles, Chapter 2 – How the MAA Regulates, Para 8.

⁷ Refer to MAA02 for definition of 1st, 2nd, 3rd Party Assurance.

⁸ <https://www.gov.uk/government/publications/the-military-aviation-authority-air-safety-management-performance-matrix-mapm>.

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1200(1)**

forums. The role of the Safety Manager will be clearly nominated along with the appointment of other key Air Safety personnel who require Terms of Reference, including unambiguous channels of communication and levels of authority.

12. Defined interfaces with adjacent Safety Management Systems will capture detail on who, what, when, why and where the interfaces are, and ensure they are reviewed regularly. Interfaces are to include all those that support an ASSC.

13. With Emergency Response Planning it is important to note that Emergency Response Planning is not only Post Crash Management or Business Continuity but assessing the Air Safety impact of any potential emergency or non-standard operating procedure and transition back to normal ops.

14. ASMS documentation is dependent on the organization's Safety management structure but needs to be auditable, controlled, accurate and current.

Safety Risk Management

15. Hazard Identification will be periodically revisited, to ensure that the assumptions remain valid and identify any new Hazards.

Safety Assurance

16. The principles of ISO 9001 are recommended for assessing the requirements for process development, Assurance⁹ and continuous improvement.

17. The compliance monitoring function will be appropriate to the size and complexity of the organization and include a feedback system of findings to the ADH, AM(MF), AM or ADH-Facing Organizations to ensure the effective implementation of corrective actions as necessary.

18. Change Management will manage both large scale change (Aircraft types, Operating Locations etc.) and small scale (minor modifications or MAA Regulatory Publications updates etc.) and will be pan Defence Lines of Development.

Further Guidance

19. The Manual of Air Safety contains further guidance material applicable for establishing, maintaining, and assuring the effectiveness of the ASMS, Risk Management and developing an Engaged Air Safety Culture.

⁹ The compliance monitoring function may already fall within the Quality Management System (QMS) within some organizations; Approved Organization QMS requirements are detailed in RA 1005 – Contracting with Competent Organizations.

RA 1202 – Cyber Security for Airworthiness and Air Safety

Rationale

Cyber vulnerabilities in Air Systems represent a significant threat to Type and Continuing Airworthiness and Air Safety. Cyber Security for Airworthiness (CSA) measures are required to identify and mitigate against inadvertent or malicious introduction of such cyber vulnerabilities, to maintain Airworthiness. This RA sets out the CSA operational requirements for management of cyber threats throughout the life of an Air System.

Contents

1202(1): Cyber Security for Airworthiness and Air Safety

Regulation

1202(1)

Cyber Security for Airworthiness and Air Safety

1202(1) Aviation Duty Holders (ADH) / Accountable Managers (Military Flying) (AM(MF))¹ and Senior Responsible Owners (SRO) **shall** ensure that cyber security threats to Air Safety and Airworthiness are identified, suitably mitigated, and managed through life, appropriate to the level required by the intended use of the Programmable Elements (PE)².

Acceptable Means of Compliance

1202(1)

Cyber Security for Airworthiness and Air Safety

1. To mitigate the cyber security threats to Airworthiness and Air Safety during operation and Maintenance of an Air System, ADHs / AM(MF)s and SROs **should** provide direction to operators. This **should** use recognized cyber security guidance aligned to the principles of the MOD Cyber Compliance Framework³. ADHs / AM(MF)s / SROs **should** follow:
 - a. Radio Technical Commission for Aeronautics (RTCA) DO-355A / EUROCAE ED-204A^{4, 5}.
 - b. JSP 440⁶.
2. The ongoing CSA activity **should** contribute to the development and management of the Air System Safety Case⁷.

Guidance Material

1202(1)

Cyber Security for Airworthiness and Air Safety

3. To harmonise the approach taken to address Risks to CSA, detailed in RTCA DO-355A / EUROCAE ED 204A, this RA captures the operational considerations for the management of cyber security threats throughout the life of an Air System.

Note:

RA 5890⁸ captures the CSA considerations for Air System Type Design and Changes / Repairs to Type Design.

4. Threat of intentional unauthorized electronic interaction will be systematically addressed throughout the life of an Air System. The introduction of changes through advances in computing technology, coupled with developments in tools and techniques, may increase the Risk associated with existing vulnerabilities or expose new ones. The periodicity and work conducted is commensurate with the potential Safety impact associated with the Air System. This RA gives guidance on actions to

¹ Refer to RA 1024 – Accountable Manager (Military Flying).

² Note – scope of activity is not confined to PE, but a whole Air System / operations focus, for the management of cyber security threats and vulnerabilities.

³A copy of the MOD Cyber Compliance Framework should be requested from the contracting organization.

⁴ Refer to RTCA DO-355A / EUROCAE ED-204A – Information Security Guidance for Continuing Airworthiness (note that DO-355A is titled 'Continued Airworthiness', DO-355A still refers to Continuing Airworthiness throughout the standard despite title of document).

⁵ DO-355A is a companion to RTCA DO-326A but written for information security In-Service, as opposed to design. The need for such provision is consistent with Defence Standard (Def Stan) 00-970 Guidance Material (Parts 1, 3, 5 and 7).

⁶ Refer to JSP 440 – The Defence Manual of Security.

⁷ Refer to RA 1205 – Air System Safety Cases.

⁸ Refer to RA 5890 – Cyber Security for Airworthiness and Air Safety – Type Design and Changes / Repairs to Type Design.

**Guidance
Material
1202(1)**

ADHs / AM(MF)s and SROs responsible for all in-service Air Systems, including Legacy Air Systems⁹, on understanding what level of vulnerability they may be subject to from cyber threats. Design Change will always be the preference to address cyber vulnerabilities, however it is accepted that action taken in line with this RA may be more feasible to achieve by justified procedural means.

5. **Cyber Compliance.** Management of cyber security for Air Systems In-Service must be consistent with the MOD Cyber Compliance Framework³, with a specific focus on Air Safety. The framework can be aligned to relevant aspects of DO-355A⁴ for Continuing Airworthiness and JSP 440¹⁰. The framework is based on the requirements of the US National Institute of Standards and Technology (NIST) Cybersecurity Framework, namely Identify, Protect, Detect, Respond and Recover, which must be followed and maintained through the life of Air Systems. This guidance is applicable to PE, Aircraft components, Aircraft network access points, Aircraft weapon systems, Aircraft intelligence systems, Ground Support Equipment, any associated Ground Support Information Systems, and the associated operators. The National Cyber Security Centre (NCSC)¹¹ also provides guidance on a Cyber Assessment Framework (CAF) that shares the principles of the NIST Framework.

6. **Identify.** The first step, and foundational for effective application of the MOD Cyber Compliance Framework³, is understanding cyber security Risk in the operational context of any Air System. Risk Assessments, Risk Management strategies, governance, supply chains and asset management are examples of outcomes within this function. DO-355A⁴ and JSP 440⁶ provide guidance on these aspects, which are key in identifying cyber threats and vulnerabilities that have the potential to impact Air Safety, along with associated operators' responsibilities.

7. **Protect.** Once cyber threats have been identified, the next step is the development and implementation of appropriate safeguards to ensure safe operation of an Air System, by limiting or containing the impact of a potential cyber Incident on Air Safety. Examples of outcomes include access management, storage, transport, training and awareness, Maintenance, protective technology, and Information Management (IM). DO-355A⁴ and JSP 440⁶ provide guidance on implementation of these processes.

8. Further information for the Assurance of the supply chain may be found in Def Stan 05-138¹² and Def Stan 05-135¹³ (eg, counterfeit materiel may not meet the original manufacturer specifications, undermining protection assumptions, and compromised materiel could deliberately introduce vulnerabilities). The NCSC also provides guidance on Assurance of supply chains.

9. **Detect.** Upon introducing protective safeguards, the detect function will be introduced to enable timely detection of cyber security Incidents that may impact Air Safety, such as continuous monitoring and security log files. By understanding the normal behaviour of relevant Air Systems, anomalies can be identified as potential cyber threats to Air Safety. DO-355A⁴ and JSP 440⁶ provide guidance on the importance of monitoring and detection systems and processes. Guidance on the management of security events that affects aviation Safety can be found in DO-392¹⁴.

10. **Respond.** Once a cyber incident affecting Air Safety has occurred, the level of response is key in supporting the ability to contain the impact, this includes the need for business continuity plans and associated response plans, Occurrence reporting¹⁵, cyber threat analysis, and Continuous Improvement (CI). The MOD requirement for cyber management controls and Cyber Incident response is detailed in JSP 440⁶. Further guidance can be sought through the MOD Cyber Compliance Framework³ and the NCSC Cyber Assessment Framework¹¹. Guidance on the management of security events that affects aviation safety can be found in DO-392¹⁴.

⁹ Refer to MAA02 – MAA Master Glossary

¹⁰ JSP 440 focuses on generic cyber security.

¹¹ www.ncsc.gov.uk.

¹² Refer to Def Stan 05-138 – Cyber Security for Defence Suppliers.

¹³ Refer to Def Stan 05-135 – Avoidance of Counterfeit Materiel.

¹⁴ Refer to DO-392 / EUROCAE ED-206 – Guidance for Security Event Management.

¹⁵ Refer to MOD Cyber Incident Reporting – [Security Incident Reporting Form](#) and RA 1410 – Occurrence Reporting and Management.

**Guidance
Material
1202(1)**

11. **Recover.** Directly linked to cyber incident response, recovery is essential in maintaining resilience and restoring operational capability. This function minimizes the impact of a cyber incident through timely recovery via recovery planning and CI. Communication and co-ordination with all stakeholders is required to ensure recovery activities are managed and lessons are identified for future improvements, as per guidance in JSP 440⁶. Further guidance can be sought through DO-392¹⁴, the MOD Cyber Compliance Framework³ and NCSC Cyber Assessment Framework¹¹.

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RA 1205 - Air System Safety Cases

Rationale

Military Air Systems are complex and often have unique and emerging capabilities that present complicated developmental challenges; moreover, the operation of Military Air Systems presents a foreseeable and credible Risk to Life (RtL). A simple Risk assessment will not be sufficient to assess the potential impact of these RtL, whereas the use of a Safety Case provides the ability to understand the cumulative and / or interrelated Risks from the use of the complex system. This Regulatory Article (RA) requires that all Air Systems on, or destined for, the UK Military Aircraft Register (MAR) have a robust Air System Safety Case (ASSC) that will demonstrate that the Air System is, or will be capable of being, safe to operate and operated safely for a given application in a given operating environment.

This RA is supported by the Manual of Air System Safety Cases (MASSC) which provides comprehensive Guidance Material regarding ASSCs.

Contents

- 1205(1): The Air System Safety Case and Air System Safety Case Report(s)**
- 1205(2): Ownership of the Air System Safety Case**
- 1205(3): The Safety Statement**
- 1205(4): Responsibilities of Organizations supporting an Air System Safety Case**
- 1205(5): Assurance, Endorsement and Scrutiny of the Air System Safety Case**

Definitions

1. ▶◀
2. ▶◀

Applicability

Applicability of this RA

3. All Air Systems on, ▶ or destined for, ◀ the UK MAR ▶¹◀.
4. ▶◀
5. All Senior Responsible Owners (SROs) responsible for the introduction, development or modification of Air Systems on, or destined for, the UK MAR.
6. All Operating Duty Holders (ODH) / Accountable Managers (Military Flying) (AM(MF)) responsible for the operation of Air Systems on the UK MAR.

Regulation 1205(1)

The Air System Safety Case and Air System Safety Case Report(s)

- 1205(1) An ASSC **shall** be produced for Air Systems on, or destined for, the UK MAR. The ASSC **shall** be articulated via an ASSC Report.

Acceptable Means of Compliance 1205(1)

The Air System Safety Case and Air System Safety Case Report(s)

The ASSC

7. The ASSC **should** consist of a claim (or number of claims), a structured and explicit argument, and a supporting body of evidence, that together provide a compelling, comprehensible and valid case that an Air System is safe to operate and being operated safely within a clearly defined context².

¹ ▶ Open Category and Specific S1 sub-category Remotely Piloted Air Systems (RPAS) do not require an ASSC. Specific S2 sub-category and Certified Category RPAS require an ASSC. Refer to RA 1600 Series – Remotely Piloted Air Systems. ◀

² That is, for a given application(s) in a given operating environment(s).

Acceptable Means of Compliance 1205(1)

8. Development of the ASSC **should** begin at the concept stage³, with Safety arguments considered during capability design and selection, and be managed through to ►(and including)◄ disposal.
9. Development of the Air System's Safety requirements and context of use **should** be influenced by the current, or intended, operators and maintainers of the Air System. For a unique and emerging technology, with no end-user expertise, an appropriate Suitably Qualified and Experienced Person (SQEP) stakeholder group **should** be established.
10. The ASSC **should** be managed via an Air Safety Management System (ASMS) established and maintained in accordance with (iaw) RA 1200⁴.
11. The ASSC **should** explicitly address the Human Factors aspects associated with the operation and Maintenance of the Air System.
12. The ASSC **should** explicitly address the inclusion, or justified exclusion, of Safety-enhancing technologies and techniques from across the aviation industry, both during the initial development of the capability and once In-Service⁵ through periodic review of the ASSC ►◄.
13. ►Where a Flight Simulator Training Device⁶ is procured or utilized in support of the Air System then the ASSC owner **should** ensure that it is appropriately captured in the ASSC.◄
14. The ASSC **should** address all operations being, or intended to be, conducted with the Air System. The ASSC **should** explicitly address any higher-technical merit and / or higher-Risk activities and present a coherent and convincing Safety argument backed up by valid supporting evidence, which might be bespoke to these capabilities ►◄.
15. As the ASSC develops, it **should** enable the following:
 - a. Provision of an 'ASSC Strategy' which ►begins to mature the ASSC Claim-Argument-Evidence construct that is endorsed by the end-user ODH / AM(MF). This effectively provides a summary of the programme activity that substantiates the claims and arguments◄ that the capability has the potential to be managed safely across all Defence Lines of Development (DLoD)►⁷◄ through its lifecycle.
 - b. Provision of an 'ASSC Acquisition Basis' which ►continues to mature an ASSC Claim-Argument-Evidence construct, begins to summarize argument substantiation evidence, continues to effectively summarize the programme activity that is substantiating the claims and arguments, and demonstrates that operating Risks have influenced capability design / selection and Pan-DLoD Safety requirements.◄
 - c. Provision of a 'Live ASSC' which demonstrates, through claim, explicit argument and appropriately cited evidence, that the Air System is safe to operate and operated safely across all DLoDs and that all RtL is both As Low As Reasonably Practicable (ALARP) and Tolerable within a clearly defined context⁸.

The ASSC Report(s)

16. An ASSC Report **should** be one document which captures the key components of the ASSC at a point in time. It **should** articulate the Safety claim and the Safety argument and summarize the supporting evidence in a clear and concise format.
 - a. The ASSC Strategy Report (for ►the Outline Business Case (OBC)◄) **should** demonstrate that the proposed Air System and the associated

³ The first stage of the CADMID cycle (Concept, Assessment, Demonstration, Manufacture, In-service, Disposal).

⁴ Refer to RA 1200 – ►◄ Air Safety Management.

⁵ The term 'service', when used in the context of an Air System being 'In-Service' or 'introduced into service', refers to the phase where the Air System has completed development and is now being used to deliver the capability for which it was intended, be that training or operations. It does not refer to use of the Air System by one of the branches of HM Armed Forces (ie the Services – Navy, Land or Air).

⁶ ►Refer to RA 2375 – Qualification, Approval and Use of Flight Simulator Training Devices.

⁷ Refer to MAA02 – Military Aviation Authority Master Glossary.◄

⁸ Refer to RA 1210 – Ownership and Management of Operating Risk (Risk to Life).

Acceptable Means of Compliance 1205(1)

processes and measures described are likely to support effective ALARP and Tolerable judgments. ► **The Report should capture a consistent Claim-Argument-Evidence construct alongside a summary of the programme activity being undertaken to substantiate the claims and arguments.** ◀

b. The ASSC Acquisition Basis Report (for ► **the Full Business Case (FBC)** ◀ **should** demonstrate that the processes and their artefacts have influenced capability design / selection ► **or,** ◀ where this has not been achieved, ► ◀ demonstrate the additional mitigation measures which are required to be implemented, eg Training Needs Analysis. ► **The Report should capture a consistent Claim-Argument-Evidence construct alongside a summary of the on-going programme activity being undertaken to substantiate the claims and arguments.** ◀

c. The ASSC Report(s) associated with the Live ASSC (for either ► **Development or In-Service**) ◀, **should** demonstrate that the processes are supporting effective ALARP and Tolerable judgements within a clearly defined context. A Live ASSC Report **should** be produced ► **as part of the Application for Approval in Principle to register an Air System on the UK MAR⁹,** ◀ prior to activation of the Air System on the UK MAR, and following review of the Live ASSC as required at para ► **27** ◀.

17. To ensure the ASSC Report presents a clear and compelling case, evidence **should** be referenced and only directly transposed into the ASSC Report where critical to the meaning or strength of an argument.

18. Legacy versions of ASSC Reports **should** be considered significant Air Safety related documents and retained iaw RA 1225¹⁰.

Guidance Material 1205(1)

The Air System Safety Case and Air System Safety Case Report(s)

19. **Safety Case Regime.** The Safety Case regime places the onus on the operator, who understands the Air System and how it will be, or is, employed to identify and manage the Risks associated with their activity, rather than simply relying on prescriptive regulation alone. To assist the regulated community, the MAA has produced the MASSC which provides guidance material for the development and management of the ASSC and of the associated ASSC Report(s).

20. **Primacy of the ASSC argument.** As described in the MASSC, an argument without supporting evidence is unfounded, whilst evidence without argument is unexplained and therefore meaningless, regardless of the quality or quantity of that evidence. The overwhelming academic view revolves around the primacy of the Safety argument; however, in practice this is often neglected with the emphasis being incorrectly placed on evidence and leaving the connection between the evidence and the argument unexplained. Within an ASSC, it is the Safety argument that has primacy, underpinned and supported by evidence.

21. **Safety-Enhancing Technologies and Techniques.** The principle behind para 12 is the requirement to consider good practice as part of any ALARP argument¹¹. As such, the design and selection of the Air System has to consider extant Safety-enhancing technologies and techniques from across the aviation industry which are applicable to the intended context, with decision(s) captured within the developing ASSC. The consideration of emerging Safety-enhancing technologies and techniques will depend on the anticipated Safety benefit, and the maturity of those technologies and techniques against the programme timeline. Once the Air System is In-Service, the periodic review of the Live ASSC (In-Service) will need to confirm that arguments based on the adoption of good practice are still valid, cognisant of any changes in context or adoption of new technologies and techniques across the aviation industry. ► **Examples of such technologies¹² and techniques include collision warning systems, terrain awareness and warning systems, cockpit voice / flight data**

⁹ ► Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment. ◀

¹⁰ Refer to RA 1225 – Air Safety Documentation Audit Trail.

¹¹ Refer to RA 1210 – Ownership and Management of Operating Risk (Risk to Life), Annex B for more details.

¹² ► Noting that some safety-enhancing technologies (ie Cockpit Voice / Flight Data Recorder) are mandatory equipment for the Air System to achieve Type Certification iaw RA 5810 – Military Type Certificate (MRP 21 Sub Part B). ◀

Guidance Material 1205(1)

recorders, windshear alerting systems, wire-strike protection systems and flight data monitoring programmes.

22. **Higher-technical merit and / or higher-Risk activities.** Such operations include: Night Vision Device operations, air-to-air refuelling, embarked operations, degraded visual environment operations, training for contested airspace operations, the use of equipment and / or procedures cleared under an Operational Emergency Clearance (OEC) and operations with reduced Safety margins¹³.

23. It is essential that development and management of an ASSC covers all DLoDs within its Claim-Argument-Evidence hierarchy. Approaching the development of an ASSC through a 'Pan-DLoD lens' can also assist in delivering an effective Claim-Argument-Evidence construct; the MASSC offers further guidance. ◀

Regulation 1205(2)

Ownership of the Air System Safety Case

1205(2) The SRO or ODH / AM(MF) **shall** develop, manage and own the ASSC subject to the following:

- a. An ASSC **shall** have a single owner at any one time.
- b. For new capabilities, the SRO **shall** own the ASSC from Concept until transfer of the ASSC to the end-user ODH / AM(MF).
- c. The end-user ODH / AM(MF) **shall** take ownership of the ASSC before any RtL is incurred through In-Service operation of the Air System.
- d. Where ▶ **Development**¹⁴ ◀ flying is to be conducted, the ODH / AM(MF) for the ▶ **Development** ◀ flying **shall** own a separate ASSC specific to the context of the ▶ **Development** ◀ flying.

Acceptable Means of Compliance 1205(2)

Ownership of the Air System Safety Case

Roles and Responsibilities of the ASSC Owner - SRO

24. From nomination as a project SRO ▶¹⁵ ◀ and on ownership of the project mandate¹⁶, until transfer of the ASSC to the end-user ODH / AM(MF), the SRO **should**:

- a. Manage the development of the ASSC argument and its associated evidence requirements.
- b. Ensure delivery of the evidence through Integrated Test, Evaluation and Acceptance (ITEA), or equivalent, which provides the relevant role-relation and independent test and / or evaluation.
- c. Ensure that Air Safety considerations are founded in capability requirement design and selection, securing end-user engagement through the Requirements Manager.
- d. Ensure appropriate operator, maintainer and ITEA stakeholder engagement during development of the ASSC Strategy and ASSC Acquisition Basis.

¹³ ▶ For example, tasks utilizing approved Reduced Operating Standard or Military Operating Standard take-off and landing performance.

¹⁴ Refer to RA 1160 – The Defence Air Environment Operating Framework.

¹⁵ For civil-initiated procurement of Civilian-Owned / Civilian Operated Air Systems which do not have a SRO, the programme manager responsible for planning, governing and overseeing the successful delivery of the programme's output / product owns and manages the ASSC until the Air System is activated on the UK MAR and the ASSC handed over to the AM(MF). ◀

¹⁶ Or whatever mechanism is equivalent in ▶ **civilian** ◀ industry / operators that confers budgetary authority to a nominated programme manager at the start of a programme involving development / procurement of an Air System.

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1205(2)**

- e. Ensure that a statement of endorsement from the end-user ODH / AM(MF)¹⁷ is available with the ►OBC◄ and ►FBC◄ Investment Appraisal Committee (IAC) submission¹⁸.
- f. Secure ►an◄ MAA scrutiny statement of the ASSC Strategy Report and ASSC Acquisition Basis Report iaw RA 1205(5) paras ►47◄ and ►48◄.
- g. Ensure that decisions that have the potential to impact on the Safety argument underpinning the subsequent Live ASSC are endorsed by the end-user ODH / AM(MF)¹⁷.
- h. Where ►Development◄ flying is required ►◄, support the ODH / AM(MF) responsible for conducting the ►Development◄ flying to generate the Live ASSC (►Development◄) specific to the context of the ►Development◄ flying.
- i. ►Secure an MAA review of an appropriately mature ASSC Report when applying to register an Air System on to the UK MAR⁹ as part of the Application for Approval in Principle (AAIP).◄
- j. Secure ►an◄ MAA review of a fully-substantiated Live ASSC, articulated through a Live ASSC Report ►(Development / In-Service), when requesting activation of an Air System on to the UK MAR⁹.◄
- k. Manage the development of the ASSC argument, and its associated evidence requirements, when an Air System returns to the developmental domain due to major modification or upgrade project¹⁹.

Roles and Responsibilities of the ASSC Owner – ODH / AM(MF)

- 25. ►Development◄ Flying. Prior to accepting any RtL associated with the operation of an Air System for ►Development◄ activity conducted during initial capability development or modification, the ODH / AM(MF) responsible for the ►Development◄ flying **should**:
 - a. Own and manage a Live ASSC (►Development◄) which delivers a substantiated argument for safe ►Development◄ flying.
 - b. Engage with the SRO and / or end-user ODH / AM(MF) to ensure that the ►Development◄ evidence requirements are clearly understood and that any role-relatable ►Development◄ activity is aligned to the intended In-Service operating context.
- 26. **In-Service Flying.** Prior to accepting any RtL associated with the operation of an Air System in their Area of Responsibility (AoR), the end-user ODH / AM(MF) **should**:
 - a. Implement procedures to review the ASSC as part of the endorsement(s) required by the SRO during ASSC development.
 - b. Assume ownership and management of the Live ASSC (In-Service) following a review of the ASSC.
 - c. Ensure the ASMS has been updated to include ASSC management.
- 27. **Periodic Review.** ►The◄ ODH / AM(MF) ►◄ **should** ►formally review their Live ASSC (Development / In-Service) as Chair of a pan-DLoD Air System Safety Working Group (ASSWG)²⁰, at least once every 12 months and as part of ODH / AM(MF) succession²¹. Through this review, the ODH / AM(MF) **should** scrutinise the validity of their Live ASSC (Development / In-Service) argument and supporting evidence to produce a Live ASSC Report and Safety Statement.◄
 - a. ►◄

¹⁷ Where the end-user ODH / AM(MF) has not yet been identified or appointed, endorsement is to be sought from a suitably empowered representative.

¹⁸ Or equivalent Approving Authority depending on the category case (A-D) of the project.

¹⁹ Refer to RA 5305 – In-Service Design Changes; and RA 5820 – Changes in Type Design (MRP 21 Subpart D).

²⁰ ►◄ Or AM(MF) equivalent.

²¹ ►Where ASSWGs cannot be completed ahead of assumption of ODH / AM(MF) responsibilities, these **should** be completed as soon as reasonably practicable thereafter.◄

Acceptable Means of Compliance 1205(2)

b. ▶◀

▶Other occasions to◀ Review ▶◀ an ASSC

28. In addition to the periodic review of the Live ASSC required at para ▶27◀, there ▶are likely to◀ be occasions when changes to either the Air System itself, the operating context for the Air System, or elements of the argumentation supporting the ASSC require a review of the ASSC to be initiated. The requirement to undertake a review of the ASSC **should** be determined by the appropriate ASSC owner, in consultation with the ODH / AM(MF), SRO and Type Airworthiness Authority (TAA) ▶/ Type Airworthiness Manager (TAM) or Commodity Chief Engineer (CE)²²◀ as appropriate. Changes which **should** initiate a review of the ASSC include:

- a. A change in the operating context of the Air System.
- b. In-Service Design Changes▶²³◀.
- c. Changes arising from any DLoD requiring change to the Release To Service (RTS) ▶or Military Permit to Fly (Development), (In-Service) or (Special Case Flying).◀
- d. Changes leading to the issue of a new certificate of registration on the UK MAR.
- e. ▶Permanent◀ transfer of the Air System to a different ▶Aircraft◀ Operating Authority▶²⁴◀, or as part of ODH / AM(MF) succession.
- f. ▶A◀ material change to the Safety argument.
- g. ▶A◀ major change to Statement of Operating Intent and Usage.
- h. A significant Continuing Airworthiness concern.
- i. Post an accident, major incident or prior to return to flying.
- j. Recognition of a new condition of higher-technical merit and / or higher-Risk activity.
- k. Adoption of a new Safety-enhancing technology and / or technique as good practice by the wider aviation industry.
- l. ▶When considering◀ any change to the planned Out of Service Date of the Air System.

ASSC Ownership Transfer

29. Transfer of ASSC ownership **should** be captured during a formal pan-DLoD review to ensure continued validity of the ASSC argument and supporting evidence in relation to ▶the◀ Air System's ▶◀ context of use. The transferring owner **should** notify the MAA²⁵ of the ASSC transfer.

Guidance Material 1205(2)

Ownership of the Air System Safety Case

30. Having a single owner of an ASSC does not limit an Air System type to have a single ASSC; a single In-Service Air System type may be operated by multiple Aircraft Operating Authorities with differing context of use, thus requiring each ODH / AM(MF) operating that type to own and manage a separate ASSC.

31. The principle outlined in para ▶30◀ will include those circumstances where an In-Service Air System is transferred to a CFAOS organization²⁶ for Maintenance Test Flying (MTF). The end-user ODH / AM(MF) will own and manage the ASSC (In-Service) aligned to the full context of in-service flying, whereas the AM(MF) for the CFAOS organization conducting the MTF will own and manage a separate Live ASSC for the specific context of the MTF conducted by that organization. Much of the argument and evidence supporting each ASSC will be common; indeed, the ASSC for

²² ▶Commodity CE for changes that do not form part of the Type Airworthiness Safety Assessment (Report).

²³ Primarily Major In-Service Design Changes iaw RA 5305 – In-Service Design Changes; and as defined in RA 5820 – Changes in Type Design (MRP 21 Subpart D).

²⁴ Refer to RA 1164 – Transfer to UK Military Registered Air Systems.◀

²⁵ Email DSA-MAA-MRPEquiries@mod.gov.uk.

²⁶ That is an organization approved by the MAA to operate military-registered Air Systems; Refer to RA 2501 – Contractor Flying Approved Organization Scheme.

Guidance Material 1205(2)

the MTF activity may rely heavily on the end-user's Live ASSC (In-Service), but with a much narrower context and a focus on the conduct of the MTF activity. Similarly, the end-user's Live ASSC (In-Service) will include claims relating to the Maintenance activity being conducted by the MTF organization. In both cases, a clear articulation of the interface between the organizations, the evidence on which each ASSCs is dependent, and a robust line of communication to highlight any weaknesses will be a fundamental part of the argumentation within each ASSC.

32. Where an Air System is undergoing ► **Development** ◀ flying as part of initial development or modification, the ODH / AM(MF) responsible for the ► **Development** ◀ flying will be required to own and manage a separate Live ASSC (► **Development** ◀) specific to the context of the ► **Development** ◀ flying. The Live ASSC (► **Development** ◀) will therefore exist in parallel to the Live ASSC (In-Service), with the latter being either owned and developed by the SRO or owned and managed by the end-user ODH / AM(MF). Whilst some elements of the Live ASSC (► **Development** ◀) and the Live ASSC (In-Service) are likely to be common, the context for each will be different and the overall claim is likely to require a different argument strategy. For example, the argument strategy for the Live ASSC (In-Service) might include reliance on a fully-substantiated equipment Safety Assessment and RTS to support world-wide operations in poor weather with the Air System flown by any qualified front line crew, regardless of experience. Conversely, the context for the Live ASSC (► **Development** ◀) may be focused on ◀ testing and / or evaluating new capabilities; the argument strategy may therefore focus on the organizational aspects such as the specific competencies of trials personnel, the highly-controlled environment and the specific trials approval / Risk assessment processes in place.

33. Amplifying guidance regarding the through life applicability of the ASSC, its influence on the development of a 'Safety capable' Air System, the lifespan of ASSC ownership and the changing roles and responsibilities for its management, can be found in the MASSC Chapter 4.

34. The SRO or ODH / AM(MF) may consider the utility of appointing an ASSC manager to provide consistent oversight of the ASSC.

35. An effective Safety Case regime recognizes that a system is unsafe until it is proven to be safe, and sets primacy in challenging all claims, arguments, evidence and evidence owners to enable the ASSC owner to state that all RtL are both ALARP and Tolerable.

Regulation 1205(3)

The Safety Statement

1205(3) ODH / AM(MF)s **shall** make a Safety Statement as a formal declaration that all RtL associated with an Air System are both ALARP and Tolerable within a clearly defined context.

Acceptable Means of Compliance 1205(3)

The Safety Statement

36. ► **The** ◀ ODH / AM(MF) **should** issue a Safety Statement that includes:

- a. A formal declaration that all current or foreseeable RtL are both ALARP and Tolerable within a clearly defined context.
- b. Supplementary information outlining areas of concern with the ASSC or management of RtL.

37. Additionally, ► **the** ◀ ODH **should** note in their Safety Statement any RtL that has been escalated for higher-level ownership.

38. ► **The** ◀ ODH / AM(MF) **should** review their Safety Statement:

- a. At least annually, following review of the ASSC.
- b. Prior to implementing a significant change to an Air System in any DLoD, including change in use or operating context.
- c. Following any other change that the ODH / AM(MF) judges to impact on the validity of the extant Safety Statement.

Acceptable Means of Compliance 1205(3)

- d. As a formal element of ASSC ownership transfer.
39. ► **The** ◀ ODH **should** present their Safety Statement to their Senior Duty Holder. ► **The** ◀ AM(MF) **should** present their Safety Statement to ► **their Sponsor.** ◀

Guidance Material 1205(3)

The Safety Statement

40. The Safety Statement is a formal, personal confirmation that the RtL for an Air System is both ALARP and Tolerable within a clearly defined context and is supported by an auditable record of key Air Safety related assumptions, decisions and arguments within the ASSC. The Safety Statement may also document a summary of the key issues arising from the ASSC, the understanding and management of which will have enabled the ODH / AM(MF) to sign the Safety Statement.
41. A suggested format for the Safety Statement is provided on the MAA websites.

Regulation 1205(4)

Responsibilities of Organizations Supporting the Air System Safety Case

- 1205(4) SROs and ODH / AM(MF)s **shall** ensure that heads of organizations²⁷ delivering elements of the ASSC, understand their roles and responsibilities in supporting the ASSC.

Acceptable Means of Compliance 1205(4)

Responsibilities of Organizations Supporting the Air System Safety Case

42. ► **The** ◀ SRO and ODH / AM(MF) **should** ensure that heads of organizations supporting, or delivering elements of, the ASSC:
- Are responsible for the performance, Safety and integrity of those ASSC elements for which they are responsible and / or the services that they provide.
 - Deliver those elements of an ASSC for which they are responsible.
 - Inform the relevant SRO or ODH / AM(MF) of any deviations or deficiencies that might affect the associated ASSC.

Guidance Material 1205(4)

Responsibilities of Organizations Supporting the Air System Safety Case

43. Some of the pan-DLoD elements of an ASSC may be delivered by external organizations outside the direct control of the ASSC owner, such as Release To Service Authorities (RTSAs), Delivery Teams, infrastructure providers, airfield service providers etc. The onus is on the ASSC owner (SRO or ODH / AM(MF) as appropriate) to clearly articulate the responsibilities of such organizations, and the relevance of those responsibilities within the context of the ASSC, to the head of each organization and to ensure they are being delivered.
44. With clearly articulated responsibilities, heads of organizations supporting the ASSC will understand the consequences of failing to deliver in respect of an ASSC. ► **Activities to discharge relevant responsibilities will be managed day to day via the associated ASMS**²⁸. ◀

²⁷ Refer to RA 1020 – Aviation Duty Holders and Aviation Duty Holder-Facing Organizations - Roles and Responsibilities.

²⁸ ► **RA 1200 (Air Safety Management) details ASMS requirements to manage hazards and communicate effective interfaces.** ◀

Regulation 1205(5)

Assurance, Endorsement and Scrutiny of the Air System Safety Case

1205(5) The ASSC **shall** be subject to independent ► **Assurance prior to activation on the UK MAR and annual Assurance whilst active on the UK MAR.** ◀ Additionally, the ASSC **shall** be subject to endorsement and scrutiny at defined points of development.

Acceptable Means of Compliance 1205(5)

Assurance, Endorsement and Scrutiny of the Air System Safety Case

Assurance

45. ► **The** ◀ SRO **should** obtain independent Assurance of ► :
- **Their ASSC Strategy as part of the OBC IAC submission.**
 - **Their ASSC Acquisition Basis as part of the FBC IAC submission.**
 - **The ASSC (In-Service) immediately prior to entry into service and transfer of responsibility for the ASSC to the ODH / AM(MF).** ◀
46. ► **The** ◀ ODH / AM(MF) **should** ► **conduct** ◀ annual ► ◀ Assurance of their Live ASSC ► (Development) and / or (In-Service) by verifying the effectiveness of their (and any interfacing) ASMS in substantiating the ASSC claim(s), validated via the ASSWG²⁰. ◀

Endorsement and MAA Scrutiny

47. For Air Systems subject to MOD ► **IAC** ◀ approval, the ASSCs **should** be endorsed by the end-user and scrutinised by the MAA at the following points:
- **Outline Business Case.** ◀ As part of the ► **OBC** ◀ submission, the SRO **should** prepare an ASSC Strategy Report capturing the ASSC Strategy. ► **This** ◀ Report **should** be endorsed by the end-user ODH / AM(MF)¹⁷ and copied to the MAA²⁵ for provision of their scrutiny statement.
 - **Full Business Case.** ◀ As part of the ► **FBC** ◀ submission, the SRO **should** prepare an ASSC Acquisition Basis Report. ► **This** ◀ Report **should** be endorsed by the end-user ODH / AM(MF)¹⁷ and copied to the MAA²⁵ for provision of their scrutiny statement.
 - **Application for Approval in Principle.** The SRO or Sponsor **should** submit the associated ASSC-R when applying to register an Air System on to the UK MAR⁹ as part of the Application for Approval in Principle (AAIP). ◀
 - **Activation on the UK MAR.** The SRO **should** submit the Live ASSC Report (► **Development / In-Service** ◀) to the MAA for review prior to activation on the UK MAR as either a Development or In-Service Air System.
48. For ► **civilian** ◀ initiated procurement of ► **a Civilian-Owned Air System which is not subject to MOD IAC** ◀ approval, the following ASSC endorsement schedule **should** be used:
- The company **should** submit the ► **ASSC-R (Development / In-Service)** ◀ to the MAA²⁵ for review ► **when applying to register an Air System on to the UK MAR⁹ as part of the** ◀ Application for Approval in Principle (AAIP) ► ◀.
 - ◀
 - The AM(MF) **should** submit the Live ► **ASSC-R (Development / In-Service)** ◀ to the MAA²⁵ for review prior to activation on the UK MAR (on which issue of Certificate of Usage would be contingent).

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Material
1205(5)****Assurance, Endorsement and Scrutiny of the Air System Safety Case**

49. Those responsible for the development and management of the ASSC may determine the most appropriate means of independent Assurance of the ASSC ▶◀ by ▶ **considering** ◀ factors such as the stage of ASSC development and the overall context / complexity of the ASSC. Options ▶◀ include ▶ **(but are not limited to)** ◀ a suitable Independent Safety Auditor, RTSA, ▶ **Sponsor**, ◀ Safety Centre, or the Air Safety Team or Safety Case Manager from another Group or Service, providing that the individual or organization is ▶ **demonstrably SQEP and is** ◀ not unduly influenced by commercial, peer or rank / status pressures.

50. ▶ **Following initial independent Assurance of the ASSC (as detailed at para 45.c), ongoing annual Assurance will be conducted by the ODH / AM(MF), primarily via the ASSWG. It will confirm that the management of the ASSC (via the ASMS) is appropriate for the Air System and its operating context. It must affirm (and reaffirm annually / at least once every 12 months) that:**

- a. **The claims are correct,**
- b. **The arguments and evidence effectively substantiate the claims being made, and**
- c. **The ownership of the ASSC is effectively understood across the AoR and supports Air Safety decision making.**

51. **Evidence is the tangible output of an ASMS and is, therefore, subject to 1st / 2nd / 3rd Party Assurance under the compliance monitoring function of the ASMS. Day-to-day management of issues which could impact ASSC validity will be via the ASMS of relevant organization(s), including:**

- a. **The identification of new and evolving hazards,**
- b. **The setting and monitoring of appropriate objectives,**
- c. **Effective communication across interfaces in a timely manner, and**
- d. **Correctly scoped Safety Assurance.**

52. **If the context of the ASSC changes then it is highly likely the argument(s) will be affected and generate a revised 'demand signal' for evidence; thus, a review and update of any associated ASMS(s) will be required. The ODH / AM(MF) must strongly consider further independent Assurance at this point, to re-establish their confidence in the ASSC and reset the basis of their ongoing annual Assurance. Additional guidance material can be found in the MASSC and the Manual of Air Safety. ◀**

RA 1207 - Air Safety Data Management and Exploitation

Rationale

Demonstrating that an Air System¹ is safe to operate and being operated safely, chiefly through the Air System Safety Case² (ASSC), relies upon the effective management of Air Safety¹ data as part of an Air Safety Management System³ (ASMS). Without a coherent approach to the management and exploitation of this data to routinely validate the continued veracity of ASSC claims, sustaining and delivering improvements in Air Safety may not be achieved and safety may be compromised with an associated increase in Risk to Life¹ and loss of capability. This RA requires ASMS owners to introduce and maintain a coherent approach to the management of Air Safety Data for each Air System, including collection, exploitation, assurance and configuration management.

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1207(2): Air Safety Data Exploitation Procedures

Regulation

1207(1)

Air Safety Data Exploitation Strategy

1207(1) Operating Duty Holders (ODH) / Accountable Managers (Military Flying) (AM(MF)) **shall** ensure an Air Safety Data Exploitation Strategy is developed and implemented for each Air System type within their Area of Responsibility (AoR).

Acceptable Means of Compliance 1207(1)

Air Safety Data Exploitation Strategy

1. The Strategy **should** detail how defined Air Safety data is collected, analyzed, validated and exploited in support of continually assuring the validity of associated ASSC claims and arguments.
2. The Strategy **should** embed Air Safety Data Exploitation as an essential element of ODH / AM(MF) and subordinate ASMSs, requiring that responsibilities for data collection, analysis and validation are clearly defined in appropriate documentation⁴.
3. The Strategy **should** apply the requisite principles of Data Governance for managing data as defined in JSP 441⁵, ensuring that quality management arrangements are included within assurance processes.
4. The Strategy **should** require that appropriate contractual agreements are in place to secure access to the necessary data and services from industry and external organizations to enable delivery of the Strategy's intent.

Guidance Material 1207(1)

Air Safety Data Exploitation Strategy

5. The following is a pertinent description encapsulating the intent of this regulation⁶:

“Data is simply raw facts and figures, alone it tells you nothing. The goal of any organization is to turn data into trustworthy information. Data becomes information when it is presented in a context so that it can answer a question or support decision-making and it is when this information can be combined with a manager’s knowledge that stronger decisions can be made.”

ODH / AM(MF) Air Safety Data Exploitation Strategies

6. The purpose of the Air Safety Data Exploitation Strategy is to provide specific aims and objectives for Air Safety Data Exploitation. It will describe the type of Air Safety data to be assembled and managed to meet these aims and objectives, identify the roles responsible within the appropriate subordinate supporting organizations, and

¹ Refer to MAA02 - MAA Master Glossary.

² Refer to RA 1205 - Air System Safety Cases.

³ Refer to RA 1200 - Air Safety Management.

⁴ Paragraph 13 provides some examples of possible appropriate documentation.

⁵ Refer to JSP 441 – Information, Knowledge, Digital and Data in Defence. External organizations without direct access are to follow the UK’s Data Protection Legislation and relevant contractual conditions.

⁶ Extracted from 2020 edition of JSP 441: Data management.

Guidance Material 1207(1)

outline the assurance processes employed to assess compliance with the Strategy. It will contribute to the establishment and sustainment of an organizational culture that recognizes the value of effectively exploiting Air Safety Data as part of an ASMS in support of the ASSC.

Air Safety Data Exploitation Strategy Contents

7. A Strategy will, as a minimum, cover the following topics:
- a. **Objectives.** Set out the Air Safety Data Exploitation objectives and the activities needed to support them. The full range of personnel across the AoR who contribute to Air Safety are to be considered when developing data requirements, including operations, maintenance, battlespace management and support staff, to ensure that all facets of the ASSC are adequately addressed. In addition to direct support of an ASSC as part of an ASMS, exploitation objectives could also include wider aspects such as increasing operational effectiveness or efficiency. The Manual of Air System Safety Cases (MASSC)⁷ provides some examples of data exploited in support of ASSC claims.
 - b. **ASMS Integration.** The Strategy in addressing the full ASSC will span multiple organizations and their ASMSs. Therefore, the Strategy will require that interfaces between the systems and organizations involved in delivery are adequately considered, including industry, Defence Equipment and Support (DE&S) and other Aviation Duty Holder (ADH)-Facing organizations. Formal commercial arrangements may be necessary to secure access to required technical detail or specialist services.
 - c. **Assurance.** Ensure that appropriate requirements are met for effective data management, including data quality, integrity and availability, such that confidence in the data can be assured⁸.
 - d. **Roles and Responsibilities.** Identify the required roles in the relevant procedures to ensure accountability and clear boundaries of responsibility for Air Safety Data management and exploitation, including:
 - (1) Ownership.
 - (2) Collection.
 - (3) Analysis.
 - (4) Validation.
 - (5) Exploitation.
 - (6) Assurance.
 - (7) Configuration management and retention.

Examples of individuals and organizations involved in exploiting Air Safety Data are shown at Annex A which outlines the broad categories of data and potential uses.

8. It is not the intent of the Strategy to require unnecessary replication of existing MRP requirements, but to ensure signposts are in place to highlight the relevant dependencies⁹.

Multiple Air Systems and Operators

9. Where one type of UK military registered Air System is operated by more than one ODH / AM(MF), the ODHs / AM(MF)s concerned will need to agree and document arrangements for their roles in defining and implementing coherency in the Strategies, with appropriate links to their respective ASMS. Similarly, where ODHs / AM(MF)s are using Types operated by other civil or international users, they are to endeavour to participate in shared Air Safety Data Exploitation activities as far as practicable to facilitate enterprise reporting and provide a baseline for common interpretation.

⁷ The MASSC supports RA 1205 – Air System Safety Cases.

⁸ JSP 441 contains comprehensive guidance on managing and exploiting data.

⁹ For instance; RA 1223 - Airworthiness Information Management, RA 1410 - Occurrence Reporting and Management, RA 2401 - Documents and Records, RA 4814 - Occurrence Reporting (MRP 145.A.60), RA 4961(3): Reliability Programme, and RA 5726 - Integrity Management; all relate in some degree to data management and exploitation.

**Regulation
1207(2)**

Air Safety Data Exploitation Procedures

1207(2) ASMS owners¹⁰ **shall** develop, publish and implement Air Safety Data Exploitation procedures that support the requirements of the Air System Data Exploitation Strategies within their AoR.

**Acceptable
Means of
Compliance
1207(2)**

Air Safety Data Exploitation Procedures

10. ASMS owners **should**:
- a. Critically review relevant Air Safety Data Exploitation Strategies to identify their requirements¹¹ for data to be collected, analyzed, validated and exploited.
 - b. Develop Data Exploitation procedures that define the roles, responsibilities and activities for data management.
 - c. Ensure that assurance of compliance with Exploitation Procedures is included within their Management System¹².
 - d. Ensure that Exploitation Procedures are routinely reviewed as part of their Continuous Improvement process.
 - e. Ensure compliance with Data Governance requirements in JSP 441, and any relevant security requirements from JSP 440¹³.

**Guidance
Material
1207(2)**

Air Safety Data Exploitation Procedures

11. The required roles and responsibilities for data management and exploitation are listed in para 7.
12. Data collection and reporting may be through manual arrangements such as paper returns and manual updating of computer systems or through automated systems.
13. There is no specific requirement to record Data Exploitation procedures in a separate document, but they need to be clearly identifiable and auditable within the ASMS. For instance, appropriate requirements could be included within the Airworthiness Strategy¹⁴ for the Type Airworthiness Authority (TAA) and / or Type Airworthiness Manager (TAM)¹⁵, the Exposition¹⁶ for Approved Organizations, Air Engineering Standing Orders¹⁷ for a Military Maintenance Organization, or the Air Safety Management Plan¹⁸ for an ADH.
14. Data Governance requirements include the span of activities including data quality, integrity, availability and disposal. Therefore, the procedures need to include arrangements for both internal management and maintenance of data integrity across organization / system boundaries, as well as aspects such as legal requirements regarding data disposal. RA 1225¹⁹ relates to documentation which includes data, so its intent is to be followed in terms of retaining appropriate Airworthiness data for the mandated period.

¹⁰ An ODH's / AM(MF)'s ASMS will include numerous interfacing and interconnected ASMSs from subordinate and supporting organizations; all ASMS owners are required to support data exploitation.

¹¹ ASMS owners may also identify their own requirements for data exploitation to support local conditions.

¹² The term 'Management System' is used to recognize that safety, quality, business and environmental etc are all valid Management Systems that may be in use.

¹³ Refer to JSP 440 - Defence Manual of Security, Resilience and Business Continuity. Organizations external to the MOD will need to comply with current legislation and relevant contractual conditions.

¹⁴ Refer to RA 1220(1): Airworthiness Strategy.

¹⁵ Refer to RA 1162 - Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems. Dependant on the agreed split of Type Airworthiness (TAW) responsibilities, TAM may be read in place of TAA as appropriate throughout this RA.

¹⁶ Refer to RA 4943 – Continuing Airworthiness Management Exposition (MRP Part M Sub Part G); RA 4816 - Maintenance Organization Exposition (MRP 145.A.70); RA 2501(3): Contractor Flying Organization Exposition; RA 5850(4): Design Organization Exposition; RA 3100(3): Air Traffic Management Equipment Organization Exposition.

¹⁷ Refer to RA 4009 – Aviation Engineering Orders and Procedures.

¹⁸ Refer to the Manual of Air Safety.

¹⁹ Refer to RA 1225 - Air Safety Documentation Audit Trail.

ANNEX A

EXAMPLES OF AIR SAFETY DATA CATEGORIES

1. The examples of data categories listed below are not exhaustive but aim to illustrate the types of data that ADH, AM(MF), DE&S teams and other ADH-Facing support organizations, Maintenance Organizations (MO)²⁰, Design Organizations (DO)²¹ and Production Organizations (PO)²² are to consider exploiting as part of their Management System.

2. The level and type of data exploitation will depend upon the perspective of the user: ODH and DE&S Operating Centre Director staff conducting second party assurance (2PA) may be reviewing trends across Air System types and fleets, whereas at the Delivery Duty Holder (DDH) and TAA level, staff managing activities or conducting first party assurance (1PA) will be more focused on performance and trends within and between individual units / squadrons. The key issue is to ensure that ASMSs are clearly focused on delivering the intent of the relevant Exploitation Strategy in support of ASSCs.

Table 1. Examples of Air Safety Data Categories

Category	Regulation ²³	Who
<p>Operations and Flight Safety Data. Data arising from Occurrence reports, including Defence Air Safety Occurrence Report (DASOR) or InForms and local equivalents.</p> <p>This forms a rich source of data which can be exploited to identify specific issues or trends and understand the reasons²⁴, both over time and against the wider regulated community. A very brief list of potential themes includes:</p> <ul style="list-style-type: none"> • Use of Local Mitigations (vice Recommendations); • Number of Recommendations and time to implement; • Time to raise and close reports; • Dominant Causal Factors; • Correlation of evidence with Bow Tie barrier claims; <p>These all relate to the ASSC claim that the Air System is operating safely.</p>	<p>RA 1410 RA 4814 RA 5825</p>	All
<p>Safety Management System (SMS)²⁵ Data. Data contained in hazard²⁶ logs, risk registers and Bow Tie models.</p> <p>Hazard and risk data are to be regularly reviewed to ensure correct ownership and active management, and to ensure there are no broader trends developing which undermine ASSC claims.</p> <p><u>Note:</u> The RA 1200²⁷ ASMS facet of Safety Performance Measurement is also likely to contain metrics drawn from several of the sections in this Annex.</p>	<p>RA 1200 RA 1210 RA 1220</p>	All
<p>Aircrew training, competence and currency data. Data contained in logbooks, training records, STARS, TMIS²⁸ and similar IT tools.</p> <p>Exploitation of such data would potentially allow early identification of issues or trends with crew availability that would impact delivery of capability. It would also facilitate improved management of the flying Authorization and Supervision processes and ensure best utilization of resources by enabling optimization of the flying programme.</p>	<p>RA 2401 RA 2305 RA 2306</p>	ADH / AM(MF)

²⁰ Refer to RA 4800 - General Requirements (MRP Part 145).

²¹ Refer to RA 5850 - Military Design Approved Organizations (MRP Part 21 Subpart J).

²² Refer to RA 5835 - Military Production Organizations (MRP Part 21 Subpart G).

²³ For full RA titles refer to Table 2.

²⁴ Identification of trends and 'outliers' is not necessarily an indication of 'bad', but merely a means to highlight the need to investigate further.

²⁵ The term 'SMS' is used to cater for the broad range of supporting organizations, some of whom may include Total Safety rather than just having an ASMS (Refer to DSA 01.1 - Defence Policy for Health, Safety and Environmental Protection).

²⁶ 'Hazard log' is a generic term for the document that records factors which may contribute to a risk.

²⁷ RA 1200 – Air Safety Management mandates 16 facets.

²⁸ STARS and TMIS are IT systems used to plan, authorize and manage flying / training programmes, and to record and track aircrew competencies, currencies and qualifications.

<p>Flight Data Monitoring. FDM is the exploitation of data that is already recorded in the 'black box' flight data recorders using specialist software that identifies occurrences of pre-programmed events.</p> <p>Implementation of FDM as part of an ASMS will deliver improved operational capability by enabling optimization of crew training and by maximizing availability of Air Systems because deviations from procedures and exceedance of limits will be identified. FDM will also enable a more accurate assessment of compliance with assumptions in the Statement of Operating Intent and Usage (SOIU) and support the ASSC claim of operating safely.</p>	RA 1205 RA 5726	ADH / AM(MF)
<p>Design Data and Type Airworthiness¹ (TAw). Airworthiness Dynamic Data (ADD)²⁹ contained in maintenance documentation systems³⁰, plus Ageing Air System and Airworthiness Review survey reports, system monitoring equipment³¹ and fault reports.</p> <p>Exploitation of maintenance records and fault reports will identify whether systems and components are performing as intended and meeting their planned reliability targets, and hence whether Air System modification or changes to the maintenance schedule are required.</p> <p>Similarly, analysis of survey reports and system monitoring data will identify the need for modification, amendment to the SOIU or maintenance schedules, or ultimately re-living of the Air System.</p> <p>Close attention to the harvesting and exploitation of assured performance data through life will also facilitate a more effective justification of any required life extension programme or extension to the out of service date if required.</p> <p>Exploitation of ADD against design data will support the ASSC claim of being safe to operate.</p>	RA 1015 RA 1223 RA 1230 RA 4973 RA 5825 RA 5850 RA 5723 RA 5724 RA 5725 RA 5726	TAA DO Military Continuing Airworthiness Management Organization (Mil CAMO) Chief Air Engineer (CAE) ³²
<p>Continuing Airworthiness¹ (CAw). The data sources are largely as listed above under TAw but will be exploited differently. Additional sources may include training / competence records or local databases produced for specific purposes such as facility defect logs.</p> <p>Exploitation of ADD will enable optimization of the Aircraft Maintenance Programme and will enable effective engagement with the TAA to seek action where corrective maintenance or Lim / ADF³³ trends indicate inadequate performance.</p> <p>Similarly, working closely with TAAs, analysis of preventive maintenance data will enable improvements to the maintenance schedule using Reliability Centred Maintenance techniques.</p> <p>Ensuring the effectiveness of CAw activities is fundamental to supporting the ASSC claim of being safe to operate because the safe Air System design is predicated on there being effective maintenance.</p>	RA 1220 RA 1223 RA 4805 RA 4806 RA 4811 RA 4813 RA 4947 RA 4951 RA 4961 RA 4964	TAA Mil CAMO CAE
<p>Quality Management and Assurance Findings. Data contained within Quality Occurrence Reports, audit findings tracking tools and similar assurance records.</p> <p>Effective exploitation of assurance findings, their root cause, and the time to close will enable identification of underlying trends such as training, resources, or issues with policy and procedures. It will also facilitate more effective planning of risk-based assurance.</p>	RA 1005 RA 1015 RA 1024 RA 1220 RA 4815 RA 4951 RA 5835 RA 5850	All

²⁹ ADD is the data which changes with system operation, such as component lifing, configuration and maintenance activity; refer to RA 1223 - Airworthiness Information Management.

³⁰ Such systems include GOLDesp, LITS, ALIS / ODIN, ESS, MDS and the paper MOD Form 700 series.

³¹ Monitoring systems include Fatigue Meters, Health & Usage Monitoring Systems and Operational Loads Monitoring.

³² The CAE may be at the Senior, Operating or Delivery Duty Holder level.

³³ Excessive use of Limitations or Acceptable Deferred Faults may indicate an inadequate Support Policy.

<p>Service Inquiry (SI) findings. SI reports are made widely available. For those directly affected, reviewing progress against extant SI recommendations provides a useful insight into the wider performance of the relevant organizations involved and can prompt follow-up as required.</p> <p>SI reports also provide a rich source of detailed analysis which invariably will have broader applicability to the wider community and be pertinent to many other operating situations. Hence, they are worth reviewing to identify any wider lessons that can be learned.</p>	RA 1420	All
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Table 2. RA Number and Titles as referred to within Table 1.

Regulation	RA Title
RA 1005	Contracting with Competent Organizations
RA 1015	Type Airworthiness Authority - Roles and Responsibilities
RA 1024	Accountable Manager (Military Flying)
RA 1200	Air Safety Management
RA 1210	Ownership and Management of Operating Risk (Risk to Life)
RA 1220	Delivery Team Airworthiness and Safety
RA 1223	Airworthiness Information Management
RA 1230	Design Safety Targets
RA 1410	Occurrence Reporting and Management
RA 1420	Service Inquiries; Air Accident and Significant Occurrence Investigation
RA 2305	Supervision of Flying
RA 2306	Authorization of Flights
RA 2401	Documents and Records
RA 4805	Facility Requirements (MRP 145.A.25)
RA 4806	Personnel Requirements (MRP 145.A.30)
RA 4811	Maintenance Planning (MRP 145.A.47)
RA 4813	Maintenance Records (MRP 145.A.55)
RA 4814	Occurrence Reporting (MRP 145.A.60)
RA 4815	Maintenance Procedures and Safety and Quality Policy (MRP 145.A.65)
RA 4947	Continuing Airworthiness Management - MRP Part M Sub Part G
RA 4951	Quality System - MRP Part M Sub Part G
RA 4961	Aircraft Maintenance Programme and Military Continuing Airworthiness Management Organization Responsibilities for Air System Release - MRP Part M Sub Part C
RA 4964	Continuing Airworthiness Management Records - MRP Part M Sub Part C
RA 4973	Military Airworthiness Review Process - MRP Part M Sub Part I
RA 5723	Ageing Air System Audit
RA 5724	Life Extension Programme
RA 5725	Out of Service Date Extension Programme
RA 5726	Integrity Management
RA 5825	Fault Reporting and Investigation
RA 5835	Military Production Organization (MRP Part 21 Subpart G)
RA 5850	Military Design Approved Organization (MRP part 21 Subpart J)

RA 1208 - Flight Data Monitoring

Rationale

Flight data obtained from onboard flight recorders provides a valuable source of information which can be used to provide Assurance that an Air System¹ is being operated safely¹. Without a coherent approach to the management and exploitation of this data within a Flight Data Monitoring Programme (FDMP), assuring Air Safety² and delivering improvements will be less effective and **operating** Safety may be compromised with the associated increase in Risk to Life. This Regulation requires Aviation Duty Holders (ADH) and Accountable Managers (Military Flying) (AM(MF)) to introduce and maintain an FDMP which is integrated with their Air Safety Management System² (ASMS) for the exploitation of flight data from capable Air Systems.

Contents

Definitions relevant to this RA

1208(1): The Flight Data Monitoring Programme

1208(2): Flight Data Monitoring Effectiveness

Definitions

Definitions relevant to this RA

- Flight Data Monitoring (FDM)** is the systematic, pro-active use of flight data to enhance the delivery of operational capability by improving Air Safety through effective integration with ASMSs² within an intrinsically just Air Safety culture.
- FDMP Programme (FDMP):** The FDMP includes the people, processes, tools and documentation which form a coherent system for delivering the required outputs from FDM. **An FDMP allows an ADH / AM(MF) to compare their Standard Operating Procedures (SOPs) with those actually achieved in everyday flights, identify areas of Risk and measure current Safety margins; more mature programmes can also enable improved Maintenance and operating efficiencies.**
- Flight Data Recorder (FDR):** FDR refers to the crash-protected recording device which is mandated for all new Air Systems³.

Regulation 1208(1)

The Flight Data Monitoring Programme

1208(1) Operating Duty Holders (ODH) and AM(MF) **shall** implement an FDMP⁴ for all Air Systems fitted with an FDR⁵.

Acceptable Means of Compliance 1208(1)

The Flight Data Monitoring Programme

Programme Objectives and Outcomes

-
-
-
-
- ADH / AM(MF) **should** specify the objectives⁶ required from the FDMP and the intended **Air Safety benefits and** outcomes. When an ODH / AM(MF) is temporarily allotted an Air System for a specific purpose⁷, they **should** support the owning ODH's FDMP.

¹ Safe operation includes compliance with Release To Service (RTS) limits, meeting Statement of Operating Intent profiles, and following specific operating procedures.

² Refer to RA 1200 – Air Safety Management and the Manual of Air Safety (MAS).

³ Colloquially termed the 'black box', FDR requirements are **contained in the relevant Parts of** Defence Standard 00-970 **Design and Airworthiness Requirements for Service Aircraft.**

⁴ Consideration is required to determine whether the most efficient option would be an FDMP per Air System, or per larger grouping.

⁵ For **Specific S2 sub-category or for Certified category** Remotely Piloted Air Systems (RPAS), the ODH / AM(MF) are to justify within the Air System Safety Case (ASSC) how recorded flight data (either from onboard or the ground station) is exploited to meet the intent of this Regulation. **There is no requirement to develop an FDMP for Open Category or Specific S1 sub-category RPAS.**

⁶ Objectives are to consider the operating Risk and monitoring of required Safety margins as a minimum so that **Aircrew** procedures and training can be optimized as a key element of an ADH's / AM(MF)'s ASMS; further detail is at paragraph **25**. Throughout this Regulation the ODH is used when the context is ownership of the FDMP; ADH is used when the context is the specific aspect of detailed FDMP management and integration with ASMSs.

⁷ Such as post-Maintenance test flying or trials evaluation. Refer to RA 1164 – Transfer of UK Military Registered Air Systems.

**Acceptable
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Compliance
1208(1)**

Airborne Recording Systems

6. ▶ When no FDR is fitted, the ODH / AM(MF) **should** include an argument within the ASSC⁸ either justifying non-fitment or referencing a Modification plan.
7. When an FDR is fitted but there is not currently a workable method to download or exploit the flight data, the ODH / AM(MF) **should** include an argument within the ASSC either justifying why implementation of the capability is not reasonable, or referencing a Modification plan. ◀
8. If the Air System monitored by an FDMP has a single recording device that is shared with the Accident investigation download, consideration **should** be given to fitting a separate data recorder to remove the Risk of compromising Accident investigation capability⁹.
9. ▶ In addition to Air System Modification requirements, ODH / AM(MF) planning for implementation of an FDM capability **should** include development of the required off-board processing, analysis and exploitation capability. ◀
10. ODH / AM(MF), supported by the Type Airworthiness Authority (TAA¹⁰), **should** ensure that the necessary usage rights and technical detail of the recorded data are available to permit its exploitation.

Process Control Tools and Procedures

11. The FDMP **should** have effective means of tracking the data downloaded from the Air System to detect data losses and delays in transmission.
12. Failures in sensors and onboard recording equipment detected by the FDMP **should** be reported via established defect reporting channels for resolution.
13. The FDMP **should** employ software tools with the capabilities to:
 - a. Convert the downloaded binary data into usable engineering units.
 - b. Automatically analyze the data to generate “measurements” and “events”.
 - c. Generate various forms of visualisation of the data for interactive analysis.
 - d. Integrate flight data with external data sources.
14. The FDMP **should** employ effective methods and techniques to assess the quality of the data and derived information and take corrective actions as required.
15. The information exchanged with the ▶ Aircrew ◀ during the investigation of flights **should** be stored in a system that enables efficient retrospective analysis.

Communication

16. The FDMP **should** establish an effective communications plan, tailored to the type of information being delivered and the target audience.
17. Where appropriate, lessons learned **should** be shared with the wider Regulated Community ▶ ◀.

FDM Documentation

18. All the manuals and documentation necessary for the correct interpretation of the data and configuration of the analysis software **should** be readily available.
19. ADH / AM(MF) **should** develop procedures to ensure effective operation of the FDMP and document them in ▶ appropriate ◀ orders; the following **should** be included as a minimum:

⁸ ▶ Refer to RA 1205 – Air System Safety Case; this requires FDR and FDM to be explicitly addressed. ◀

⁹ Consideration of any Modification requirement is expected to include a cost / benefit analysis; paragraph ▶ 21 ◀ provides more detail of system requirements.

¹⁰ ▶ 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. Dependent on the agreed delegation of TAW responsibilities TAM may be read in place of TAA as appropriate throughout this RA. ◀

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- a. **Data Recovery Targets:** Minimum targets for the percentage of data recovery and the download frequency.
- b. **Data Management and Security:** Data access and security policies which **should** be compliant with UK data protection law and UK military data management requirements, defining as a minimum:
 - (1) The retention period for data and derived information.
 - (2) Levels of access to authorized personnel.
 - (3) The process to establish contact with ► **Aircrew** ◀.
 - (4) The process and conditions for withdrawing confidentiality.
- c. **Roles and Responsibilities:** Define the various roles, responsibilities and Authorization requirements for downloading, processing, transferring, storing, analyzing and assuring the data, and responsibilities for ensuring effective integration with the ASMS.

**Guidance
Material
1208(1)**

The Flight Data Monitoring Programme

► Development Flying Activity

20. Due to the nature of the flying activities, there is no requirement to implement an FDMP for Air Systems being operated within the Military Operated (Development) or Civilian Operated (Development) Defence Air Environment (DAE) Operating Categories¹¹. Similarly, there is no FDMP requirement for those undertaking Development activity within the Special Case Flying DAE Operating Category. However, this does not preclude the ODH / AM(MF) choosing to do so where they see benefit in such a programme. ◀

Airborne Recording Systems

21. It is possible to use data downloaded from the crash protected FDR to support the FDMP. However, repeated use of the FDR may cause a degradation of its serviceability which means the FDR might not be available in case of an Accident. Modern FDRs store data in solid state memory units and are very resilient but the installation of onboard Quick Access Recorders (QAR) or equivalent technology is recommended for FDM purposes; these devices connect to the same data acquisition unit as the FDR ► ◀. A QAR will also generally have a longer record time which would allow greater flexibility of data download frequency before FDR data is overwritten, so the required cost / benefit analysis will need to consider such broader issues¹².

22. The suitability of a data recording system for FDM purposes is primarily dependent on two aspects:

- a. The quality and quantity of recorder flight parameters.
- b. The practicality of the process of extracting data from the Air System.

23. There will be a link between the objectives desired from an FDMP and the parameters available for recording since what is not recorded cannot be monitored. Therefore, any Modification action to enhance the list of recorded parameters will require appropriate cost / benefit assessment¹³. ► Whilst it is the existence (or not) of an FDR that drives the context for an appropriate FDMP argument within the ASSC, an ODH / AM(MF) may choose to argue for implementing an acceptable FDMP that delivers the Regulatory intent using alternate data sources if no FDR exists and the required cost versus benefit Safety argument can be made. ◀

24. The detailed format of the FDR binary data stream is required to enable its processing and exploitation. This 'Data Frame Layout' is an important document which contains the necessary information to convert the binary data downloaded from the Aircraft into engineering units which is required for the proper configuration of the FDM software. This information is generally the same as that used in the processing of the

¹¹ ► Refer to RA 1160 – The Defence Air Environment Framework. ◀

¹² ODH / AM(MF) need to ensure that the TAA's Air System Support Policy Statement (SPS) includes adequate requirements for the management of recorded data to support the FDMP. ► Refer to RA 5407 – Support Policy Statement. ◀

¹³ Civil Aviation Authority (CAA) [Civil Aviation Publication \(CAP\) 1394](#) provides details for potential simple FDM solutions.

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annual FDR downloads which is an Air Navigation Order (ANO) requirement¹⁴. It is also necessary to ensure that there are no Intellectual Property Rights issues with the recorder manufacturer which would prevent data exploitation within the FDMP.

Process Control Tools and Procedures

25. In order to meet the desired objectives set for the FDMP, the software needs to be configured to capture the relevant events and / or measurements. All FDM software tools can be configured to raise “events” for conditions where parameters exceed certain threshold limits in a given flight. For example, a “Velocity, Maximum Operating (VMO) Exceeded” event can be raised whenever the Indicated Airspeed (IAS) parameter exceeds the VMO envelope¹⁵. In addition to “events”, FDM software tools can be configured to generate “measurements” for every flight, such as “Maximum IAS”. Events are only created for flights which exceed pre-determined thresholds while measurements can be created for all flights whether or not events have also been detected.

26. Events¹⁶ are useful means of prioritizing attention to specific flights where unusual situations have occurred, while measurements provide a more complete representation of the entire operational envelope. Not every flight will have events, therefore events are exceptional and represent only the “tip of the iceberg”. Measurements on the other hand are abundant not only because they will exist for every flight but also because it is common to have hundreds of different measurements generated for each flight.

27. Flight data records what happened on a given flight but not why it happened. To understand causal factors, it is often necessary to augment the recorded flight data with external data such as flight logs, Flight Plans, Electronic Flight Bag (EFB)¹⁷ data and weather data. This level of integration invariably requires IT development efforts to facilitate communication between systems in an automated manner. Flight manuals, operations manuals, Maintenance manuals, approach charts, Aerodrome charts, terrain maps, etc are also normally necessary to contextualize and interpret the flight data and derived information.

28. It is essential that data quality is routinely checked for accuracy and completeness so suitable arrangements are to be included as part of local management systems.

29. A system is required to manage ► Aircrew ◀ contacts so that it can be carefully monitored and linked with the related flight data. This capture of ► Aircrew ◀ perspectives regarding the events and their insights about related Safety issues will enable a richer source of information and identify potential trends etc.

Communication

30. Analysis of the flight data can identify a range of finding categories¹⁸ which will necessitate different communication approaches, so the required communication channels and procedures need to be pre-established to ensure they work effectively and efficiently; this is particularly important in the cases when error management and data protection principles need to be observed. Adequate management of the communication between the FDMP and other stakeholders is fundamental to promote and maintain the reputation and trust in the programme; MAS chapter 3 provides further guidance on managing the required Air Safety culture.

FDM Documentation

31. FDM ► ◀ orders need to be produced to address the following aspects as a minimum:

¹⁴ There is an ANO requirement for all Aircraft to maintain a reference sample from their FDR to support potential Accident investigations; whilst this requirement is not directly applicable to military Air Systems, it is to be included in the SPS.

¹⁵ European Aviation Safety Agency Regulations ORO.AOC.130 (fixed wing) and SPA.HOFO.145 (rotary wing) contain examples of potential FDM events.

¹⁶ Development of the correct events to monitor Safety and Airworthiness issues is key to FDMP effectiveness; TAA input will be required.

¹⁷ European Union Aviation Safety Agency (EASA) AMC 20-25 provides further detail on EFB requirements.

¹⁸ Categories range from individual Airworthiness events or isolated handling anomalies, through to events which may affect most or all ► Aircrew ◀ due to systemic operating issues.

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- a. **Data Recovery Targets:** The data recovery target is normally expressed as the percentage of flights captured in the FDM programme versus the total amount of flights flown by the Air System. It will be set to a value that enables capturing a statistically representative sample of the operation. For high-volume operations where flights tend to occur over the same standard routes (such as the case of standard air transport routes) a relatively low data capture rate is sufficient¹⁹. Operations where each flight is unique and exposed to novel threats require a higher data capture rate.
- b. **Download Frequency:** The download frequency needs to be high enough to facilitate the recall of the flight by ► **Aircrew** ◀ members in case of ► **an Aircrew** ◀ contact and to improve the response time for Airworthiness events detected in the data (which may have not been reported by other means). There is a link between download frequency, data recovery targets, recorder capacity and operating necessity so careful consideration is required.
- c. **Data Management and Security:** There are detailed requirements specified for generic data governance²⁰ as well as specific General Data Protection Regulation (GDPR) legislation on protecting personal data, all of which must be considered. There are also security requirements²¹ for handling classified or sensitive data which need to be considered, particularly in operational scenarios. MAA Regulatory Publication (MRP) requirements for retaining significant Air Safety related documents²² also apply. The governance and retention rules need to be adapted to the characteristics of the various types of data used and created by the FDMP²³.
- d. **Roles and Responsibilities:** These will detail both specific FDM roles and how effective integration is achieved with the ASMS, including recommended training requirements. ► **The additional sources of guidance at Para 33 provide** ◀ explanation of potential roles including ► **Aircrew** ◀ liaison and technical / operating data interpreters.

Implementation

32. Developing an effective FDMP requires consideration of a broad range of technical and procedural issues relating to both the Air System and off-platform infrastructure. Given the similar nature of FDMP requirements across the DAE, it is likely that there will be synergies and economies of scale to be realised by sharing resources.

► Further Sources of FDM Guidance

33. **Further guidance on implementing an FDM programme is available at the following sources:**
 - a. **EASA: GM1, GM2 and GM3 to ORO.AOC.130**
 - b. **UK CAA: CAP 739**
 - c. **Australian Civil Aviation Safety Authority: Advisory Circular 119-04** ◀

Regulation 1208(2)

Flight Data Monitoring Effectiveness

1208(2) ODH / AM(MF) **shall** ensure that the FDMP exploits available data to enhance operating effectiveness by providing actionable Safety intelligence that supports the ASMS, and ultimately the ASSC.

¹⁹ Consideration needs to be given to the number of ► **Aircrew** ◀ flying the same routes to ensure a representative sample of performance is obtained.

²⁰ Refer to Joint Service Publication (JSP) 441: Information, Knowledge, Digital and Data in Defence. Organizations external to the MOD will need to comply with current legislation and relevant contractual conditions.

²¹ Refer to JSP 440: Defence Manual of Security, Resilience and Business Continuity. Organizations external to the MOD will need to comply with current legislation and relevant contractual conditions.

²² Refer to RA 1225 – Air Safety Documentation Audit Trail.

²³ This relates to aspects such as raw FDM data versus processed data etc, and requirements for data anonymisation.

**Acceptable
Means of
Compliance
1208(2)**

Flight Data Monitoring Effectiveness

Integration with the ASMS

34. ODH / AM(MF) **should** ensure that the FDMP is integrated with their ASMS to support the following areas:

- a. Hazard Identification.
- b. Risk Assessment.
- c. Safety Assurance.
- d. Proactive management of change.

35. ODH / AM(MF) **should** be responsible for the effectiveness of the FDMP in meeting the specified objectives.

Continuous Improvement

36. ODH / AM(MF) **should** ensure that the FDMP continuously improves its capacity to generate data and actionable Safety intelligence to further enhance the ASMS.

Assurance

37. ODH / AM(MF) **should** implement an Assurance framework for FDM to monitor FDMP effectiveness.

**Guidance
Material
1208(2)**

Flight Data Monitoring Effectiveness

Integration with the ASMS

38. An FDMP can be an important element of the data exploitation strategy²⁴ of an ODH / AM(MF) since flight data can be used for multiple purposes²⁵. However, for the purposes of this Regulatory Article the focus is on integration with the ASMS and ultimately with supporting the ASSC.

39. An FDMP can be seen as one of the various sources of data and information feeding the ASMS to support the elements detailed below. The categories of FDM findings which may undermine Safety claims and require corrective action²⁶ were discussed in paragraph ►30◀.

- a. **Hazard Identification:** In contrast with Occurrence Reports²⁷ submitted by ►Aircrew,◀ flight data is not biased by the perception of the reporter nor the reporting culture of the organization. Flight data therefore offers a potential to identify Safety Hazards that is not possible with other data sources but the FDMP is not intended nor designed to manage the Hazards that it identifies. Instead, such Hazards will be identified in the pre-set 'events' and communicated to the parent ASMS to be appropriately managed; figure 1 below provides a schematic representation of the process.

²⁴ Refer to RA 1207 – Air Safety Data Exploitation.

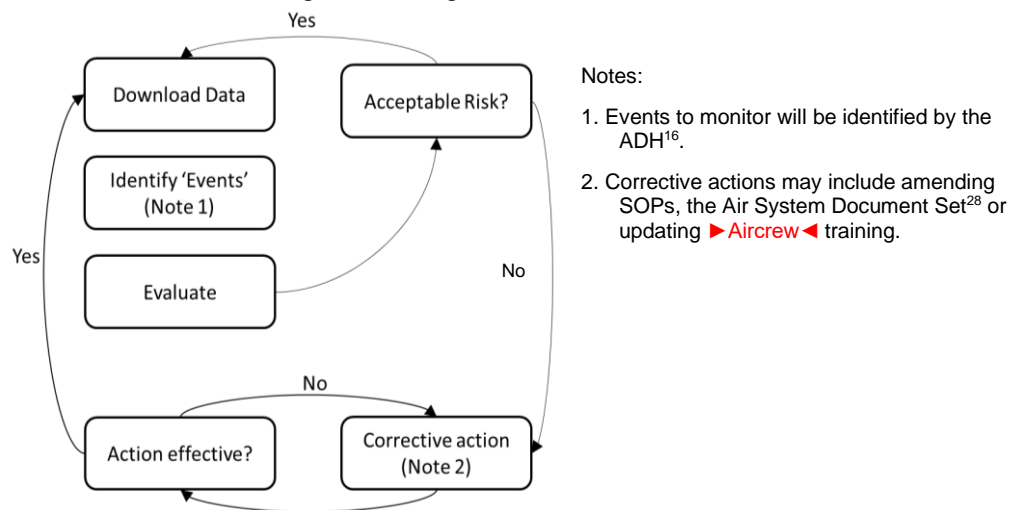
²⁵ An FDMP can be used to enhance Maintenance and operating efficiency by identifying trends which fall below standard thresholds, but that can require more complex and sophisticated exploitation which will be developed in the future as knowledge and experience mature.

²⁶ Corrective actions could include individual training, amendment of a training syllabus, new SOP or system modification.

²⁷ Refer to RA 1410 – Occurrence Reporting and Management.

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1208(2)**

Figure 1 - Integration of FDM within an ASMS



b. **Risk Assessment:** whether a Safety Hazard has been identified by the FDMP or not, in many cases the FDMP can provide useful data to quantify its frequency and severity in support of Safety Risk Assessments conducted at the ASMS level.

c. **Safety Assurance:** The FDMP can provide data to assess the effectiveness of safety barriers and operational performance over time, in the form of Safety Performance Indicators (SPI). Those SPIs can apply to barriers that already exist or to new barriers just created in response to threats identified by the FDMP or the ASMS. In this context, the FDMP can be a useful tool to support the claims of the ASSC, such as effectiveness of training and ►Aircrew◀ Competence, compliance with SOP and operating within RTS limits.

d. **Proactive Management of Change:** Whenever Safety critical processes and procedures change²⁹, that change needs to be managed from a Safety perspective. An important part of that management involves establishing a baseline of the Safety performance of the process being changed (via dedicated SPIs). The continuous monitoring of the SPIs before and after the change will enable an operator to assess the impact of the change on the Safety performance of the process. The FDMP can play a role in management of change similar to that in Safety Assurance.

40. Clear lines of Accountability and Responsibility are essential for effectively managing the FDMP and its integration with the ASMS.

Continuous Improvement

41. The implementation of an FDMP can be progressive, focusing first on basic functionality such as detection of Airworthiness events and compliance with some SOPs. This will be enough to quickly identify any issues and generate simple but useful deliverables for the ASMS to develop the credibility of FDM as a powerful tool for Safety Management. However, once such 'low hanging fruit' has been addressed, the lack of identified issues can present the illusion of 'Safety' but an FDMP can only answer the questions it has been programmed to 'ask'. This apparent lack of useful outputs from the FDMP can be seen as a form of stagnation and is one of the reasons why Continuous Improvement (CI) activity is so critical. When applied to FDM, CI needs to focus on three main areas to ensure that the FDMP continues to generate actionable Safety intelligence:

a. **Process Optimisation:** Tasks which are very time-consuming and laborious need to be enhanced or automated to free time that can be invested elsewhere.

²⁸ Refer to RA 1310 – Air System Document Set.

²⁹ Changes may include to planning systems, SOPs, orders or training.

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1208(2)**

- b. **FDM Software Configuration:** Update the questions being asked to match the existing and evolving Safety Risks of the organization.
- c. **Staff skills:** The skills of the staff need to evolve to match the maturity of the programme and the more sophisticated questions needing to be asked.

42. Therefore, a robust evaluation framework needs to be implemented to regularly assess the ongoing effectiveness of the FDMP and prompt corrective action as necessary.

Assurance

43. An example describing a possible FDMP Assurance framework is within Annex A.

44. The schematic in figure 1 above illustrates how the Hazards identified by the ADH / AM(MF) and added to the FDM software as events are exploited within the ASMS to ensure Risks are actively managed; the Assurance process will assure the effectiveness of this system.

ANNEX A

EXAMPLE FDM ASSURANCE FRAMEWORK

Question	Positive Indicators	Negative Indicators
What new Safety Intelligence has your FDM programme produced since the last audit?	<ul style="list-style-type: none"> • Various types of findings, including systemic Safety issues. • Findings arise from both isolated Occurrences and broader management activities. • Findings include original discoveries and confirmation of known problems. • Good rate of discovery. 	<ul style="list-style-type: none"> • “No findings because we’re already very safe”. • Findings are mainly related to Airworthiness events, personal readiness or noise. • Systemic issues, if any, are mainly discovered from isolated Occurrences (reactive micro-management). • Findings are mainly confirmation of problems already highlighted by other sources. • Poor rate of discovery suggesting stagnation.
How are the outputs of FDM communicated?	<ul style="list-style-type: none"> • Adequate range of channels, appropriate to each type of finding. • FDM review meetings are presented with actionable information about well-defined problems. • FDM review meetings are conclusive, decisions are tracked at ASMS level. • Safety issues are included in Hazard Log. • 'Group think' is adequately managed. 	<ul style="list-style-type: none"> • Over reliance on general newsletters etc. to ► Aircrew ◀ members as means to mitigate Risk. • FDM review meetings are largely used to interpret the meaning of data and statistics published in scheduled reports. • Actions and decisions agreed at FDM review meetings are managed in parallel to ASMS processes. • Actions and decisions agreed at FDM review meetings suggest effects of 'group think' and peer pressure. • FDM reports include mostly data and facts but little actionable information.
How is FDM used in Management of Change?	<ul style="list-style-type: none"> • Outputs from the FDM programme are employed in proactive Safety Risk Assessments. • The FDM programme feeds SPI which are project-specific and can be interpreted with little or no additional context (eg “rate of unstable approaches at XYZ”, vs “overall rate of unstable approaches”). 	<ul style="list-style-type: none"> • No link between FDM and change management. • No exploitation of FDM in SPIs.
Does the event set capture all areas of Risk of the operation?	<ul style="list-style-type: none"> • Evolving FDM software configuration is driven by reactive (internal ASMS Hazards and Incidents, changing SOPs) and proactive sources of ideas (industry Incidents, third party best practices, brainstorming). • Opportunities for improvement are tracked in a log, with acceptable progress shown. 	<ul style="list-style-type: none"> • Static FDM software configuration (“we follow OEM recommendations”). • Purely reactive evolution, in response to internal Incidents. • Internal ASMS Hazards and Incidents not adequately covered. • Excessive dependency on the service provider for managing FDM software configuration.

Question	Positive Indicators	Negative Indicators
How are trends discovered and investigated?	<ul style="list-style-type: none"> • Data analysis includes regular review of all flight Measurements. • Systematic efforts are in place to identify trends and clusters (systemic issues). • ► Aircrew ◀ contacts investigated beyond basic 'stick & rudder' handling causes and are collectively used to build a broader 'view of the forest'. 	<ul style="list-style-type: none"> • Trends limited to analysis of Events (tip of iceberg) over time. • Comparison of current period data against previous period (normalization of deviance). • Limited drill-down to detect hidden clusters (eg 'hard landings by Runway'). • Interpretation of trends relies on review meetings.
Are there enough qualified and experienced personnel?	<ul style="list-style-type: none"> • Routine and tedious tasks are largely automated (primarily in reporting and data auditing). • Multidisciplinary team covering all necessary areas of expertise: Aircraft operations, data management, data mining, FDM software configuration, Human Factors, project management. • Gaps are identified and plans are in place to ramp up skills and / or staffing levels. 	<ul style="list-style-type: none"> • Little automation so time wasted on processing and not analyzing. • Too much multi-hatting preventing development of expertise. • No effective training or staffing plans.

RA 1210 - Ownership and Management of Operating Risk (Risk to Life)

Rationale

Aviation Duty Holders (ADHs) and Accountable Managers (Military Flying) (AM(MF)s) have a personal Duty of Care for parties affected by their operations. Failure to ensure a suitable and sufficient Risk Assessment is conducted and the findings acted upon accordingly, will potentially expose individuals to Risks that are neither As Low As Reasonably Practicable (ALARP) nor Tolerable. This RA supports ADHs / AM(MF)s in the ownership and management of Risks to Life (RtL) and to ensure such Risks are ALARP and Tolerable.

Contents

- 1210(1): Risk Ownership**
- 1210(2): Risk Management**
- 1210(3): Standardized Approach to Risk**
- 1210(4): Emerging Hazards and Risks**

Regulation

1210(1)

Risk Ownership

1210(1) As the Risk owners, ADHs / AM(MF)s **shall** always remain accountable for operating RtL¹ within their Area of Responsibility (AoR).

Acceptable Means of Compliance 1210(1)

Risk Ownership

ADH Risk Ownership

1. ADHs **should** use the Defence Aviation Hazard Risk Matrix (HRM) and clearly document their Risk ownership, (detailed at Annex A), and referral / escalation protocols in their Air Safety Management System (ASMS).
2. If a RtL is identified that Senior Duty Holders (SDHs) consider to be of potential Societal Concern², the Secretary of State (SofS) **should** be informed for consideration of the wider implications before SDHs accept such a Risk.
3. Director General Defence Safety Authority (DG DSA) **should** be informed in parallel when Risks are referred up to SDHs or the SofS.
4. As a formal element of ADH succession activities, all existing Hazards and Risks that present a credible RtL **should** be reviewed by incoming ADHs to ensure they are personally content that all RtL are ALARP and Tolerable considering the effectiveness of any extant mitigation measures.

AM(MF) Risk Ownership

5. AM(MF)s **should** clearly document the HRM and Risk Management processes (detailed in Annex A paras 6 and 7), and that all operating RtL is owned by the AM(MF), within their ASMS.
6. If a RtL is identified that AM(MF)s consider to be of potential Societal Concern², the SofS **should** be informed (via the relevant MOD Sponsor) for consideration of the wider implications before AM(MF)s accept such a Risk.
7. MOD Sponsors **should** inform DG DSA in parallel when Risks are referred up to the SofS.
8. As a formal element of AM(MF) succession activities, all existing Hazards and Risks that present a credible RtL **should** be reviewed by incoming AM(MF)s to ensure they are personally content that all RtL are ALARP and Tolerable considering the effectiveness of any extant mitigation measures.

¹ The MAA02: Military Aviation Authority Master Glossary provides definitions for RtL, Hazard and Risk which are to be used in conjunction with this RA.

² Reducing Risks, Protecting People (R2P2) – ISBN 0 7176 2151 0, Published 2001 offers assistance to understanding this field.

**Guidance
Material
1210(1)**

Risk Ownership

9. ADHs / AM(MF)s accountable for the RtL of a given activity will be fully engaged in the Risk decision process. In the execution of their specific responsibilities, ADHs are personally accountable to the SofS via their superior ADH chain; AM(MF)s are directly accountable to the SofS.

Societal Concern

10. Societal Concern is a recognized factor in Risk Management when there is potential for public condemnation, particularly from Accidents involving significant numbers of people and / or vulnerable groups. Measures introduced to mitigate this class of Risk need to be considered carefully taking into account the political dimension with the need to protect both the MOD's reputation and maintain public confidence in the Regulation and operation of UK military-registered Air Systems.

**Regulation
1210(2)**

Risk Management

1210(2) ADHs / AM(MF)s **shall** ensure RtL are both ALARP and Tolerable.

**Acceptable
Means of
Compliance
1210(2)**

Risk Management

11. ADHs / AM(MF)s **should** be able to demonstrate that RtL have been reduced to ALARP.

12. ADHs / AM(MF)s **should** be able to satisfy themselves that the Risk exposure is Tolerable, such that people are only exposed where some defined benefit is expected, where the Risk exposure is proportional to the expected benefit and where the Risks are adequately controlled.

13. Operating Duty Holders (ODHs) / AM(MF)s **should** record and justify an argument that Risks are ALARP and Tolerable in their Air System's annual Safety Statements, which support the appropriate Live Air System Safety Case (ASSC) and Latest ASSC Report³.

14. Risk Management **should** consider both single Risks and the overall Risk⁴ exposure.

a. **ADH chains.** Single Risks provide a clear focus for effective management of issues at lower levels, but ADHs **should** understand the overall Risk exposure within their AoR.

b. **AM(MF)s.** AM(MF)s **should** understand the overall Risk exposure.

15. ALARP and Tolerable arguments **should** be revisited periodically and on any occasion which suggests a change in associated assumptions or analysis as part of the ADH's / AM(MF)'s Risk review process, to ensure that it remains valid⁵.

**Guidance
Material
1210(2)**

Risk Management

16. ADH / AM(MF)s need to consider and address any RtL to 1st, 2nd and 3rd parties⁶.

17. Guidance material on the standardized approach to ALARP and Tolerable decision making is contained in Annex B.

18. A Risk can be said to be reduced to a level that is ALARP when the sacrifice (see Annex B), or further reduction is "grossly disproportionate" to the decrease in Risk that would be achieved; ADHs / AM(MF)s need to be able to show that this is the

³ Refer to RA 1205 – Air System Safety Cases.

⁴ Overall Risk is sometimes referred to as 'Aggregated Risk'. Aggregated Risk is defined within the International Organization for Standardization Risk Management vocabulary as: "the process of combining individual Risks to obtain a more complete understanding of Risk". The purpose of Risk aggregation is to provide a more complete picture of the Risks posed by a system, or Risks faced by an individual or group of people, than is given by considering possible Risk outcomes one at a time.

⁵ This Risk review process is expected to be stipulated in the ASMS (see RA 1200 – Air Safety Management) and reflected in the ASSC (see RA 1205 – Air Safety System Cases).

⁶ 1st Parties are aircrew. 2nd Parties are other personnel working on Air Systems, or as ground crew, or flying as duty passengers. 3rd parties are the general public and personnel who do not fall within the category of 1st or 2nd Parties.

**Guidance
Material
1210(2)**

case when the decision not to incorporate a recognized Risk reduction measure is made. The balance needs to be weighted in favour of Safety, with a greater “disproportion factor” for higher levels of Risk⁷.

19. Once a Risk has been reduced to ALARP, ADHs / AM(MF)s will balance the residual Risk against the expected benefit to determine whether the Risk is Tolerable. ADHs need to be aware of how much Risk they can accept and when to elevate Risk decisions to a higher level.

20. The validity of an ALARP and Tolerable argument can only be decided definitively by the courts in the event of an Accident or Incident.

21. Heads of ADH-Facing Organizations⁸ need to be cognisant of their responsibilities in the delivery of their outputs and dependencies of their respective ADHs⁹, and to any AM(MF)s that may be similarly influenced / affected, when assessing RtL.

**Regulation
1210(3)**

Standardized Approach to Risk

1210(3) ADHs / AM(MF)s **shall** adopt a standardized approach in managing RtL.

**Acceptable
Means of
Compliance
1210(3)**

Standardized Approach to Risk

22. Superior ADHs **should** ensure a coherent and consistent approach to managing RtL, particularly if lower level ADHs have similar responsibilities or where multiple Air System types operate under a single Delivery Duty Holder (DDH).

23. AM(MF)s **should** ensure a coherent and consistent approach to managing RtL.

24. ADHs / AM(MF)s **should** ensure that Risk Assessments are carried out. The core elements of a Risk Assessment, that focuses on RtL, that **should** be conducted are:

- a. Hazard identification.
- b. Assessment of the Risk (likelihood, consequence, who is exposed, existing mitigation, and accountability).
- c. Reduce Risk until ALARP. Ensure residual Risk is Tolerable.
- d. Record significant findings.
- e. Monitor and review.

25. ADHs / AM(MF)s **should** maintain clear, unambiguous and auditable records of each of their Risks including details of Risk decisions and periodic Risk reviews. The minimum information requirements and Risk review process is at Annex C which **should** be used by ADHs / AM(MF)s.

**Guidance
Material
1210(3)**

Standardized Approach to Risk

26. Hazard identification, Risk Assessment, reduction, recording, monitoring and review are key elements in managing RtL and need to be maintained and updated to ensure a coherent Risk picture. Annex D provides further detail on the key elements of Risk Management.

27. ADHs / AM(MF)s will be cognisant of the high levels of Risk exposure associated with military aviation and the requirement for more rigorous Risk Management than that typically expected of activities with lower Risk exposure.

⁷ Further guidance on ALARP is available from <http://www.hse.gov.uk/Risk/expert.htm>.

⁸ ‘Heads of ADH-Facing Organizations’ includes Type Airworthiness Authorities (TAA), Type Airworthiness Managers (TAM), Commodity Delivery Team Leaders, Heads of Establishment (HoE), Military Continuing Airworthiness Managers (Mil CAMs), etc.

⁹ Refer to RA 1020 – Aviation Duty Holder ▶ ◀ - Roles and Responsibilities.

**Regulation
1210(4)****Emerging Hazards and Risks**

1210(4) ADHs / AM(MF)s **shall** be involved in the understanding and management of emerging Hazards and Risks.

**Acceptable
Means of
Compliance
1210(4)****Emerging Hazards and Risks**

28. ADHs / AM(MF)s **should** identify, record and manage emerging Hazards that undermine RtL mitigations, within the relevant ASSC.

29. ADHs / AM(MF)s **should** ensure that emerging Safety Risks derived from current and future Air System types, systems, modifications, technologies, environments and activities¹⁰ are managed in accordance with (iaw) this RA.

**Guidance
Material
1210(4)****Emerging Hazards and Risks**

30. Emerging Risks may be best managed through an early, pan-Defence Lines of Development (pan-DLoD) focus on the ASSC while the system or modification is still in development. Emerging Risks may arise from changes in the operating environment. These Risks will be recorded, managed and reviewed in a standardized and auditable manner.

¹⁰ Refer to RA 1200 – Air Safety Management.

ANNEX A
RISK OWNERSHIP, REFERRAL AND
DEFENCE AVIATION HAZARD RISK MATRIX

Service Organizations**1. Risk Ownership.**

a. In order to ensure management attention commensurate with the levels of Risk and authority to accept Single Risks, the following graduated scale **should** be used:

- (1) Very High (VH) Risks - **SDH**.
- (2) High (H) and Medium (M) Risks – **ODH**.
- (3) Low (L) Risks – **DDH**.

b. All operating Risks¹¹ **should** have an ADH owner and this **should** be indicated in the Risk Register or suitable alternative¹¹. ADHs can delegate the management of Risks to other Suitably Qualified and Experienced Person (SQEP) as and when appropriate. However, as the Risk owners, ADHs **should** always remain accountable for RtL within their AoR.

2. Defence Aviation HRM. The HRM at Table 1 enables Risk classification according to each Single Risk's assessed severity and likelihood and is designed to assist with assessing the Hazards on a like-for-like basis and to determine the appropriate levels of ADH Risk ownership. The position of a Risk in a HRM is not an indication of its ALARP or Tolerable status.

3. Risk Referral.

a. The process for referring Risks classified using the HRM to superior ADHs is outlined below. However, the purpose of referring a Single Risk is not limited to transferring ownership. It also informs a superior ADH's assessment of RtL across the related activity and wider AoR, the importance of the activity being undertaken, and re-evaluation of whether the RtL remains demonstrably ALARP and Tolerable.

b. **Key Principles of Risk Referral.** SDHs **should** ensure:

- (1) Risks are owned at the lowest acceptable level, by ADHs with the appropriate level of authority and resources.
- (2) Positive control of all Risks at the appropriate level through the escalation process.
 - (a) The decision over who is best placed to manage a Risk is separate from Risk ownership.
 - (b) Once escalated, superior ADHs **should** provide formal feedback to the lower level ADHs on the treatment and outcome of the subject Risk. It is the responsibility of the accepting ADH to ensure that the Risk Register or suitable alternative is annotated accordingly and to establish a review process to monitor the Risk and associated mitigating action.

4. Risk Severity. The severity of a Single Risk is an assessment of the worst credible outcome¹² that may result from the Hazard. The severity categories listed below **should** be used by ADHs.

a. **Catastrophic.** Three or more fatalities of MOD employees¹³ engaged in the activity in question¹⁴ or a single fatality of a member of the public.

b. **Critical.** One or two fatalities of MOD employees engaged in the activity in question¹⁵. A large number of specified injuries¹⁵ **should** also be included in this category.

c. **Major.** Specified injuries to any person. A large number of reportable injuries¹⁶ **should** also be included in this category.

¹¹ Any suitable alternative **should** enable a record to be kept of Risk decisions, activities and periodic Risk reviews.

¹² Although the HRM is calibrated on worst credible outcome, care **should** be taken to ensure that ADHs are aware of the full range of outcomes when considering appropriate mitigations.

¹³ Including MOD contractors engaged in MOD-supervised activity.

¹⁴ "MOD employees engaged in the activity in question" refer to the 1st and 2nd parties (as per footnote 5) who are involved in the activity (including Air System operation, pre-op preparation and post-op wrap up).

¹⁵ Specified injuries are defined on the Reporting of Injuries, Diseases and Dangerous Occurrence Regulations (RIDDOR) 2013 website at: <http://www.hse.gov.uk/riddor/>.

¹⁶ Injuries that result in a worker being away from work or unable to perform their normal work duties for more than seven consecutive days (not counting the day of the Accident). See HSE guidance: <http://www.hse.gov.uk/pubns/indg453.pdf>.

- d. Minor. Reportable injuries to any person.

5. **Risk Likelihood.** Likelihood is assessed with respect to the likelihood of the assessed consequence of a Hazard. This is based on the likelihood of a single Accident resulting in harm for a particular fleet. The appropriate category listed below **should** be used by ADHs:

- a. Frequent. Likely to occur at least several times a year.
- b. Occasional. Likely to occur one or more times per year.
- c. Remote. Likely to occur one or more times in 10 years.
- d. Improbable. Unlikely to occur in 10 years.

Table 1. The Defence Aviation HRM.

		Severity			
		Minor	Major	Critical	Catastrophic
Likelihood	Frequent	M	H	VH	VH
	Occasional	L	M	H	VH
	Remote	L	L	M	H
	Improbable	L	L	L	M

Contractor Flying Approved Organization Scheme (CFAOS) Organizations

6. **Risk Ownership.** For CFAOS organizations all operating RtL are owned by the AM(MF). The decision over who is best placed to manage a Risk is separate from Risk ownership, and AM(MF)s can delegate the management of Risks to other SQEP as and when appropriate. The AM(MF) **should**:

- a. Ensure that the Risk Register or suitable alternative articulates that all operating RtL are owned by the AM(MF), and clearly shows individual Risk managers.
- b. Establish a review process to monitor Risks and associated mitigating actions.

7. **Hazard Risk Matrix (HRM) and Risk Management.**

- a. AM(MF)s **should** apply the principles of paragraphs 2, 4 and 5 above ensuring that:
 - (1) An HRM appropriate to the organization is employed that enables Risk classification according to each single Risk’s assessed severity and likelihood.
 - (2) Risk Severity categories are clearly defined.
 - (3) Risk Likelihood categories are clearly defined.
- b. The position of a Risk in an HRM is not an indication of its ALARP or Tolerable status.

ANNEX B

ALARP and Tolerable

1. The goal of Risk Management¹⁷ is to show that safety Risks are ALARP and can be tolerated; merely identifying and mitigating Risks is not in itself sufficient. The law requires that Risk has to be weighed against the measures necessary to eliminate the Risk, and the more significant the Risk, the less weight will be given to the factor of cost.
2. A Risk can be said to be reduced to a level that is ALARP when the sacrifice of further reduction is “grossly disproportionate” to the decrease in Risk that would be achieved¹⁸. An ALARP argument will balance the “sacrifice” (in time, money or trouble) of possible further Risk reduction measures against their expected safety benefit (incremental reduction in Risk exposure).
3. In their Safety Statements³, ODHs / AM(MF)s are required to make an argument that Risks are ALARP (and Tolerable); justifying and recording how this conclusion has been reached is an important and vital step in Safety Management. This argument will be revisited periodically in line with ADHs / AM(MF)s Risk review process or when assumptions and knowledge has changed to ensure that it still meets the ALARP criteria, for example, by ascertaining whether further or new control measures need to be introduced to take into account changes over time, such as new knowledge about the Risk or the availability of new techniques for reducing or eliminating Risks. The Health and Safety Executive (HSE)¹⁹ identifies 2 approaches to supporting an ALARP claim:
 - a. **Good practice justification**, is based upon the argument that compliance with a recognized code of practice / MAA approved process / guidance / Defence Standard is acceptable. ADHs / AM(MF)s will understand that practices change over time and that “Good Practice” is only the minimum initial standard to achieve.
 - b. **First principles**, which can be further divided into:
 - (1) **Qualitative judgements** are founded upon professional and military judgement, common sense and experience from SQEP using the best available evidence.
 - (2) **Quantitative assessment** is based upon practicable methods of Risk reduction and control. A quantitative ALARP argument / judgement will normally be based upon a Cost Benefit Analysis (CBA)²⁰ and a gross disproportion test, the results of which will be used as evidence to support the ALARP claim. A CBA cannot be the sole determinant of an ALARP decision.
4. The approach chosen to support an ALARP claim can be constructed in a number of ways, which may include one or more of the above. The choice of approach is the ADHs / AM(MF)s responsibility and is informed by the nature of the Risk. ALARP arguments will therefore consider the wider Risk reduction measures which are available for ‘reasonably practicable’ adoption, in both the short and long term. Risk owners need to consider whether in the event of an Accident, the absence of further Risk reduction measures to support an ALARP claim could be considered as due to negligence, inactivity or complacency.
5. Before exposing an individual to a Risk, a judgement is required of ADHs / AM(MF)s, on whether the Risk is ALARP and the exposure is Tolerable. The HSE defines Tolerable as a “willingness by society as a whole to live with a Risk so as to secure certain benefits and in the confidence that the Risk is one that is worth taking and that it is being properly controlled”²¹.
6. Given the unique nature of, and unavoidable Hazards associated with Defence Aviation activity, ADHs / AM(MF)s are to ensure that the residual Risk exposure is proportional to the expected benefit. The residual Risk exposure can only be fully understood once the ALARP principle has been applied. It will be noted that what is considered ‘Tolerable’ in one scenario does not necessarily apply to another (eg a residual Risk that, when balanced against an urgent operational need is considered Tolerable, is not necessarily Tolerable when balanced against a need that is less urgent). The HSE highlights that “what is Tolerable may differ in peace or war”²².

¹⁷ Refer to MAA02: Military Aviation Authority Master Glossary.

¹⁸ However, the potential impact of societal concern may also need to be considered.

¹⁹ ► [Risk management: Expert guidance - ALARP at a glance \(www.hse.gov.uk/enforce/expert/alarplance.htm\)](http://www.hse.gov.uk/enforce/expert/alarplance.htm). ◀

²⁰ HSE principles for CBA in support of ALARP decisions are detailed at: ► [Risk management: Expert guidance – HSE principles for Cost Benefit Analysis in support of ALARP \(www.hse.gov.uk/enforce/expert/alarpcba.htm\)](http://www.hse.gov.uk/enforce/expert/alarpcba.htm). ◀

²¹ Reducing Risks, Protecting People (R2P2) page 3 – ISBN 0 7176 2151 0, Published 2001.

²² Reducing Risks, Protecting People (R2P2) page 43 – ISBN 0 7176 2151 0, Published 2001.

ANNEX C

RISK RECORDING AND REVIEW PROCESS

Risk Recording

1. ODHs / AM(MF)s are to maintain clear, unambiguous and auditable records of each of their Risks including details of decisions, activities and periodic Risk reviews. For ODHs, all Risks of Catastrophic, Critical and Major severity (definitions at Annex A) **should** be recorded in a Risk Register or suitable alternative^{11, 12}. For AM(MF)s, they **should** apply the same principles iaw Annex A. It is at the discretion of ODHs / AM(MF)s whether to record Minor severity Risks. The minimum information recording requirements are detailed at Table 2.
2. ODHs / AM(MF)s **should** own and hold the aggregated view²³ of Risks and review them on a regular basis. There **should** be an aggregated individual Air System view and an aggregated view of all Air Systems operated by ODHs / AM(MF)s within their AoRs, which considers pan-DLoD elements and have a suitably senior and empowered nominated Risk Records Manager (RRM). A suitably empowered individual **should** be nominated for the administration of the Risk Management process but this in no way relieves the managers and owners of individual and collective Risks of their personal responsibilities.
3. Once a Risk is identified and recorded, it **should not** be removed from records but **should** be closed only once the Risk no longer has any relevance to, or impacts upon, the operating Risk environment or ODHs / AM(MF)s respective AoRs. Effective safeguards **should** be in place to ensure records are protected from unauthorized access and editing. High confidence backups **should** be made to ensure through-life business continuity and that records cannot be corrupted or lost²⁴.

Review Process

4. Air Safety Steering Groups and Air System Safety Working Groups led by ODHs and equivalent meetings led by AM(MF)s **should** include the review of Risk mitigations, the aggregated Risk and ALARP and Tolerable decisions. More frequent reviews may prove beneficial, particularly where there is a change in circumstances to better understand and manage Risk.
5. ADHs / AM(MF)s **should** consider the frequency of subordinate working groups and attendance of Subject Matter Experts (SMEs) to ensure that sufficient and effective review is achieved, whilst avoiding an unwieldy and unnecessary burden. Minutes, or Records of Decisions, for the supporting meetings are to be taken, recorded, and relevant activity reported upwards as necessary.

MAA Assurance

6. Artefacts supporting the Risk Management process, including records of Risk decisions, activities and supporting review meetings will be scrutinized during MAA oversight.
7. Table 2 overleaf details the minimum information that **should** be recorded to support effective Risk Management.

²³ The aggregated view is a compilation of an ODH / DDH chain's or an AM(MF)'s standardized Risk Registers or suitable alternatives.

²⁴ Refer to RA 1225 – Air Safety Documentation Audit Trail.

Table 2. Minimum Information Recording Requirements.

Each Risk should have:	Description
A unique identifier (number and / or title)	The unique identifier allows traceability of Risk Management decisions.
Description	A description of the Risk using plain language to provide clarity on the relationship between the specific Hazards and potential consequences.
Current likelihood	Assessed iaw Annex A.
Current severity	Assessed iaw Annex A.
HRM Classification	Assessed iaw Annex A.
Risk owner	Determined iaw Annex A.
Risk manager	The individual managing the Risk as nominated by the ADH / AM(MF).
Existing mitigations	Details the existing mitigations in place (eg barriers (proactive and recovery)). This should refer out to the ASSC and where appropriate high level safety claims.
Proposed mitigations	Details of the strategies and action plans proposed to mitigate the Risk and any additional strategies or controls required. If known, illustrative costs of proposed mitigations and timescale of action plans should be recorded. Artefacts supporting the Risk Management process, including records of Risk mitigation decisions should be retained.
Future likelihood	Identifies likelihood post implementation of proposed mitigation. Assessed iaw Annex A.
Future severity	Identifies severity post implementation of proposed mitigation. Assessed iaw Annex A.
Future HRM Classification	The severity and likelihood should be recorded using a HRM. Assessed iaw Annex A.
Proposed mitigations status (funded, endorsed, not endorsed (include those rejected as grossly disproportionate))	Details of whether the proposed mitigation is funded, endorsed, not endorsed. Artefacts supporting the Risk Management process, including records of Risk mitigation decisions should be retained. The rationale for those Risk mitigations rejected as 'grossly disproportionate' should be recorded.
Last review date	Details the date and level of review carried out.
Next review date	Details the date and level of review to be carried out.
Closure date and reference to Risk owner authority to close Risk	Risks should not be removed from records and should only be closed by the Risk owner.

ANNEX D

STANDARDIZED APPROACH TO RISK MANAGEMENT

1. Risk Management is an essential element of an effective ASMS¹⁰. Its implementation is also essential for the higher control and management of Air Safety Risk and will enable Defence resources to be appropriately targeted to that end. The diagram below outlines the key elements and continuous cycle of Risk Management.

Figure 1. Key elements of Risk Management



2. Risk is a measure of exposure to possible loss and it combines the severity of loss (how bad) and the likelihood of suffering that loss (how often). RA 1210 is concerned solely with RtL and so addresses fatality and injury, but excludes damage to assets or the environment where no personal harm results.

3. The following are required as a minimum to manage single Risks:

a. **Hazard Identification.** Hazards may be identified by a variety of different means: previous Occurrences, reporting, checklists, Hazard and Operability Study (HAZOPS), Zonal Hazard (Safety) Analysis²⁵, error trends, monitoring, Systems-Theoretic Accident Model and Processes (STAMP) etc. Whichever techniques are used, sound Hazard identification depends on the engagement of individuals recognized as SQEP for the activity. A combination of techniques could be selected with the aim of providing high confidence that all credible Hazards have been identified. Once identified, these are to be recorded iaw Annex C.

b. **Risk Assessment.** The likelihood and severity related to a Hazard with a potential harmful outcome will be assessed. The assessment may be undertaken by a range of approaches, although it will be recognized that the results will only be an estimate, or forecast, of potential outcomes and subject to uncertainty. Hence, it may also be necessary to consider other more likely outcomes, rather than just the worst credible²⁶. In addition the need to conduct the associated activity and the expected benefit will be understood. The Defence Aviation HRM enables classification according to each Single Risk assessed for severity and likelihood. It is designed to assist ADHs with assessing the Hazards on a like-for-like basis and enable determination of the appropriate levels of ADH Risk ownership (noting that AM(MF)s own all RtL when operating UK military-registered Aircraft). Before

²⁵ Refer to ARP 4761: Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and Equipment.

²⁶ Considered to have the greatest detriment.

exposing an individual to a Risk, a judgement is required whether the Risk is ALARP and the exposure is Tolerable.

c. **Risk Reduction.** In order that a single Risk is reduced ALARP, Risk mitigation techniques are to be applied. These may range from eliminating the Hazard altogether, to reducing the severity and / or likelihood.

d. **Risk Recording and Escalation.** Once Risk mitigation is applied ADHs / AM(MF)s will assure themselves that the Risk is ALARP and the exposure is Tolerable. Key information regarding Risks decisions and Risk Management activities will be recorded as detailed at Annex C, and communicated across all relevant stakeholders, ie ADHs, AM(MF)s, AMs, and ADH-Facing Organizations. ADHs will be aware of how much Risk they can accept and when to elevate Risk decisions to a higher level.

e. **Risk Monitoring and Review.** ADHs / AM(MF)s will routinely monitor identified Risks. Mitigation activity may take time to implement, therefore ADHs / AM(MF)s will review the timescales and effectiveness of mitigation plans to ensure that Risks remain ALARP and Tolerable.

4. Due to the high levels of Risk exposure associated with Defence Aviation and the potential for societal concerns, Risk Management within the Defence Air Environment requires a more rigorous approach than typically expected of activities with lower Risk exposure. Therefore the requirement for techniques, tools, assurance, recording, monitoring and SQEP involvement are far greater. Recognized good practice will, where possible, be the minimum level applied to Risk Management processes.

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RA 1223 – Airworthiness Information Management

Rationale

Effective management of Airworthiness information¹ is required throughout the life of an Air System to sustain Type Airworthiness (TAW) and contribute to the delivery of Continuing Airworthiness (CAW). Without a systematic¹ approach to the management of Airworthiness information, the underpinning argument within the Type Airworthiness Safety Assessment² (TASA) will be undermined and Air Safety may be adversely affected. RA 1223 supports effective Air Safety Management³ and data exploitation⁴ by providing the minimum requirements for effective management of Airworthiness information and for the systems used to manage and host it, whether paper-based (eg MOD Form 700 or equivalent), electronic (eg ALIS⁵) or a hybrid combination of the two (eg GOLDesp).⁶

Contents

Definitions relevant to this RA

1223(1): Establishment of Airworthiness Information Management

1223(2): Airworthiness Information Management

Definitions

► Definitions relevant to this RA

1. **Airworthiness information**, for the purposes of this RA, is defined as information that directly contributes to the day-to-day management of an Air System's TAW and CAW. Airworthiness information is comprised of Airworthiness Static Data (ASD) and Airworthiness Dynamic Data (ADD):
 - a. ASD describes the approved data sourced from the Air System Document Set (ADS) that defines the Type Design and is used to sustain TAW of an Air System, such as providing the approved Configuration and implementing the Maintenance policy.
 - b. ADD describes the Airworthiness data captured and recorded that changes as the Air System is operated or maintained, such as the "as-flown" Configuration, Maintenance records and accumulation of component life. ADD is the main output for data exploitation in accordance with RA 1207⁴.

Regulation

1223(1)

1223(2)

Establishment of Airworthiness Information Management

1223(1) The Type Airworthiness Authority⁶ (TAA) shall define the Airworthiness information that is necessary to sustain TAW and the manner in which this information is to be managed.

Airworthiness Information Management

1223(2) Aviation Duty Holders (ADHs) and Accountable Managers (Military Flying) (AM(MF)s) shall ensure effective AIM, consistent with the TAA's requirements, to sustain and assure the Airworthiness of an Air System within their Area of Responsibility.

¹ ► Where the word 'system' is used within this RA, it refers to the management regime for Airworthiness information; it is not to be confused with electronic Information Systems (IS) used in support of Airworthiness Information Management (AIM). Where applicable, requirements for electronic IS will be identified specifically throughout the RA.

² Refer to RA 5012 – Type Airworthiness Safety Assessment. ◀

³ Refer to RA 1200 – ► ◀ Air Safety Management.

⁴ ► Refer to RA 1207 – Air Safety Data Management and Exploitation.

⁵ ALIS – Lightning II Autonomic Logistics Information System.

⁶ Where the Air System is not UK MOD-owned, TAW management regulatory responsibility by either the TAA or Type Airworthiness Manager (TAM) shall 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. Dependent on the agreed delegation of TAW responsibilities TAM shall be read in place of TAA as appropriate throughout this RA. ◀

**Acceptable
Means of
Compliance
1223(1)
1223(2)**

**Establishment of Airworthiness Information Management
Airworthiness Information Management**

2. ▶◀
3. ▶◀
 - a. ▶◀
 - b. ▶◀
4. TAAs ▶, supported by Commodity Chief Engineers (CE) ◀ **should**:
 - a. Define in the ▶ TAW Strategy⁷, the Airworthiness information that is to be managed through life and the management system to be used, referencing appropriate documentation. ◀
 - b. Ensure that the system of AIM ▶ as a minimum ◀ fulfils the generic functional and non-functional requirements specified at Annexes A and B respectively, and those Type specific requirements identified by the TAA. An auditable record of compliance **should** be maintained;
 - c. ▶◀
 - d. Where an electronic IS is employed within AIM, ▶ determine the extent to which its functions directly affect the Airworthiness and performance of the Air System; if deemed Safety critical ◀ it **should** be certified with the Air System▶⁸◀;
 - e. Specify in the ADS the ▶ Critical Parts⁹ ◀ of the Air System which **should** be individually tracked by AIM;
 - f. Generate and publish in the ADS any AIM constraints or rules that constitute control measures, that support the ▶ TASA; ◀
 - g. Determine and promulgate Airworthiness information Assurance and retention requirements ▶ (in addition to those already mandated elsewhere within MAA Regulatory Publications¹⁰); ◀
 - h. Ensure suitable arrangements are in place to validate AIM and its effectiveness in sustaining TAW through life;
 - i. Provide the ADH and / or AM(MF) with instructions explaining how to retrieve the Airworthiness information captured during Maintenance activities¹¹ conducted outside of the AIM control boundary.
 - j. ▶ Where more than one method (paper / Electronic IS / hybrid) of managing Airworthiness information is used, specify which approach is mandated for each Airworthiness function. If Airworthiness information is available in more than one format, information primacy **should** be specified by the TAA in the ADS¹². ◀
5. ADHs and AM(MF)s **should**, in meeting the intent of the TAA:
 - a. Understand the ▶ requirements for ◀ Airworthiness information as detailed within the ▶ TAW ◀ Strategy, ADS and the TAA's Hazard Log and accept any associated Risk(s) and control measures³;
 - b. Implement suitable levels of Assurance to continuously verify that ADD▶◀ is correctly and accurately captured;
 - c. Ensure the applicable Military Continuing Airworthiness Manager (Mil CAM) implements and upholds AIM processes by;

⁷ ▶ Refer to RA 5010 – Type Airworthiness Strategy.

⁸ Refer to RA 5810 – Military Type Certificate (MRP 21 Subpart B).

⁹ Refer to RA 5885(4): Identification of Critical Parts (MRP Part 21.A.805).

¹⁰ Eg Manual of Airworthiness Maintenance – Documentation (MAM-D). ◀

¹¹ Such as Maintenance being undertaken by industry.

¹² ▶ For example, in a Topic 2(N/A/R)1 leaflet. ◀

**Acceptable
Means of
Compliance**
1223(1)
1223(2)

- (1) Promulgating the ►aviation engineering orders and / or local procedures◄ required to implement the TAA published support policy and instructions for effective AIM;
- (2) Specifying any local AIM requirements ►¹³◄;
- (3) Conducting Quality Assurance activity to maintain enduring adherence to AIM support policies, instructions for use, orders and procedures;
- (4) Assuring the Configuration Management, accuracy and availability of all Air System Airworthiness information;
- (5) Assuring that personnel are satisfactorily trained and Competent¹⁴ to undertake AIM;
- (6) Validating the effectiveness of AIM and reporting issues and / or emerging trends to the TAA;
- (7) Reporting any discrepancies in the defined ►◄ Airworthiness information ►to the TAA.◄

**Guidance
Material**
1223(1)
1223(2)

Establishment of Airworthiness Information Management Airworthiness Information Management

6. ►◄
7. TAAs ►need◄ to maintain an auditable record of the incorporation of functional and non-functional requirements and ensure it is clearly explained in the ►TASA.◄
8. When establishing a system for AIM, the Mil CAMs ►need to◄ provide the ►ADH / AM(MF)◄ with Assurance that compliance with control measures ►◄ is being maintained. The ADHs and / or AM(MF)s ►need to◄ ensure this is conducted throughout the life of an Air System in order to identify any additional requirements to those specified at Annexes A and B.
9. ►◄
 - a. ►◄
 - b. ►◄

Functional Requirements

10. Functional requirements are AIM Activities, which if not conducted satisfactorily, could undermine the Airworthiness of an Air System. The functional requirements are grouped under 3 headings:
 - a. **Maintenance Certification, Recording and Management (MCRM).** This functional requirement group includes the processes and management of information associated with Maintenance Certification¹⁵ and recording. The data being captured and controlled for Maintenance management is ADD.
 - b. **Maintenance Data Management.** This functional requirement group includes the Configuration Control, Audit, archive / retention, exploitation, transfer between Maintenance organizations and quarantine of ADD.
 - c. **Approved Data Management.** Where Approved Data is managed within AIM, changes to the data ►need to◄ be implemented through a TAA authorized process to enable delegated Authorization of the changes.

Non-functional Requirements

11. Non-functional requirements specify how the system ►(eg paper, Electronic IS, hybrid)◄ delivers AIM activities.

¹³ ►Examples of 'local AIM requirements' may include information managed in databases, spreadsheets or local forms.◄

¹⁴ Refer to: RA 1002 – Airworthiness Competent Persons; RA 4806 – Personnel Requirements (MRP 145.A.30); and RA 4945 – Personnel Requirements - MRP Part M Sub Part G.

¹⁵ Refer to RA 4812(1): Certification of Air System Release (MRP 145.A.50(a)).

**Guidance
Material
1223(1)
1223(2)**

► Safety ◀ Analysis of AIM functions

12. All functions of AIM require analysis to determine its Safety criticality (ie the integrity of a function managing the Airworthiness information). When constructing the ►TASA, ◀ TAAs ►need to◀ consider how all aspects of AIM, at all levels, contribute to the aggregation ►or reduction◀ of Airworthiness Risks. ►An example would be the analysis of a management information aid (eg Resolve or other tools) for its criticality and effectiveness in managing TAw.◀ The analysis ►needs to◀ include the interfaces and boundaries with other AIM systems.

13. ►The analysis of AIM needs to be reviewed through life as emergent Hazards arise to ensure that AIM remains appropriate. There needs to be a clear Audit trail from the analysis and Hazard Log to the TAw Strategy and AIM to the ADS and Assurance policy.◀

►◀

14. ►◀

►◀

15. ►◀

Airworthiness Information Retention

16. When determining and promulgating Airworthiness information retention requirements, TAAs ►need◀ to consider defining Airworthiness information retention categories to ease storage constraints, whilst ensuring Airworthiness information is retained for periods coherent with Regulatory and Safety requirements.

AIM Implementation and Sustainment

17. Air System TAAs may utilize corporate or Contractor-supplied AIM solutions but they remain accountable for the Safety, suitability, integrity and availability of the solutions implemented. ►In such cases, suitable◀ contractual arrangements ►need to◀ be established to enable effective AIM.

18. The TAA ►needs to◀ ensure suitable interface arrangements are in place with organizations undertaking Maintenance activity¹¹ outside of their AIM control boundary, and the measures required to support the retrieval and Assurance of Airworthiness information upon completion of that activity. The Mil CAM, on behalf of the ADH and AM(MF), remains responsible for retrieving the necessary Airworthiness information captured during such Maintenance activity.

19. ►◀

Annex A to RA 1223

Functional Requirements ▶◀

1. Activities detailed in Annex A as required 'Y' maintain the status of Acceptable Means of Compliance (AMC). Activities detailed as required 'N' are to be considered as Guidance Material (GM).

Primary Function	Sub Function / Ser No	Activity	Required	
Maintenance Certification, Recording and Management (MCRM)			Required	
Preventive Maintenance				
	1.	Specify (forecast) preventive / scheduled Maintenance operation due.		Y
	2.	Record and Certify ¹⁶ preventive / scheduled Maintenance activities.		Y
	3.	Specify (forecast) Special Instruction (Technical) (SI(T)) compliance due.		Y
	4.	Record and Certify satisfaction of SI(T)s.		Y
	5.	Specify (forecast) component replacement due.		Y
	6.	Record and Certify component replacement completed.		Y
	7.	Specify (forecast) flight servicing due.		Y
	8.	Record and Certify flight servicing completed.		Y
	9.	Specify (forecast) supplementary flight servicing.		Y
	10.	Record and Certify supplementary flight servicing completed.		Y
	11.	▶ Where an electronic IS that is utilized for ◀ AIM incorporates a prognostic or health monitoring and reporting system, specify indication disposition procedures.		Y
	12.	Record and Certify miscellaneous activities ¹⁷ .		Y
Corrective Maintenance				
	13.	Record all arisings ¹⁸ and incorporate a defined process to prevent the Air System being released for flight in an unsafe condition.		Y
	14.	Manage Air System Fault code reporting (Health monitoring).		N
	15.	Record and Certify Corrective Maintenance completed.		Y
	16.	Record and Certify Repairs carried out.		Y
Maintenance General				
	17.	Record and Certify Maintenance organization check of Technical Information Configuration standard.		Y
	18.	Record and Certify Environmental Damage Prevention and Control (EDPC) activities.		Y
	19.	Record and Certify Maintenance tasks requiring Air System prep (eg pre-wash).		Y
	20.	Record and Certify Independent Inspections.		Y
	21.	Record and Certify Stage Checks.		Y
	22.	Record and Certify vital checks.		Y
	23.	Record and Certify post-Maintenance loose article, tool and panel checks.		Y
Maintenance Deferment				
	24.	Record and Certify serviceability state - Limitations.	Y	
	25.	Record and Certify serviceability state - Acceptable Deferred Faults.	Y	
	26.	Record and Certify Waiver of flight servicing.	Y	
	27.	Record and Certify pre-flight Faults.	Y	
	28.	Record and Certify Aircrew acceptance of Faults.	Y	

¹⁶ Refer to RA 4813 – Maintenance Records (MRP 145.A.55) and RA 4812 – Certification of Aircraft and Component Release (MRP 145.A.50).

¹⁷ Miscellaneous Activities – activities that ▶ should ◀ be recorded in AIM but which do not necessarily need to be reported for fault analysis purposes, eg tool control entries, movement of ejection seat Safety pins and manual folding / spreading of helicopter rotor blades.

¹⁸ Arising – an indication of a potential requirement (eg potential Air System fault or exceedance) to perform Maintenance.

	29.	Host a loose article register.	Y
	30.	Host a damage / corrosion register.	Y
	31.	Record and Certify Concessions applied to the Air System.	Y
Configuration Management			
	32.	Record Air System type and registration mark.	Y
	33.	Record leading particulars.	Y
	34.	Record Air System and asset usage status.	Y
	35.	Record Air System serviceability status.	Y
	36.	Incorporate a log of Maintenance records (eg Aircraft Maintenance Log (AML)).	Y
	37.	Capture component replacement minimum traceability data (eg nomenclature, serial number and, where applicable, lifing data).	Y
	38.	Record the life accumulated on life limited and ► critical Parts. ◀	Y
	39.	Incorporate a process for management of component records and log 'cards', including component 'activity' outside the scope of AIM.	Y
	40.	Calculate Air System weight and moment.	N
	41.	Record Air System weight and moment.	Y
	42.	Calculate, record and monitor the appropriate structural life usage, eg Fatigue Index (FI).	Y
	43.	Record software Configuration.	Y
	44.	Record and Certify role change/weapon Loading.	Y
	45.	Record and Certify refuel / defuel / fuel status.	Y
	46.	Record and Certify mission data load.	Y
	47.	Specify (dis) / embodiment of Modifications.	Y
	48.	Record and Certify (dis) / embodiment of Modifications.	Y
	49.	Record Modification embodiment status.	Y
	50.	Record SI(T) satisfaction status.	Y
Engineering Operations Management			
	51.	Record Certification of Air System Release.	Y
	52.	Specify and Record Flight Testing.	Y
	53.	Record and Certify Aircrew acceptance of Air System for flight.	Y
	54.	Record and Certify Continuous Charge operations.	Y
	55.	Record aero-engine or Auxiliary Power Unit (APU) ground running.	Y
	56.	Manage Air System usage reporting.	N
Administrative Functions			
	57.	Enable amendment of Technical Information (eg MOD Form 765).	Y
	58.	Enable Fault reporting (eg MOD Form 760).	Y
	59.	Record working-hours expended on Air System tasks.	Y
	60.	Record Administration Tasks ¹⁹ .	N
	61.	Host Military Airworthiness Review Certificate (MARC).	N
	62.	Host Quality Occurrence reporting and Quality Management functions.	N
Logistics Functions			
	63.	State authenticity and serviceability of Air System parts (eg Authorized Release Certificate ► ²⁰ ◀, EASA Form 1, Certificate of Conformity).	N
	64.	Record logistics / sustainment metrics (eg working-hours per flying hour, mission capability, Cannibalization).	N
Maintenance Data Management			
	65.	Retain the 'Programme of Record' prime data for Air System fleet Configuration.	Y

¹⁹ Administration Task – Where a requirement exists to make a 'For recording purposes only' entry to record an administrative task that does not render the Air System unserviceable, once an Air System has been prepared for flight or is on Continuous Charge.

²⁰ ► Refer to RA 4809 – Acceptance of Components (MRP 145.A.42). ◀

	66.	Incorporate a robust data lockdown / quarantine process in case of Air System Accident / Incident, compliant with Defence Accident Investigation Branch requirements.	Y
	67.	Incorporate robust and repeatable access to Airworthiness data for Audit.	Y
	68.	Incorporate a process for the retention and / or archive of ADD. Data storage facilities need to comply with security Regulations and need to be capable of preserving the data for the specified retention period. Authorization requirements for access to archived data need to be considered.	Y
	69.	Incorporate a process for Airworthiness data exploitation / trending. To include the provision of appropriate tools and personnel to access archived data.	Y
	70.	Incorporate a compliant process for transfer of Air System Maintenance records between organizations, including civilian Contracted Maintenance organizations.	Y
	71.	Incorporate a compliant process for transfer of data between IS in the event of IS upgrade.	Y
	72.	Incorporate a compliant ²¹ process for the correction, deletion and subsequent disposal of ADD. Authorization requirements need to be considered.	Y
Approved Data Management			
	73.	Host/suggest Maintenance Approved Data.	N
	74.	Host/suggest Modification Approved Data.	N
	75.	Host definitive / Configuration-controlled approved parts catalogue.	N
	76.	Host definitive / Configuration-controlled approved Maintenance schedule.	N
	77.	Host/suggest Repair data.	N
	78.	Host definitive / Configuration-controlled Minimum Equipment List (MEL).	N
	79.	Host/generate pre-printed expendable work cards.	N

²¹ Including data disposal security requirements published in JSP 440 – The Defence Manual of Security, Resilience and Business Continuity, and JSP 441 – Managing Information in Defence.

Annex B to RA 1223

Non-Functional Requirements ▶◀

1. Activities detailed in Annex B as required 'Y' maintain the status of AMC. Activities detailed as required 'N' are provided as GM. ▶ Where they relate solely to Electronic IS, this is stipulated below, either as a section or as an individual activity. ◀

Category / Ser No	Requirement	Required
Design / Certification / Acquisition ▶ (Electronic IS) ◀		
1.	Where an electronic IS is used, the IS should be designed by a Competent Organization. The requirements of RA 1005 – Contracting with Competent Organizations, should be considered for Safety critical functions.	Y
2.	Electronic IS applications should be developed to a recognized software standard, commensurate with the Safety criticality of the IS outputs. ²²	Y
3.	The 'look and feel' of the system employed should be ▶◀ assessed▶ ²³ ◀ as being clear, unambiguous and logical.	Y
4.	Where an electronic IS is used, it should be tested using operationally representative data (Validated and Verified) before introduction to Service.	Y
Airworthiness Data Integrity ▶ (Electronic IS) ◀		
5.	AIM should have data integrity Validation checks, journaling and associated data auditing to support design integrity requirements that are coherent with the ▶ importance◀ of the data. Audit procedures should include explicit checks for the corruption or tampering with ADD.	Y
6.	AIM should incorporate user access control arrangements that place appropriate degrees of control on data entry, manipulation, access and retrieval coherent with the ▶ importance◀ of the data and the Maintenance documentation Certification requirements▶ ¹⁶ ◀. Where an electronic IS is used, each terminal should contain programme safeguards against unauthorized alteration of the database and should also have traceability features (eg two factor authentication).	Y
7.	The Maintenance management function should incorporate logical junctures (ie 'Certification points') at which Maintenance Certification of completed activities is recorded (by signature or electronically).	Y
8.	The Maintenance management function should provide an Audit trail of activities carried out and those responsible for the Maintenance activity. The Maintenance Certification of the activity should link the individual responsible to the activity itself. The system should enable the correct authority level to certify the Maintenance activity.	Y
9.	The Maintenance management function should enable a complete reviewable data set to which the Maintenance Certification attests, including any additional certified data on which the Certification is dependent.	Y
10.	Where applicable, AIM should have functionality and/or business processes that minimise likelihood and manage (indicate) the instance of duplicate asset creation ▶◀.	Y
11.	AIM should utilize a single universal time zone for Maintenance Certification and recording.	Y
12.	Where health management algorithms are incorporated in AIM, they should be assured to the satisfaction of the TAA.	Y
Security and Legal		
13.	▶ Where an electronic IS is used, the IS ◀ should meet the applicable security requirements ²⁴ .	Y

²² When using the requirements of Def Stan 00-055, the means of compliance selected to meet the requirements ▶ **should** ◀ be agreed with the authority.

²³ ▶ Eg TAA assessment using input from the end user community. ◀

²⁴ In accordance with JSP 440 and Air System-specific security requirements (eg International Traffic in Arms Regulations - ITAR).

14.	Where Maintenance Certification is recorded using Electronic Signatures, applicable legislation should be complied with ²⁵ . TAAs should ensure that their Electronic Signature solution will withstand legal scrutiny if matters relating to Airworthiness or culpability of an individual come under investigation ²⁶ .	Y
15.	ADD should be secured and handled in a way that supports investigations and/or legal proceedings in the event of an Incident or Accident.	Y
Configuration Management		
16.	Any ► electronic IS ◀ AIM hardware should be Configuration managed to a level coherent with the Safety criticality of the system's functional outputs.	Y
17.	Any ► electronic IS ◀ AIM software application employed should be Configuration managed to a level coherent with the Safety criticality of the system's functional outputs.	Y
18.	Where an electronic IS is used, initial release of and changes to ASD should be documented as approved by the TAA and implemented by appropriately authorized personnel.	Y
19.	There should be an auditable record (eg journaling, additional Maintenance Work Orders (MWO)) created to reflect changes, corrections, additions or deletions of MCRM data that may be required after initial recording.	Y
20.	MWO ²⁷ , including MAM-D-based formats ²⁸ , Work Cards ²⁹ and any other electronic system-generated formats should be Configuration controlled.	Y
21.	AIM should have defined processes for component record creation, alteration and deletion, which should only be carried out by an appropriately authorized person.	Y
22.	AIM should conform to a Minimum Data Capture List ³⁰ determined by the TAA.	Y
Operation		
23.	AIM should have adequate redundancy / reversionary arrangements. Electronic IS elements should have cyber-attack defence and recovery measures in place as detailed within the platform Risk Management and Accreditation Documentation Set (RMADS).	Y
24.	Where electronic IS are used, they should have off-line processes, which are specified in AIM instructions and the Air System Business Continuity and Disaster Recovery Plans.	Y
25.	Where appropriate, AIM needs to have a portable capability that is robust and approved. If an electronic IS Maintenance management function is to be used whilst on deployed operations, access to the main IS may not be continuously available; there needs to be a timely and robust method of synchronization during deployment and on subsequent return to the home Stn/Ship/Unit.	N
► 26.	Where an electronic IS is used, consideration needs be given to provision of additional functions such as: a comprehensive problem / discrepancy log that can be exportable, exploitable and searchable; data extraction; and data error monitoring capability, etc.	N◀
Documentation		
27.	AIM through life management arrangements should be captured in ► appropriate documentation. ◀	Y
28.	AIM should have a current Business Continuity and Disaster Recovery Plan.	Y
29.	AIM should be included in the Air System Support Policy Statement.	Y
30.	AIM should have effective and current processes (for example, change management, AIM instructions/user manual).	Y
Training		
31.	AIM should have a training programme ³¹ for personnel (If an Electronic IS is used this is to include users and administrators).	Y
Safety Management		

²⁵ Guidance on admissibility of Electronic Signatures is contained in the Electronic Communications Act 2000 Chapter 7; the strength of admissibility may be dependent on the level of authentication, Authorization and integrity control applied within the electronic IS.

²⁶ Further clarification may be sought from Defence Legal Services. Examples of Electronic Signatures are Smart Card and Personal Identification Number (PIN), Physical Input Devices (PID), Biometrics and physical signature capture / recognition.

²⁷ Maintenance Work Orders do not include pre-populated Technical Information.

²⁸ A format is an electronic copy of a standard MOD Form 700 form.

²⁹ Work Cards (eg Maintenance procedures, F2988, MOD Form 707MS) include pre-populated work content.

³⁰ A Minimum Data Capture List is a controlled and TAA-approved list of parameters that ► **should** ◀ be captured within AIM to sustain TAW, achieve the Support Policy and allow effective Data Exploitation, in accordance with the Air System Safety Case.

³¹ In accordance with JSP 822 – Defence Direction and Guidance for Training and Education.

32.	AIM should be included in the Air System ►TASA◄	Y
AIM Interfaces ► (Electronic IS) ◄		
33.	Where applicable, AIM is to interface effectively with the Air System training/Authorization management system.	N
34.	Where applicable, AIM is to interface effectively with other Air System Maintenance systems (eg low observable systems).	N
35.	Where applicable, AIM is to interface effectively with the Air System mission planning system.	N
36.	Where applicable, AIM is to interface effectively with the Air System supply chain/inventory management system.	N
37.	Where applicable, AIM is to interface effectively with the Air System performance management system.	N
38.	Where applicable, AIM is to interface effectively with Commodity Delivery Team component management systems.	N
39.	Where applicable, AIM is to interface effectively with civilian supplier information management systems.	N

RA 1230 - Design Safety Targets

Rationale

It is important to have design safety targets to provide a level of assurance that a design can achieve specific safety criteria. The design solutions for new Air Systems, modifications to new and in-service Air Systems, and associated equipment and software, are to be consistent with the acceptable design safety targets, unless overriding statements for Airworthiness are contained in the specification or contract, with the prior agreement of the MAA.

Contents

1230(1): Design Safety Target Criteria

Regulation

1230(1)

Design Safety Target Criteria

1230(1) ▶ **The Type Airworthiness Authority (TAA) shall ensure that** ◀ Air Systems, associated equipment and software ▶ **are** ◀ designed¹ to acceptable design safety targets.

Acceptable Means of Compliance

1230(1)

Design Safety Target Criteria

Military Aircraft

1. The cumulative probability of the loss of an aircraft due to a technical fault and the cumulative probability of a technical failure of the aircraft (inclusive of its systems, structure and stores) leading to a death², **should** both be assessed to be no more frequent than one in a million per flying hour (probability of occurrence 1×10^{-6} per flying hour) when operated within the conditions used for the Airworthiness demonstration³.

Airworthiness Demonstration

2. The Airworthiness demonstration **should** be as specified in the contract including the operating conditions to be applied, and **should** be undertaken during the demonstration of the compliance with the Type Certification Basis (TCB)⁴ and matured throughout the life of the platform. The demonstration of Airworthiness ▶ **might** ◀ include design analysis, application of specified standards (such as Def Stan 00-970), and historical evidence of successful use of design features, system tests, and ground and air tests to arrive at an overall assessment of Airworthiness.

Civil Aircraft Types

3. Civil certified aircraft types unmodified for military use, registered or operated by the MOD **should** meet the civil Type Certificate holder's design safety target. Where configurations specific to the needs of the military are embodied or the intended use of the aircraft has changed, MAA Certification Division **should** be consulted and a design safety target agreed in accordance with the TCB and prior to Main Gate approval or appropriate approval juncture.

Remotely Piloted Air Systems (RPAS)

4. The operation of a RPAS **should** be no more likely to cause injury or fatality to personnel or the general public than the operation of a manned aircraft. The design safety target for the operation of RPAS **should** reflect the categorization found in RA 1600⁵.

Software/Complex Electronic Hardware (CEH)

5. It is recognized that it is not possible to set quantifiable design safety targets for software (including the software aspects of CEH). Therefore a qualitative design target **should** be set; how this is achieved will depend on the approach to compliance with the software/CEH aspects of Def Stan 00-970 Part 13. This **should** result in the

¹ It is acknowledged that some legacy Air Systems, equipment and software will not have direct correlation with the original design safety target. Therefore there will be a need to define an acceptable Design Safety Target.

² This is in reference to 1st, 2nd or 3rd parties, refer to RA 1210 – Ownership and Management of Operating Risk (Risk to Life).

³ The primary mitigation for a technical design shortfall is to be through technical design changes; where this is not wholly possible, operator or maintenance procedures may be utilised, however this would require verification that the procedure has a reasonable expectation of being accomplished successfully and in a timely manner to provide acceptable mitigation.

⁴ ▶ **Refer to** ◀ RA 5810 – Military Type Certificate (MRP 21 Subpart B).

⁵ ▶ **Refer to** ◀ RA 1600 – Remotely Piloted Air Systems.

Acceptable Means of Compliance 1230(1)

assignment of design targets in the form of Design Assurance Levels that are commensurate with the design target of the system in which the software/CEH operates.

Weapon Release and Airborne Equipment

6. Weapon release⁶ and Airborne Equipment (AE⁷) descent assessments **should** be made on an event basis, instead of a target related to flying hours.

Historic Aircraft⁸

7. When there is incomplete design, testing information, or when maintenance records are missing such that a numerical target cannot be reached, the TAA **should** carry out a Safety Assessment and in agreement with the Aviation Duty Holder (ADH) ensure the principles of As Low As Reasonably Practicable (ALARP) are adopted in authorizing any changes to design, maintenance policy or operating limits (see also RA 1325⁹). Any modification to the aircraft **should** as a minimum be Airworthiness safety-neutral and ideally be safety-positive. The TAA can accept a safety-neutral outcome where a reduction in risk would not be expected or where a positive outcome cannot be reasonably demonstrated.

Guidance Material 1230(1)

Design Safety Target Criteria

Aircraft Weapons, AE and Historic Aircraft

8. The safety criteria given in this RA must include the safe carriage, release/despach, and jettison of armament, weapons and AE from the immediate vicinity of the aircraft.

Weapons and Armament

9. Following release or jettison of the weapon, the safety criteria of the subsequent trajectory must be as defined in the relevant specification. However, the platform TAA must satisfy himself that the achieved Air Launched Weapon safety, from the immediate vicinity point to the arming point, meets the overall operating safety requirements for the complete weapon system. The ownership of risks to safety associated with aircraft self-damage post weapon arming, and collateral damage, is the responsibility of the ADH, Accountable Managers (Military Flying) and commanders.

AE

10. The safety criteria for the descent of the AE system must be as defined within the individual equipment's specification. In addition, the delivery aircraft TAA must satisfy himself that the AE safety meets the overall operating safety requirements for the delivery aircraft; during embarkation to the aircraft; airborne transit; despach (until clear of the aircraft boundaries) and disembarkation.

Historic Aircraft

11. The same general principles apply to the management of the Airworthiness of historic aircraft as apply to other legacy aircraft on the military register. Where a design change is being considered under the terms of the AMC at paragraph 7, it is particularly important that when specialist advice or manufacture is required, it is sought from those with proven competence in the relevant design philosophy and techniques. In addition, historic aircraft are normally limited within the Release To Service to limits far below those for which they were designed, to ensure the Risk to Life is demonstrably maintained ALARP and Tolerable to the satisfaction of the ADH.

⁶ Refer to Def Stan 07-085 – Design Requirements for Weapons and Associated Systems.

⁷ AE encompasses Airborne Forces Equipment and Airborne Delivery Equipment.

⁸ For the purposes of this RA, historic aircraft are flown by the Battle of Britain Memorial Flight and the Royal Navy Historic Flight.

⁹ ► Refer to ◀ RA 1325 – Drafting of Limitations in the Release To Service.

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

RA 1240 – Chartering of Civilian Air Systems for Military Purposes

Rationale

The Ministry of Defence (MOD) has a requirement to charter civilian Air Systems to supplement shortfalls in the availability of military Air Systems. The scope of chartering activity is broad, but common to all chartering activity is that the MOD has a Duty of Care to ensure that appropriate safety assurances are met with respect to Risk to Life (RtL), including pilots, passengers and any other person who may be affected by the activity. Having such assurances in place supports the operational capability of the MOD and reduces the potential exposure of individuals to harm; therefore, a full understanding of the risks involved, through the completion of a suitable and proportionate safety assessment, with appropriate signoff is required to ensure the safety of all affected personnel.

Contents

1240(1): Chartering of Civilian Air Systems for Military Purposes

Regulation

1240(1)

Chartering of Civilian Air Systems for Military Purposes

1240(1) The Sponsor of the chartering activity **shall** only charter civilian Air Systems for military purposes after appropriate safety assurances have been obtained and endorsed.

Acceptable Means of Compliance

1240(1)

Chartering of Civilian Air Systems for Military Purposes

1. The Sponsor **should** provide justification for the circumstances of the charter to, and any additional requirements as required by, the Approving Officer.
2. In all circumstances, to assess the level of risk associated with the chartering of civilian Air Systems, the Sponsor **should** prepare a coherent and proportionate safety assessment for Approving Officer consideration and approval. The Sponsor **should** ensure that, as a minimum, the safety assessment:
 - a. Affirms the competence of the contracted, or any sub-contracted, organization.
 - b. Affirms, where appropriate, the material state of the contracted Air System, including any safety and emergency equipment provided.
 - c. Affirms, where appropriate, an assessment of the contracted Air System, to identify any operating or handling characteristics that could affect flight safety.
 - d. Mandates the use of appropriate clothing, protective clothing, and Aircrew Equipment Assemblies.
 - e. Confirms that charter carriers / contractors hold all of the following International Civil Aviation Organization (ICAO) and National Airworthiness Authority (NAA) requirements:
 - (1) Certificate of Competency, Air Operators Certificate or Operating Licence.
 - (2) Certificate of Airworthiness or valid Airworthiness Review Certificate for the relevant Air System.
 - (3) Certificate of Registration for the relevant Air System.
 - (4) Certificate of Insurance for the relevant Air System.
 - f. Confirms that the Air System meets the traffic collision avoidance system requirements in accordance with (iaw) the National Aviation Authority Regulations the Air System is to be operated in.
 - g. Confirms that the Air System meets the Carbon Monoxide detection and active warning requirements iaw the National Aviation Authority Regulations the Air System is to be operated in.

**Acceptable
Means of
Compliance
1240(1)**

- h. Confirms that the Air System's Maintenance schedule includes the engine manufacturer's guidance on inspecting and testing the engine exhaust system.
- i. Confirms that wherever possible the carrier / contractor, and the contracted airframe, are registered in one of the European Union Aviation Safety Agency (EASA) nations, Australia, Canada, New Zealand, the UK, or the USA¹.
- j. Confirms that the carrier / contractor, and the contracted airframe, are not on the European Union (EU) Air Safety List Annex A² or on the Federal Aviation Administration (FAA) International Aviation Safety Assessment (IASA) Category 2 list.
3. The Sponsor **should** ensure that the completed safety assessment is presented to the relevant Approving Officer for consideration and approval.
4. The Sponsor **should** ensure that:
- a. Foreign registered chartered Air Systems, permanently based and / or operated in the UK, comply with the requirements of the Air Navigation Order (ANO) and their Certificate of Airworthiness.
- b. The chartered organization is effective in maintaining accurate and up-to-date records related to personnel licences, certificates and ratings (for EASA registered Air Systems this is iaw EASA Part ARA. GEN.220).
- c. There are no applicable ANO related restrictions on the charter Air System or aircrew.
- d. There is no ambiguity regarding which Regulations and supervisory oversight the charter is being operated within.
- e. The Certificates at paragraph 2e are valid in the location(s), including all of the route, and for the purposes of the intended charter.
5. **Approving Officer requirements.** The Approving Officer, who is exercising the MOD's Duty of Care for the charter, **should** satisfy themselves that the supporting safety assessment is robust, fully recorded, and that the carrier / contractor is a competent organization with robust safety management processes in place with respect to RtL. The Approving Officer applicability is as follows:
- a. **Provision of Air Systems by Defence Support Chain Operations and Movements (DSCOM) for passengers and escorted freight.** The Approving Officer for the movement of DSCOM passengers and / or escorted freight **should** seek appropriate Air Safety and air engineering advice from Suitably Qualified and Experienced Persons (SQEP) and be the appropriate Air Safety aware 2* (or higher if no 2* has appropriate Air Safety awareness and understanding).
- b. **Provision of Air Systems for Test and Evaluation activities, Airborne Equipment (AE)^{3,4} activities, and Defence personnel parachuting⁵ activities.** The Approving Officer for chartering Air Systems for Test and Evaluation activities (including trials, testing, training⁶, and usage), AE activities, and Defence personnel parachuting activities **should** seek appropriate Air Safety and air engineering advice from SQEP, and be the appropriate Air Safety aware 2* (eg Air Officer Commanding 1 Group, Air Officer Commanding 2 Group, etc) in consultation with their Chief Air Engineer.
- c. **Provision of Air Systems by organizations other than DSCOM for all other activities.** The Approving Officer for Air Systems to be chartered for any

¹ The countries listed are those that the MAA has confidence in the regulatory framework (including the Five Eyes Air Force Interoperability Council nations).

² For the avoidance of doubt, EU regulations do not permit any flight over EU territory by any Air System belonging to an air carrier which is on the EU banned list.

³ Refer to RA 1150 – Airborne Equipment and Airborne Forces.

⁴ Refer to MAA02: Military Aviation Authority Master Glossary.

⁵ Defence personnel parachuting includes both Force Elements at Readiness (FE@R) and sports parachuting activities.

⁶ This RA does not apply to Aircraft chartered or hired by the QinetiQ Civil Flying Organization to enable Empire Test Pilots' School (ETPS) course delivery.

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1240(1)**

other activity **should** seek appropriate air engineering advice from SQEP, and be one of the following:

- (1) The relevant Air Safety aware 2*, in consultation with their Chief Air Engineer, with responsibility for exercising the MOD's Duty of Care related to the charter.
- (2) The Accountable Manager (Military Flying) of the organization in receipt of the chartered Air System.
- (3) The Head of Establishment in receipt of the chartered Remotely Piloted Air System, with responsibility for exercising the MOD's Duty of Care related to the charter, whilst ensuring compliance with appropriate civil regulation.

6. **Long-term arrangements.** In circumstances where the organization chartering the Air System has entered into long-term arrangements for service provision, the Sponsor **should** assure themselves that appropriate procedures are in place to ensure that the Air System is maintained in a serviceable and airworthy condition in accordance with the approved Maintenance data, and is certified as fit for flight by the Air System operator.

**Guidance
Material
1240(1)**

Chartering of Civilian Air Systems for Military Purposes

7. This RA only covers the chartering of civilian Air Systems for military purposes and does not absolve individuals from their Duty of Care or Aviation Duty Holder responsibilities for any activity to be carried out in the chartered Air System.

8. When constructing the safety assessment and ascertaining the appropriate safety assurances, consideration may be given to information provided by aviation safety assurance websites. The EU Air Safety List Annex A, the FAA IASA Category 2 list and other safety related information can be found at:

- a. EU Air Safety List Annex A - http://ec.europa.eu/transport/modes/air/safety/air-ban_en
- b. FAA IASA Category 2 list - http://www.faa.gov/about/initiatives/iasa/media/FAA_Initiatives_IASA.pdf
- c. The EASA Safety Assessment Of Foreign Aircraft (SAFA Programme) - <http://easa.europa.eu/node/15629>
- d. Aviation Safety Network - <http://aviation-safety.net>
- e. Air Safety Information Management System (ASIMS) - <https://www.asims.r.mil.uk>

9. Sponsor queries regarding the chartering of civilian Air Systems for military purposes, initially may be directed towards the DSCOM organization, who are Subject Matter Experts with considerable Air System chartering experience.

10. The following activities are outside the scope of this RA:

- a. The purchase of individual seats or group bookings on normal commercial carriers⁷.
- b. Unescorted freight.
- c. All other instances of UK Military Personnel being transported by air where a charter arrangement has not been formalised.

⁷ "Normal commercial carriers" is defined as scheduled commercial flights (ie British Airways flights, MOD US fare (Trooper) flights).

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

RA 1300 - Release To Service

Rationale

The Release To Service (RTS) authorizes Military Operated (In-Service) Defence Air Environment (DAE) Operating Category¹ flying on behalf of the responsible Senior Duty Holder (SDH). Failure to observe RTS limitations may result in unacceptable Hazards. The RTS is based on the RTS Recommendation (RTSR). It defines permitted as flown configurations and the permitted operating envelope. RTS limitations are the definitive limits for the Air System and apply in all conditions, from peacetime training to war². Air Systems will be operated iaw an RTS or a Military Permit To Fly (MPTF), however this RA only deals with the RTS requirements.

Contents

- 1300(1): Requirement
- 1300(2): Release To Service Recommendation
- 1300(3): Limitations
- 1300(4): Operational Emergency Clearance
- 1300(5): Clearance with Limited Evidence
- 1300(6): Authorization
- 1300(7): Configuration Control and Audit Trail

Regulation 1300(1)

Requirement

- 1300(1) An RTS **shall** be prepared for all Air Systems that are operated within the Military Operated (In-Service)¹ DAE Operating Category³, except for:
- a. RPAS operating in the Open category,
 - b. RPAS operating in the Specific S1 sub-category, and
 - c. Air Systems with an MPTF.

Acceptable Means of Compliance 1300(1)

Requirement

1. The RTS **should** be an integrated document with all limitations and associated Warnings, Cautions, and Notes detailed in the appropriate parts iaw Annex A and:
 - a. Define the permissible as-flown configuration(s) of the Air System.
 - b. Detail the permitted flight envelope of the Air System including limitations⁴.
 - c. Detail any limitations, Warnings, Cautions, or Notes required as a result of Type Design Changes (eg Air Launched Weapons)^{4, 5}.
 - d. Include all Equipment authorized to be carried in, despatched from, or fitted to the Air System^{6, 7, 8}.
 - e. If applicable⁹, reference a MEL from Annex A Part A7.

¹ The RTS may also be used by the Sponsor to authorize flying in the Civilian Operated (In-Service) DAE Operating Category for Air Systems temporarily allotted in accordance with (iaw) RA 1164. Refer to RA 1164 – Transfer of UK Military Registered Air Systems.

² For guidance on operations outside of any existing RTS, refer to RA 1020 – Aviation Duty Holder and Aviation Duty Holder-Facing Organizations – Roles and Responsibilities.

³ RPAS operating in the Open category and Specific S1 sub-category do not have an RTS but rely on a Letter of Endorsed Categorization which, for the purposes of this Regulation, is the equivalent to an RTS; Refer to RA 1600 – Remotely Piloted Air Systems.

⁴ Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

⁵ Refer to RA 1350 – Air Launched Weapon Release.

⁶ Refer to RA 1340 – Equipment Not Basic to the Air System.

⁷ Refer to RA 1345 – The Compendium of Airborne Equipment Release Certificates.

⁸ This RA is not applicable to items properly classified as cargo. Cargo is regulated by the Movement and Transport Safety Regulator as directed by JSP 800: Defence Movements and Transportation Safety Regulations.

⁹ The inclusion of the Minimum Equipment List (MEL) is applicable where the Master MEL forms part of the Type Certification Basis of the Air System.

Acceptable Means of Compliance 1300(1)

- f. Be subject to a formal review, by the RTS Authority (RTSA)¹⁰, on a 5 yearly basis against Annex A and the recommendations leading to amendment of the RTS.
 - g. Where there are differing levels of limitations, detail the most restrictive.
 - h. If referenced, include in the Aircrew Equipment Assemblies section, the DAP108B-0001-1 issue and amendment state.
2. The content of the RTS **should** be:
- a. Auditable and traceable back to the source data.
 - b. Maintained by the RTSA throughout the life of the Air System and appropriate data retained¹¹.

Guidance Material 1300(1)

Requirement

3. Nil.

Regulation 1300(2)

Release To Service Recommendation

- 1300(2) The Type Airworthiness Authority (TAA) **shall** prepare the RTSR to the satisfaction of the RTSA.

Acceptable Means of Compliance 1300(2)

Release To Service Recommendation

4. The RTSR is the evidenced argument supporting the RTS which **should** include Type Design Change process completion as demonstrated by the Approved Design Change Certificate (ADCC) or Military Type Certificate (MTC). Any limitations or restrictions imposed by the MAA **should** be detailed in the RTS.
5. The TAA **should** ensure that the RTSR provides all clearances and associated limitations in a format consistent with the RTS structure.
6. The initial RTSR and subsequent amendments and re-issue of the RTSR **should** be prepared by the TAA. The TAA can delegate authority to approve amendments to, or re-issues of, the RTSR. Such delegations **should** be to a competent individual of OF5 level (or equivalent).
7. The RTSR and supporting documentation, for new Air Systems and Major Changes that result in a new Mark number, **should** be approved by the appropriate 2* Operating Centre Director (OCD)¹², then submitted to the RTSA for Authorization and independent Assurance; and to the MAA for independent Assurance¹³.
8. The TAA **should** ensure that the RTSR demonstrates an acceptably safe operating envelope, in line with the context of the Air System Safety Case (ASSC).
9. The TAA should review all documents, presented as evidence in the RTSR on amendment, for potential impact on limitations in the RTS.
10. The content of the RTSR **should** be:
 - a. Auditable and traceable back to the source data.
 - b. Maintained by the TAA throughout the life of the Air System and appropriate data retained¹¹.
11. Air Systems and Type Design changes **should** be introduced to service by completion of the Military Air System Certification Process (MACP). CLEs **should not** be used to mitigate for lack of MACP completion.

¹⁰ Where RTSA is used in this RA, this also includes the Sponsor responsible for authorizing the MPTF (In-Service) or the Type Airworthiness Manager responsible for approving the MPTF (Special Case Flying) for Civilian Operated Air Systems, as detailed at RA 1305 – Military Permit to Fly (MPTF) (In-Service), (Special Case Flying) and (Single Task).

¹¹ Refer to RA 1225 – Air Safety Documentation Audit Trail.

¹² Refer to RA 1013 – Air Systems Operating Centre Director – Provision of Airworthy and Safe Systems.

¹³ For other Major Changes; the TAA will consult with the MAA and the RTSA to agree the requirement for Assurance activities.

**Acceptable
Means of
Compliance
1300(2)**

12. The MAA independent Audit of the RTSR Equipment DLoD scope **should** include (but is not limited to):
- a. Compliance of design with appropriate standards (this will normally be based on the results of Type Certification).
 - b. Review of build concessions.
 - c. Build quality.
 - d. RTSR content.
 - e. Independent Safety Auditor and Independent Technical Evaluator scrutiny.
 - f. Maturity of the Air Safety Management System.
 - g. Review of Audit observations.
 - h. Type Airworthiness arrangements¹⁴.
 - i. Continuing Airworthiness arrangements¹⁵.
 - j. Personnel competence.
13. TAAs **should** liaise with Equipment / Commodity Delivery Teams (DT) to ensure the Hazards posed to the Air System or crew by the carriage, interfacing, and operation of equipment is addressed in the Type Airworthiness Safety Assessment (TASA)¹⁶, which will be reflected in the ASSC and in the RTS by including all limitations applicable to the airborne carriage of stores or equipment on that Air System. In cases where common equipment, weapons, and AE are to be fitted to several Air System types, the Equipment / Commodity DT **should** produce a Safety Assessment covering the Safety features of the equipment and the achievement of the Design Safety Target (DST).

**Guidance
Material
1300(2)**

Release To Service Recommendation

14. To facilitate delivery of the Air System into service it might be necessary to clear certain aspects of the Air System in advance of others. In such cases, the RTS will proceed in stages. The priority of each stage will be agreed between the appropriate Front Line Command (FLC) Capability organization, the RTSA and the TAA.
15. The following will apply to the use of limitations in the RTS:
- a. Safety limits are those that are overriding and ensure that the Air System can be operated safely within its intended role. They, in some cases, may represent the boundaries of the evaluated envelope where, in the context of the planned operational role of the Air System and without prejudice to Safety, it was not cost-effective or a requirement to explore in full the possible operating envelope.
 - b. Unless the system is credibly 'self-limiting' in use, the limits to which the TAA has approved the system will be presented within the RTS.
16. The TAA and RTSA decision on inclusion of degraded mode limitations will need to take account of the probability of encountering the degraded mode and of the severity of any Hazards specifically associated with that mode. In some cases the general advice within the Aircrew Manual (AM) and normal standards of airmanship will be sufficient to deal with degraded modes. Only in unusual circumstances will it be necessary to consider presenting limitations for multiple independent failures or for second failures in the same system. It may be necessary to distinguish between the deliberate use of degraded modes (ie no actual failure), usually for training purposes, and operation in the presence of real failures. Indeed, in some cases, deliberate use of a degraded mode may have to be prohibited because of the severity of the associated Hazards.

¹⁴ Refer to RA 1015 – Type Airworthiness Authority – Roles and Responsibilities.

¹⁵ Refer to RA 1016 – Military Continuing Airworthiness Management.

¹⁶ Refer to RA 5012 – Type Airworthiness Safety Assessment.

Guidance Material 1300(2)

17. For new Air Systems and for Major Type Design Changes the TAA will have agreed an Integrated Test, Evaluation and Acceptance Plan with the FLC Capability organization, based on meeting the requirements of the User Requirements Document.
18. The RTSR approval will be recorded in Part A.1 of the RTS.
19. The RTSR will be submitted to the MAA for independent Audit / Assurance as follows:
- a. The initial RTSR for new Air Systems needs to be submitted to the MAA for independent Assurance. For Major Changes, the MAA, in consultation with the RTSA and TAA, will decide during MACP Phase 3 if the MAA will carry out an RTSR Audit.
 - b. Liaison with the RTSA(s) is mandated for new Air Systems and Major Changes that result in a new Mark number.
20. The RTSR submission will demonstrate clear Audit trails and specific reference to evidence and describe any further work to be completed.
21. The MAA independent Audit of the RTSR will examine equipment Risks and any associated RiL, the communication of those Risks to the RTSA and Operating Duty Holder (ODH) and, where appropriate, proposed mitigations.

Regulation 1300(3)

Limitations

- 1300(3) The RTS **shall** state the limitations and restrictions for the Air System.

Acceptable Means of Compliance 1300(3)

Limitations

22. The limitations in the RTS **should** be reflected in the appropriate elements of the ADS¹⁷.
23. Any limits in the RTS to be applied by Aircrew **should** be:
- a. Expressed so that they are observable using the controls and displays in the Air System and / or by following Standard Operating Procedures (SOPs).
 - b. Set with a consideration of the accuracy, precision and legibility of cockpit and crew station displays and the Aircrew's ability to interpret this information given the prevailing workload.

Guidance Material 1300(3)

Limitations

24. The limitations in the RTS will be used in the formulation of the Air System's operating envelope as well as contingency and war plans, flying and operating orders.
25. Within the RTS, if a system or equipment is part of the configuration in the RTS, but no limitations for it are detailed in Parts B to D, then it will be cleared for its intended use - as expressed in the ADS - without further limitation. It is sufficient for the RTS to use the phrase "Information and procedures contained within Air System publications".
26. In order to provide the Aircrew with the complete set of limitations for the Air System, it may be necessary to provide the limitations that apply when certain failures have occurred.
27. The need for completeness demands that the limitations of individual systems are revealed, but there is potential for confusion over the precise operating limits. Such situations will be discussed with the ADS Publication Organization so that the information in the RTS and AM is presented in a coherent fashion.
- a. The overarching release, in Parts A or B, will reflect the most restrictive limit for the whole Air System and needs to be annotated to show the system or characteristic which applies. Individual systems' limits need to be reflected in

¹⁷ Refer to RA 1310 – Air System Document Set.

**Guidance
Material
1300(3)**

Parts C or D, but they will be cross-referred to the most restrictive limit in order that there is no doubt about the precise operating envelope of the Air System.

b. Basic limits will be represented in Parts B and C (only if these limits are changed will mention be made in Part D).

c. Role-related limits will be represented in Part D. It is quite possible that role limits (in Part D) will affect what is defined within the basic Air System parts (Parts B and C).

28. Limitations identified as 'OECs', 'pre-mod / post-mod', 'Installation only' and 'Switch on only' are Safety limitations because they represent procedural Risk mitigations. They are not to be thought of as management limitations. The situation with respect to a limitation designated 'Normal Operating' may be different. There will be circumstances in which a limitation designated 'Normal Operating' may also represent a procedural mitigation that reflects the way in which Aircrew are trained and hence is not to be exceeded.

29. Cross-referencing of limitations will reduce the potential for inconsistencies. However, in some cases, a system that would otherwise restrict the whole Air System might not be vital for flight, or special operating procedures might be invoked, to ensure Safety and thus avoid damage to equipment. In such cases, which will be supported by the TASA, the limitation in Part B will be relaxed accordingly. This will require full and explicit reference to the relevant system limitations, in Parts C or D, and to the operating procedures in other parts of the ADS.

30. Where different limitations apply to different Modification states of the Air System or equipment (for example when Air Systems are being progressively modified in-Service) then split limitations will be stated. These will normally be of the form "pre-mod nnn...; post-mod nnn..." and the Modification identified within Section A.6. When appropriate, and when the TAA has confirmed with the Military Continuing Airworthiness Manager that all Air Systems are of the same Modification standard, the RTS will be amended to remove the split limitation.

31. When setting limitations, the ability of the Aircrew to observe the limit has to be considered. It is important to note that the only means Aircrew have to respect limitations are by reference to the controls and displays in or from the Air System and / or by following SOPs. Where a limit is unobservable, an alternative approach may be by means of a procedure to ensure that the limits are observed.

**Regulation
1300(4)**

Operational Emergency Clearance

1300(4) An OEC **shall** be raised when there is likely to be an increased RtL associated with the Air System's usage, compared to the Risk identified within the Design Safety Target.

**Acceptable
Means of
Compliance
1300(4)**

Operational Emergency Clearance

32. An OEC **should** be identified when the Air System operates outside of its Design Safety Target.

33. An OEC **should** be authorized by the RTSA and only enabled at ODH level for a given activity and defined period following the ODH review of their Safety Statement.

34. Where appropriate, the ODH **should** declare, in their Safety Statement, to which Operation (including training for said Operation) or to which trial the OEC applies. In the absence of a named operation, the ODH **should** state the operational or force generation imperative for the OEC.

35. OEC review periodicities **should not** exceed 12 months.

36. The TAA **should** subject the proposed OEC to a Safety analysis and update the existing TASA¹⁶ as appropriate.

Guidance Material 1300(4)

Operational Emergency Clearance

37. An OEC will only be used for flight under either of the following circumstances:
- In conditions of actual or potential hostile enemy action, other life-threatening emergency situations, or associated training.
 - In the evaluation of options needed for contingency planning, including any Test and Evaluation trials.
38. Although the TAA might not be the instigator of an OEC, they are expected to submit the RTSR. The TAA will then ensure that a clear explanation of the applicable Type Airworthiness Hazards¹⁸ and related operating instructions to support the OEC are incorporated in the ADS.
39. The ODH will ensure that the procedures required for an OEC to be enabled, guidance on the Risk involved, and related operating instructions are specified in appropriate flying orders.

Regulation 1300(5)

Clearance with Limited Evidence

- 1300(5) A CLE **shall** be raised when a fully substantiated TASA is not available to support a full RTS clearance but, on the balance of available evidence, the clearance is judged to remain within the required Design Safety Target.

Acceptable Means of Compliance 1300(5)

Clearance with Limited Evidence

40. A CLE **should** be used when a fully substantiated TASA is not available to support an RTS clearance but, on the balance of available evidence, the Air System continues to operate within its Design Safety Target.
41. CLE review periodicities **should not** exceed 12 months.
42. A CLE **should** have a maximum life of 5 years.
43. Where a CLE involves a change to Type Design, the MACP requirements^{4, 19} **should** be met.

Guidance Material 1300(5)

Clearance with Limited Evidence

44. While unusual, an Air System can be flown on the basis of a whole Air System CLE. However, this approach requires early engagement with the MAA and will require authorization by the Secretary of State for Defence.
45. There is an expectation that a CLE will be incorporated as a full RTS clearance within 5 years. It is recognized that factors may mitigate against obtaining sufficient evidence to be able to underpin an upgrade to a full RTS clearance. In this case the procedures outlined in MAA03²⁰ must be followed. All CLEs with a life beyond 5 years, and those due to go beyond the 5 years prior to the next Air System Safety Working Group (ASSWG), will be articulated at the ASSWG.
46. For the avoidance of doubt, the use of a CLE does not in itself obviate the need for Certification of the Design Change / Air System iaw the MACP detailed in RA 5810⁴. If the TAA proposes to make an RTS Recommendation prior to full completion of the MACP, then a Waiver must be sought against the application of RA 5810⁴.

Regulation 1300(6)

Authorization

- 1300(6) The RTS and subsequent changes **shall** be authorized by the RTSA.

¹⁸ Refer to RA 5011 – Type Airworthiness Safety Management System.

¹⁹ Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D).

²⁰ Refer to MAA03: Military Aviation Authority Regulatory Processes.

**Acceptable
Means of
Compliance
1300(6)**

Authorization

47. The RTSA **should** conduct independent Assurance of the ASSC prior to authorization of the initial RTS²¹.

48. The initial issue and subsequent changes to the RTS **should** be authorized by the RTSA with delegated authority from the appropriate SDH. The RTSA has the right to delegate authority to authorize changes to a DRTSA who **should** be OF5 (or equivalent) or above.

**Guidance
Material
1300(6)**

Authorization

49. The RTSA will assure that all organizations that have a long term role and involvement with the RTS and the ASSC are kept informed of changes to the design standard. The ODH will assure that any changes to the usage In-Service are reflected in the Statement of Operating Intent and Usage²² and that the RTSA and TAA are informed of such changes.

**Regulation
1300(7)**

Configuration Control and Audit Trail

1300(7) The RTS **shall** be amended and maintained to reflect the Aircrew related configuration(s) of the Air System.

**Acceptable
Means of
Compliance
1300(7)**

Configuration Control and Audit Trail

50. The RTS **should** be amended to reflect any changes to limitations arising from changes in design, operation, or the conditions in which the Air System is used throughout the Air System's In-Service life.

51. The Air System's TAA **should** ensure all changes to limitations of the Air System are recorded in the RTSR.

52. The RTSA **should** provide and maintain an auditable trail for all changes to the RTS¹¹.

**Guidance
Material
1300(7)**

Configuration Control and Audit Trail

53. The full Audit trail need not be produced in Part G of the RTS.

54. Amendments to the RTS will be required when limitations or restrictions are removed, revised or introduced. These may occur as a result of:

- a. Modifications which alter the design standard;
- b. Where other changes affecting limitations or restrictions are authorized;
or
- c. When documents referenced in the RTS are raised in issue or amendment number.

²¹ Refer to RA 1205 – Air System Safety Cases.

²² Refer to RA 5726 – Integrity Management.

ANNEX A
RELEASE TO SERVICE
STRUCTURE AND INSTRUCTIONS FOR USE

PRESENTATION OF RTS TEXT

1. In this Annex (Page 16 onwards) the following conventions are used:
 - a. All normal text, including headings, will be used as shown.
 - b. Italic text within brackets *{example}* is used to show where text appropriate to a specific RTS is required.

c. *Italic text presented within shaded boxes is not required in the RTS; rather it provides guidance on the required RTS content.*

d. Normal text shown within double-line boxes is where mandatory content is defined, but the presentation is not specified.

- e. A table shaded and italic text used, as below, indicates that it is an example of an acceptable format.

<i>Mod N^o</i>	<i>Description</i>	<i>Affects RTS or not fully integrated into Air System Document Set (ADS)</i>	<i>RTS Reference</i>	<i>Review Date</i>

NON-APPLICABLE SECTIONS

2. The Parts of the RTS (A to G) are mandatory for all Air Systems.
3. The sections within each Part are also mandatory, and each heading must exist within all RTS.
4. Some Sections will not be applicable to some Air Systems (eg Remotely Piloted Air System (RPAS), C.1 Aircrew Equipment, or C.3 Auxiliary Power Units); in such cases, the section heading **should** be used, with the text 'This section is not applicable to the *{Air System type and mark number}*'.
5. There may be occasions where the Section is applicable, but there are no limitations that need to be expressed (eg C.10 - Undercarriage). In such situations, the section heading **should** be used with the text 'Information and procedures within Air System publications'.

SUB-SECTION TITLES

6. Each RTS section may be divided into as many sub-sections as required for each individual Air System. The layout of these sub-sections is at the discretion of the RTSA. Part D of the RTS is Air System specific, and therefore no detailed guidance can be given on its content or layout. However, the principles detailed above will be used to define how Part D will be used.

SUB-SECTION NUMBERING

7. The numbering of sub-sections will follow the same format as that used within the RTS. Therefore, in Section A of the RTS, Level 1 is an 'A' followed by a single digit (eg 'A.n'), Level 2 is 'A' followed by 'n.n' (eg 'A.n.n'), etc.

CLASSIFICATION

8. The Classification of an Air System RTS **should** be in line with the guidance provided within JSP 440²³ Part 4 Section 1: Classification Policy. If information of a higher classification than OFFICIAL – SENSITIVE must be included in the RTS, rather than in another part of the ADS (such as the Tactics Manual), or a classified part of the Aircrew Manual, this will be presented as a separate 'Classified Supplement' to the RTS. In these circumstances, both the main and supplementary parts of the RTS have their own Preliminary Pages and RTS Statement. The supplement uses the same numbering system for Parts and sub-sections as the main, but to keep it to the minimum number of pages, the supplement need only include those Parts and sub-sections that are directly relevant.

CONFIGURATION CONTROL

9. All pages in the RTS (including the Preliminary Pages and any blank pages) must show their Issue and Amendment status.

²³ Refer to JSP 440 – The Defence Manual of Security, Resilience and Business Continuity.

10. If a 'Classified Supplement' is used it will need to be under separate configuration control (ie with its own Issue and Amendment Status). The RTSA must ensure that the main RTS and a supplement are always coherent and both the main RTS and the supplement must be cross-referenced to the Issue and Amendment status of the other.

ELECTRONIC FORMATS

11. The RTS may be provided solely in electronic format.

CONTENT APPROPRIATE TO THE RTS

12. The RTS is the primary document of the ADS and, where appropriate to provide supporting detail, it will contain cross-references to other documents within the ADS.

13. In judging what content is appropriate to the RTS, and how to handle Safety information, authors need to consider 5 principles:

- a. Relevance. Is the information relevant to the aim of the RTS? Does it help define the Safety envelope of the Air System?
- b. Completeness. If the information is relevant, it needs to be presented without omissions.
- c. Target Audience. Is the information relevant to the target audience?
- d. Coherence. The RTS is to be coherent with the other documents in the ADS. Early liaison with other ADS authors is essential to ensure that the whole ADS is a coherent and seamless source of Safety information.
- e. Responsibility. Authors need to be aware of their overarching responsibility for providing Safety information. Where an author decides not to include information, they must take positive steps to provide an auditable trail to show why the information has not been included and bring this to the attention of the Air System DT.

PROCEDURES

14. It is common for procedures to find their way into the RTS; however, only those procedures that are directly essential to enable compliance with a limitation **should** be included. All other procedures **should** be placed in the Aircrew Manual or SOPs issued by ODHs, Force SOPs or a Technical Publication.

PLACING INFORMATION IN PARTS

15. Although the Part and section headings can be defined for the RTS, it can be rather more difficult to decide in which Part a specific Air System limit needs to be placed. It is recommended that the technique used to derive the Part headings (see Table below) is used for deciding in which particular RTS Part information needs to be placed.

Table 1. Placing Information in Parts of the RTS.

Question	Response	Action
1. Is the information supported by a fully substantiated Safety Assessment that has been accepted by the Type Airworthiness Authority (TAA) and RTSA?	No	Cannot be included in the RTS, unless as a Clearance with Limited Evidence or an Operational Emergency Clearance, is placed in Parts B-D as appropriate; it must be recorded in Part F
	Yes	Go to Q2
2. Is the information of a temporary nature?	Yes	Place in Part E
	No	Go to Q3
3. Is the topic an actual limitation that the Aircrew must obey?	Yes	Go to Q5
	No	Go to Q4
4. Is the topic engineering information?	Yes	Place in Part A (directly or by explicit cross-reference)
	No	Not legitimate RTS content, place elsewhere in the ADS
5. Does the limitation apply whenever the Air System is flown, regardless of configuration?	Yes	Go to Q6
	No	Place in Part D
6. Does the limitation affect the overall Air System flight envelope or handling?	Yes	Place in Part B
	No	Go to Q7
7. Does the limitation relate to an Air System?	Yes	Place in Part C
	No	Not legitimate RTS content, place elsewhere in the ADS

16. Where different limitations apply to different Modification states of the Air System or equipment (for example when Air Systems are being progressively modified In-Service) then split limitations must be stated. These will normally be of the form 'pre-mod nnn...; post-mod nnn...' and the Modification identified at Part A within Section A.6. When appropriate, and when the TAA has confirmed that all Air Systems are to the same Modification standard, the RTS must be amended to remove the split limitation.

RECORDING OF MODIFICATIONS

17. Air System Modifications will be recorded by the TAA in the ADS under their configuration control. The RTS is not the repository of all Modifications embodied on the Air System, however, some Modifications need to be identified to Aircrew. A Modification affects the RTS when it is necessary to identify different limitations and / or procedures for the pre-mod and / or post-mod conditions of the Air System or equipment. Those Modifications affecting the RTS **should** be recorded in Part A.6 utilizing two headings for "Design Modifications (DM)" Part A.6.2 and "Service Modifications (SM) and Alternative Design Organization Modifications (ADOM)" Part A.6.3 and **should** be listed separately. Modifications may be listed numerically or by system (Engines, airframe, avionics, etc). Once a Modification has been superseded (Fleet embodiment, subsequent Modification, etc) it **should** be removed from the RTS.

CONTENTS OF THE RTS

PRELIMINARY PAGES

PART A - AIRWORTHINESS AND DOCUMENT MANAGEMENT

PART B - AIR SYSTEM DESIGN AND HANDLING LIMITATIONS

PART C - SYSTEM LIMITATIONS AND CONSTRAINTS

PART D - ROLE LIMITATIONS AND CONSTRAINTS

PART E - TEMPORARY INFORMATION

PART F - CLEARANCES WITH LIMITED EVIDENCE / OPERATIONAL EMERGENCY CLEARANCES

PART G - RTS HISTORY

Preliminary pages

Classified Supplement: *When the document is a Classified Supplement the following statement will be inserted at the head of this page; it is vital that the Supplement and main document are coherent at all times:*

This document is the Classified Supplement to the RTS for the {Air System identifier}. This Supplement will be read in conjunction with the main document {document reference} at {Issue} and {amendment}.

The preliminary pages of the RTS must contain the following sections:

*List of Contents
List of Amendments
List of Effective Pages
List of Abbreviations
Definition of Terms
Distribution*

Note: Conventionally each of the above elements of the Preliminary pages would start on a new page.

List of Contents

A List of Contents will be provided, to a level of detail defined by the RTSA. The following represents the minimum list:

Preliminary pages

Part A - Airworthiness and Document Management

Part B - Air System Design and Handling Limitations

Part C - System Limitations and Constraints

Part D - Role Limitations and Constraints

Part E - Temporary information

Part F - Clearances with Limited Evidence / Operational Emergency Clearances

Part G - RTS History

Classified Supplement: *When there is a Classified Supplement, the following statement will be inserted at the end of the List of Content, and the reference included at A.7.4:*

Classified Supplement – There is a Classified Supplement to this RTS. It is issued under a separate distribution.

List of Amendments

<i>An amendment list must be provided to record all amendments made to the RTS, eg:</i>		
<i>Amendment number</i>	<i>Date</i>	<i>Detail of Changes</i>

List of Effective Pages

An important element of document control is a correct and auditable amendment procedure. To achieve this the RTS will have a 'List of Effective Pages' which will be updated by every amendment eg:

<i>Page</i>	<i>Issue / Amendment</i>	<i>Page</i>	<i>Issue / Amendment</i>

List of Abbreviations

The RTS must provide a consolidated list of the abbreviations used throughout the document as an aid to the reader. Where appropriate, this list will include specific labels and / or captions in the Air System that are used to define limitations (in which case they must reproduce the presentation in the Air System exactly in relation to (mis-) spelling and capitalisation and not follow any particular style conventions in use in the RTS). No further expansion of abbreviations need be used throughout the document.

Definition of Terms

It is important to the use of the RTS and the overall Airworthiness of the Air System, that there is a clear and common understanding of the terms used within the RTS. Therefore, every RTS will have a section dealing with the definition of terms.

Many of the terms used within an RTS are common to all Air Systems, and hence must be defined in all RTS. The following must be included in all RTS:

Term	Definition
Airworthiness	The ability of an Air System or other Airborne Equipment or system to be operated in-flight and on the ground without significant Hazard to Aircrew, ground crew, Passengers or to third parties; it is a technical attribute of materiel throughout its lifecycle.
TAA-approved Design Standard	The Standard is the standard to which the RTS applies. The TAA has the discretion to use a reference design standard that is other than the Design Organization (DO) Configuration Status Record (CSR). The TAA must be satisfied that there is a Safety Assessment for this reference design standard and that configuration control procedures are equivalent to those required for a CSR.
CAUTION	When the consequence of not respecting a limitation might be damage to the Air System or equipment.
Installation only	The equipment may be fitted but must not be operated in-flight. It will be isolated iaw a defined scheme unless it has been shown that inadvertent operation represents an acceptable Hazard.
Note	To clarify the reason for a limitation.
Operational Emergency Clearance (OEC)	A clearance within the Release To Service (RTS) for an Air System that does not achieve the Air System Design Safety Target. This judgement may be substantiated by an Type Airworthiness Safety Assessment (TASA) or on limited available evidence. An OEC will only be authorized by the RTS Authority once it is assured that any operating Risks have been communicated to, and accepted by, the appropriate Aviation Duty Holder.
Clearance with Limited Evidence (CLE)	A clearance within the Release To Service (RTS) for an Air System when a fully substantiated TASA is not available to support a full RTS clearance but, on the balance of available evidence, the clearance is judged to remain within the required Air System Design Safety Target.

Prohibited	Operation in the manner described, or of the equipment specified (as appropriate), is prohibited because the associated Risk is unacceptable. The Risk may be judged unacceptable because it is either too high or because there is insufficient knowledge to determine the likelihood of encountering a severe Hazard.
Switch-on only	Operation of the equipment does not interfere with the proper operation of any other equipment or system fitted to the Air System. The equipment may be fitted and may be operated in flight within the limitations defined (which may therefore restrict such operation to specific phases of flight and parts of the flight envelope) but cannot be relied upon to function correctly (which may include incorrect functioning of any failure indications). The Air System will not be operated in any way that places any reliance whatsoever on the proper functioning of this equipment.
“Cannot be Relied Upon” and “Not to be Relied Upon”	“Cannot be Relied Upon” – correctly forms part of the definition of “Switch on only” which applies to phased clearances as defined in Reg(3). However, “Cannot be Relied Upon” and “Not to be Relied Upon” may also be used more widely to provide limitations on a system in a Special or Full Clearance. These limitation(s) should provide direction on how the system may be used ²⁴ , and / or which parts or elements of the system, its information or envelope are unreliable and when ²⁵ . It follows that a “Cannot be Relied Upon” or “Not to be Relied Upon” clearance may provide limitations for conditional or partial reliance rather than prohibiting “any reliance whatsoever” as is the case for “Switch on only”.
Temporary Information	Temporary Information includes: Temporary Clearances, Temporary Restrictions, and Temporary Information Notices. The details of Temporary Information will be located in Part E of the RTS. Within Temporary Information, where a Temporary Clearance is used, it is to be of a genuinely transitory nature (eg the clearance of a Modification for a short duration trial after which it will be removed, test equipment for short term use only, etc). Temporary Clearances with a fully substantiated and evidenced Safety Assessment would be included in Part E of the RTS as stand-alone entries (not covered by an OEC or CLE); if the Safety Assessment is not fully substantiated or does not meet the Design Safety Target, the Temporary Clearance would also need to be covered by either an OEC or CLE and listed / cross-referenced in Part F. Temporary Clearances will be expected to reference the specific Air System tail numbers or other applicability restrictions (eg Aircrew requirements, software loads, operating restrictions, etc) it is applicable to.
WARNING	When the consequence of not respecting a limitation might be death and / or injury.

*In addition to these there may be other terms that are specific to the Air System type; these **should** all be clearly defined.*

Presentation of WARNINGS, CAUTIONS and Notes

*The convention used for presenting **WARNINGS, CAUTIONS**²⁶ and Notes within the RTS needs to be explained. The appropriate statement will be selected from the following:*

The **WARNINGS, CAUTIONS** and Notes are placed as close as practicable to the relevant limitation / procedure.

or

The **WARNINGS, CAUTIONS** and Notes are called out and numbered within each sub-section, and placed at the end of the relevant sub-section within each Part.

or

²⁴ For example – Not to be used as the sole source of reference for position - for a particular moving map system.

²⁵ For example – **Should not** be relied upon to provide altitude information of the target - for a particular Traffic Advisory System.

²⁶ **WARNINGS** and **CAUTIONS** are written in upper case and bold.

The **WARNINGS, CAUTIONS** and Notes are called out and numbered within each Part and placed at the end of the relevant Part.

Distribution²⁷

Necessary to ensure amendments are promulgated to all document holders

Action:

Mandatory:

RTSA	<i>Master copy and to promulgate the RTS</i>
ODH	
TAA	
MAA	<i>For independent assurance of new Air Systems and Major Changes to existing Air Systems only</i>

Information:

Mandatory:

DT Safety Manager / RTS Manager	
DO	<i>For comparison with Air System design assumptions and limits.</i>
Delivery Duty Holder (DDH)	
Officer Commanding Defence Aircrew Publications Squadron (OC DAPS)	<i>For comparison with Aircrew documentation data.</i>
Operating Data Manual (ODM) Agency	
Military Continuing Airworthiness Management Organization (Mil CAMO)	

²⁷ The RTSA may add other addressees to the distribution list.

Part A – Airworthiness and Document Management**A.1 RTS STATEMENTS²⁸**

All RTS statements must use a common standard of wording.

A.1.1 APPROVAL OF INITIAL RTSR ISSUE

I recommend the initial issue of the RTSR for the *{Air System type and mark}* to the RTSA.

{signature}

{name}

{Post of the 2 Operating Centre Director (OCD) with appropriate delegated airworthiness authority}*

{date}

A.1.2 AUTHORIZATION OF INITIAL ISSUE

The *{Air System type and mark}* is released for flight subject to the limitations stated in this initial issue RTS.

The limitations of the RTS are the definitive limits for the Air System in Service. Where any conflict arises between this RTS and any other Air System documentation, the limitations in the RTS are overriding.

Authorized holders of the RTS are to ensure that all RTS documents that define current flight limitations are kept with this authority under one cover.

The authority for authorizing changes to this RTS is vested in *{appropriate post title}* as my DRTSA for the *{Air System type and mark}*.

{signature}

{name}

{rank}

{RTSA}

{date}

²⁸ On initial Issue for new Air Systems and Major Changes that result in the Mark Number for the Air System changing, the RTSR must be approved by the 2* OCD and the RTS must be authorized by the RTSA. Subsequent (routine) amendments of the RTS can be delegated for authorization by the Delegated RTSA (DRTSA).

A.1.3 CERTIFICATION OF SAFETY AND AIRWORTHINESS

I certify that the *{Air System type and mark}*, when operated iaw the RTS at Issue *{number}* amendment *{number}*, including those CLEs listed in Part F.1, is airworthy and that the overall Risk is in the order of the Project Safety Target.

Clearances which carry a higher level of Safety Risk are identified as OECs and their use, once authorized by the RTSA, requires specific approval by the relevant ODH iaw RA 1300 Regulations 4 and 5.

Clearances in Part E and F that are not supported by a fully substantiated Air System Safety Case (ASSC) or Type Airworthiness Safety Assessment (TASA) are authorized for inclusion in the RTS by the RTSA.

The authority for the exposure to, and the ownership and management of, the residual Risk associated with the clearances in Part E and F lies with the Aviation Duty Holder (ADH) chain.

{Signature}

{name}

{Type Airworthiness Authority for the {Air System Identifier}}

{Date}

A.1.4 AUTHORIZATION OF AMENDMENT (not required for initial issue)

As the Delegated Release To Service Authority, I authorize amendment *{number}* to issue *{number}* of the *{Air System type and mark}* RTS.

The following wording is required if not included in the initial authorization statement for legacy RTS (delete this sentence when populated)

The limitations of the RTS are the definitive limits for the Air System in Service. Where any conflict arises between this RTS and any other Air System documentation, the limitations in the RTS are overriding.

Authorized holders of the RTS are to ensure that all RTS documents that define current flight limitations are kept with this authority under one cover.

{signature}

{name}

{rank}

DRTSA {Service}

{date}

A.2 Introduction

A.2.1 Purpose: The initial RTSR is the statement by the TAA approved by the OCD, to the RTSA that an acceptable TASA has been prepared for the Air System and its equipment, and forms the basis for the initial RTS of the Air System.

The RTS describes the approved Air System configuration(s), the operating envelope, limitations, design standard, standard of operational software and the parameters within which the ASSC has been established, and to which the Air System or equipment may be flown in Service regulated flying. It also includes the approved OECs and CLEs, and advice on their application.

A.2.2 Structure: This RTS comprises RTS statements and 7 supporting parts:

Part A covers the purpose and management of the RTS and any other relevant information that does not appear as a flying limitation.

Part B covers limitations on the handling and use of the basic Air System.

Part C covers those additional limitations and constraints that may be imposed by systems integral to the Air System.

Part D covers those limitations and constraints imposed when the Air System is operating in a particular role.

Part E details Temporary Clearances and the management of temporary information.

Part F details Clearances with Limited Evidence and Operational Emergency Clearances.

Part G enables the production, content and evolution of the RTS to be audited.

The limitations in Parts B to E may be either: for normal use (ie in peace and war), or for operational emergency use only.

All permanent information that has been derived from the ASSC will be included within the main Parts B to D, of the RTS, with temporary information, also having been derived from the ASSC, being covered by Part E.

A.2.3 Amendment: Amendments will be promulgated automatically to the agencies detailed within the distribution list. Suggestions for amendment are to be forwarded to:

{Contact details of the RTSA Desk Officer}

A.3 Description

The *{Air System identifier}* is an *{Air System description}*, procured against *{reference to agreed characteristics against which contract was let}* for use by *{service operator}* in the following roles:

{Primary Roles}

{Secondary Roles}

{Tertiary Roles}

The *{Air System identifier}* was designed to meet the requirements of *{Type Certification Basis (TCB), design standard eg EASA, JAR, FAR, Def Stan (including anthropometric considerations)}*. It is manufactured in *{country of origin}* by *{manufacturer}* under *{arrangements to ensure manufacture will meet the design}*.

The DO(s) for various elements of the Air System are listed below:

This list will highlight all DOs who have a role in maintaining the Configuration Control of the Air System.

Air System: *{Air System DO}*

Engine: *{Engine DO}*

Equipment or major system: *{Equipment or Co-ordinating DOs}*

The MAA has examined compliance with the Type Certification Basis (TCB) and has issued a Military Type Certificate / Statement of Type Design Assurance / Approved Design Change Certificate *{delete as appropriate}* file reference ###.

A.4 Air System Life and Fatigue

The limitations in Parts B, C and D are valid for the life of the Air System. The Air System life is *{eg x hours or assessed on condition}*. This life and elements of the maintenance and servicing schedule are based on the following assumed spectrum:

{Design Usage Spectrum}

A.5 Statement of Operating Intent and Usage (SOI / SOIU)

The use of the *{Air System identifier}* has been reviewed by the ADH and TAA within the roles and fleets as detailed below:

{List of all Marks, Roles or fleets (groupings) of Air System that operate to different usage spectrum.}

The Statement of Operating Intent / Statement of Operating Intent and Usage (SOI / SOIU) *{delete as appropriate}* for *{Air System identifier}* has been issued at *{SOI / SOIU reference}* and has been passed to *{Air System DO}* for comparison against the assumed design spectrum. Any perceived differences between the Air System use described by the SOI / SOIU and the way in which the Air System is actually being operated are to be highlighted to *{SOI / SOIU issuing authority}* for resolution or SOI / SOIU amendment.

{SOI / SOIU executive summary}

A.6 Air System Configuration

The design standard of *{Air System identifier}* to which this RTS applies is given below:

Users of the RTS are to note that, unless listed or referenced below, a Modification / item of equipment is not authorized to be fitted or used. In case of doubt, refer to *{Contact details of the Delivery Team EA}*

Within section A6 the Air System Configuration will be built up through the sub-sections of:

A.6.1 Basic Design Standard

The initial design of the manufacturer. If there are several DOs, then multiple entries will be required.

Production Design Standard(s). Configuration Status Record *{number and issue state}*

A.6.2 In-Service Design Modifications and Alternative Design Organization Modifications

This will provide a cross-reference to a list that is under the configuration control of the TAA, all In-Service DM / ADOM introduced since the initial design.

SM / ADOM affecting the RTS:

Service Modifications and Alternative Design Organization Modifications affecting RTS

Mod N^o	Title	RTS Reference

A.6.3 Other equipment

Subject to RTSA / TAA's discretion, Modifications or authorizations for any equipment that is fitted to, or carried in, the Air System but is not covered by sub-sections A.6.1 or A.6.2 (ie Equipment Not Part of the Type Design). Everything listed under 'Other Equipment' must have a Safety Assessment to determine the Safety impact and any associated limitations incorporated in the ADS. Such Safety Assessments may be integral to (or supplements to) the TASA, or can be based on the equipment's own Safety Assessment, provided specific consideration of the Air System integration aspects is added.

Freight carried iaw standard rules is not included.

Aircrew Equipment Assemblies (AEA)

*This section **should** detail the AEA that has been specifically cleared for use with the Air System. Ideally cross reference **should** be made to AEA schedule DAP108B-0001-1 (providing appropriate procedures are in place for the TAA and RTSA to approve AEA introduction), thereafter the table of AEA in the RTS **should** endorse a limited amount of AEA. The limitations for AEA will be given at C.1.*

The following further sub divisions are suggested, but others may be used at the discretion of the TAA.

Role Equipment (when applicable)

The limitations for Role Equipment will be given at C.21 or Part D, as appropriate.

Armament and non-armament stores (when applicable).

The limitations for armament and non-armament stores will be given at C.20 or Part D, as appropriate.

Airborne Equipment (AE) (when applicable).

Helicopter Under-Slung Load Equipment (HUSLE) (when applicable).

Cleared Carry-on Equipment (when applicable).

The limitations for AE, HUSLE and Miscellaneous Items of Carry-on Equipment will be given at Part D. Where an OEC or CLE is provided it is referenced in Part F.

A.7 Related Documents

A.7.1 The production design is airworthy when operated by qualified Aircrew within the limitations promulgated in Parts B, C, D and E of this RTS and law the information and provisions contained in the following related documents:

Enter in the form given below for all Airworthiness related documents, including: AM, ODM, FRCs, Tech Pubs, MOD F700, etc.

{Document} to the latest standard, published and maintained by {publishing organization eg OC HS, ODM Agency} on behalf of {sponsor eg TAA / RTSA / ODH}.

A.7.2 To ensure the Air System retains its design Airworthiness it will be serviced and maintained iaw:

{Tech Pubs reference} to the latest standard, published and maintained by {publication organization} under the authority of {document sponsor}.

{Component lifing policy reference} to the latest standard, published and maintained by {publication authority} under the authority of {document sponsor}.

The following sub-section is used when appropriate.

A.7.3 Other documents referred to in this RTS which contain information relevant to the Airworthiness and operation this Air System are:

{Document Reference eg BRd766C} to the latest standard, published and amended by {publication organization} under the authority of {document sponsor}.

The following sub-section is used when appropriate to a main RTS document that has a Classified Supplement, or to the Supplement itself.

A.7.4 The Classified Supplement {Document Reference}, {Issue}, {Amendment}.

or

The main RTS {Document Reference}, {Issue}, {Amendment}.

Part B – Air System Design and Handling Limitations

This part of the RTS contains Air System design and handling limitations that provide for airworthy operation of the Air System by qualified Service Aircrew. This part covers the information to Aircrew, for limitations that are basic to flying the Air System without external stores or other role equipment fitted. Thus it covers items such as: speed, altitude, manoeuvres, environmental conditions, take-off and landing etc. They are to be expressed in a manner that allows them to be respected by the Aircrew. The conditions pertaining to a particular limit are to be expressed unambiguously. Where the meaning of a term is not formally defined it needs to be explained (eg ramp mass). Conflict, or perceived conflict, of information will be avoided. When operation is dependent on the Air System configuration this will be expressed unambiguously (eg including reference to the relevant Modification number).

Where an OEC or CLE is appropriate, it is referenced in Part F and the detail is placed in Part B.

B.1 Environmental Conditions

Snow, icing, cold weather limits; hot weather limits; operation in sandy or dusty environments.

B.2 Temperature Envelope

Maximum and minimum temperatures (ie with reference to International Standard Atmosphere see also Def Stan 00-970, Part 1, section 7) for ground operation and flight; dew point limits; hot and cold soak limits. To assist the Aircrew an indication needs to be provided as to where the temperature will be measured.

B.3 Flight Envelope

Altitude / Speed / All Up Mass limits expressed in written or (preferably) graphical form (eg flight velocity diagrams). Instrument flying and degraded mode flight envelopes, formation flying, speeds limits for systems (eg flaps, undercarriage) and degraded systems (eg one hydraulic system) etc.

B.4 Mass and Centre of Gravity

Maximum all up mass (AUM) and any other AUM related limits eg maximum take-off mass if different to landing mass, maximum towing mass, jacking mass slinging mass. Longitudinal and lateral centre of gravity limits. This may be a graph with AUM and CG as the axes. For Fixed Wing Air Systems, it may include: ramp mass, maximum take-off mass, maximum overload take-off mass, maximum landing mass and maximum fuel mass. (Note that this document takes the scientific view that mass is not the same as weight).

B.5 Manoeuvre Limits

Angle of bank limits (may be a graph); G limits, incidence, stalling and spinning, roll limits, aerobatics and unusual manoeuvres. For Rotary Wing Air Systems, it may include: hovering and low speeds flight envelope; spot turn limits. Note any additional limits with external configurations by referring to roles (Part D).

B.6 Ground Operations, Take-Off and Landing

Airfield or alternative surface limitations; ground running restrictions; towing and taxiing; Air System tie down / restraint arrangements for engine ground runs; for Rotary Wing: rotor brake, rotor engaging and disengaging; cross wind take-off and landing; maximum rate of descent on landing; Air System arresting systems; sloping ground limits; undercarriage, tyres and brakes limits; taxiing limits; running take-off and running landing limits; engine off landings. Limitations on ship operations: ships from which operation is cleared or prohibited, airspeed and approach limits, landing spots etc.

B.7 Instrument and Night Flying

Limitations for unaided instrument or night flying (ie without NVGs etc). Any special to type limits which need to be observed only at night. Any external configurations which affect these and refer to Part D. Refer to instrument flying envelope at Paragraph 1. Helicopter Type Allowance (needs to state if pressure error is or is not included) and any special to type limits.

B.8 Electro-Optic Flying

Air System / equipment combination related limits only; NOT equipment related limits for flying with NVG, FLIR, visor displays etc. May include primary and reversionary modes. Equipment-related limitations (eg those relating to temperature storage of NVG) must not be included in the RTS but must appear in the appropriate equipment publication. Aircrew will be aware of equipment limitations by receiving the required training before they are authorized to use it.

B.9 Electromagnetic Compatibility

Basic Air System HIRTA limits; reference to any additional limits due to role configuration (Part D).

B.10 Minimum Crew

Minimum Crew. The minimum number of Certificate of Qualification on Type (CQT) Aircrew (Pilot and Non-Pilot) will be stated. Additionally, due to the nature of RPAS operations, the minimum number of Ground Crew required during the launch and recovery phase will be stated.

Guidance Material. The minimum crew will be determined by the Design Organization. Stipulation of minimum Crew by task (eg take-off and landing) or Crew position (eg cockpit seat or RPAS Remote Pilot Station position) may be required.

Guidance Material. Operation of the Air System by non-CQT personnel (eg test flying, students, Passengers, Supernumerary Crew) as permitted within the MRP 2000 Series²⁹, will be detailed in ADH / AM(MF) Orders.

²⁹ Refer to the 2000 Series: Flying Regulations (FLY).

Part C – System Limitations and Constraints

This part of the RTS covers those systems integral to the Air System and contains limitations that provide for airworthy operation of the Air System by qualified Service Aircrew. Only system limitations that have an impact on the airworthy operation of the Air System, to a required performance standard, by qualified Service Aircrew are to be included. They are to be expressed in a manner that allows them to be respected by the Aircrew. The conditions pertaining to a particular limit are to be expressed unambiguously. Where the meaning of a term is not formally defined (eg ejection mass) it needs to be explained. Conflict, or perceived conflict, of information will be avoided. When operation is dependent on the Air System configuration this will be expressed unambiguously (eg including reference to the relevant Modification number).

Where system limitations are wholly described in Part B they need not be repeated in Part C. Where this is not the case, system limitations need to be comprehensively covered under the relevant heading.

Role-related limitations (ie those covering different external stores configurations and specific roles) will appear in part D.

Where an OEC or CLE is appropriate, it is referenced in Part F and the detail is placed in Part C.

C.1 Aircrew Equipment

Where there are Air System limitations associated with the equipment / Air System combination they will appear here. Equipment limitations will only appear in the RTS when they need to be brought to the attention of the Aircrew and do not exist elsewhere. For RTS purposes Aircrew equipment includes Carry-on Equipment.

Any items specifically cleared for use need to be either listed in the AEA section of the Design Standard in Part A or covered by a Modification.

C.2 Fuels, Oils and Lubricants

List of all permitted fuels³⁰, oils and lubricants, use of icing inhibitors, with associated limits if any.

C.3 Auxiliary Power Units

All APU and starter system limits; air and ground use; system temperature limits; starting limits; running time.

C.4 Electrical System

Any relevant limits including those associated with degraded modes or load shedding; battery limits. Limitations on the testing of warning systems in-flight.

C.5 Hydraulic System

System temperature and pressure limits. Any limits associated with degraded modes; ground use limits; limitations on any services provided by hydraulic system.

C.6 Fuel System

Minimum fuel for flight; altitude limits associated with booster or fuel pump operation; any cross-feeding limitations; refuelling and de-fuelling limits; in-flight refuelling limitations.

C.7 Engines and Transmission

System temperature and pressure limits; starting limits; running time; limits on in-flight shut down or in-flight re-light. Torque; compressor speed; gas temperature; free turbine limits.

If required, sub-sections on: propellers; reheat; water injection; rotors etc.

C.8 Environmental Conditioning System

Associated system limits and operational constraints for Aircrew, cargo and equipment, including oxygen system.

C.9 Canopy / Windscreen

Associated system limits; operational constraints.

³⁰ Permitted fuels include synthetic fuels as detailed in RA 1910 - Quality Assurance of Aviation Fuel from non-UK MOD Sources.

C.10 Undercarriage

Associated system limits; operational constraints.

C.11 Emergency and Escape Systems

Needs to include any limits associated with escape systems, emergency avionics such as cockpit voice recorders, sonar location beacons etc. Limitations on ejection mass and how mass is defined (eg walk out mass, total mass etc). Emergency lighting limitations.

C.12 Fire Protection System

All limitations associated with fire detection and fire fighting system for airframe and engine.

C.13 Ice Detection and Ice Protection Systems

All limitations associated with the functioning of the ice detection system and ice protection (de-icing, anti-icing) systems. Limitations on the operational envelope imposed by the capability of the ice detection / protection are expressed in Parts B1, B2, B3 and B6 as appropriate.

C.14 Flying Control System

All limitations associated with flying controls, lifting surfaces etc.

C.15 Stability Augmentation / Autopilot System

Limitations associated with any form of stability augmentation or autopilot system, including degraded mode limits. Stability augmentation equipment autopilot modes including engagement / disengagement / mode failure constraints; any specific flying control limitations (eg any need to keep hands on stick); minimum operating height to allow for recovery from runaway.

C.16 Communication Systems

Limitation of the use of communication equipment; including homing equipment and data links (for example RPAS); operational performance constraints.

C.17 Navigation Systems and Sensors

Limitation associated with use of navigation equipment (eg GPS, RAD Alt, TACAN, digital maps, PBN, RVSM etc); operational constraints which affect performance.

C.18 Mission Management Systems

Mission management systems include weapon aiming systems.

C.19 Operational / Mission Sensors

Any limitations or operational constraints associated with ESM, optical, sonar, sonic sensor systems, IFF, radar: needs to include operating performance constraints such as areas of blanking etc.

C.20 Defensive Aids

Installed system limits where these form part of an integrated suite or are individual items.

C.21 Armament System

Identification of armament / stores management systems, stores and associated limits (eg HIRTA, RAD Haz) imposed on the Air System by its armament systems. Carriage, Release and Jettison limits may either be included here (where they can be simply expressed; for example where an Air System carries a single store type and which is not configuration dependent), or reference may be made to Part D (where there may be a number of different stores, configurations and other associated variables). RTS limitations need to be consistent with weapon aiming and mission management system limits. Limitations associated with the use of integral guns, as opposed to role fit guns, would appear here. Role fit guns would appear in Part D.

C.22 Role Equipment

Where the TAA and RTSA judge it convenient and appropriate, rather than using Part D, list equipment and respective limits for equipment which is related to a role or roles but is normally carried in or on the Air System as normal fit.

Part D – Role Limitations and Constraints

The Air System configuration(s) for each role needs to be listed including any Equipment Not Basic to the Air System, or are to be removed from the basic design standard. Cleared equipment for each role fit must be listed (eg HUSLE). Any additional or different limits to those in Parts B and C which need to be observed as a result of these configurations must be detailed.

Where equipment is role-related but not considered a role fit item (eg a hoist which is fitted all the time as opposed to solely during SAR missions) this needs to be included in Section C.

When operation is dependent on the Air System configuration this will be expressed unambiguously (eg including reference to the relevant Modification number). If necessary, compatibility matrices are to be used.

Where an OEC or CLE is appropriate, it is referenced in Part F and the detail is placed in Part D.

Part D is likely to be highly Air System specific.

The headings suggested are indicative and not prescriptive.

Examples of section headings for a Fixed Wing Air System include:

Authorized Configurations (with associated Carriage, Release and Jettison limits)

Air to Air Refuelling

Target Towing

Loading Limitations (including passengers and freight)

Ferry Configurations

Air Drop

Parachuting

Reconnaissance

Examples of section headings for a Rotary Wing Air System include:

Underslung Load Operations

Winch Operations

Casevac

ASW

ASuW

Troop Carrying

SAR

Parachuting

Surveillance

Part E – Temporary information

Part E is reserved for the 'Management of Temporary Information'. Clearances included in this section are to be of a genuinely transitory nature (eg the clearance of a SM for a short duration trial after which it will be removed); or included within this part through operational necessity as a temporary amendment, pending its inclusion in the appropriate part at the next formal amendment of the RTS and / or ADS. Each element of Part E will have been derived from a supplementary Safety Assessment, and provides information (limitations) on one or more aspects of Air System operation. This section may also be used to promulgate other urgent information to Aircrew pending formal amendment of Aircrew publications (eg operating data in support of a new clearance). This part may also be used for time-limited clearances (eg any that are specific to an operation or exercise), and where it is expected that they will not form part of the RTS in the longer term.

The RTSA has the option to place the Temporary Clearances entirely within Part E of the RTS, or to insert pages in the appropriate places throughout the ADS, or a combination, whichever method suits the particular circumstances.

This section may be subdivided into the following sections:

Record of Temporary Clearances.

Record of Temporary Restrictions.

Record of Temporary Information Notices.

The information within Part E must provide:

A record of all current Temporary Clearances;

The definition of the applicability of each Temporary Clearance (eg tail number, OEU flying only, named exercise, named operation);

The arrangements for withdrawal of each Temporary Clearance (eg calendar, embodiment of a Modification);

A definition of the parts of the ADS affected by each Temporary Clearance;

The location of the information relating to the Temporary Clearance.

This must be done with a table of the following form:

<i>Temporary Clearance №</i>	<i>Title</i>	<i>Applicability</i>	<i>Arrangement for Withdrawal (to include duration)</i>	<i>Affected parts of ADS</i>	<i>Location of Temporary Clearance</i>

If appropriate, specific Temporary Clearances may be included within Section E. It is suggested that this be presented under suitable sub-heading(s) below sub-section E.2 (eg 'E.2.1 Temporary Clearance {insert number} - Limitations for Operation {insert title}').

Part F – Clearances with Limited Evidence / Operational Emergency Clearances

The purpose of Part F is to record where information has been included within the RTS that has not been derived from a fully substantiated Safety Assessment; such clearances are termed 'Clearances with Limited Evidence' (CLE). Each CLE will be integrated into the appropriate part of the RTS, and identified as a CLE through cross referencing to the Part F register. Such clearances are subject to periodic review, frequent amendment, and some may be applicable only to certain marks, operating units or even individual Air Systems. Following a periodic review or change to such clearance, the applicability and validity of the CLE may change.

An Operational Emergency Clearance (OEC) can be applied to a clearance residing in the main body of the appropriate section of the RTS and referenced in Part F (if appropriate). The RTS must present OECs in a separate sub section within the section to which they are applicable. The OEC must include an indication of the reason for identifying it as a high Risk clearance. A full explanation of the Risks must be retained by the TAA within the Audit trail.

The information within Part F.1 and F.2 must provide:

The title of the CLE / OEC.

A record of all current CLEs / OECs.

The definition of the applicability of each CLE / OEC (eg Tail Number, OEU flying only, named exercise, named operation).

The review period of the CLE / OEC is defined in RA 1300 Regulation 4 and Regulation 5.

The arrangements for withdrawal of each CLE / OEC (eg calendar, embodiment of a Modification).

The location within the RTS of the details of the CLE / OEC.

F.1 Record of Clearances with Limited Evidence

<i>Clearance with Limited Evidence N^o</i>	<i>Title</i>	<i>Applicability</i>	<i>Arrangement for Withdrawal</i>	<i>Location within RTS</i>	<i>Review Date</i>

F.2 Record of Operational Emergency Clearances

<i>Operational Emergency Clearance N^o</i>	<i>Title</i>	<i>Applicability</i>	<i>Arrangement for Withdrawal</i>	<i>Location within RTS</i>	<i>Review Date</i>

Part G – RTS History

Not part of promulgated RTS.

This part covers the historical function required to ensure Airworthiness. It is a record of all the Safety Assessment data that has been used in compiling the RTS and provides justification for all elements of the RTS content. It is not required that the full Audit trail be produced in Part G, but rather that it defines what the Safety Assessment Audit trail is, and identifies where the information can be located. It will be maintained by the RTSA in conjunction with the TAA throughout the life of the Air System; after the Out of Service Date appropriate data must be retained for 5 years¹¹. Some elements may exist as databases in their own right. Careful consideration will be given to archiving such material and it is not to be destroyed until at least 5 years¹¹ after the Air System is Out of Service.

The minimum that is required in Section G is an index of where the following information can be found:

Attribution matrix specifying the source of every element of the earlier parts.

Design documentation (F100 Series Forms, Military Permit to Fly (MPTF)³¹ etc).

List of Trials and associated Reports not covered by the design documentation.

Details of any Safety Assessments relating to the Air System or its systems.

Details of sentencing of trial recommendations.

Other baseline data used in generating the first issue.

Details of all changes to the initial issue (amendments and subsequent issues) to include: their nature, the reason for their introduction and the individual authorizing their implementation.

Acceptable layouts for Part G include, but are not limited to:

A reference to one or more series of files held in particular locations. Thus it could be a list such as: RTSA RTS Safety Assessment files {file series reference}, TAA Modification files {file series reference}, and Independent Evaluation and Audit¹⁶ reports {reference to list of applicable reports}. Each of these groups of files could, and often will, be held in different locations which need to be specified³².

A reference to an Airworthiness or Safety Assessment database. Many modern Air Systems will be developed with much, or all, of the information relevant to the RTS held on a Safety Assessment or configuration database. A reference to this database is acceptable, providing that the database references further source documents, or data¹⁷.

³¹ Refer to RA 5880 – Military Permit to Fly (Development) (MRP Part 21 Subpart P).

³² Refer to RA 1200 – Air Safety Management.

RA 1305 - Military Permit to Fly (In-Service), (Special Case Flying) and (Single Task)

Rationale

A Military Permit to Fly (MPTF) (In-Service) and MPTF (Special Case Flying) is the flight release and limitations document¹ authorizing the operation of an Air System in the Civilian Operated (In-Service) and Civilian Operated (Special Case Flying) Operating Categories. A MPTF (Single Task) permits the bespoke flight release limitations for a specific flight outside of a MPTF (In-Service) or MPTF (Special Case Flying). Not having a MPTF (In-Service), MPTF (Special Case Flying) or MPTF (Single Task) could result in the Accountable Manager (Military Flying) (AM(MF)) and Aircrew not knowing the limitations on the Air System. This RA describes the process and Air Safety governance requirements for authorization and issue of a MPTF (In Service), MPTF (Special Case Flying) and MPTF (Single Task).

Contents

Definitions Relevant to this RA

Applicability of this RA

1305(1): Requirement for a Military Permit to Fly (In-Service)

1305(2): Military Permit to Fly (In-Service) Recommendation

1305(3): Military Permit to Fly (In-Service) Preparation and Authorization

1305(4): Military Permit to Fly (Single Task)

1305(5): Military Permit to Fly (Special Case Flying)

Definitions

Definitions Relevant to this RA

1. **MPTF (In-Service).** The MPTF (In-Service) is the flight release and limitations document applicable to Air Systems being operated by a Contractor Flying Approved Organization Scheme (CFAOS) in the Civilian Operated (In-Service) Operating Category.
2. **MPTF (Special Case Flying).** The MPTF (Special Case Flying) is the flight release and limitation document applicable to Air Systems being operated by a CFAOS in the Civilian Operated (Special Case Flying) Operating Category.
3. **MPTF (Single Task).** The MPTF (Single Task) is the flight release and limitations document for bespoke circumstances when an Air System is required to operate outside its extant MPTF (In-Service) or MPTF (Special Case Flying). An example being a ferry flight following damage to the Air System. An MPTF (Single-Task) will apply for a single flight (or a series of multi-sector ferry flights) and will reflect the defined conditions under which the Air System is deemed safe to operate.

Applicability

Applicability of this RA

4. This RA applies to Air Systems, except Open and Specific S1 Category Remotely Piloted Aircraft Systems (RPAS), operating in the Civilian Operated (In-Service) and Civil Operated (Special Case Flying) Operating Categories.

Regulation 1305(1)

Requirement for a Military Permit to Fly (In-Service)

- 1305(1) Civilian Operated (In-Service) Air Systems **shall** operate under an MPTF (In-Service).

¹ Analogous to the Release To Service (RTS) authorizing the operation of an Air System in the Military Operated (In-Service) Defence Air Environment operating category.

**Acceptable
Means of
Compliance
1305(1)**

Requirement for a Military Permit to Fly (In-Service)

5. The MPTF (In-Service) **should** be an integrated document, with all clearances and associated limitations detailed in the appropriate parts and:
- a. Follow the format shown in the MPTF (In-Service) template (held on the MAA websites).
 - b. Define the as-flown configuration(s) of the Air System, establish the boundary and context for the supported Air System Safety Case (ASSC) and detail any procedural safety mitigations required.
 - c. Detail the permitted flight envelope of the Air System, including actions that are not permitted.
 - d. Include all Equipment Not Basic to the Air System (ENBAS)² that is authorized to be carried in or fitted to the Air System³.
 - e. Airworthiness and Equipment Safety Assessment limitations for all aspects of the Air System's operation as approved in the MPTF (In-Service) Recommendation.
 - f. Include all temporary information affecting the MPTF (In-Service).
 - g. Record all Special Clearances⁴ including Clearances with Limited Evidence (CLE). Operating Emergency Clearances **should not** be permitted within the MPTF (In-Service).
 - h. Include an audit trail of amendments.
 - i. Be subject to a formal review on a routine basis.
 - j. Include a Minimum Equipment List (MEL). The Type Airworthiness Authority (TAA) **should** ensure that the Equipment Safety Assessment (ESA) takes account of the MEL, which is normally derived from the Design Organizations (DO) generic Master MEL for the Air System, but can be made more restrictive by the TAA, in consultation with the Air System's Military Continuing Airworthiness Manager (Mil CAM), as appropriate for the operating context.
 - k. Include procedures and limitations for the Carriage, Release and Jettison (CR&J) of Airborne Equipment (AE) or Air Launched Weapons (ALW), which **should** be in the format detailed in RA 1345⁵ and RA 1350⁶, respectively.
6. There may be an urgent need to operate the Air System for a MPTF (Single Task), beyond the approved limitations and constraints of the extant MPTF (In-Service), where a MPTF (Single Task) **should** be issued and authorized⁷.
7. The content of the MPTF (In-Service) **should** be:
- a. Auditable and traceable back to the source data.
 - b. Maintained by the Operator throughout the In-Service life of the Air System and appropriate data retained in accordance with (jaw) RA 1225⁸.

**Guidance
Material
1305(1)**

Requirement for a Military Permit to Fly (In-Service)

8. The MPTF (In-Service) is a limitations-based document supported, where necessary, by evidence from all Defence Lines of Development (DLod).

² Refer to RA 1340 – Equipment Not Basic to the Air System.

³ This RA is not applicable to items properly classified as cargo. Cargo is regulated by the Movement and Transport Safety Regulator as directed by JSP 800.

⁴ Refer to RA 1330 – Special Clearances.

⁵ Refer to RA 1345 – The Compendium of Airborne Equipment Release Certificates.

⁶ Refer to RA 1350 – Air Launched Weapon Release.

⁷ Refer to RA 1305(4): Military Permit to Fly (Single Task).

⁸ Refer to RA 1225 – Air Safety Documentation Audit Trail.

Regulation 1305(2)

Military Permit to Fly (In-Service) Recommendation

1305(2) The TAA **shall** submit the Initial MPTF (In-Service) Recommendation or Major changes to the Operating Centre Director (OCD). The OCD **shall** approve and issue the MPTF (In-Service) Recommendation

Acceptable Means of Compliance 1305(2)

Military Permit to Fly (In-Service) Recommendation

9. Preparation of the data to support the MPTF Recommendation **should** be completed by an appropriate Type Airworthiness Manager (TAM).
10. The TAA **should** certify the initial issue of MPTF (In-Service) Recommendation and subsequent amendment and re-issue. Amendments to, or re-issues of, the MPTF (In-Service) recommendation **should** only be made by the TAM if agreed within the Sponsor's approved model for Type Airworthiness (TAw) management.
11. The MPTF (In-Service) Recommendation evidence **should** provide the argument, backed up by appropriate evidence, that supports the Airworthiness arguments of the MPTF (In-Service). All clearances and associated limitations **should** be in a format consistent with the MPTF (In-Service) structure.
12. The TAA **should** submit the initial MPTF (In-Service) Recommendation and major change evidence to the nominated OCD for approval and issue. Amendments to the MPTF (In-Service) Recommendation made by the TAM **should** be reviewed by the TAA and submitted to the OCD for approval and issue.
13. As the approving authority for the MPTF (In-Service) Recommendation, the OCD **should** be at 2* level or above with an appropriate Airworthiness delegation.
14. The OCD **should** submit the initial MPTF (In-Service) Recommendation or major change evidence to the MAA for independent review.
15. Once reviewed by the MAA, the OCD **should** issue the MPTF (In-Service) Recommendation to the Sponsor.
16. The Sponsor **should** ensure appropriate independent scrutiny of the MPTF (In-Service) Recommendation, alongside the operator submitted MPTF (In-Service).
17. The initial MPTF (In-Service) Recommendation **should** include, as a key component, the outcome of the MAA's Military Air Systems Certification Process (MACP)⁹, or equivalent MAA assessment of the Civilian Type Certificate.

Guidance Material 1305(2)

Military Permit to Fly (In-Service) Recommendation

18. The MPTF (In-Service) Recommendation is the statement, certified by the TAA and submitted to the OCD and Sponsor, that an ESA has been prepared for the Air System and an acceptable level of Airworthiness has been achieved.
19. There is a requirement for type certification evidence to support the issue of a Military Type Certificate (MTC) or an Approved Design Change Certificate (ADCC). These certificates may draw on the recommendations of other official certification bodies; the MPTF Recommendation may also use this information. Some examples are:
 - a. **Military Variants of Civil Air Systems and Military Registered Civilian-Owned Air System.** The MPTF (In-Service) may be based on the Civil Type Certificate and the civil Flight Manual of the Air Systems concerned which, once approved by the MAA, will be recognized by issue of a MTC or ADCC.
 - b. **Foreign Military Air Systems.** The MPTF (In-Service) may draw on the Type Certificate of an Airworthiness Authority that has been recognized¹⁰ by the

⁹ Refer to RA 5880 – Military Permit to Fly (MRP 21 Subpart P).

¹⁰ Refer to MAA/RN/2015/08 (D Tech) – Recognition of Other Military Airworthiness Regulators.

Guidance Material 1305(2)

MAA which, once approved by the MAA, will be recognized by issue of a MTC or ADCC.

20. To facilitate delivery of the Air System into Service it might be necessary to clear certain aspects of the Air System in advance of others. In such cases, the MPTF (In-Service) will proceed in stages. The priority of each stage will be agreed between the appropriate Front Line Command Capability organization or AM(MF), the Sponsor and the TAA.

ENBAS

21. For ENBAS, the TAM and / or TAA is to ensure that the equipment safety evidence covers all aspects of the proposed Air System's use and is appropriately addressed through an ESA. The TAA and / or TAM is to ensure this safety evidence supports the AM(MF)s ASSC and if necessary, is captured in the relevant MPTF (In-Service) by including any associated Air System limitations applicable to the ENBAS.

MAA Independent Assurance of the MPTF (In-Service) Recommendation

22. The MAA independent audit of the MPTF (In-Service) Recommendation will examine Equipment DLoD aspects of the MPTF (In-Service) Recommendation, equipment risks and any associated Risk to Life, the communication of those risks to the Sponsor and Operating Duty Holder / AM(MF) and, where appropriate, proposed mitigations. The MAA audit will result in an Audit Report, covered by a Sponsor Assurance Letter to the Sponsor for his consideration, giving MAA advice on the Equipment DLoD aspects of the MPTF (In-Service) Recommendation.

Regulation 1305(3)

Military Permit to Fly (In-Service) Preparation and Authorization

1305(3) The MPTF (In-Service) **shall** be prepared by the Operator and **shall** be authorized by the Sponsor.

Acceptable Means of Compliance 1305(3)

Military Permit to Fly (In-Service) Preparation and Authorization

23. The MPTF (In-Service) **should** be prepared by the Operator, ensuring appropriate input from all DLoD leads.

24. As the authorizing authority for the MPTF (In-Service) the Sponsor **should** be at 2* level or above with an appropriate delegation from the relevant service Chief of Staff or Chief Executive Officer.

25. Prior to authorizing the MPTF (In-Service) and subsequent amendments the Sponsor **should**:

- a. Ensure an appropriate level of independent scrutiny of the MPTF (In-Service) Recommendations and MPTF (In-Service) is undertaken.
- b. Obtain a Certificate of Registration for the Air System from the MAA¹¹.
- c. Be satisfied that all Risk to Life (RtL) has been identified and brought to the attention of the AM(MF), who has made a Safety Statement to the effect that the RtL has been reduced to As Low as Reasonably Practicable and Tolerable.
- d. Be satisfied that all DLoDs are at an appropriate level of maturity.
- e. Be satisfied that an Air Safety Management System (ASMS) is in place that describes how changes to an Air System, and any associated limitations and procedure, are to be managed.
- f. Be engaged with the AM(MF)s ASSC governance structure to ensure the Operator has appropriate means to ensure the integrity of the MPTF (In-Service) is maintained.

26. Amendments to the MPTF (In-Service) **should** be prepared by the TAM and **should** be reviewed by the Operator and TAA before submission to the Sponsor for authorization.

¹¹ Refer to RA 1161(3): Request for Activation on the UK Military Aircraft Register.

**Guidance
Material
1305(3)**

Military Permit to Fly (In-Service) Preparation and Authorization

27. A flow chart summarizing the route to authorization of the MPTF (In-Service) is at Annex A.

28. When authorizing the MPTF (In-Service), the Sponsor is to take a proportionate based approach to the scrutiny that is required of the MPTF (In-Service) Recommendation and MPTF (In-Service), depending on the Air System's operating context. Independent scrutiny could be conducted by either a MOD organization (such as a Release To Service Authority) or a suitably independent, competent and experienced civilian organization.

29. As the authorizing authority for the MPTF (In-Service), the Sponsor will consider the submission in light of the independent MAA audit and the maturity of the other DLoDs as presented in an ASSC Report. The Sponsor may accept the MPTF (In-Service) Recommendation with risk outside the design safety target but is to ensure that the AM(MF) has made an associated statement of tolerability and that it is captured appropriately in the ASSC. In considering an MPTF (In-Service) Recommendation, the Sponsor is to, as a minimum:

- a. Obtain confirmation that all the operating and support elements necessary to preserve the Airworthiness of the Air System during operation are in place.
- b. Review the adequacy of the safety justification and consider the change in overall risk to the Air System.
- c. Highlight the implications on operating safety.
- d. Assure the sufficiency of the Air System Document Set.

30. Obtain assurance that the DLoDs are at an appropriate level of maturity.

**Regulation
1305(4)**

Military Permit to Fly (Single Task)

1305(4) Civilian Operated (In-Service) and Civilian Operated (Special Case Flying) Air Systems **shall** operate under an MPTF (Single Task) when required to operate outside the extant MPTF (In-Service) or MPTF (Special Case Flying).

**Acceptable
Means of
Compliance
1305(4)**

Military Permit to Fly (Single Task)

31. The MPTF (Single Task) **should**:

- a. Follow the format shown in the MPTF (Single Task) template (held on the MAA websites).
- b. Refer to relevant parts of the MPTF (In-Service) or MPTF (Special Case Flying) for clearances and limitations that remain applicable for the single task flight activity.
- c. Define the additional clearances and associated limitations, beyond the Air Systems MPTF (In-Service) or MPTF (Special Case Flying), specific to the single task flight activity.
- d. Define any additional as-flown configuration(s) of the Air System.
- e. Include any additional ENBAS that is required to be carried in or fitted to the Air System for the purposes of the single task flight activity.
- f. Define any additional conditions to the MEL.

32. For Civilian Operated (In-Service) Air Systems, issue and authorization of the MPTF (Single Task) **should** be completed by the Sponsor's nominated TAA, with a copy sent to the Sponsor.

**Acceptable
Means of
Compliance
1305(4)**

33. For Civilian Operated (Special Case Flying) Air Systems, issue and authorization of the MPTF (Single Task) **should** be completed by the Sponsor's nominated TAM, with a copy sent to the Sponsor and their nominated TAW assurer.
34. The decision to invoke the operating conditions of a MPTF (Single Task) **should** be notified to the appropriate OCD and the Sponsor by the TAA or TAM.

**Guidance
Material
1305(4)**

Military Permit to Fly (Single Task)

35. The MPTF (Single Task) is a single task flight activity limitations and constraints based document, supported where necessary by evidence from all DLoDs.
36. Where the activity requires a series of ferry flights, within which the Airworthiness configuration and limitations imposed on the Air System remain unchanged, then a MPTF (Single Task) is valid.

**Regulation
1305(5)**

Military Permit to Fly (Special Case Flying)

- 1305(5) Civilian-Owned and Civilian Operated (Special Case Flying) Air Systems **shall** operate under a MPTF (Special Case Flying).

**Acceptable
Means of
Compliance
1305(5)**

Military Permit to Fly (Special Case Flying)

37. The MPTF (Special Case Flying) **should** be an integrated document, with all clearances and associated limitations detailed in the appropriate parts and:
- Follow the format shown in the MPTF (Special Case Flying) template (held on the MAA websites).
 - Define the as-flown configuration(s) of the Air System, establish the boundary and context for the supported ASSC and detail any procedural safety mitigations required.
 - Include all ENBAS² that is authorized to be carried in or fitted to the Air System³.
 - Include all temporary information affecting the MPTF (Special Case Flying). Special Clearances⁴ **should not** be permitted within the MPTF (Special case Flying).
 - Include an audit trail of amendments.
 - Be subject to a formal review on a routine basis.
 - Include a MEL that is derived from the DO's generic Master MEL for the Air System.
 - Procedures and limitations for the CR&J of AE or ALW **should** be included in the MPTF (Special Case Flying) of the Air System. AE and ALW Release certificates **should** be in the format detailed in RA 1345⁵ and RA 1350⁶, respectively.
38. Preparation of data to support the MPTF (Special Case Flying) **should** be collated by an organization holding an appropriate MAA Design Approved Organization Scheme approval.
39. Preparation of the MPTF (Special Case Flying) **should** be completed by the Operator, ensuring input from all DLoD leads.
40. The MPTF (Special Case Flying) **should** be approved by the TAM.
41. Sponsor **should** ensure Independent scrutiny of the MPTF (Special Case Flying) is completed.
42. Once satisfied with the MPTF (Special Case Flying); the independent scrutiny; and upon receipt of the Certification of Registration, the Sponsor **should** authorize

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Compliance
1305(4)**

commencement of flying operations by issue of the Certificate of Commencement of Flight to the AM(MF) (template held on the MAA websites).

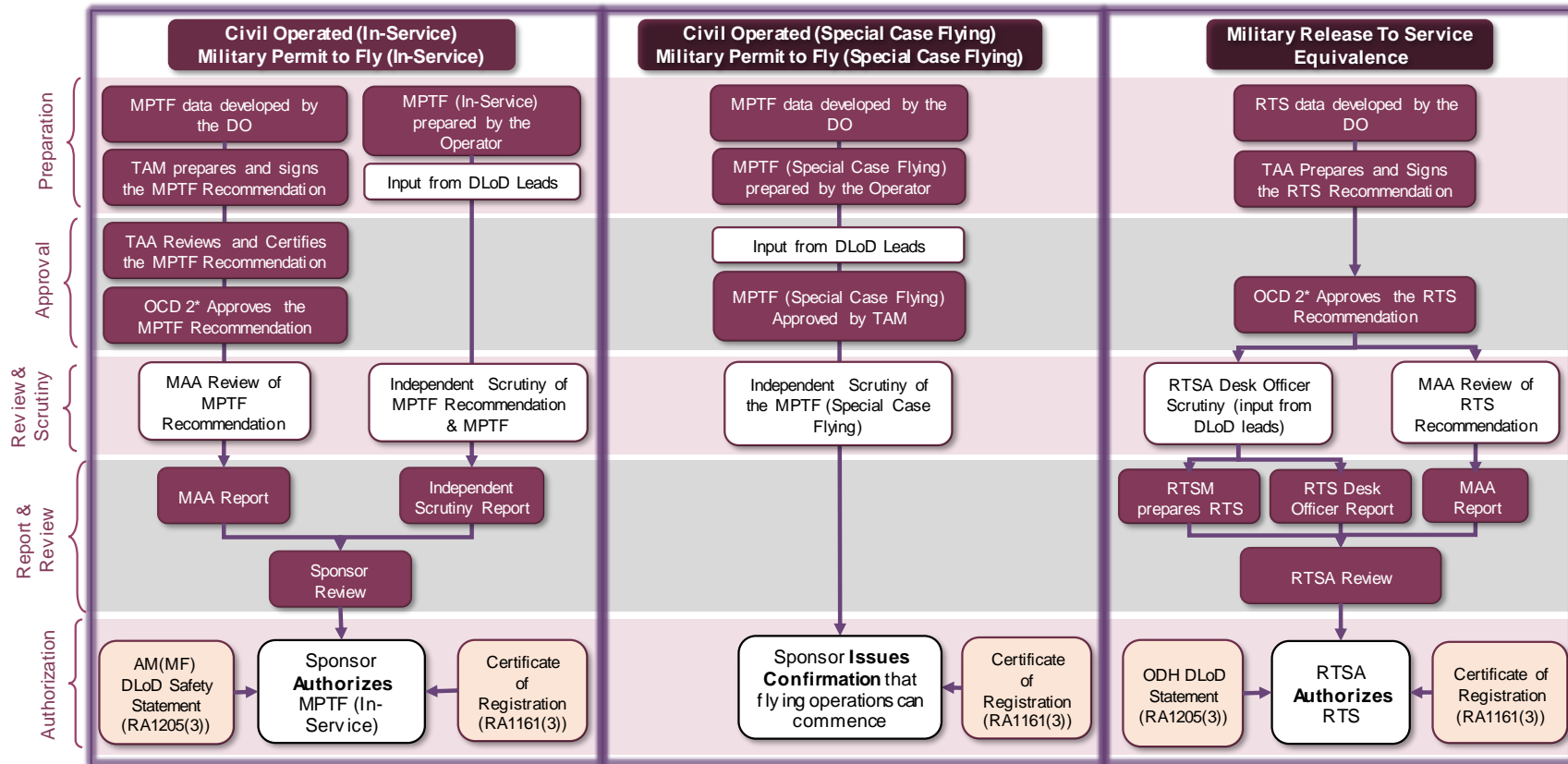
43. Amendments to the MPTF (Special Case Flying), and the subsequent changes to the authorized MPTF (Special Case Flying), **should** follow the same order as detailed in this regulation and **should** be made by the TAM, notifying the Sponsor of the changes made.

**Guidance
Material
1305(5)****Military Permit to Fly (Special Case Flying)**

44. A flow chart summarizing the route to authorization of the MPTF (Special Case Flying) is at Annex A.

Annex A

Figure 1 - Route to Authorization of a Military Permit to Fly (In-Service) and (Special Case Flying)



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

RA 1310 - Air System Document Set

Rationale

Air Systems can only be operated and maintained safely if there exists a set of instructions which describes: operating procedures, operating limitations and Maintenance procedures. These publications are known collectively as the Air System Document Set (ADS). Deficiencies within the ADS may mean the Air System is no longer Safe to Operate, or being Operated Safely. This RA requires individuals and organizations to identify their responsibilities in maintaining the integrity of the ADS, throughout the life of the Air System.

Contents

1310(1): The Air System Document Set

1310(2): Validation of the Air System Document Set

1310(3): Verification of the Air System Document Set

Regulation

1310(1)

The Air System Document Set

1310(1) The Type Airworthiness Authority (TAA)¹, Commodity Chief Engineer (CE)², Operating Duty Holder (ODH) / Accountable Manager (Military Flying) (AM(MF)) and Release To Service Authority (RTSA) **shall** define the scope, develop and maintain their contributions to the ADS.

Acceptable Means of Compliance 1310(1)

The Air System Document Set

1. The ADS is a bespoke set of instructions for each Air System and its scope **should** be defined by the TAA, Commodity CE, ODH / AM(MF) and RTSA's contributions, as applicable.
2. The TAA **should** produce an ADS management plan, in consultation with the Commodity CE, ODH / AM(MF) and RTSA, which:
 - a. Defines the contributions of the TAA, Commodity CE, ODH / AM(MF) and RTSA.
 - b. Details who is authorized³ to approve and make changes to the scope and content of the ADS.
 - c. Ensures that all operating procedures, operating limitations and Maintenance instructions needed to maintain Airworthiness are developed in accordance with the Type Certification Basis⁴.
 - d. Ensures that amendments to the ADS are promulgated to relevant users in a timely manner.
 - e. Describes the processes to ensure the ADS is managed effectively throughout the Air System's complete life cycle.
 - f. Describes the processes for Validation and Verification of the ADS.
 - g. Describes the processes for the management of Unsatisfactory Feature Reports (UFR).

¹ 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. Dependent on the agreed split of TAw responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

² Although a Commodity CE is not the delegated authority to amend the ADS (refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility), the TAA is critically reliant upon Commodity CE inputs in manuals to maintain Airworthiness and meet the TAA's Type Airworthiness Safety Assessment.

³ Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility and RA 5850 – Military Design Approved Organization (MRP Part 21 Subpart J).

⁴ Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

**Acceptable
Means of
Compliance
1310(1)**

3. The TAA **should**:
 - a. Define the scope and structure of the Aircrew Publications (AP)⁵ and Instructions for Sustaining Type Airworthiness (ISTA)⁶ within a leaflet in the Orders and Instructions issued by the TAA (Topic 2(N/A/R)1)⁷.
 - b. Provide the ODH / AM(MF) with source material to feed into the Air Transport Operation Manuals (ATOM).
 - c. Provide the source material for the Release To Service (RTS) within the RTS Recommendation (RTSR)⁸.
 - d. Provide the source material for a Military Permit To Fly (MPTF)⁹.
 - e. Ensure the Statement of Operating Intent (SOI) / Statement of Operating Intent and Usage (SOIU) is published in the ADS once authorized by the Aircraft Operating Authority (AOA)¹⁰.
4. The Commodity CE **should**:
 - a. Prepare ISTA as required by the TAA⁶ for Commodity Delivery Team provisioned Products, Parts and Appliances and Air Launched Weapons.
 - b. Approve Maintenance Manuals to support off-aircraft Maintenance of Products, Parts and Appliances.
 - c. Approve Maintenance Manuals to support off-aircraft equipment, which is required by the TAA's Type Airworthiness Safety Assessment¹¹ and the ODH / AM(MF)'s Air System Safety Case¹².
5. Where appropriate the ODH / AM(MF) in collaboration with the Joint Air Delivery Test and Evaluation Unit (JADTEU), **should** define the scope, structure and manage the ATOM.
6. Where appropriate the RTSA¹³ **should** authorize and issue an initial RTS and subsequent RTS amendments.

**Guidance
Material
1310(1)**

The Air System Document Set

7. **The ADS management plan.** In developing the ADS management plan, the following may be considered:
 - a. Stakeholders, including the scope and nature of their responsibilities.
 - b. Governance, including the meetings (agenda, frequency and attendees) and review procedures that will be used periodically to assess the ADS and share the status of activities between relevant stakeholders.
 - c. Configuration management, detailing the processes for maintaining and updating the ADS to reflect the RTS / MPTF cleared configuration of the Air System.
 - d. Amendments may be made by means of a MOD Form 765 UFR, MOD Form 765X Aircrew Publications Amendment Request or equivalent.
8. **Aircrew Publications.** Aircrew Publications⁵ are the TAA approved user information on the technical details, performance and handling characteristics of an Air System. They also include the normal operating and emergency procedures.
9. **ISTA.** ISTA⁶ are TAA approved Instructions and combined suite of methods, inspections, processes, and procedures necessary to maintain an Air System's Type and Continuing Airworthiness and ability to deliver its operational capabilities.

⁵ Refer to RA 5406 – Aircrew Publications.

⁶ Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

⁷ The Topic number in brackets are legacy military references.

⁸ Refer to RA 1360 – Release To Service Recommendations Preparation and Authorization.

⁹ Where an Air System is operated under MPTF, refer to RA 5880 – Military Permit to Fly (Development) (MRP Part 21 Subpart P) or RA 1305 – Military Permit to Fly (In-Service), (Special Case Flying) and (Single Task).

¹⁰ Refer to MAA01: MAA Regulatory Policy, Chapter 3, paragraph 10.

¹¹ Refer to RA 1220 – Delivery Team Airworthiness and Safety.

¹² Refer to RA 1205 – Air System Safety Cases.

¹³ Refer to RA 1300 – Release To Service.

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Material
1310(1)**

10. **ATOM.** JADTEU are the subject matter experts on all air transport information. The ATOM is the suite of publications used to enable the effective delivery of air transport capability for a given Air System. It is comprised of five key parts:
- General information and the carriage of personnel and cargo (Topic 11A).
 - Tie-down schemes - planned and special loads (Topic 11B).
 - Carriage and despatch of parachutists and / or air-dropped loads - Parachuting of personnel and air-dropping of loads (Topic 11C).
 - Loading information (Topic 11D).
 - Underslung Load Clearance (USLC).
11. **SOI / SOIU.** The SOI is the means by which the AOA formally conveys the operating intent for a new Air System type or major mark to the TAA. The SOI is converted into an SOIU as soon as sufficient representative In-Service usage data is accumulated, no later than 3 years after In-Service Date (ISD).
12. The appropriate AOA owns and authorizes each issue of, and any amendment to, the SOI / SOIU. The AOA will advise the TAA, via the SOI / SOIU (which will state the operating parameters and conditions the Air System is operating in, or expected to operate in), about any changes to the operating parameters and conditions to enable the TAA to plan and carry out engineering activities to support the Air System's intended usage.
13. **RTS.** The RTS¹³ is the document that authorizes Service flying. It is based on the RTSR and includes the definitive limits for the Air System.

**Regulation
1310(2)**

Validation of the Air System Document Set

- 1310(2) The TAA, Commodity CE and ODH / AM(MF) **shall** ensure, through validation, that all the information contained within their contribution to the ADS is technically accurate.

**Acceptable
Means of
Compliance
1310(2)**

Validation of the Air System Document Set

14. The TAA, Commodity CE or ODH / AM(MF) **should** ensure that quality assurance processes are in place to validate that all the information contained within the ADS is technically accurate before first use.
15. The TAA, Commodity CE or ODH / AM(MF) **should** ensure that the ADS is reviewed on a regular basis to ensure its continued validity and accuracy.
16. When practical validation trials are deemed necessary, they **should** be conducted under conditions that provide reasonable assurance that the procedure can be accomplished under normal In-Service conditions.
17. Flight or safety-critical procedures **should** be validated by practical trial, except where it can be shown that such procedures have already been accomplished on identical installations, for example, civil aeroplanes / equipment adopted for Service use.
18. Descriptive material **should** be validated by means of a comparative check against design source material to ensure its accuracy.
19. At the conclusion of validation, all work delivered to the TAA or Commodity CE for acceptance **should** be accompanied by evidence that validation has been completed.

**Guidance
Material
1310(2)****Validation of the Air System Document Set**

20. Procedural material may be validated in one or more of three ways:
- a. A practical trial of the procedure.
 - b. A simulated practical trial whereby the text is taken to the material concerned and the procedure is 'talked through'.
 - c. A 'table-top' comparison with a similar procedure that has been subject to practical trial.

**Regulation
1310(3)****Verification of the Air System Document Set**

- 1310(3) The TAA, Commodity CE and ODH / AM(MF) **shall** ensure that the relevant quality checks are carried out to verify that all the information contained within their contribution to the ADS is safe in application and suitable for its intended purpose.

**Acceptable
Means of
Compliance
1310(3)****Verification of the Air System Document Set**

21. The TAA, Commodity CE or ODH / AM(MF) **should** implement a process that satisfies themselves¹⁴, through verification, that the information contained within the validated ADS meets the user requirement, can be used for its intended purpose by operators and maintainers under normal operating conditions and is coherent with authorized limitations^{15, 16}.

**Guidance
Material
1310(3)****Verification of the Air System Document Set**

22. Nil.

¹⁴ Using operators and / or maintainers where required, or an individual akin to a User Authenticator.

¹⁵ Such as those within the RTS.

¹⁶ See the Defence Aircrew Publications Guide for further info.

RA 1340 - Equipment Not Basic to the Air System

Rationale

*Equipment Not Basic to the Air System (ENBAS) is the generic term used for weapons¹, Role Equipment, releasable stores, Airborne Equipment, Aircrew Equipment Assemblies, Carry-on Equipment and other items used to support² the operation of the Air System³; such equipment will form part of the Air System Safety Case (ASSC)⁴ and it is fundamental that these are included in the Release To Service (RTS) **▶ or appropriate Military Permit To Fly (MPTF)⁵. ◀** Not having all ENBAS identified and understood (eg use, limitations, etc) in the RTS **▶ or appropriate MPTF◀** and ASSC could result in the Air System's stakeholders incorrectly utilizing the ENBAS. To ensure ENBAS are correctly and completely identified and understood within the RTS **▶ or appropriate MPTF◀** and ASSC, Safety Assessments are required for each equipment type. The ENBAS defined in the RTS **▶ or appropriate MPTF◀** are the definitive ENBAS for the Air System, and allow for peacetime training, exercise, contingency, threat and war conditions.*

Contents

1340(1): Equipment Not Basic to the Air System

Regulation 1340(1)

Equipment Not Basic to the Air System

1340(1) ENBAS **shall** be authorized in the RTS **▶ or appropriate MPTF. ◀**

Acceptable Means of Compliance 1340(1)

Equipment Not Basic to the Air System

▶▶

1. The **▶ Type Airworthiness Authority (TAA) and / or Type Airworthiness Manager (TAM)⁶◀ should:**

a. Assure **▶ themselves◀** that each item of ENBAS used to support the operation of the Air System has a Safety Assessment completed to **▶ their◀** satisfaction, including but not limited to:

- (1) Aircraft all up mass.
- (2) Centre of Gravity of the Aircraft during: carriage, release and jettison.
- (3) Aircraft performance and handling characteristics.
- (4) Structural loading.
- (5) Electrical loading.
- (6) Equipment restraint and stability.
- (7) Electro-magnetic compatibility.
- (8) Environmental factors eg:
 - (a) Vibration.
 - (b) Humidity.

¹ **▶ In this RA, "weapons" refers to: hand-held weapons (eg pistols, rifles, etc) and Air Launched Weapons (as defined in MAA02: MAA Master Glossary). ◀**

² This RA is not applicable to items properly classified as cargo. Cargo is regulated by the Movement and Transport Safety Regulator as directed by JSP 800: **▶ Defence Movement and Transport Regulations. ◀**

³ ENBAS does not include Ground Support Equipment, test equipment or equipment not intended for carriage during flight or equipment that does not affect the Airworthiness and / or Air Safety of the Air System. ENBAS does include elements relevant to the Remote Pilot Station of a Remotely Piloted Air System.

⁴ Refer to RA 1205 - Air System Safety Cases.

⁵ **▶ Refer to RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task); Refer to RA 5880 – Military Permit To Fly (Development) (MRP Part 21 Subpart P).**

⁶ Where the Air System is Civilian-Owned, ownership of regulatory responsibility by either the TAA or 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. Dependant on the agreed split of TAW responsibilities TAM may be read in place of TAA as appropriate throughout this RA. ◀

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- (c) Contamination (fuels, oils etc).
 - (d) If applicable; pressurization and depressurization.
 - (e) Temperature.
 - (f) Illumination (night vision device compatibility if required).
 - (9) If applicable, safe separation of the ENBAS from the Aircraft during release and jettison, including avoidance of Aircraft self-damage.
 - (10) Critical factors such as gust susceptibility, wind, turbulence and aerodynamics.
 - (11) Failure modes, effects and their criticality to the ENBAS and the **▶ Air System. ◀**
 - b. Consider human factors.
 - c. Consider all aspects of the operation of equipment when carried on the Air System, when making a Release To Service Recommendation (RTSR) **▶ or appropriate MPTF Recommendation. ◀**
 - d. Ensure ENBAS used to support the Air System is captured in, or referenced from the Air System Document Set⁷ (ADS).
 - e. Communicate all hazards to the Operating Duty Holder **▶ or Accountable Manager (Military Flying) for their ◀** consideration.
 - f. Ensure all **▶ Airborne Equipment and Air Launched Weapons related ◀** ENBAS have a completed Certificate of Design⁸.
 - g. For complex, novel or high risk ENBAS, employ the services of an Independent Safety Auditor and an Independent Technical Evaluator⁹.
 - h. Ensure Test and Evaluation is carried out and completed¹⁰ for its intended role.
 - i. **▶ Assure themselves that the Airworthiness of Helicopter Under-Slung Load Equipment (HUSLE)^{11, 12} is assessed to their satisfaction before making an RTSR or appropriate MPTF Recommendation. This **should** include a Safety Assessment and as a minimum contain, in addition to the above:**
 - (1) **Emergency procedures during under-slung load operations.**
 - (2) **Floor loading.**
 - (3) **The elasticity of strops.**
 - (4) **The type of delivery concerned.**
 - j. **Assure themselves that the Airworthiness of Cargo restraint equipment is assessed to their satisfaction before making an RTSR or appropriate MPTF Recommendation. This should include a Safety Assessment. ◀**
- ▶ ◀**
2. **▶ ◀**
- a. **▶ ◀**
 - b. **▶ ◀**
 - c. **▶ ◀**
 - d. **▶ ◀**

⁷ Refer to RA 1310 – Air System Document Set.

⁸ Refer to RA 5103 – Certification of Design.

⁹ Refer to RA 1220 – Delivery Team Airworthiness and Safety.

¹⁰ Refer to RA 1013 – Air Systems Operating Centre Director – Provision of Airworthy and Safe Systems and RA 2370 - Test and Evaluation.

¹¹ **▶ HUSLE and JADTEU publications can be found located on the JADTEU Publications Intranet webpage.**

¹² **Troop Insertion and Extraction Systems (TIES) is not HUSLE. ◀**

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- ▶ ◀
3. The RTSA **should** consider the RTSR ▶ ◀ and if content provide an entry in the RTS¹³.
4. ▶ **The Sponsor⁴ should consider the MPTF Recommendation and if content authorize the entry in the appropriate MPTF.** ◀

**Guidance
Material
1340(1)**

Equipment Not Basic to the Air System

Safety Assessment

5. Responsibility for the provision of the Safety Assessment for ENBAS normally rests with the procuring Delivery Team Leader (DTL) ▶ **and / or TAA.** ◀
6. When addressing ENBAS in the ASSC, the advice of the ▶ ◀ TAA will have primacy ▶ ◀.

Airborne Equipment (AE) and Air Launched Weapons (ALW)

7. Notwithstanding the completeness of AE¹⁴ and ALW¹⁵ releases in respect to the equipment itself, the safety of carriage, release, jettison and despatch from a particular Air System still has to be addressed as part of the ASSC and RTS. The ▶ ◀ RTS thus gives authority for the use of the AE or ALW in Service.
8. Only AE cleared through a specific RTS entry may be operated on a military registered Aircraft. Clearance for use of AE from one Aircraft type cannot be assumed to read across to another Aircraft type or mark.
9. The risks to the Air System prior to completion of safe separation of the AE and ALW ▶ **will** ◀ be considered in the Safety Assessment and the ASSC and will be updated to ▶ **assure** ◀ that all such risks are addressed. The RTSA will ensure that all these aspects are detailed in the ▶ ◀ RTS and, where appropriate, are carried forward into the rest of the ADS.

Aircrew Equipment Assembly (AEA)

10. An AEA will be declared safe for use by a statement based on the Safety Assessment, issued by the providing DTL¹⁶, ▶ **and / or TAA** ◀ for the purpose of In-Service use. The providing DTL, ▶ **and / or TAA** ◀ will ensure that ▶ **a proportional** ◀ Safety Assessment of each AEA details the extent of the clearance, and the limitations of the AEA for specific Air System, or roles, in Service operation. AEA details can be found in ▶ **DAP108B-0001-1**¹⁷. ◀
11. The ▶ ◀ TAA will ensure that the AEA Safety Assessment fully supports the proposed use on ▶ **the** ◀ Air System. ▶ **Where limited Safety and Certification evidence exists for the AEA, the TAA needs to be satisfied that the use of the AEA remains within the Air System's Design Safety Target. The TAA** ◀ will also include any limitations on the use of the AEA in the ▶ **RTS or appropriate MPTF** ◀ where they affect, or contribute to, limitations that affect the Air System.

Miscellaneous Items of Carry-on Equipment

12. ▶ **Items of Carry-on Equipment, where they are required to support the operation of the Air System, are classed as ENBAS.** ◀ ENBAS classed as Carry-on Equipment have included in the past: Electronic Flight Bags¹⁸, laptop computers, cameras, tool kits, survival equipment not classed as AEA, binoculars, aeromedical equipment, high altitude breathing apparatus and electronic tablets.

¹³ Refer to RA 1300 – Release To Service.

¹⁴ Refer to RA 1345 – The Compendium of Airborne Equipment Release Certificates.

¹⁵ Refer to RA 1350 – Air Launched Weapon Release ▶ ◀.

¹⁶ This may or may not be the Air Commodities Delivery Team.

¹⁷ ▶ **Refer to DAP108B-0001-1 - Aircrew Equipment Assemblies – Platform Schedules.** ◀

¹⁸ TAAs may wish to consult ▶ **Commission Regulation (EU) No 965/2012 and Commission Implementing Regulation (EU) 2018/1975** ◀ for Electronic Flight Bags.

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

RA 1345 - The Compendium of Airborne Equipment Release Certificates

Rationale

The information in the Compendium of Airborne Equipment¹ Release Certificates (CAERC) underpins the Airworthiness of Airborne Equipment (AE) when carried in, and dispatched from, an aircraft; and it informs the Air System's Release To Service (RTS) on the carriage and operation of the equipment concerned. The carriage and dispatch of AE from aircraft presents additional Risks to Life to users, the public, and military personnel. To ensure AE are correctly and completely identified and understood; Safety Assessments are required, within the CAERC, for each aircraft and all special requirements, modifications and limitations (speed, height, flaps, etc).

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1345(1): The Compendium of Airborne Equipment Release Certificates

Regulation 1345(1)

The Compendium of Airborne Equipment Release Certificates

1345(1) All AE **shall** have a certificate describing the conditions and limitations for safe carriage and dispatch from an aircraft.

Acceptable Means of Compliance 1345(1)

The Compendium of Airborne Equipment Release Certificates

1. AE **should** be certified through the issuance of AE Release Certificates which are to be included in the CAERC by the AE Type Airworthiness Authority (TAA).
2. The CAERC **should**:
 - a. Be issued by the AE TAA and Delegated Release To Service Authority (DRTSA).
 - b. Conform to the CAERC held on the MAA websites.
 - c. Record all Special Clearances including Operational Emergency Clearances (OEC) and Clearances with Limited Evidence (CLE), and be suitably marked.
 - d. Include an audit trail of amendments.
 - e. Be subject to a formal review on a routine basis.
3. The AE TAA **should** provide and maintain an auditable trail for all changes to Airworthiness documentation and ensure the equipment and the associated reference documents are trackable and preserved throughout the life of the affected equipment plus 5 years².
4. Where civilian or non-UK military aircraft are to be used as the dispatching aircraft, a rigorous Safety Assessment **should** be made by the AE TAA of the aircraft, its suitability, the interaction of the AE with the aircraft and all special requirements, modifications and limitations (speed, height, flaps etc). The Safety Assessment **should** be listed in the CAERC. The CAERC lists these aircraft that have been assessed as suitable by type or, if required, registration number. Particular attention **should** be made where the intention is to use static line Airborne Forces Equipment (AFE).
5. The AE TAA **should** inform the Aviation Duty Holder (ADH) of all identified operating risks.

¹ Defined in MAA02.

² Refer to RA 1225 – Air Safety Documentation Audit Trail.

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Material
1345(1)****The Compendium of Airborne Equipment Release Certificates**

6. AE is the generic term covering the wide variety of parachuting assemblies for personnel and equipment, airdrop platforms, supply dropping equipment and ancillary items that are used for the insertion of personnel and equipment onto Drop Zones. This equipment can be split into three areas: Airborne Forces Equipment (AFE), Aerial Delivery Equipment (ADE), and Ancillary Equipment.

7. The AE defined in the CAERC allow for peacetime training, exercise, contingency, threat and war conditions.

The AERC and the AE Documentation Set (AEDS)

8. The MOD must ensure that all safety-related risks have been identified, and are managed. A key process of Safety Management is the dissemination of authorized limits, procedures and operating information to the personnel involved with AE, be these the aircrew in the aircraft from which the dispatch takes place, the parachutists, the equipment / parachutist dispatchers, or maintainers of AE. This function is fulfilled by the AEDS.

9. The CAERC is central to the Airworthiness of the AE. It is the apex document in a suite of documents and publications which make up the AEDS, and is used to ensure the safe operation of the equipment. The supporting documentation within the AEDS includes the various operators' publications, the equipment support policy statements and the technical publications; some of these items may be aircrew / aircraft-specific. The CAERC provides the authority to various elements of the AEDS, with the RTS providing authority to any associated, aircraft-specific publications.

Target Audience

10. The target audience for the CAERC is the operators and engineers specifically associated with the equipment concerned, as well as those associated with the aircraft within which the equipment will be carried and from which it will be dispatched.

Structure and Control of the CAERC

11. The Compendium of CAERC is a controlled document under the management of the AE TAA. The individual clearances are contained within the relevant Part of the Compendium. Each Part provides, or refers to the location of, the information necessary for the safe use of the equipment concerned. The information pertinent to the safe use of the equipment from a specific aircraft or aircraft type will be found in an associated Annex.

12. The document itself is built up of preliminary pages and seven specific parts as detailed in the template held on the MAA websites.

Management of the CAERC / Configuration Control

13. The master copy of the CAERC is held by the Release To Service Authority (RTSA)³ and is available on the MOD Intranet. The master copy contains all original signatures. All pages within the CAERC will show the issue status of the document and AL status for the specific page. The AE TAA is responsible for holding all superseded master copies throughout the life of the AE plus 5 years beyond its Out of Service Date. Similarly, the AE TAA is responsible for maintaining the original CAERC Acknowledgement Sheets (held on the MAA websites). The RTSA Desk Officer is responsible for maintaining the relevant intranet website as CAERC is amended.

Endorsement / Approval of the CAERC

14. The CAERC will be amended once all necessary evidence has been collated. Recommended amendments, with supporting evidence, will be presented to the AE TAA for endorsement. The AE TAA will provide a recommendation to the DRTSA.

15. The DRTSA approval process will take into consideration the aircraft that the AE is to be dispatched from.

16. The CAERC determines that the equipment is safe to use, not that it is authorized to use from any specific aircraft.

³ ACAS-RTSA-FW3 SO2.

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17. The CAERC, signed by the AE TAA and approved by the DRTSA (along with supporting evidence), will be passed to the TAAs of the dispatching aircraft.
18. The TAA of the dispatching aircraft will:
 - a. Provide recommendation to the DRTSA of the dispatching aircraft to authorize the use of the AE within their aircraft RTS.
 - b. Return the completed Acknowledgement Sheet to the AE TAA, detailing the acceptance of the AE for use on the aircraft or stating the reason for non-acceptance.
19. A Matrix, controlled by the RTSA, will be maintained on the MOD Intranet alongside the CAERC⁴; this Matrix will be referenced from the CAERC and will identify what elements of the CAERC have been accepted by aircraft TAAs.

Guidance on the Content of the CAERC

20. In addition to the guidance material contained within RA 1300⁴ and RA 1325⁵, the following guidance material is relevant:

- a. **Limitations.** The CAERC will outline the limitations imposed on the use of the AE, with the AEDS detailing the general usage of the equipment. Where there is inter-dependency of limits, by default the most restrictive apply. Where a variety of equipment configurations exist, and each has differing limitations, a matrix of configurations / limitations will be constructed.

Note:

Modifications are not normally shown in the CAERC unless they change any of the operating characteristics / limitations of the equipment. Details of modifications can be found in the AEDS and, where appropriate, the operators' manuals.

- b. **Ancillary Equipment.** It is fundamental that all equipment fitted to, or used in direct support of, the primary AE is included in the CAERC. aircraft-specific role equipment used in conjunction with AE need not be directly covered within the CAERC, but the items must appear within the Air System Document Set⁶ and must be at least referred to in the AEDS. Some equipment, where used in multiple aircraft roles or in support of more than one AE, can have their own entry in the CAERC. This equipment appears in Part D of the CAERC.

⁴ Refer to RA 1300 – Release To Service.

⁵ Refer to RA 1325 – Release To Service Limitations.

⁶ Refer to RA 1310 – Air System Document Set.

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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, to users, the public, military personnel and other aircraft. Not having all ALW limitations and clearances identified and understood could result in the Air System's stakeholders incorrectly utilizing the ALW. The ALW Release² allows the stakeholders to understand all the limitations and clearances applicable to the use of the ALW.

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1350(1): UK MOD In-Service Air Launched Weapons

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

Regulation

1350(1)

UK MOD In-Service Air Launched Weapons

1350(1) The Air System's Type Airworthiness Authority (TAA) and the ALW Delivery Team (DT) Letter of Air Safety Notification (LoAN) holder **shall** authorize all UK MOD In-Service ALWs³ for aircraft CR&J.

Acceptable Means of Compliance

1350(1)

UK MOD In-Service Air Launched Weapons

1. The ALW Release is a living body of evidence and **should** be tailored and proportionate to the complexity of the ALW and the associated hazards.
2. UK MOD In-Service ALWs **should** be authorized through the issuance of an ALWRC prior to RtL being incurred through CR&J and prior to first flight.
3. The ALWRC **should**:
 - a. Conform to the ALWRC template held on the MAA websites.
 - b. Be signed by the ALW DT LoAN holder.
 - c. Be issued by the ALW DT.
 - d. Be accepted by the Air System's TAA, including any limitations and clearances, by formal acknowledgement (template held on the MAA websites) to the ALW DT LoAN holder.
 - e. Be reviewed by the ALW DT LoAN holder in line with the Statement of Operating Intent/Usage (SOI/U) review process⁴, the Safety and Environmental Case Report⁵ (SECR) and on change to the "Ordnance, Munitions and Explosives" (OME) Safety Review Panel Assurance Statement⁵ (OAS). If the ALWRC is not reviewed, then it becomes invalid, and the ALW DT LoAN holder **should** inform the Air System's TAA and Aviation Duty Holder (ADH)/Accountable Manager (Military Flying) (AM(MF)).
 - f. Be reissued when a change affecting the limitations and/or clearances of the ALWRC is identified.
 - g. Document the ALW's limitations (eg Service Life, structural, environmental, altitude, Electro-Magnetic Compatibility, etc) and the information required (eg interface control documentation) to allow its safe integration and operation on any specified aircraft.
 - h. State unambiguously the applicability of various marks or variants of the ALW on each aircraft type (and mark, if applicable). If the ALW is utilized on multiple aircraft types, then there **should** be a single ALWRC 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.

¹ Refer to MAA02: Military Aviation Authority Master Glossary.

² An ALW Release is a living body of evidence that supports either an ALW Release Certificate (ALWRC) or a Military Permit To Fly (MPTF).

³ "UK MOD In-Service" refers to ALWs that are of cleared capability on the UK MOD inventory.

⁴ Refer to ► [RA 5726 – Integrity Management](#). ◀

⁵ Refer to DSA02.OME – Defence Ordnance, Munitions and Explosives (OME) Regulations.

**Acceptable
Means of
Compliance
1350(1)**

4. The ALW DT LoAN holder **should** ensure that:
 - a. The Air System's TAA is provided with the applicable ALW SECR(s) and OAS(s).
 - b. An auditable trail is provided and maintained for all changes to Air Safety documentation and ensure the equipment and the associated reference documents are trackable and preserved⁶.
 - c. Staged releases of the Air Safety documentation or significant changes such as the introduction of a new host Air System are appropriately authorized.
 - d. The Air System's TAA and ADH/AM(MF) are kept informed of all emergent hazards or equipment changes that might affect the Air System's Release To Service (RTS).
5. The Air System's TAA **should** ensure that:
 - a. The ALW DT employs robust Safety Management processes ► **fully supporting the Safety Panel reviews.** ◀
 - b. The SECR and OAS are robust, fully recorded and accepted.
 - c. That RTS Recommendations⁷ (RTSR) include all ALW limitations and clearances.
 - d. Evidence is provided to the ALW DT LoAN holder of any Air System limitations or clearances applying to the ALW for CR&J of the ALW.
 - e. An auditable trail is provided and maintained for all changes to Air Safety documentation and ensure the equipment and the associated reference documents are trackable and preserved⁶.
 - f. The ALW DT LoAN holder is provided any information (such as a change to the usage or environment for which the Air System or ALW is cleared) which may affect the Airworthiness of the weapon when carried, released or jettisoned from the aircraft.
6. The ADH/AM(MF) **should** ensure that CR&J of any ALW are addressed in the relevant Air System Safety Case (ASSC)⁸.

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UK MOD In-Service Air Launched Weapons

7. The ALW Release 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, any of the aircraft which utilize the ALW.

Limitations of the ALW Release Certificate

8. The ALWRC is intended to encompass CR&J on the launch aircraft. The ALWRC will refer directly to all the limitations and clearances required by the SECR and OAS for the ALW. The ALW limitations and clearances apply only while the ALW is carried on its host aircraft, and up to a defined safe separation distance⁹ after Release or Jettison (ie not all the way to target) from the host aircraft and to other aircraft in close proximity.
9. The chapter headings in the ALWRC template are mandatory. The lower-level topics and headings will be considered by the ALW DT LoAN holder, but only those appropriate to the ALW need be presented in the final document. The ALWRC will be used to support acceptance of the ALW and the generation of the Air System's RTS.
10. The ALWRC informs and/or restricts the Air System's RTS for each aircraft that is cleared to carry the ALW. Limitations and clearances are unlikely to be identical for different Air Systems.
11. An ALWRC supplements an Air System's RTS in 2 major areas:

⁶ Refer to RA 1225 – Air Safety Documentation Audit Trail.

⁷ Refer to RA 1360 – Release To Service Recommendations Preparation and Authorization.

⁸ Refer to RA 1205 – Air System Safety Cases.

⁹ Defined in 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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- 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.

12. The ALWRC will contain (or refer to) evidence which will be relevant to all actual and potential users¹⁰ through the life of the ALW, not just that directly associated with the first aircraft which carried the ALW. It identifies the Air System the ALW is authorized for use on and reflects the differing build standards that apply to each Air System. Certificates of Design¹¹ (CofD) will be the primary source of such information and the ALWRC is to contain a record of all those issued. Clear and firm configuration control in accordance with (iaw) Def Stan 05-057¹² must be maintained.

13. Procedural limitations or clearances, in the form of instructions to aircrew and/or ground-crew, to enhance safety or achieve specified functions, may form part of the ALWRC.

14. 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.

Safety Assessment

15. The ALWRC provides evidence towards the relevant ASSC and will include CR&J of the ALW on nominated aircraft. The ALWRC can provide details of what has been met (eg Compliance with regulations, standards and processes) to confirm the ALW is ‘Safe to Operate’ to the Air System’s TAA and ADH/AM(MF).

16. Defence Ordnance Safety Group (DOSG) and MAA¹³ armament specialists may be consulted in the preparation of the ALWRC and Air System’s RTSR⁷ to ensure that all ALW aspects of the Safety Assessment have been addressed as described in this RA and DSA 02.OME⁵. 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) The Air System's TAA and the ALW DT LoAN holder **shall** authorize all ALWs not requiring an Air Launched Weapon Release Certificate for aircraft CR&J.

Acceptable Means of Compliance 1350(2)

Air Launched Weapons not requiring an Air Launched Weapon Release Certificate

17. All flying activity for the development or trials of ALW **should** be conducted iaw the limitations and clearances as articulated in either the Air System’s MPTF¹⁴ or Certificate of Usage (CofU)¹⁵.

18. The MPTF/CofU **should** appropriately detail all ALW limitations and clearances.

19. For ALWs destined for UK MOD In-Service use, ALW DTs **should** compile the evidence gathered during development or trialling into the ALWRC format.

20. The ALW Release is a living body of evidence and its content **should** be tailored and proportionate to the complexity of the ALW and the associated hazards.

21. The MPTF **should**:

- a. Be valid for the duration of the specified ALW trials.
- b. Document the ALW’s limitations (eg Service Life, structural,

¹⁰ Such as users that have the ALW cleared to use on their aircraft, but do not use it.

¹¹ Refer to RA 5103 – Certificate of Design.

¹² Refer to Def Stan 05-057 – Configuration Management of Defence Materiel.

¹³ DSA-MAA-Cert-ES4-ArmSys@mod.gov.uk.

¹⁴ Refer to RA 5880 – Military Permit to Fly (MRP 21 Subpart P).

¹⁵ Refer to RA 1123 – Certificate of Usage for Military Registered Civil-Owned Aircraft.

Acceptable Means of Compliance 1350(2)

environmental, altitude, Electro-Magnetic Compatibility, etc) and the information required (eg interface control documentation) to allow its safe integration and operation on any specified aircraft.

c. State unambiguously the applicability of various marks or variants of the ALW included in the trial.

22. The CofU **should**:

a. Appropriately reference the ALW's limitations (eg Service Life, structural, environmental, altitude, Electro-Magnetic Compatibility, etc) and the information required (eg interface control documentation) to allow its safe integration and operation on any specified aircraft.

b. State unambiguously the applicability of various marks or variants of the ALW included in the trial.

23. The ALW supplier/DT LoAN holder **should** ensure that:

a. The Air System's TAA is provided with the applicable ALW SECR(s) and OAS(s).

b. Staged releases of the Air Safety documentation or significant changes such as the introduction of a new host Air System are appropriately authorized.

c. An auditable trail is provided and maintained for all changes to Air Safety documentation and ensure the equipment and the associated reference documents are trackable and preserved⁸.

24. The Air System's TAA and the ADH/AM(MF) **should** ensure that:

a. The ALW supplier employs robust Safety Management processes ► **fully supporting the Safety Panel reviews.** ◀

b. The SECR and OAS are robust, fully recorded and accepted.

c. Evidence is provided to the ALW DT LoAN holder of any Air System limitations and clearances applying to the ALW for CR&J of the ALW.

d. An auditable trail is provided and maintained for all changes to Air Safety documentation and ensure the equipment and the associated reference documents are trackable and preserved⁶.

e. The ALW supplier/DT LoAN holder is provided any information (such as a change to the usage or environment of the Air System or ALW) which may affect the Airworthiness of the weapon when carried, released, or jettisoned from the aircraft.

25. The ADH/AM(MF) **should** ensure that the CR&J of any ALW are addressed in the relevant ASSC⁸.

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Air Launched Weapons not requiring an Air Launched Weapon Release Certificate

26. For ALWs not destined for UK MOD In-Service use, the ALW supplier/DT LoAN holder will ensure that appropriate evidence is retained and available to enable ALW integration Certification activity in case the ALW is brought into UK MOD In-Service use. ALW integration Certification activity will be conducted on the integration of every Air System ALW combination destined for UK MOD In-Service use.

Limitations of the ALW Release

27. The MPTF/CofU is intended to encompass CR&J on the launch aircraft. The MPTF/CofU document will refer directly to all the limitations and clearances required by the SECR and/or OAS for the ALW. The ALW limitations and clearances apply only while the ALW is carried on its host aircraft, up to a defined distance after Release or Jettison (ie not all the way to target) from the host aircraft and to other aircraft in close proximity.

28. The ALW Release will:

a. Cover all aspects of an ALW build standard and operation in the MTDS,

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thus providing a link between the ALW SECR, OAS and the MPTF/CofU.

b. Record the build standard that has been assessed for safe CR&J on the Air System with its associated Air System specific limitations.

29. The MPTF/CofU will contain (or refer to) the ALW limitations and clearances which will be relevant to one Air System ALW combination. CofDs will be the primary source of such information and the MPTF/CofU is to contain or reference a record of all those issued. Clear and firm configuration control iaw Def Stan 05-057 must be maintained.

30. Procedural limitations or clearances, in the form of instructions to aircrew and/or ground-crew, to enhance safety or achieve specified functions, may be issued. If the ALW enters UK MOD In-Service, these limitations and clearances may be transferred into the ALWRC and RTS.

31. 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.

Safety Assessment

32. The results of flight testing¹⁶ provides ALW CR&J details for the ASSC. The ALWRC can provide details of what has been met (eg Compliance with regulations, standards and processes) to confirm the safety and Airworthiness of the ALW to the Air System's TAA and ADH/AM(MF).

33. DOSG and MAA¹³ armament specialists may be consulted in the preparation of the MPTF/CofU to ensure that all ALW aspects of the Safety Assessment have been addressed as described in this RA and DSA 02.OME⁵. Advice and assistance may also be needed from independent organizations.

¹⁶ 'Flight testing' is the process (usually involving a number of test flights) by which the capabilities and performance of an aircraft (usually a new one or one which is substantially modified) are established. 'Test flight' refers to an individual flight which is used for testing purpose (eg post engine change).

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

RA 1380 - Performance Based Navigation

Rationale

The drive for improved operating efficiency has resulted in the development of the International Civil Aviation Organization (ICAO) Performance Based Navigation (PBN)^{1, 2, 3, 4} concept. This concept moves aviation away from traditional navigation using ground-based beacons to a system more reliant on airborne technologies utilizing RNAV and GNSS, and aims to ensure global interoperability through the standardisation of PBN system performance through internationally agreed specifications. Without appropriate governance of PBN, access to certain procedures may be restricted. In order to fully exploit airspace worldwide there is a requirement to comply with the appropriate PBN standards either through equipage or the demonstration of equivalence.

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Definitions Relevant to this RA

1380(1): Performance Based Navigation

Definitions

Definitions Relevant to this RA

1. **PBN.** The broad term used to describe the technologies that allow Air Systems to fly flexible, accurate, repeatable and therefore deterministic 2 dimensional and 3 dimensional flight paths using onboard equipment and capabilities. PBN introduces 2 categories of navigation specifications: Area Navigation (RNAV) and Required Navigation Performance (RNP). RNAV and RNP are thereafter designated further (eg RNAV1, RNP1).
2. **RNAV.** RNAV permits Air System operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.
3. **RNP.** RNP is RNAV with the support of on-board performance monitoring and alerting, and relies primarily on the use of Global Navigation Satellite Systems (GNSS).
4. **PBN system performance.** Performance requirements are identified in the navigation specifications, which also identify the choice of navigation sensors and equipment that may be used to meet the performance requirements. These navigation specifications are defined in sufficient detail to facilitate global harmonization by providing specific implementation guidance for states and operators. Furthermore, under PBN, generic navigation requirements are defined based on operating requirements. Operators then evaluate options in respect of available technology and navigation services, which could allow the requirements to be met. An operator thereby has the opportunity to select an option, rather than an imposed solution (ICAO PBN Manual Executive Summary).

Regulation 1380(1)

Performance Based Navigation

1380(1) Aviation Duty Holders (ADH) and Accountable Managers (Military Flying) (AM(MF)) **shall** ensure that for PBN operations the UK military registered Air Systems for which they are responsible are eligible, capable and qualified to operate in the PBN designated airspace.

¹ As defined in MAA02: MAA Master Glossary.

² Refer to RA 2120 – Pilots' Instrument Rating Scheme.

³ Refer to RA 2380 – Performance Based Navigation Operations.

⁴ Refer to RA 3295 – Required Navigation Performance Approach – Controller Responsibilities.

**Acceptable
Means of
Compliance
1380(1)**

Performance Based Navigation

5. UK military registered Air Systems that regularly use the civil Air Traffic Service (ATS) structure as General Air Traffic **should** comply with or demonstrate equivalence to civil PBN regulatory requirements and standards of performance such as: accuracy, integrity, continuity, and interoperability with respect to Air System functionality and the ability to conduct required PBN operations.

PBN Approval Process

6. Senior Responsible Officers (SRO), Operating Duty Holders (ODH) and AM(MF)s **should** include PBN specifications and systems (across all Defence Lines of Development (DLod)) in their Air System Safety Cases (ASSC)⁵;

7. ODHs and AM(MF)s **should**:

a. Ensure Air Systems within their Area of Responsibility achieve the performance required by the RNAV / RNP specifications to be encountered (ie against the RNAV / RNP specifications demanded by particular airspace controlling authorities) through provision of appropriate orders, instructions and MEL (where used);

b. Ensure data for use with PBN systems is assured to appropriate standards⁶, and ensure that appropriate processes exist for the handling, updating⁷ and configuration management of electronic navigation data;

c. Ensure aircrew are qualified and competent both in the operation of PBN systems and in any other relevant procedures needed to achieve the performance required by the RNAV / RNP specifications to be encountered;

d. Ensure that Aircrew are qualified against the particular specifications required for operation in specific airspace;

e. When required, assert compliance to civil authorities⁸ against stipulated specifications.

8. AM(MF)s **should** be in possession of the appropriate Contractor Flying Approved Organization Scheme (CFAOS)⁹ Approval prior to conducting PBN operations.

9. UK military registered Air Systems **should not** conduct RNP Authorization Required Approaches (AR APCH).

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Performance Based Navigation

10. Specific Approval is required for RNP 0.3 (for helicopters) and RNP AR APCH for all Air Systems, in accordance with Part-SPA of European Union Commission Regulation Number 965/2012¹⁰ as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 (UK (EU) Reg No 965/2012). For all other approaches and Air Systems, Operations Manual and Training Manual entries, checked by the User Authenticator¹ for the SRO, ODH, and AM(MF), is deemed sufficient. This places PBN on a similar footing as other forms of “everyday” authorization.

11. This regulation does not aim to detail the RNAV / RNP specifications required for particular Air Systems to meet their actual / anticipated modes of operation, nor does it aim to define the actual or likely specifications demanded by particular airspace controlling authorities.

⁵ Refer to RA 1205 – Air System Safety Cases.

⁶ To meet international / national requirement or as demanded by airspace providers.

⁷ Refer to RA 1030 – Defence Aeronautical Information Management.

⁸ Declaration of Compliance is articulated through the Flight Plan.

⁹ Refer to RA 1028 – Contractor Flying Approved Organization Scheme – Responsibilities.

¹⁰ <https://www.easa.europa.eu/document-library/regulations/commission-regulation-eu-no-9652012>. The Civil Aviation Authority (CAA) is applying this regulation in UK airspace.

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12. PBN creates requirements for Airworthiness Certification¹¹ and Operational¹² Approval to use RNAV / RNP systems on routes / airspace notified for a given PBN application. RNAV / RNP system functionality as well as its navigation accuracy in a given Navigational Aid (NAVAID) infrastructure environment must comply with the requirements stipulated for the routes / airspace.
13. When the relevant PBN approval process has been completed then the respective UK military registered Air System can be considered as having achieved equivalence to PBN Operational Approval¹³ in the civilian domain.
14. When the appropriate Release To Service (RTS) / Military Permit To Fly, supporting documentation, ASSC, and CFAOS Approval are in place; ODHs / AM(MF)s may assert compliance¹⁴ to civil authorities.
15. Defence Airspace and Air Traffic Management (DAATM) is the focal point for PBN policy. DAATM will also provide guidance on forthcoming changes to legislation to the Capability areas and MAA through the International Aviation Regulation and Compliance (IARC) Community of Interest.
16. The ICAO PBN Manual (ICAO Doc 9613) defines PBN (RNAV / RNP) navigation specifications and performance requirements (technical and operational criteria). The manual also details: Air System requirements and operating procedures; specific aircrew knowledge and training where applicable; any requirements for control of navigation databases and oversight of operators; and provides practical guidance to States, regulatory authorities, air navigation service providers, manufacturers and airspace users on how to implement RNAV / RNP applications. The manual comprises two volumes: Volume I contains, amongst other things, guidance on airborne RNAV / RNP systems and aeronautical data processes; Volume II provides the direct support for implementing RNAV and RNP navigation applications.
17. Further guidance on PBN policy, approval and processes may be found in the following:
- a. ICAO PBN Operational Approval Manual (ICAO Doc 9997);
 - b. CAA / Irish Aviation Authority Policy for the Application of PBN in UK / Irish Airspace¹⁵;
 - c. UK (EU) Reg No 965/2012¹⁰.
 - d. <https://www.easa.europa.eu/document-library/general-publications/easy-access-rules-air-operations>.
 - e. EASA Certification Specifications Airborne Communications, Navigation and Surveillance¹⁶.
18. Identification of which PBN approval is required depends on:
- a. What access to airspace, ATS routes, terminal airspace procedures and instrument approach procedures is required;
 - b. The airspace requirement which will dictate the necessary performance (accuracy / integrity / continuity) and functionality required;
 - c. And the navigation infrastructure (sensors) upon which the performance is based.

¹¹ Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B); Refer to RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task); Refer to RA 5880 – Military Permit To Fly (Development) (MRP Part 21 Subpart P); and RA 1160 – The Defence Air Environment Operating Framework.

¹² 'Operational' is used in the context of this RA because the term 'PBN Operational Approval' is used specifically by ICAO and the CAA.

¹³ Against stipulated RNAV / RNP specifications.

¹⁴ Compliance must be determined against each relevant navigation specification; compliance with one does not automatically imply compliance with another.

¹⁵ <https://publicapps.caa.co.uk/modalapplication.aspx?catid=1&pagetype=65&appid=11&mode=detail&id=4744>, Dated 21 Oct 2011.

¹⁶ <https://www.easa.europa.eu/document-library/certification-specifications/group/cs-acns-airborne-communications-navigation-and-surveillance#group-table>.

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19. ADHs and AM(MF)s can refer to the relevant paragraphs in Civil Aviation Publication (CAP) 2025A00¹⁷ and complete a PBN compliance matrix against these latest EASA flight operational requirements.

¹⁷ Refer to [CAP 2025A00 – Air Operations Regulation 965/2012](#).

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

RA 1390 - Reduced Vertical Separation Minimum

Rationale

Growing demand to increase airspace capacity has resulted in the Reduced Vertical Separation Minimum (RVSM) Programme which has, in turn, introduced an additional 6 flight levels between FL 290 and FL 410 through the reduction of vertical separation between those flight levels from 2000 ft to 1000 ft. Without providing RVSM, airspace worldwide would become saturated with flights leading to increased Airprox incidents and potential mid-air collisions. In order to fully exploit airspace worldwide there is a requirement to comply with the appropriate civil RVSM standards.

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1390(1): Reduced Vertical Separation Minimum

Regulation 1390(1)

Reduced Vertical Separation Minimum

1390(1) Aviation Duty Holders (ADH) and Accountable Managers (Military Flying) (AM(MF)) **shall** ensure that for RVSM operations their UK military registered Air Systems are appropriately approved.

Acceptable Means of Compliance 1390(1)

Reduced Vertical Separation Minimum

1. UK military registered Air Systems that regularly use the civil Air Traffic Service structure as General Air Traffic (GAT) **should** comply with civil RVSM regulatory requirements of the nation who controls the airspace that the Air System is operating in.

RVSM Approval Process

2. Senior Responsible Officers (SRO), Operating Duty Holders (ODH) and AM(MF)s **should**:

- a. Ensure that RVSM vertical navigation performance capability is compliant with the criteria of the RVSM Minimum Aircraft System Performance Specifications (MASPS);
- b. Include RVSM specifications and systems (across all Defence Lines of Development (DLod)) in their Air System Safety Cases (ASSC)¹.

3. ODHs and AM(MF)s **should**:

- a. Ensure Air Systems within their Area of Responsibility achieve RVSM compliance through provision of appropriate orders, instructions and MEL (where used);
- b. Ensure aircrew are qualified and competent both in the operation of RVSM equipment and relevant procedures needed for operation in RVSM airspace;
- c. Assert compliance to the Defence Airspace and Air Traffic Management (DAATM) organization using Appendix D to EUROCONTROL Guidance Material for the Certification of State Aircraft in European RVSM Airspace²;
- d. Ensure that flight plans are appropriately annotated for those Air Systems with a valid RVSM approval.

4. The DAATM organization **should**:

- a. Act as the point of contact with the European Regional Monitoring

¹ Refer to RA 1205 – Air System Safety Cases.

² <https://www.eurocontrol.int/sites/default/files/content/documents/official-documents/guidance/2014-rvsm-military-guidance-v2-0-may-2014.pdf>.

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Agency (RMA) for RVSM matters regarding UK military registered Air Systems;

b. Provide updates regarding UK military RVSM approvals, de-registrations, and withdrawals to the European RMA.

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1390(1)**

Reduced Vertical Separation Minimum

5. RVSM creates requirements for Airworthiness Certification³ and Operational⁴ Approval to use RVSM systems in RVSM designated airspace. This regulation is designed to outline the route to RVSM approval for UK military registered Air Systems. This regulation does not aim to detail the RVSM MASPS.

6. When the appropriate Release To Service / Military Permit To Fly and ASSC¹ are in place, ODHs / AM(MF)s may assert compliance to DAATM. Release To Service clearance for RVSM operations does not constitute operational approval to conduct RVSM operations. Operational approval can only be granted by the ODH.

7. When the relevant RVSM approval process has been completed then the respective UK military registered Air System can be considered as having achieved RVSM Operational Approval⁵ in the civilian domain allowing them to operate in RVSM airspace worldwide.

8. The DAATM organization⁶ is the focal point regarding RVSM policy. The DAATM organization will also provide guidance on forthcoming changes to legislation to the Capability areas and MAA through the International Aviation Regulation and Compliance (IARC) Community of Interest.

9. Guidance on RVSM policy, approval and processes may be found in the following documents:

a. ICAO 'Doc 9574 AN/934 Manual on Implementation of a 300 m (1000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive'⁷;

b. Eurocontrol document 'Guidance Material for the Certification and Operation of State Aircraft in European RVSM Airspace'².

c. UK Aeronautical Information Publication – CAA Civil Aviation Publication 032 (CAP 032)⁸.

10. The European RMA is obliged to maintain a database of RVSM approvals and will periodically compare samples of flight plan data where RVSM approval has been stated with the database of approvals.

11. UK military registered Air Systems without RVSM approval may not operate as GAT within RVSM airspace with 1000 ft vertical separation. However, such Air Systems may file a flight plan to fly inside RVSM airspace with 2000 ft vertical separation with exemption status; however, the routing offered may not be optimal.

³ Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B)); Refer to RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task); Refer to RA 5880 – Military Permit To Fly (Development) (MRP Part 21 Subpart P); and RA 1160 – The Defence Air Environment Operating Framework.

⁴ 'Operational' is used in the context of this RA because the term 'RVSM Operational Approval' is used specifically by the International Civil Aviation Organization (ICAO) and the Civil Aviation Authority (CAA).

⁵ Note: the term "RVSM-APPROVED" will be used to indicate that an Air System has been granted RVSM approval.

⁶ Contact via DAATM-All@mod.gov.uk.

⁷ <https://www.skybrary.aero/bookshelf/books/1311.pdf>.

⁸ <http://publicapps.caa.co.uk/modalapplication.aspx?appid=11&catid=1&id=223&mode=detail&pagetype=65>, Dated 23 Apr 2020.

RA 1395 - Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships

Rationale

Operating embarked aviation requires the integration of two complex independent systems, Ship and Air System, which are operated through separate Ship Duty Holder (DH) ► / Accountable Person (AP) ◀ and Aviation Duty Holder (ADH) / Accountable Manager (Military Flying) (AM(MF)) constructs. The safe conduct of this embarked activity requires that the Risk to Life (RtL) associated with operating Air Systems from Ships are understood and that the scope and boundaries of such operations are clearly defined. The Ship Air-Release (SA-Release) is the document that Authorizes a specified Class of His Majesty's (HM) / MOD Ship¹ and Air System Type / Mark to conduct embarked aviation activity. The SA-Release is underpinned by Safety documentation for the Ship / Air System combination and contains vital Safety information and operating limitations.

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- 1395(1): Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships
- 1395(2): Ship Air-Release
- 1395(3): Ship Air-Release Recommendation
- 1395(4): Ship-Air Special Releases
- 1395(5): Ship Air-Release – Remotely Piloted Air Systems

Regulation 1395(1)

Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships

1395(1) ► **Permission to conduct** ◀ embarked aviation in aviation-capable² HM / MOD Ship Classes **shall** be Authorized.

Acceptable Means of Compliance 1395(1)

Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships

1. Where the requirement for a Ship and Air System to conduct embarked aviation exists, the combination **should** be Authorized through a SA-Release.
2. Where, by exception:
 - a. Circumstances of operational need or short term and unlikely to be repeated requirements, make it impractical for the SA-Release process to be followed in full. In such situations, the Ship Operating DH (ODH) ► / AP ◀ and ADH / AM(MF) **should** Authorize specified Ship / Air System combinations to conduct embarked aviation outside of established orders only after dynamic, pan Defence Lines of Development (DLoD) assessments of the associated Risks are conducted and prescribing specific Assurance and mitigation. In these circumstances, the processes required to generate a SA-Release **should** be followed as far as reasonably practicable.
 - b. Situations of very short notice where operational circumstances are such that it is impractical for the Ship ODH and ADH to grant Authorization, the Ship's Delivery Duty Holder (DDH)³ or the Operational Commander⁴ **should** only Authorize specified Ship / Air System combinations to conduct embarked aviation outside of established orders after dynamic Risk Assessments are conducted and the prescribing of specific Assurance and mitigation. In such circumstances the Ship DDH / Operational Commander **should** inform the ADH / AM(MF), the Ship Platform Authority (PA), the Ship ODH and Navy Command

¹ As defined in the Defence Maritime Regulator (DMR) Master Glossary of Terms.

² ► **Defined** ◀ as those which can be categorized as Applicability Level A, B or C in Defence Standard 00-133 Part 1.

³ As defined in DSA02-DMR – Defence Maritime Regulations for Health, Safety and Environmental Protection.

⁴ Embarked aviation activity involving operational tasking (eg Search and Rescue Operations) will not necessarily be conducted in an 'Operational Theatre' but requires use of the Air System by an Operational Commander in a manner described in RA 1020(1): Role and Responsibilities of the Aviation Duty Holder. The Ship's Commanding Officer (CO) or DDH Authorizes aviation activity from their Ship and may be the Operational Commander, or the role of Operational Commander may be performed by a third party; in either circumstance, the Ship's CO or DDH remains responsible for immediate RtL to personnel on the Ship.

Acceptable Means of Compliance 1395(1)

Headquarters (NCHQ) Naval Aviation Division (NAVn) as soon as reasonably practicable.

3. The Release To Service (RTS)⁵ or appropriate Military Permit To Fly (MPTF)^{6, 7} of an Air System **should** generically permit the Air System to operate in a maritime role and conduct embarked operations to HM / MOD Ships.

4. A SA-Release is not required for short term and / or non-enduring nature Crossdeck Operations. Such activity **should** be conducted in accordance with (iaw) BRd 766⁸. The Ship DH and ADH / AM(MF) chain **should** remain accountable for the safe operation of the Ship / Air System and that RA 1026⁹ still applies in the case of HM / MOD ships. NCHQ NAVn advice **should** determine if the activity may be considered appropriate to be conducted iaw MPP-02¹⁰ or whether a specific clearance is required. In such circumstances the Ship DH and ADH / AM(MF) chains **should** ensure, as a minimum that the associated procedures detailed in BRd 766 are followed.

Guidance Material 1395(1)

Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships

SA-Release

5. The SA-Release will be generated iaw RA 1395(2) and Authorized by the Royal Navy Release To Service Authority (RN RTSA) for Air Systems required to embark in HM / MOD Ships. The SA-Release process provides a clearance for a Ship Class to conduct embarked aviation with a specified Air System Type / Mark iaw established orders as directed in ►RA 2309(18)◀¹¹. This process is illustrated at Annex A Figure 1, and is to be read in conjunction with the Roles and Responsibilities detailed in RA 1029¹².

6. Once Authorized, the SA-Release will remain valid throughout the lifetime of the Ship-Air System combination unless amended or withdrawn.

Authorization to Permit HM / MOD Ships and Air Systems to Conduct Embarked Aviation Outside of Established Orders

7. An abridged route is detailed in Annex A, Figure 2 for conducting specific, short notice urgent or short term operations and unlikely to be repeated requirements that do not fall within the existing clearances and orders. Clearance in such circumstances is achieved through the Ship ODH and ADH / AM(MF) conducting dynamic, pan DLoD assessments of individual Ship and Air System Risks to ensure procedural Safety mitigations can be implemented as required for any given operational requirement. Such Assurance and operation specific direction ►will◀ be used to mitigate specific Ship shortfalls (such as limited Ship's company experience and / or training shortfalls; equipment deficiencies; etc) or aviation shortfalls (such as crew currency; Aircraft deficiencies; specific climatic conditions; etc). Such abridged Authorizations will be temporary in nature. For scheduled deployments, operational planners would be expected to ensure that all SA-Releases for expected combinations of Ships and Air Systems are in place following the SA-Release process in Annex A, Figure 1.

8. The complexity and depth of these Ship ODH and ADH / AM(MF) assessments will be tailored dependent upon the specific operation, including such elements as the duration and level of integration. Consideration will be given to collating evidence from these assessments for any future formal SA-Release.

9. In all circumstances where the Ship and / or Air Systems do not meet the requirements defined in the established orders, these assessments are required before operations commence, to ensure both Ship ODH and ADH / AM(MF) fully understand the RtL associated with their respective platforms. Although in such

⁵ Refer to RA 1300 – Release To Service.

⁶ Refer to RA 5880 – Military Permit To Fly (Development) (MRP Part 21 Subpart P).

⁷ Refer to RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task).

⁸ Refer to BRd 766 – Embarked Aviation Orders.

⁹ Refer to RA 1026 – Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities ►◀.

¹⁰ ► For crewed aviation, refer ◀ to MPP-02: ► Volume I ◀ – Helicopter Operations from Ships Other Than Aircraft Carriers (HOSTAC); ► Volume II – Multinational Through-Deck and Aircraft Carrier Crossdeck Operations (MTACCOPS). ◀

¹¹ Refer to ►RA 2309(18): Embarked Aviation Operations. ◀

¹² Refer to RA 1029 – Ship Air-Release - Roles and Responsibilities.

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circumstances formal independent RN RTSA Authorization may not be achievable in the time available, both Ship ODH and ADH / AM(MF) are to consider seeking Subject Matter Expert (SME) advice from relevant departments within Defence Equipment & Support (DE&S), Front Line Commands (FLC), Ship PA, NCHQ NAVn and RTSAs / Sponsor.

Embarkation of Non-MOD Air Systems

10. Where the requirement for Foreign ▶◀ Air Systems▶¹³◀ to conduct embarked aviation is enduring, then the issue of a SA-Release will be required. In such circumstances, where no UK ADH / AM(MF) chain and / or Type Airworthiness Authority (TAA)¹⁴ exist, the requirement sponsor is responsible for providing information on the Air System¹⁵ iaw RA 1395(2) paragraph 15.

Embarkation in Non-HM / MOD Ships

11. UK Military registered Air System embarkations in non-HM / MOD Ships are outside of this Regulation, however in order to manage RtL, ADHs / AM(MF)s will follow the principles of SA-Release when planning embarkations, utilizing the guidance within this RA, BRd 766 and MPP-02. Further advice will be sought from NCHQ NAVn ▶ and the RN RTSA. ◀

Risk to Life boundary demarcation

12. The Ship DH ▶ / AP ◀ is accountable for the RtL of an individual aboard a ship, that is due to embark on an Air System, until they are taken under the supervision of the Aircraft's crew or pass under the Aircraft's main rotor (whichever occurs first), at which point the ADH / AM(MF) becomes accountable for the RtL that the Air System poses to them. Additionally, the ADH / AM(MF) would be accountable for the RtL of an individual embarked on an Air System until they are taken under the supervision of the Flight Deck Crew or pass from underneath the Aircraft's main rotor (whichever occurs first) after which accountability passes to the Ship DH ▶ / AP ◀. If rotors (or engines for Fixed Wing Air Systems) are not turning then the transition point is on entry / exit to / from the Aircraft.

Regulation 1395(2)

Ship Air-Release

1395(2) ▶ The RN RTSA shall review pan DLoD evidence and if satisfied authorize an SA-Release. ◀

Acceptable Means of Compliance 1395(2)

Ship Air-Release

13. The SA-Release **should** be an integrated, limitations based document with all associated Safety information, operating limits and constraints included in the appropriate part and underpinned by the following considerations:

- a. The SA-Release **should** be supported by evidence from all DLoDs¹⁶ based on:
 - (1) An Equipment DLoD based SA-Release Recommendation produced by the Ship PA and the TAA; RA 1395(3) refers.
 - (2) Non-Equipment DLoD assessments drawn from the Ship ▶DH / AP ◀ and ADH / AM(MF) as appropriate.
- b. The SA-Release **should** specify the subject Ship Class and Air System Type / Mark combination.

¹³ ▶ Refer to RA 1029(4): Foreign Air System Sponsor: Roles and Responsibilities. ◀

¹⁴ Where the Air System is ▶non-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.

¹⁵ For example, flight performance, hazardous materials, lost-link protocol of Remotely Piloted Air Systems (RPAS), Electro-magnetic Compatibility (EMC) vulnerability etc.

¹⁶ For UK Military Registered Air Systems see also RA 1205 – Air System Safety Cases; For HM / MOD Ships see DSA02-DMR – Defence Maritime Regulations for Health, Safety and Environmental Protection.

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- c. The 'as flown' standard of the subject Air System Type / Mark **should** be defined as suitable for the proposed aviation activities at sea.
- d. The 'as operated' configuration of the Ship platform (associated with aviation arrangements, equipment and ►crewing) **should be** ◀ defined and is suitable for the proposed aviation activities.
- e. The identified RtL associated with integration and operation of the subject Ship / Air System combination, across all DLoDs, **should** be demonstrated to be As Low As Reasonably Practicable (ALARP) and Tolerable, and owned by the Ship DH ► / AP ◀ or ADH / AM(MF). Procedural Safety mitigations, including those identified in the Ship Safety Assessment and Air System Type Airworthiness Safety Assessment (TASA) **should** be included in a ADH / AM(MF) SA-Release Safety Statement and supported by a claim-argument-evidence based Safety Case¹⁷ which **should** be reflected in the SA-Release.
14. The content of the SA-Release **should**:
- a. Be maintained by the RN RTSA; supported by the Ship DH ► / AP ◀, Ship PA, ADH / AM(MF), TAA¹⁴, Air System RTSA¹⁸, and Sponsor¹⁹ as appropriate.
- b. Include an Audit trail of amendments.
- c. Be subject to a formal review on a routine basis²⁰.
15. For non-UK Military Registered Air Systems where no UK ADH / AM(MF) and / or TAA exists, the ►Foreign Air System Sponsor¹³ ◀ **should** be responsible for:
- a. Providing the Air System Equipment DLoD Safety evidence associated with the production of a SA-Release Recommendation to DE&S following the principles in RA 1395(3). The requirement sponsor **should not** be responsible for managing Type or Continuing Airworthiness as this remains the responsibility of the civil Air System Type Certificate / Supplementary Type Certificate (TC / STC)²¹ holder, Continuing Airworthiness Manager (CAM) or AP within the Foreign ► ◀ Air System operating authority.
- b. Providing the non-Equipment DLoD Safety evidence associated with the production of a SA-Release to the RN RTSA. The requirement sponsor **should not** be responsible for managing 1st party RtL of the Air System as this remains the responsibility of the civil Air System Air Operator Certificate (AOC)²⁰ holder (or equivalent) or AP within the Foreign ► ◀ Air System operating authority.
16. This RA **should** be read in conjunction with RA 1029¹².

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Ship Air-Release

17. Annex A, Figure 1 illustrates the SA-Release process and the relationship between the organizations responsible for producing the outputs which enable the production and approval of a SA-Release. Fundamental to this is that the RtL for aviation operations with HM / MOD Ships remains clearly defined between the Ship DH ► / AP ◀ and ADH / AM(MF). The ADH / AM(MF) remains accountable for the inherent RtL to all parties associated with their Air System, noting that the Ship DH ► / AP ◀ is accountable for the RtL that the Ship poses to the Air System and that the Air System poses to the Ship's Company specifically. DH-Facing Organizations ►will ◀ support the ADH / AM(MF) with delegations defined as appropriate for delivery of safe equipment. The development and approval of the SA-Release is therefore a crucial element in managing the interface between these DHs.
18. The SA-Release is complementary to the existing Authorization processes for Ships (DSA02-DMR) and Air Systems (eg RA 1300 Series²² or appropriate MPTF) and

¹⁷ Refer to BRd 766 Chapter 1 Annex EAO01(4)C.

¹⁸ For Military Registered Civilian-Owned and Civilian Operated Air Systems, the Sponsor fulfils the role of Air System RTSA.

¹⁹ Refer to RA 1019 – Sponsor of Military Registered Civilian-Owned and Civilian Operated Air Systems - Air Safety Responsibilities.

²⁰ Refer to BRd 766 – Embarked Aviation Orders 1029 - Roles and Responsibilities: Ship Air-Release – Stakeholder Roles Responsibilities and Deliverables.

²¹ As defined in European Union Aviation Safety Agency (EASA) and UK Civil Aviation Authority Regulation.

²² Refer to RA 1300 Series – Release To Service.

Guidance Material 1395(2)

will not countermand the limitations or requirements of these processes (ie if any doubt exists, then the most restrictive limitation ►will◄ be applied).

19. The SA-Release will take account of design differences of individual Ships within a Ship Class that impact aviation. Ships within the subject Ship Class, iaw the requirements of DSA03-DMR²³, must hold Naval Authority Certification ►²⁴◄ and subsequently hold a Ship Management Certificate.

20. The maturity of Non-Equipment DLoDs relevant to safe integration of the Ship and Air System will be assessed and demonstrated to the RN RTSA by the Ship DH ►DH / AP◄ and ADH / AM(MF). The output of these assessments will be summarised in a ADH / AM(MF) SA-Release Safety Statement supported by a pan DLoD claim-argument-evidence assessment and Command Safety & Environmental Summary. The RN RTSA will issue the SA-Release once the Ship ►DH / AP◄ and ADH / AM(MF) have finalised their respective Safety Statements.

21. To facilitate operation of the Air System on the Ship it might be necessary to Authorize operation of certain aspects of the integrated Ship / Air System combination in advance of others (eg for the conduct of Ship-Air trial activity²⁵). In such cases, the SA-Release process will proceed incrementally through the imposition of Ship-Air Special Releases iaw RA 1395(4).

22. Generation of a SA-Release can be detailed and include representation from a large number of stakeholders. In order to manage this process further guidance is available in NCHQ Mid-Level Orders²⁰, stakeholders can follow these additional requirements, noting that on most occasions a SA-Release will involve a minimum of one NCHQ DH. When a new ship or Air System enters service, extensive planning will be required to conduct First of Class Flying Trials or First of Type Flying Trials respectively²⁵. The purpose of the Ship-Air Working Group (WG), however, is not a function of Project Management, but rather as the vehicle to achieving regulatory compliance.

Regulation 1395(3)

Ship Air-Release Recommendation

1395(3) The Ship PA and TAA **shall** jointly prepare the SA-Release Recommendation for each Ship / Air System combination to the satisfaction of the RN RTSA.

Acceptable Means of Compliance 1395(3)

Ship Air-Release Recommendation

23. The SA-Release Recommendation is the evidenced equipment-based argument supporting the SA-Release; all operating requirements, limitations, warnings and cautions **should** be in a format consistent with the SA-Release structure or prepared to the satisfaction of the RN RTSA and the Ship-Air WG. Content is likely to vary dependent upon the type of clearance being required.

24. The Ship PA and TAA **should** certify that the SA-Release Recommendation:

- a. Demonstrates that both the Ship and Air System equipment are acceptably safe to conduct embarked aviation.
- b. Provides an acceptably safe Ship / Air System operating envelope for subsequent approval and Authorization.

25. The Ship PA and TAA **should** submit the SA-Release Recommendation and supporting evidence to the Ship-Air WG for consideration and copy to the Defence Safety Authority, for the Military Aviation Authority (MAA) Head of Regulation & Certification, Head of the DMR and the RN RTSA. This **should** include an updated draft of the relevant BRd 766 Chapters for the Air System and Ship / Air combination. The SA-Release Recommendation **should** include as key components the outcome of:

²³ Refer to DSA03-DMR – Naval Authority Rules for Certification of MOD Shipping.

²⁴ ► Including a valid Certificate of Safety (Aviation) (CS-A), MOD Ship Safety Certificate, or MOD Boat Safety Certificate. ◄

²⁵ As defined in Defence Standard 00-133 Part 4.

Acceptable Means of Compliance 1395(3)

- a. The Military Air System Certification Process²⁶.
- b. The Certification process for aviation capable HM / MOD Ships²³.
- c. Updated drafts of the relevant BRd 766 chapters for the Ship, Air System and Ship / Air combination.
- d. Equipment Hazards identified within Ship / Air System Safety Assessments which are mitigated by DLoDs for which the DHs ► / APs ◀ are responsible.
- e. The reviewed BRd 766 chapters that identifies any elements that cannot be substantiated by supporting evidence or are generated through DLoDs for which the DHs are responsible.

Guidance Material 1395(3)

Ship Air-Release Recommendation

26. The Ship PA and TAA will prepare the SA-Release Recommendation, co-ordinating its development through Working Groups considering each Ship / Air System combination in line with the requirements of ► RA 1029(2)²⁷ and RA 1029(3)²⁸. ◀
27. The SA-Release Recommendation will contain the content of the proposed SA-Release bar any amendments deemed necessary by the RN RTSA. It will articulate:
 - a. The suitability of the Air System to operate with the Ship and its associated equipment safely in the maritime environment. This will be supported by evidence from the Air System TASA and subordinate TASAs where appropriate.
 - b. The suitability of the Ship to operate safely with the Air System and its associated equipment. This will be supported by evidence from the Ship Aviation Safety Report (SASR) and from subordinate Safety Assessments where appropriate.
 - c. That an acceptably safe Ship-Air System operating envelope has been established for the detailed Ship / Air System combination. Although derived from the Ship and Air System Safety Cases (ASSC), the development of the Ship-Air System operating envelope, including the imposition of limitations, will be supported by appropriate evidence, for example Instrumented Flying Trials and Independent Test and Evaluation (ITE) evidence, or evidence derived from analysis of previously conducted trials.
28. The SA-Release Recommendation will include specific operating procedures but may also reference other related operating procedures (Standard Operating Procedures (SOPs), Emergency Operating Procedures, etc) or other orders developed from the DLoD / Safety Assessments and trials evidence.

Regulation 1395(4)

Ship-Air Special Releases

- 1395(4) ► When the SA-Release evidence requirements of RA 1395(2) cannot be fully met, ◀ a Ship-Air Special Release **shall** be raised by the Ship PA and TAA to permit Ship Classes and Air System Type / Marks to conduct embarked aviation ► ◀.

Acceptable Means of Compliance 1395(4)

Ship-Air Special Releases

29. A Ship-Air Release with Limited Evidence (SA-RLE)²⁹, as Authorized by the RN RTSA, **should**:
 - a. Be identified when a fully substantiated Ship and / or ASSC is not available to support a full SA-Release, but on the balance of available evidence,

²⁶ Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

²⁷ ► Refer to RA 1029(2): Ship Platform Authority: Roles and Responsibilities.

²⁸ Refer to 1029(3): Air System Type Airworthiness: Roles and Responsibilities. ◀

²⁹ Equivalent to a RTS Clearance with Limited Evidence.

Acceptable Means of Compliance 1395(4)

clearance is judged safe and within the declared Safety Target. This can include Test and Evaluation activity.

- b. Be reviewed at a periodicity not exceeding 12 months.
- c. Have a maximum life of 5 years.

30. A Ship-Air Operational Emergency Release (SA-OER) **should** be raised when the RtL is considered too high for normal day-to-day operations. A SA-OER, as Authorized by the RN RTSA, **should**:

- a. Be identified when the embarked aviation activity associated with a specified Ship / Air System combination is deemed outside the declared Safety Target. A SA-OER is not applicable to Air Systems under the responsibility of an AM(MF).
- b. Be jointly enabled at Ship ODH and ADH level for a defined activity or period.
- c. Be reviewed at a periodicity not exceeding 12 months.

Guidance Material 1395(4)

Ship-Air Special Releases

General

31. Where a Special Release is ►◄ used to permit a Ship / Air System combination to conduct embarked aviation activity in lieu of a full SA-Release, a SA-OER and SA-RLE can only become a fully Authorized SA-Release with the provision of suitable additional evidence.

32. For trials activity this Regulation ►must◄ be read in conjunction with RA 2370³⁰.

33. Special Releases may also be used to introduce a new operating capability (eg Helicopter In-Flight Re-fuelling (HIFR)), changes in limitations (eg Ship Helicopter Operating Limits (SHOL)), or adding subordinate equipment (eg Air Launched Weapon), to an existing Release document. Where a Special Release is used in this manner, the Acceptable Means of Compliance and Guidance Material contained within paragraphs 29 to 32 above will remain applicable.

SA-OER

34. A SA-OER will only be used to permit aviation activities related to a specified Ship/Air System combination under the following circumstances:

- a. In conditions of actual or potential hostile enemy action.
- b. In the evaluation of options needed for contingency planning.
- c. In other conditions of operational imperative, to include training for actual, or planned, operations, when enabled by the Ship ODH and ADH. The RN RTSA ►will◄ be informed of all such activity, and the Aviation ODH ►will◄ consider seeking Air System RTSA advice prior to use of the SA-OER.

Regulation 1395(5)

Ship Air-Release – Remotely Piloted Air Systems

1395(5) Embarked operation of RPAS in HM / MOD Ships³¹ **shall** be Authorized.

Acceptable Means of Compliance 1395(5)

Ship Air-Release – Remotely Piloted Air Systems

35. Where the requirement for an RPAS³² to be operated from a HM / MOD Ship exists, the combination **should** be Authorized through an appropriate SA-Release process (with the exception of RPAS categorized in the A1 Open sub-category). The level of Authorization required is dependent on the Risk:

³⁰ Refer to RA 2370 – Test and Evaluation.

³¹ Due to the flexibility offered by RPAS, this Regulation applies to all HM / MOD ships including those not considered aviation capable, ►boats◄ and submarines.

³² Refer to RA 1600 series – Remotely Piloted Air Systems.

**Acceptable
Means of
Compliance
1395(5)**

- a. RPAS categorized in the Open A2 and A3 sub-categories and Specific category. The Ship DH / AP and RPAS Responsible Officer (RO) / RPAS Accountable Manager (AM) / ADH / AM(MF) **should** complete a preliminary assessment of Risk³³, in consultation with the Ship PA and TAA³⁴, prior to discussion with the RN DRTSA, who **should** decide on the extent of SA-Release required and whether the accelerated route illustrated at Annex A Figure 3 / 4 is applicable.
- b. RPAS categorized in the Certified Category. The Ship DH / AP and ADH / AM(MF) **should** conduct a full SA-Release iaw RA 1395(2).
36. Prior to being operated, all RPAS **should** have received a Letter of Endorsed Categorization from the MAA iaw RA 1600. Where RA 1600 does not apply³⁵, such as Civilian Operated RPAS operating iaw the Air Navigation Order, the organizations operating RPAS **should** demonstrate equivalence with respect to the RA 1600 Categorization requirements by complying with paragraph 35.
37. Unless conducting Crossdeck Operations or operating under a Trial Instruction all Air Systems **should** be within the Scope of the ship's certificate^{23, 36}, this applies to all HM / MOD ships including those not previously considered aviation capable, boats and submarines.
38. When carrying out the accelerated route illustrated at Annex A Figure 3 / 4, as a minimum the Ship DH / AP and RPAS RO / RPAS AM / ADH / AM(MF) **should** consider the following in the Risk Assessment:
- a. RPAS / Vessel Electromagnetic Interference (EMI)³⁷.
 - b. Take-off and landing location and method.
 - c. Battery charging and stowage.
 - d. Fuel storage and transportation.
 - e. Inter-Communications as applicable between the Remote Pilot and:
 - (1) Flight Deck Officer (FDO).
 - (2) Command.
 - (3) Air Systems Controller.
 - (4) Principle Warfare Officer (PWO).
 - (5) Deck Crew.
 - f. Firefighting.
 - g. Radiation Hazards.
 - h. Ship Motion / SHOLS.
 - i. Air Flow effect on RPAS.
 - j. Remote Pilot Station (RPS) Location.
 - k. Securing and movement / handling of RPAS.
 - l. Concurrent operations.
 - m. Impact of RPS equipment on other RPAS and crewed operations³⁸.
 - n. Maintenance / Equipment stowage and activity areas.
39. The Ship DH / AP and RPAS RO / RPAS AM / ADH / AM(MF) **should** generate a set of SOPs to operate the Air System and Ship combination for this SA-Release.

³³ Refer to JSP 892: Risk Management.

³⁴ Open Category and Specific S1 sub-category RPAS do not require a TAA, whereas Specific S2 sub-category and Certified Category RPAS require a TAA. Refer to the RA 1600 Series.

³⁵ Refer to RA 1600 – Remotely Piloted Air Systems.

³⁶ Refer to RA 1920 – Aviation Arrangements in His Majesty's / MOD Ships – Equipment Standards.

³⁷ Note, if no EMI assessment has been carried out consideration **should** be given to mitigating actions (ie sector blanking of the ships radar etc). Refer to BRd 2924 – EMF Hazards in the Royal Navy.

³⁸ Refer to 2022DIN04-220 – Guidance on Conducting Surface Fleet Development Trials.

**Guidance
Material
1395(5)****Ship Air-Release – Remotely Piloted Air Systems**

40. The extent of SA-Release Assurance required may range from a simple documented agreement between DHs to completion of the full SA-Release process, depending on the Risk encountered during the embarked take-off and landing cycle (including movements, securing, start up, shut down, etc). The aggravating and mitigating factors in RA 1600 for RPAS categorization may not be the primary indicators of Risk in this phase of operation.

ANNEX A

SHIP / AIR SYSTEM COMBINATIONS – AUTHORIZATION PROCESS

Figure 1 – Ship-Air Release

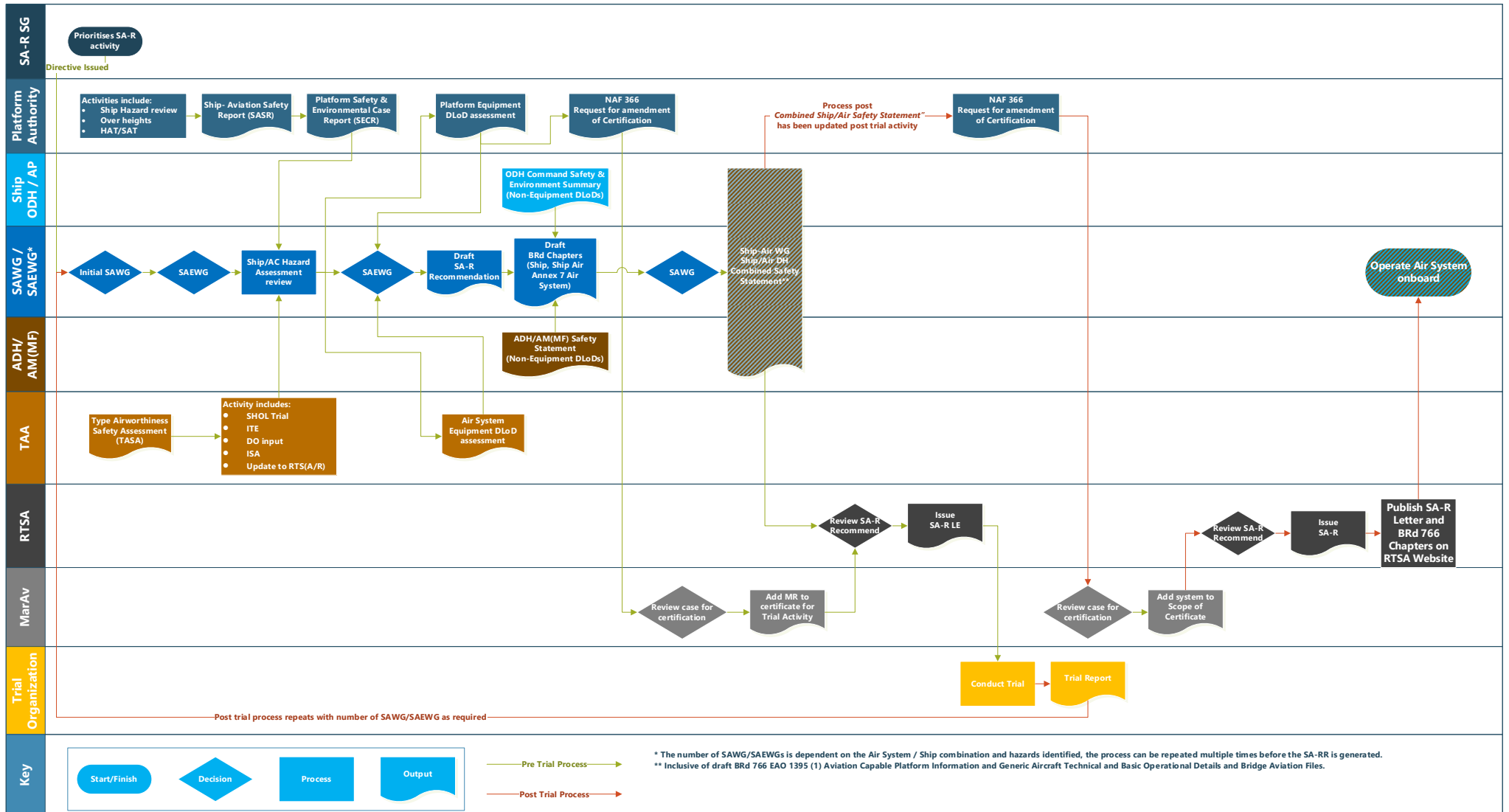
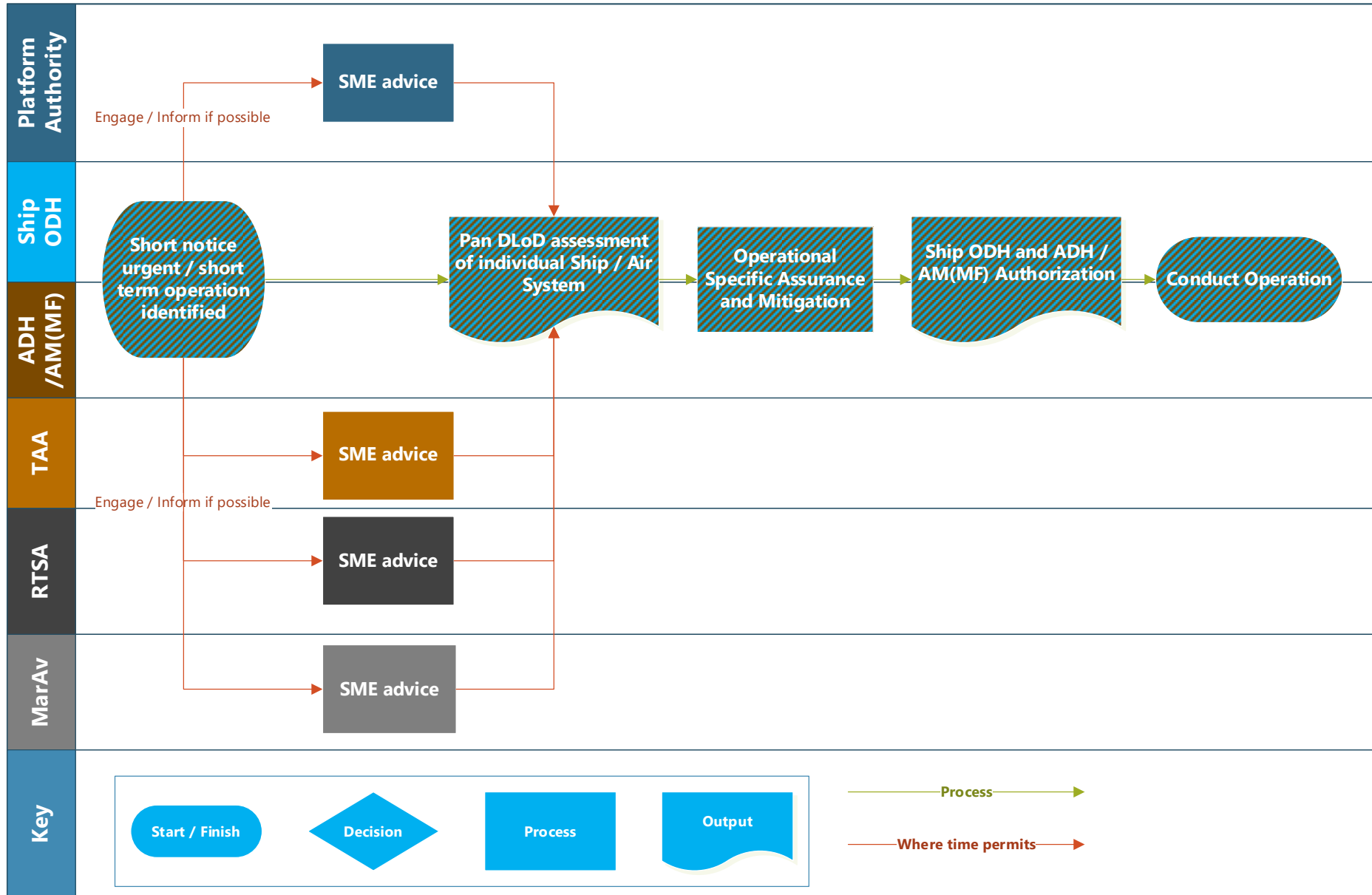
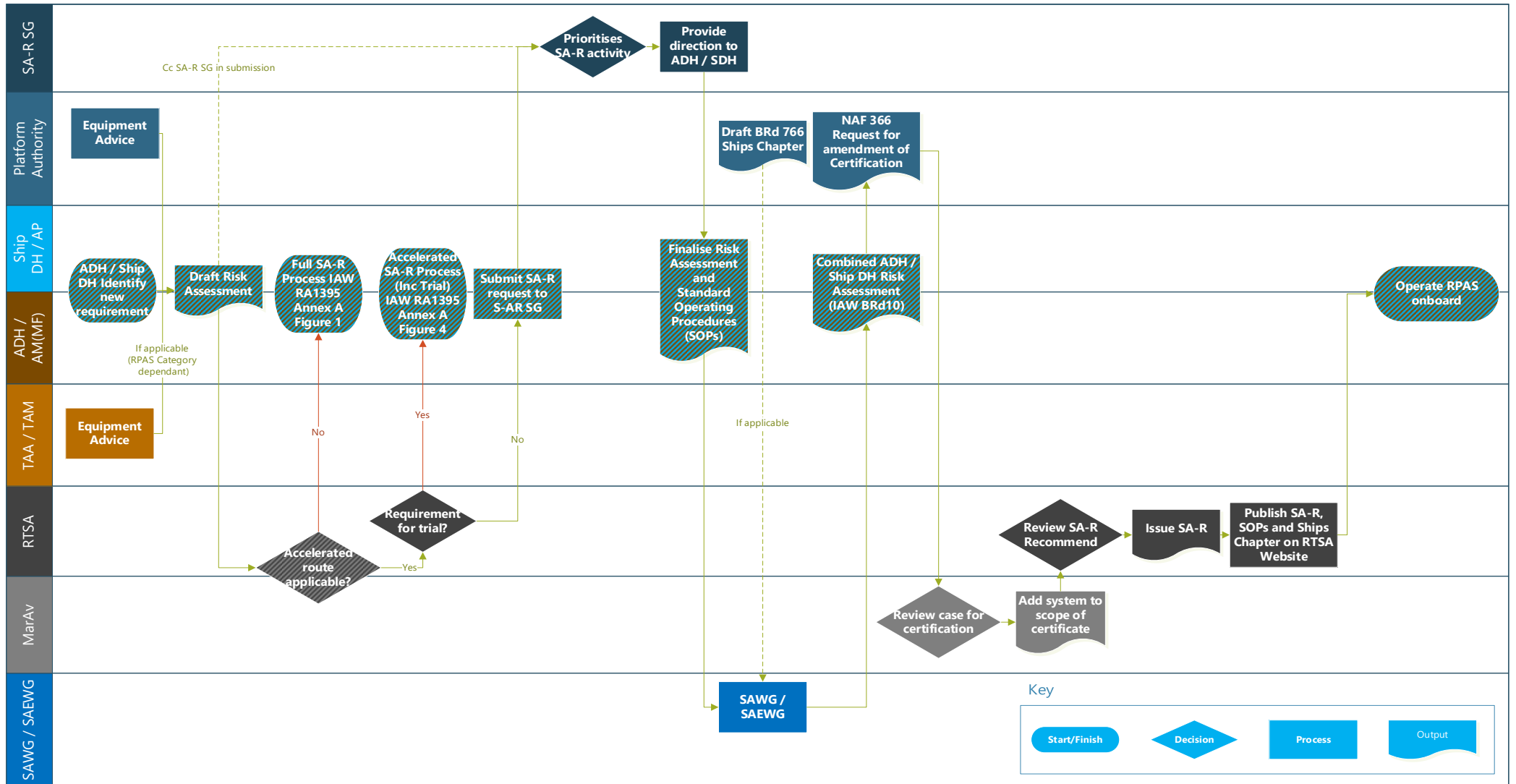


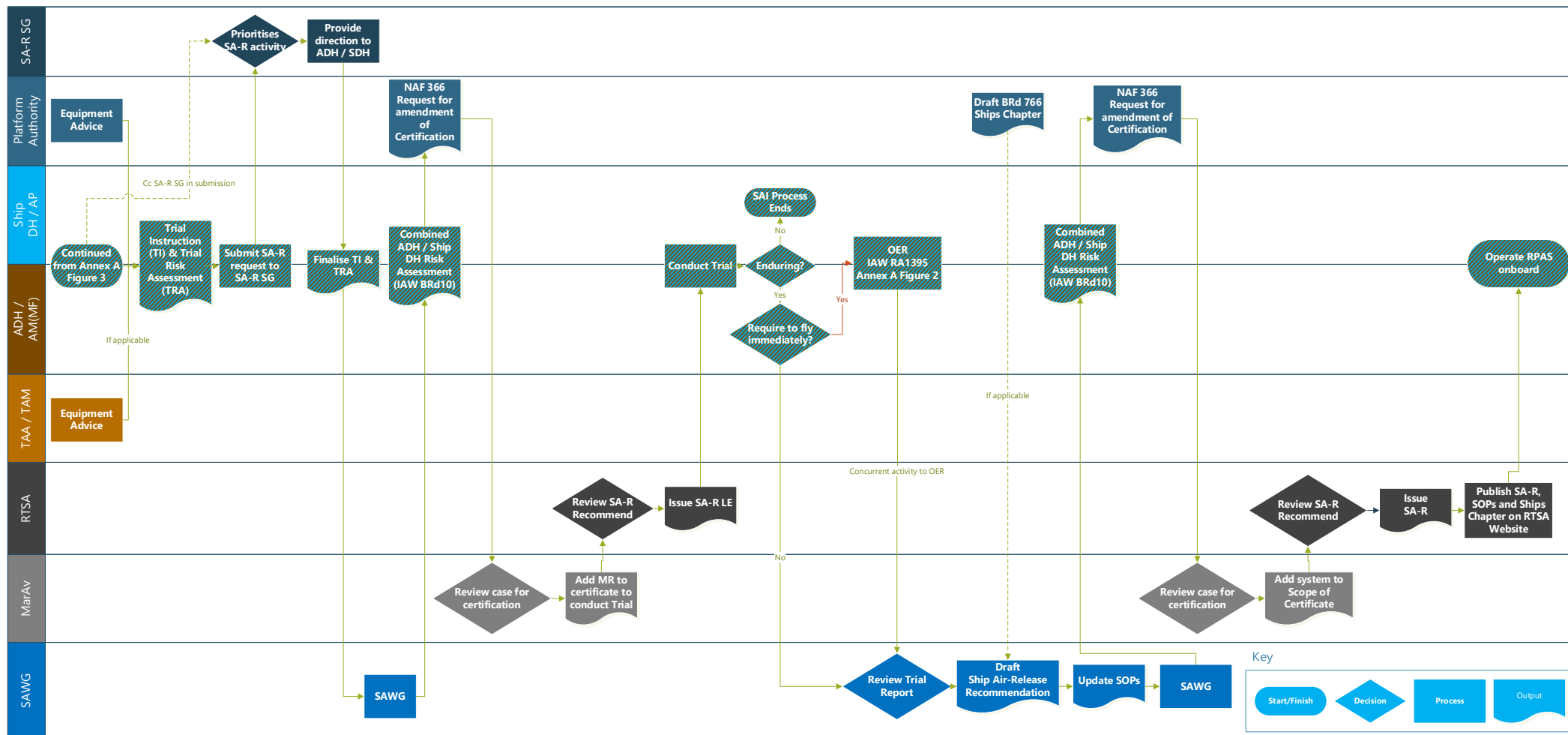
Figure 2 – Non-Routine ▶ Force Generation directed ◀ Authorization of Ship and Air System Combinations



► Figure 3 – RPAS Accelerated Authorization of Ship and Air System Combinations ◀



► Figure 4 – RPAS Accelerated Authorization of Ship and Air System Combinations (Inclusive of Trial) ◀



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RA 1400 - Flight Safety

Rationale

Flight Safety is a key component of Air Safety and is a collective endeavour to operate safely in the Defence ► Air Environment (DAE) ◀ that embraces any activity in flight or on the ground that contributes to the operation of Air Systems. A failure to enforce Flight Safety will increase Risk to Life and therefore coherent control of supporting activities is required. ► This RA details the requirements organizations dealing with Flight Safety are to manage, in order to ensure the safe operation of Air Systems. ◀

Contents

1400(1): Flight Safety

1400(2): Withdrawn – Content incorporated in RA 1400(1)

Regulation 1400(1)

Flight Safety

1400(1) Aviation Duty Holders (ADH), ► **Accountable Managers (Military Flying) (AM(MF))**, ◀ Accountable Managers (AM)¹ ► **and Heads of ADH-Facing Organizations**² ◀ **shall** have appropriate Flight Safety measures in place, and promulgate appropriate orders, to support the flying operations for which they are responsible.

Acceptable Means of Compliance 1400(1)

Flight Safety

1. ADHs and ► **AM(MF)s** ◀ **should**:
 - a. Have a Flight Safety organization in place.
 - b. Produce orders or instructions detailing the Flight Safety organization and duties within their Area of Responsibility (AoR).
 - c. Nominate and issue Terms of References (TOR) to Suitably Qualified and Experienced Persons (SQEP) Flight Safety Officers (FSO) and Foreign Object Debris (FOD)³. ►⁴ ◀ Prevention Officers.
2. ► **AMs and Heads of** ◀ ADH-Facing Organizations **should** produce orders and instructions detailing the Flight Safety measures and duties appropriate to the flying activity ► **which they support.** ◀

Guidance Material 1400(1)

Flight Safety

3. Relevant HoEs⁵ may nominate and issue TORs to SQEP FSO and FOD Prevention Officers.
4. Flight Safety may include, but is not limited to:
 - a. Promotion of a positive Air Safety culture.
 - b. Identification of hazards and risks.
 - c. Provision for the reporting and investigation of all Flight Safety occurrences, subsequent understanding of the cause(s) and promulgation and implementation of lessons identified.
 - d. FOD Prevention.
 - e. ► **FOD removal.** ◀

¹ Those AMs within: ADH-Facing Organizations; ► ◀ Maintenance Approved Organizations; ► ◀ Air Traffic Management Equipment Approved Organizations. ► This RA excludes those AMs within ◀ Design Approved Organizations.

² ► 'Heads of ADH-Facing Organizations' includes but is not limited to: Aviation Delivery Team Leaders, Commodity Delivery Team Leaders, Heads of Establishment (HoE), Military Continuing Airworthiness Managers (Mil CAMs). ◀

³ As defined in MAA02: Master Glossary.

⁴ ► For further guidance and instructions for FOD prevention see AP 8000 – Air TLB Safety and Environmental Management System. ◀

⁵ 'Relevant ► HoEs' are ◀ the ► individuals ◀ with responsibility for Duty of Care within their AoR, where aviation activity takes place.

**Guidance
Material
1400(1)**

5. Within the bounds of security and commercial considerations ► DAE ◀ organizations must share relevant Flight Safety information.
6. Additional guidance on Air Safety principles, policies and procedures can be found in RA 1200⁶ and the MAA Manual of Air Safety.

**Regulation
1400(2)****Foreign Object Debris Damage Prevention**

1400(2) Withdrawn – Regulatory content included in RA 1400(1).

**Acceptable
Means of
Compliance
1400(2)****Foreign Object Debris Damage Prevention**

7. Withdrawn – Regulatory content included in RA 1400(1).

**Guidance
Material
1400(2)****Foreign Object Debris Damage Prevention**

8. Withdrawn – Regulatory content included in RA 1400(1).

⁶ Refer to RA 1200 – ► ◀ Air Safety Management.

RA 1410 – Occurrence Reporting and Management

Rationale

Accurate and timely Occurrence reporting with effective investigation is fundamental to identifying Air Safety Risks and delivering effective mitigation. Without a simple, robust reporting and management system, that includes investigation and feedback, these events will re-occur, leading to increased Risk to personnel, equipment and the public. This RA requires the Regulated Community to report all Air Safety Occurrences, and take appropriate action, in order to reduce the overall number of events.

Contents

1410(1): Occurrence Reporting and Management

Regulation 1410(1)

Occurrence Reporting and Management

1410(1) Aviation Duty Holders (ADH), Accountable Managers (Military Flying) (AM(MF)), Accountable Managers (AM)¹, and Heads of ADH-Facing Organizations^{2, 3} **shall** ensure that all Air Safety reportable Occurrences are reported, managed and appropriate action taken.

Acceptable Means of Compliance 1410(1)

Occurrence Reporting and Management

1. Air Safety Occurrences **should** be reported in accordance with (iaw) Annex A and the Air Safety Information Management System (ASIMS) User Manual (hosted on the MAA websites).
2. ADHs, AM(MF)s, AMs, and Heads of ADH-Facing Organizations with access to ASIMS⁴ **should** ensure that:
 - a. All Air Safety Occurrences are reported, investigated, the results recorded, and any identified actions recorded and closed using the ASIMS as the primary management tool.
 - b. A Significant Occurrence Notification (SON) is raised following any Accident, or any serious or sensitive Incident utilizing the template held on the MAA websites and accessible through the ASIMS homepage.
 - c. An ASIMS Occurrence Reporting Structure is maintained and managed.
3. ADHs, AM(MF)s, AMs and Heads of ADH-Facing Organizations without access to ASIMS **should** ensure that:
 - a. All Air Safety Occurrences are reported in the first instance to the MOD in the form of a PDF Defence Air Safety Occurrence Report (DASOR) within the timescales detailed in Annex A. Subsequent actions, including the following may be completed via an appropriate local Occurrence Management System and uploaded to ASIMS upon completion:
 - (1) Investigating the cause,
 - (2) Recording the result of the investigation,
 - (3) Identifying any recovery actions and recording their closure.
 - b. A SON is raised following any Accident, or any serious or sensitive Incident utilizing the template held on the MAA websites.

¹ Those AMs within: ADH-Facing Organizations; Maintenance Approved Organizations; or Air Traffic Management Equipment Approved Organizations. This RA excludes those AMs within Design Approved Organizations.

² 'Heads of ADH-Facing Organizations' includes but is not limited to: Aviation Delivery Team Leaders, Commodity Delivery Team Leaders (DTL), Heads of Establishment (HoE), Military Continuing Airworthiness Managers (Mil CAMs).

³ Where the Air System is Civilian-Owned, ownership of regulatory responsibility by either the Type Airworthiness Authority (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 split of TAw responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

⁴ ► <https://asims.ice.mod.gov.uk/MODCas/login> ◀

Acceptable Means of Compliance 1410(1)

- c. A local Occurrence Reporting Structure is maintained and managed.
4. Air Safety Occurrences involving civil registered Aircraft, MOD civil derived Aircraft or applicable agencies **should** be reported as a DASOR and distributed as a Mandatory Occurrence Report (MOR) iaw paragraph 17 and European Regulation 376/2014 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018. ADHs, AM(MF)s, AMs, and Heads of ADH-Facing Organizations **should** ensure that any MOR received from civil aviation, which might affect Defence Aviation, is also reported as a DASOR. MORs **should** be attached to the DASOR for ease of information transfer.
5. ADHs, AM(MF)s, AMs and Heads of ADH-Facing Organizations **should** ensure that all DASORs relating to their platform or equipment type(s) are routinely reviewed, assessed for safety and / or Airworthiness impact with appropriate activity undertaken by individuals who are Suitably Qualified and Experienced Persons (SQEP)⁵. This activity includes, but is not limited to, actions against the Hazard Log and equipment safety assessment.
6. ADHs, AM(MF)s, AMs and Heads of ADH-Facing Organizations **should** ensure that:
- Their Air Safety Management System⁶ explicitly trends and tracks applicable Occurrence Investigation recommendations to closure.
 - Applicable Occurrence Investigation recommendations that affect their Air System Safety Case (ASSC) are reviewed as part of the periodic ASSC review⁷; especially those from Service Inquiries (SI) and Director General Defence Safety Authority (DSA-DG) Non-Statutory Inquiries (NSI).
7. TAAs and Commodity DTLs **should** ensure that a brief summary of activity relating to each DASOR is added in a timely manner to inform and support the relevant investigation; this summary **should** also include reference of any Special Instructions (Technical) raised, references to Airworthiness management tools (eg RESOLVE), and other supporting documentation as required.
8. DASOR information transmitted via ASIMS **should** be classified no higher than Official⁸. Where relevant information attracts a higher classification, ADHs, AM(MF)s, AMs and Heads of ADH-Facing Organizations **should** maintain a record on an appropriately classified system that refers to the corresponding DASOR.
9. DASORs **should** be distributed to all areas, such as other ADHs, AM(MF)s, AMs and Heads of ADH-Facing Organizations that may be affected or provide / gain benefit through awareness.
10. ADHs, AM(MF)s, AMs and Heads of ADH-Facing Organizations **should** assure the quality of the reports within their Area of Responsibility.

Guidance Material 1410(1)

Occurrence Reporting and Management

11. Air Safety Occurrences fall into one of 3 types: Accidents, Incidents or Hazard Observations⁹. To reduce the likelihood of re-Occurrence, all Air Safety Occurrences and failures of safety controls (including those that originate in areas such as logistics, infrastructure and other support) need to be reported and investigated to a suitable depth in order that causes are understood and lessons identified, promulgated and appropriate action taken. Examples of Air Safety reportable Occurrences are detailed in Annex B.
12. Timely and accurate Occurrence reporting is required across Defence Aviation to:

⁵ The individuals who are SQEP might not just be TAA / Delivery Team personnel; this may include forwarding Occurrences to relevant stakeholders (ie: Design Organizations, Original Equipment Manufacturers, etc). Refer to RA 1015 – Type Airworthiness **► Management ◀** – Roles and Responsibilities.

⁶ Refer to RA 1200 – Air Safety Management.

⁷ Refer to RA 1205 – Air System Safety Cases.

⁸ Information marked Official-Sensitive cannot be transmitted via ASIMS.

⁹ A quick reference guide and definitions are at Annex A.

**Guidance
Material
1410(1)**

- a. Notify all relevant agencies of actual and potential Hazards.
 - b. Identify the cause and causal factors.
 - c. Initiate further investigation where appropriate.
 - d. Highlight recommendations to address identified issue(s).
 - e. Enable data capture and analysis.
13. **Reporting Types.** There are three main Occurrence report types:
- a. **Significant Occurrence Notification.** It is essential that a SON is submitted as soon as possible following any applicable reportable Occurrence, see Annex A, and updated as additional information becomes available, so that senior military leadership is notified as quickly and as accurately as possible. Units / Organizations submitting a SON are to ensure their Chain of Command and supporting organizations, such as ADH chain / AM(MF), TAAs etc, are appropriately informed independently of the SON. SONs need to be supported by a linked DASOR, where possible. The format for a SON and the report addressees are available in the SON template held on the MAA websites and accessible through the ASIMS homepage.
 - b. **Defence Air Safety Occurrence Report.** All Occurrences (including those described in a SON) need to be reported and distributed using a DASOR submitted via ASIMS. Other documents may be referenced where either classification or sensitivity markings mean they are inappropriate for transmission via ASIMS.
 - c. **Unit Level Forms.** An alternative method for the initial reporting of Hazard Observations may be in use at unit level such as InForms and / or for Navy Command Aircraft Operating Authority Units, the Flight Safety Log, nevertheless all Air Safety related observations need to be recorded via a DASOR.
14. **Non-ASIMS Organizations.** For organizations not using ASIMS as its primary management tool, an editable DASOR template can be found on the MAA websites. This will result in organizations dual reporting to ensure that all interested parties are aware of the Occurrence.
15. **Reporting Procedures.** Air Safety reporting procedures including required timelines will be iaw Annex A.
16. **ASIMS Training.** Individuals ► may ◀ complete the ► ◀ online training, which is available within ASIMS on the launch ► page ◀, for their respective roles and responsibilities within the reporting process, prior to the use of ASIMS. MAA sponsored ASIMS role training is available via Safety Training for Error Prevention (STEP), the suite of which is highlighted in RA 1440¹⁰.
17. **Civil Occurrence Reporting**¹¹. The European Union (EU) MOR scheme¹¹, as detailed in European Regulation 376/2014 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018, is comprised of MORs and Voluntary Occurrence Reports (VOR). The MOD requires DASORs for a wider selection of Occurrences than the civilian MORs and VORs¹². The Occurrence Manager needs to select the ASIMS MOR function for all appropriate DASORs (for both civilian MORs and civilian VORs), using the following breakdown:
- a. **MORs.** Occurrences which may represent a significant Risk to aviation safety, such as Occurrences related to:
 - (1) The operation of the Air System.
 - (2) Technical conditions, Maintenance and repair of the Air System.
 - (3) Air navigation services and facilities.

¹⁰ Refer to RA 1440 – Air Safety Training.

¹¹ <http://www.caa.co.uk/Our-work/Make-a-report-or-complaint/MOR/Occurrence-reporting>.

¹² Civilian aviation authorities reportable Occurrence are detailed in EU Commission Implementing Regulation 2015/1018 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018.

**Guidance
Material
1410(1)**

- (4) Aerodromes and ground services.
- b. **VORs.** Occurrences which:
 - (1) May not be captured as a MOR.
 - (2) Are perceived by the reporter as an actual or potential Hazard to aviation safety.

Reporting of Occurrences Involving Other Nations¹³

18. Significant Occurrences involving other nations' military Air Systems which occur in the UK Flight Information Regions or in UK overseas territories¹⁴, or are under the control of or hosted by a UK Service unit or Contractor Flying Organization, need to be reported via a SON.

19. Where an Occurrence, significant or otherwise, takes place under the control of or hosted by a UK Service unit or Contractor Flying Organization a DASOR also needs to be raised by the controllers or hosts respectively.

Confidential Reporting

20. **General.** There may be occasions where an individual may not wish to raise an issue with their immediate superior or colleagues through the DASOR reporting system. In this circumstance reports may be raised through the pan-Defence confidential reporting scheme directly to an appropriate sponsor.

21. **Defence Confidential Occurrence Report Scheme (DCORS).** The DCORS aims to encourage the reporting of such Incidents directly to the appropriate Command Flight Safety Officer (CFSO) or MAA as per the DCORS form. If desired, the author's anonymity is guaranteed and names will only be released with appropriate consent. Reports submitted anonymously will still be staffed, but they are less likely to be concluded satisfactorily, and originators will not receive feedback. Those reports that do include the author's details enable the recipient to seek further detail / clarification, if needed, and allow feedback.

22. **Procedure.** The DCORS procedure is as follows:

- a. **Forms.** The DCORS form and addresses are available on the MAA website and accessible through the ASIMS homepage. Forms may be submitted in a plain envelope addressed to the appropriate sponsor.
- b. **Progression.** Only the individual to whom it is addressed may open the letter. The MAA or the relevant CFSO will reply to the originator with a full progress report.
- c. **Publication of DCORS.** Information from DCORS may be published for educational purposes; however, CFSOs will maintain confidentiality. If, for any reason, an originator feels that a report may not be used for any subsequent publicity this will be explicitly stated.
- d. **Forms Supply.** ADHs, AM(MF)s and CFSOs will ensure that a supply of DCORS forms is readily available.

Investigations

23. All Air Safety Occurrences will be investigated. The aim of the investigation is to determine what happened, why it happened and provide formally recorded recommendations or mitigation¹⁵ to prevent recurrence. There are three main types of investigation:

- a. **Service Inquiries (SI)^{16, 17}.** When mandated by law or policy, or where DSA-DG deems appropriate, DSA-DG will convene a SI iaw The Armed Forces (Service Inquiry) Regulations 2008 and RA 1420. When DSA-DG deems that a

¹³ For the avoidance of doubt paras 18 and 19 apply to non-UK military-registered Aircraft.

¹⁴ For the avoidance of doubt this includes Sovereign Base Areas.

¹⁵ Mitigations are used within ASIMS, to record local actions or activity, to prevent a further Occurrence, that do not require Delivery Duty Holder / Operating Duty Holder / AM approval. Further details are contained within the ASIMS User Manual.

¹⁶ SIs are statutory inquiries, in that they are governed by statute – The Armed Forces (Service Inquiries) Regulations 2008. Any investigations below a SI – such as an OSI or LI – are often called “Non-Statutory Inquiries” (NSI).

¹⁷ Refer to RA 1420 – Service Inquiries and Non-Statutory Inquiries.

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1410(1)**

SI is not required, the DSA-DG may direct that an NSI be conducted by the relevant authority (such as the ADH).

b. **Occurrence Safety Investigation (OSI).** An OSI is a non-statutory and flexible investigation that provides a standard Defence investigation format within ASIMS that can be used to record an investigation into any Air Safety Occurrence. An OSI also provides additional levels of scrutiny through the Occurrence Review Group (ORG).

c. **Local Investigation (LI).** For Occurrences that do not require a SI or OSI, the depth of the investigation may be tailored by the local Occurrence Manager to suit the nature of the Occurrence.

24. **Investigation Support.** The Defence Accident Investigation Branch (DAIB) will support the SI and can also provide advice and assistance to the NSI. Following notification by SON, DAIB staff acting on behalf of DSA-DG will review the Occurrence and, subject to information available, may deploy to undertake Triage investigation. All personnel are to assist DAIB investigators during the Triage process to ensure that an accurate Risk picture can be established and the most appropriate follow-on investigation can be instigated¹⁸.

25. **Recommendations.** Recommendations provide a mechanism for managed change within the Air Safety environment based on the conclusions from investigations. As such, they will have a clear and justifiable purpose and a reasonable timescale for implementation. Recommendations can be used to address particular causal factor issues or wider preventative / corrective / mitigating action. All recommendations arising from the investigation need to be recorded on ASIMS with any actions taken corroborated with an auditable record of supporting evidence. There are specific requirements with regard to recommendations arising out of SIs.

Airprox Investigation and follow-up actions

26. **Airprox Reporting.** An Airprox form will be raised by the Aircraft commander whenever an Airprox is deemed to have occurred. All parties involved in an Airprox (eg the Aircraft commander, Air Traffic Control (ATC) controllers, Flt Ops Assistants, etc) who are advised that they have been involved in an Airprox, irrespective of whether or not they were aware of the occurrence or considered that it constituted an Airprox, will submit a DASOR which is independent but linked to the Airprox prime DASOR.

27. **Investigation.** ADHs, AM(MF)s and AMs will ensure that any Airprox involving their Air Systems are investigated. Results of investigations will be placed on a DASOR and linked to any other report pertinent to that Airprox.

28. **Follow-up Action.** Airprox within UK and delegated airspace will be assessed by the UK Airprox Board (UKAB). Any recommendations from the Director UKAB are to be actioned where required and notified once complete.

¹⁸ Refer to RA 1430 – Aircraft Post Crash Management and Significant Occurrence Management.

ANNEX A

AIR SAFETY OCCURRENCES REPORTING QUICK REFERENCE GUIDE

	Unit Level Forms	DASOR Occurrence Types			SON (see note 4)
		Haz / Obs	Incident	Accident	
Accident see notes 1 and 6.				✓	✓
Incident see notes 2 and 6.			✓		As required
Hazard Observation see notes 3 and 6.	✓	✓			As required
SON Consideration					
Sensitive (Air Safety). VIP involved, possible societal, media or ministerial interest, including damage to commercial and / or public property.		Recorded on originating DASOR			✓
Suspension or Restriction. An Air Safety Occurrence that has led to, or may lead to, the suspension of flying operations or a significant restriction being imposed such as an 'op pause'.		Recorded on originating DASOR			✓
Non-UK NATO Aircraft in the UK. On notification of an Accident or serious Occurrence involving a non-UK NATO Aircraft in the UK.		Recorded on originating DASOR			✓
To be reported within: see note 5	48 hrs	48 hrs	48 hrs (or 24 hrs for Airprox)	24 hrs	ASAP (<1 hr)

Notes:

- Accident.** An Air Safety related Occurrence which has resulted in any or all of the following conditions:
 - A person being killed; or,
 - A person suffering a specified injury^{19, 20} lasting over seven days. In the event that an injury severity is not known or confirmed (eg not immediately determinable, awaiting a medical examination, etc) when initially reported (as per the reporting quick reference guide above), then the injury **should** be assumed to last for over seven days and be reported accordingly. When the injury severity is confirmed the report **should** be updated accordingly; or,
 - An Air System sustaining damage or structural failure which adversely affects the structural strength, performance or flight characteristics of the Aircraft, and would normally require major repair or replacement of the affected component. Except for: engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the Aircraft skin (such as small dents or puncture holes) or minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike, (including holes in the Radome). Derived from ICAO Annex 13; or,
 - An assessment of Air System Repair Category 4 or (including provisional) Category 5.
- Incident.** An Air Safety related Occurrence which has not resulted in an Accident but has resulted in any or all of the following conditions:
 - A person receiving a specified injury lasting seven days or less²¹; or,
 - An event which compromises Air Safety; or,
 - An assessment of Air System Repair Category 1, 2 or 3 damage.
- Hazard Observation.** A report used to provide information on a specific situation or set of circumstances which did not actually result in an Air Safety Incident but where the potential for an Air Safety Incident to occur in the future was identified. Air Safety related Hazard Observations reported on Unit Level Forms need to be transferred to a DASOR.
- SON.** The format and contact details for a SON are detailed within the SON template held on the MAA websites and accessible through the ASIMS homepage.
- DASOR Reporting Timeline.** DASOR reporting timelines refer to the submission and initial distribution of the report by the Occurrence Manager.
- Remotely Piloted Air System (RPAS).** For RPAS investigations see also the appropriate RA in the RA 1600 series.

¹⁹ Injuries are defined in the Reporting of Injuries, Diseases and Dangerous Occurrence Regulations (RIDDOR) 2013 Regulation 4: <http://www.hse.gov.uk/riddor/> and <http://www.legislation.gov.uk/ukxi/2013/1471/contents/made>.

²⁰ Refer to JSP 375 Part 2 Volume 1 Chapter 16 Annex A – Accident/Incident Reporting and Investigation.

²¹ The report (DASOR and SON if applicable) **should** be subsequently recategorized depending on the outcome, within 15 days of the occurrence.

ANNEX B
GUIDE TO REPORTABLE OCCURRENCES

1. Example Occurrences for which DASORs are required include (this list is not exhaustive; if in any doubt, a DASOR is to be submitted):

a. General:

- (1) Errors that significantly reduce the levels of safety normally expected.
- (2) Occurrences involving a serious increase in workload which correspondingly reduces safety margins due to fatigue; this includes cumulative fatigue.
- (3) Damage to an Air System sustained during any activity whilst on the ground occurring outside the period of operation of the Aircraft.
- (4) Flight simulator Occurrences or Occurrences in a synthetic environment which may be of benefit to the wider Defence Aviation community, but excluding those of a Health and Safety at Work nature.
- (5) Real-event Occurrences that held elevated Risk due to negative consequences or learned behaviours from experiences in a synthetic environment.
- (6) Real-event Occurrences that had a cause tangibly-linked to experiences in a synthetic environment and may be of benefit to the wider Defence Aviation community.
- (7) Occurrences involving Foreign Object Debris or loose articles either in or on an Air System and whether or not any damage results.
- (8) Significant failure or unforeseen degradation of any safety critical system.

b. Air Traffic Management:

- (1) ATC / Area Control Centre (ACC) Incidents and Accidents – involving and reported by personnel of ATC and ACC disciplines.
- (2) Any Occurrence where ATC procedures, military flying regulations and / or, where appropriate, civil legislation are breached.

c. Continuing Airworthiness:

- (1) Maintenance Occurrences – occurring during Maintenance of an Air System²².
- (2) Maintenance error where the potential for an Air Safety Incident to occur was identified.
- (3) Maintenance errors identified after Certification.
- (4) Serious equipment faults identified during Maintenance.
- (5) Misleading, incorrect or insufficient applicable Maintenance data or procedures that could lead to significant Maintenance errors.
- (6) Incorrect control of the Air System Maintenance schedule.
- (7) Releasing an Air System to service from Maintenance in which the material state endangers flight safety.
- (8) Releasing an Air System to service from Maintenance in which the documented state of the Air System does not match the physical state of the Air System and could compromise Flight Safety.
- (9) Where insufficient or inadequate resources are available to conduct safe Maintenance operations.
- (10) The use of products, components or materials, from unknown, suspect origin, or unserviceable critical components.

d. Flight Operations:

²² Where applicable Health and Safety Executive & Service specific reporting (eg the Navy Lessons and Incident Management System (NLIMS)) needs to be raised and cross referred to within the applicable DASOR.

- (1) Incidents and Accidents – occurring during the period of operation of the Air System under the control of Flight Crew personnel.
- (2) Uncharted Obstructions.
- (3) Other Occurrences – in support of flying operations²².
- (4) Occurrences that represent an actual or potential Flight Safety Hazard.
- (5) Abandoned take-offs or unintentionally leaving a runway, taxiway or Aircraft operating surface.
- (6) Unplanned autorotative landing.
- (7) Aircraft forced landing.
- (8) Aircraft hard landing.
- (9) Unauthorised exceedances of the flight envelope.
- (10) Deviations from the Release To Service.
- (11) A significant loss of thrust / engine power.
- (12) Flying control system failure or malfunction, or un-commanded flying control movement (UFCM) however momentary.
- (13) Any item that becomes detached from or falls from an Aircraft.
- (14) Helicopter external load malfunctions, including unusual load behaviour which led or could have led to irregular release, giving rise to significant concern for safety.
- (15) Serious reduction in Aircraft performance due to weather or icing.
- (16) Severe turbulence, wake turbulence or wind shear.
- (17) Any loss of prescribed separation between Aircraft.
- (18) When the Aircraft Commander has received and responded to a Traffic Collision Avoidance System Resolution Advisory, regardless of the cause.
- (19) When an individual during Air System operations has been adversely affected by injury; incapacitated due to illness, the use of drugs or alcohol; or affected by noxious fumes or food poisoning. This includes Aircrew or support personnel who, for any reason, are required to report to a medical officer after an Incident.
- (20) Lightning strike.
- (21) Aircraft self-damage by weapons.
- (22) Losses due to hostile action.
- (23) Irregular release / discharge of weapons.
- (24) Inadvertent release of towed targets.
- (25) Occurrences resulting from fast roping or abseiling from Aircraft.
- (26) Equipment failure or deficiencies causing significant concern to the user.
- (27) Wildlife strikes or near wildlife strikes.
- (28) Bird strikes or near bird strikes.
- (29) Wire strikes or near wire strikes.
- (30) Instances of laser equipment being used against Aircraft and personnel in direct support of flying operations.
- (31) Parachute deployment irregularities such as any difficulty experienced by a free fall parachutist in locating or pulling their base of container toggle or difficulties experienced by a Parachute Jump Instructor drogue setting for a tandem parachutist.
- (32) Any parachuting equipment issues experienced by a parachutist either during or prior to a military parachute descent.
- (33) All occasions when a Runway or Aerodrome Movement Area Incursion has occurred.
- (34) Any Operation of a Personal Locator Beacon.

RA 1420 - Service Inquiries ► and Non-Statutory Inquiries ◀

Rationale

There is a necessity to investigate aviation Accidents and Significant Occurrences¹ to enhance the delivery of operational capability through continuous improvement to Defence Air Safety. Director General Defence Safety Agency (DSA-DG) is appointed by the Defence Council as the primary Convening Authority (CA) for Service Inquiries (SI) into safety related Accidents and Significant Occurrences, which include those occurring in the aviation domain. The SI (whether required by law or policy or convened at the discretion of DSA-DG) ► and Non-Statutory Inquiries (NSI) (which may be convened at the discretion of DSA-DG or by Aviation Duty Holders (ADH), Accountable Managers (Military Flying) (AM(MF)), Accountable Managers (AM), or Heads of ADH-Facing Organizations)◀ will make recommendations to prevent recurrence and improve Air Safety.

Contents

1420(1): Service Inquiries ► and Non-Statutory Inquiries ◀

Regulation 1420(1)

Service Inquiries ► and Non-Statutory Inquiries ◀

1420(1) The independent, full time, SI ► / NSI ◀ Panel (working directly to the CA) **shall** fully investigate all aspects of the Accident or ► Significant ◀ Occurrence and ► ◀ provide the CA with a timely, comprehensive written report, with relevant recommendations. ADHs, AM(MF)s, ► ◀ AMs²◀, ► and Heads of ADH-Facing Organizations^{3, 4, 5}◀ **shall** support the CA in all aspects of the investigation and act upon SI ► / NSI ◀ recommendations.

Acceptable Means of Compliance 1420(1)

Service Inquiries ► and Non-Statutory Inquiries ◀

1. ► ◀
2. The MOD Deputy Chief of Defence Staff Duty Officer and / or Permanent Joint Headquarters duty staff **should** inform DSA-DG, the Defence Accident Investigation Branch (DAIB), Operating Duty Holders (ODH) ► and AM(MF)s of Accidents and Significant ◀ Occurrences⁶◀. The ODH ► or AM(MF) ◀ **should** inform all other relevant stakeholders.
3. Following notification of ► an Accident or Significant ◀ Occurrence, Head DAIB, once directed by DSA-DG, **should** deploy an appropriately constituted team to gather and secure vulnerable and perishable evidence as soon as possible.
4. For the avoidance of doubt, ► Accidents and Significant ◀ Occurrences defined in this RA **should** include those where serious injuries or fatalities occur during parachuting, fast roping or abseiling where a ► UK ◀ military registered Air System is deemed to have had a direct bearing on the Occurrence.
5. Where an SI ► or NSI ◀ is convened, single Service Chiefs of Staff have agreed that they **should** provide appropriate candidates for the SI ► or NSI ◀ panel as specified by DSA-DG on request from appropriate single Service resources. This will include the appropriate Front Line Command (FLC) provision of assistance to DSA-

¹ ► A "Significant Occurrence" is an Occurrence involving circumstances indicating that there was a high probability of an Accident and associated with the operation of an Air System. The difference between an Accident and a Significant Occurrence lies only in the severity of the outcome.

² Those AMs within: ADH-Facing Organizations; Contractor Flying Approved Organizations; Maintenance Approved Organizations; Air Traffic Management Equipment Approved Organizations; or Design Approved Organizations.

³ 'Heads of ADH-Facing Organizations' includes but is not limited to: Aviation Delivery Team Leaders, Commodity Delivery Team Leaders, Heads of Establishment (HoE), Military Continuing Airworthiness Managers (Mil CAMs).

⁴ Refer to RA 1205 – Air System Safety Cases.

⁵ Where the Air System is Civilian-Owned, ownership of regulatory responsibility by either the Type Airworthiness Authority (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 split of TAW responsibilities TAM may be read in place of TAA as appropriate throughout this RA. ◀

⁶ Refer to RA 1410 – Occurrence Reporting.

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DG in respect of requirements arising from Accidents involving non-FLC Defence aviation contractors.

6. The SI ►or NSI◄ panel **should** conduct the investigation iaw Joint Service Publication (JSP) 832⁷.
7. The SI ►or NSI◄ panel **should** avoid the explicit attribution of blame⁷.
8. The SI ►or NSI◄ panel **should** aim to be complete within 6 months. Investigations exceeding this timeframe **should** have progress reports submitted to the CA⁸. These reports **should** be further distributed as directed by the CA ►;and all SI and NSI reports are to be provided to Head DAIB.◄

Final Report

9. The report **should** be written iaw JSP 832 guidance. Prior to final publication the ODH or AM(MF)⁹ **should** be given the opportunity to check the provisional report for errors of fact and to make contextual or wider comment. To protect the independence of the SI ►and NSI◄ process, the comments **should** be retained as part of the Record of Proceedings but will only be incorporated in the main report if they are accepted by the SI ►or NSI◄ president.
10. ADHs, AM(MF)s, ►◄ AMs ►and Heads of◄ ADH-Facing Organizations identified by the CA to enact SI ►or NSI◄ recommendations **should** do so and subsequently ►◄ report progress to Head DAIB iaw paragraphs ►30-31◄ below.

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Service Inquiries ►and Non-Statutory Inquiries◄

11. ►An aviation safety investigation below SI is a non-statutory and flexible investigation that may be used to investigate any matter (with the exception of those matters for which an SI is mandated by law or policy) in order to establish the cause of the Accident or Significant Occurrence and to make recommendations to prevent recurrence. On a case-by-case basis, DSA-DG may elect to employ an NSI in place of a full SI. In such cases, DSA-DG may provide specialist assistance to an NSI and may also require visibility of the NSI proceedings and findings.◄
12. ►◄ Where the ►Accident or Significant◄ Occurrence requires immediate investigation, or further information is required, DSA-DG will task the DAIB to deploy an appropriately constituted investigation team. This action may precede DSA-DG decision to convene an SI ►or NSI.◄
13. The DAIB team will commence an investigation as soon as possible in order to secure vulnerable and perishable evidence. As part of this process they must be granted unrestricted access to the crash site, ►Air System◄ and any evidence. This may include, but is not limited to, witnesses, documentation, Air Traffic Control and Air System data recording equipment. They will report on the broad circumstances of the ►Accident or Significant◄ Occurrence and highlight any immediate Flight Safety concerns to DSA-DG. DSA-DG may use this report, in addition to other information, to determine the appropriate type of investigation into the ►Accident or Significant◄ Occurrence.
14. ADHs, AM(MF)s, ►◄ AMs ►and Heads of◄ ADH-Facing Organizations will confirm to DSA-DG via ►the◄ Military Assistant (DSA-DGMA) or Assistant Military Assistant (DSA-DG-AMA) (contact details at Table 1) that their internal Chains of Command have been made aware. This will trigger an initial discussion between DSA-DG and the ADHs, AM(MF)s, ►◄ AMs ►and Heads of◄ ADH-Facing Organizations to assess the options for further investigation. SIs ►or NSIs◄ may be mandated by statute or policy¹⁰. For other eventualities, the final decision on whether or not to initiate an SI ►or NSI◄ lies solely with DSA-DG. If DSA-DG determines that there is no requirement to convene an SI, ►DSA-DG◄ may direct an ADH ►or AM(MF)◄ to undertake a Non-Statutory Inquiry and give guidance on its conduct. The decision to

⁷ Refer to JSP 832 – Guide to Service Inquiries.

⁸ Refer to JSP 832, Chapter 2 Appendix 2, p50 – progress report requirements (every 30 days).

⁹ Where, due to the content of the report, it would be inappropriate for the relevant 2* ODH / AM(MF) to make comment, 3* or above (or equivalent) comment will be requested.

¹⁰ Refer to JSP 832, Para 1.14 ►►.

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convene an SI ► or NSI ◀ will normally be made within 48 hours of the ► Accident or Significant ◀ Occurrence.

Table 1. Contact numbers

Post	Office (working hours)	Mobile (OOH)
DSA-DGMA	020 7218 2724 or 9621 82724	07825 674645
DSA-DG-AMA	020 7218 0199 or 9621 80199	07917 627162

SI ► or NSI ◀ Convening Process

15. Where an SI ► or NSI ◀ is to be initiated, DSA-DG will exercise ► responsibility ◀ as CA and will seek appropriate candidates in rank, qualification and experience for the SI ► or NSI ◀ panel posts, as required by the circumstances of the ► Accident or Significant ◀ Occurrence.

16. Single Service Manning Authority (SMA) support will be necessary to identify suitable candidates promptly, including the appropriate FLC provision of assistance over the requirements arising from Accidents ► or Significant Occurrences ◀ involving non-FLC Defence Aviation contractors. To allow the CA to balance the experience of the panel, SMA are, wherever possible, to nominate 2 candidates. Panel members will be assigned to the inquiry until the ► final ◀ report has been completed to the satisfaction of the CA.

17. Panels will be populated to achieve a balance of subject matter expertise and demonstrable independence. Candidates will be sought from outside the Chain of Command of the ► Air System involved in the Accident or Significant ◀ Occurrence ► ◀ and personnel concerned and, usually, the SI ► or NSI ◀ President will be sought from outside the Service concerned. ► ◀

18. Having already initiated an investigation to gather and secure evidence, once the SI is convened, Head DAIB will augment the SI panel with trained Accident investigators. ► For NSI investigations, the DAIB can provide advice and assistance upon request but will not augment the NSI panel. ◀ The DAIB will provide guidance relating to: the technical (including a technical report), operating and organizational elements of the investigation; investigative techniques and procedures; the procedural and regulatory aspects of aviation related SI ► or NSI; ◀ and access to specialist support and capabilities.

Liaison between ► stakeholders ◀ and the CA

19. During the investigation, urgent Flight Safety information arising from SI ► or NSI will ◀ be distributed to the relevant ODH ► or AM(MF) ◀ and lead Flight Safety organization by the CA (or SI ► or NSI ◀ President) for action and onward dissemination to any organization that may benefit from the information. Lead Flight Safety organizations ► will ◀ ensure that the relevant point of contact within MOD with responsibility for notifying industry and other nations of safety critical information receives the information immediately.

20. To ensure that urgent Flight Safety information has been adequately communicated and understood, the CA may require confirmation from the ODH ► / AM(MF) ◀ / Flight Safety / Lead Flight Safety organization as to what steps have been taken to notify interested parties of the safety information.

21. General liaison between the CA and the relevant Chain of Command will be directly with the ADH chain ► or AM(MF), ◀ copying in ► their ◀ Senior Operators ► / Flight Operations post-holders ◀ and the respective Flight Safety staff where appropriate. Routine FLC internal communication within the Chain of Command, SMA, legal and secretariat as an SI ► or NSI ◀ is conducted will be facilitated via the respective Flight Safety organizations and / or secretariat.

22. Any ADH ► or AM(MF) ◀ with a specific concern in relation to mitigating continuing hazards may avail themselves of direct access to the CA to discuss any aspect of an ► Accident or Significant ◀ Occurrence that presents them with such a cause for concern.

23. At the discretion of the CA, the Accident ► or Significant Occurrence ◀ owning ODH ► or AM(MF) ◀ may be provided with a personal update brief from the SI ► or

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NSI ◀ President on a privilege basis and in the presence of the CA. This will only occur after completion of interviews and collection of evidence.

Multiple ▶ organizations ◀ with Interest in an Accident or Significant Occurrence under Investigation

24. Where more than one ADH ▶ or AM(MF) or Head of ADH-Facing Organization ◀ has an interest in an SI ▶ or NSI, ◀ DSA-DG through ▶ their ◀ office or Head DAIB will inform ▶ all relevant ◀ stakeholders.

▶ ◀ Observers

25. One SI ▶ or NSI ◀ panel member ▶ will ◀ have appropriate knowledge and experience of the ▶ Air System type involved in the Accident or Significant Occurrence. ◀ However, in circumstances where the nature of the ▶ Accident or Significant ◀ Occurrence or the makeup and competencies of the SI ▶ or NSI ◀ Panel warrant it, and at the discretion of the CA, ADH or AM(MF)¹¹ may be *invited* to nominate an SI ▶ or NSI ◀ Panel Observer. Such a nominated individual will be granted visibility of the SI ▶ or NSI ◀ proceedings solely to highlight any critical Flight Safety issues to the SI ▶ or NSI ◀ President for onward distribution to the relevant ODH ▶ or AM(MF) ◀ and lead Flight Safety organization by the CA. SI ▶ or NSI ◀ Panel Observers will be required to act under rules of confidentiality. Explicitly, they will not be authorized to provide their parent organization with a running commentary on the independent SI's ▶ or NSI's ◀ proceedings or emerging findings. They may, however, assist their parent organization in the interpretation and response following the formal release of continuing hazards and / or other critical Flight Safety information.

Return to Flying

26. Decisions on whether or not to cease and resume flying operations remain the responsibility of the ADH or AM(MF) who ▶ will ◀, where appropriate, seek and expect specialist advice from their TAA ▶ or Mil CAM ◀ and exercise their professional judgement on the evidence available to them. However, to assist, factual technical reports attained by SI ▶ or NSI ◀ will be provided freely to the ▶ ADH chain or AM(MF) ◀ to inform the decision. In addition, the CA and Head DAIB will assist where possible by providing feedback where clear evidence raises cause for concern with regard to continued flying operations or where possible causes have been eliminated.

General Support from ▶ stakeholders ◀

27. ADHs, ▶ AM(MF)s or Heads of ADH-Facing Organizations ◀ will provide 'kin-forming', Aircraft Post Crash Management¹² and media handling. Reasonable costs for the SI ▶ or NSI ◀ will be borne by the ▶ DSA, but other stakeholders ◀ may be called upon to provide office accommodation, administrative and domestic support to the panel for the duration of the inquiry.

Final Report

28. Once the SI ▶ or NSI ◀ President has submitted the provisional SI ▶ or NSI ◀ Report, the ODH ▶ or AM(MF) ◀ will have the opportunity to make formal comment, which will be recorded in the Record of Proceedings. Finally, the CA comments will be added and the Report released for publication. The internal publication of the report to MOD stakeholders by email from DSA-DG's office constitutes the formal sign off of the report. The ▶ DSA ◀ secretariat will redact the report to Freedom Of Information standards and publish on the internet as soon as practicable following internal distribution.

29. Disclosure of the final report is effected iaw JSP 832 chapter 7 ▶ ◀ which reflects agreements between ▶ the DSA ◀ and Defence Inquest Unit (where there has been a fatality and resultant Coroner's inquest (or Fatal Accident Inquiry in Scotland)). There are specific requirements with regard to disclosing the report to the next of kin and to the Coroner (or Procurator Fiscal in Scotland) who will often use the content of the final report to inform the Inquest or Fatal Accident Inquiry process.

¹¹ Refer to JSP 832, Para 2.26, Observers.

¹² Refer to RA 1430 – Aircraft Post Crash Management and Significant Occurrence Management; and the Manual of Post Crash Management.

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Recommendations

30. Recommendations are designed to reduce the potential for recurrence and to improve safety in aviation operations. Urgent safety recommendations can be made at any stage during the inquiry; however, once the ►final◄ report is completed DSA-DG will distribute a consolidated and complete list of recommendations with action responsibilities directed at an individual in an accountable post with a single responsible officer rather than an organization. Recommendations will aim to articulate an effect to be achieved, as opposed to a solution.

31. The DAIB will monitor the implementation of the recommendations on behalf of the CA and will ensure that recommendations are initiated and tracked⁷. Those with action responsibilities for recommendations will be contacted by the DAIB to provide a plan of action and a timeframe for completion. The DAIB will advise on the background to the recommendation to assist the accountable owner (of the recommendation) in determining a suitable solution that will meet the CA expectations for closure. The DAIB will request updates on progress quarterly and will report progress to DSA-DG as at Q2 and Q4. Recommendations require the approval of the CA before they can be closed.



32. ►◄

Criminal and Disciplinary Investigations

33. In addition to SI and NSI, the police or other investigative bodies may also investigate an Occurrence, with a view to deciding whether a criminal prosecution or disciplinary action may result. Where there is an investigation into potential criminal or disciplinary activity, it is vital that the safety investigation (such as an SI) continues in parallel wherever possible. This is to ensure that critical safety information (which is not the purpose of the criminal investigation) is uncovered, captured and acted upon by the panel as soon as possible. Careful liaison with the criminal investigators will be essential to ensure de-confliction and continued effective assurance of the independent and no blame nature of the SI ►or NSI.◄

Investigation of Accidents ►or Significant Occurrences involving military Air Systems and Weapons of foreign nations◄

34. The procedures for the safety investigation and reporting of ►Accidents or Significant Occurrences◄ involving military Air ►Systems and Weapons◄ which involve the equipment, facilities and / or personnel of ►multiple nations (eg NATO / Partnership For Peace (PfP) nations, Five Eyes Air Force Interoperability Council (Five Eyes AFIC) nations, etc)◄ are detailed in Standardization Agreement (STANAG) ►3531^{13, 14}. Where an Accident or Significant Occurrence has occurred to which the STANAG is not applicable, the relevant Memorandum of Understanding between the UK and the country / countries of the military Air Systems involved in the Accident or Significant Occurrence is to be checked to ascertain if any special provision has been made for military Air System Accident or Significant Occurrence investigation.◄



35. ►◄

Investigation Policy

36. When a member of the UK Armed Forces or an MOD contracted civilian organization is fatally or seriously injured in an air Accident abroad, which is not covered by the NATO / PfP STANAG or the Air Standard, the UK MOD will always provide at least an Observer to the Accident inquiry and will participate in any Safety Investigation Committee. The Observer will be required to furnish a detailed report (to DSA-DG and the Joint Casualty and Compassionate Centre) on the conclusion of the

¹³ ►Refer to STANAG 3531 - SAFETY INVESTIGATION OF ACCIDENTS / SERIOUS INCIDENTS INVOLVING MILITARY AIRCRAFT, MISSILES, AND / OR UASs.

¹⁴ Historically Australia, Canada, New Zealand, the UK and the United States of America complied with the procedures in Air Standard 85/2A (which was authored by the Air Standardization Coordinating Committee (ASCC)). In 2005 the ASCC changed to the Air and Space Interoperability Council (ASIC), and then in 2017 the ASIC changed to the Five Eyes AFIC. The Five Eyes AFIC replaced Air Standard 85/2A with Air Standard ACS 4086 which is a part of STANAG 3531.◄

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inquiry (this report may be the full report of the Safety Investigation Committee). If the UK is denied adequate access to observe the inquiry or the DSA-DG considers there are additional lessons to be learned then a separate UK SI into the Accident will be convened.

Investigations by the Health and Safety Executive

37. The MOD, under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations will notify certain Accidents, Incidents and injuries to the Health and Safety Executive (HSE). The detail of this obligation may be found in JSP 375 Vol ▶1◀ Leaflet ▶16◀ and ▶DSA 01.2 Chapter 10¹⁵.◀

¹⁵ ▶ DSA 01.2 Chapter 10 – Service Inquiries.◀

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

RA 1430 - Aircraft Post Crash Management and Significant Occurrence Management

Rationale

There is a requirement for Aviation Duty Holders (ADH), Heads of Establishment (HoE) and Accountable Managers (Military Flying) (AM(MF)) to ensure that Aircraft¹ Post Crash Management (APCM) and Significant Occurrence Management is carried out following an Accident, Incident or Significant Occurrence². The management measures and procedures that are required to be in place include correct reporting, preservation of evidence, Health and Safety precaution, appropriate corporate communications, and where required, activities to restore the Accident / Incident site to a satisfactory condition. If APCM is inadequately prepared for, the handling of Accidents, Incidents and / or Significant Occurrences could be compromised, which could impact the ability of organizations to conduct Aircraft Post Crash investigations. This RA ensures ADHs, HoEs and AM(MF)s are suitably prepared for APCM. For the avoidance of doubt, APCM does not encompass activation of emergency services or Accident / Incident investigation.

Contents

1430(1): Aviation Duty Holders and Heads of Establishment
1430(2): Accountable Managers (Military Flying)

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Aviation Duty Holders and Heads of Establishment

1430(1) ADHs and HoEs³ **shall** ensure that there are appropriate APCM plans and capabilities in place in the event of an Air System Accident, Incident or Significant Occurrence.

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Aviation Duty Holders and Heads of Establishment

1. ADHs and HoEs **should** produce and maintain standalone orders and procedures to be used for APCM and Significant Occurrences which **should**:
 - a. Detail, as a minimum, the following:
 - (1) Reporting procedures.
 - (2) Health and Safety precautions.
 - (3) Actions to ensure the preservation of evidence.
 - (4) Corporate communications procedures.
 - (5) Unit APCM individual roles and responsibilities, along with resources available.
 - b. Provide specific instructions regarding the handling and procedures for the preservation and isolation of electronic and digital data post Accident, Incident or Significant Occurrence, in order that the data is not lost or compromised.
 - c. Be reviewed on the following occasions:
 - (1) At least annually.
 - (2) In the event of an Air System Accident, Incident or Significant Occurrence.
 - (3) A major change to the scope of Air System operations.
 - d. Be readily available and auditable.

¹ The term 'Aircraft' within the context of the acronym 'APCM' also refers to an Air System.

² An occurrence involving circumstances indicating that there was a high probability of an Accident and associated with the operation of an Air System. The difference between an Accident and a Significant Occurrence lies only in the result.

³ Commanding Officers of aviation capable HM and RFA ships are to be regarded as HoEs for the purposes of this Regulation.

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2. APCM plans **should** ensure:
 - a. The provision and availability of Suitably Qualified and Experienced Persons (SQEP) APCM Incident Officers (APCMIO) ranked OF3 and above. Exceptionally, ADHs and HoEs can authorize SQEP OF2 or WO to act as APCMIO⁴.
 - b. That appropriate capabilities to cover Air System operations exist at permanent UK operating locations, on HM and RFA ships, and overseas deployed operating locations.
 - c. MOD units and Defence Contractor Flying Organizations (DCFOs) with an APCM responsibility⁵ complete a live exercise with civil emergency service representation every 2 years, with multi-agency table-top exercises in the intervening years⁶.
 - d. That live and table-top exercises include consideration of the full response required, and for live exercises the inspection and deployment of the unit's APCM Support Equipment.
 - e. The Defence Accident Investigation Branch (DAIB)⁷ is advised of exercise dates.
 - f. Exercise reports are submitted to the DAIB detailing lessons identified and / or learnt and confirming the suitability and serviceability of APCM Support Equipment.
 - g. That in the event of unusual aerial activity (eg unit air display) or if circumstances dictate, additional APCM training or exercises are carried out.
 - h. That appropriate Eng Tech (Weapons), ATO or Qualified Maintainer (RN) personnel are rostered and that they are available to provide specialist guidance to Explosive Ordnance Disposal (EOD) operators.

Guidance Material 1430(1)

Aviation Duty Holders and Heads of Establishment

3. Guidance on the capabilities required to conduct APCM and the content of APCM plans can be found within the MAA MAPCM. Guidance on Significant Occurrence Management can be found within the MAA MAPCM and RA 1410(1)⁸.
4. Elements of APCM activity or a full APCM response may be required in response to a Significant Occurrence or serious Incident⁹, regardless of whether or not an Air System Accident / Incident has occurred.
5. Advice on APCM training can be sought from the DAIB and details of the APCMIO Course can be found in RA 1440¹⁰ and on the MAA website¹¹.
6. Unit specific training (including familiarisation with unit APCM plans and equipment) is required biennially in addition to the APCMIO Course.

Regulation 1430(2)

Accountable Managers (Military Flying)

- 1430(2) AM(MF)s **shall** ensure that there are appropriate APCM plans and capabilities in place in the event of a UK Military Registered Air System Accident, Incident or Significant Occurrence.

⁴ Only those authorized by the ADH and HoE **should** attend the APCMIO course.

⁵ The Manual of Aircraft Post Crash Management (MAPCM) Chapter 2 Annex A details APCM responsibilities.

⁶ In the event a unit responds to an Accident, Incident or Significant Occurrence with a full APCM response (utilizing all aspects of the APCM response that would be tested in an exercise), it will be considered to have fulfilled the live ex requirement. The 2 yearly exercise requirement will reset to align with the date of the Accident, Incident or Significant Occurrence.

⁷ DSA-DAIB-Air-Mailbox@mod.gov.uk.

⁸ Refer to RA 1410(1): Occurrence Reporting and Management.

⁹ Definition of Serious Incident, ICAO Annex 13 Ch 1 Pg 1-3.

¹⁰ Refer to RA 1440 – Air Safety Training.

¹¹ www.gov.uk/maa.

**Acceptable
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Accountable Managers (Military Flying)

7. AM(MF)s **should** produce and maintain standalone documents and procedures which are to be used for APCM and Significant Occurrences which **should**:
- a. Detail as a minimum, the following:
 - (1) Actions to be carried out in the event of an Accident, Incident or Significant Occurrence involving a UK Military Registered Air System, including actions to assist military APCM activity.
 - (2) Reporting procedures.
 - (3) Health and Safety precautions.
 - (4) Actions to ensure the preservation of evidence.
 - (5) Corporate communications procedures.
 - b. Provide specific instructions regarding the handling and procedures for the preservation and isolation of electronic and digital data post Accident, Incident or Significant Occurrence, in order that the data is not lost or compromised.
 - c. Contain contact details of the relevant RAF Regional Liaison Officer (RAFRLO)¹² and details of the lead regional APCM unit.
 - d. Be reviewed on the following occasions:
 - (1) At least annually.
 - (2) In the event of an Accident, Incident or Significant Occurrence involving a UK Military Registered Air System.
 - (3) A major change to the DCFO's scope of UK Military Registered Air System operations.
 - e. Be readily available and auditable.
8. APCM plans **should** ensure:
- a. That appropriate capabilities to cover UK Military Registered Air System operations exist at permanent UK operating locations, on HM and RFA ships, and overseas deployed operating locations.
 - b. Organizations with an APCM responsibility⁵ complete a live exercise with civil emergency service representation every 2 years, with multi-agency table-top exercises in the intervening years⁶.
 - c. That live and table-top exercises include consideration of the full nature of the DCFO's scope of UK Military Registered Air System operations.
 - d. The DAIB is advised of exercise dates and exercise reports are submitted to the DAIB detailing lessons identified and / or learnt⁷.
 - e. That in the event of unusual aerial activity (eg air display) or if circumstances dictate, additional APCM training and / or exercises are carried out.
 - f. That appropriate platform-specific engineering personnel are rostered and that they are available to provide specialist guidance to EOD operators.
9. AM(MF)s **should** nominate SQEP personnel within the DCFO that will have lead responsibilities for APCM in the event of an Accident, Incident or Significant Occurrence involving a UK Military Registered Air System. Nominated personnel **should** be readily available throughout UK Military Registered Air System operations and have the APCM responsibility detailed within their post specification and responsibilities.
10. In order to facilitate APCM training and support the development of organizational APCM plans, AM(MF)s **should** apply for places on the APCMIO

¹² Contact details of the RAFRLO that covers a particular region can be obtained by contacting the following group email: Air-RAFRLOs@mod.gov.uk.

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Course for their personnel who have lead responsibilities for APCM; information on the process for applying for places on this Course can be accessed through RA 1440¹⁰ and the MAA website¹¹.

**Guidance
Material
1430(2)****Accountable Managers (Military Flying)**

11. Guidance on the capabilities required to conduct APCM and the content of APCM plans can be found within the MAA MAPCM. Guidance on Significant Occurrence Management can be found within the MAA MAPCM and RA 1410(1)⁸. AM(MF)s are encouraged to regularly engage with their RAFRLO in order to benefit from his APCM expertise and gain awareness of upcoming APCM events in their area.

12. Elements of APCM activity or a full APCM response may be required in response to a Significant Occurrence or serious Incident⁹, regardless of whether or not an Air System Accident / Incident has occurred.

13. Advice on APCM training can be sought from the DAIB and details of the APCMIO Course can be found in RA 1440¹⁰ and on the MAA website¹¹.

14. Organization specific training (including familiarisation with unit APCM plans and equipment) are required biennially in addition to the APCMIO Course.

► This RA has been re-formatted for clarity and withdrawn Sub-Regulations have been removed. Other amendments have been made and change marks presented. ◀

RA 1440 – Air Safety Training

Rationale

Air Safety Training is a critical component in the mitigation of Risk to Life. It increases safety awareness and supports the establishment and Maintenance of an engaged Air Safety culture. Human Factors (HF) and our interaction with aviation systems remain the principal causal factors in aviation Incidents and Accidents. Therefore, it is essential that all those involved in Defence Aviation (DA) ► / the Defence Air Environment (DAE) ◀ are trained to the highest possible standard.

Contents

1440(1): Air Safety Training

Regulation 1440(1)

Air Safety Training

1440(1) Aviation Duty Holders (ADH), Accountable Managers (Military Flying) (AM(MF)), Accountable Managers (AM)¹, ► Heads of Establishment (HoE)², ◀ and Heads of ADH-Facing Organizations³ **shall** ensure that all personnel ► involved in DA / ◀ the DAE are appropriately competent, qualified and current regarding Air Safety⁴ training.

Acceptable Means of Compliance 1440(1)

Air Safety Training

1. ADHs, AM(MF)s, AMs, ► HoEs, ◀ and Heads of ADH-Facing Organizations **should** ensure that:
 - a. The Air Safety and HF training competencies, qualifications, experience and currencies are defined in orders, for all posts, appointments and roles, within their Area of Responsibility (AoR).
 - b. Their personnel successfully complete the Air Safety training courses⁵ (which are mandated for certain posts, appointments and roles within the MRP) as detailed in Annex A.
 - c. Accurate and detailed records of Air Safety and HF training are maintained.
2. ► ADHs, AM(MF)s, AMs, HoEs, and Heads of ADH-Facing Organizations **should** assess the individuals within their AoR to ensure a satisfactory level of competence⁶, once the individuals have successfully completed the applicable Air Safety training courses detailed in Annex A. ◀
3. ADHs, AM(MF)s, AMs, ► HoEs, ◀ and Heads of ADH-Facing Organizations, who specify in their orders a requirement to attend the Air Safety training courses detailed in Annex A, **should** staff their requirement through the MAA Air Safety and Airworthiness Customer Executive Board (CEB) or through International Defence Training.

Human Factors

4. All ► personnel involved in DA / ◀ the DAE ► ◀ **should** receive Foundation level HF and Error Management (EM) training, and 2 yearly continuation training, delivered by a qualified and current HF Facilitator (HFF), HF Supervisor (HFS) or Civilian Qualified HF Instructor (CQHFI):

¹ Those AMs within: ADH-Facing Organizations; Continuing Airworthiness Management Organizations; Maintenance Approved Organizations; Air Traffic Management Equipment Approved Organizations; or Design Approved Organizations.

² ► This RA applies to HoEs with aviation responsibilities, as per RA 1010 – Head of Establishment - Aviation Responsibilities. ◀

³ 'Heads of ADH-Facing Organizations' includes but is not limited to: Aviation Delivery Team Leaders, Commodity ► Chief Engineers (CE) ◀, Military Continuing Airworthiness Managers (Mil CAMs), ► etc. ◀

⁴ Refer to MAA02: MAA Master Glossary.

⁵ A number of MAA courses are also open to Defence Contractor Flying Organizations and foreign military through International Defence Training.

⁶ Successfully completing Air Safety training courses (as detailed in Annex A) does not automatically signify that an individual is competent.

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1440(1)**

- a. For military personnel, during basic training and / or single / joint Service phased training⁷.
 - b. For civilian personnel, during induction training in preparation for working ► within DA / ◀ the DAE.
5. HFFs ► ◀ **should** complete the Human Factors Facilitators' Course (HFFC) and ► HFSs **should** complete the Human Factors Facilitators' Course (HFFC) ◀ and the Human Factors Supervisors' Course (HFSC). ► Both courses are delivered by ◀ Defence Aviation HF Training School, RAFC Cranwell.
6. CQHFI **should** complete either the HFFC / HFSC or a Civilian HF instructors' course which is deemed suitable by the applicable ADH, AM(MF), AM, ► HoEs, ◀ or Head of ADH-Facing Organization. As a minimum, the course **should** meet the requirements laid down in the "MAA HF and EM Training Requirements" document ►⁸ ◀. The applicable ADH, AM(MF), AM, ► HoEs, ◀ or Head of ADH-Facing Organization **should** determine which appropriate civilian HF instructors' course to send their CQHFI on.
7. All ► DA / ◀ DAE HF training **should** be delivered in accordance with the HF Competency Framework that can be found in the MAA HF and EM Training Requirement document ► ◀.
8. ADHs, AM(MF)s, AMs, ► HoEs, ◀ and Heads of ADH-Facing Organizations **should** include HF delivery in their assurance programs for compliance with the MAA HF and EM Training Requirement document which is made relevant to their organization.
9. **HFF Currency and Validity.** To maintain currency, HFFs **should** deliver a minimum of one facilitated or instructional session every 6 months. HFF currency **should** be regained through an assessment by a current HFS. The HFS assessment sheet and any other supporting documentation **should** be maintained as evidence. If a HFF's session is judged to be ineffective or below standard during a HFS assessment, the competency **should** be removed and the ADH, AM(MF), AM, ► HoEs, ◀ Heads of ADH-Facing Organizations informed. The ADH, AM(MF), AM, ► HoEs, ◀ or Head of ADH-Facing organization **should** agree any requirements for further training and / or assessment by an HFS before the HFF's qualification is restored. Once 5 years has elapsed since initial qualification, HFFs **should** successfully complete HFF refresher training conducted by the Defence Aviation HF Training School.
10. **HFS Currency and Validity.** To maintain currency, HFSs **should** deliver a minimum of one facilitated or instructional session and conduct at least one HFF assessment every 6 months. HFS currency **should** be regained through an assessment by a current HFS. The ADH, AM(MF), AM, ► HoEs, ◀ or Head of ADH-Facing organization **should** agree any requirements for further training and / or assessment before the HFS's qualification is restored. Once 5 years has elapsed since initial qualification, all HFSs **should** successfully complete an HFSC course again, irrespective of currency.
11. **CQHFI Validity and Currency.** All CQHFI **should** meet the HFF or HFS validity and currency requirements detailed in paragraphs 9-10. Once 5 years has elapsed since initial qualification, CQHFI may opt to apply for the HFFRC or conduct further Civilian HF instructor training deemed suitable as per paragraph 6.
- MAA Endorsed Alternative Air Safety training courses**
12. The MAA has endorsed some alternative Air Safety training courses to those detailed in Annex A, which are detailed in Annex C, and the providers of these alternative courses **should**:
- a. Ensure that all instructors, delivering the course, attend the primary course as detailed in Annex A.
 - b. Ensure that all instructors continue to be assessed as suitably competent and experienced and maintain a 5-year currency.

⁷ This refers to Phase 1, ► Phase 2, or Phase 3 ◀ training.

⁸ The "MAA HF and EM Training Requirement document" can be found via: <https://www.gov.uk/government/publications/defence-human-factors-training-courses>.

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c. Ensure the alternative course content is aligned with, and equivalent to, the primary MAA Centre of Air Safety Training (CoAST) course (as detailed in Annex A).

13. The MAA endorsement of the Air Safety training courses detailed in Annex C remains valid for 5 years, so the course providers **should** make all evidence requested (eg Joining Instructional paperwork, the instructor Terms of Reference, the Statement Of Training Requirements, observer attendance on one of the courses, etc) available to the MAA CoAST team for revalidation and re-endorsement. Personnel who are awarded a qualification by an Annex C endorsed training provider remain current for the full period of that qualification, even if the provider's endorsement expires, and is not renewed, during that period.

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Air Safety Training

14. While courses are directed primarily towards Aircrew, engineers and Controllers, they also embrace those support personnel whose work does not necessarily bring them into direct and regular contact with Air Systems, but who underpin and enable aviation operations.

15. **Embarked Operations.** Due to the unique nature of embarked maritime operations, ADHs, AM(MF)s and AMs must consider the specific additional Air Safety requirements detailed in Book of Reference digital (BRd) 766⁹, BRd 767¹⁰, RA 1029¹¹ and RA 1395¹².

16. **Further Air Safety Courses.** Annex B, although not exhaustive, lists further Air Safety training courses to enhance relevant ►DA / ◄ DAE personnel capability.

Human Factors

17. HF training will be delivered face to face. However, when exceptionally required, it may be delivered virtually when authorized by the applicable ADHs, ►AM(MF)s, ◄ AMs, HoEs, or Heads of ADH-Facing Organizations.

18. All ►DA / ◄ DAE HF continuation training will be tailored and relevant to the unit / organization, addressing its current HF issues, and be limited to no more than 15 people and last approximately 3 hours.

⁹ Refer to BRd 766 – Embarked Aviation Orders.

¹⁰ Refer to BRd 767 – Naval Aviation Orders.

¹¹ Refer to RA 1029 – Ship-Air Release - Roles and Responsibilities.

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

Annex A¹³Air Safety training courses^{14, 15}

Course	Assignment / Post / Role ¹⁶	Validity
Aircraft Post Crash Management Incident Officers Course (APCMIOC) ¹⁷	Nominated Aircraft Post Crash Management Incident Officers	5 Years
Aircraft Structural Integrity Course (ASIC)	Officers, Non-Commissioned Officers (NCO) and Civil Servants serving as Aircraft Structural Engineers or responsible for Aircraft Structural Integrity Management	5 Years
Airworthiness of Military Aircraft Course – Fundamentals (AMAC-F) ¹⁸ ◀	Letter of Airworthiness Authority (LoAA) Holders ¹⁹ authorized to ► amend ◀ the Air System Document Set (ADS) ► below OF3 level (or equivalent), Letter of Airworthiness Notification (LoAN) holding Commodity CEs ◀, Continuing Airworthiness Management Organization (CAMO) Quality Managers	5 Years
Airworthiness of Military Aircraft Course – Practitioner (AMAC-P) ¹⁸ ◀	► LoAA Holders authorized to amend the ADS at OF3 level (or equivalent) and above, Type Airworthiness Authority (TAA), Type Airworthiness Managers (TAM), LoAA holding Commodity CEs, ◀ Chief Air Engineers ²⁰ , Mil CAMs ²¹	5 Years
CAMO Functional Training (CAMO(FT)) ²² ◀	CAMO personnel identified by the Mil CAM ► (including Contracted and Subcontracted personnel where appropriate) ◀	5 Years
Contractor Flying Air Safety Course (CFASC) ^{23, 24} ◀	AM(MF)s, ► TAMs ²⁵ , ◀ Flight Operations PH, Crew Training PH, Ground Operations PH, Mil CAMs ²⁶	5 Years
Duty Holder Air Safety Course (DHASC) ²⁷	ADHs, Senior Operators, Chief Air Engineers, ► ◀, Mil CAMs ²⁶ , ► HoEs ²⁸ , ◀ Defence Equipment & Support (DE&S) Operating Centre Directors, DE&S 1* LoAA holders, TAAs ²⁹ , ► LoAA holding Commodity CEs ◀	5 Years
Effective Error Management (EEM) ^{30, 31}	Individuals performing roles involving the management of error including Station Error Management System Co-ordinators or other posts with similar responsibilities	5 Years

¹³ The courses detailed in Annex A are those that have been endorsed by the MAA, some of which are provided by the MAA.

¹⁴ Course aims, content, dates and application procedures can be found via the MAA website:

<https://www.gov.uk/government/collections/military-aviation-authority-training-courses>.

¹⁵ Prior to attending Air Safety courses, personnel need to satisfy the course pre-requisites.

¹⁶ This is the mandated requirement, ie the courses are not exclusive to these assignments, posts and roles.

¹⁷ Attendance on the Fundamentals of Aircraft Post Crash Management Brief is a recommended pre-requisite.

¹⁸ ► **All personnel attending this course should complete the course in full including successful completion of the post course assessment.** ◀

¹⁹ Refer to RA 1003 – Delegation of Airworthiness Authority and Notification of Air Safety Responsibility.

²⁰ Refer to RA 1023 – Chief Air Engineers - Air Safety Responsibilities.

²¹ This includes, but is not limited to, Military CAMs (Mil CAM) and Deputy CAMs.

²² ► **For personnel with limited prior CAMO experience, the CAMO(RT) course may be completed as a pre-requisite to CAMO(FT), as determined by the Mil CAM.** ◀

²³ CFASC currency will remain valid for AM(MF)s and their Post Holders (PH) on the provision that they have held their appointment continuously since completing the CFASC and have attended at least one Contractor Flying Advisory Group in the last two years.

²⁴ ► **To be completed within 6 months of taking up post.**

²⁵ Where possible, TAMs **should** attend the same CFASC as their relevant AM(MF).

²⁶ Mil CAMs supporting ADHs need only attend the DHASC. Mil CAMs supporting AM(MF)s need only attend the CFASC. Mil CAMs supporting ADHs and Contractor Flying Approved Organizations Scheme (CFAOS) Organizations needs to attend the DHASC and CFASC. ◀

²⁷ The DHASC is available only to MOD Crown Servants.

²⁸ ► **Refer to RA 1010(2): Head of Establishment – Aviation Responsibilities for all Tiers.** ◀

²⁹ Where possible, TAAs **should** attend the same DHASC as their relevant Delivery Duty Holder(s).

³⁰ This course is not mandated for Contractor Flying Approved Organizations, Maintenance Approved Organizations, Air Traffic Management Equipment Approved Organizations, and Design Approved Organizations; however, Error Managers within these organizations have to be competent and appropriately trained to manage their respective organization's error management system(s).

³¹ Those whose primary role is Error Management (eg SEMSCs), or other posts with similar responsibilities, on behalf of the EMS owner.

Course	Assignment / Post / Role ¹⁶	Validity
Flight Safety Officers Course (FSOC) ³²	Defence Aviation personnel in Flight Safety Officer roles or holding Flight Safety Officer duties	5 Years
Flying Authorizers Course (FLAC) ³² , ▶ ³³ ◀	Authorizing Officers, personnel authorizing flying activity	5 Years
Flying Display Directors (FDD) ▶ ¹⁸ ◀	Flying Display Directors	3 Years
Flying Supervisors Course (FSC) ³² , ³³	Flying Unit Executives ³⁴ , Flight Commanders, Flight Operations Post Holders	5 Years
Fundamentals of Aircraft Post Crash Management Brief	Individuals performing roles in an Aircraft Incident Response Activity or other posts with similar responsibility	Once Only
Human Factors Facilitator's Course (HFFC)	Those personnel fulfilling the role of unit/station Human Factors Facilitator (ie HFFs, CQHFI)	5 Years
Human Factors Facilitator's Revalidation Course (HFFRC)	Those personnel fulfilling the role of unit / station Human Factors Facilitator (ie HFFs, CQHFI) who have reached or are approaching the end of their 5 year competency	5 Years
Human Factors Supervisor's Course (HFSC)	Those qualified personnel fulfilling the role of unit / station Human Factors Supervisor (ie HFSS)	5 Years
Occurrence Investigator (OI)	Those nominated to be Occurrence Safety Investigators	▶ 3 ◀ Years ▶ ³⁵ ◀
Occurrence Review Group (ORG)	Those chairing or nominated as ▶ ◀ Occurrence Review Group members	5 Years
Overseas / Deployed Aircraft Post Crash Management Incident Officer Brief (OSB)	Nominated Aircraft Post Crash Management Incident Officers	1 Year
Propulsion Integrity Course (PIC) ▶ ¹⁸ ◀	Officers, NCOs and Civil Servants serving as Aircraft Propulsion Engineers or responsible for Aircraft Propulsion Integrity Management	5 Years
▶ Remotely Piloted Air System (RPAS) Duty Holder (DH) / RPAS Accountable Manager (AM) brief ³⁶	RPAS DHs / RPAS AMs responsible for RPAS operating in the Open A2, Open A3, and Specific S1 sub-categories ³⁷ .	Duration of Tour ◀

³² FLAC, FSOC and FSC count as 2 yearly HF continuation training.

³³ Completion of FSC counts as both FSC and FLAC currency (provided that the FLAC has been previously completed).

³⁴ Primarily aimed at OF4s and OF3s who have executive roles within a Regiment, Wing or Squadron.

³⁵ ▶ Unit Air Safety Teams are permitted to extend OI currency, up to 48 months beyond the RA 1440 Annex A validity requirements, when competent use of OI skills has been demonstrated. ADHs, AM(MF)s, AMs, HoEs, and Heads of ADH-Facing Organizations **should** provide guidance to the Unit Air Safety Teams on how competency can be demonstrated.

³⁶ This brief is applicable to both RPAS DHs and RPAS AMs.

³⁷ Where directed by the MAA; the requirement will be reviewed by the MAA during the RPAS categorization process and articulated in the Letter of Endorsed Categorization. ◀

Annex B³⁸

Further Air Safety training courses

Course	Assignment/Post/Role	Validity
Air Safety Data Analysis (ASDA)	Air Safety data trend analysis personnel	Duration of Tour
Air Safety Management System Overview (ASMSO)	Air Safety Management Systems development personnel	Duration of Tour
CAMO Regulatory Training (CAMO(RT)) ▶ ²² ◀	CAMO personnel ▶ identified by the Mil CAM ³⁹ (including Contracted and Subcontracted personnel where appropriate), DT personnel with delegated CAMO responsibilities	5 Years ◀
MAA Air Safety Risk Assessment & Management Practitioners (MASRAMP)	Risk Management requirements personnel	5 Years
Military Aerospace and Airworthiness Suite (MAAS)	The MAA sponsors 18 accredited MSc courses, which are aimed at those who require a Masters' level of understanding of military Air Systems (It is expected that course applicants are employed as Letter of Airworthiness Authority holders in Chartered Engineer (CEng) designated posts or working towards this level of competence)	Once Only

³⁸ The courses detailed in Annex B are those that have been endorsed by the MAA, some of which are provided by the MAA.

³⁹ ▶ For personnel with limited prior CAMO experience, the CAMO(RT) course may be completed as a pre-requisite to CAMO(FT), as determined by the Mil CAM. ◀

Annex C

MAA endorsed alternative Air Safety training courses

Course	Assignment / Post / Role	Provider	Alternative to	Validity
Gliding Authorizers Course (GLAC) ^{40, ▶41◀}	Central Gliding School: Authorizing Officers, personnel authorizing flying activity	Central Gliding School	FLAC	5 Years
Royal Navy Flight Safety Course (AIR 302)	Royal Navy: Flight Safety Officers, Authorizing Officers, personnel authorizing flying activity (or those from other Services employed in posts that support maritime aviation operations)	Royal Navy Flight Safety Centre	FSOC	5 Years
Volunteer Gliding Squadron Flying Supervisors Course (VGS FSC) ^{40, 41}	Central Gliding School: Flying Unit Executives ⁴² , Flight Commanders, Flight Operations Post Holders	Central Gliding School	FSC	5 Years

⁴⁰ The GLAC and VGS FSC count as 2 yearly HF continuation training.

⁴¹ Completion of VGS FSC counts as both VGS FSC and GLAC currency (provided that the GLAC has been previously completed).

⁴² Primarily aimed at OF4s and OF3s who have executive roles within a Glider Regiment, Wing or Squadron.

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

RA 1600 – Remotely Piloted Air Systems

Rationale

There is a requirement to acquire and operate appropriate Remotely Piloted Air Systems (RPAS). Therefore, there needs to be in place a proportionate regulatory and certification framework; this is based on the RPAS operating intent and the level of Risk their proposed activity poses. Without agreed frameworks to assist organizations to acquire, develop and operate appropriate RPAS (based on the way in which they are planned to be operated, and physical attributes (mass, speed, energy, etc)), RPAS may present uncontrolled and unmitigated Risks to Life (RtL). The categorization of RPAS (which considers both RPAS type and method of operation) directs which Regulation and AMC apply. This Regulatory Article (RA) provides an overview of the Categorization system and directs the regulatory requirements to ensure that organizations acquire appropriate RPAS and correctly operate them in the relevant Category¹ to enable suitable regulatory frameworks to be applied to their operation. This will ensure that RPAS are safe to operate and are being operated safely throughout their life.

Contents

Scope

Definitions relevant to the RA 1600 Series

1600(1): Remotely Piloted Air System Categorization

1600(2): Remotely Piloted Air System Regulatory Requirements

Scope

The purpose of Categorization is to set proportionate regulatory frameworks to ensure that RPAS operations are conducted safely. The process of RPAS categorization considers both the RPAS type and method of operation.

For RPAS with a Maximum Take-Off Weight (MTOW)² up to 25 kg, RPAS operations can be conducted in the Open or Specific S1 categories. For these operations, the Regulations are designed to be contained, suitable for operators with limited or no aviation qualifications or experience, and are restricted to Visual Line of Sight (VLOS) or no more than 2 km Beyond Visual Line of Sight (BVLOS) from the Remote Pilot (RP). Open and Specific S1 operations need only comply with RA 1600 and the applicable RA from RA 1601 – RA 1604. These RAs set the Risk boundaries in which the operations are to be conducted and RPAS Responsible Officers (RPAS RO) / RPAS Accountable Managers (RPAS AM) are only required to assess that they remain within these boundaries.

For operations of RPAS with maximum take-off mass greater than 25 kg, or where the operating range is more than 2 km from the RP, or other factors apply that increase RtL beyond that for Specific S1 and below, operators need to follow the whole of the MAA Regulatory Publications (MRP), with derogations appropriate to the level of Risk. Aviation Duty Holder (ADH) / Accountable Manager (Military Flying) (AM(MF))³ are required to manage the RtL to As Low As Reasonably Practicable and Tolerable in accordance with (iaw) RA 1020⁴ or RA 1024³.

Categorization is based on the Risk RPAS operations pose to uninvolved persons⁵ on the ground and other air users. The Risk is dependent on many factors including, but not limited to air vehicle mass, dimensions, speed, range of operation, duration of exposure⁶, robustness of link, the nature of the airspace, and the quality of training. As the Risk increases, the robustness of the Integrity and Assurance required to demonstrate that operations are safe will increase.

¹ Hereafter "Category" refers to Category and / or Categories.

² Including Aircraft Stores and Payload.

³ Refer to RA 1024 – Accountable Manager (Military Flying).

⁴ Refer to RA 1020 – Aviation Duty Holder and Aviation Duty Holder-Facing Organizations – Roles and Responsibilities.

⁵ Uninvolved persons are those who either are not participating in the RPAS operation or have not received clear instruction or Safety precautions from the RPAS RO / RPAS AM. A person is 'participating' if they are acting on behalf of, or under Safety instruction of, the RPAS RO / RPAS AM.

⁶ Exposure is a function of the numbers of third parties at Risk from the operation and the time during which they are at Risk.

Definitions

Definitions relevant to the RA 1600 Series

RPAS Categories

1. RPAS are categorized by an MAA RPAS Letter of Endorsed Categorization (LEC).
2. **Open Category**
 - a. Open Category operations present a low RtL and are bounded by three main factors:
 - (1) The MTOW of the RPAS is less than 25 kg.
 - (2) The RPAS is operated within VLOS⁷.
 - (3) The RPAS is not flown at a height greater than 120 m (400 ft) from the closest point of the surface of the earth.
 - b. The Open Category is divided into three operating sub-categories:
 - (1) **Open A1 (Fly 'over' people)**. Operations within the Open A1 sub-category are only to be conducted with RPAS that present a low RtL due to their low MTOW (less than 250 g) and their physical attributes / construction. The Open A1 sub-category allows operations over uninvolved persons but not flight over areas of high population density.
 - (2) **Open A2 (Fly 'close to' people)**. Operations within the Open A2 sub-category are only to be conducted with RPAS that have a MTOW of less than 4 kg and are capable of being operated safely to a minimum horizontal distance of 30 m from uninvolved persons, or down to 5 m horizontally if a 'low speed mode'⁸ is fitted and selected.
 - (3) **Open A3 (Fly 'far from' people)**. Operations within the Open A3 sub-category are only to be conducted with RPAS that have a MTOW of less than 25 kg. The Open A3 sub-category allows operations to a minimum horizontal distance of 50 m from uninvolved persons and not within 50 m of Congested Areas⁷.
3. **Specific Category**
 - a. Specific Category operations present a greater RtL than that of the Open Category; this includes where one or more elements of the operation fall outside the boundaries of the Open Category.
 - b. The Specific Category is divided into two sub-categories:
 - c. **Specific S1**. Operations within the Specific S1 sub-category are those to be conducted with RPAS that:
 - (1) Have a MTOW of less than 25 kg, and
 - (2) Are required to operate Beyond Visual Line of Sight (BVLOS)⁷ up to a maximum of 2,000 m from the RP, and
 - (3) Are flown inside the UK Flight Information Region and in Segregated Airspace.
 - d. **Specific S2**. Operations within the Specific Category are those to be conducted with RPAS that either:
 - (1) Have a MTOW of 25 kg or greater, or
 - (2) Are required to operate BVLOS in excess of 2,000 m from the RP.
4. **Certified Category**
 - a. Operations within the Certified Category present a greater potential RtL than that of the Specific Category and present an equivalent 2nd and 3rd party RtL to that of crewed aviation.

⁷ Refer to MAA02: Military Aviation Authority Master Glossary.

⁸ "low-speed mode" limits the maximum speed to 3 m/s when selected by the RP.

Definitions

b. Criteria that add complexity and therefore may lead to Categorization as Certified include⁹:

- (1) Flight over areas of high population density, or;
- (2) Carriage of people, or;
- (3) A determination by the MAA that residual RtL is too great unless the RPAS is certified, based on a combination of: MTOW, Remotely Piloted Aircraft (RPA) size, VLOS or BVLOS operation, overflight of people, airspace integration and classification, Detect And Avoid, etc, or;
- (4) Automatic or autonomous systems with procedures that prevent the RP from directly controlling the RPA throughout the entirety of its flight (except for unplanned emergency conditions such as lost link⁷ profiles).

5. **Armed RPAS and RPAS transporting Dangerous Cargo**

a. RPAS are considered to be armed if they carry a kinetic or directed energy weapon and are designed to be launched and recovered to be used again¹⁰. Armed Systems that are not designed to be recovered post-launch, may be considered one way attack systems and need not comply with MAA Regulation. If the RPA is capable of flight with the munition removed then, when the munition is fitted, it is considered an armed RPAS and subject to the MRP.

Note:

The MAA recognizes that there may be some ambiguity when determining whether an armed system meets the criteria of RPAS or one way attack system. Examples may include cases whereby the RPAS munition can be removed (rather than built-in) but will never be re-used or in the case of a loitering munition that is designed to take an indirect route to target. Early engagement with the MAA is encouraged to ensure the most appropriate Regulatory framework is applied in conjunction with the Defence OME Safety Regulator (DOSR).

b. RPAS that are armed or carry dangerous cargo^{11, 12} will be categorized either in the Specific S2 or the Certified Category. Armed Specific S2 RPAS will be constrained to named Operations and Designated Danger Areas (DDA) only.

6. **Swarming.** An RPAS swarm is defined as the operation of more than one RPA controlled collectively rather than individually¹³. Swarming operations are likely to be categorized as Specific S2 or Certified according to the assessed RtL.

7. **Dropping of materiel.** Dropping of materiel is defined as articles intentionally separated from the Aircraft that are under the pull of gravity only. Operations that intentionally involve RPAS dropping materiel are likely to be categorized as Specific S2 or Certified according to the assessed RtL.

8. **Flight over areas of high population density.** Gatherings where persons are unable to move away due to the density of the people present¹⁴.

9. **Uninvolved person(s).** An individual, or group of individuals, who either: Are not, in any way, participating in the RPAS operation; or Have not received clear instructions and safety precautions from the Remote Pilot, the RPAS operator or a person nominated by the RPAS operator, to follow throughout the operation and in the event the RPAS exhibits any unplanned behaviour. (CAP 722 derived)

⁹ These characteristics may be approved in a lower Category where the overall Safety argument supports it.

¹⁰ Other effectors including chemical, acoustic and target designation are considered armed RPAS.

¹¹ Refer to AAP-06 - The North Atlantic Treaty Organization (NATO) Glossary of Terms and Definitions (English and French).

¹² For example (non-exhaustive list): Explosives, radioactive material, flammable liquids, dangerous or volatile chemicals, strong acids, compressed gases, biological agents, poisons.

¹³ Derived from Civil Aviation Authority (CAA). "Unmanned Aircraft Systems. Rotary Wing Swarm Operations – Visual Line of Sight Requirements, Guidance & Policy. Civil Aviation Publication (CAP) 722E".

¹⁴ Derived from CAP 722 definition of "Assemblies of people".

**Regulation
1600(1)**

Remotely Piloted Air System Categorization

1600(1) All UK military registered RPAS **shall** be categorized¹⁵.

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Remotely Piloted Air System Categorization

10. RPAS **should** be categorized into one or more of the following: Open A1, Open A2, Open A3, Specific S1, Specific S2 sub-categories or Certified Category.

11. Organizations **should** submit a Categorization submission to the MAA¹⁶; an MAA Categorization Panel **should** thereafter confirm the valid / applicable Category. Organizations planning on submitting a Categorization submission **should** contact the MAA at the earliest opportunity to discuss intent and operation.

12. **Responsibility for RPAS Categorization.** Once an organization recognizes the need to categorize an RPAS it intends to operate, an appropriate person within the organization **should** accept responsibility for completing the MAA Categorization submission as follows:

a. **Open A1, Open A2, Open A3, and Specific S1 sub-categories.** The RPAS RO / RPAS AM of the organization that plans to operate the RPAS **should** be responsible for submitting a Categorization submission to the MAA.

b. **Specific S2 sub-category.** The Type Airworthiness Authority (TAA)¹⁷ (with ADH / AM(MF) / Senior Responsible Owner (SRO) endorsement¹⁸) **should** be responsible for submitting the Categorization submission to the MAA.

c. **Certified Category.** The TAA¹⁷ (with ADH / AM(MF) / SRO endorsement¹⁸), or the AM(MF) only¹⁹, **should** be responsible for submitting the Categorization submission to the MAA.

13. **Categorization Submission.** Cases for Categorization **should** be based on the operating Risk (which includes, but is not limited to: MTOW, dimensions and speed of the remote air vehicle and the nature of the proposed operations, including the range from the RP and the airspace).

14. Open and Specific S1 Categorization submissions **should** provide detail to allocate a Category, identifying processes and aggravating factors coupled with mitigations that contribute to both the Safe to Operate and Operate Safely arguments.

15. **UK Military Aircraft Register (MAR) Requirements.** RPAS **should** be registered on, and de-registered from, the UK MAR iaw RA 1161²⁰. For Open Category and Specific S1 sub-category RPAS, application for UK MAR registration is implicit in the Categorization submission²¹ and there is no requirement to submit a separate application. Specific S2 sub-category and Certified Category RPAS **should** comply with RA 1161.

16. The LEC is likely to be issued close to first flight.

a. **Open Category and Specific S1 sub-category.** Categorization submission information, **should** as a minimum include:

(1) A statement detailing why the RPAS belong in the proposed RPAS Category and sub-category (Open A1, Open A2, Open A3, and / or Specific S1).

¹⁵ In this RA, from this point on, the term 'categorize' / 'categorized' / 'categorization' refers to the MAA-endorsed RPAS Category which defines an appropriate Regulatory Framework.

¹⁶ Contact via DSA-MAA-MRPEnquiries@mod.gov.uk.

¹⁷ 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. Dependant on the agreed delegation of TAW responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

¹⁸ For RPAS intended for embarked operations the Ship Platform Authority and Ship Duty Holder, where known, **should** be consulted and involved in the categorization process.

¹⁹ For RPAS in the Special Case Flying operating category; Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.

²⁰ Refer to RA 1161 – Military Registration of Air Systems operating within the Defence Air Environment.

²¹ The Categorization submission is in place of the Release To Service (RTS) / Military Permit To Fly (MPTF), the Air System Safety Case (ASSC), and the Application for Approval in Principle.

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(2) The applicable information as detailed within the Categorization Safety Checklist at Annex B.

b. **Open A1 sub-category.** The organization submitting a Categorization submission for RPAS to operate in the Open A1 sub-category **should** ensure, and make clear within the Categorization submission, that the RPAS being acquired has a European Union (EU) / UK conformity marking or is designed to similar standards.

c. **Open A2, Open A3, and Specific S1 sub-categories.** The organization submitting a Categorization submission for RPAS to operate in the Open A2, Open A3, and Specific S1 sub-categories **should** ensure, and make clear within the Categorization submission, that the RPAS being acquired has a EU / UK conformity marking or is designed to similar standards. If the RPAS does not hold a conformity marking, it **should** be designed to similar standards, and the RPAS manufacturer **should** be endorsed by the Defence Equipment & Support (DE&S) RPAS Delivery Team (DT).

17. Specific S2 and Certified Categorization submissions **should** provide detail of the proposed regulatory governance construct the RPA will follow for MAA agreement, including substantiated arguments for any requested derogations from the MRP.

18. Due to the likely impact on contracting and default adherence to the full MRP, the Categorization submission **should** be made early in the project life cycle and align with Application for Approval in Principle (AAiP) for MAR application to allow for associated governance to be contracted and enacted through normal routes.

a. **Specific S2 sub-category.** Categorization submission information is provided in RA 1605²².

b. **Certified Category.** Categorization submission information **should** as a minimum include:

(1) A statement detailing why the RPAS belongs in the proposed Category.

(2) A technical description of the RPAS.

(3) A detailed description of RPAS operating intent²³.

(4) The Airworthiness Strategy²⁴.

(5) The proposed Design Safety Target²⁵.

19. Following receipt of the completed RPAS Categorization submission, the MAA **should** confirm the RPAS Category and / or sub-categories (if applicable) and issue an MAA RPAS LEC detailing confirmation of the RPAS Category.

20. The LEC **should** remain valid for the duration of the organization's RPAS operations provided the conditions specified in the LEC remain extant. Where an operating organization wishes to expand beyond those conditions, including changes to the equipment, operating intent or operating environment:

a. The organization **should** resubmit the Categorization submission and an associated Safety argument to the MAA, noting that the updated Category may be different to that previously endorsed.

b. A new LEC **should** be in place prior to any operation under the new conditions.

c. For new organizations and / or use cases for Specific S2, the ASSC (Live) and RTS Recommendation / MPTF (In-Service) Recommendation **should** be re-submitted to the MAA for review.

d. If a requirement is identified for an RPAS being operated in the S1 sub-category to be operated outside its extant LEC for a specific operational

²² Refer to RA 1605 – Remotely Piloted Air Systems Specific S2 sub-category.

²³ For commercial off-the-shelf (COTS) RPAS this could be the Concept of Use (CONUSE); or for more complex RPAS this could be based on the operating intent, the Statement of Operating Intent (SOI), etc (non-exhaustive list).

²⁴ Refer to RA 1606 – Remotely Piloted Air Systems - Certified Category.

²⁵ Refer to RA 1230 – Design Safety Targets.

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requirement, the use of a Special Purpose Clearance (SPC)²⁶ **should** be applied.

21. Organizations wishing to add or remove different RPAS models to an extant Open Category or Specific S1 sub-category LEC are only required to submit an Appendix 1 to the Categorization Safety Checklist at Annex B. Appendix 1 submissions **should** only be submitted if no changes have been made to the original endorsed Safety Checklist Annex B.
22. For Certified Category, no further LEC applications **should** be submitted following completion of initial Certification activity iaw RA 5810. The full MRP will apply and further LEC submissions provide no additional benefit.
23. Development activity (including Test and Evaluation (T&E), trials, and experimentation) **should** only be approved and undertaken by T&E endorsed organizations and Suitably Qualified and Experienced Persons²⁷.

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Remotely Piloted Air System Categorization

24. Civil Registered, Military Operated RPAS are regulated by RA 1166²⁸.
25. RA 1600 applies to UK Military Registered RPAS, whether Military-Owned or Civilian-Owned and / or Military Operated or Civilian Operated. This includes Civilian-Owned and Civilian Operated RPAS operating extra-territorially under contract to the MOD.
26. RA 1600 does not apply to:
 - a. Privately-owned RPAS (ie non-MOD owned and not on the UK MAR) operated by MOD personnel outwith their MOD duties²⁹.
 - b. Civil Registered or Unregistered Civilian-Owned RPAS and Civilian Operated RPAS operating, iaw the Air Navigation Order / Overseas National Regulations, under contract to the MOD.
 - c. Other Nation's military RPAS.
27. MOD owned and / or operated RPAS in the Open Category and Specific S1 sub-category must have 'Authority to Proceed' and security accreditation granted iaw 2023DIN03-17³⁰ prior to Categorization and use.
28. The MAA may categorize RPAS into a different Category than that submitted if deemed appropriate.
29. The MAA will form a RPAS Categorization Panel chaired by an Authorizing Officer to review the Categorization submission. It is expected that the MAA Categorization process, from receipt of the Categorization submission to issuance of a LEC or provisional Categorization response, will be no longer than 60 working days. Where the MAA has to request further information from the submitting organization to inform the Categorization decision, the response may be delayed.
30. The LEC will detail confirmation of the RPAS Category and or sub-categories detailing the Regulatory Framework to be applied.
31. Early engagement with the MAA is encouraged to reduce impact on project timelines. Engagement will ideally be during the equipment assessment phase (or earlier if possible) to enable the Categorization submission to be submitted no later than Full Business Case to ensure that the correct certification and regulatory regime can be adopted.
32. The Categorization Safety Checklist at Annex B provides a list of topics to be considered in the cases for Open Category and Specific S1 sub-category Categorization. However, it is recognized that minimal detail may be available when a Categorization submission is made during the RPAS Concept phase. Nonetheless, it is in the best interests of the submitting organization to include as much detail as is

²⁶ Refer to RA 1604 – Remotely Piloted Air Systems Specific S1 sub-category.

²⁷ Refer to RA 2370 – Test and Evaluation.

²⁸ Refer to RA 1166 – UK Civil-Registered Aircraft Utilized by the Ministry of Defence.

²⁹ ie where the use is private or recreational.

³⁰ Refer to 2023DIN03-17 – Procurement and use of small UAS (sUAS) in Defence-OS.

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available. This will, in turn, enable the MAA to make the best-informed RPAS Category assessment.

33. The Specific S1 sub-category represents the greatest RtL that an RPAS RO can manage. The RtL is bounded through the LEC. Elevation of Risk beyond this point requires an ADH chain and entry into Specific S2 sub-category.

34. The MAA recognizes that the full suite of artefacts and evidence for Specific S2 sub-category and Certified Category RPAS may not be available at LEC submission and that ASSC and RTS / MPTF review will be completed prior to commencement of flight.

35. Any re-Categorization may require additional MRP compliance including Certification, Continuing Airworthiness management, etc. Therefore, organizations may wish to seek initial Categorization in an appropriate Category if they envisage operating intent and / or conditions being expanded later.

36. It is important that an organization wishing to bring an RPAS into service within the Defence Air Environment fully understands the extent of its proposed usage in so far as is practicable throughout the life of the Air System, in order that an appropriate RPAS can be acquired from the outset (future-proofing). Changes to the requirements once In-Service will require re-assessment of the Categorization which may lead to the categorized RPAS not being suitable for the revised operating intent and / or conditions.

37. Selection of the correct RPAS is dependent on the intended CONUSE and Concept of Employment. Organizations can refer to Annex A, Figure 1 to assist in determining appropriate RPAS categories and physical attributes from the outset.

38. The acquisition of RPAS to be operated in the Open Category or Specific S1 sub-category is likely to be undertaken outside of the DE&S acquisition process, by organizations with minimal RPAS experience. DE&S RPAS DT, CATALYST DT or DE&S Airworthiness Team (DAT) are able to provide guidance on the acquisition of such RPAS.

39. Where RPAS will be operated in the maritime environment (ie embarked aviation), the Ship's Platform Authority and Ship Duty Holder are likely to be essential in the provision of Subject Matter Expertise for the Categorization submission³¹. The RPAS categorization needs to be reviewed to ensure the original RPAS categorization remains accurate, or requires a re-categorization, with a change in CONUSE / CONOPS if used in maritime environment.

**Regulation
1600(2)**

Remotely Piloted Air System Regulatory Requirements

1600(2) The appropriate Regulatory Framework **shall** be applied to all RPAS.

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Remotely Piloted Air System Regulatory Requirements

40. Organizations responsible for RPAS categorized in the:

- a. Open A1 sub-category **should** ensure compliance with the regulatory requirements as detailed in RA 1601³².
- b. Open A2 sub-category **should** ensure compliance with the regulatory requirements as detailed in RA 1602³³.
- c. Open A3 sub-category **should** ensure compliance with the regulatory requirements as detailed in RA 1603³⁴.
- d. Specific S1 sub-category **should** ensure compliance with the regulatory requirements as detailed in RA 1604²⁶.

³¹ Refer to RA 1395(5): Ship Air-Release Remotely Piloted Air Systems.

³² Refer to RA 1601 – Remotely Piloted Air Systems Open A1 sub-category (Fly 'Over' People).

³³ Refer to RA 1602 – Remotely Piloted Air Systems Open A2 sub-category (Fly 'Close To' People).

³⁴ Refer to RA 1603 – Remotely Piloted Air Systems Open A3 sub-category (Fly 'Far From' People).

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- e. Specific S2 sub-category **should** ensure compliance with the regulatory requirements as detailed in RA 1605²².
- f. Certified Category **should** ensure compliance with the regulatory requirements as detailed in RA 1606²⁴.

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1600(2)****Remotely Piloted Air System Regulatory Requirements**

41. RPAS operating in the Open and S1 sub-categories do not require a RTS / MPTF. RPAS operating in the S2 sub-category and Certified Category require an RTS / MPTF. There may be a requirement to have an MPTF (Development)²⁶ for Test and Evaluation activities.

ANNEX A

Figure 1 – Categorization Schematic (for illustrative purposes only – see RAs for definitive applicability)

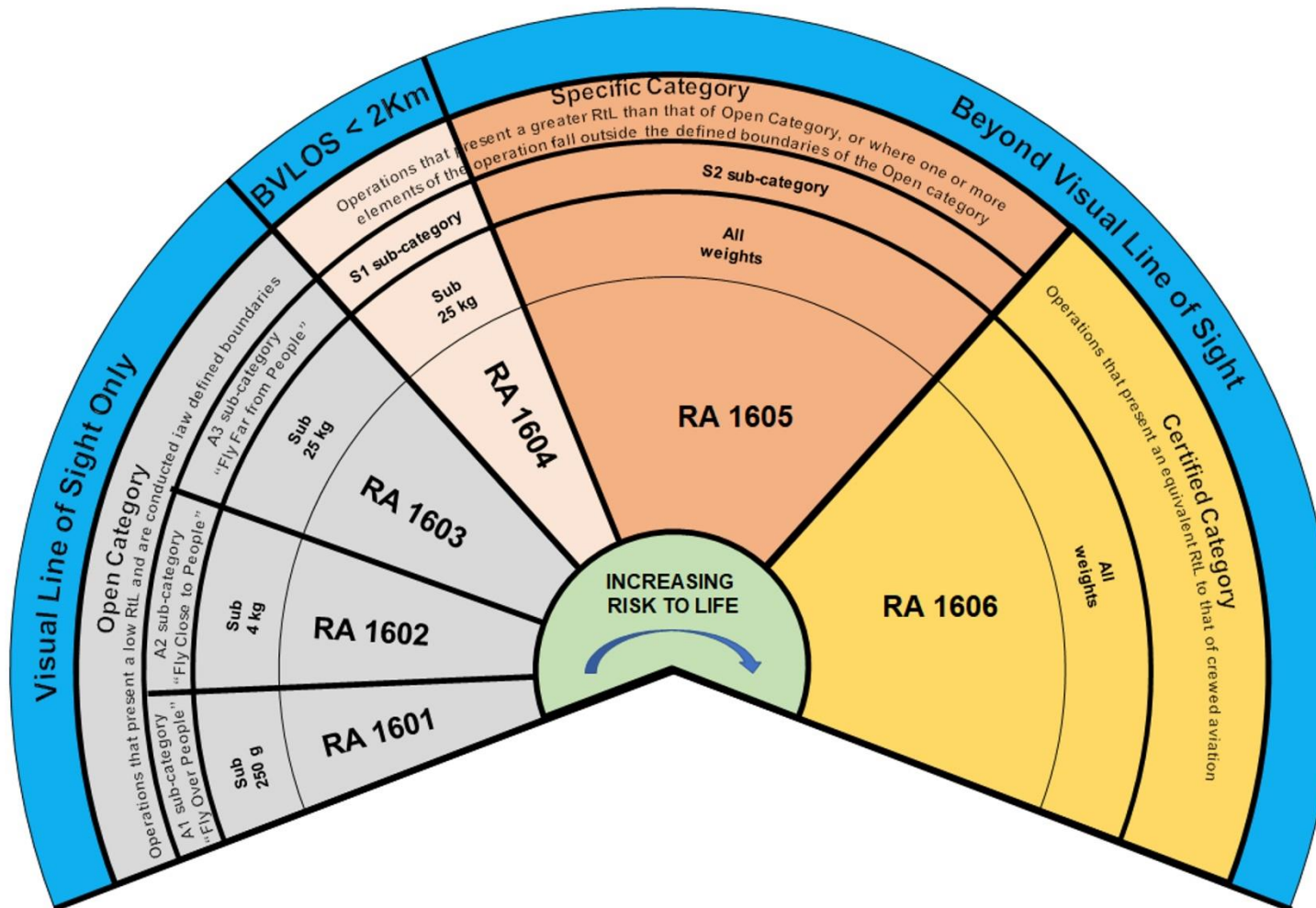
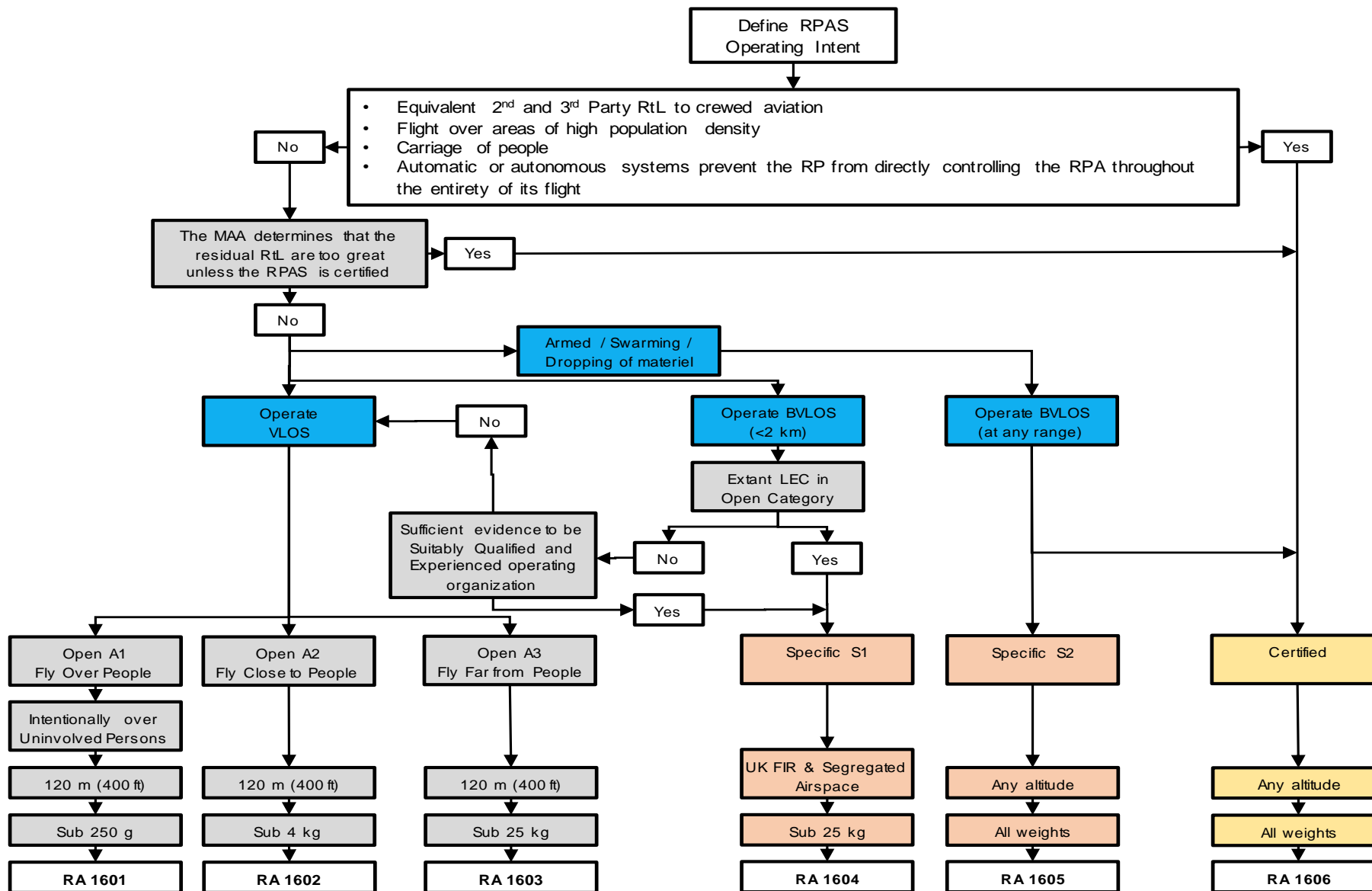


Figure 2 – Categorization Flow Chart (for illustrative purposes only – see RAs for definitive applicability)



ANNEX B

Categorization Safety Checklist

The Categorization Safety Checklist provides recommended headings and content to be considered for inclusion in the submission for Open Category and Specific S1 sub-category RPAS Categorization. It is recognized that some of the content detailed below might not be available at the time the Categorization submission is prepared. Nonetheless, it is in the best interests of the submitting organization to include as much information as available to inform the MAA Categorization.

1. Organization

*{Full details of the organization that is subject to the submission – all areas detailed below ought to be covered as a minimum. **Where examples are given, they are not exhaustive**}*

- 1.1. Structure of organization and management
{Brief description}
- 1.2. Key personnel
{As appropriate, eg RPAS RO, RPAS AM. Aviation qualifications and experience to be included if applicable}
- 1.3. Responsibility and duties of the RP
{Expected duties of the RP}
- 1.4. Responsibility and duties of support personnel in the operation of the RPAS
{eg RPs might use an assistant to help with the operation of the RPA. Give a brief description of this person's responsibilities and duties}
- 1.5. Flight team composition
{Composition of the flight team according to nature of operation, complexity, type of RPA, etc}
- 1.6. Operation of multiple types of RPAS
{Detail any limitations to the numbers and types of RPAS that a RP might operate if appropriate}
- 1.7. Qualification requirements
{Details of the qualifications, experience or training necessary for the RP or support crew according to the types of RPAS and roles employed by the RP}
- 1.8. Crew health
{A statement and any guidance to ensure that the crew are appropriately fit before conducting any operations}
- 1.9. Logs and records
{Requirements for logs and records of flights for the RPAS and by the RP}
- 1.10. Details of the RP training programme
{Training and checking requirements for RPs and support crew as determined by the RPAS RO / RPAS AM to cover initial, refresher and conversion syllabi. Include any independent assessment of RP competency and currency requirements}
- 1.11. Occurrence prevention, Occurrence reporting, and Flight Safety programme
{Include any reporting requirements and interface with Safety Management System}
- 1.12. Change Management (Modifications)
{Detail how the organization manages changes to the original design}
- 1.13. Other documents
{As considered necessary – copies of any documents ought to be attached}

2. Operations

*{Details of the operating environment and procedures subject to the submission – all areas detailed below ought to be covered as a minimum. **Where examples are given, they are not exhaustive**}*

- 2.1. Operating Intent / Types of operation
{Detail nature of operation (eg Visual Line of Sight, flexible / dynamic tasking, day / night, weather, operating behaviour, etc)}
- 2.2. Operating Areas
{Full detail of expected areas of geographic operations including operating areas (eg Congested Areas, open countryside, roads, etc). Consideration of overflown population density, suitability of launch and recovery locations and required services}

- 2.3. Operating limitations, conditions, and related factors
{Minimum and maximum operating conditions and limitations; reference any applicable limitations document if available and / or applicable; maximum kinetic energy; MTOW; maximum speed; population density}
- 2.4. Aggravating and / or mitigating factors table affecting or likely to affect the RPAS Category or Categories.
- 2.5. Supervision of RPAS operations
{A description of any system to supervise the operations of the RP}
- 2.6. Operating site planning and assessment
{Airspace operating environment considerations and procedures (eg controlled or restricted airspace, local avoids and Hazards, electromagnetic environment, etc)}
- 2.7. Communications
{Awareness and links with other users and Aircraft Aircrew / RPs}
- 2.8. Weather
{Consideration of RPAS environmental limitations}
- 2.9. On site procedures
 - a. Site Survey *{Methods of surveying operating area, identifying Hazards and any recorded Risk Assessment}*
 - b. Selection of operating area and alternate *{Methods of identifying and selecting operating area and how the alternate would be kept clear}*
 - c. Crew briefing *{Procedures to brief crew (eg task, responsibilities, duties, emergencies, etc)}*
 - d. Cordon Procedure *{Adherence of separation criteria}*
 - e. Communications *{Procedures to maintain contact with crew and adjacent air operations if appropriate}*
 - f. Weather Checks *{Met brief provision, limitations and operating considerations}*
 - g. Refuelling *{To include changing / charging of batteries}*
 - h. Loading of equipment *{Detail procedures taken to ensure security of loaded equipment}*
- 2.10. Assembly and functional checks
{Checks conducted on completion of assembly of the system}
- 2.11. Pre-flight checks
{Checks conducted immediately prior to flight}
- 2.12. Flight Procedures
{Start, take-off, in-flight, landing, shutdown}
- 2.13. Post-flight or between flight checks
{Detail the checks or inspections conducted both after flight and between flights, do appropriate Maintenance documents exist to return the Air System to a serviceable state?}
- 2.14. Emergency Procedures
{Include lost link, flyaway, Airspace encroachment, fire (RPA and Ground Control Station), etc. Preventive measures ought to also be detailed, along with a list of alarms and associated instructions, etc. Preventive measures ought to also be detailed}
- 2.15. Surveillance of Operations
{Surveillance methods for verification of RPAS geospatial positioning}

ANNEX B – APPENDIX 1**Categorization Safety Checklist**

Technical descriptions and details of the RPAS that is subject to the submission – all areas detailed below **should** to be covered as a minimum. **Where examples are given, they are not exhaustive.**

3. Systems

- 3.1. Details of Design Organization and manufacturer / production organization
{The designer and manufacturer might be the same company, include details of any approvals that such organizations hold}
- 3.2. Recognized standards, to which the equipment has been designed, built and tested
{Details of any standards that might or might not be aviation related and might add to the safety argument. Where known this ought to include test and evaluation evidence}
- 3.3. The designed flight envelope
{Full description of the flight envelope including: MTOW, flight duration, communications range, max height and speeds to maintain safe flight and glide profile (where appropriate). Include effects on flight envelope of differing payloads}
- 3.4. RPA dimensions
{Full dimensions to be given including mass with and without fuel; with and without any payloads, etc}
- 3.5. RPA energy
{maximum speed (m/s), maximum kinetic energy (joules)}
- 3.6. Design features
{Detail the design features of the system, materials used, type of structure, etc}
- 3.7. Software Assurance
{Detail the software version, and the steps taken to assure the software}
- 3.8. Construction
{Detail the build nature of each Air System and how structural strength is assured}
- 3.9. Electrical power and distribution
*{Detail the electrical power and distribution, include battery type and number, generator specifications, equipment ratings, load shedding where appropriate, etc. This section **should** also consider any storage considerations related to batteries (eg on board ship)}*
- 3.10. Propulsion System
{Detail the Propulsion System(s) used, power output, type of propeller / rotor, etc}
- 3.11. Fuel System
{Detail the fuel system arrangement, type of fuel, fuel delivery, etc}
- 3.12. Flight Management System and Flight Control System
{Detail of how the RPA is controlled, control linkages, control rigging, include any automatic stabilisation, etc}
- 3.13. Navigation and Guidance
{Detail the system used for navigation and guidance, include any automatic piloting, telemetry, etc}
- 3.14. Other avionics
{Detail any other avionics fitted to the system}
- 3.15. Launch and Recovery
{Describe the launch and recovery systems and detail any landing aids fitted to the system}
- 3.16. Payloads
{For each RPA give a technical description of the payload expected to be installed or carried}
- 3.17. Emergency recovery or safety systems
{Detail any systems fitted to the RPA or Ground Control Station (GCS) that contribute to safe flight or handling including their modes of operation (eg ballistic parachutes, propeller guards, independent flight termination, flight recovery system, etc)}
- 3.18. Modifications to the system
{Detail any Modifications that have been made post initial design}

- 3.19. GCS
{Where a laptop / tablet is utilized give details of the type of operating system and other technical specifications. Give detail of process for firmware and software updates, and what flight parameters, commands, and data are recorded}
- 3.20. Command and Control Link (C2)
{Describe the C2 infrastructure, how its integrity is monitored and the reaction of the system to degraded signal strengths}
- 3.21. C2 Loss Prevention
{What design characteristics or procedures are in place to prevent and mitigate loss of data link whether due to Radio Frequency (RF) interference, equipment malfunctions (RPA / GCS) or atmospheric conditions}
- 3.22. Lost Link
{Describe the RPA lost data link logic, profile and management for all phases of flight}
- 3.23. Whole system single points of failure (SPOF)
{For each element of the whole system, identify where SPOF might exist or alternatively where redundancy exists (eg motors, propellers, etc)}
- 3.24. Lifting, Maintenance schedules and inspections as applicable
{Describe the general Maintenance philosophy for the platform}
- 3.25. Repair and servicing as applicable
{Where repairs to the system are necessary describe the repair and servicing philosophy}
- 3.26. Known failure modes
{For the whole system identify known failure modes and detail preventive strategy}
- 3.27. Failsafe features
{Detail any failsafe features in the design of the system}
- 3.28. Operating limitations and conditions (for Categorization phase only) as applicable
{List the minimum and maximum operating conditions to highlight any mitigating or aggravating factors}
- 3.29. Transportation requirements
{Detail how the system is transported between sites. Include all carry cases, transport description, etc}
- 3.30. EU Conformity Standard / Similar Standards
{Detail the conformity standard of the RPAS}

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

RA 1601 – Remotely Piloted Air Systems Open A1 sub-category (Fly ‘Over’ 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 A1 sub-category. The regulatory framework is structured to specifically permit appropriate operating freedom to ‘non-traditional’ aviation units (who are the prevalent users of Open A1 sub-category RPAS).

Contents

- 1601(1): Regulatory Requirements
- 1601(2): Responsibilities
- 1601(3): Remote Pilot Competence
- 1601(4): Safe Operation and Limitations

Regulation 1601(1)

Regulatory Requirements

- 1601(1) Organizations operating RPAS in the Open A1 sub-category **shall** ensure that the requirements of RA 1600 and RA 1601 are complied with.

Acceptable Means of Compliance 1601(1)

Regulatory Requirements

1. The operation of RPAS in the Open A1 sub-category **should** be in the MOD Interest².
2. Organizations **should** hold an appropriate MAA RPAS Letter of Endorsed Categorization (LEC) prior to operation of RPAS in the Open A1 sub-category.
3. RPAS **should**:
 - a. Have a Maximum Take Off Weight (MTOW), including Stores, of less than 250 g.
 - b. Carry a European Union (EU) / UK conformity marking of **C0**³ or be designed to similar standards.
 - c. Have a maximum speed of 19 m/s if the RPAS has a EU / UK conformity marking of C0, or be designed to similar standards.
 - d. Be registered on the UK Military Aircraft Register by type⁴.
 - e. Operate under the Defence Air Environment (DAE) Operating Framework and be assigned to a DAE Operating Category^{2, 5}.
4. RPAS Occurrences **should** be reported, investigated, and recorded^{6, 7}.

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 RA 1160 – The Defence Air Environment Operating Framework.

³ Refer to [Commission Delegated Regulation \(EU\) 2019/945](#), [Commission Delegated Regulation \(EU\) 2020/1058](#), and [CAP2037A00](#).

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

⁵ 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.

⁶ Refer to RA 1410 – Occurrence Reporting and Management.

⁷ Refer to the Manual of Aircraft Post Crash Management, Chapter 1: The Aircraft Post Crash Management (APCM) Task, paragraph 8: Applicability.

**Guidance
Material
1601(1)**

Regulatory Requirements

5. Only those MAA Regulatory Publication (MRP) documents detailed in this RA, RA 1600, and applicable Regulatory Instructions and Regulatory Notices, are applicable to RPAS operating in Open A1 sub-category.
6. Contractor Flying Approved Organization Scheme (Basic RPAS) (CFAOS (BR)) organizations must also comply with RA 1031⁸.
7. RPAS Responsible Officers (RO) and RPAS Accountable Manager (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.

**Regulation
1601(2)**

Responsibilities

- 1601(2) RPAS operating in the Open A1 sub-category **shall** be operated under the authority of an RPAS RO or RPAS AM.

**Acceptable
Means of
Compliance
1601(2)**

Responsibilities

8. Non-MOD organizations **should**:
 - a. Be appropriately approved in accordance with (iaw) the CFAOS(BR)⁸.
 - b. Nominate an RPAS AM iaw RA 1031⁸.
9. MOD organizations **should** either:
 - a. Nominate an RPAS RO (minimum OF2 or equivalent); or
 - b. Ensure that operations are carried out by an organization appropriately approved iaw the CFAOS(BR).
10. RPAS ROs and RPAS AMs **should**:
 - a. Be responsible and accountable for the safe operation of RPAS within their Area of Responsibility (AoR).
 - b. Ensure that Risks to Remote Pilots (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.
 - d. Ensure that RPAS are operated and maintained in line with the Manufacturer's User or Operating Manual, RA 1601(4) and LEC.
 - e. Ensure that RPs are appropriately trained (iaw JSP 822⁹) and competent.
 - f. Ensure that RPs are medically fit to operate the Categorized RPAS¹⁰.
 - g. Specify a Suitably Qualified and Experienced Person (eg Remote Pilot Instructors (RPI)) to award RPAS flying privileges.

**Guidance
Material
1601(2)**

Responsibilities

11. Nil.

⁸ Refer to RA 1031 – Contractor Flying Approved Organization Scheme (Basic Remotely Piloted Air Systems).

⁹ Refer to JSP 822: Defence Direction and Guidance for Training and Education.

¹⁰ The baseline minimum Joint Medical Employment Standard for Military RPs of Open A1 Category RPAS is A-4. There is no baseline minimum Medical Employment Standard for Civilian RPs of Open A1 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
1601(3)**

Remote Pilot Competence

1601(3) RPs operating RPAS in the Open A1 sub-category **shall** be trained and competent.

**Acceptable
Means of
Compliance
1601(3)**

Remote Pilot Competence

12. RPs **should**:
- a. Be familiar with all publications, processes and orders required to safely operate the RPAS.
 - b. Maintain a level of competence appropriate to the tasks being conducted.

**Guidance
Material
1601(3)**

Remote Pilot Competence

13. RPs will be appropriately trained and competent. RPs are required to understand and be fully conversant with all appropriate publications and RA 1601(4), to ensure that their RPAS are safe to operate and being operated safely.
14. RPAS training will not be conducted while undertaking formal tasking.
15. Not all potential RPs will have experience flying RPAS; to gain sufficient experience, it is expected that organizations will provide appropriate training packages.

**Regulation
1601(4)**

Safe Operation and Limitations

1601(4) RPAS operating in the Open A1 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
Means of
Compliance
1601(4)**

Safe Operation and Limitations

16. RPAS ROs and RPAS AMs **should**:
- a. Detail in Orders the operating limitations and regulatory requirements applicable to operations in their AoR.
 - b. Ensure that operations outside UK airspace satisfy Diplomatic Clearance¹¹ requirements.
17. 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.
18. When flying in the UK, RPs **should** notify the Low Flying Booking Cell (LFBC)¹² in advance of any flying above 50 ft Above Ground Level, unless in Segregated Airspace activated for their use.
19. RPs **should** adhere to:
- a. Orders promulgated by the RPAS RO or RPAS AM.
 - b. The RPAS Manufacturer's User or Operating Manual.
 - c. The applicable operating parameters and procedures detailed in the RA 1600 Annex B Categorization Safety Checklist and LEC.
20. RPs **should** conduct flight planning and Risk Assessments iaw the most restrictive of Orders and adhere to the following operating limitations:

¹¹ Refer to RA 2305 – Supervision of Flying.

¹² 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.

Acceptable Means of Compliance 1601(4)

- a. Operated within Visual Line Of Sight (VLOS)^{13, 14} of the RP, maintaining an ability to determine the Remotely Piloted Aircraft's (RPA) orientation up to a maximum range of 500 m¹⁵.
 - b. Any additional conditions stipulated in the LEC.
21. RPA **should not** be:
- a. Operated higher than 120 m (400 ft) above the surface (land or sea).
 - b. Operated over open-air assemblies of uninvolved people where in the event of RPA failure, collision with uninvolved people is probable.
 - c. Operated in the flight restriction zone of a protected Aerodrome¹⁶, unless in receipt of appropriate permission from the Airspace Controlling Authority.
22. Organizations **should** ensure that operations outside UK airspace are conducted in accordance with the relevant national or international legal and regulatory requirements.
23. **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 1601(4)

Safe Operation and Limitations

24. An RPAS RO may be required to employ Open A1 sub-category RPAS outside limitations contained within their LEC, when there is an unplanned or unexpected operational imperative to do so¹⁷. When such situations arise, the RPAS RO (or their representative when the RPAS RO is not deployed) needs to inform the operational commander¹⁸ 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)¹⁹. 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.
25. 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).
26. 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 or RPAS AM.
 - d. Local orders such as those published by a Head of Establishment or Head of Unit.
27. The requirement to Authorize operations in the Open A1 sub-category is not mandated; however, RPAS ROs may elect to implement an authorization process to formalize and account for any tasking conducted²⁰.

¹³ Refer to MAA02: Military Aviation Authority Master Glossary.

¹⁴ RPAS Categorized as Open A1 may be operated Beyond VLOS when operating within buildings, vessels and Structures.

¹⁵ In 'follow-me' mode (the 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.

¹⁶ 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](#).

¹⁷ Where Safety, Environmental Protection or operational imperatives demand, the Regulations may be deviated from provided that a convincing case can be offered in retrospect.

¹⁸ The empowered individual at the time with tactical awareness of the current operation or task.

¹⁹ Bounded by the Laws of Armed Conflict, superior command direction, Rules of Engagement and RtL to own forces.

²⁰ If RPAS ROs choose to implement the Authorization process, they are advised to use the principles of RA 2306 – Authorization of Flights.

► 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).

Contents

- 1602(1): Regulatory Requirements
- 1602(2): Responsibilities
- 1602(3): Remote Pilot Competence
- 1602(4): Safe Operation and Limitations
- 1602(5): Handing over Control of Remotely Piloted Aircraft
- 1602(6): Remote Pilot Instructors

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.

**Acceptable
Means of
Compliance
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.

Acceptable Means of Compliance 1602(2)

- 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
Means of
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:
- For operations conducted with the nation's consent, iaw relevant local, national, and international legal requirements, and satisfy diplomatic clearance requirements¹⁸, or
 - 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:
- Orders promulgated by the RPAS RO / RPAS AM.
 - The RPAS Manufacturer's User or Operating Manual.
 - 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:
- Operated within Visual Line Of Sight (VLOS)²¹ of the RP up to a maximum range of 500 m²².
 - Operated with a minimum safe horizontal distance of 30 m from any person, vessel, vehicle or structure not under the control of the RP²³.
 - Any conditions stipulated in the LEC.
28. RPAS operating in the Open A2 sub-category **should not** be:
- Intentionally operated over uninvolved persons.
 - 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.

Acceptable Means of Compliance 1602(4)

- 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
Means of
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.

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

- 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.

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

RA 1603 – Remotely Piloted Air Systems Open A3 sub-category (Fly ‘Far From’ 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 A3 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 A3 sub-category).

Contents

- 1603(1): Regulatory Requirements
- 1603(2): Responsibilities
- 1603(3): Remote Pilot Competence
- 1603(4): Safe Operation and Limitations
- 1603(5): Handing over Control of Remotely Piloted Aircraft
- 1603(6): Remote Pilot Instructors

Regulation 1603(1)

Regulatory Requirements

- 1603(1) Organizations operating RPAS in the Open A3 sub-category **shall** ensure that the requirements of RA 1600 and RA 1603 are complied with.

Acceptable Means of Compliance 1603(1)

Regulatory Requirements

1. Organizations **should** hold an appropriate MAA RPAS Letter of Endorsed Categorization (LEC) prior to operation of RPAS in the Open A3 sub-category.
2. RPAS **should**:
 - a. Have a Maximum Take Off Weight (MTOW), including Stores, of less than 25 kg.
 - b. Carry a European Union (EU) / UK conformity marking of **C0-C4**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. Adhere to noise limits, height limits and requirements for remote identification and geo-awareness systems and additional requirements if being used during tethered flight⁶.

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.

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).

**Acceptable
Means of
Compliance
1603(1)**

- f. Operate under the Defence Air Environment (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
1603(1)**

Regulatory Requirements

4. Only those MRP documents detailed in this RA, including relevant Regulatory Instructions and Regulatory Notices, are applicable to RPAS operating in Open A3 sub-category.
5. Contractor Flying Approved Organization Scheme (Basic RPAS) (CFAOS (BR)) organizations must also comply with RA 1031¹¹.
6. RPAS Responsible Officers (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
1603(2)**

Responsibilities

- 1603(2) RPAS in the Open A3 sub-category **shall** be operated under the authority of a RPAS RO / RPAS AM and supported by appropriate persons.

**Acceptable
Means of
Compliance
1603(2)**

Responsibilities

8. Non-MOD organizations operating military registered RPAS in the Open A3 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**:
- 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.

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 RPAS).

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

**Acceptable
Means of
Compliance
1603(2)**

- 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 1603(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 1603(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. Nominate¹¹ a Flight Operations Post Holder (FOPH) 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.
 - 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.
 - d. Ensure that RPs are medically fit to operate the Categorized RPAS¹⁷.
 - e. Ensure the RP Instructor (RPI) complies with RA 1603(6).

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.

¹⁷ The baseline minimum Joint Medical Employment Standard for Military RPs of Open A3 Category RPAS is A-4. There is no baseline minimum Medical Employment Standard for Civilian RPs of Open A3 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 – Remotely Piloted Air Systems, Annex B: Categorization Safety Checklist.

**Acceptable
Means of
Compliance
1603(2)**

- f. Assure themselves that a RPAS operating training package and flying assessment of the RPs is conducted.
- g. Specify SQEP individuals (eg RPIs) to award RPAS flying privileges.

**Guidance
Material
1603(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 / AM briefings¹³ to those assessed as requiring further training in order that they may be considered competent to manage the RtL associated with the 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
1603(3)**

Remote Pilot Competence

1603(3) RPs operating RPAS in the Open A3 sub-category **shall** be qualified and competent.

**Acceptable
Means of
Compliance
1603(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
1603(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 1603(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.

**Regulation
1603(4)**

Safe Operation and Limitations

1603(4) RPAS operating in the Open A3 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
Means of
Compliance
1603(4)**

Safe Operation and Limitations

21. RPAS ROs and RPAS AMs **should**:
 - a. Detail in Orders the operating limitations and regulatory requirements applicable to operations in their AoR.
 - b. Ensure that operations outside UK airspace satisfy Diplomatic Clearance¹⁸ requirements.
22. 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.
23. When flying in the UK, RPs **should** notify the Low Flying Booking Cell (LFBC)¹⁹ in advance of any flying above 50 ft Above Ground Level, unless in Segregated Airspace activated for their use.
24. RPs **should** adhere to:
 - a. Orders promulgated by 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.
25. 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)²⁰ of the RP up to a maximum range of 500 m²¹.
 - b. Operated with a minimum safe horizontal distance of 50 m from any person, vessel, vehicle or structure not under the control of the RP.
 - c. Any conditions stipulated in the LEC.
26. RPA operating in the Open A3 sub-category **should not** be:
 - a. Intentionally operated over uninvolved persons²⁰.
 - b. Operated higher than 120 m (400 ft) above the surface (land or sea).
 - c. Operated over or within 50 m of any Congested Area²⁰.
 - d. Operated in the flight restriction zone of a protected Aerodrome²², unless in receipt of appropriate permission from the Airspace Controlling Authority.
27. Organizations **should** ensure that operations outside UK airspace are conducted iaw the relevant national or international legal and regulatory requirements.
28. **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
1603(4)**

Safe Operation and Limitations

29. An RPAS RO may be required to employ Open A3 sub-category RPAS outside limitations contained within their LEC, when there is an unplanned or unexpected operational imperative to do so²³. When such situations arise, the RPAS RO (or their

¹⁸ Refer to RA 2305 – Supervision of Flying.

¹⁹ 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.

²⁰ Refer to MAA02: Military Aviation Authority Master Glossary.

²¹ 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.

²² 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](#).

²³ Where Safety, Environmental Protection or operational imperatives demand, the Regulations may be deviated from provided that a convincing case can be offered in retrospect.

**Guidance
Material
1603(4)**

representative when the RPAS RO is not deployed) needs to inform the operational commander²⁴ 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)²⁵. 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.

30. 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).

31. 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.

32. The requirement to Authorize operations in the Open A3 sub-category is not mandated; however, RPAS ROs / RPAS AMs may elect to implement an authorization process to formalize and account for any tasking conducted²⁶.

**Regulation
1603(5)**

Handing over Control of Remotely Piloted Aircraft

1603(5) Handing over or taking over control of an RPA **shall** be conducted formally.

**Acceptable
Means of
Compliance
1603(5)**

Handing over Control of Remotely Piloted Aircraft

33. 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.

34. 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.

35. 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
1603(5)**

Handing over Control of Remotely Piloted Aircraft

36. Nil.

**Regulation
1603(6)**

Remote Pilot Instructors

1603(6) RPIs **shall** be trained and competent.

²⁴ The empowered individual at the time with tactical awareness of the current operation or task.

²⁵ Bounded by the Laws of Armed Conflict, superior command direction, Rules of Engagement and RtL to own forces.

²⁶ If RPAS ROs choose to implement the Authorization process, they are advised to use the principles of RA 2306 – Authorization of Flights.

**Acceptable
Means of
Compliance
1603(6)****Remote Pilot Instructors**

37. RPAS ROs and RPAS AMs **should** detail in orders:
- The types of RPI within their AoR;
 - The experience level and course(s) required by personnel in their AoR to become an RPI.
 - The required currencies and competencies required for an RPI qualification to remain valid.
38. 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:
- Plan, prepare and deliver appropriately structured theoretical and practical teaching events.
 - Manage trainees, students and instructional resources.
 - Deliver specialist instruction to incorporate a range of differing learning styles.
 - Integrate Human Factors training¹³ into all serials.
 - Confirm / check learning has taken place, using appropriate practical techniques on the ground and in the air.
 - Monitor and review trainee or student progress across the full range of RP training events.
 - Produce comprehensive written reports on individual training outcomes.
39. RPIs **should**:
- Have qualified as an RPAS operator following successful completion of an approved MAA Defence System Approach to Training (DSAT) compliant course or a National Qualified Entity / RAE civilian course that includes a flying assessment.
 - Be qualified as a Defence Trainer²⁷.
 - Achieve Practitioner Level of the Defence Trainer²⁷ prior to awarding an MAA approved DSAT course qualification / competency for a RP to fly RPAS in this sub-category.
40. All RPIs **should** undertake an instructional competence check on an annual basis. This check **should** be conducted by a Defence Training Supervisor²⁷ who meets the criteria to be an Independent Assessor²⁰ and who is qualified on the same or a similar RPAS type. It **should** include the following baseline competencies:
- Ability to impart skill and knowledge, utilizing effective analysis and debriefing.
 - Proficiency in flying or airborne operating skills, and knowledge of the Air System on which tested.
 - Standardization of current training practice.
 - Knowledge of subjects allied to flying / Air System operation.
 - Review a sample of comprehensive written reports on individual training outcomes.

**Guidance
Material
1603(6)****Remote Pilot Instructors**

41. Nil.

²⁷ Refer to JSP 822 – Defence Direction and Guidance for Training and Education.

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

RA 1604 – Remotely Piloted Air Systems Specific S1 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. This Regulatory Article (RA) defines the regulatory framework for those RPAS operating in the Specific S1 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 Specific S1 sub-category).

Contents

- 1604(1): Regulatory Requirements**
- 1604(2): Responsibilities**
- 1604(3): Remote Pilot Competence**
- 1604(4): Safe Operation and Limitations**
- 1604(5): Special Purpose Clearances**
- 1604(6): Handing over Control of Remotely Piloted Aircraft**
- 1604(7): Remote Pilot Instructors**

Regulation 1604(1)

Regulatory Requirements

- 1604(1) Organizations operating RPAS in the Specific S1 sub-category **shall** ensure that the requirements of RA 1600 and RA 1604 are complied with.

Acceptable Means of Compliance 1604(1)

Regulatory Requirements

1. Organizations **should** hold an appropriate MAA RPAS Letter of Endorsed Categorization (LEC) prior to operation of RPAS in the Specific S1 sub-category².
2. RPAS **should**:
 - a. Have a Maximum Take Off Weight (MTOW), including Stores, of less than 25 kg.
 - b. Carry a European Union (EU) / UK conformity marking of **C0-C4**³ 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)^{4, 5}.
 - c. Have a maximum speed of 19 m/s if the RPAS has an EU / UK conformity marking of **C0-C1**, or is designed to similar standards.
 - d. Be registered on the UK Military Aircraft Register by type⁶.

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 Military Organizations (ie Military Operated) that have previously operated under an Open Category Sub 250 g RPAS LEC will require to establish an appropriate RPAS Responsible Officer (RPAS RO) construct and undertake additional Remote Pilot (RP) training beyond that required for Open Category operations, as defined within this RA. Civilian Organizations (ie Civilian Operated) that have previously operated under an Open Category RPAS LEC will require to undertake additional RP training beyond that required for Open Category operations, as defined within this RA.

³ Refer to [Commission Delegated Regulation \(EU\) 2019/945](#), [Commission Delegated Regulation \(EU\) 2020/1058](#), and [CAP2037A00](#).

⁴ This will provide Assurance that the RPAS meets basic Airworthiness requirements and that it is "Safe to Operate" in the Defence Air Environment (DAE).

⁵ Refer to 2023DIN03-030 – DES Remotely Piloted Air System (RPAS) Delivery Team Commercial Off The Shelf (COTS) Endorsed Manufacturers List (EML).

⁶ Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.

**Acceptable
Means of
Compliance
1604(1)**

- e. Be equipped with a low-speed mode which limits the maximum speed to 3 m/s when selected by the Remote Pilot if the RPAS has an EU / UK conformity marking of **C2**, or is designed to similar standards.
 - f. Adhere to noise limits, height limits and requirements for remote identification and geo-awareness systems and additional requirements if being used during tethered flight⁷.
 - g. Operate under the Defence Air Environment (DAE) Operating Framework and be assigned to a DAE Operating Category^{4, 8, 9}.
3. RPAS Occurrences **should** be reported, investigated, and recorded^{10, 11}.

**Guidance
Material
1604(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 Specific S1 sub-category.
- 5. Contractor Flying Approved Organization Scheme (Basic RPAS) (CFAOS (BR)) organizations must also comply with RA 1031¹².
- 6. This RA has been designed to permit RPAS operations beyond the limitations of RPAS Categorized in the Open Category.
- 7. There is no requirement for Specific S1 sub-category RPAS to be Certified.
- 8. There is no requirement to have a Certificate of Design or meet Design Safety Targets.
- 9. There is no requirement to demonstrate and sustain Airworthiness via an Airworthiness / Air Safety Strategy.
- 10. An Air System Safety Case (ASSC) provides an evidenced and coherent argument that a system is safe to operate and is being operated safely. The endorsed RA 1600 Annex B Categorization Safety Checklist will satisfy the requirement for an ASSC.
- 11. 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.
- 12. This Regulation does not cover Test and Evaluation (T&E) activity. RPAS applicants wishing to operate in a manner or configuration not supported by RA 1600 and RA 1604 (ie T&E) will be subject to RA 2370¹³ and other MRP requirements. Discussion with the MAA¹⁴ will be required in order to confirm the applicable Regulations.
- 13. An Ageing Air System Audit is not required for Specific S1 sub-category RPAS.
- 14. 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 process¹⁵.

⁷ 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).

⁸ Refer to RA 1160 – The Defence Air Environment Operating Framework.

⁹ 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.

¹⁰ Refer to RA 1410 – Occurrence Reporting and Management.

¹¹ Refer to the Manual of Aircraft Post Crash Management Chapter 1: The Aircraft Post Crash Management (APCM) Task, paragraph 8: Applicability.

¹² Refer to RA 1031 – Contractor Flying Approved Organization Scheme (Basic Remotely Piloted Air Systems).

¹³ Refer to RA 2370 – Test and Evaluation.

¹⁴ Contact via DSA-MAA-MRPEnquiries@mod.gov.uk.

¹⁵ RA 1395 – Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships.

**Regulation
1604(2)**

Responsibilities

1604(2) RPAS in the Specific S1 sub-category **shall** be operated under the authority of a RPAS RO or RPAS AM and be supported by appropriate persons.

**Acceptable
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Compliance
1604(2)**

Responsibilities

15. Non-MOD organizations operating military registered RPAS in the Specific S1 sub-category **should**:
- a. Be appropriately approved in accordance with (iaw) the CFAOS(BR)¹².
 - b. Nominate an RPAS AM iaw RA 1031¹².
16. MOD organizations responsible for operating RPAS **should** either:
- a. Nominate:
 - (1) A Capability Owner (minimum OF5 or equivalent), and
 - (2) An RPAS RO (minimum OF4 or equivalent).
 - b. Or ensure that operations are carried out by an organization appropriately approved iaw the CFAOS(BR).
17. RPAS ROs **should**:
- 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 1604(4) and LEC.
 - e. Attend an MAA RPAS RO / AM Briefing Day¹⁶ prior to commencement of RPAS operations if required to do so by the MAA¹⁷.
 - f. Nominate a Senior Operator (SO).
18. 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 RO / AM Briefing Day. Whilst day to day supervisory responsibility may be delegated by the RPAS RO, accountability will remain with the RPAS RO.
19. RPAS AMs **should**:
- a. Be appointed iaw RA 1031.
 - 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.

¹⁶ Refer to RA 1440 – Air Safety Training.

¹⁷ This requirement will be reviewed by the MAA during the categorization process; and any requirement / dispensation articulated in the LEC.

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Compliance
1604(2)**

- 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 1604(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 MAA¹⁷.
 - g. Nominate a Flight Operations Post Holder (FOPH)¹² in order to provide the RPAS AM with appropriate specialist support¹⁸.
20. 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 Defence Systems Approach to Training (DSAT) compliant MAA approved RPAS course, or an equivalent Civil Aviation Authority (CAA) approved Recognized Assessment Entity (RAE)¹⁹ that includes a flying assessment. Where the training provided does not include flying under MRP rules, the RP **should** receive additional local training on MRP RPAS flying by an RP Instructor (RPI) as approved by the RPAS RO. If the training does not include a period of Beyond Visual Line of Sight (BVLOS) flight, the RP **should** complete BVLOS practical flying training under supervision of RPI / RPAS SO until deemed qualified as competent to operate BVLOS.
 - c. Ensure that all RPs within their AoR have successfully completed a DSAT compliant MAA approved RPAS course, or an equivalent approved RPAS training package provided by a RAE that includes a flying assessment.
 - d. Be qualified on similar type RPAS to be operated.
 - e. Ensure that RPs are medically fit to operate the Categorized RPAS²⁰.
 - f. Ensure the RPI complies with RA 1604(7).
 - g. Have completed and be current for the RPAS RO / RPAS AM Briefing Day¹⁶.
 - h. Specify SQEP individuals (eg RPIs) to award RPAS flying privileges.

**Guidance
Material
1604(2)**

Responsibilities

21. RPAS operating in the Specific S1 sub-category are not required to be supported by a:
- a. Senior Duty Holder;
 - b. Operating Duty Holder;
 - c. Delivery Duty Holder;
 - d. Accountable Manager (Military Flying);
 - e. Type Airworthiness Authority²¹;
 - f. Continuing Airworthiness Management Organization;
 - g. Chief Air Engineer.
22. **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.

¹⁸ To include T&E when in the organization's CFAOS(BR) Approval and the RPAS AM is not appropriately T&E qualified.

¹⁹ The list of CAA approved RAEs is found in the Unmanned Aircraft section of the CAA website.

²⁰ The baseline minimum Joint Medical Employment Standard for Military RPs of Specific S1 Category RPAS is A-4. There is no baseline minimum Medical Employment Standard for Civilian RPs of Specific S1 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.

²¹ The organization submitting a categorization submission for RPAS to be operate in the Open A2 sub-category, Open A3 sub-category and Specific S1 sub-category will ensure, and make clear within the Categorization submission, that either: the manufacturer is listed in the RPAS Endorsed Manufacturers List; or the RPAS being acquired has a EU / UK conformity marking, or be designed to similar standards.

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Material
1604(2)**

Therefore, the MAA will provide appropriate RPAS ROs / AMs Briefings¹⁶ 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.

23. **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.
24. The RPAS SO / FOPH may also hold a dual role as an RPI.

**Regulation
1604(3)**

Remote Pilot Competence

1604(3) RPs operating RPAS in the Specific S1 sub-category **shall** be qualified and competent.

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Means of
Compliance
1604(3)**

Remote Pilot Competence

25. RPAS RPs **should**:
- a. Complete an RPAS training package, designed for RPs flying RPAS under MRP rules, that includes a flying assessment. This **should** be provided by a CAA approved RAE, or an equivalent DSAT compliant organization providing an 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. If the training does not include a period of BVLOS flight, the RP **should** complete BVLOS practical flying training under supervision of RPI / RPAS SO until deemed qualified as competent to operate BVLOS.
 - 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.
 - f. Maintain a log of the inspections and Maintenance carried out on their RPAS.

**Guidance
Material
1604(3)**

Remote Pilot Competence

26. RPs will be appropriately trained and competent. RPs are required to understand and be fully conversant with all appropriate publications and RA 1604(4), to ensure that their RPAS are safe to operate and are being operated safely.
27. RPAS training will not be conducted while undertaking formal tasking.
28. RPAS SOs / FOPHs will ensure that all RPs receive Conversion To Type (CTT) training from an RPI.

**Regulation
1604(4)**

Safe Operation and Limitations

1604(4) RPAS operating in the Specific S1 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.

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Means of
Compliance
1604(4)**

Safe Operation and Limitations

29. RPAS ROs and RPAS AMs **should** ensure:
- a. A level of Safety is provided in respect of collision avoidance, equivalent to that provided by the pilot of a crewed Aircraft, and that this is achieved using

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1604(4)**

the 'Layered Safety Approach'²² (for operations either inside or outside UK airspace).

- b. Operations inside the UK Flight Information Region are flown in Segregated Airspace²².
- c. For RPAS ROs; That RPAS operations within another sovereign nation's territorial Airspace are conducted either:
 - (1) For operations conducted with the nation's consent, iaw the relevant local, national, and international legal requirements, and satisfy diplomatic clearance requirements, or
 - (2) 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), under 'Due Regard'²³ and outside Controlled Airspace; unless the Controlled Airspace has been created or assigned for the purposes of the Operation.
- d. For RPAS AMs; That RPAS operations within another sovereign nation's territorial Airspace and with that nation's consent are conducted iaw the relevant local, national, and international legal requirements and satisfy diplomatic clearance requirements²⁴.
- e. That RPAS operations in international Airspace are conducted iaw relevant international legal requirements and under 'Due Regard'²³.

30. RPAS ROs and RPAS AMs **should** detail in orders:

- a. The operating limitations and regulatory requirements applicable to operations in their AoR.
- b. The procedures to be followed for piloted control.
- c. The applicable emergency procedures, including any requirements for pre-planned emergency recovery sites.
- d. The protocols required to manage control data-links.

31. 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.

32. When flying in the UK, RPs **should** notify the Low Flying Booking Cell (LFBC)²⁵ in advance of any flying above 50 ft Above Ground Level, unless in Segregated Airspace activated for their use.

33. 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.

34. RPs **should** conduct flight planning and Risk Assessments iaw the most restrictive of Orders and adhere to the following operating limitations:

- a. The 'Layered Safety Approach'.
- b. Operations are conducted in Segregated Airspace²².
- c. Operated, BVLOS²⁶, up to a maximum range of 2,000 m²⁷ from the RP.

²² For definition refer to MAA02: Military Aviation Authority Master Glossary.

²³ Refer to RA 2307 – Rules of the Air.

²⁴ Refer to AP1158 – Approval and Diplomatic Clearance for Flights to Destinations Abroad.

²⁵ 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.

²⁶ Refer to MAA02: Military Aviation Authority Master Glossary.

²⁷ Operations beyond 2,000 m maybe approved but the range, justification, and ability to support LSA to this range needs to be covered and approved in the Categorization Submission.

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1604(4)**

35. RPAS operating in the Specific S1 sub-category **should not** be:
- Operated within 50 m of any person, vessel, vehicle or Structure not under the control of the RP except during take-off or landing.
 - Operated over or within 50 m of any Congested Area²².
 - Operated in the flight restriction zone of a protected Aerodrome²⁸, unless in receipt of appropriate permission from the Airspace Controlling Authority.
36. **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 Remote Pilot Station that requires abandonment, or the loss of Return feed data link that precludes safe control, lost link procedures **should** be followed.

**Guidance
Material
1604(4)**

Safe Operation and Limitations

37. An RPAS RO may be required to employ Specific S1 sub-category RPAS outside limitations contained within their LEC, when there is an unplanned or unexpected operational imperative to do so²⁹. When such situations arise, the RPAS RO (or their representative when the RPAS RO is not deployed) needs to inform the operational commander³⁰ 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)³¹. 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.
38. 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).
39. RPAS publications are likely to include:
- The RA 1600 Annex B Categorization Safety Checklist for the RPAS.
 - Manufacturer's User or Operating Manual.
 - Specific orders or Instructions from the RPAS RO / RPAS AM.
 - Local orders such as those published by a Head of Establishment or Head of Unit.
40. The requirement to Authorize operations in the Specific S1 sub-category is not mandated; however, RPAS ROs / RPAS AMs may elect to implement an authorization process to formalize and account for any tasking conducted³².

Operations Inside UK Airspace

41. **Segregated Airspace.** Segregated Airspace is used as a mitigation for mid-air collision. RPAS ROs / RPAS AMs will detail the procedures to be followed to ensure that the RPAS remains within the Segregated Airspace (this might include restrictions on approaching the boundaries of allocated airspace or use of independent flight termination systems).
42. **Inside UK Danger Areas³³.** Operation within a designated UK Danger Area, authorized for BVLOS RPAS operations, is subject to the approval of the Danger Area command authority, and will be iaw the specific Danger Area, range or operating area instructions.

²⁸ 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](#).

²⁹ Where safety, Environmental Protection or operational imperatives demand, the Regulations may be deviated from provided that a convincing case can be offered in retrospect.

³⁰ The empowered individual at the time with tactical awareness of the current operation or task.

³¹ Bounded by the Laws of Armed Conflict, superior command direction, Rules of Engagement and RtL to own forces.

³² If RPAS ROs choose to implement the Authorization process, they are advised to use the principles of RA 2306 – Authorization of Flights.

³³ Refer to MAA02 – MAA Master Glossary; and DSA 03.OME Part 3 (Formerly JSP 403 Volume 2) - Defence Code of Practice (DCOP) for Ranges.

**Regulation
1604(5)**

Special Purpose Clearances

1604(5) An RPAS Special Purpose Clearance (SPC) **shall** be invoked when the RtL associated with its usage is greater than the Risk identified within the Specific S1 LEC³⁴.

**Acceptable
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Compliance
1604(5)**

Special Purpose Clearances

43. An SPC **should** be identified when an RPAS operating in the Specific S1 sub-category requires to be operated outside the bounds of its LEC, for a specific named Operation (and associated training).

44. An RPAS SPC **should** be authorized by the MAA and issued to the RPAS RO. An SPC **should** be for a defined activity and time bounded. The RPAS SPC review periodicities **should not** exceed 6 months.

45. When applying for a SPC the RPAS RO **should** supplement the original Categorization Submission for the RPAS with relevant details including a record of their judgement that the benefits of operating the RPAS with an RPAS SPC outweigh any increased RtL and submit it to the MAA iaw the RA 1600 Categorization submission process³⁴.

**Guidance
Material
1604(5)**

Special Purpose Clearances

46. RPAS SPCs are situation dependant and bound by time (length of approval period) and airspace in which the operation will be conducted. They are not to be viewed as an alternative to long-term compliance.

47. An RPAS SPC is comparable to a Specific S2 sub-category and Certified Category Operational Emergency Clearance (OEC) and will only be used for flight under the following circumstances:

- a. In conditions of actual or potential hostile enemy action, or;
- b. In other conditions of operational imperative, to include training for actual or planned operations, when enabled by the RPAS RO.

48. The RPAS RO will ensure that a clear explanation of the Risks involved, and related operating instructions to support an RPAS SPC are incorporated into the Categorization Submission.

49. The RPAS RO will ensure that the authority required for an RPAS SPC to be enabled, guidance on the Risk involved, and related operating instructions are specified in appropriate orders.

**Regulation
1604(6)**

Handing over Control of Remotely Piloted Aircraft

1604(6) Handing over or taking over control of an RPA **shall** be conducted formally.

**Acceptable
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Compliance
1604(6)**

Handing over Control of Remotely Piloted Aircraft

50. 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.

51. 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.

52. 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).

³⁴ Refer to RA 1600 – Remotely Piloted Air Systems.

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Material
1604(6)**

Handing over Control of Remotely Piloted Aircraft

53. Nil.

**Regulation
1604(7)**

Remote Pilot Instructors

1604(7) RPIs **shall** be trained and competent.

**Acceptable
Means of
Compliance
1604(7)**

Remote Pilot Instructors

54. RPAS ROs and RPAS AMs **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.

55. 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 training¹⁶ 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.

56. 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 Trainer³⁵.
- c. Achieve Practitioner Level of the Defence Trainer³⁵ prior to awarding an MAA approved DSAT course qualification / competency for a RP to fly RPAS in this sub-category.

57. All RPIs **should** undertake an instructional competence check on an annual basis. This check **should** be conducted by a Defence Training Supervisor³⁵ who meets the criteria to be an Independent Assessor²² 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.
- 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.

³⁵ Refer to JSP 822 – Defence Direction and Guidance for Training and Education.

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1604(7)**

- e. Review a sample of comprehensive written reports on individual training outcomes.

**Guidance
Material
1604(7)**

Remote Pilot Instructors

- 58. Nil.

► 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.

Contents

1605(1): Regulatory Requirements

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

1605(3): Withdrawn – Incorporated into RA 1605(1) and the Remotely Piloted Air Systems Manual

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.

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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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- 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.

**Guidance
Material
1605(2)**

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.

**Guidance
Material
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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RA 1606 – Remotely Piloted Air Systems – Certified 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. This Regulatory Article (RA) defines the regulatory framework for those RPAS operating in the Certified Category.

Contents

1606(1): Regulatory Requirements

Regulation 1606(1)

Regulatory Requirements

1606(1) The MAA Regulatory Publications (MRP) **shall** apply to RPAS in the Certified Category.

Acceptable Means of Compliance 1606(1)

Regulatory Requirements

1. Organizations² responsible for RPAS in the Certified Category **should** comply with all applicable RAs as would be ► **required for crewed** ◀ aviation.
2. Aviation Duty Holders / Accountable Managers (Military Flying) **should**:
 - a. Ensure an appropriate MAA RPAS Letter of Endorsed Categorization (LEC) is in place prior to operation of RPAS in the Certified Category.
 - b. Ensure that RPAS are operated in compliance with the LEC.
3. RPAS in the Certified Category **should** be certified in accordance with ► **the Military Air System Certification Process**^{3, 4}. ◀
4. RPAS operating in the Certified Category **should** be registered on the UK Military Aircraft Register⁵.

Guidance Material 1606(1)

Regulatory Requirements

5. The operation of RPAS in the Certified Category presents RtL similar to that of ► **crewed** ◀ aviation. Therefore, excepting the Categorization and LEC requirements of RA 1600⁶, RPAS in the Certified Category are subject to the same regulatory regime as ► **crewed** ◀ aviation.
6. **Ageing Air System Audit.** RPAS with an anticipated service life of less than 6 years are exempt from the requirements of an Ageing Air System Audit ► **7** ◀.

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 Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B).

⁴ ► **Refer to RA 5820 – Changes to Type Design.** ◀

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

⁶ Refer to RA 1600 – Remotely Piloted Air Systems.

⁷ ► **Refer to RA 5723 – Ageing Air System Audit.** ◀

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RA 1800 – Aerodrome and Air Weapon Range Aviation Activity - Management of Environmental Impacts and Risks

Rationale

Aviation activity has adverse effects on the natural environment on and around MOD Aerodromes and Air Weapon Ranges. Without adequate processes and tools for managing the Environmental Impacts and Environmental Risks associated with this aviation activity, opportunities to minimize these adverse effects may be missed. This Regulatory Article (RA) requires ownership and management of the Environmental Impacts and Environmental Risks associated with aviation activity at MOD Aerodromes and Air Weapon Ranges.

Contents

Definitions Relevant to this RA

1800(1): Aerodrome and Air Weapon Range Aviation Activity - Management of Environmental Impacts and Risks

Definitions

Definitions Relevant to this RA

1. **Environmental Impact**¹. An adverse or beneficial change to the environment resulting from the organization's environmental aspects.
2. **Environmental Risk**¹. The chance, however large or small, that an item, event, activity, or situation could cause damage to the environment.
3. **Best Practicable Environmental Option (BPEO)**². The outcome of a systematic and consultative decision-making procedure which emphasises the protection and conservation of the environment across land, air and water.
4. **Aircraft Operator**. The person who at the relevant time has Responsibility³ for the management of the military Aircraft. This might be a Delivery Duty Holder or Accountable Manager (Military Flying).

Regulation 1800(1)

Aerodrome and Air Weapon Range Aviation Activity - Management of Environmental Impacts and Risks

1800(1) Heads of Establishment (HoEs)³ **shall** manage the Environmental Impacts and Environmental Risks associated with aviation activity at an MOD Aerodrome or Air Weapon Range.

Acceptable Means of Compliance 1800(1)

Aerodrome and Air Weapon Range Aviation Activity - Management of Environmental Impacts and Risks

5. HoEs **should** identify and assess the Environmental Impacts and Environmental Risks associated with aviation activity at the MOD Aerodrome or Air Weapon Range.
6. HoEs **should** take steps to reduce any adverse Environmental Impacts, where reasonably practicable, and mitigate Environmental Risks using the BPEO.
7. An Environmental Management System **should** be utilized to manage the Environmental Impacts and Environmental Risks. Where appropriate, the management arrangements put in place to reduce, control or mitigate the adverse Environmental Impacts and any Environmental Risks **should** be communicated in an appropriate and auditable manner, for example noise abatement procedures.
8. To support the identification and mitigation of noise impacts arising from aviation activity, HoEs **should** ensure that Military Aviation Noise Contours (MANCs) are produced and maintained for the MOD Aerodrome⁴ or Air Weapon Range.

¹ Refer to Joint Service Publication (JSP) 418 – Management of Environmental Protection in Defence, Master Glossary.

² Refer to JSP 816 – Defence Environmental Management System Volume 2, Element 5: Supervision, Contracting and Control of Activities.

³ Refer to MAA 02: MAA Master Glossary.

⁴ Including overseas Aerodromes when the HoE determines it appropriate.

**Acceptable
Means of
Compliance
1800(1)**

9. The MANC⁵ **should** be generated from the following data:
 - a. Noise-Power-Distance (NPD) curves and associated spectral information. This data **should** be provided by the Delivery Team Leader or other nominated individual.
 - b. Flight tracks and profile information (including associated Altitudes, speeds and power settings) and engine ground run data. This data **should** be provided by the Aircraft Operator⁶.
 - c. Number of Aircraft movements for the preceding 12-month period, categorized by day (07:00 to 19:00), evening (19:00 to 23:00) or sleeping (23:00 to 07:00) periods⁷. This data **should** be provided by the HoE.
10. MANCs **should** be reviewed and updated on a periodic basis and whenever there is a change in the aviation activity at the MOD Aerodrome / Air Weapon Range⁸.

**Guidance
Material
1800(1)**

Aerodrome and Air Weapon Range Aviation Activity - Management of Environmental Impacts and Risks

11. While not exhaustive, Environmental Impacts and Environmental Risks associated with aviation activity at the Aerodrome / Air Weapon Range may include:
 - a. Noise nuisance.
 - b. Waste arising from Aircraft and Aircraft Maintenance activities.
 - c. Water and effluent (such as from Aircraft washing).
 - d. Substances used on the Movement Area eg anti-icing fluids.
 - e. Substances used during the operation and Maintenance of Aircraft eg fuel, de-icing fluids and other petrol, oil and lubricants.
12. MOD environmental protection policy for Environmental Management Systems can be found in:
 - a. JSP 816 – Defence Environmental Management System.
 - b. JSP 418 – Management of Environmental Protection in Defence.
13. For new or refurbished Aerodrome / Air Weapon Range buildings or infrastructure the Environmental Impacts and Environmental Risks may also include visual effects and other disturbances to the environment or public. MOD environmental protection policy for buildings and infrastructure can be found in:
 - a. JSP 850 – Infrastructure and Estate Policy, Standards and Guidance.
14. A MANC graphically shows the noise emitted from aviation activity around the Aerodrome / Air Weapon Range and is a useful tool for noise nuisance management.
15. The HoE, in consultation with the Aircraft Operator, will define the geographical boundaries of their responsibilities, and manage the Environmental Impacts and Risks, including noise, within those boundaries.
16. The Royal Airforce Centre for Aerospace Medicine (RAF CAM) can be contacted for further details on the format of the data required and for MANC tasking⁹.

⁵ Examples of MANCs are available on the UK Government website: [Military Aviation Noise Contours - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

⁶ The HoE **should** coordinate the provision of this data for non-Military Aircraft that are permanently based at the Aerodrome.

⁷ To enable the annoyance induced by noise during those periods to be accounted for.

⁸ For example, following the introduction of a new Aircraft type or a change to the Aircraft's configuration that affects the Aircraft's noise characteristics.

⁹ Via email - Air COS Spt-CAM-OEM-NVD-HD.

RA 1801 – Air System Environmental Cases

Rationale

Aviation activity has adverse effects on the natural environment for example, through its production of noise and engine emissions. Without adequate tools and processes for managing the Environmental Impacts of UK military registered Air Systems, opportunities to minimize these adverse effects may be missed. This Regulatory Article (RA) requires the Environmental Impacts associated with Air Systems on, or destined for, the UK Military Aircraft Register (MAR) to be managed via an Air System Environmental Case (ASEC).

Contents

Definitions Relevant to this RA

Applicability of this RA

1801(1): The Air System Environmental Case and Air System Environmental Case Report

1801(2): Ownership of the Air System Environmental Case

Definitions

Definitions Relevant to this RA

1. **Environmental Impact**¹. An adverse or beneficial change to the environment resulting from the organization's environmental aspects.
2. **Best Practicable Environmental Option (BPEO)**². The outcome of a systematic and consultative decision-making procedure which emphasises the protection and conservation of the environment across land, air and water.
3. **Aircraft Operator**. The person who at the relevant time has Responsibility³ for the management of the military Aircraft. This might be a Delivery Duty Holder or Accountable Manager (Military Flying).

Applicability

Applicability of this RA

4. All Air Systems on, or destined for, the UK MAR⁴.
5. All Senior Responsible Owners (SROs)⁵ responsible for the introduction, development or Modification of Air Systems on, or destined for, the UK MAR.
6. All Delivery Team Leaders (DTLs), or other nominated individual, responsible for the environmental management of Air Systems on the UK MAR.
7. All Aircraft Operators responsible for the operation of Air Systems on the UK MAR.

Regulation 1801(1)

The Air System Environmental Case and Air System Environmental Case Report

1801(1) An ASEC **shall** be produced for Air Systems on, or destined for, the UK MAR. The ASEC **shall** be articulated via an ASEC Report.

¹ Refer to JSP 418 – Management of Environmental Protection in Defence, Master Glossary.

² Refer to JSP 816 – Defence Environmental Management System Volume 2, Element 5: Supervision, Contracting and Control of Activities.

³ Refer to MAA 02: MAA Master Glossary.

⁴ Civil-registered Aircraft (refer to RA 1166 – UK Civil-Registered Aircraft Utilized and Piloted by the Ministry of Defence and RA 1240 – Chartering of Civilian Air Systems for Military Purposes) are not subject to this RA since civil environmental protection legislation applies.

⁵ For civil-initiated procurement of Civilian-Owned / Civilian Operated Air Systems which do not have a SRO, the programme manager responsible for planning, governing and overseeing the successful delivery of the programme's output / product owns and manages the ASEC until it is transferred to the next ASEC owner in accordance with (iaw) RA 1801(2). Note the programme manager may be from the DT or Industry.

**Acceptable
Means of
Compliance
1801(1)**

**The Air System Environmental Case and Air System
Environmental Case Report**

8. An ASEC **should** consist of a structured argument, supported by a body of evidence that together provide a compelling, comprehensible and valid case that the adverse Environmental Impacts of an Air System have been reduced, where reasonably practicable, or that the BPEO has been applied.
9. Development of the ASEC **should** begin at the concept stage⁶, with Environmental Impacts and any UK environmental legislative requirements being considered during capability design and selection and be managed through to (and including) disposal.
10. The impact of any changes to an Air System's Configuration, role or operating environment that result in a deviation from the original assessment **should** be identified and assessed via the ASEC.
11. The ASEC **should** be managed via an Environmental Management System.
12. The ASEC **should** explicitly address the inclusion, or justified exclusion, of technologies and techniques that would improve the environmental performance of an Air System, both during the initial development of the capability and once in-service.
13. The decision to utilize qualitative or quantitative assessments to support the ASEC argument **should** be explained in the ASEC.
14. To meet the Secretary of State's intent with regards to Defence Derogations, Exemptions or Dis-applications from environmental protection legislation⁷, the ASEC **should** contain specific mention of Aircraft noise, Aircraft engine emissions and Aircraft CO₂ emissions as detailed in paragraphs 15-19.

Aircraft Noise

15. When an Aircraft on, or destined for, the UK MAR falls into one of the International Civil Aviation Organization (ICAO) Annex 16 classifications defined for noise Certification purposes⁸, the noise standards set within Annex 16 **should** be utilized as a benchmark to support an environmental assessment⁹. Where an Aircraft does not fall into one of the ICAO Annex 16 classifications defined for noise Certification purposes, the environmental assessment **should** still be completed but it is accepted that the assessment will not be against an ICAO defined benchmark.
16. Noise-Power-Distance curves and associated spectral information **should** be referenced in the ASEC and provided to the relevant stakeholders to support the creation of Military Aviation Noise Contours iaw RA 1800¹⁰.

Fuel Venting Requirements

17. The ASEC **should** assess the potential for intentional discharge of liquid fuel from the fuel nozzle manifolds during the engine shutdown process following normal flight or ground operations¹¹. The likelihood of this occurring **should** be reduced by design but, where this is not practicable, the impact needs to be controlled by processes implemented by the Aircraft Operator.

Aircraft Engine Emissions¹²

18. When an Aircraft on, or destined for, the UK MAR has engines that fall into one of the ICAO Annex 16 classifications defined for emission Certification purposes¹³, the emissions standards set within Annex 16 **should** be utilized as a benchmark for an environmental assessment¹⁴. Where the engines fitted to the Aircraft do not fall into

⁶ The first stage of the CADMID cycle (Concept, Assessment, Demonstration, Manufacture, In-service, Disposal).

⁷ Secretary of State for Defence Policy Statement - Health, Safety and Environmental Protection in Defence revised April 2020.

⁸ ICAO Annex 16 Environmental Protection, Volume I – Aircraft Noise.

⁹ Where civil noise certificates are available these can be used as evidence within the ASEC and further noise assessment is not required.

¹⁰ Refer to RA 1800 – Aerodrome and Air Weapon Range Aviation Activity – Management of Environmental Impacts and Risks.

¹¹ ICAO Annex 16, Volume II, Part II, Chapter 2 – Prevention of Intentional Fuel Venting.

¹² Aircraft engine emissions include: smoke; non-volatile particulate matter (nvPM); unburned hydrocarbons; carbon monoxide; and oxides of nitrogen.

¹³ ICAO Annex 16 Environmental Protection, Volume II – Aircraft Engine Emissions.

¹⁴ Where civil engine emissions certificates are available these can be used as evidence within the ASEC and further engine emissions assessment is not required.

Acceptable Means of Compliance 1801(1)

one of the ICAO Annex 16 classifications defined for emission Certification purposes, the environmental assessment **should** still be completed but it is accepted that the assessment will not be against an ICAO defined benchmark.

Aircraft CO₂ Emissions

19. When an Aircraft on, or destined for, the UK MAR has engines that fall into one of the ICAO Annex 16 classifications defined for CO₂ emissions Certification purposes¹⁵, the CO₂ emissions standards set within Annex 16 **should** be utilized as a benchmark for an environmental assessment¹⁶. Where the engines fitted to the Aircraft do not fall into one of the ICAO Annex 16 classifications defined for CO₂ emissions Certification purposes, the environmental assessment **should** still be completed but it is accepted that the assessment will not be against an ICAO defined benchmark.

20. The ASEC **should** support the Aircraft Operator's responsibilities under RA 1802¹⁷.

The ASEC Report

21. An ASEC Report **should** be one document which captures the key components of the ASEC at a point in time. It **should** articulate the environmental argument and summarize the supporting evidence in a clear and concise format.

22. To ensure the ASEC Report presents a clear and compelling case, evidence **should** be referenced and only directly transposed into the ASEC Report where critical to the meaning or strength of an argument.

Guidance Material 1801(1)

The Air System Environmental Case and Air System Environmental Case Report

23. Whilst UK civil legislation requires UK civil registered Aircraft to comply with the environmental standards set by ICAO, it is deemed impracticable to require military registered Air Systems to comply with the ICAO environmental standards or to create bespoke environmental standards for military registered Air Systems. Instead, the ASEC will be used to understand and reduce, where reasonably practicable, the adverse Environmental Impacts of an Air System within the context of the operational requirement.

24. **Technologies and techniques that reduce adverse Environmental Impacts.** The principle behind paragraph 12 is the requirement to consider good practice as part of any environmental case. As such, the design and selection of the Air System has to consider extant technologies and techniques that improve the environmental performance of an Air System and are applicable to the intended context, with decision(s) captured within the developing ASEC. The consideration of emerging technologies and techniques will depend on the anticipated environmental benefit, and the maturity of those technologies and techniques against the programme timeline. Once the Air System is in-service, periodic review of the ASEC will need to confirm that arguments based on the adoption of good practice are still valid, cognisant of any changes in context or adoption of new technologies and techniques across the aviation industry.

25. When considering the management of the adverse Environmental Impacts associated with the operation of an Air System it is important to consider all the likely Air System operating locations eg at an Aerodrome, away from the Aerodrome, in the low flying system.

26. MOD environmental protection policy can be found in:

- a. JSP 816 – Defence Environmental Management System.
- b. JSP 418 – Management of Environmental Protection in Defence.

27. Environmental considerations for the Acquisition process can be found in JSP 655 – Defence Investment Approvals.

¹⁵ ICAO Annex 16 – Environmental Protection, Volume III – Aeroplane CO₂ Emissions.

¹⁶ Where civil CO₂ emissions certificates are available these can be used as evidence within the ASEC and further CO₂ emissions assessment is not required.

¹⁷ Refer to RA 1802 – Aviation Greenhouse Gas Emissions.

**Regulation
1801(2)**

Ownership of the Air System Environmental Case

- 1801(2) The SRO or DTL **shall** develop, manage and own the ASEC subject to the following:
- a. An ASEC **shall** have a single owner at any one time.
 - b. For new Air Systems, the SRO **shall** own the ASEC from concept until transfer of the ASEC to the DTL.

**Acceptable
Means of
Compliance
1801(2)**

Ownership of the Air System Environmental Case

Roles and Responsibilities of the ASEC Owner – SRO

28. From nomination as a project SRO and on ownership of the project mandate, until transfer of the ASEC to the DTL, the SRO **should**:
- a. Own and manage the development of the ASEC argument and its associated evidence requirements.
 - b. Ensure that environmental considerations are founded in capability requirement design and selection.
 - c. Ensure appropriate stakeholder¹⁸ engagement during development of the ASEC.
 - d. Manage the development of the ASEC argument, and its associated evidence requirements, when an Air System returns to the developmental domain due to major Modification or upgrade project¹⁹.

Roles and Responsibilities of the ASEC Owner – DTL

29. The DTL **should**:
- a. Assume ownership and management of the ASEC on handover from the SRO. This will follow a review of the ASEC during which the DTL confirms that they understand the environmental argument and associated body of evidence.
 - b. Ensure appropriate engagement with the Aircraft Operator is maintained to enable effective management of the ASEC.
 - c. Formally notify the relevant stakeholder(s)²⁰ of any Environmental Impacts and obtain their acceptance of them, noting that the DTL will continue to own the ASEC.

Roles and Responsibilities of the Aircraft Operator

30. The Aircraft Operator **should**:
- a. Provide the SRO and / or DTL with information from an operating perspective that will be relevant to the development and Maintenance of the ASEC, including any change in the operating context of the Air System.
 - b. Understand the adverse Environmental Impacts associated with the operation of the Air System as outlined in the ASEC.
 - c. Where possible and reasonably practicable to do so, employ operating measures that will reduce the adverse Environmental Impacts. These measures will be captured in the ASEC.
31. For Special Case Flying Air Systems²¹ where no DTL exists, the Aircraft Operator **should** produce the ASEC. The Sponsor³ **should** ensure that the Environmental Impacts articulated in the ASEC are acceptable to the MOD.
32. **Review of the ASEC.** The requirement to undertake a review of the ASEC

¹⁸ Including Aircraft Operators, DTLs, Front Line Commands, relevant Contractor Flying Approved Organization Schemes, and Heads of Establishment (HoE) representatives at relevant MOD Aerodromes.

¹⁹ Refer to RA 5305 – In-Service Design Changes; and RA 5820 – Changes in Type Design (MRP 21 Subpart D).

²⁰ The individual with responsibility for managing the Environmental Impact identified in the ASEC, such as Aircraft Operator, HoE (see RA1800 for HoE responsibilities), Maintenance organization etc.

²¹ Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.

**Acceptable
Means of
Compliance
1801(2)**

should be determined by the appropriate ASEC owner. Changes which **should** initiate a review of the ASEC include, but are not limited to:

- a. A change in the operating context of the Air System.
- b. In-service Design Changes²².
- c. A change to the environmental case argument²³.

**Guidance
Material
1801(2)****Ownership of the Air System Environmental Case**

33. A single in-service Air System type may be operated by multiple Aircraft Operators with differing context of use. Where the Environmental Impacts associated with each context differ, the ASEC will need to capture this clearly but there is no requirement to maintain separate ASECs for each Aircraft Operator.

²² Primarily Major in-service Design Changes iaw RA 5305 – In-Service Design Changes; and as defined in RA 5820 – Changes in Type Design (MRP 21 Subpart D).

²³ Including, but not limited to: changes to environmental legislation or MOD Policy; changes to relevant project stakeholders or the information available from them; or as a result of an Environmental Incident as defined in Joint Service Publication (JSP) 418 – Management of Environmental Protection in Defence, Master Glossary.

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RA 1802 – Aviation Greenhouse Gas Emissions

Rationale

Aviation activity produces greenhouse gas emissions¹ which have an adverse effect on the natural environment through their contribution to global warming. Without adequate processes and tools for managing the greenhouse gas emissions produced by aviation activity, opportunities to minimize these adverse effects may be missed. This Regulatory Article (RA) requires the greenhouse gas emissions produced by UK military registered Aircraft to be managed, focusing on carbon emissions², with the aim of limiting where reasonably practicable.

Contents

Definitions Relevant to this RA

1802(1): Aviation Greenhouse Gas Emissions

Definitions

Definitions Relevant to this RA

1. **Aircraft Operator.** The person who at the relevant time has Responsibility³ for the management of the military Aircraft. This might be a Delivery Duty Holder or Accountable Manager (Military Flying).

Regulation 1802(1)

Aviation Greenhouse Gas Emissions

1802(1) Aircraft Operators of UK military registered Aircraft **shall** manage the carbon emissions produced by their Aircraft.

Acceptable Means of Compliance 1802(1)

Aviation Greenhouse Gas Emissions

2. Aircraft Operators of UK military registered Aircraft **should** have a carbon emissions monitoring plan for each Aircraft fleet for which they are responsible.
3. As a minimum, a carbon emissions monitoring plan **should** include:
 - a. Version and date of document.
 - b. Details of the Aircraft Operator.
 - c. Aircraft types and number of Aircraft per type.
 - d. Fuel type used for each Aircraft type.
 - e. Procedures used to obtain the data required to monitor annual carbon emissions.
 - f. Methodology for calculating carbon emissions.
4. Carbon emissions monitoring plans **should** be updated whenever there is a change to the information related to sub-paragraphs b to f above.
5. To calculate carbon emissions from fuel type, the Government conversion factors for the reporting of greenhouse gas emissions⁴ **should** be used.
6. Aircraft Operators of UK military registered Aircraft **should** report their carbon emissions annually to the Operational Energy Authority (OEA)⁵. The submission **should** include a short narrative on how the Aircraft Operator manages the carbon emissions produced by their Aircraft, with the aim of limiting them where reasonably practicable; an explanation of any variation in the reported values from previous years submissions; alongside a copy of the carbon emissions monitoring plan.

¹ The [Climate Change Act 2008](#) defines greenhouse gases as: carbon dioxide (CO₂); methane (CH₄); nitrous oxide (N₂O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃).

² Carbon emissions include a subset of greenhouse gas emissions. In line with civil legislation and UK Government Conversion Factors, these include CO₂, CH₄ and N₂O, referred to as CO₂e (where the 'e' stands for CO₂ 'equivalent').

³ Refer to MAA 02: MAA Master Glossary.

⁴ <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>.

⁵ Via email UKStratCom-DefSp-OEA SO1 CapCoh.

**Guidance
Material
1802(1)****Aviation Greenhouse Gas Emissions**

7. UK civil legislation⁶ requires civilian aviation to participate in the UK Greenhouse Gas Emissions Trading Scheme⁷, but the creation of a military scheme is considered impracticable. Aircraft Operators are instead required to have an understanding of, and limit where reasonably practicable, their Aircraft's carbon emissions and intelligently assess, via a narrative in their annual emissions report, how they manage these emissions and why the emissions may have increased or decreased from previous years.

8. Whilst the required outcomes of this RA are driven by environmental protection⁸, they also support Ministry of Defence (MOD) sustainability strategies⁹.

9. The Government conversion factors for the reporting of greenhouse gas emissions are updated annually.

10. The OEA may provide Aircraft Operators with further guidance on annual reporting requirements to ensure Standardization across all Aircraft Operators.

11. Whilst independent verification of the annually reported emissions data is not currently necessary, this may be required in the future to ensure the consistency and accuracy of the data.

⁶ [The Greenhouse Gas Emissions Trading Scheme Order 2020](#) and [The Air Navigation \(Carbon Offsetting and Reduction Scheme for International Aviation\) Order 2021](#).

⁷ Noting that some UK military Aircraft on civil taskings are also required to participate in this Scheme.

⁸ Practices and procedures that are designed to avoid, minimize, eliminate, or reverse damage to the environmental and to environmental systems.

⁹ [MOD Sustainability and Climate Change](#).

RA 1910 - Quality Assurance of aviation fuel from non-UK MOD Sources

Rationale

There may be a requirement to uplift aviation fuel from non-UK MOD Aerodromes¹. There is **a** Risk that the fuel available may not match the grade, specification and **quality** required by the consumer Air System. This can be mitigated by application of processes and / or local orders to ensure appropriate actions are taken when uplifting non-UK MOD aviation fuels.

Contents

1910(1): Quality Assurance of aviation fuel from non-UK MOD Sources

Regulation

1910(1)

Quality Assurance of aviation fuel from non-UK MOD Sources

1910(1) Aviation Duty Holders (ADH) and Accountable Managers (Military Flying) (AM(MF)) **shall** ensure that non-UK MOD sourced fuel is uplifted from an appropriate source and to the appropriate **grade, specification and** quality.

Acceptable Means of Compliance

1910(1)

Quality Assurance of aviation fuel from non-UK MOD Sources

1. When UK MOD **sourced** fuel² is not available, the ADH / AM(MF) **should** ensure that fuel of an acceptable grade is uplifted from a:
 - a. North Atlantic Treaty Organization (NATO) supply chain,
 - b. UK or Overseas Territories Licensed Aerodrome supply chain,
 - c. **UK Civil Aviation Authority (CAA) Certified Aerodrome supply chain,**
 - d. European Aviation Safety Agency (EASA) Certified Aerodrome supply chain,
 - e. Federal Aviation Administration (FAA) Certified Aerodrome supply chain, or
 - f. Certified Commercial Airport supply chain.
2. When fuel is not available from a UK MOD source or those supply chains listed in paragraph 1, the ADH / AM(MF) **should** ensure that:
 - a. For planned occurrences, the fuel quality is checked at a suitable point prior to uplift (eg via use of an Advanced Party).
 - b. For unplanned and operational requirements:
 - (1) The minimum quantity required is uplifted.
 - (2) On arrival at a UK MOD supported site, the remaining Aircraft fuel is sampled and tested (eg by 1710 Naval Air Squadron (1710NAS)) and Type Airworthiness Authority (TAA)³ advice sought as required.
3. Uplifted fuel found to be not suitable, in accordance with (iaw) the Release To Service (RTS)⁴ or **appropriate** Military Permit to Fly (MPTF)⁵, or deemed to be contaminated **should** be removed from the Aircraft (prior to next flight)⁶, except where

¹ **This includes UK and non-UK Aerodromes that are not owned by the UK MOD.**

² "UK MOD **sourced** fuel" is deemed to be either: supplied by a UK MOD supplier / source; or fuel that complies with JSP 317 aviation fuel quality control and Assurance procedures and where fixed Bulk Fuel Installations are audited by the MOD's Fuel and Gas Safety Regulator.

³ **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.**

⁴ Refer to RA 1300 – Release To Service.

⁵ Refer to **RA 1305 – Military Permit to Fly (In-Service), (Special Case Flying) and (Single Task)** or RA 5880 – Military Permit to Fly **(Development)** (MRP 21 Subpart P).

⁶ iaw the Air System's Technical Instructions.

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deemed operationally essential⁷, and the Continuing Airworthiness Management Organization informed.

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Quality Assurance of aviation fuel from non-UK MOD Sources

4. All Licensed Aerodromes⁸ within the UK must, iaw the Air Navigation Order⁹, ensure their fuel is fit for use in Aircraft.
5. All Licensed Aerodromes within UK Overseas Territories must, iaw the Air Navigation (Overseas Territories) Order¹⁰, ensure their fuel is fit for use in Aircraft.
6. UK Unlicensed Aerodromes are guided to comply with the Air Navigation Order¹¹.
7. EASA Certified Aerodromes^{12, 13} **will** ensure their fuel is fit for purpose, uncontaminated and of the correct specification. Furthermore, EASA Air Operation Regulations require that Certified Aerodromes detail their procedures and management systems within an Operations Manual¹⁴.
8. **UK CAA Certified Aerodromes¹⁵ will ensure their fuel is fit for purpose, uncontaminated and of the correct specification.**
9. FAA Certified Aerodromes¹⁶ **will** ensure their fuel is fit for purpose, uncontaminated and of the correct specification.
10. Certified Commercial Airports across the majority of the world, self-regulate the quality of fuel at uplift with no International Civil Aviation Organization / CAA mandatory requirements. Whilst absolute confirmation cannot be given as a result the participation of the Energy Institute / Joint Inspection Group standard 1530^{17, 18} testing regimes and the International Air Transport Association Fuel Quality Pool mean that reasonable confidence can be taken in the quality of fuel at any Certified Commercial Airport.
11. Aviation fuel Quality Assurance (QA) is based on certification at the point of manufacture and subsequent procedures to verify that the quality remains within specification limits through to delivery to the Air System tanks. Documentation is an essential part of this process; and when fuel is not available from a UK MOD source or those supply chains listed in paragraph 1, ADHs and AM(MF)s are strongly encouraged to obtain copies of test certificates as evidence of fuel quality. Key documents likely to be available from a supplier are:
 - a. **Refinery Certificate of Quality (RCQ).** Produced at the point of manufacture; it is the definitive original document describing the quality of a batch of aviation fuel.
 - b. **Certificate of Analysis.** Issued by a laboratory downstream from the point of manufacture; it contains determinations of the properties required in the relevant specification.
 - c. **Recertification Test Certificate.** Produced where there is a risk of cross contamination, ie multiproduct pipelines or ocean-going tankers. The results are

⁷ Refer to RA 1020 – Aviation Duty Holder and Aviation Duty Holder-Facing Organizations – Roles and Responsibilities.

⁸ A list of UK CAA Licensed Aerodromes is available here: <https://www.caa.co.uk/Commercial-industry/Airports/Aerodrome-licences/Licences/Aerodrome-licences-and-boundary-maps>.

⁹ Refer to The Air Navigation Order 2016 Part 8, Chapter 1, Article 220.

¹⁰ Refer to Statutory Instrument 2013 No. 2870 – The Air Navigation (Overseas Territories) Order 2013.

¹¹ Refer to CAP 793 – Safe Operating Practices.

¹² A list of EASA Certified Aerodromes is available here: <https://www.easa.europa.eu/domains/aerodromes>.

¹³ Refer to EU Regulation (EU) No 2018/1139.

¹⁴ Refer to EU Commission Regulation (EU) No 965/2012.

¹⁵ A list of UK CAA Certified Aerodromes is available here: <https://www.caa.co.uk/Commercial-industry/Airports/Aerodrome-licences/Certificates/UK-certificated-aerodromes>.

¹⁶ Refer to FAA Regulation 121.373 – Continuing analysis and surveillance.

¹⁷ Refer to EI / JIG 1530 – Quality assurance requirements for the manufacture, storage and distribution of aviation fuels to airports.

¹⁸ <http://www.energyinst.org/technical/safety/aviation/1530>.

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compared to the original RCQ to ensure the quality of the product has not been compromised during transfer.

d. **Release Certificate.** An operational document linked to one or more laboratory test certificates; it authorizes any transfer of aviation fuel (including to airports), confirming compliance with a relevant specification.

12. When fuel is not available from a UK MOD source or those supply chains listed in paragraph 1, additional field tests are undertaken and results recorded as part of the overall QA process; these include Periodic Tests, Appearance Checks, Membrane Filtration Tests, Control Checks, Conductivity and Microbiological Tests. Copies of such reports may also be available on request from the supplier.

13. Advice and guidance on fuel testing, retrospective fuel analysis and technical assurance can be obtained from the Defence Strategic Fuels Authority¹⁹ (Bulk Fuels, JSP 317) or 1710NAS²⁰ (Aircraft samples).

14. The Air System's RTS or MPTF will include details of the normal and alternative fuel grades and specifications that are compatible.

15. ▶◀

¹⁹ Email ▶ UKStratCom-DefSp-DSFATechMulti@mod.gov.uk. ◀

²⁰ Email NAVY1710NAS-MIGCIS@mod.gov.uk.

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RA 1920 – Aviation Arrangements in His Majesty’s / MOD Ships – Equipment Standards

Rationale

When new, His Majesty’s (HM) / MOD Ships¹ are procured, or existing Ships are modified, it is essential to ensure that aviation arrangements meet the appropriate Safety requirements and that the Ship equipment is designed to meet a minimum standard so that embarked aviation² can be operated safely. ►If◄ appropriate aviation arrangements are ►not◄ considered as part of Ship design, ►this◄ could restrict the operational capability of the aviation activities of ►the Ship◄ and ►the◄ Air Systems ►the Ship can operate.◄ Defence Standard (Def Stan) 00-133³ defines the appropriate specification requirements to be met for the introduction of aviation arrangements in HM / MOD Ships.

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Regulation 1920(1)

Aviation Arrangements in His Majesty’s / MOD Ships – Equipment Standards

1920(1) The Ship Platform Authority (PA) **shall** ensure that all new and modified aviation arrangements are designed and built against a recognized standard appropriate to the intended use of the Air System.

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Aviation Arrangements in His Majesty’s / MOD Ships – Equipment Standards

1. The Ship PA **should** ensure that Ship aviation arrangements meet the minimum specification requirements of Def Stan 00-133 in:
 - a. New aviation capable Ships that are pre-Full Business Case approval on 31 May 14.
 - b. Legacy aviation capable surface Ships that are modified after 31 May 14.
2. Unless modified, legacy equipment is exempt from being compliant with Def Stan 00-133 Part 2 and Part 3 but **should** remain compliant with Part 0, Part 1 and Part 4.
3. If the Out of Service Date of legacy equipment is extended, a gap analysis against Def Stan 00-133 **should** be conducted by the Ship PA. This analysis **should** either demonstrate compliance or identify areas of non-compliance. The equipment **should** be modified to address these areas of non-compliance or an application for a Waiver / Exemption **should** be made to the MAA.
4. ►For vessels where there is a new requirement to operate Remotely Piloted Air Systems (RPAS), the Ship PA **should** update the vessels’ Certification Strategy. The Ship PA **should** present a Claim / Argument / Evidence case to the Naval Aviation and Technology Group⁴ stating the RPAS aviation arrangements standards. Guidance for areas of consideration is available in the Aviation Arrangements Claim / Argument / Evidence Checklist (available via the MAA’s websites).
5. Unless conducting Crossdeck Operations, Temporary Operating Authorization, or operating under a Trial Instruction all Air Systems **should** be within the Scope of the ship’s certificate, this applies to all HM / MOD ships including those not previously considered aviation capable, boats and submarines.◄

¹ As defined in the Defence Maritime Regulator (DMR) Master Glossary of Terms.

² Refer to RA 1395 – Authorization to Permit Embarked Aviation in His Majesty’s / MOD Ships.

³ Refer to Def Stan 00-133 – Aviation Arrangements in Surface Ships.

⁴ ►Refer to Naval Authority Rules for certification - DSA 03 DMR.◄

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6. The Ship PA will be required to provide evidence that the aviation arrangements comply with Def Stan 00-133 as part of the Naval Authority Rules for Certification⁵.
7. A Modification to an aviation arrangement is deemed to be any design change that alters or affects the functionality, operability, output, purpose or physical characteristics of the arrangement.
8. **▶ The Ship PA will ensure all Air Traffic Management Equipment, new or significantly modified, have been through the Release into Service Process⁶. ◀**

⁵ DSA02-DMR – MOD Shipping Regulations for Safety and Environmental Protection.

⁶ **▶ Refer to RA 3134 – Air Traffic Management Equipment Release into Service Process. ◀**