



Defence
Safety
Authority

CONTINUING AIRWORTHINESS
ENGINEERING (CAE)
4000 SERIES
REGULATORY ARTICLES

Military Aviation
Authority

Military Aviation Authority

MAA

Intentionally Blank for Pagination

4000 Series Update Record

The information below details the last 5 updates of the RA 4000 Series.

4 June 2026 - NAA 26/38

- RA 4061 - Air Systems Displaying Abnormal Flying Characteristics - Issue 5

29 May 2026 - NAA 26/34 and NAA 26/35

- RA 4800 - General Requirements (MRP Part 145) - Issue 12
- RA 4806 - Personnel Requirements (MRP 145.A.30) - Issue 10
- RA 4821 - Findings and Observations (MRP 145.A.95) - Issue 5
- RA 4947 - Continuing Airworthiness Management - MRP Part M Subpart G - Issue 6
- RA 4951 - Quality Management System - MRP Part M Subpart G - Issue 6
- RA 4955 - Findings - MRP Part M Subpart G - Issue 5
- RA 4966 - Military Continuing Airworthiness Management Organization Instructions - MRP Part M Subpart C - Issue 4

28 November 2025 - NAA 25/48 and NAA 25/49

- RA 4803 - Method of Application for Approval (MRP 145.A.15) - Approved Maintenance Organizations only - Issue 7
- RA 4804 - Terms of Approval (MRP 145.A.20) - Approved Maintenance Organizations only - Issue 6
- RA 4805 - Facility Requirements (MRP 145.A.25) - Issue 6
- RA 4943 - Continuing Airworthiness Management Exposition - MRP Part M Subpart G - Issue 6
- RA 4945 - Personnel Requirements - MRP Part M Subpart G - Issue 8

31 May 2024 - NAA 24/27 and NAA 24/29

- RA 4806 - Personnel Requirements (MRP 145.A.30) - Issue 9
- RA 4945 - Personnel Requirements, MRP Part M Subpart G - Issue 7

30 November 2023 - NAA 23/58 and NAA 23/59

- RA 4800 - General Requirements (MRP Part 145) - Issue 11
- RA 4801 - Certifying Staff - Issue 7
- RA 4806 - Personnel Requirements (MRP 145.A.30) - Issue 8
- RA 4807 - Certifying Staff1 and Support Staff (MRP 145.A.35) - Issue 7
- RA 4808 - Equipment, Tools and Material (MRP 145.A.40) - Issue 7
- RA 4809 - Acceptance of Components (MRP 145.A.42) - Issue 9
- RA 4810 - Technical Information (MRP 145.A.45) - Issue 7
- RA 4811 - Maintenance Planning (MRP 145.A.47) - Issue 5

- RA 4812 - Certification of Air System Release and Component Release (MRP 145.A.50) - Issue 9
- RA 4813 - Maintenance Records (MRP 145.A.55) - Issue 9
- RA 4815 - Maintenance Procedures and Safety and Quality Policy (MRP 145.A.65) - Issue 9
- RA 4816 - Maintenance Organization Exposition (MRP 145.A.70) - Approved Maintenance Organizations only - Issue 10
- RA 4941 - Application - MRP Part M Subpart G - Issue 4
- RA 4943 - Continuing Airworthiness Management Exposition - MRP Part M Subpart G - Issue 5
- RA 4945 - Personnel Requirements - MRP Part M Subpart G - Issue 6
- RA 4947 - Continuing Airworthiness Management - MRP Part M Subpart G - Issue 5
- RA 4948 - Documentation - MRP Part M Subpart G - Issue 4, RA 4951 - Quality System - MRP Part M Subpart G - Issue 5
- RA 4954 - Continued Validity of Approval - MRP Part M Sub Part G - Issue 5
- RA 4955 - Findings - MRP Part M Subpart G - Issue 4
- RA 4956 - Military Continuing Airworthiness Management Organization Tasks Performed by Other Organizations - MRP Part M Subpart G - Issue 5
- RA 4961 - Aircraft Maintenance Programme and Military Continuing Airworthiness Management Organization Responsibilities for Air System Release - MRP Part M Subpart C - Issue 3
- RA 4962 - Special Instructions (Technical) - MRP Part M Subpart C - Issue 3
- RA 4963 - Modifications and Repairs - MRP Part M Subpart C - Issue 3
- RA 4964 - Continuing Airworthiness Management Records - MRP Part M Subpart C - Issue 2
- RA 4965 - Local Manufacture Assurance – MRP Part M Subpart C - Issue 2
- RA 4966 - Military Continuing Airworthiness Management Organization Instructions – MRP Part M Subpart C - Issue 3
- RA 4970 - Baseline Military Airworthiness Review - MRP Part M Subpart I - Issue 5
- RA 4971 - Military Airworthiness Review and Certification - MRP Part M Subpart I - Issue 5
- RA 4972 - Military Airworthiness Review Surveyors - MRP Part M Subpart I - Issue 4
- RA 4973 - Military Airworthiness Review Process - MRP Part M Subpart I - Issue 4
- RA 4974 - Circumstances when Military Airworthiness Review Certificates Become Invalid - MRP Part M Subpart I - Issue 4

4000 SERIES (CAE) REGULATORY ARTICLES

1. The CAE series of RAs support Preventive Maintenance and Corrective Maintenance standards that can affect Continuing Airworthiness and hence influence Air Safety. The CAE 4000 series comprises 3 streams:

a. The RA 4000-4700 series is referred to as the “Military Deltas” and contains Regulation to support Service Maintenance activities.

b. The RA 4800-4849 series (MRP Part 145) regulates many of the core Maintenance activities of both Military Maintenance Organization (MMOs) and Approved Maintenance Organizations (AMOs) and the approval of AMOs to conduct Air System and / or Air System component Maintenance through the Maintenance Approved Organization Scheme.

c. The RA 4900 to RA 4999 series of RAs covers the management of Continuing Airworthiness across the Defence Air Environment, also referred to collectively as the “MRP Part M” Regulation set. It is further divided into the following sub parts:

(1) RA 4941 to RA 4956 govern the establishment and function of Continuing Airworthiness Management Organizations (CAMOs), referred to collectively as “MRP Part M Sub Part G”.

(2) RA 4961 to RA 4966 govern Continuing Airworthiness, referred to collectively as “MRP Part M Sub Part C”.

(3) RA 4970 to RA 4974 govern CAMO Airworthiness Reviews, referred to collectively as the “MRP Part M Sub Part I”.

2. The CAE 4000 Series is supported by the Manual of Airworthiness Maintenance – Documentation. This Manual provides instructions and guidance for the use of the MOD Form 700 Series of forms and hosts MAA sponsored and developed MOD Form 700 Series forms and formats.

3. 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. 4000 Series (CAE) Regulatory Articles

RA NUMBER	RA DESCRIPTION	SUB RA
RA 4009	Aviation Engineering Orders and Local Procedures	4009(1): Aviation Engineering Orders and Local Procedures
RA 4051	Airborne Checks	4051(1): Airborne Checks
RA 4053	Royal Flights and Flights for Nominated Very Important Persons	4053(1): Air System Selection and Preparation
RA 4054	Ground Handling Operations	4054(1): Ground Handling Operations
RA 4061	Air Systems Displaying Abnormal Flying Characteristics	4061(1): Investigation of Air Systems Displaying Abnormal Flying Characteristics
		4061(2): Rogue Aircraft
RA 4103	Removal of Body Fluid Contamination from Aircraft	4103(1): Removal of Body Fluids
RA 4213	Control of Air System Components used in Ground Test Facilities	4213(1): Control of Air System Components used in Ground Test Facilities
RA 4253	Loose Articles Recovery	4253(1): Loose Articles Recovery
		4253(2): Certification of Air System Release Following Unsuccessful Loose Article Search
RA 4510	Ground Running of Aero-Engines and Auxiliary Power Units	4510(1): Ground Running of Aero-Engines and Auxiliary Power Units
RA 4600	Aircraft Assisted Escape Systems – Safety and Maintenance	4600(1): Aircraft Assisted Escape Systems Safety Precautions
		4600(2): Aircraft Assisted Escape Systems Maintenance Responsibilities
RA 4657	Weapon Loading and Armed Aircraft Maintenance	4657(1): Armed Aircraft Maintenance
		4657(2): Weapon Loading Personnel Requirements
		4657(3): Weapon Loading Training Requirements
RA 4800	General Requirements (MRP Part 145)	4800(1): General Requirements (MRP Part 145)
		4800(2): Distribution of Approved Maintenance Organization Exposition and Supplement Documents
RA 4801	Certifying Staff	4801(1): Certifying Staff
RA 4802	Scope of the MRP Part 145 (MRP 145.A.10) - Approved Maintenance Organizations only	4802(1): Scope of the MRP Part 145 (MRP 145.A.10(a))
RA 4803	Method of Application for Approval (MRP 145.A.15) - Approved Maintenance Organizations only	4803(1): Method of Application for Approval (MRP 145.A.15(a))
RA 4804	Terms of Approval (MRP 145.A.20) - Approved Maintenance Organizations only	4804(1): Terms of Approval (MRP 145.A.20(a))
RA 4805	Facility Requirements (MRP 145.A.25)	4805(1): Facility Requirements (MRP 145.A.25(a))
		4805(2): Office Accommodation (MRP 145.A.25(b))
		4805(3): Working Environment (MRP 145.A.25(c))
		4805(4): Storage Facilities (MRP 145.A.25(d))
RA 4806	Personnel Requirements (MRP 145.A.30)	4806(1): Accountable Manager (Maintenance) (MRP 145.A.30(a))
		4806(2): Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b))
		4806(3): Quality Manager ▶◀
		4806(4): Maintenance Working Hours Plan (MRP 145.A.30(d))

RA NUMBER	RA DESCRIPTION	SUB RA
		4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)) 4806(6): Specialized Services (MRP 145.A.30(f)) 4806(7): Air System Certifying Staff (Line Maintenance) (MRP 145.A.30(g)) - Approved Maintenance Organizations (AMOs) only 4806(8): Air System Certifying Staff (Base Maintenance) (MRP 145.A.30(h)) - AMOs only 4806(9): Component Certifying Staff (MRP 145.A.30(i)) 4806(10): Non-Engineering Staff (MRP 145.A.30(j))
RA 4807	Certifying Staff and Support Staff (MRP 145.A.35)	4807(1): Staff Knowledge (MRP 145.A.35(a)) 4807(2): Certification and Supervisory Authorizations (MRP 145.A.35(b)) 4807(3): Staff Experience Requirements (MRP 145.A.35(c)) 4807(4): Staff Continuation Training (MRP 145.A.35(d)) 4807(5): Continuation Training Programme (MRP 145.A.35(e)) 4807(6): Certifying Staff Competence Assessment (MRP 145.A.35(f)) 4807(7): Issue of Certification Authorization (MRP 145.A.35(g)) 4807(8): Certification Authorization Codes (MRP 145.A.35(h)) 4807(9): Responsibility for Issuing Certification Authorization (MRP 145.A.35(i)) 4807(10): Record of Staff (MRP 145.A.35(j)) 4807(11): Provision to Staff of a Copy of their Authorizations (MRP 145.A.35(k)) 4807(12): Requirement to Produce Certification Authorization (MRP 145.A.35(l)) 4807(13): Withdrawn – Not deemed regulatory material
RA 4808	Equipment Tools and Material (MRP 145.A.40)	4808(1): Accounting of Equipment Tools and Materials (MRP 145.A.40(a)) 4808(2): Availability of Equipment Tools and Materials (MRP 145.A.40(b)) 4808(3): Management and Calibration of Equipment and Tools (MRP 145.A.40(c))
RA 4809	Acceptance of Components (MRP 145.A.42)	4809(1): Component Classification and Documentation (MRP 145.A.42(a)) 4809(2): Suitability of Components (MRP 145.A.42(b)) 4809(3): Local Manufacture/Fabrication of Components (MRP 145.A.42(c)) 4809(4): Withdrawn incorporated into RA 4809(1)
RA 4810	Technical Information (MRP 145.A.45)	4810(1): Use of Approved and Current Technical Information (MRP 145.A.45(a)) 4810(2): Scope of Applicable Technical Information (MRP 145.A.45(b)) 4810(3): Requirement to Inform Technical Information Author of Errors (MRP 145.A.45(c)) 4810(4): Modification of Technical Information (MRP 145.A.45(d))

RA NUMBER	RA DESCRIPTION	SUB RA
		4810(5): Common Work Card or Work Sheet (MRP 145.A.45(e)) 4810(6): Availability of Technical Information (MRP 145.A.45(f)) 4810(7): Maintaining the Amendment State of Technical Information (MRP 145.A.45(g))
RA 4811	Maintenance Planning (MRP 145.A.47)	4811(1): Maintenance Planning System (MRP 145.A.47(a)) 4811(2): Human Factors Limitations (MRP 145.A.47(b)) 4811(3): Handover of Maintenance Tasks (MRP 145.A.47(c))
RA 4812	Certification of Air System Release and Component Release (MRP 145.A.50)	4812(1): Certification of Air System Release (MRP 145.A.50(a)) 4812(2): Air System Release for Flight (MRP 145.A.50(b)) 4812(3): New Faults (MRP 145.A.50(c)) 4812(4): Certification of Component Release and Cannibalization (MRP 145.A.50(d)) 4812(5): Deferred and Incomplete Maintenance (MRP 145.A.50(e)) 4812(6): Component Concessions
RA 4813	Maintenance Records (MRP 145.A.55)	4813(1): Recording and Retention of Maintenance Work (MRP 145.A.55(a)) 4813(2): Copies of Maintenance Records (MRP 145.A.55(b)) 4813(3): Management of Retained Maintenance Records (MRP 145.A.55(c)) 4813(4): Management of Maintenance Documentation on Delivery or Transfer of an Air System
RA 4814	Occurrence Reporting (MRP 145.A.60)	4814(1): Unsafe Condition Reporting (MRP 145.A.60(a)) 4814(2): Internal Occurrence reporting (MRP 145.A.60(b)) 4814(3): MOD Sponsored Reporting Action (MRP 145.A.60(c))
RA 4815	Maintenance Procedures and Safety and Quality Policy (MRP 145.A.65)	4815(1): Organization Safety and Quality Policy (MRP 145.A.65(a)) 4815(2): Procedures for Good Maintenance Practices (MRP 145.A.65(b)) 4815(3): Quality Management System (MRP 145.A.65(c))
RA 4816	Maintenance Organization Exposition (MRP 145.A.70) - Approved Maintenance Organizations only	4816(1): Content of a Maintenance Organization Exposition (MRP 145.A.70(a)) 4816(2): Amendment of a Maintenance Organization Exposition (MRP 145.A.70(b)) 4816(3): Minor Amendment of a Maintenance Organization Exposition (MRP 145.A.70(c)) 4816(4): Exemption to Content of a Maintenance Organization Exposition due to Civil Aviation Authority Part 145 Approval (MRP 145.A.70(d)) 4816(5): Distribution of Approved Maintenance Organization Exposition
RA 4817	Privileges of the Organization (MRP 145.A.75)	4817(1): Privileges of the Organization (MRP 145.A.75(a))
RA 4818	Limitations on the Organization (MRP 145.A.80) - Approved Maintenance Organizations (AMOs) only	4818(1): Limitations on the Organization (MRP 145.A.80(a))

RA NUMBER	RA DESCRIPTION	SUB RA
RA 4819	Changes to the Organization (MRP 145.A.85) - Approved Maintenance Organizations (AMOs) only	4819(1): Changes to the Organization (MRP 145.A.85(a))
RA 4820	Continued Validity of Approval (MRP 145.A.90) - Approved Maintenance Organizations only	4820(1): Continued Validity of Approval (MRP 145.A.90(a))
		4820(2): Approval, Surrender, Suspension or Revocation (MRP 145.A.90(b))
RA 4821	► Findings and Observations (MRP 145.A.95) ◀	4821(1): Findings (MRP 145.A.95(a))
		► 4821(2): Corrective Actions (MRP 145.A.95)
		4821(3): Observations (MRP 145.A.95) ◀
RA 4941	Application - MRP Part M Sub Part G	4941(1): Application - MRP Part M Sub Part G
RA 4943	Continuing Airworthiness Management Exposition - MRP Part M Sub Part G	4943(1): Provision of the Continuing Airworthiness Management Exposition
		4943(2): Continuing Airworthiness Management Exposition Approval
RA 4945	Personnel Requirements - MRP Part M Sub Part G	4945(1): Requirements for the Military Continuing Airworthiness Manager
		4945(2): Qualification of Personnel
		4945(3): Personnel Competence and MRP Part M Authorization
RA 4947	Continuing Airworthiness Management - MRP Part M Sub Part G	4947(1): Military Continuing Airworthiness Management Organization Responsibilities
RA 4948	Documentation - MRP Part M Sub Part G	4948(1): Documentation
RA 4951	Quality ► Management ◀ System - MRP Part M Subpart G	4951(1): Establishing a Quality ► Management ◀ System
		4951(2): Functions of the Quality ► Management ◀ System
		4951(3): Retention of Quality ► Management ◀ System Records
RA 4954	Continued Validity of Approval - MRP Part M Sub Part G	4954(1): Continued Validity of Approval
		4954(2): Approval, Surrender, Suspension or Revocation
RA 4955	Findings - MRP Part M Subpart G	4955(1): Findings
		► 4955(2): Corrective Actions
		4955(3): Observations ◀
RA 4956	Military Continuing Airworthiness Management Organization Tasks Performed by Other Organizations - MRP Part M Sub Part G	4956(1): Subcontracting of Military Continuing Airworthiness Management Organization Tasks
RA 4961	Aircraft Maintenance Programme and Military Continuing Airworthiness Management Organization Responsibilities for Air System Release - MRP Part M Sub Part C	4961(1): Aircraft Maintenance Programme
		4961(2): Military Continuing Airworthiness Management Organization Responsibilities Prior to the Release of an Air System
		4961(3): Reliability Programme
RA 4962	Special Instructions (Technical) - MRP Part M Sub Part C	4962(1): Special Instructions (Technical)
RA 4963	Modifications and Repairs - MRP Part M Sub Part C	4963(1): Modifications and Repairs
RA 4964	Continuing Airworthiness Management Records - MRP Part M Sub Part C	4964(1): Continuing Airworthiness Record Keeping
		4964(2): Continuing Airworthiness Records
RA 4965	Local Manufacture Assurance – MRP Part M Sub Part C	4965(1): Military Continuing Airworthiness Maintenance Organization Responsibilities for Local Manufacture
RA 4966		4966(1): Use of Military Continuing Airworthiness Management Organization Instructions

RA NUMBER	RA DESCRIPTION	SUB RA
	Military Continuing Airworthiness Management Organization Instructions – MRP Part M Sub Part C	4966(2): Management of Military Continuing Airworthiness Management Organization Instructions
RA 4970	Baseline Military Airworthiness Review - MRP Part M Sub Part I	4970(1): Military Continuing Airworthiness Manager Responsibilities
		4970(2): Delivery Duty Holder / Accountable Manager (Military Flying) Responsibilities
RA 4971	Military Airworthiness Review and Certification - MRP Part M Sub Part I	4971(1): Military Continuing Airworthiness Manager Responsibilities
		4971(2): Military Airworthiness Review Certificate
RA 4972	Military Airworthiness Review Surveyors – MRP Part M Sub Part I	4972(1): Requirements of the Military Continuing Airworthiness Management Organization
		4972(2): Military Airworthiness Review Surveyor Records
RA 4973	Military Airworthiness Review Process – MRP Part M Sub Part I	4973(1): Military Airworthiness Process
RA 4974	Circumstances when Military Airworthiness Review Certificates Become Invalid – MRP Part M Sub Part I	4974(1): Circumstances when Military Airworthiness Review Certificates Become Invalid
-	Manual of Airworthiness Maintenance – Process (MAM-P)	
-	Manual of Airworthiness Maintenance – Documentation (MAM-D)	

Table 2: Withdrawn 4000 Series (CAE) Regulatory Articles (not included in the 4000 Series combined document)

RA NUMBER	RA DESCRIPTION	SUB RA
RA 4050	Maintenance of Remotely Piloted Air Systems (RPAS)	4050(1): Withdrawn – See Rationale
		4050(2): Withdrawn – See Rationale
		4050(3): Withdrawn – See Rationale
		4050(4): Withdrawn – See Rationale
RA 4052	Engineering Aspects of Physical Security of Aircraft at Foreign and UK Civilian Airfields	4052(1): Withdrawn - Incorporated into RA4805(1)
RA 4055	Fuelling Operations for Aircraft on the Ground	4055(1): Withdrawn – See Rationale
		4055(2): Withdrawn – See Rationale
RA 4056	Anti-Icing and De-icing of Parked Aircraft	4056(1): Withdrawn – See Rationale
		4056(2): Withdrawn – See Rationale
RA 4057	Flight Servicing	4057(1): Withdrawn - See Rationale
RA 4058	Flight Servicing Competency Checks	4058(1): Withdrawn - Incorporated into RA4807(4)
RA 4059	Continuous Charge	4059(1): Withdrawn – See Rationale
RA 4060	Chemical, Biological, Radiological and Nuclear Decontamination and Protection	4060(1): Withdrawn – See Rationale
		4060(2): Withdrawn – See Rationale
RA 4062	Embarked Aviation	4062(1): Withdrawn - Incorporated into RA4805(3)
RA 4063	Replenishment of Liquid and Gaseous Oxygen Systems in Exceptional Circumstances	4063(1): Withdrawn - See Rationale
		4063(2): Withdrawn - See Rationale
RA 4101	Aircraft Cabin Pressure Testing – Safety Health Environmental and Fire Precautions	4101(1): Withdrawn - See Rationale
		4101(2): Withdrawn - See Rationale
RA 4102	Biological Security	4102(1): Withdrawn - See Rationale
RA 4104	Control of Compressed Gas and Pneumatic Lubricating Equipment	4104(1): Withdrawn - See Rationale
RA 4150	Training and Competence	4150(1): Withdrawn - Incorporated into RA4806(5)
		4150(2): Withdrawn – See Rationale
RA 4151	Engineering Authorizations	4151(1): Withdrawn - Incorporated into RA4806(5)
RA 4152	Recording of Engineering Authorizations	4152(1): Withdrawn - Incorporated into RA4806(5)
		4152(2): Withdrawn - Incorporated into RA4807(11)
RA 4153	Signatures on Maintenance Documentation	4153(1): Withdrawn - Incorporated into RA4806(5)
RA 4154	Aircraft Ground Engineers	4154(1): Withdrawn - Incorporated into RA4806(5)
RA 4155	Self-Supervision	4155(1): Withdrawn - Incorporated into RA4806(5)
		4155(2): Withdrawn – See Rationale
RA 4156	Elementary Self-Supervision	4156(1): Withdrawn - Incorporated into RA4806(5)
		4156(2): Withdrawn - See Rationale
RA 4158	Authorization of Aircrew to carry out Aircraft Maintenance Work	4158(1): Withdrawn - Incorporated into RA4806(10)

RA NUMBER	RA DESCRIPTION	SUB RA
RA 4159	Operation of Air Transport Systems by Movements Personnel	4159(1): Withdrawn - Incorporated into RA4806(10)
RA 4161	Contractors' Working Parties Maintaining Aircraft at Stations, Ships and Units	4161(1): Withdrawn - See Rationale
		4161(2): Withdrawn - See Rationale
RA 4200	Maintenance Policy – General	4200(1): Withdrawn - See Rationale
		4200(2): Withdrawn - See Rationale
RA 4201	Maintenance Policy – Composite Materials	4201(1): Withdrawn – See Rationale
		4201(2): Withdrawn – See Rationale
		4201(3): Withdrawn – See Rationale
RA 4202	Maintenance of Aircraft in Multi-Service Environments	4202(1): Withdrawn - Incorporated into RA4806(5)
RA 4203	Preventative Maintenance	4203(1): Withdrawn – See Rationale
RA 4204	Lifing of Aerospace Components	4204(1): Withdrawn – See Rationale
RA 4205	Corrective Maintenance	4205(1): Withdrawn – See Rationale
		4205(2): Withdrawn - Incorporated into RA4812(3)
		4205(3): Withdrawn – See Rationale
		4205(4): Withdrawn – See Rationale
		4205(5): Withdrawn – See Rationale
		4205(6): Withdrawn – See Rationale
		4205(7): Withdrawn – See Rationale
		4205(8): Withdrawn – See Rationale
RA 4206	Deferment of Maintenance – Guidance on the use of Limitations and Acceptable Deferred Faults	4206(1): Withdrawn - Incorporated into RA4812(5)
RA 4208	Dehumidification of Aircraft	4208(1): Withdrawn – See Rationale
RA 4210	Anti-Deterioration Maintenance of Equipment In Store	4210(1): Withdrawn – See Rationale
RA 4211	Ground Training Aids	4211(1): Withdrawn - Incorporated into RA4212
RA 4212	Ground Instructional Aircraft and Aero-Engines, and the Control of Components used in Simulators or as Ground Training Aids	4212(1): Withdrawn – See Rationale
		4212(2): Withdrawn – See Rationale
		4212(3): Withdrawn – See Rationale
		4212(4): Withdrawn – See Rationale
RA 4214	Support Policy Statements	4214(1): Withdrawn – See Rationale
RA 4250	Management of Hand Tools and Test and Measuring Equipment	4250(1): Withdrawn - Incorporated into RA4808(1)
		4250(2): Withdrawn - Incorporated into RA4808(2)
RA 4251	Tool Control Procedures	4251(1): Withdrawn - Incorporated into RA4808(2)
RA 4254	Local Manufacture of Parts for Aircraft and Airborne Equipment	4254(1): Withdrawn - Incorporated into RA4809(3)
RA 4255	Electrical Bonding and Earthing of Aircraft and Associated Ground Support Equipment	4255(1): Withdrawn – See Rationale
RA 4256	Aircraft Weighing	4256(1): Withdrawn – See Rationale

RA NUMBER	RA DESCRIPTION	SUB RA
RA 4257	Surface Finish of Military Air Environment Equipment	4257(1): Withdrawn – See Rationale
RA 4260	Checks on Helicopter Blades and Tail Pylons after Spreading using Automatic or Semi-Automatic Systems	4260(1): Withdrawn – See Rationale
		4260(2): Withdrawn – See Rationale
RA 4261	Aircraft Independent Inspections	4261(1): Withdrawn - Incorporated into RA4815(2)
RA 4262	Cannibalization of Parts from Aircraft and Uninstalled Aircraft Equipment	4262(1): Withdrawn - Incorporated into RA4812(4)
RA 4263	Shift and Task Handover	4263(1): Withdrawn - Incorporated into RA4811(3)
RA 4264	Welding of Aircraft Parts	4264(1): Withdrawn – See Rationale
		4264(2): Withdrawn – See Rationale
RA 4265	Laser Equipment Maintenance	4265(1): Withdrawn - See Rationale
RA 4266	Re-Use of Self Locking Fasteners	4266(1): Withdrawn – See Rationale
RA 4300	Certification of Aircraft Maintenance Documentation	4300(1): Withdrawn - Incorporated into RA4813(1)
RA 4302	MOD Form 700 Documentation	4302(1): Withdrawn - incorporated into RA 4813(1)
RA 4303	Logistic Information Systems	4303(1): Withdrawn – See Rationale
		4303(2): Withdrawn – See Rationale
RA 4304	Electronic Certification of Aircraft Maintenance	4304(1): Withdrawn - Incorporated into RA4813(1)
RA 4305	Electronic Documentation of Aircraft Maintenance	4305(1): Withdrawn – See Rationale
RA 4306	Management of Arisings Within a Ground Maintenance System (GMS)	4306(1): Withdrawn – See Rationale
		4306(2): Withdrawn - Incorporated into RA4806(5)
RA 4307	Fault Reporting	4307(1): Withdrawn - Incorporated into RA4814(1)
RA 4311	Retention of Military Aviation Engineering Documentation	4311(1): Withdrawn - Incorporated into RA4813(3)
RA 4312	Scanning and Electronic Storage of Military Aviation Engineering Documentation	4312(1): Withdrawn - Incorporated into RA4813(3)
RA 4350	Through Life Management of Technical Information	4350(1): Withdrawn – See Rationale
RA 4351	Production and Maintenance of Maintenance Schedules	4351(1): Withdrawn – See Rationale
RA 4352	Production and Maintenance of Flight Test Procedures	4352(1): Withdrawn – See Rationale
RA 4353	Amendment to Technical Information	4353(1): Withdrawn - Incorporated into RA4810(3)
RA 4356	Topic 2(N/A/R) – General Orders, Special Instructions and Modifications	4356(1): Withdrawn – See Rationale
RA 4401	Transfer of Aircraft and Equipment	4401(1): Withdrawn – See Rationale
RA 4402	Technical Equipment – Conditioning and Preparation for Movement or Storage	4402(1): Withdrawn - Incorporated into RA4809(1)
RA 4403	Expedient Repair	4403(1): Withdrawn – See Rationale

RA NUMBER	RA DESCRIPTION	SUB RA
RA 4405	Assessment, Categorization and Repair of Aircraft and Aircraft Structural Components	4405(1): Withdrawn - Incorporated into RA4815(2)
RA 4406	New Repair Instructions and Aerospace Equipment Design Requests	4406(1): Withdrawn - Incorporated into RA4815(2)
RA 4457	Special Instructions (Technical)	4457(1): Withdrawn – See Rationale
RA 4462	Aviation Local Technical Instructions	4462(1): Withdrawn – See Rationale
		4462(2): Withdrawn – See Rationale
RA 4500	Health and Usage Monitoring	4500(1): Withdrawn – See Rationale
		4500(2): Withdrawn – See Rationale
RA 4501	Vibration Control	4501(1): Withdrawn – See Rationale
RA 4502	Wear Debris Monitoring	4502(1): Withdrawn – See Rationale
		4502(2): Withdrawn – See Rationale
RA 4503	Hydraulic Oil Monitoring	4503(1): Withdrawn – See Rationale
		4503(2): Withdrawn – See Rationale
RA 4504	Non-Destructive Testing	4504(1): Withdrawn - See Rationale
RA 4507	Aircraft Environmental Damage Prevention and Control	4507(1): Withdrawn – See Rationale
		4507(2): Withdrawn – See Rationale
RA 4509	Aircraft Domestic Water	4509(1): Withdrawn - See Rationale
RA 4514	Contaminated Breathing Oxygen	4514(1): Withdrawn – See Rationale
RA 4515	Fuels, Lubricants and Associated Products	4515(1): Withdrawn – See Rationale
		4515(2): Withdrawn – See Rationale
RA 4550	Electrical Wiring Interconnect System	4550(1): Withdrawn – See Rationale
		4450(2): Withdrawn – See Rationale
RA 4551	Aircraft Wiring Husbandry	4551(1): Withdrawn – See Rationale
RA 4552	Use of Crimped Splices in Aircraft Electrical Wiring Interconnect System	4552(1): Withdrawn – See Rationale
RA 4553	Aircraft Electrical Wire	4553(1): Withdrawn – See Rationale
		4553(2): Withdrawn – See Rationale
RA 4554	Maintenance and Repair of Aircraft Data Buses	4554(1): Withdrawn – See Rationale
RA 4555	Aircraft Fibre Optic Systems	4555(1): Withdrawn – See Rationale
RA 4556	Pitot Static Systems – Maintenance Responsibilities	4556(1): Withdrawn – See Rationale
		4556(2): Withdrawn – See Rationale
RA 4557	Electrostatic Discharge Sensitive Devices – Prevention of Damage by Static Electricity	4557(1): Withdrawn - See Rationale
RA 4558	Aircraft TEMPEST Testing	4558(1): Withdrawn - See Rationale
RA 4559	Aircraft COMSEC Material	4559(1): Withdrawn - See Rationale
RA 4561	Maintenance of Aircraft Compass Accuracy	4561(1): Withdrawn – See Rationale

RA NUMBER	RA DESCRIPTION	SUB RA
RA 4601	Aircraft Assisted Escape Systems – Maintenance Responsibilities	4601(1): Withdrawn – See Rationale
RA 4602	Aircraft Assisted Escape Systems – Maintenance, Vital and Independent Checks	4602(1): Withdrawn – See Rationale
RA 4603	Lifing, Marking and Maintenance of Carbon Dioxide (CO ₂) Cylinders used in Life Preservers	4603(1): Withdrawn – See Rationale
RA 4604	Survival Equipment Maintenance	4604(1): Withdrawn – See Rationale
RA 4605	Compressed Gas Cylinders having an Airborne Application	4605(1): Withdrawn – See Rationale
RA 4607	Aircraft Role Equipment – Maintenance, Modification and Control	4607(1): Withdrawn – See Rationale
		4607(2): Withdrawn – See Rationale
RA 4652	Weapon Preparation and Loading	4652(1): Withdrawn – See Rationale
RA 4653	Examination of in-use Pyrotechnics and Dangerous Goods issued for use in Survival Equipment and on Airborne Platforms	4653(1): Withdrawn - See Rationale
RA 4654	Connecting Electro-Explosive Devices	4654(1): Withdrawn – See Rationale
RA 4655	Aircraft Armament System Maintenance	4655(1): Withdrawn – See Rationale
RA 4656	Lifing of Explosives and Associated Ancillaries	4656(1): Withdrawn – See Rationale
RA 4660	Aircraft Explosive Armament Stores, Explosive Components and Related Equipment - Performance Failures	4660(1): Withdrawn – See Rationale
RA 4700	Military Air Environment Quality Policy	4700(1): Withdrawn – See Rationale
RA 4701	Quality Occurrence Reporting	4701(1): Withdrawn - Incorporated into RA4815(3)
RA 4702	Quality Auditing	4702(1): Withdrawn - Incorporated into RA4815(3)
RA 4825	Procedures for the Competent Authority (MRP 145.B)	4825(1): Withdrawn in toto
		4825(2): Withdrawn in toto
		4825(3): Withdrawn in toto
		4825(4): Withdrawn in toto
		4825(5): Withdrawn in toto
		4825(6): Withdrawn in toto
		4825(7): Withdrawn in toto
		4825(8): Withdrawn in toto
		4825(9): Withdrawn in toto
		4825(10): Withdrawn in toto
		4825(11): Withdrawn in toto
		4825(12): Withdrawn in toto
		4825(13): Withdrawn in toto

RA NUMBER	RA DESCRIPTION	SUB RA
RA 4953	Record Keeping - MRP Part M Sub Part G	4953(1): Withdrawn - Incorporated into RA 4964
		4953(2): Withdrawn - Incorporated into RA 4964

RA 4009 - Aviation Engineering Orders and ►Local◄ Procedures

Rationale

All Stations / ships / units or sites have unique local variations or conditions that need to be considered when implementing Airworthiness Regulations. These local conditions / variations, if not controlled or managed, may have an impact on Air System Airworthiness and / or Risk to Life (RtL) may be increased. ► This RA◄ requires that ► aviation◄ engineering orders ► and / or local procedures◄ are produced and promulgated, to mitigate Hazards associated with local conditions / variations.

Contents

4009(1): Aviation Engineering Orders and ►Local◄ Procedures

Regulation 4009(1)

Aviation Engineering Orders and ►Local◄ Procedures

4009(1) ► The Chief Air Engineer (CAE)^{1,2} and / or◄ the Military Continuing Airworthiness Manager (Mil CAM)³ shall ensure that local engineering instructions are promulgated in aviation engineering orders and / or ► local◄ procedures.
► Sponsorship of each aviation engineering order and / or local procedure shall be clearly documented.◄

Acceptable Means of Compliance 4009(1)

Aviation Engineering Orders and ►Local◄ Procedures

Common AMC

1. The ► aviation engineering◄ orders and / or ► local◄ procedures **should** contain engineering instructions that will take account of any local conditions⁴ and provide clarification of any local variations, that will affect the implementation of higher level orders and / or procedures.
2. ► Where Stations / units have Air Systems operated by multiple Mil CAMs³, or a Mil CAM³ has Air Systems operating from multiple Stations / units, then the relevant aviation engineering orders and / or local procedures **should** be agreed by all parties and sponsorship clearly defined.◄
3. The ► aviation engineering◄ orders and / or ► local◄ procedures **should not** countermand higher level orders and / or local procedures and **should not** be more permissive⁵.

Additional AMC – Military Maintenance Organizations (MMOs) only

4. ► Aviation engineering orders define the manner and / or timing of MMO Maintenance activities on Air Systems or equipment in a specified location. Aviation engineering orders◄ **should** be structured ► in an appropriate manner (for example◄ as Aviation Engineering Standing Orders (AESO) and Aviation Engineering Routine Orders (AERO)).

Additional AMC – Approved Maintenance Organizations (AMOs) only

5. ► Local procedures define the manner and / or timing of AMO Maintenance activities on Air Systems or equipment in a specified location.◄ Local procedures **should** be promulgated in the Maintenance Organization Exposition (MOE).
6. ► AMOs **should** abide by location based aviation engineering orders and / or local procedures where applicable, and as agreed by the sponsor of the aviation engineering orders and / or local procedures. This **should** be documented within the MOE⁶.◄

¹ ► Refer to RA 1023 – Chief Air Engineers – Air Safety Responsibilities.

² Accountable Manager (Maintenance) (AM(M)) for civil organizations.◄

³ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

⁴ Such as the operation of hangar doors.

⁵ Refer to MAA01: MAA Regulatory ►Principles◄ - Chap 4, Para 4.

⁶ ► Refer to RA 4816(1): Content of an Maintenance Organization Exposition (MRP 145.A.70(a)).◄

**Guidance
Material
4009(1)**

Aviation Engineering Orders and ► Local ◀ Procedures

Common GM

In addition to the requirements of this Regulation, the ► Responsible Post will ◀ ensure that the following regulatory requirements, summarized in Table 1, are promulgated as ► aviation engineering ◀ orders and / or ► local ◀ procedures where applicable:

Table 1. Aviation engineering orders and ► local ◀ procedures

► Regulatory Article	Regulation	Responsible Post ◀
► RA 1164 – Transfer of UK Military Registered Air Systems	1164(1): Permanent Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities	Mil CAM ³
	1164(2): Temporary Allotment of UK Military Registered Air Systems between Aircraft Operating Authorities	Mil CAM ³
	1164(3): Transfer of UK Military Registered Air Systems by Allocation	Mil CAM ³ ◀
RA 4051 – Airborne Checks	4051(1): Airborne Checks	► Mil CAM ³ ◀
RA 4053 – Royal Flights and Flights for Nominated Very Important Persons	4053(1): Air System Selection and Preparation	► Mil CAM ³ ◀
RA 4054 – Ground Handling Operations	4054(1): Ground Handling Operations	► CAE ¹ and / or AM(M) ⁷ ◀
RA 4061 – Air Systems Displaying Abnormal Flying Characteristics	4061(1): Investigation of Air Systems Displaying Abnormal Flying Characteristics	► Mil CAM ³ ◀
	4061(2): Rogue Aircraft	► Mil CAM ³ ◀
RA 4103 – Removal of Body Fluid Contamination from Aircraft	4103(1): ► ◀ Removal of Body Fluids	► Mil CAM ³ ◀
RA 4213 – Control of Air System Components used in Ground Test Facilities	4213(1): Control of Air System Components used in Ground Test Facilities	► AM(M) ⁷ and / or Mil CAM ³ ◀
RA 4253 – Loose Article Recovery ► ◀	4253(1): Loose Article Recovery	► Mil CAM ³ ◀
	4253(2): Certification of Air System Release Following Unsuccessful Loose Article Search	► Mil CAM ³ ◀
RA 4510 – Ground Running of Aero-Engines and Auxiliary Power Units	4510(1): Ground Running Aero-Engines and Auxiliary Power Units	► CAE ¹ and / or Mil CAM ³ ◀

⁷ ► Refer to RA 4806(1): Accountable Manager (Maintenance) (MRP 145.A.30(a)). ◀

Guidance Material 4009(1)	▶ Regulatory Article	Regulation	Responsible Post ◀
	RA 4600 – Aircraft Assisted Escape Systems – Safety and Maintenance ▶ ◀	4600(1): Aircraft Assisted Escape Systems Safety Precautions	▶ CAE ¹ and / or Mil CAM ³ ◀
		4600(2): Aircraft Assisted Escape Systems Maintenance Responsibilities	▶ CAE ¹ and / or Mil CAM ³ ◀
	RA 4657 – Weapon Loading and Armed Aircraft Maintenance	4657(1): Armed Aircraft Maintenance	▶ Mil CAM ³ ◀
		4657(2): Weapon Loading Personnel Requirements	▶ CAE ¹ and / or Mil CAM ³ ◀
		4657(3): Weapon Loading Training Requirements	▶ CAE ¹ and / or Mil CAM ³ ◀
Additional GM – MMOs only			
7. Nil.			
Additional GM – AMOs only			
8. Nil.			

Intentionally Blank for Print Pagination

RA 4051 - Airborne Checks

Rationale

Airborne Checks¹, including taxi checks, may be required as part of an investigation or diagnostic process, or for monitoring of a Product, Part or Appliance that cannot be fully functioned whilst the Air System is stationary. Unless each Airborne Check is specified by a Competent Person exercising engineering judgement within defined boundaries, additional Hazards may be introduced, potentially increasing Risk to Life (RtL)². ► This RA ◀ requires measures to be put in place to control the use of Airborne Checks and to ensure that they are specified by Competent individuals, such that any additional Hazards can be assessed and any additional RtL² ◀ is correctly managed.

Contents

4051(1): Airborne Checks

Regulation 4051(1)

Airborne Checks

4051(1) The Military Continuing Airworthiness Manager (Mil CAM)³ shall ensure that ► aviation engineering ◀ orders and / or ► local ◀ procedures⁴ ◀ are promulgated to control the use of Airborne Checks⁵ ◀.

Acceptable Means of Compliance 4051(1)

Airborne Checks

1. The ► aviation engineering ◀ orders and ► / or local ◀ procedures⁴ ◀ should include, as a minimum:
 - a. The process to assess the Competence⁶ of those personnel who will be required to specify Airborne Checks and to authorize⁷ them to do so.
 - b. Instructions for assessing whether it is appropriate to conduct an Airborne Check, supported by guidance on factors to be taken into account, especially those that affect RtL² ◀.
 - c. Instructions for specifying the extent of an Airborne Check.
 - d. The requirement to agree the scope of the checks with the Authorizing Officer⁸.
 - e. Instructions for recording⁹ the extent and outcome of an Airborne Check.
 - f. Arrangements for releasing the Air System for flight¹⁰
 - g. The requirement for an Airborne Check to remain within the limits¹¹ stated in the Release To Service or Military Permit to Fly¹².
 - h. The conditions that will prevent an Air System from being released on Continuous Charge Operations¹³ if correct system function cannot be positively confirmed during an Airborne Check.

¹ A requirement not covered by the Flight Test Schedule (FTS), or where the testing of the Air System or component in accordance with the FTS is deemed inappropriate. The requirements can be operational, or to address a lack of Technical Information (TI) and / or Test Equipment. If used in the recovery of a Loose Article, refer to RA 4253 – Loose Article Recovery.

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

³ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

⁴ ► Refer to RA 4009 – Aviation Engineering Orders and Local Procedures.

⁵ Not applicable to Air Systems operating under RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered Air Systems Arrangements. ◀

⁶ Refer to RA 1002 – Airworthiness Competent Persons.

⁷ Refer to RA 1006 – Delegation of Engineering Authorizations.

⁸ Refer to RA 2306 – Authorization of Flights.

⁹ Refer to RA 4813(1): Recording and Retention of Maintenance Work (MRP 145.A.55(a)).

¹⁰ Refer to RA 4961 – Aircraft Maintenance Programme ► and Military Continuing Airworthiness Management Organization Responsibilities for Air System Release ◀ - MRP Part M Sub Part C.

¹¹ ► Refer to RA 2309(1): Aircraft Limitations. ◀

¹² Refer to RA 2401(1): Air System Document Set.

¹³ Refer to RA 2210(2): Continuous Charge Operations.

**Guidance
Material
4051(1)****Airborne Checks**

2. An Airborne Check is unlikely to be appropriate unless all of the following conditions are met:
 - a. The required action or activity cannot be carried out while the Air System is stationary. This might be because of an inherent requirement of the test or because the necessary test equipment is not available in the required timescale.
 - b. The Flight Test Schedule¹⁴ does not provide an appropriate test.
 - c. Suitable TI¹⁵ cannot be generated in the required timescale.
3. The ►aviation engineering◄ orders and ►/ or local◄ procedures►⁴◄ may restrict those activities deemed suitable for Airborne Checks and may specify circumstances where specific referrals are required prior to conducting an Airborne Check.
4. An Airborne Check is not to be used repeatedly in lieu of amendment to TI¹⁶, nor is it to be used repeatedly in lieu of test equipment. In both cases, shortfalls will be reported to the appropriate Delivery Team Leader or Commodity Team Leader.

¹⁴ Refer to RA 2220 – Maintenance Test Flights.

¹⁵ ►Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.◄

¹⁶ Refer to RA 4810(3): Requirement to Inform Technical Information Author of Errors (MRP 145.A.45(c)).

RA 4053 – Royal Flights and Flights for Nominated Very Important Persons

Rationale

Military registered Aircraft¹ may be selected for Royal Flights or flights for nominated Very Important Persons (VIPs). In addition to the Societal Concern factor², which this tasking may introduce, military registered Aircraft also have greater latitude for deferment of Maintenance activity and installation of Modifications with limited Airworthiness evidence, than is the case for civil registered Aircraft. ► This RA ◀ requires that ► aviation engineering ◀ orders and ► / or local ◀ procedures³ are issued to ensure the decisions affecting the Airworthiness of an Air System, to be used for a Royal Flight or flights for nominated VIPs, are reviewed to confirm their continued validity and to determine if any action is required.

Contents

4053(1): Air System Selection and Preparation

Regulation 4053(1)

Air System Selection and Preparation

4053(1) The Military Continuing Airworthiness Manager (Mil CAM)⁴ shall ensure that ► aviation engineering ◀ orders and ► / or local ◀ procedures³ are promulgated to identify the Continuing Airworthiness actions required when providing an Air System for a Royal Flight or a flight for a nominated VIP.

Acceptable Means of Compliance 4053(1)

Air System Selection and Preparation

1. The ► aviation engineering ◀ orders and ► / or local ◀ procedures³ for Royal Flights and flights for nominated VIPs shall include as a minimum:
 - a. Instructions for the selection and preparation of an Air System, including the action to be taken if there is insufficient time to complete these instructions.
 - b. Identification of the person(s) authorized to select the specific Air System to be used.
 - c. Identification of the person(s) responsible for ensuring that the necessary preparation procedures are carried out.
 - d. Details of any restriction on the ability of engineering personnel to make decisions with Airworthiness implications during the tasking period.

Guidance Material 4053(1)

Air System Selection and Preparation

2. A Royal Flight is one that is organized through the Head of Royal Travel. Adoption of the ► aviation engineering ◀ orders and ► / or local ◀ procedures³ required by this Regulation for other nominated VIPs⁵ is at the discretion of the appropriate Aviation Duty Holder (ADH) or Accountable Manager (Military Flying) (AM(MF)). This RA need not be applied to members of the Royal Family serving in the Armed Forces when they fly or are flown in military registered Aircraft, as part of their military duties.
3. The ► aviation engineering ◀ orders and ► / or local ◀ procedures³ issued in compliance with this RA support the instructions or orders for the carriage of Passengers on military registered Aircraft issued by ADHs and AM(MF)s⁶.
4. The selection and preparation criteria for an Air System will include a review of the Air System configuration including, but not limited to, the following considerations:

¹ Refer to ► RA 1161(1): Military Air System Registration. ◀

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

³ ► Refer to RA 4009 – Aviation Engineering Orders and Local Procedures. ◀

⁴ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

⁵ The decision on who is to be accorded VIP status is a single Service matter.

⁶ Refer to RA 2340 – Supernumerary Crew, ► Supernumerary Support Crew ◀ and Passengers.

**Guidance
Material
4053(1)**

- a. Embodiment of all Safety Modifications.
 - b. Embodiment of applicable mandatory Technical Instructions⁷.
 - c. Removal of Modifications without a full clearance in the Release To Service.
5. The selection and preparation criteria for an Air System will include a review of the Technical Log and recent Maintenance history to confirm that:
- a. The selected Air System is not manifesting any unsatisfactory Fault trends.
 - b. The Limitations and Acceptable Deferred Faults remain acceptable for the required Flight(s).
 - c. Any extensions applied to lifed components are appropriate and acceptable for the planned tasking.
6. Where an Air System may be used for a Royal Flight or a flight for a nominated VIP, which takes place partly or entirely within an operational theatre, the Mil CAM may consider the issue of supplementary instructions to reflect any circumstances specific to that Theatre.
7. ADHs and AM(MF)s may wish to be consulted or informed regarding Air System selection and preparation for Royal Flights and / or flights for nominated VIPs, as this may require additional Societal Concern² considerations based upon the status of the Passenger(s), the operating environment and existing Risk to Life (RtL) assessments for their Area of Responsibility (AoR). ADHs and AM(MF)s retain responsibility for ensuring that RtL for Royal Flights and flights for nominated VIPs in their respective AoRs remain As Low As Reasonably Practicable and Tolerable.

⁷ Technical Instructions include Special Instructions (Technical) (SI(T)), relevant Airworthiness Directives and equivalent instructions issued by Authorities.

RA 4054 – Ground Handling Operations

Rationale

The ground handling of Aircraft can be a hazardous activity. Without effective controls for these activities, there may be a threat to Airworthiness and an increase in Risk to Life. ► This RA ◀ requires that the ► Chief Air Engineer (CAE)¹ and / or the Accountable Manager (Maintenance) (AM(M))² ◀ ensures that ► aviation engineering ◀ orders and / or ► local ◀ procedures³ ◀ are issued, detailing the control measures required for ground handling activities to be carried out safely.

Contents

4054(1): Ground Handling Operations

Regulation 4054(1)

Ground Handling Operations

4054(1) ► The CAE¹ and / or the AM(M)² ◀ shall ensure that ► aviation engineering ◀ orders and / or ► local ◀ procedures³ ◀ are issued to strictly control the ground handling of Aircraft⁴ ◀.

Acceptable Means of Compliance 4054(1)

Ground Handling Operations

1. Ground handling operations **should** be carried out in accordance with (iaw) Technical Information⁵. However, specific orders are required to cater for local variations or conditions, that require controls, to ensure safe ground handling operations. Local ► aviation engineering ◀ orders and / or ► local ◀ procedures³ ◀ **should** be promulgated by Approved Maintenance Organizations in the Maintenance Organization Exposition⁶ and by Military Maintenance Organizations in Aviation Engineering Standing Orders ► or equivalent. ◀ As a minimum, they **should** include:
 - a. Ground handling team composition and individual responsibilities.
 - b. The required training, Competences and Authorizations⁷ for all team members.
 - c. Communication methods between the team and with local operational Controllers if required.
 - d. Precautions to be taken in adverse weather conditions.
 - e. Additional precautions to be taken when moving an Aircraft with an Unserviceable brake system.
 - f. Occasions when distinctive / fluorescent garments do not have to be worn, due to operations or exercises.
 - g. ► ◀

Guidance Material 4054(1)

Ground Handling Operations

2. ► Procedures for visiting Aircraft are found within the Defence Aerodrome Manual (DAM)⁸. ◀

¹ Refer to ► RA 1023 – Chief Air Engineers – Air Safety Responsibilities.

² Refer to RA 4806(1): Accountable Manager (Maintenance) (MRP 145.A.30(a)).

³ Refer to RA 4009 – Aviation Engineering Orders and Local Procedures.

⁴ Sponsorship of each aviation engineering order and / or local procedure is to be clearly documented iaw RA 4009(1): Aviation Engineering Orders and Local Procedures. ◀

⁵ Refer to RA 4810 – Technical Information (MRP 145.A.45).

⁶ Refer to RA 4816(1): Content of an Maintenance Organization Exposition (MRP 145.A.70(a)).

⁷ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

⁸ ► Refer to RA 1026(4): Management of a Defence Aerodrome Manual and Defence Aerodrome Assurance Framework. ◀

Intentionally Blank for Print Pagination

RA 4061 - Air Systems Displaying Abnormal Flying Characteristics

Rationale

Air Systems may display abnormal flying characteristics, including Uncommanded Flying Control Movements¹ (UFCM), Control Restrictions² (CR) and Unusual Occurrences³. Occurrences of abnormal flying characteristics pose potentially serious Airworthiness Risk and the underlying Causes may not become apparent without a careful and detailed investigation. This RA requires that aviation engineering orders and / or local procedures⁴ are put in place to ensure the timely and effective investigation into, and resolution of, Occurrences of abnormal flying characteristics.

Contents

4061(1): Investigation of Air Systems Displaying Abnormal Flying Characteristics

4061(2): Rogue Aircraft

Regulation 4061(1)

Investigation of Air Systems Displaying Abnormal Flying Characteristics

4061(1) The Military Continuing Airworthiness Manager (Mil CAM)⁵ **shall** ensure that aviation engineering orders and / or local procedures⁴ are promulgated to ensure the prompt and effective investigation into, and resolution of, Occurrences of abnormal flying characteristics⁶.

Acceptable Means of Compliance 4061(1)

Investigation of Air Systems Displaying Abnormal Flying Characteristics

1. The aviation engineering orders and / or local procedures⁴ **should** specify, as a minimum:
 - a. Initial actions to be taken if an Air System displays abnormal flying characteristics, including:
 - (1) Any changes to immediate post-flight shut down and Maintenance procedures.
 - (2) Requirements for the notification of appropriate personnel and / or organizations, including:
 - (a) The Military Continuing Airworthiness Management Organization (Mil CAMO)⁷.
 - (3) Occurrence reporting⁸ requirements.
 - (4) Other reporting requirements.
 - b. The formal investigation process to be followed, including how the key decisions are ►◄ recorded.
 - c. The requirement to appoint a person with specific responsibility for leading the investigation.

¹ Refer to MAA02: MAA Master Glossary.

² An inability to move the flying control input system to any position within its normal range of travel, or a condition when a greater than normal force is required to move a flying control input, or the failure of a flying control surface or system to respond correctly to a flying control input.

³ Any other abnormal flying condition involving a primary flying control system, which is not classified as a UFCM or CR, and which results in a Defence ►Air◄ Safety Occurrence Report being raised (refer to RA 1410 – Occurrence Reporting and Management).

⁴ Refer to RA 4009 – Aviation Engineering Orders and Local Procedures.

⁵ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

⁶ Not applicable to Air Systems operating under RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered ►Aircraft◄.

⁷ Refer to RA 4947 – Continuing Airworthiness Management – MRP Part M Subpart G.

⁸ Refer to RA 1410 – Occurrence Reporting and Management.

Acceptable Means of Compliance 4061(1)

- d. Any changes to the arrangements for the Certification of Air System Release⁹.
- e. Arrangements for releasing the Air System for flight¹⁰ when this is done as part of the investigation.
- f. Criteria for determining that the investigation is complete.
- g. The Competence¹¹ requirements of those individuals that will be authorized¹² to:
 - (1) Lead the investigation.
 - (2) Release an Air System for flight as part of the investigation.
 - (3) Determine that the investigation is complete.

Guidance Material 4061(1)

Investigation of Air Systems Displaying Abnormal Flying Characteristics

2. **Changes to immediate post-flight procedures.** To aid the investigation, the Air System's operating configuration needs to be retained as closely as possible to the condition in which the abnormal flying characteristic occurred. Some variation to post-flight procedures may be necessary as normal post-flight procedures, such as engine shutdown, could lead to the loss or masking of important Fault indicators. In addition, it is likely that all Maintenance activity, other than that required to make the Air System safe, would be suspended for the early stages of the investigation.
3. **Other reporting requirements.** This includes any reporting requirements mandated by the Type Airworthiness Authority (TAA) in the Air System Document Set.
4. **Investigation process.** This encompasses all elements of the investigation, adding location and organization specific detail to the type-specific investigation process in the Air System Support Policy Statement¹³.
5. **Release for flight.** If an Air System is released for flight as part of the investigation, the flight may be either a partial test flight conducted in accordance with the Flight Test Schedule¹⁴ or an Airborne Check¹⁵. It may be appropriate to impose additional constraints on such flights when they form part of an investigation into an Occurrence of abnormal flying characteristics.
6. **Recording of key decisions.** It is essential to capture the decisions that are made during an investigation. This may be done in the Aircraft Technical Log or in a separate report by the investigating officer.

Regulation 4061(2)

Rogue Aircraft

- 4061(2) The Mil CAM **shall** ensure that aviation engineering orders and / or local procedures⁴ are promulgated to ensure the correct management of rogue Aircraft^{16, 6}.

Acceptable Means of Compliance 4061(2)

Rogue Aircraft

7. The aviation engineering orders and / or local procedures⁴ **should** specify, as a minimum:
 - a. The specific platform type criteria for determining that an Aircraft is rogue.
 - b. Who is authorized⁹ to designate an Aircraft as rogue.

⁹ Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50).

¹⁰ Refer to RA 4961 – Aircraft Maintenance Programme **► and Military Continuing Airworthiness Management Organization Responsibilities for Air System Release ◀** – MRP Part M Subpart C.

¹¹ Refer to RA 1002 – Airworthiness Competent Persons.

¹² Refer to RA 1006 – Delegation of Engineering Authorizations.

¹³ Refer to RA 5407 – Support Policy Statement.

¹⁴ Refer to RA 2220 – Maintenance Test Flights.

¹⁵ Refer to RA 4051 – Airborne Checks.

¹⁶ A Rogue Aircraft is one that continues to display abnormal flying characteristics, despite a thorough investigation and every reasonable course of action having been taken to rectify the Fault.

**Acceptable
Means of
Compliance
4061(2)**

- c. The reporting requirements if an Aircraft is designated as rogue.
- d. Who is responsible for the management of rogue Aircraft.
- e. Any additional measures to be applied to rogue Aircraft.

**Guidance
Material
4061(2)****Rogue Aircraft**

8. **Additional measures.** The additional measures are likely to include an increased requirement for Design Organization support during any subsequent activity. It may also be appropriate to quarantine or place further restrictions on the release of the Aircraft for flight.

Intentionally Blank for Print Pagination

RA 4103 - Removal of Body Fluid Contamination from Aircraft

Rationale

The operational role of military registered Aircraft presents a Risk of an Aircraft's Structure, materials and components being contaminated with body fluids¹. Such contamination may pose a significant corrosive Hazard to an Aircraft's Airworthiness. **▶ This RA ◀ sets the requirement for ▶ aviation engineering ◀ orders and ▶ / or local ◀ procedures▶²◀ to be in place to ensure that timely, safe and effective decontamination is undertaken.**

Contents

4103(1): ▶ ◀ Removal of Body Fluids

Regulation 4103(1)

▶ ◀ Removal of Body Fluids

4103(1) The Military Continuing Airworthiness Manager (Mil CAM)³ **shall** ensure that ▶ aviation engineering ◀ orders and / or ▶ local ◀ procedures▶²◀ are promulgated to achieve the timely, safe and effective removal of body fluid contamination from Aircraft within their Area of Responsibility.

Acceptable Means of Compliance 4103(1)

▶ ◀ Removal of Body Fluids

1. The ▶ aviation engineering ◀ orders and ▶ / or local ◀ procedures▶²◀ **should**, as a minimum:
 - a. State the actions to be taken on discovering that an Aircraft is contaminated with body fluids¹, including:
 - (1) Nomination of an authorized⁴ person to take control of the decontamination operation in accordance with (iaw) the published ▶ aviation engineering ◀ orders and ▶ / or local ◀ procedures▶²◀.
 - (2) Assessment of the contamination and of the resources required, including medical expertise, to be able to safely decontaminate the Aircraft.
 - (3) Control of the contamination iaw Technical Information⁵ (TI), applicable Defence Policy⁶ and, where appropriate, medical advice.
 - b. Define the ▶ process ◀ for deferring full decontamination, including consultation, notification and Authorization⁴ requirements.
 - c. Identify those personnel who are authorized⁴ to determine when sufficient decontamination has been carried out and to certify that no further decontamination is required.

Guidance Material 4103(1)

▶ ◀ Removal of Body Fluids

2. This Regulation addresses only the Hazard to an Aircraft's Structure, materials and components. It does not address other considerations associated with body fluid contamination; these must be addressed iaw existing Defence Policies⁶ and include:
 - a. Health, Safety and environmental aspects, particularly the health and Safety of personnel carrying out decontamination.
 - b. Biosecurity.
 - c. Infection control and sterilization requirements when dealing with a known or suspected infectious disease.

¹ The term 'body fluids' includes saliva, blood, vomit, urine, faeces and body remains from human or animal sources.

² ▶ Refer to RA 4009 – Aviation Engineering Orders and Local Procedures. ◀

³ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

⁴ Refer to RA 1006 – Delegation of Engineering Authorizations.

⁵ Refer to RA 4810 – Technical Information (MRP 145.A.45).

⁶ Refer to JSP 800, Vol 3 – Movement of Materiel Part 2 Policy Leaflet 25.

**Guidance
Material
4103(1)**

3. The assessment of the contamination will be informed by the following, non-exhaustive, list of factors:
 - a. The type of body fluids present.
 - b. The requirement to restrict access to the Aircraft until decontamination is complete.
 - c. The extent and location of the contamination.
 - d. The size and composition of the team required to carry out decontamination in a timely, safe and effective manner.
 - e. The specific personal protective measures required.
 - f. The equipment required for decontamination.
 - g. Disposal of contaminated material, including fluids.
 4. Medical advice on decontamination may recommend the use of disinfectants or other materials that are not listed in TI. This Regulation does not give authority to deviate from TI and any deviation required to comply with medical advice will be resolved in the same manner as any other deviation.
 5. It may not be possible to carry out full decontamination of an Aircraft prior to its next flight, due to either operational pressures or the contamination extending to areas that are inaccessible given the resources available to the Maintenance organization. The Mil CAM³ may wish to distinguish between:
 - a. The Authorization to defer full decontamination for a short period, eg to meet an operational need or to recover the Aircraft to a more suitable location.
 - b. The Authorization to defer full decontamination for a longer period, eg until a suitable scheduled Maintenance opportunity.
- Note: In both cases, the decision to defer full decontamination would need to consider any Hazard⁷ to personnel⁸ alongside Airworthiness considerations.
6. The removal of body fluid contamination from an Aircraft is not a task that can be neatly defined in TI, especially as Aircraft components may need to be removed to determine the extent of the contamination and to enable access to complete decontamination. The determination that no further decontamination is required will be made on a case-by-case basis by appropriately authorized⁴ personnel.

⁷ Refer to RA 1210 – Ownership and Management of Operating Risk (Risk to Life).

⁸ Refer to RA 1020 – Aviation Duty Holder and Aviation Duty Holder-Facing Organizations - Roles and Responsibilities.

RA 4213 - Control of Air System Components used in Ground Test Facilities

Rationale

Ground test facilities may include components that have been modified for their function in the ground test facility, yet are still physically capable of being fitted to an operating Air System. It is therefore imperative that all ground test facility components are uniquely identified and strictly controlled. Without adequate control and Maintenance of such components there is increased Risk to Airworthiness and subsequent Risk to Life. ► This RA ◀ requires that ► the Accountable Manager (Maintenance) (AM(M))¹ and / or the ◀ Military Continuing Airworthiness Managers (Mil CAMs)² ◀ ensure that ► aviation engineering ◀ orders and / or ► local ◀ procedures³ ◀ are issued, detailing the control measures required for the strict control of all Air System components allocated to ground test facilities.

Contents

4213(1): Control of Air System Components used in Ground Test Facilities

Regulation 4213(1)

Control of Air System Components used in Ground Test Facilities

4213(1) The ► AM(M)¹ and / or the ◀ Mil CAM² shall ensure that ► aviation engineering ◀ orders and / or ► local ◀ procedures³ ◀ are promulgated to control Air System components utilized within ground test facilities ► on Government Property⁴. ◀

Acceptable Means of Compliance 4213(1)

Control of Air System Components used in Ground Test Facilities

1. Where ground test facilities are used, the ► AM(M)¹ and / or the ◀ Mil CAM² ◀ should ensure that ► aviation engineering ◀ orders and / or ► local ◀ procedures³ ◀ are in place controlling the use of Air System components within ground test facilities, which include as a minimum:
 - a. How to identify components⁵ used in ground test facilities.
 - b. The requirements for the segregation of components that have been modified for use in the ground test facilities, to prevent the uncontrolled release of components to an Air System or into the supply chain.
 - c. The requirements for detailing the component's status.
 - d. A process to ensure that Air System components are not used in, or modified for use in, ground test facilities without the Authorization of the relevant Type Airworthiness Authority.
 - e. ► A process to detail the Maintenance and / or de-modification procedures and any serviceability requirements, including removal of any additional marking⁶, which should be carried out before the component can subsequently be certified for release⁷ and be fitted to an Air System⁸. ◀

¹ ► Refer to RA 4806(1): Accountable Manager (Maintenance) (MRP 145.A.30(a)). ◀

² Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

³ ► Refer to RA 4009 – Aviation Engineering Orders and Local Procedures.

⁴ Sponsorship of each aviation engineering order and / or local procedure is to be clearly documented in accordance with RA 4009(1): Aviation Engineering Orders and Local Procedures. ◀

⁵ Ground test facility components may be classified as: specifically manufactured for the ground test facility; permanently modified; temporarily modified or unmodified.

⁶ Such as 'Ground Use Only'.

⁷ ► Refer to RA 4812(4): Certification of Component Release and Cannibalization (MRP 145.A.50(d)).

⁸ Refer to RA 4809(2): Suitability of Components (MRP 145.A.42(b)). ◀

**Guidance
Material
4213(1)**

Control of Air System Components used in Ground Test Facilities

2. Supporting documentation for temporarily modified components will state that the component has been temporarily modified and describe the Modification. ▶◀

RA 4253 – Loose Article Recovery ▶◀

Rationale

Items that have been dropped, lost, become detached or unaccounted for in and around Air Systems and / or Air System components are classed as loose articles. The presence of loose articles may result in control restrictions and system malfunctions compromising Airworthiness. ▶ This RA ◀ requires that ▶ aviation engineering orders and / or local ◀ procedures¹◀ are put in place to record and recover loose articles, and ensure that the release of an Air System from Maintenance following an unsuccessful loose article search takes place only once the associated Risk to Life is As Low As Reasonably Practicable and Tolerable.

Contents

4253(1): Loose Article Recovery
4253(2): Certification of Air System Release Following Unsuccessful Loose Article Search

Regulation 4253(1)

Loose Article Recovery

4253(1) The Military Continuing Airworthiness Manager (Mil CAM)² shall ensure that ▶ aviation engineering ◀ orders and / or ▶ local ◀ procedures¹◀ are promulgated for the recovery of loose articles.

Acceptable Means of Compliance 4253(1)

Loose Article Recovery

1. The Mil CAM²◀ should ensure that ▶ aviation engineering ◀ orders and / or ▶ local ◀ procedures¹◀ for the recovery of loose articles include reference to the process at Annex A and the following requirements:

- a. Guidance on the appropriate scope and conduct of search activity to maximize the probability of recovering a loose article.
- b. The requirements for consultation with the Military Continuing Airworthiness Management Organization (Mil CAMO) including when the extent of searches may Cause further detriment to Airworthiness.
- c. The requirement to manage confirmed or suspected loose articles as Faults³ and record them in the Technical Log⁴.
- d. The requirement to notify other people and organizations, as applicable, who might be affected⁵.
- e. The requirements for a mandatory search after a loose article airborne check⁶, where utilized, before Certification of Air System Release.

Guidance Material 4253(1)

Loose Article Recovery

2. This Regulation covers the management of two distinct scenarios and unless explicitly stated, 'loose article' refers to both:

- a. Scenario one – Loose Article. An item is confirmed or suspected as being lost, constituting a potential loose article, for which suitable searches must be conducted; or
- b. Scenario two – Found Article. An item is found and is suspected of originating from an Air System or an Air System component, for which integrity checks must be conducted to locate its origin.

¹ ▶ Refer to RA 4009 – Aviation Engineering Orders and Local Procedures. ◀

² Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

³ Refer to RA 4812(3): New Faults (MRP 145.A.50(c)).

⁴ Refer to RA 4813 – Maintenance Records (MRP 145.A.55).

⁵ Refer to RA 1410 – Occurrence Reporting and Management.

⁶ Refer to RA 4051 – Airborne Checks.

**Guidance
Material
4253(1)**

3. Detailing the extent and conduct of searches are Maintenance activities; therefore, individuals must be assessed as Competent and appropriately authorized⁷ to undertake such activities.
4. The recording of suspected loose articles and loose article recovery efforts will include the detail of searches and / or integrity checks and their outcomes.
5. If a loose article is not recovered after searches, the Certification of Air System Release must be undertaken⁸.

**Regulation
4253(2)**

Certification of Air System Release Following Unsuccessful Loose Article Search

4253(2) The Mil CAM² **shall** ensure that ►aviation engineering◄ orders and / or ►local◄ procedures¹ are promulgated to manage the Certification of Air System Release⁹ after unsuccessful loose article searches.

**Acceptable
Means of
Compliance
4253(2)**

Certification of Air System Release Following Unsuccessful Loose Article Search

6. The Mil CAM² **should** ensure that ►aviation engineering◄ orders and / or ►local◄ procedures¹ include:
 - a. Requirements¹⁰ for personnel authorized to Certify the Air System Release following an unsuccessful loose article search.
 - b. Requirement for, and the method of, Mil CAMO notification¹¹ where searches are unsuccessful.
 - c. The process by which personnel certifying the Air System Release for Flight¹² following an unsuccessful loose article search are assessed as Competent⁷.

**Guidance
Material
4253(2)**

Certification of Air System Release Following Unsuccessful Loose Article Search

7. The Certification of Air System Release⁹ is the act of completing the final signatures ►/ electronic Authorization,◄ confirming the completion of the preceding Maintenance processes ►by suitably authorized personnel.◄
8. The management of loose articles on Military Registered Civil Owned Aircraft will take into account platform specific instructions accepted by the Type Airworthiness Authority in the Air Safety Strategy¹³.

⁷ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

⁸ ►Refer to RA 4253(2): Certification of Air System Release Following Unsuccessful Loose Article Search.◄

⁹ Refer to RA 4812(1): Certification of Air System Release (MRP 145.A.50(a)).

¹⁰ Refer to RA 4812(5): Deferred and Incomplete Maintenance (MRP 145.A.50(e)).

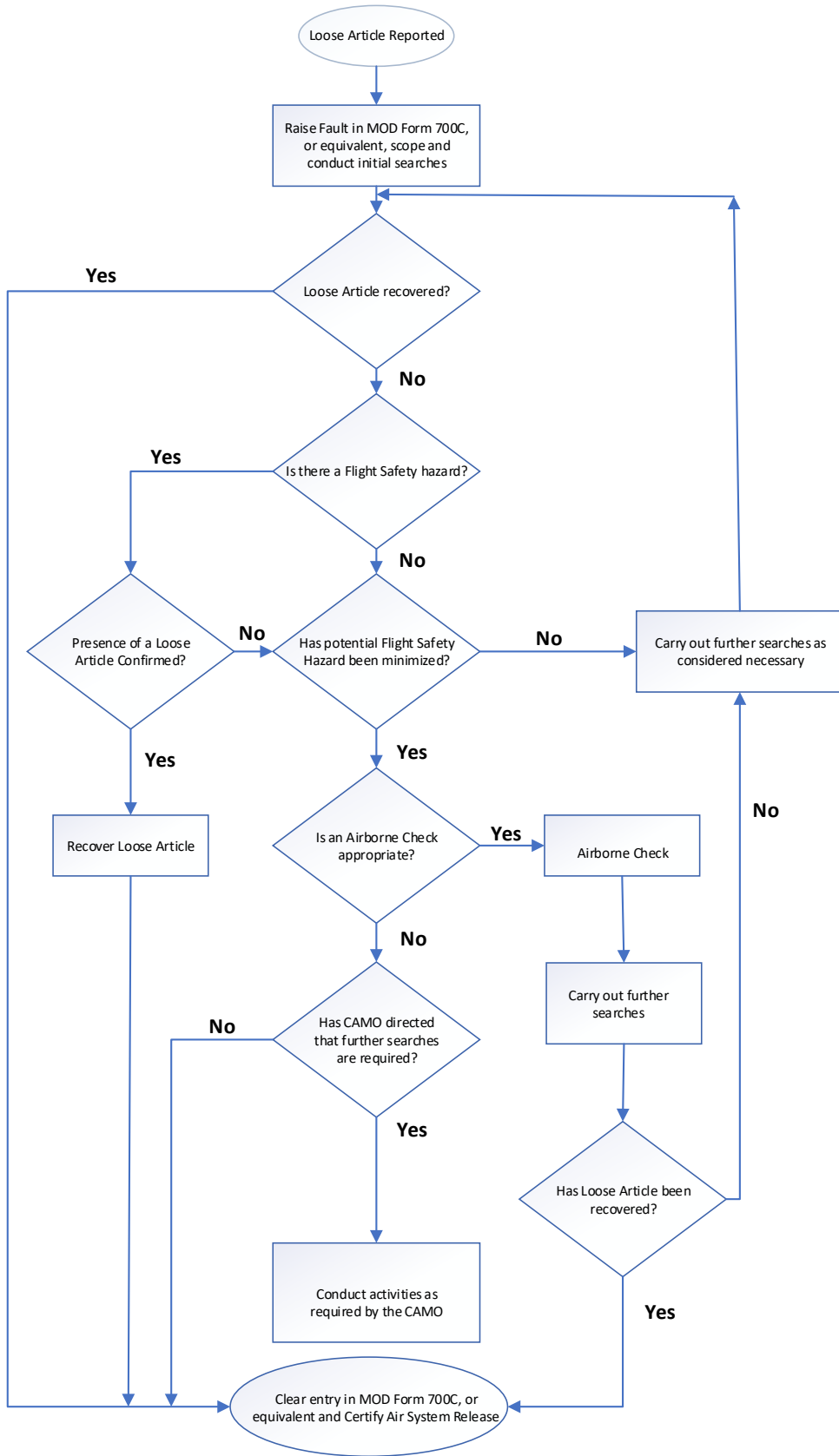
¹¹ Refer to RA 4947 – Continuing Airworthiness Management - MRP Part M Sub Part G.

¹² Refer to RA 4961(1): Aircraft Maintenance Programme.

¹³ ►Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.◄

ANNEX A

FLOWCHART FOR THE RECOVERY OF A LOOSE ARTICLE



Intentionally Blank for Print Pagination

RA 4510 - Ground Running of Aero-Engines and Auxiliary Power Units

Rationale

Military registered Air Systems may require the operation of aero-engines or Auxiliary Power Units (APUs)¹ to undertake post Maintenance / installation checks or to provide Air System services² for other system Maintenance activity. Without effective controls for the conduct of ground running of aero-engines and APUs for Maintenance purposes, the threat to Air System Airworthiness and Risk to Life may be increased. **► This RA ◀** requires that control measures are put in place to ensure that aero-engine and APU Maintenance ground runs are carried out safely.

Contents

4510(1): Ground Running Aero-Engines and Auxiliary Power Units

Regulation 4510(1)

Ground Running Aero-Engines and Auxiliary Power Units

4510(1) **► The Chief Air Engineer (CAE)³ and / or ◀** the Military Continuing Airworthiness Manager (Mil CAM)⁴ **shall** have **► aviation engineering ◀** orders and / or **► local ◀** procedures⁵ to control the Maintenance ground running of aero-engines and APUs^{6, 7}.

Acceptable Means of Compliance 4510(1)

Ground Running Aero-Engines and Auxiliary Power Units

1. Maintenance ground running **► CAE³ and / or Mil CAM⁴ aviation engineering ◀** orders and / or **► local ◀** procedures⁵ **should** be promulgated by Approved Maintenance Organizations in the Maintenance Organization Exposition or by Military Maintenance Organizations in Aviation Engineering Standing Orders **► or equivalent, ◀** and **should** contain as a minimum:
 - a. The composition of the Maintenance ground running team, their specific Competence and Authorization requirements⁸ and their responsibilities.
 - b. Any local considerations or actions that **should** be taken prior to and during a Maintenance ground run that is required following an unscheduled landing away from the Main Operating Base⁹. **► ◀**
 - c. Actions to be taken in an emergency.
 - d. **► ◀**
 - e. The required communications that **should** be established prior to and during the Maintenance ground run.
2. Maintenance personnel authorized to carry out Maintenance ground runs **should** be assessed as Competent and subject to adequate recurrent training to ensure continued Competency.

Guidance Material 4510(1)

Ground Running Aero-Engines and Auxiliary Power Units

3. The Maintenance ground running of the main propulsion engine(s) when installed on an Air System may Cause unintended taxi or flight. In such circumstances, it may be necessary or appropriate to use Aircrew. The **► aviation engineering ◀** orders **► and / ◀** or **► local ◀** procedures⁵ will need to include Delivery Duty Holder

¹ Either installed or uninstalled on an Air System.

² Air System services include, but are not limited to: hydraulic power, pneumatics or electrical power supply.

³ **► Refer to RA 1023 – Chief Air Engineers – Air Safety Responsibilities. ◀**

⁴ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

⁵ **► Refer to RA 4009 – Aviation Engineering Orders and Local Procedures. ◀**

⁶ Not applicable to Air Systems operating under RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered Air Systems Arrangements.

⁷ Sponsorship of each aviation engineering order and / or local procedure is to be clearly documented in accordance with RA 4009(1): Aviation Engineering Orders and Local Procedures. **◀**

⁸ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

⁹ **► Refer to RA 2309(17): Landing away from Active Airfields. ◀**

**Guidance
Material
4510(1)**

or Accountable Manager (Military Flying) direction, for when the use of suitably qualified and Competent Aircrew is to be considered, and when it is mandatory.

4. ▶ The authorized sites for Maintenance ground running are found within the Defence Aerodrome Manual (DAM)¹⁰. ◀

¹⁰ ▶ Refer to RA 1026(4): Management of a Defence Aerodrome Manual and Defence Aerodrome Assurance Framework. ◀

RA 4600 – Aircraft Assisted Escape Systems – Safety and Maintenance ▶◀

Rationale

Maintenance personnel may be required to maintain and / or work in the vicinity of Aircraft Assisted Escape Systems (AAES) and / or Crew Escape Systems (CES) fitted to Aircraft or in storage areas. Inadvertent operation of an AAES or CES¹, or its failure to operate correctly, has the potential to Cause serious Injury or death. ▶This RA◀ details the Safety precautions and additional Maintenance checks required for AAES.

Contents

4600(1): Aircraft Assisted Escape Systems Safety Precautions

4600(2): Aircraft Assisted Escape Systems Maintenance Responsibilities

Regulation 4600(1)

Aircraft Assisted Escape Systems Safety Precautions

4600(1) ▶The Chief Air Engineer (CAE)² and / or◀ the Military Continuing Airworthiness Manager (Mil CAM)³ **shall** ensure that ▶aviation engineering◀ orders and / or ▶local◀ procedures▶⁴◀ are promulgated detailing the Safety precautions applicable to AAES▶⁵◀.

Acceptable Means of Compliance 4600(1)

Aircraft Assisted Escape Systems Safety Precautions

1. The fitment, removal or position setting of AAES Safety devices, or associated system Safety devices, **should** be conducted in accordance with (iaw) Technical Information (TI).
2. ▶The CAE² and / or the Mil CAM³ aviation engineering◀ orders and / or ▶local◀ procedures▶⁴◀ **should** be promulgated by Approved Maintenance Organizations in the Maintenance Organization Exposition (MOE)⁶ or by Military Maintenance Organizations in Aviation Engineering Standing Orders ▶or equivalent,◀ and as a minimum **should** state:
 - a. Training and Competence requirements for Maintenance personnel requiring access to AAES Hazard zones⁷.
 - b. AAES Safety device Configuration for the movement of Aircraft into hangars or shelters.
 - c. ▶Aviation engineering orders and / or local◀ procedures▶⁴◀ for un-trained Maintenance personnel or visitors requiring access to AAES Hazard zones.
3. Maintenance personnel requiring access to AAES Hazard zones **should** be assessed as Competent⁸ and **should** be re-assessed every 12 months⁹.
4. AAES that have been removed from an Aircraft for Maintenance **should** be stored in a location or facility that has a valid Explosives Licence¹⁰.

¹ For the purpose of this Regulatory Article (RA) AAES is to be read to include CES.

² ▶Refer to RA 1023 – Chief Air Engineers – Air Safety Responsibilities.◀

³ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

⁴ ▶Refer to RA 4009 – Aviation Engineering Orders and Local Procedures.

⁵ Sponsorship of each aviation engineering order and / or local procedure is to be clearly documented iaw RA 4009(1): Aviation Engineering Orders and Local Procedures.◀

⁶ Refer to RA 4816(1): Content of an Maintenance Organization Exposition (MRP 145.A.70(a)).

⁷ Hazard zones are storage areas, cockpits, or cabins, where AAES is held or installed. This is inclusive of installed and uninstalled AAES hazard zones as defined in the TI.

⁸ Refer to RA 4806(5): Personnel Competences and Authorization (MRP145.A.30(e)).

⁹ DAP109A-0100-2(N/A/R)1 AAES Part 4 Leaflet 1 – Training Policy for AAES.

¹⁰ Refer to DSA 03 – OME, Part 2, In-Service and Operational Safety Management of OME, Chap 9 and Chap 10 Sect 8, Annex C.

**Guidance
Material
4600(1)**

Aircraft Assisted Escape Systems Safety Precautions

5. Personnel ►will◀ be re-trained if any significant changes are made to the AAES.
6. Ordnance, Munitions and Explosives ►will◀ be stored in explosives licenced locations or facilities¹⁰. Such storage facilities are not to be used for storage of other equipment, material or dangerous goods.

**Regulation
4600(2)**

Aircraft Assisted Escape Systems Maintenance Responsibilities

- 4600(2) The ►CAE² and / or the◀ Mil CAM►³◀ shall strictly control the Maintenance of AAES►⁵◀. Whenever an AAES or associated component is disturbed or subject to Maintenance activity, the AAES or associated component **shall** be subject to Maintenance checks, vital checks and Independent Inspection.

**Acceptable
Means of
Compliance
4600(2)**

Aircraft Assisted Escape Systems Maintenance Responsibilities

7. Maintenance personnel required to work on AAES **should** be assessed as Competent and authorized⁸.
8. Mandatory checks **should** be conducted at critical stages during the assembly and installation of AAES. The following terminology **should** be used:
 - a. **Maintenance checks** – Maintenance checks **should** be carried out whenever an AAES component undergoes any form of Maintenance in a bay or as part of the bay activity in a licensed explosives area.
 - b. **Vital checks** – Vital checks **should** be carried out at defined stages during the process of installing an AAES, or a component part of an AAES in an Aircraft. Vital checks **should** be undertaken at the Aircraft, or in a licensed explosives area associated with the Aircraft Maintenance activity.
 - c. **Independent checks** – Independent checks **should** be made at the Aircraft after installation of an AAES, or a component part of an AAES.
9. Maintenance, Vital and Independent checks **should** be recorded in the Maintenance Log¹¹.
10. The movement of AAES Safety devices is a Maintenance activity and **should** be undertaken iaw MRP Part 145 requirements.

**Guidance
Material
4600(2)**

Aircraft Assisted Escape Systems Maintenance Responsibilities

11. **Maintenance checks** are checks for correct assembly, locking and function to ensure the reliable operation of the AAES. These checks are carried out because they cannot be readily undertaken during or after installation or re-installation of the component in an Aircraft. The relevant Maintenance checks are detailed in the appropriate bay Maintenance schedule.
12. **Vital checks** are checks for correct assembly, routeing, locking and function to ensure the reliable operation of the AAES, which cannot be readily undertaken before installation or re-installation commences, or after it has been completed. Details of each vital check are contained in the appropriate Aircraft Maintenance schedule or procedure.
13. **Independent Checks** provide final visual confirmation that all locking, routeing and installation processes have been carried out correctly. The detail of each independent check is contained in the appropriate Aircraft Maintenance schedule or procedure. They may be divided by sub-system, eg CES independent check, canopy system independent check and ejection seat independent check.

¹¹ Refer to RA 4813(1): Recording and Retention of Maintenance Work (MRP 145.A.55(a)).

RA 4657 – Weapon Loading and Armed Aircraft Maintenance

Rationale

Military registered Aircraft¹ may have the need for preparation, Loading and unloading of munitions² for operational and / or training requirements. Once loaded, Maintenance of that Armed Aircraft may be necessary to achieve the operational task. Without defined Safety precautions and appropriately trained and Competent personnel to load³ munitions, there is a Risk of Inadvertent Release or firing of an Aircraft's weapons which could Cause extensive damage and Risk to Life. ► This RA ◀ details the Safety precautions and training, Competence assessment and Authorization requirements for personnel involved with the Loading of munitions, Maintenance and parking of Armed Aircraft.

Contents

4657(1): Armed Aircraft Maintenance

4657(2): Weapon Loading Personnel Requirements

4657(3): Weapon Loading Training Requirements

Regulation

4657(1)

Armed Aircraft Maintenance

4657(1) The Military Continuing Airworthiness Manager (Mil CAM)⁴ **shall** ensure that ► aviation engineering ◀ orders and / or ► local ◀ procedures⁵ are issued to strictly control the Maintenance, Loading and parking of Armed Aircraft.

Acceptable Means of Compliance 4657(1)

Armed Aircraft Maintenance

1. The ► aviation engineering ◀ orders and / or ► local ◀ procedures⁵ **should** be promulgated by Approved Maintenance Organizations (AMO) in the Maintenance Organization Exposition (MOE)⁶ or by Military Maintenance Organization (MMO) in Aviation Engineering Standing Orders (AESOs) ► or equivalent. ◀
2. The ► Mil CAM⁴ aviation engineering ◀ orders and / or ► local ◀ procedures⁵ **should** detail:
 - a. The requirements for Armed Aircraft that have been diverted, including diversions to non-MOD Airfields.
 - b. ► Processes ◀ for performance failures of Aircraft munitions, Explosive Components or related equipment.
3. Other than flight servicing, munitions **should** be unloaded prior to any Maintenance activity being carried out on the Aircraft. However, in exceptional circumstances and if an operational imperative exists, there may be some permissible Maintenance activities that can be carried out on Armed Aircraft. These activities are detailed in the relevant Technical Information⁷ (TI) or can be authorized by Commands, but Authorization **should** be granted prior to any work being undertaken by an appropriately authorized individual⁸.
4. The individual authorizing these permissible Maintenance activities on an Armed Aircraft **should** conduct a Risk Assessment on each occasion. Factors to be considered include but are not limited to:
 - a. The likelihood and Risk of an Occurrence and the outcome.
 - b. The operational sortie imperative.

¹ Refer to ► RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment. ◀

² Refer to DSA03 – Ordinance, Munitions and Explosives (OME), Part 2. A complete device, charged with explosives, propellants, pyrotechnics, initiating compositions or nuclear, biological or chemical material, for use in military operations.

³ Load also includes the activities of munitions preparation and unloading for the purpose of this Regulation.

⁴ Refer to RA 1011 – Military Continuing Airworthiness Manager Responsibilities.

⁵ ► Refer to RA 4009 – Aviation Engineering Orders and Local Procedures. ◀

⁶ Refer to RA 4816(1): Content of a Maintenance Organization Exposition (MRP 145.A.70(a)).

⁷ Refer to RA 4810 – Technical Information (MRP 145.A.45).

⁸ Refer to RA 1006 – Delegation of Engineering Authorizations.

**Acceptable
Means of
Compliance
4657(1)**

- c. The nature of the weapon load.
 - d. Additional Safety precautions that may be required, such as enhancing supervision or additional fire / rescue assets.
5. Armed Aircraft **should** only be parked at locations or facilities that have a valid Explosives Licence⁹.
 6. For ship hangars – Direction on stowage of Armed Aircraft in ships hangars is detailed in BRd 862(1) MOD Maritime Explosive Orders Vol 1 (Surface Ships).
 7. A formal system **should** be in place whereby unit weapons and air movements staff are advised whenever a thunderstorm level / risk high or moderate is declared by the responsible meteorological office¹⁰. If declared, munition Loading in progress, including the return of explosives to their normal storage sites, **should** be completed as a priority and no further weapon Loading commenced unless authorized.
 8. If munition Loading to an Aircraft is operationally essential in thunderstorm level / risk high, a dynamic Risk Assessment **should** be carried out taking into consideration the susceptibility of the munitions to lightning strike¹¹ and authorized by the operational commander¹². Additionally:
 - a. The activity **should** be conducted in a facility that has a compliant Lightning Protection System.
 - b. If conducted within a Hardened Aircraft Shelter (HAS), the HAS doors are to remain closed to prevent blast and fragmentation propagation.
 9. Implementation of operational arming¹³ **should** only be authorized by the operational commander¹² when operationally essential, no other arming options are available and that an appropriately authorized Safety case has been developed¹¹. Operational arming **should** only be carried out by an authorized person¹⁴. Wherever possible, duplicate Safety devices **should** be stowed in the Aircraft prior to taxiing to avoid the need to open panels / stowage.

**Guidance
Material
4657(1)**

Armed Aircraft Maintenance

10. Where there is a requirement to park an Armed Aircraft at a location or facility that does not have a valid Explosives Licence, the following actions are required:
 - a. An OME Risk Assessment must be carried out¹¹.
 - b. The appropriate Head of Establishment and Inspector of Explosives will be notified, seeking their advice, with the aim of being issued an Explosives Licence Waiver for that activity;
 - c. Parking must meet the requirements of explosives Regulations⁹, safe Heading for directional weapons and Flare Danger Areas will be achieved;
 - d. The Aircraft will remain in the Initially Armed state; and
 - e. There will not be any Maintenance activity carried out.

⁹ Refer to DSA 03 – OME, Part 2, Defence Code of Practice ►◄ for In-Service and Operational Safety Management of OME, Chap 10, Sect 5.

¹⁰ Refer to RA 3301(2): Meteorological Information Requirements.

¹¹ Refer to DOSR Publication 001, Guidance on completing Risk Assessment for Explosives Activity.

¹² Refer to RA 1020 – Aviation Duty Holder and Aviation Duty Holder-Facing Organizations - Roles and Responsibilities.

¹³ A modified arming procedure, adopted to allow an armed Aircraft to taxi in the finally armed state, to a location with a safe heading, where safety devices are then removed in accordance with (iaw) TI. Also referred to as, end of runway arming.

¹⁴ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

**Regulation
4657(2)**

Weapon Loading Personnel Requirements

4657(2) The ►Chief Air Engineer (CAE)¹⁵ and / or the ◀Mil CAM⁴ ◀ shall ensure that ►aviation engineering ◀ orders and / or ►local ◀ procedures⁵ ◀ are issued, controlling the Loading of munitions to Aircraft by trained, Competent and Authorized personnel¹⁶ ◀.

**Acceptable
Means of
Compliance
4657(2)**

Weapon Loading Personnel Requirements

11. ►The CAE¹⁵ and / or the Mil CAM⁴ aviation engineering ◀ orders and / or ►local ◀ procedures⁵ ◀ should be promulgated by the AMOs in the MOE⁶ or by the MMO in AESOs ►or equivalent. ◀
12. The ►CAE¹⁵ and / or the Mil CAM⁴ aviation engineering ◀ orders and / or ►local ◀ procedures⁵ ◀ for the Loading of munitions should include as a minimum:
 - a. The number and composition of Loading teams for each munition.
 - b. Personnel Competence and Authorization requirements¹⁴.
 - c. The requirements and responsibilities for training, assessing Competence and the awarding of Authorizations¹⁴.
 - d. Details of any non-explosive and non-expendable stores that are to be subject to similar requirements as munitions.
13. Maintenance personnel authorized to load munitions to Aircraft should be subject to adequate recurrent training to ensure continued Competency.

**Guidance
Material
4657(2)**

Weapon Loading Personnel Requirements

14. When preparing for war fighting or enduring armed operations, or due to the nature of the working environment, it may be appropriate to increase the frequency of Competency checks.

**Regulation
4657(3)**

Weapon Loading Training Requirements

4657(3) The ►CAE¹⁵ and / or the ◀Mil CAM⁴ ◀ shall ensure that ►aviation engineering ◀ orders and / or ►local ◀ procedures⁵ ◀ are issued detailing that munitions load training is carried out in a realistic and representative environment¹⁶ ◀.

**Acceptable
Means of
Compliance
4657(3)**

Weapon Loading Training Requirements

15. Wherever possible, weapon load training should be performed on Serviceable Aircraft. Where a Serviceable Aircraft is not available, it is acceptable for the Aircraft to have other Faults, not relating to the armament system, but their presence should not impede the training. The Aircraft Armament System should be Serviceable.
16. Weapons used to carry out training and Competency checks should be fully representative. When using drill or training weapons, the ►processes ◀ and precautions should be followed as if a live load is being carried out.

**Guidance
Material
4657(3)**

Weapon Loading Training Requirements

17. The ►CAE¹⁵ and / or the ◀Mil CAM⁴ ◀ in conjunction with the Type Airworthiness Authority, may authorize the use of training Aircraft or training rigs,

¹⁵ ►Refer to RA 1023 – Chief Air Engineers – Air Safety Responsibilities.

¹⁶ Sponsorship of each aviation engineering order and / or local procedure is to be clearly documented iaw RA 4009(1): Aviation Engineering Orders and Local Procedures. ◀

**Guidance
Material
4657(3)**

provided that training can be carried out safely and in a manner representative of the real Aircraft.

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

RA 4800 – General Requirements (MRP Part 145)

Rationale

MRP Part 145 consists of discrete Regulatory Articles (RAs)¹ that govern Maintenance organizations. This RA outlines the fundamental requirements for Maintenance organizations and where they apply to the Maintenance Approved Organization Scheme (MAOS). Contracting with a Maintenance organization without an assessment of the Maintenance organization's Competence could lead to Maintenance errors and increased Risk to Life. An organization's achievement of the outcomes expressed in MRP Part 145 demonstrates a level of Competence that reduces the likelihood of Maintenance errors and contributes towards Aviation Duty Holder and Accountable Manager (Military Flying) Assurance of the Airworthiness of military registered Air Systems and components.

Contents

Definitions Relevant to RA 4800 – 4849 (MRP Pt 145) Series

4800(1): General Requirements (MRP Part 145)

4800(2): Distribution of Approved Maintenance Organization Exposition and Supplement Documents

Definitions

Definitions Relevant to RA 4800 – 4849 (MRP Pt 145) Series

1. **Tradesperson.** Competent and Authorized staff² responsible for executing Air System and Air System component Maintenance activities. This role may also be known as Support Staff within Approved Maintenance Organizations (AMOs), or 1st Signature within Military Maintenance Organizations (MMOs).
2. **Supervisor.** Competent and Authorized staff² responsible for carrying out supervision of Tradespersons in the execution of their Maintenance activities. This role may also be known as Support Staff with supervisory Responsibilities within AMOs, or 2nd Signature within MMOs.
3. **Coordinating / Certifying Staff.** Competent and Authorized staff^{2,3} holding Authorization within the Maintenance organization to endorse the appropriate Certification of Air System Release and / or Component Release⁴ (Air System coordination / Work Order coordination). This role may also be known as the 3rd Signature within MMOs.

Note:

The term “certifying staff”, when uncapitalised has a different meaning from “Certifying Staff” defined above. When uncapitalised “certifying staff” is the collective noun for Maintenance personnel with Responsibilities for signing Maintenance documentation as either Tradesperson, Supervisor or Coordinating / Certifying Staff.

Regulation 4800(1)

General Requirements (MRP Part 145)

4800(1) Air System Maintenance⁵ **shall** only be carried out by organizations whose management, technical resources and Quality Assurance arrangements are demonstrably fit for purpose to provide products and services of the required Quality, economically and on time.

¹ Refer to the RA 4800 - 4849 (MRP Part 145) series.

² Refer to RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

³ Refer to RA 4801(1): Certifying Staff.

⁴ Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50).

⁵ For the purposes of this RA, Air System Maintenance refers to Air Systems (including their Products, Parts and Appliances), Airborne Equipment and Air Launched Weapons.

Acceptable Means of Compliance 4800(1)

General Requirements (MRP Part 145)

Common AMC

4. Nil.

Additional AMC – MMOs only

5. A military-run organization does not require a MAOS Approval to conduct Air System Maintenance⁵, but its compliance with the relevant parts of MRP Part 145 **should** be assured under single-Service arrangements. In addition, some 3rd party Assurance activity will be conducted by the MAA as part of existing Audit arrangements.

Aircraft Cross Maintenance (ACM)

6. Air System Maintenance⁵ conducted by a Maintenance organization from another nation **should** only be undertaken by organizations whose National Military Airworthiness Authority is formally Recognised⁶ by the UK Military Aviation Authority (MAA) with a current Recognition Certificate. ACM **should** be undertaken in accordance with (iaw) the Recognition Implementing Arrangement (RIA) and associated Technical Annexes for the partner nation. However, providing a current Recognition Certificate is in place, Commands may negotiate ACM agreements appropriate to their operational commitments pending issuance of an RIA.

Additional AMC – AMOs only

7. A Contractor-run organization executing Maintenance activities as defined in RA 1005(3)⁷, **should** apply for the issue or continuation of an Approval for the Maintenance of military registered Air Systems⁵ through the MAOS, iaw MRP Part 145, or, where applicable, the MRP Part 145 Supplement - Requirements Document (S-RD) at Annex A.

8. A Contractor-run Maintenance organization holding a UK Civil Aviation Authority (CAA) Part 145 Approval **should** apply for an MAA Approval through the MRP Part 145 S-RD process detailed in Annex A to this Regulation. This process **should** only be used by those organizations meeting the qualifying criteria and conditions contained within this document and when agreed by the MAA.

Guidance Material 4800(1)

General Requirements (MRP Part 145)

Common GM

Applicability

9. MRP Part 145 must be read in conjunction with MAA01⁸ and this RA must be read in association with RA 1005⁹. MRP Part 145 forms part of the wider Continuing Airworthiness (CAw) Engineering 4000 Series RAs that govern CAw activity. As such, these Regulations have applicability to military-run Air System Maintenance⁵ organizations; these organizations will be referred to throughout MRP Part 145 as MMOs. The applicability of the RA 4800 series to MMOs and AMOs is summarized in table 1.

Table 1. MRP Part 145 Applicability

RAs	MMO Applicability	AMO Applicability
RA 4800 - 4801	Yes	Yes
RA 4802 - 4804	No	Yes
RA 4805 - 4815	Yes	Yes
RA 4816	No	Yes
RA 4817	Yes	Yes

⁶ Recognition is the process used to evaluate other military aviation regulators and assess the potential to use their Airworthiness outputs within MAA processes, see [MAA Recognition](#).

⁷ Refer to RA 1005(3): Maintenance Organizations.

⁸ Refer to [MAA01: MAA Regulatory Principles](#).

⁹ Refer to RA 1005 – Contracting with Competent Organizations.

**Guidance
Material
4800(1)**

RA 4818 - 4820	No	Yes
RA 4821	Yes	Yes

10. RAs within MRP Part 145 detail Acceptable Means of Compliance (AMC) and / or Guidance Material (GM) that is applicable to either MMOs only, AMOs only, or both. Where necessary, AMC / GM has been split under the following 3 headings: 'Common AMC / GM', 'Additional AMC / GM - MMOs only' and 'Additional AMC / GM - AMOs only'. 'Common AMC' is equally applicable to both MMOs and AMOs; 'Additional AMC – MMOs / AMOs only' is applicable to either an MMO or AMO respectively. It is not permissible for AMOs to follow the 'MMOs only' AMC in lieu of the AMO only AMC, or vice-versa, without specific Approval from the MAA to do so. Where no such headings exist, the entire AMC / GM relating to that sub-RA is applicable to both MMOs and AMOs.

Terminology

11. The MRP Part 145 has been derived primarily from civilian European Aviation Safety Agency (EASA) Part 145 Regulations and as such many of the terminologies used in the MRP are civilian aviation terms. These terms include 'certifying staff', 'support staff' and various colloquial terms for Air System engineering personnel. In some cases, the civilian aviation term of 'support staff', referring to the tradespersons carrying out Maintenance activities, has been confused with administrative support personnel. The collective noun, certifying staff, has previously been confused with Certifying Staff who are Authorized to endorse the appropriate Certification of Air System Release and / or Component Release. Therefore, the language utilized throughout the MRP Part 145 has been standardized.

12. Clarifying definitions of these terms have been included at the start of this RA and are applicable throughout the RA 4800 - 4849 (Part 145) Series.

Warning

13. The MOD, like its Contractors, is subject to UK Health, Safety and Environmental Protection law. All Defence Standards and RAs either directly or indirectly invoke the use of processes and procedures that could be injurious to health or the environment if adequate precautions are not taken. CAw Engineering 4000 Series RAs or their use in no way absolves users from complying with statutory and legal requirements relating to Health, Safety and Environmental Protection.

Additional GM – MMOs only

14. The scale of an MMO may vary depending on the organizational construct within which it is located. MMOs may conduct Maintenance in the forward domain, the depth domain, or both, and it is possible that several MMOs may be located at the same Unit or MOD site.

15. Work undertaken in support of defined Maintenance packages and / or Modification programmes at an MMO where such work is not undertaken under its control¹⁰ would be regarded as "Contractor-run" Maintenance and hence an organization undertaking such work will require Approval under MRP Part 145 and be considered as a separate AMO.

Additional GM – AMOs only

16. MRP Part 145 (RA 4800 – 4849) provides the Regulation to be met by Contractor-run Maintenance organizations to qualify for the Approval required by this Regulation and RA 1005⁹ for military registered Air Systems⁵ Maintenance. Organizations obtaining such Approval will be referred to throughout MRP Part 145 as AMOs.

17. While MRP Part 145 establishes the requirements to be met by a Contractor-run Maintenance organization to qualify for the issue or continuation of an MAA

¹⁰ The phrase "not undertaken under its control" is meant as those activities not undertaken as part of work force substitution activity for which the Accountable Manager (Maintenance) (AM(M)) retains the power to authorize personnel as Coordinating / Certifying Staff, Tradespersons or Supervisors. Examples are Modification programmes or Preventive Maintenance packages undertaken by a Contractor Working Party.

**Guidance
Material
4800(1)**

Approval through MAOS, it does not negate the requirement for such an organization to adhere to other applicable Regulations (as Contracted) within the MAA Regulatory Publications (MRP). Each RA will be considered for applicability. Such Regulations include, but are not limited to, those in the General 1000 Series. The AMC for these Regulations may refer to MMO specific terms; AMO specific equivalent terms may be used instead but the AMO's means of meeting the Regulation will be demonstrably no less safe than the requirements of the AMC and will be detailed in the organization's Maintenance Organization Exposition (MOE).

Application for MAOS MRP Part 145 Approval

18. A Contracted organization applying for the issue or continuation of a MAOS Approval will apply to the MAA by email to DSA-MAA-OA-ACC@mod.gov.uk.

**Regulation
4800(2)**

Distribution of Approved Maintenance Organization Exposition and Supplement Documents

4800(2) AMOs **shall** provide the Type Airworthiness Authority (TAA)¹¹ and the Military Continuing Airworthiness Manager (Mil CAM) an extant copy of the organization's Approved MOE and supplement¹².

**Acceptable
Means of
Compliance
4800(2)**

Distribution of Approved Maintenance Organization Exposition and Supplement Documents

19. Following Approval of the supplement the AMO **should** distribute an up to date copy of the organization's Approved MOE and supplement to the TAA and Mil CAM within 10 working days.

**Guidance
Material
4800(2)**

Distribution of Approved Maintenance Organization Exposition and Supplement Documents

20. Distribution of the organization's MOE and supplement ensures the TAA and Mil CAM are aware of the scope of an AMO's Approval and their procedures to meet the requirements set by the RA 4800 - 4849 (MRP Part 145) series of Regulations.

21. Where there are Commercial in Confidence considerations the AMO may provide a redacted copy to protect its commercial interests.

¹¹ 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.

¹² Reference to "MOE and supplement" throughout RA 4800(2) is to be read as referring to the documents as applicable to the Maintenance Organization, ie MOE only to AMOs without CAA Approvals who have a full MRP MOE Approval and have not used the supplement process.

Annex A to RA 4800

MRP Part 145 Supplement - Requirements Document (S-RD)

1. This document details a simplified process for a Maintenance Organization Approved iaw the UK CAA's Part 145 Approval process to qualify for an Approval iaw MRP Part 145 under the MAOS.
2. An MRP Part 145 Approval issued through the method detailed in this document is an alternative to the organization demonstrating compliance with MRP Part 145 as a whole; its use will be limited to those organizations who meet the qualifying criteria and conditions set out in Section 1 below.
3. The MAA has assessed the requirements of CAA Part 145 against those of MRP Part 145 and established the substantial degree to which MRP Part 145 compliance can be demonstrated by virtue of holding a current CAA Part 145 Approval of an applicable scope. However, where the MRP Part 145 contains requirements that may not be met by the organization through its CAA Part 145 Approval, demonstration of compliance will be necessary to gain an MRP Part 145 Approval; these additional requirements are detailed in Section 2 of this document. Therefore, subject to meeting the qualifying criteria and conditions in Section 1, a Maintenance organization Approved by the UK CAA under CAA Part 145 may apply for the issue of an MRP Part 145 Approval by submitting an MRP Part 145 supplement (hereafter referred to as the 'supplement') that details how these additional requirements are met. Hence, the organization is not required to duplicate effort in re-justifying how it meets the requirements common with CAA Part 145.
4. The MRP is applicable⁸ to CAW Engineering activities associated with Air Systems⁵ on the UK Military Aircraft Register. Therefore, while the MAA's acceptance of an organization's supplement will provide an Exemption from the need to comply with MRP Part 145, it does not remove the need for an organization to comply with any other applicable areas of the MRP.

Section 1 - Qualifying Criteria and Conditions

5. An organization may use the process in this document to apply for an MRP Part 145 Approval subject to meeting the following criteria:
 - a. The organization **should** demonstrate the need for an MRP Part 145 Approval (eg a Contracted requirement to maintain UK military registered Air Systems).
 - b. The organization **should** hold a valid CAA Part 145 Approval certificate, issued by the CAA iaw the current CAA Part 145, covering all applicable Approval classes and ratings, and at the locations that require an MRP Part 145 Approval.
 - c. The organization **should** meet the conditions of Civil Air Publication (CAP) 562 - Book 1, Chapter B, Leaflet B-40 (hereinafter referred to as Leaflet B-40).
6. Prior to submission of the supplement, the organization **should** confirm that it will comply with the following requirements:
 - a. Allow the MAA to inspect the organization for initial and continued compliance with procedures and standards relating to the Maintenance of military registered Air Systems and to investigate specific problems¹³.
 - b. Cooperate with the relevant Mil CAM, and their Authorized representatives, so that the Mil CAM can discharge their Responsibilities for the CAW of relevant military registered Air Systems iaw the RA 4900 series (MRP Part M). While the Mil CAM may rely on the CAA Continuing Airworthiness Management Organization (CAMO) organization to undertake much of the CAW management activity on their behalf, the Maintenance organization **should** permit the Mil CAM (and their Authorized representatives) full access to those areas of the organization involved in the Maintenance of military registered Air Systems, when deemed necessary by the Mil CAM.
 - c. Cooperate with the relevant MOD TAA, and their Authorized representatives, so that they can effectively manage the Type Airworthiness¹⁴ of relevant military registered Air Systems.
 - d. Accept that investigation and Enforcement Action¹⁵ may be taken by the MAA iaw the Regulations and procedures contained within the MRP.

¹³ While the principle of this document is that the MAA will utilize the evidence of the CAA Part 145 Approval to confirm compliance with elements of MRP Part 145, the MAA will retain the right to inspect the organization if deemed necessary.

¹⁴ Refer to RA 1015 – Type Airworthiness Management - Roles and Responsibilities.

¹⁵ The MAA's Enforcement policy is detailed in [MAA01: MAA Regulatory Principles](#).

- e. Cooperate with any MAA investigation or Enforcement Action.

7. Notwithstanding the qualifying criteria and conditions detailed here, the MAA may, in exceptional circumstances, require a Maintenance organization to submit a full MRP Part 145 MOE, iaw MRP Part 145, before an MRP Part 145 Approval is granted. This is detailed further in Appendix 1.

Section 2 - Additional Requirements Applicable to Maintenance Organizations Approved Under CAA Part 145

General requirements

8. The MAA agrees that a Maintenance organization that meets the qualification criteria and conditions of Section 1 will be eligible for an MRP Part 145 Approval once the MAA is satisfied that the requirements of this document have been met. To achieve this Approval, the organization **should** complete a supplement and submit it to the MAA iaw Appendix 1.

9. Since an MRP Part 145 Approval granted in this manner is largely based on the CAA Part 145 Approval held, the current Approved, CAA Part 145 MOE **should** be submitted to the MAA¹⁶ together with the completed supplement, iaw Appendix 1. However, where the procedures detailed within the MOE are deviated from or expanded when used on military registered Air Systems and its components, the supplement **should** highlight this and the revised procedures **should** be detailed. Similarly, where the CAA Part 145 MOE details Alternative Means of Compliance to CAA Part 145, then this **should** also be highlighted.

10. Where content required in the supplement is contained within the Approved CAA Part 145 MOE, it is not necessary to reproduce the content. Rather, the content **should** be identified in the supplement by referencing the corresponding part of the MOE.

11. Likewise, where the supplement requirement is not applicable to the organization's scope of work (eg where the Air System being maintained does not have 'military Role Equipment' fitted), a statement to that effect **should** be included in the relevant section of the supplement.

12. The MRP Part 145 Approval will not exceed the scope of the ratings and limitations contained in the CAA Part 145 Approval certificate.

13. The supplement **should** detail the locations at which the MRP Part 145 Approval will be exercised.

14. The supplement **should** be amended as necessary to remain an up-to-date description of the organization. The organization **should** specify a process for submitting amendments in their supplement and identify who within the organization is responsible for amendment action. The supplement and any subsequent amendment **should** be Approved by the MAA, unless such amendment is deemed a 'minor amendment', as follows:

- a. The process for incorporating minor amendments **should** be detailed in the supplement.
- b. The process for minor amendments, if required, **should** define the type of amendments to which it may be applied¹⁷. This may be aligned with the type of amendments deemed a minor amendment in the CAA Part 145 MOE¹⁸.

15. An organization Approved under MRP Part 145 is subject to the privileges and limitations detailed in the applicable Regulations¹⁹ with respect to the Maintenance of UK military registered Air Systems.

Facility Requirements

16. The organization **should** detail within the supplement the appropriate safeguards and control measures in place for classified items.

Personnel requirements

17. The supplement **should** contain a statement by the Accountable Manager of the organization, who **should** be the same individual nominated iaw CAA Part 145.A.30(a), which commits the organization to compliance with CAA Part 145 and the conditions and requirements of this Annex whilst operating under their MRP Part 145 Approval. This **should** include acknowledgement of the consequences of failing to meet these requirements.

¹⁶ If necessary, the MOE may be redacted to remove any elements that do not relate to the Maintenance of military registered Air Systems.

¹⁷ Examples of minor amendments may include: correcting typographical errors; renumbering of procedures, provided that the intent of the procedure has not changed; editorial changes to procedures, provided that the intent of the procedure has not changed; and changes to named individuals within procedures, excluding those individuals that are required to hold a CAA Form SRG1769.

¹⁸ Refer to CAA Part 145.A.70(c) – Maintenance Organisation Exposition.

¹⁹ Refer to RA 4817 – Privileges of the Organization (MRP 145.A.75) and RA 4818 - Limitations on the Organization (MRP 145.A.80) - Approved Maintenance Organizations only.

- a. The statement by the Accountable Manager **should** embrace the intent of the following statement which may be used without amendment, but any changes **should not** alter the intent:

*The CAA Part 145 MOE, MRP Part 145 supplement and any associated referenced manuals defines the organization and procedures upon which the MRP Part 145 Approval is based, as required by the MAA Part 145 Supplement - Requirements Document. These procedures are Approved by the undersigned and **should** be complied with, as applicable, when work / orders are being progressed under the terms of the MRP Part 145 Approval.*

It is accepted that these procedures do not override the necessity of complying with any new or amended Regulation / instruction published by the MAA or the CAA from time to time where these new or amended Regulations / instructions conflict with the procedures contained within this supplement and the CAA Part 145 MOE.

It is understood that the MAA will Approve this organization whilst the MAA is satisfied that the procedures are being followed and work standards maintained, and that this organization retains its CAA Part 145 Approval certificate for the corresponding Approval class and ratings. It is further understood that the MAA reserves the right to suspend, limit or revoke the Approval of the organization if the MAA believes that procedures are not being followed, or standards are not being upheld.

Signed.....

Name.....[print name in block capitals].....

Dated.....

Accountable Manager and[quote position].....

For and on behalf of.....[quote organization's name].....

- b. Whenever the Accountable Manager changes, the new Accountable Manager **should** sign the statement detailed above (or alternative) at the earliest opportunity. Failure to carry out this action could invalidate the MRP Part 145 Approval.

- c. When the Accountable Manager Maintenance (AM(M)) is not the Chief Executive Officer (CEO) of the organization, evidence **should** be provided ensuring AM(M) has sufficient funding to meet the scope of the Approval contained in the MOE.

18. The organization **should** identify the person or group of people responsible for the organization's compliance with this document²⁰. Such person(s) **should** ultimately be responsible to the Accountable Manager. These **should** be the relevant individuals nominated iaw CAA 145.A.30(b). The nominated individuals **should** have a working knowledge of the relevant parts of the MRP, including this document.

19. The organization **should** ensure that Coordinating / Certifying Staff, Tradespersons and Supervisors have an adequate understanding of the contents of the supplement. In the case of Coordinating / Certifying Staff, this **should** be accomplished before the issue or re-issue of the Certification Authorization.

Release Statement

20. The supplement **should** contain the procedure for the Certification of Air System Release (also known as the 'Certificate of Release to Service') of a military registered Air System, which meets MRP requirements²¹, noting the following:

- a. The detailed procedure **should** contain the release statement that will be used. Organizations completing a supplement (and hence meeting the qualifying conditions and criteria of Section 1) may use an alternative release statement to that required, provided that:

(1) This statement declares that the Maintenance has been performed to the standard accepted by the MAA; and

(2) The statement differentiates itself from a CAA Part 145 release statement for an Air System with a CAA Certificate of Airworthiness. An example Release To Service statement that is acceptable to both the MAA and the UK CAA is contained in Leaflet B-40.

²⁰ The MAA does not intend to conduct interviews with any of these individuals. Rather, where the individual is the holder of a CAA Form SRG1769, this fact will be taken as evidence of the individual's Competence and suitability to hold this appointment.

²¹ Refer to RA 4812(1): Certification of Air System Release (MRP 145.A.50(a)).

- b. Reference to MRP 145.A.45²² may be taken to mean a reference to CAA Part 145.A.45, subject to the additional requirements of Approved Maintenance data listed at paragraph 28 of this document.

Coordinating / Certifying Staff, Tradespersons and Supervisors

21. Where applicable, the personnel records established through CAA 145.A.35(j) **should** record the individual's security clearance.
22. Where necessary, the process for granting military Aircrew Maintenance certifying Authorizations²³ **should** be detailed in the supplement. This process **should** state the qualifying criterion used and the scope of Authorizations permitted.
23. Where not detailed within the MOE the organization **should** specify procedures within the supplement for assessing all prospective and current Coordinating / Certifying Staff for their Competence, qualification and capability to carry out their intended certifying duties prior to the issue or re-issue of a Certification Authorization.

Equipment, Tools and Material

24. The organization **should** state the procedures for the control of any equipment, tool or material used on an Air System or component.
25. The process for the control of tools, equipment and test equipment **should** ensure that the Air System or Air System component is clear of all tools and equipment on completion of any Maintenance or servicing activity, as required²⁴ by MRP Part 145. If this element of the process is not detailed in the CAA Part 145 MOE, the process **should** be detailed in the supplement.

Military Role Equipment

26. Any specific 'military Role Equipment' fitted to the Air System²⁵, **should** be controlled and maintained iaw procedures detailed in the supplement. This **should** include a procedure for the acceptance, storage and provisioning of 'military Role Equipment' parts, demonstrating compliance with MRP requirements²⁶.
27. Where 'military Role Equipment' is present, Coordinating / Certifying Staff, Tradespersons and Supervisors **should** have an adequate understanding of such equipment to be maintained and the associated organizational procedures for maintaining it. Procedures **should** be detailed in the supplement to state how staff will achieve this requirement and include the need to expand relevant continuation training (as required by CAA 145.A.35) where necessary.

Approved Maintenance Data

28. To reflect the differing sources of 'Approved' Maintenance data in MRP Part 145 and CAA Part 145, the supplement **should** include the following:
- a. A procedure to ensure that the organization holds and uses Maintenance data²⁷ and to ensure that the use of such data has been Approved by the relevant TAA.
 - b. A procedure for modifying Maintenance instructions iaw the MRP requirements²⁸.
 - c. Where MOD-sponsored publications are used:
 - (1) A procedure for notifying the MOD publication sponsor of Maintenance data inaccuracies²⁹.
 - (2) A procedure for checking that all publication amendments are being received and incorporated³⁰.

²² Refer to RA 4810 – Technical Information (MRP 145.A.45).

²³ Refer to RA 2211 – Authorization of Aircrew to Carry Out Maintenance Tasks.

²⁴ Refer to RA 4808 – Equipment, Tools and Material (MRP 145.A.40).

²⁵ Leaflet B-40 defines 'military Role Equipment' as those elements of an Air System Modification that cannot be Approved by CAA due to its nature and military security requirements.

²⁶ Refer to RA 4809(1): Component Classification and Documentation (MRP 145.A.42(a)) and RA 4809(2): Suitability of Components (MRP 145.A.42(b)).

²⁷ Refer to RA 4810(1): Use of Approved and Current Technical Information (MRP 145.A.45(a)) and RA 4810(2): Scope of Applicable Technical Information (MRP 145.A.45(b)).

²⁸ Refer to RA 4810(4): Modification of Technical Information (MRP 145.A.45(d)). Due to the very nature of the Air System lease arrangements with the MOD, an organization maintaining Military Registered Civil-Owned Air Systems will normally be required to hold both an MRP Part 145 and CAA Part 145 Approval. As such, any deviation from Approved Technical Information will only be done following Approval from the TAA, who will establish any financial implications that such deviation may have to the MOD, prior to the deviation being Authorized.

²⁹ Refer to RA 4810(3): Requirements to Inform Technical Information Author of Errors (MRP 145.A.45(c)).

³⁰ Refer to RA 4810(7): Maintaining the Amendment State of Technical Information (MRP 145.A.45(g)).

Technical Information

29. Where TAA-issued Special Instructions (Technical) (SI(T)s)³¹ are applicable³², the supplement **should** detail procedures for the organization to:

- a. Ensure completeness of, and compliance with, relevant SI(T)s.
- b. Hold a copy of all SI(T)s that the TAA and Mil CAM requires them to comply with.
- c. Ensure that prior to the installation of a component it is eligible to be fitted when different SI(T) standards may be applicable; this is in addition to the requirements of CAA 145.A.42(b).

Maintenance Records

30. The organizations records retention period **should** be set to that instructed by the TAA. Where an AMO terminates its operation, all retained Maintenance records **should** be transferred to the relevant Military Continuing Airworthiness Management Organization (Mil CAMO).

Occurrence reporting

31. The organization **should** report to the MOD any condition of the Air System or Air System component identified by the organization that has resulted or may result in an Unsafe Condition that is a Hazard to Flight Safety. The supplement **should** detail its procedures for such reporting to the MAA, TAA, Mil CAM and broader MOD, as required. Procedures **should** state how the organization will manage Occurrence reporting³³. The supplement **should** reference a link to the organization's Safety Management System (SMS).

Good Maintenance Practices

32. The organization **should** detail within the supplement procedures to minimize the Risk of multiple errors and to capture errors on critical Systems. In particular, the organization **should** detail procedures to ensure that no one person is required to self-supervise a Maintenance task that involves some element of disassembly / reassembly and then repeat that same Maintenance task on identical or similar Systems on the same Air System.

33. By exception, when only one person is available to carry out these tasks, then the organization's work card or work sheet **should** include an additional stage for re-inspection of the work by this person after completion of all the same tasks.

Quality Management System

34. The organization's Audit plan, as established through CAA 145.A.200(a) – Management System **should** be expanded to encompass the additional procedures detailed in the supplement.

Appendix:

1. MRP Part 145 Supplement - Approval Processes.

³¹ Refer to RA 5405 – Special Instructions (Technical).

³² It is acknowledged that, subject to MAA agreement, the TAA may sanction the use of civil instructions (eg Airworthiness Directives) in place of SI(T)s as part of the platform's Airworthiness Strategy. However, **should** any 'military role equipment' used on the Air System be subject to SI(T)s, compliance will need to be demonstrated.

³³ Refer to RA 1410 – Occurrence Reporting and Management.

Appendix 1 to Annex A to RA 4800

MRP Part 145 Supplement - Approval Processes

Application for MRP Part 145 Approval

Applicant actions

1. An application for the issue or variation of an MRP Part 145 Approval **should** be submitted to DSA-MAA-OA-ACC@mod.gov.uk on a MAA MAOS Form 2³⁴. In submitting the Form 2, the organization **should**:
 - a. Demonstrate the need for an MRP Part 145 Approval (eg a Contracted requirement to maintain UK military registered Air Systems).
 - b. Ensure that the application does not exceed the scope of the ratings and limitations contained in the CAA Part 145 Approval certificate³⁵.
 - c. State their request to gain an Approval by submitting a completed supplement to the organization's Approved CAA Part 145 MOE, in place of a full MRP Part 145 MOE.
2. Once the MAA has confirmed that the organization may apply for MRP Part 145 Approval by submitting a supplement, the organization **should** complete a supplement for assessment by the MAA.
3. The completed supplement **should** be submitted to DSA-MAA-OA-ACC@mod.gov.uk, together with the current CAA Part 145 MOE and the latest CAA Audit Report.

MAA actions

4. On receipt of the MAA MAOS Form 2, the MAA will assess the organization's need for Approval and the required level of MAA Assurance:
 - a. In those instances where the MAA assesses that there is sufficient CAA oversight of the activities undertaken (less the additional requirements detailed in this document), the organization will be informed that they may complete a supplement to apply for MRP Part 145 Approval.
 - b. Exceptionally, where the MAA assesses that completion of a supplement will not be either appropriate or sufficient for the organization to demonstrate compliance with the additional requirements of MRP Part 145, the MAA will instruct the organization to demonstrate full MRP Part 145 compliance through the submission of an MRP Part 145 MOE. In such instances, the following **should** be noted:
 - (1) The provisions of Exemptions³⁶ to the content of an MOE due to holding a CAA Part 145 Approval may still be applied.
 - (2) In compiling the MRP Part 145 MOE, the organization **should** highlight to the relevant TAA any areas where MRP compliance may invalidate their CAA Part 145 Approval. Where this is the case, an application for a Regulatory Alternative Acceptable Means of Compliance, Waiver or Exemption, as appropriate, may be submitted to the MAA for consideration³⁷.
5. When satisfied that the conditions of MRP Part 145 have been met through assessing the supplement and, where necessary, conducting an Approval visit to the organization, the MAA will issue an MRP Part 145 Approval certificate to the Maintenance organization.

Continuation of MRP Part 145 Approval

6. The MRP Part 145 Approval is issued for an unlimited duration, noting the limitation detailed in paragraph 16 of this Appendix. It **should** remain valid subject to:
 - a. The organization remaining in compliance with the supplement; and
 - b. The MAA and / or their Authorized representatives being granted access to the organization to determine continued compliance with the supplement; and

³⁴ The MAA MAOS Form 2 is available on the [MAA Website](#).

³⁵ It is not necessary for the application to cover all B and C Ratings held under the CAA Part 145 Approval if such ratings are outside the scope of the Maintenance Approved Organization Scheme. This scope is detailed in RA 1005 – Contracting with Competent Organizations.

³⁶ Refer to RA 4816(4): Exemption to Content of Maintenance Organization Exposition due to Civil Aviation Authority Part 145 Approval (MRP 145.A.70(d)).

³⁷ Refer to [MAA03: MAA Regulatory Process](#).

- c. The organization continuing to hold a valid CAA Part 145 Approval for the applicable class and ratings; and
 - d. The organization providing the MAA with a copy of each applicable CAA Part 145 CAA Audit Report within 10 working days of receiving this report; and
 - e. The MRP Part 145 Approval certificate not being surrendered or revoked.
7. The organization **should** ensure that the supplement continues to reflect the organization's procedures and activities. Any change will require an amendment of the supplement iaw paragraphs 9-12 of this Appendix.
8. The organization **should** continue to cooperate with the MAA, as required.

Amendment of MRP Part 145 Approval

9. Any amendment of the supplement **should** be submitted to the MAA iaw the relevant procedure contained within the supplement.
10. In addition, the organization **should** notify the MAA of any proposal to carry out any of the following changes so the MAA can determine continued compliance with the supplement and to amend, if necessary, the Approval certificate:
- a. The ownership of the organization or its parent company.
 - b. The name of the organization.
 - c. The main location of the organization.
 - d. Additional locations of the organization at which the MRP Part 145 Approval will be exercised.
 - e. The Accountable Manager.
 - f. Any of the persons nominated as responsible for the organization's compliance with the supplement, as detailed in paragraph 16 of the Annex.
11. Notification **should** occur before such changes take place, except in the case of proposed changes in personnel not known to the management beforehand; these changes **should** be notified at the earliest opportunity.
12. Failure to ensure that the CAA Part 145 MOE and the supplement are kept up to date in respect of regulatory changes, and that the organization staff comply with the procedures therein, could invalidate the MRP Part 145 Approval.

Revocation, Surrender and Suspension of the MRP Part 145 Approval

13. An MRP Part 145 Approval **should** be revoked or suspended¹⁵ by the MAA if the organization fails to comply with the conditions and requirements detailed in this Annex.
14. A revocation or suspension of the CAA Part 145 Approval **should** automatically invalidate the MRP Part 145 Approval.
15. The MAA will notify the holder of an MRP Part 145 Approval in writing regarding any suspension.
16. Organizations that do not exercise the privileges of their Approval within a two year period **should** surrender the Approval unless a contractual requirement for its retention can be demonstrated.
17. Upon surrender or revocation, the MRP Part 145 Approval certificate **should** be returned to the MAA.

Intentionally Blank for Print Pagination

RA 4801 – Certifying Staff

Rationale

A Maintenance organization will appoint individuals with a specific responsibility to certify the completion of military registered Air System Maintenance and / or component Maintenance in accordance with (iaw) MRP Part 145. If such individuals were to be authorized as certifying staff without a minimum level of qualification and experience, Airworthiness may be compromised. ► This RA ◀ defines the qualification and experience criteria to be met by Maintenance personnel in order to be eligible for Authorization as certifying staff, subject to meeting other applicable requirements¹.

Contents

► Definitions Relevant to this RA ◀

4801(1): Certifying Staff

Definitions

► Definitions Relevant to this RA

1. **Tradesperson.** Suitably Competent and authorized staff² responsible for executing Air System and Air System component Maintenance activities. This role may also be known as Support Staff within Approved Maintenance Organizations (AMOs).
2. **Supervisor.** Suitably Competent and authorized staff² responsible for carrying out supervision of Tradespersons in the execution of their Maintenance activities
3. **Coordinating / Certifying Staff.** Staff holding Authorization by the Maintenance organization to endorse the appropriate Certification of Air System Release and / or Component Release³. In Military Maintenance Organizations (MMOs) this role may be referred to as the 3rd Signature. This term will not be confused with the term certifying staff used uncapitalised or on its own, this is the collective noun for Maintenance personnel with responsibilities for signing Maintenance documentation as either Tradesperson, Supervisor or Coordinating / Certifying Staff. ◀

Regulation 4801(1)

Certifying Staff

- 4801(1) For the purpose of MRP Part 145, staff **shall** meet one of the following eligibility criteria to be qualified as ‘certifying staff’:
- a. Be appropriately experienced and have completed, as a minimum, MOD Phase 2 technical training;
 - b. Hold an appropriate category A, B1, B2 or C licence in compliance with United Kingdom (UK) Civil Aviation Authority (CAA) Annex III (Part 66) ►◀; or
 - c. Be appropriately experienced and have completed suitable civilian training (civilian Contractors only) ►⁴◀.

Acceptable Means of Compliance 4801(1)

Certifying Staff

Common AMC

4. Nil.

Additional AMC –MMOs only

5. Military staff within an MMO will meet the eligibility criteria by virtue of their trade and rank. In this respect, the relevant single-Service eligibility criteria **should** be met.

¹ Refer to RA 4806 – Personnel Requirements (MRP 145.A.30) and RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

² ► Refer to RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

³ Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50).

⁴ For non-CAA Air Systems, an European Aviation Safety Agency (EASA) Part 66 licence may be used as evidence of training and Competence in trade. ◀

**Acceptable
Means of
Compliance
4801(1)**

Additional AMC –AMOs only

6. The qualification of an individual as certifying staff **should** be categorized according to the scope of Certification privileges available and the trade boundaries within which these privileges may be exercised.

**Guidance
Material
4801(1)**

Certifying Staff

Common GM

7. This Regulation does not seek to regulate the process to issue Certification privileges or any other engineering Authorizations⁵.

8. ► **Coordinating / Certifying Staff** ◀ are only those individuals with the specific responsibility of endorsing the 'Certification of Air System Release and / or Component Release'⁶, with the exception of where the MOD Form 700 is used as the technical log and will be completed iaw the relevant Instructions for Use. ► ◀

9. The term 'MOD Phase 2 technical training' denotes initial MOD provided aviation specialist training that prepares Service personnel for their first employment in the Defence Air Environment.

10. In derogation to this Regulation, non-engineering staff may also be granted Maintenance Authorizations⁷.

11. Table 1 below further clarifies the terms used for signing Air System Maintenance documentation in an AMO or MMO whilst also highlighting that they are not equivalent terms due to their use in each Maintenance organization and their applicable Maintenance environment.

Table 1. Maintenance personnel terms.

► MRP Terms used in RA 4800 Series ◀	Terms used in Part 145	Terms used in MMOs and MOD Form 700 series documentation
► Coordinating / Certifying Staff ◀	Certifying Staff	3 rd signature
► Supervisor ◀	Support Staff with Supervisory Responsibilities	2 nd signature
► Tradesperson ◀	Support Staff	1 st signature



Additional GM - MMOs only

12. Within MMOs, MOD Form 700 documentation⁸ associated with a Maintenance task is signed at 3 key stages and MMOs ► **will** ◀ promulgate instructions to identify the specific responsibilities of these signatories:

- 1st signature – completed by the ► **Tradesperson** ◀ / operator.
- 2nd signature – completed by the ► **Supervisor**. ◀
- 3rd signature – completed by the ► **Coordinator / Certifying Staff**. ◀

13. At each stage the individual who has carried out the work detailed will sign for that work. When one or more individuals are involved with a Maintenance task, each person will identify and sign for the work that they have carried out themselves.

14. For the purposes of MRP Part 145, personnel that assume the Responsibilities of both the 1st and 2nd Signatory are known as 'self-supervisors' who can undertake such activity unless restricted by Technical Information.

⁵ Refer to RA 4806 – Personnel Requirements (MRP 145.A.30) and RA 1006 – Delegation of Engineering Authorizations.

⁶ Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50).

⁷ Refer to RA 4806(10): Non-engineering Staff (MRP 145.A.30(j)).

⁸ Refer to RA 4813 – Maintenance Records (MRP 145.A.55).

**Guidance
Material
4801(1)**

15. When signing for an activity as a self-supervisor, the individual certifying the Maintenance documentation accepts the responsibilities of both the 1st and 2nd signature. On Maintenance documentation that has space for only one signature, it is implicit on signing that the individual is accepting both 1st and 2nd signature responsibilities.

Additional GM - AMOs only

16. ▶◀

17. When an individual does not hold an appropriate Category A, B1, B2 or C licence in compliance with UK CAA Annex III (Part 66) ▶◀⁴, a suitable level of experience and qualification ▶will◀ be demonstrated before the individual can be employed and authorized as certifying staff. In addition to the Authorization requirements⁹, it is incumbent on the person granting a Certification Authorization to such an individual to assess their basic experience and qualification level in the absence of a recognized Part 66 licence.

⁹ Refer to of RA 4807(2): Certification and Supervisory Authorizations (MRP 145.A.35(b)).

Intentionally Blank for Print Pagination

RA 4802 - Scope of the MRP Part 145 (MRP 145.A.10) - Approved Maintenance Organizations only

Rationale

Contractor-run Maintenance organizations are required to be competent to maintain military registered Air Systems and / or components. Without a system of assessment and approval, the Maintenance of military registered Air Systems and / or components cannot be assured as being compliant with current Regulations, potentially increasing the Risk to Air Safety and subsequent Risk to Life. MRP Part 145 approval will permit contractor-run Maintenance organizations to maintain military registered Air Systems and / or components within a defined scope, thus providing Aviation Duty Holders and Accountable Managers (Military Flying) assurance of a Maintenance organization's competence and suitability to carry out Contracted Maintenance activities.

Contents

► Definitions Relevant to this RA ◀

4802(1): Scope of the MRP Part 145 (MRP 145.A.10(a))

Definitions

Definitions Relevant to this RA

1. ► **Coordinating / Certifying Staff.**¹ Staff holding authorization by the Maintenance Organization to endorse the appropriate Certification of Air System Release and / or Component Release. This role may also be known as the Air System and / or Work Order Coordinator within military parlance. ◀

Regulation 4802(1)

Scope of the MRP Part 145 (MRP 145.A.10(a))

- 4802(1) A contractor-run Maintenance Organization **shall** meet the requirements of MRP Part 145 to qualify for the issue or continuation of an approval to maintain military registered Air Systems and / or components.

Acceptable Means of Compliance 4802(1)

Scope of the MRP Part 145 (MRP 145.A.10(a))

2. Nil.

Guidance Material 4802(1)

Scope of the MRP Part 145 (MRP 145.A.10(a))

'Line' and 'base' Maintenance

3. For the purposes of MRP Part 145 approval, the terms 'Line' and 'Base' Maintenance are used to define specific types of Maintenance activity. These terms overlap, but are not aligned to, the military framework of 'forward' and 'depth', since Line and Base Maintenance can be carried out in both the forward and depth domains. It is possible for an organization to be approved to conduct Line Maintenance only, Base Maintenance only or both.

a. Line Maintenance is defined as any Maintenance that is carried out before flight to ensure that the Air System is fit for the intended flight. It may include, but is not limited to:

- (1) Trouble shooting / Fault diagnosis.
- (2) Fault rectification.
- (3) Component replacement with use of external test equipment if required. Component replacement may include components such as engines, propellers and rotors.

¹ ► Refer to RA 4801(1): Certifying Staff. ◀

**Guidance
Material
4802(1)**

(4) Preventive Maintenance and / or checks including visual inspections that will detect obvious unsatisfactory conditions / discrepancies but do not require extensive in depth inspection. It may also include internal structure, Systems and power plant items, which are visible through quick opening access panels / doors.

(5) Minor repairs and Modifications, which do not require extensive disassembly and can be accomplished by simple means.

b. Maintenance tasks falling outside these criteria are considered to be Base Maintenance.

c. For temporary or occasional cases (eg Special Instructions (Technical) (SI(T)s) or Airworthiness Directives (ADs)), the Quality Manager may accept Base Maintenance tasks to be performed by a Line Maintenance Organization provided all regulatory requirements are fulfilled.

d. Air Systems maintained in accordance with (iaw) 'progressive' / 'equalized' Preventive Maintenance type programmes may be individually assessed in relation to this paragraph. In principle, the decision to allow some equalized checks to be carried out by a 'Line Maintenance only' approved organization will be determined by the assessment that all tasks within the particular check can be carried out safely to the required standards at the designated Line Maintenance station.

4. Where the Approved Maintenance Organizations (AMO) uses facilities both inside and outside the UK, such as satellite facilities, subcontractors², line stations etc, such facilities may be included in the approval without being identified on the approval certificate subject to the Maintenance Organization Exposition identifying the facilities and containing procedures to control such facilities and the MAA being satisfied that they form an integral part of the AMO.

Guidance for small AMOs

5. It is recognized that MRP Part 145 approval may be required by 2 quite different types of small AMO, the first being the component Maintenance workshop, eg radio equipment or wheels etc, the second being specialized services, eg welding or Non-Destructive Testing. This part of the Guidance Material provides detail on how these small AMOs may satisfy the intent of MRP Part 145.

6. Where only one person is employed (holding the certifying function and others), this AMO may use the guidance provided in the following sub-paragraphs, limited to the following approval classes: Class B2 – Small Piston Engines; Class C – Components; and Class D1 – Non-Destructive Inspections.

Note:

The following sub-paragraphs only include the relevant clauses of MRP Part 145 for which this guidance applies. When RAs within MRP Part 145 are not listed, then it means that full compliance must be demonstrated.

a. With reference to RA 4806(2)³, the minimum requirement is for one full time person who meets the requirements² for **Coordinating / Certifying Staff** and holds the position of Accountable Manager (Maintenance) (AM(M)), Maintenance Manager and is also certifying staff. No other person may issue a certificate of Air System release and therefore, if absent, no Maintenance may be released during such absence.

² **Subcontracted facilities, personnel and procedures involved with the AMO's Products, Parts and Appliances undergoing Maintenance are effectively subsumed into the AMO in that they will come under the AMO's Quality System and the AMO's Maintenance Approval Organization Scheme (MAOS) approval is extended to include the subcontractor. It therefore follows that those parts of the subcontractor's facilities, personnel and procedures are to meet MRP Part 145 requirements for the duration of that Maintenance. It remains the contracting AMO's responsibility to ensure such requirements are satisfied, as it retains accountability for all actions and outputs of the Subcontracted organization in the Maintenance of the AMO's Products, Parts and Appliances.**

³ Refer to RA 4806(2): Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b)).

**Guidance
Material
4802(1)**

Note:

'Full time' for the purpose of MRP Part 145 means not less than 35 hrs per week except during vacation periods.

b. The quality monitoring function⁴ may be Contracted to an appropriate AMO or to a person with appropriate technical knowledge and extensive experience of Quality Audits employed on a part time basis, with the agreement of the MAA.

c. In the case of an approval based on one person using a Subcontracted quality monitoring arrangement, the requirement⁵ for a record of ►Coordinating / Certifying Staff◄ is satisfied by the submission to and acceptance by the MAA of the MAA MAOS Form 4 - Details of Nominated Personnel. With only one person, the requirement for a separate record of authorization is unnecessary because the Approval Schedule defines the authorization. An appropriate statement to reflect this situation will be included in the exposition.

d. With reference to RA 4815(3)⁴, it is the responsibility of the Contracted Quality monitoring organization or person to make a minimum of 2 visits per 12 months to the AMO being monitored and it is the responsibility of this organization or person to carry out such monitoring on the basis of one visit pre-announced and one visit unannounced to the AMO. It is the responsibility of the AMO to comply with the findings of the Contracted Quality monitoring organization or the person.

Note:

It is to be understood that, if the Contracted Quality monitoring organization or the above mentioned person loses or gives up its approval, then the organization's approval will be suspended.

7. An AMO with up to 10 persons involved in Maintenance may use the following guidance:

a. With reference to RA 4806(2)³, the normal minimum requirement is for the employment on a full-time basis of 2 persons who meet the requirements¹ for ►Coordinating / Certifying Staff◄, whereby one holds the position of 'Maintenance Manager' and the other holds the position of 'Quality Audit Engineer'.

b. Either person can assume the responsibilities of the AM(M), providing that they can comply in full with the applicable elements of RA 4806(1)⁶, but the Maintenance Manager will be the ►Coordinating / Certifying Staff◄ to retain the independence of the Quality Audit Engineer to carry out audits. Nothing prevents either engineer from undertaking Maintenance tasks providing that the Maintenance Manager endorses the Certification of Air System Release and / or Component Release.

c. The Quality Audit Engineer will have similar qualifications and status to the Maintenance Manager for reasons of credibility, unless ►they have◄ a proven track record in Air System Quality Assurance, in which case some reduction in the extent of Maintenance qualifications may be permitted.

d. In cases where the MAA agrees that it is not practical for the organization to nominate a post-holder for the quality monitoring function, this function may be Contracted iaw Paragraph ►6.b.◄

⁴ Refer to RA 4815(3): ►Quality Management System◄ (MRP 145.A.65(c)).

⁵ Refer to RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

⁶ Refer to RA 4806(1): Accountable Manager (Maintenance) (MRP 145.A.30(a)).

Intentionally Blank for Print Pagination

RA 4803 – Method of Application for Approval (MRP 145.A.15) - Approved Maintenance Organizations only

Rationale

Formal Contractor-run Maintenance organization application for initial MRP Part 145 Approval, or to amend an existing Approval, is required to follow a consistent approach. Without a standardised format, Maintenance organization Approvals may be delayed due to the incomplete submission of evidence or misinterpretation of the intended scope of work. An inconsistent approach to seeking Approval could potentially limit Assurance that Air System and / or component Maintenance is being performed using appropriate engineering practices. This RA requires that all Contractor-run Maintenance organization applications for initial MRP Part 145 Approval, or to amend an existing Approval, are submitted in a specified format that stipulates the minimum information requirement for such applications.

Contents

4803(1): Method of Application for Approval (MRP 145.A.15(a))

Regulation 4803(1)

Method of Application for Approval (MRP 145.A.15(a))

4803(1) An application for the issue or for the variation to an existing Approval **shall** be made to the MAA in an agreed form and manner.

Acceptable Means of Compliance 4803(1)

Method of Application for Approval (MRP 145.A.15(a))

1. The application for the issue or variation to an existing Approval **should** be made on an MAA MAOS Form 2.
2. Applications **should** be submitted to the MAA Maintenance Approved Organization Scheme (MAOS) Approvals Group¹.
3. ► Applicants for an initial MAOS Approval **should** provide the MAA with the results of a pre-Audit performed by the organization, and documentation demonstrating how they intend to ensure compliance with the RA 4800 Series (MRP Part 145)². ◀

Guidance Material 4803(1)

Method of Application for Approval (MRP 145.A.15(a))

4. The MAA MAOS Form 2 can be downloaded from the MAOS Approvals page on the MAA Website³. Applicants are strongly advised to contact the MAA in advance of any formal submission, to discuss their requirements and the Approval process¹.
5. ► An application for an initial Approval can only be submitted for a Contracted requirement, and an initial Approval or changes cannot take place until the MAA has received all the completed documents.
6. This information, including the results of the internal pre-Audit specified in para 3, will enable the MAA to conduct an assessment to determine the work required for the Approval review and oversight, including the locations where Maintenance will be carried out.
7. The intent of the pre-Audit is to ensure that the organization has internally verified its compliance with the RA 4800 Series. This is to provide Assurance that the organization management system (including Quality Management System⁴) is established to a level that is sufficient to perform Maintenance activities. ◀

¹ ► Assurance Co-ordination Cell, Operating Assurance Group ◀: DSA-MAA-OA-ACC@mod.gov.uk.

² ► Refer to the Guidance Material in RA 4800(1): General Requirements (MRP Part 145). ◀

³ <https://www.gov.uk/government/publications/maintenance-approved-organization-scheme-maos>.

⁴ ► Refer to RA 4815(3): Quality Management System (MRP 145.A.65(c)). ◀

Intentionally Blank for Print Pagination

RA 4804 - Terms of Approval (MRP 145.A.20) - Approved Maintenance Organizations only

Rationale

Contractor-run Maintenance organizations are employed to undertake Maintenance tasks for a defined scope of work. ►◄ To assure Aviation Duty Holders and Accountable Managers (Military Flying) that such Maintenance tasks are undertaken in compliance with MRP Part 145, a system for MAA Approval is required. Without such a system, Contractor-run Maintenance organizations could operate outside the scope of their capability, which has potential for Air Systems and components to be incorrectly maintained. ►◄ To mitigate this Hazard, this RA requires that Contractor-run Maintenance organizations are approved using a consistent class and rating numbering system, according to their scope of work.

Contents

4804(1): Terms of Approval (MRP 145. A.20(a))

Regulation 4804(1)

Terms of Approval (MRP 145.A.20(a))

4804(1) The Contractor-run Maintenance organization **shall** specify the scope of work required for Approval in its Maintenance Organization Exposition (MOE).

Acceptable Means of Compliance 4804(1)

Terms of Approval (MRP 145.A.20(a))

1. The Approval class and rating system defined at Annex A to this Regulation **should** be used.

Guidance Material 4804(1)

Terms of Approval (MRP 145.A.20(a))

2. Table A-1, ► **details the Approval classifications and Standard Numbering System (SNS)**¹ ◄ for each component rating.

¹ ► Refer to S1000D - International Specification for Technical Publications. ◄

Annex A

Organizations Approval Class and Rating System

1. Table A-1 outlines the full extent of Approval possible under MRP Part 145 in a standardized form. An organization may be granted an Approval ranging from a single class and rating with limitations to all classes and ratings with limitations.
2. In addition to Table A-1, the Approved Maintenance Organizations (AMO) ► **should** ◀ indicate its scope of work in the MOE (see also Paragraph 11).
3. Within the Approval class(es) and rating(s) granted by the MAA, the scope of work specified in the MOE defines the exact limits of Approval. It is therefore essential that the Approval class(es) and rating(s) and the organization's scope of work are compatible.
4. A Category A class rating means that the AMO may carry out Maintenance on the Air System and any component (including engines / Auxiliary Power Units (APUs) only whilst such components are fitted to the Air System, except that such components can be temporarily removed for Maintenance when such removal is expressly permitted by the Air System Maintenance manual to improve access for Maintenance, subject to a control procedure in the MOE acceptable to the MAA. The limitation section will specify the scope of such Maintenance, thereby indicating the extent of Approval. The A4 rating is to be used for all ► **Uncrewed Air Systems (UAS)**. ◀
5. A Category B class rating means that the AMO may carry out Maintenance on the uninstalled engine / APU and engine / APU components only whilst such components are fitted to the engine / APU except that such components can be temporarily removed for Maintenance when such removal is expressly permitted by the engine / APU manual to improve access for Maintenance. The limitation section will specify the scope of such Maintenance thereby indicating the extent of Approval. An AMO with a Category B class rating may also carry out Maintenance on an installed engine during Air System Maintenance, subject to a control procedure in the MOE acceptable to the MAA. The MOE scope of work will reflect such activity where permitted.
6. A Category C class rating means that the AMO may carry out Maintenance on uninstalled components (excluding engines and APUs) intended for fitment to the Air System or engine / APU. The limitation section will specify the scope of such Maintenance thereby indicating the extent of Approval. An AMO with a Category C class rating may also carry out Maintenance on an installed component during Air System Maintenance or at an engine / APU Maintenance facility subject to a control procedure in the MOE. The MOE scope of work will reflect such activity where permitted.
7. A Category D class rating is a self-contained class rating not necessarily related to a specific Air System, engine, or other component. The D1 - Non-Destructive Testing (NDT) rating is only necessary for an AMO that carries out NDT as a particular task for another organization. An AMO with a class rating in A or B or C Category may carry out NDT on products it is maintaining, subject to the MOE containing NDT procedures, without the need for a D1 class rating.
8. Category A class ratings are subdivided into Line and Base Maintenance. An AMO may be approved for either Line or Base Maintenance or both.
9. The 'limitation' section is intended to give the MAA maximum flexibility to customize the Approval to a particular organization. Table A-1 specifies the types of limitation possible and, whilst Maintenance is listed last in each class rating, it is acceptable to stress the Maintenance task rather than the Air System or engine type or manufacturer, if this is more appropriate to the organization. An example could be avionics Systems installations and Maintenance.
10. Table A-1 ► **refers** ◀ to series and type in the limitation section of class A and B. Series means a specific type series such as Typhoon or Merlin or EJ200 etc. Type means a specific type or model such as FGR Mk4 or HC Mk4 or Mk101 etc. Any number of series or types may be quoted.
11. When a lengthy capability list is used which could be subject to frequent amendment, then such amendment will be in accordance with a procedure acceptable to the MAA and included in the MOE. The procedure will address the issues of who is responsible for capability list amendment control and the actions that need to be taken for amendment. Such actions include ensuring compliance with MRP Part 145 for products or services added to the list.

Note:

Approvals granted prior to 1 January 2014 for class ratings C51 through to C57 have been issued under class ratings C21 through to C27. Any Approvals granted under class ratings C21 through to C27 under this legacy system will have their numbering amended at the next issue of the AMO's Approval Schedule. This change in the numbering of class ratings does not require an immediate resubmission of the organization's MOE, but MOEs submitted after 1 January 2014 will use the below class ratings.

Table A-1. Approval Classifications and SNS Numbering

Class	Rating	SNS Number	Limitation	Line	Base
Air System	A1 Aeroplanes / ▶ airships ◀ above 5700 kg		Will state ▶ Aircraft ◀ manufacturer or series or type and / or the Maintenance task(s).		
	A2 Aeroplanes / ▶ airships ◀ 5700 kg and below				
	A3 Helicopters				
	A4 Air Systems other than A1, A2 and A3 This rating is to be used for all ▶ UAS ◀		Will state Air System ▶ manufacturer or ◀ series or type and / or the Maintenance task(s).		
Engines	B1 Turbine		Will state engine manufacturer or series or type and / or the Maintenance task(s).		
	B2 Piston				
	B3 APU				
Components (other than complete engines or APUs)	C1 Air Cond and Press	21	▶ Will state ◀ Air System type(s) and / or component manufacturer or the specific component and / or cross-refer to a capability list in the MOE.		
	C2 Auto Flight	22			
	C3 Comms and Nav	23-34-43			
	C4 Doors - Hatches	52			
	C5 Electrical Power ▶ and Lights ◀	24-33-▶ 85- ◀91			
	C6 Equipment	25-38-▶ 44- ◀45-50			
	C7 Engine - APU	49-71-72-73-74-75- 76-77-78-79-80-81- 82-83-86			
	C8 Flight Controls	27-55-57.40-57.50- 57.60-57.70			
	C9 Fuel - Airframe	28-▶ 47- ◀48			
	C10 Helicopter - Rotors	62-64-66-67			
	C11 Helicopter - Transmission	63-65			
	C12 Hydraulic	29			
	C13 ▶ Indicating / Recording Systems ◀	31-▶ 42- ◀46			
	C14 Landing Gear	32-90			
	C15 Oxygen	35-47			
	C16 Propellers	61			
	C17 Pneumatic ▶ and Vacuum ◀	36-37			

	C18 Protection ice / rain / fire	26-30	
	C19 Windows	56	
	C20 Structural	53-54-57.10-57.20-57.30	
	C21 Water Ballast	41	
	C22 Propulsion Augmentation	84	
	C51 Attack Systems	39-40-42	
	C52 Radar / Surveillance	92-93	
	C53 Weapons Systems	94	
	C54 Crew Escape	95	
	C55 Missiles / Target Drones / Telemetry	96	
	C56 Reconnaissance	97-98	
	C57 Electronic Warfare	99	
Specialized Services	D1 Non-Destructive Testing		

RA 4805 – Facility Requirements (MRP 145.A.25)

Rationale

►◀ To carry out Air System and / or Air System component Maintenance it is essential that appropriate engineering facilities are provided. Without suitable infrastructure, Maintenance personnel and equipment may not have the necessary protection from the environment, which can increase the potential for Maintenance errors and Risk to Life. ► This RA ◀ details the appropriate facility requirements for Maintenance organizations to ensure that the scope of work can be undertaken safely.

Contents

4805(1): Facility Requirements (MRP 145.A.25(a))
4805(2): Office Accommodation (MRP 145.A.25(b))
4805(3): Working Environment (MRP 145.A.25(c))
4805(4): Storage Facilities (MRP 145.A.25(d))

Regulation 4805(1)

Facility Requirements (MRP 145.A.25(a))

4805(1) The organization **shall** ensure that facilities are provided that are appropriate for Maintenance work¹, ensuring, when necessary, protection from the weather elements and appropriate security safeguards for any classified items. Specialized workshops and bays **shall** be segregated as appropriate to ensure that environmental and work area contamination is unlikely to occur.

- a. For ► Base / Depth ◀ Maintenance of Air Systems, Air System hangars **shall** be both available and large enough to accommodate Air System ‘Base’ or ‘Depth’ Maintenance. Where such facilities cannot be established at deployed locations, Military Maintenance Organizations (MMOs) **shall** assess the suitability of alternative facilities and ensure that any additional Risk to Air Safety is appropriately managed, advising the Delivery Duty Holder (DDH) as appropriate.
- b. For component Maintenance, component workshops **shall** be large enough to accommodate the Maintenance work.

Acceptable Means of Compliance 4805(1)

Facility Requirements (MRP 145.A.25(a))

Common AMC

1. Protection from the weather elements relates to the normal prevailing local weather elements that are expected throughout any 12-month period. Air System hangar structures used to accommodate ► Base / Depth ◀ Maintenance and component workshop structures **should** prevent the ingress of rain, hail, ice, snow, wind and dust etc; floors **should** be sealed to minimize dust.

Additional AMC - MMOs only

2. In derogation to Paragraph 1, expeditionary operations (and training for such operations) might require MMOs to undertake Preventive Maintenance without the provision of a suitable hangar, including that level of Maintenance which would otherwise be carried out in the ‘Depth’ domain. In such circumstances, the MMO

¹ For Approved Maintenance Organizations (AMOs), the Maintenance work is that which is undertaken in accordance with (iaw) the approved scope of work; refer to RA 4804 – Terms of Approval (MRP 145.A.20) – Approved Maintenance Organizations only.

Acceptable Means of Compliance 4805(1)

should assess and utilize those resources available to establish an environment appropriate for the scope of Maintenance to be carried out. If adequate facilities cannot be established, the DDH **should** be informed to ensure that any additional Air Safety Risk is appropriately managed.

3. When operating at UK civilian or foreign airfields, MMOs **should** adhere to Defence Policy and single-Service requirements for security safeguards.

Additional AMC - AMOs only

4. **▶ Where occupying a hangar or facility provided by the MOD, AMOs should comply with location-based aviation engineering orders and / or local procedures where applicable and as agreed by the Sponsor of the aviation engineering orders and local procedures². ◀**

5. Where the hangar is not owned by the organization or provided by the MOD, AMOs might have to establish proof of tenancy. In addition, sufficient hangar space to carry out Maintenance **should** be demonstrated by the preparation of a projected Air System hangar visit plan relative to the Maintenance programme. The Air System hangar visit plan **should** be updated on a regular basis.

Guidance Material 4805(1)

Facility Requirements (MRP 145.A.25(a))

Common GM

6. For **▶ Line / forward ◀** Maintenance of Air Systems, hangars are not essential, but it is recommended that, where practicable, access to hangar accommodation be demonstrated for usage during inclement weather for minor Preventive Maintenance work and lengthy Fault rectification.

7. Facilities will provide the appropriate level of security to any classified items being maintained and / or stored, be they held individually or installed to an Air System or assembly. AMOs will meet their contractual requirements in this regard.

8. When a UK military registered Air System is at a foreign or civilian airfield, the appropriate Command or Defence Contractor Flying Organization **▶ needs ◀** to consider guarding by the host nation or UK Service personnel to preserve the Airworthiness of the Air System.

Additional GM - MMOs only

9. If security requirements necessitate the removal of classified equipment, it will be undertaken iaw the Air System Document Set and the items held in a secure store as required by Defence Policy.

Additional GM - AMOs only

10. The 'hangar visit plan' is a document that shows the projected planning of hangar utilization. The purpose of the hangar visit plan is to show that adequate facilities are at the disposal of the organization for the proposed scope of Maintenance.

Regulation 4805(2)

Office Accommodation (MRP 145.A.25(b))

4805(2) The organization **shall** ensure that office accommodation is provided for the management of the Maintenance work referred to in RA 4805(1)³, and certifying staff so that they can carry out their designated tasks in a manner that contributes to good Air System Maintenance standards.

² **▶ Refer to RA 4009(1): Aviation Engineering Orders and Local Procedures. ◀**

³ Refer to RA 4805(1): Facility Requirements (MRP 145.A.25(a)).

**Acceptable
Means of
Compliance
4805(2)**

Office Accommodation (MRP 145.A.25(b))

11. Air System Maintenance staff **should** be provided with an area where they can study Maintenance instructions and complete Maintenance records.

**Guidance
Material
4805(2)**

Office Accommodation (MRP 145.A.25(b))

12. It is acceptable to combine any or all of the office accommodation requirements into one office subject to the staff having sufficient room to carry out the assigned tasks.

13. It is not essential for the office accommodation required by this Regulation to be a purpose-built room or building, but it will provide a working environment that permits personnel to carry out their work in an effective manner.

**Regulation
4805(3)**

Working Environment (MRP 145.A.25(c))

4805(3) The organization **shall** ensure that the working environment, including Air System hangars, component workshops and office accommodation, is appropriate for the task carried out. Unless otherwise dictated by the specific task environment, the working environment **shall** be such that the effectiveness of personnel is not impaired.

**Acceptable
Means of
Compliance
4805(3)**

Working Environment (MRP 145.A.25(c))

Common AMC

14. Temperatures **should** be maintained such that personnel can carry out required tasks without undue discomfort.

15. Dust and any other airborne contamination **should** be kept to a minimum and not be permitted to reach a level in the work task area where visible Air System and / or Air System component surface contamination is evident. Where dust / other airborne contamination results in visible surface contamination, all susceptible systems **should** be sealed until acceptable conditions are re-established.

16. Lighting **should** be such as to ensure each inspection and Maintenance task can be carried out in an effective manner.

17. Noise **should not** distract personnel from carrying out inspection tasks. Where it is impractical to control the noise source, such personnel **should** be provided with the necessary personal equipment to stop excessive noise causing distraction during inspection tasks.

18. The working environment for Air System Maintenance **should** be such that the specific Maintenance or inspection task can be carried out without undue distraction. Therefore, where the working environment deteriorates to an unacceptable level in respect of temperature, moisture, hail, ice, snow, wind, light, dust or other airborne contamination, the specific Maintenance or inspection tasks **should** be suspended until satisfactory conditions are re-established.

19. Due to the ►◄ challenges of embarked aviation, specific Risk mitigation measures **should** be put in place for Air System Maintenance in this environment.

Additional AMC - MMOs only

20. In derogation to Paragraphs ►14-18◄, an MMO can be required to conduct Maintenance at austere locations or in harsh environments. In such instances, the individual appointed as the relevant Maintenance Manager⁴ or, in their absence, their authorized representative **should** put in place measures to mitigate the Risk of environmental conditions having a detrimental effect on Maintenance standards such that Risk remains As Low As Reasonably Practicable (ALARP) and Tolerable.

⁴ Refer to RA 4806(2): Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b)).

**Acceptable
Means of
Compliance
4805(3)**

Additional AMC - AMOs only

21. Nil.

**Guidance
Material
4805(3)**

Working Environment (MRP 145.A.25(c))

Common GM

22. Specific Maintenance tasks may ►be subject to◄ specific environmental conditions ►or limitations;◄ such conditions will be identified in the ►Approved Data◄ and will be observed.

Additional GM - MMOs only

23. While Paragraph ►20◄ provides some flexibility for MMOs, the requirements of this Regulation must be adhered to as far as is practicable.

Additional GM - AMOs only

24. Nil.

**Regulation
4805(4)**

Storage Facilities (MRP 145.A.25(d))

4805(4) The organization **shall** ensure that secure storage facilities are provided for components, equipment, tools and material that ensure segregation of Serviceable components and material from Unserviceable Air System components, material, equipment and tools. The conditions of storage **shall** be in accordance with the instructions of the manufacturer, or other applicable MOD instructions, to prevent deterioration and damage of stored items. Access to storage facilities **shall** be restricted to authorized personnel.

**Acceptable
Means of
Compliance
4805(4)**

Storage Facilities (MRP 145.A.25(d))

Common AMC

25. Storage facilities for Serviceable Air System components **should** be clean, well-ventilated and maintained within a suitable temperature range to minimize the effects of condensation unless the use of Type Airworthiness Authority approved special-to-contents containers permits storage in alternative conditions. Manufacturer's storage recommendations **should** be followed for those Air System components identified in such published recommendations.

26. Storage racks **should** be strong enough to hold Air System components and provide sufficient support for large Air System components such that the component is not damaged, scratched or distorted during storage; protective matting or equivalent can be used if necessary.

27. All Air System components, wherever practicable, **should** remain packaged in protective material to minimize damage and corrosion during storage.

Additional AMC - MMO Only

28. In reference to paragraphs ►25-26◄, MMOs operating at deployed or austere locations **should** adhere to these requirements as far as practicable.

Additional AMC - AMO Only

29. Nil.

**Guidance
Material
4805(4)**

Storage Facilities (MRP 145.A.25(d))

30. Nil.

RA 4806 - Personnel Requirements (MRP 145.A.30)

Rationale

An organization applying for MRP Part 145 Approval is required to appoint ► **several essential positions** ◀, which each have specific responsibilities, and detail them in the Maintenance Organization Exposition (MOE). While Military Maintenance Organizations (MMOs) are not currently required to apply for Approval, this RA remains applicable. Without the appointment of specific roles within a Maintenance organization, personnel leadership and management of essential functions could be compromised, thus increasing the Risk of a Maintenance Occurrence, the organization operating outside its scope of work and potentially increasing Risk to Life. This RA describes the Maintenance organization roles that require Competent individuals to fulfil their responsibilities and provide Assurance that the organization is compliant with MRP Part 145.

Contents

Definitions Relevant to this RA

4806(1): Accountable Manager (Maintenance) (MRP 145.A.30(a))

4806(2): Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b))

4806(3): Quality Manager ► ◀

4806(4): Maintenance Working Hours Plan (MRP 145.A.30(d))

4806(5): Personnel Competences and Authorization (MRP 145.A.30(e))

4806(6): Specialized Services (MRP 145.A.30(f))

4806(7): Air System Certifying Staff (Line Maintenance) (MRP 145.A.30(g)) - Approved Maintenance Organizations only

4806(8): Air System Certifying Staff (Base Maintenance) (MRP 145.A.30(h)) - Approved Maintenance Organizations only

4806(9): Component Certifying Staff (MRP 145.A.30(i))

4806(10): Non-engineering Staff (MRP 145.A.30(j))

Definitions

Definitions Relevant to this RA

1. ► Refer to RA 4800 – General Requirements (MRP Part 145) for standardized definitions. ◀
2. ► ◀
3. ► ◀

Regulation 4806(1)

Accountable Manager (Maintenance) (MRP 145.A.30(a))

- 4806(1) An Accountable Manager (Maintenance) (AM(M)) **shall** be appointed who has a basic understanding of MRP Part 145, and has organizational authority ► **and Responsibility** ◀ for:
- a. Ensuring that all Maintenance is carried out in compliance with MRP Part 145.
 - b. Ensuring that all necessary resources are available to accomplish Maintenance¹ and, where applicable, support the organization Approval (Approved Maintenance Organizations (AMOs) only).
 - c. Establishing and promoting the Safety and Quality Policy² (AMOs only).

¹ Refer to RA 4815(2): Procedures for Good Maintenance Practices (MRP 145.A.65(b)).

² Refer to RA 4815(1): Organization Safety and Quality Policy (MRP 145.A.65(a)).

**Acceptable
Means of
Compliance
4806(1)**

Accountable Manager (Maintenance) (MRP 145.A.30(a))

Common AMC

4. Nil.

Additional AMC – MMOs only

5. The Aviation Duty Holder (ADH) ► **should** ◀ appoint an individual who is responsible for ensuring that Maintenance is carried out in compliance with MRP Part 145. ► **The AM(M)** ◀ **should** have direct access to the Delivery Duty Holder to communicate Safety related issues.

Additional AMC – AMOs only

6. ► ◀ The AM(M) is normally intended to mean the Chief Executive Officer (CEO) of the AMO who, by virtue of position, has overall (including financial) Responsibility for running the organization. When the AM(M) is not the CEO, the MAA **should** be assured that such an AM(M) has direct access to the CEO on Safety related issues and has sufficient 'Maintenance funding' allocation.

**Guidance
Material
4806(1)**

Accountable Manager (Maintenance) (MRP 145.A.30(a))

Common GM

7. Nil.

Additional GM – MMOs only

8. Nil.

Additional GM – AMOs only

9. The AM(M) may be the AM(M) for more than one AMO and is not necessarily required to ► **have in-depth knowledge** ◀ on technical matters, as the MOE defines the Maintenance standards.

10. Where an AMO holds both an Approval under MRP Part 145 and a Civil Aviation Authority (CAA) Part 145, the post title of AM(M) may be shortened to 'Accountable Manager' for clarity if required. However, this appointment must not be confused with the Accountable Manager (Military Flying)³.

**Regulation
4806(2)**

Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b))

- 4806(2) The organization **shall** nominate a person or group of persons, whose Responsibilities include ensuring that the organization complies with MRP Part 145. Such person(s) **shall** ultimately be responsible to the AM(M).
- a. The person(s) nominated **shall** represent the Maintenance management structure of the organization and be responsible for all functions specified in MRP Part 145.
 - b. The person(s) nominated **shall** be identified and their credentials submitted⁴ using an MAA MAOS Form 4 (AMOs only).
 - c. The person(s) nominated **shall** be able to demonstrate relevant knowledge, background and satisfactory experience related to Air Systems ► **and** / ◀ or component Maintenance and demonstrate a working knowledge of MRP Part 145.

³ Refer to RA 1028 – Contractor Flying Approved Organization Scheme.

⁴ The MAA MAOS Form 4 can be found on the Maintenance Approved Organization Scheme (MAOS) Approvals page of the MAA Website (► <https://www.gov.uk/government/publications/maintenance-approved-organization-scheme-maos> ◀).

**Regulation
4806(2)**

- d. Procedures **shall** make clear who deputizes for any **▶nominated◀** person in the case of lengthy absence of the said person.

**Acceptable
Means of
Compliance
4806(2)**

**Personnel Responsible to the Accountable Manager (Maintenance)
(MRP 145.A.30(b))**

Common AMC

11. Nil.

Additional AMC – MMOs only

12. An MMO **should** have a Quality manager and, depending on the type and size of MMO, one or more Air System Maintenance manager(s) and / or workshop manager(s) who will hold Responsibility for the Maintenance output of their relevant areas.

13. Individuals to be identified as an MMO's Air System Maintenance manager or workshop manager **should** be appropriately Authorized⁵.

14. The individuals identified in this Regulation **should** have direct access to the AM(M), **▶irrespective of whether the AM(M) is their◀** direct reporting officer for appraisal purposes.

Additional AMC – AMOs only

15. An AMO **should** have, dependent upon the extent of Approval, a Base Maintenance manager, a Line Maintenance manager, a workshop manager and a Quality manager **▶6◀**, all of whom **should** report to the AM(M) except in a small AMO, where any one manager can also be the AM(M).

16. The Base Maintenance manager **should** be responsible for ensuring that all Maintenance required to be carried out in the hangar, plus any Fault rectification carried out during Base Maintenance, is carried out to the required¹ design and Quality standards. The Base Maintenance manager **should** also be responsible for any corrective action resulting from Quality compliance monitoring **▶7◀**⁸.

17. The Line Maintenance manager **should** be responsible for ensuring that all Maintenance required to be carried out on the line, including **▶◀** Fault rectification, is carried out to the required¹ standards and **▶◀** for any corrective action resulting from Quality compliance monitoring⁷.

18. The workshop manager **should** be responsible for ensuring that all work on Air System components is carried out to the required¹ standards and also responsible for any corrective action resulting from Quality compliance monitoring⁷.

19. Notwithstanding the example post titles detailed here, the organization can adopt any title for the foregoing managerial positions but AMOs **should** identify to the MAA the titles and persons chosen to carry out these functions on submission of the MAA MAOS Form 4 and in the MOE.

20. Where an organization chooses to appoint **▶subordinate◀** managers for all or any combination of the identified MRP Part 145 functions because of the size of the undertaking, these managers **should** report through either the Base Maintenance manager, Line Maintenance manager, Workshop manager or Quality manager, as appropriate, to the AM(M).

21. Certifying staff can report to any of the managers specified, depending upon which type of control the AMO uses (for example, licensed engineers / Independent

⁵ Refer to RA 1006 – Delegation of Engineering Authorizations and RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

⁶ **▶ For CAA Part 145 Approved organizations, the equivalent compliance monitoring Responsibilities **should** be held by personnel nominated iaw CAA Part 145.A.30(b) Personnel Requirements.**

⁷ **For CAA Part 145 Approved organizations, the requirements will be captured under compliance monitoring iaw CAA Part 145.A.200 Management Systems.◀**

⁸ Refer to RA 4815(3): Quality Management System (MRP 145.A.65(c)).

Acceptable Means of Compliance 4806(2)

Inspection / dual function supervisors etc); however, the Quality compliance monitoring staff⁹ **should** remain independent.

Guidance Material 4806(2)

Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b))

Common GM

22. Dependent upon the size of the organization, the MRP Part 145 functions may be subdivided under individual managers or combined in any number of ways.

Additional GM – MMOs only

23. Nil.

Additional GM – AMOs only

24. Nil.

Regulation 4806(3)

Quality Manager ▶◀

4806(3) The AM(M)¹⁰ **shall** appoint a person⁶◀ with Responsibility for monitoring the Quality ▶ **Management** ◀ System^{7, 8}◀, including the associated feedback system⁷. The appointed person **shall** have direct access to the AM(M) to ensure that the AM(M) is kept properly informed on Quality and compliance matters.

Acceptable Means of Compliance 4806(3)

Quality Manager ▶◀

25. Monitoring the Quality ▶ **Management** ◀ System **should** include requesting remedial and preventive action, ensuring full Root Cause Analysis, ▶ **on behalf of the AM(M) or other nominated personnel**¹¹.◀

Guidance Material 4806(3)

Quality Manager ▶◀

26. Nil.

Regulation 4806(4)

Maintenance Working Hours Plan (MRP 145.A.30(d))

4806(4) The organization **shall** have a Maintenance working hours plan demonstrating that the organization has the workforce capacity and Competence to carry out the scope of its Approval, and that the workforce is of sufficient quantity and appropriate composition to plan, perform, supervise, inspect and Quality monitor the organization. In addition, the organization **shall** have a procedure to reassess work intended to be carried out when actual staff availability is less than the planned staffing level for any ▶◀ period.

Acceptable Means of Compliance 4806(4)

Maintenance Working Hours Plan (MRP 145.A.30(d))

Common AMC

27. Nil.

⁹ Refer to RA 4806(3): Quality Manager ▶◀.

¹⁰ Refer to RA 4806(1): Accountable Manager (Maintenance) (MRP 145.A.30(a)).

¹¹ Refer to RA 4806(2): Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b)).

**Acceptable
Means of
Compliance
4806(4)**

Additional AMC – MMOs only

28. Where an MMO utilizes Contracted staff, the relevant Maintenance Manager **should** ensure that they adhere to the appropriate Regulations and procedures.

29. In cases where an MMO is required to deviate from the Maintenance working hours plan to meet a temporary increase in the required output (for example, in support of an increase in flying task), the relevant Maintenance manager **should** report the deviation to the AM(M) ▶◀ to assess any Air Safety implications and, if necessary, establish appropriate mitigation strategies. Likewise, if adequate staffing levels cannot be maintained, the AM(M) **should** consider the need for a commensurate reduction in Maintenance tasking, in discussion with the ADH chain where appropriate.

Additional AMC – AMOs only

30. The organization **should** demonstrate that they have appropriate workforce capacity by meeting either one, or both, of the following conditions:

a. Employ or contract staff such that at least half the staff who perform Maintenance in each workshop, hangar or flight line on any shift are employed to ensure organizational stability (definitions of 'employed' and 'Contracted' are contained within the Guidance Material to this Regulation).

b. Ensure organizational stability by demonstration in the Maintenance working hours plan of the organization's active assessment and management of:

(1) Staff experience.

(2) Staff time in post.

(3) Supervision ratios.

(4) Staff turnover rates which **should** be below 50% of the staff who perform Maintenance in each workshop, hangar or flight line on any shift in a rolling 12-month period (method of calculation is contained within the Guidance Material to this Regulation).

31. Contract staff, being part time or full time **should** be made aware that when working for the organization they are subjected to compliance with the organization's procedures specified in the MOE relevant to their duties.

32. The Maintenance working hours plan **should** ▶consider◀ any Maintenance carried out on Air Systems and / or components from outside the UK and **should** also ▶consider◀ all work carried out outside the scope of the MRP Part 145 Approval.

33. The Maintenance working hours plan **should** relate to the anticipated Maintenance workload.

34. In the case of Air System Base Maintenance, the Maintenance working hours plan **should** relate to the Air System hangar visit plan¹².

35. The Quality monitoring▶⁷◀ compliance function working hours **should** be sufficient to meet the Quality ▶Management◀ System requirement⁸. Where Quality-monitoring staff perform other functions, the time allocated to such functions **should** be ▶considered when◀ determining Quality monitoring staff numbers.

36. The Maintenance working hours plan **should** be reviewed at least every 3 months and updated when necessary.

37. Significant deviation from the Maintenance working hours plan **should** be reported through the departmental manager to the Quality manager▶⁶◀ and the AM(M) for review.

¹² Refer to RA 4805(1): Facility Requirements (MRP 145.A.25(a)).

**Guidance
Material
4806(4)**

Maintenance Working Hours Plan (MRP 145.A.30(d))

Common GM

38. The 'Maintenance working hours plan' is a document or set of documents that demonstrate what the organization ►can◄ achieve with the actual workforce resource available and, where applicable for 'Line' or 'forward' ►◄ Maintenance organizations, the Air System Flying Hours that can be made available as a result of this Maintenance.

Additional GM – MMOs only

39. An MMO's Maintenance working hours plan may be developed and held by a higher military formation, but individual MMOs will be expected to have access to, and an understanding of, their plan.

40. An MMO's Maintenance working hours plan may be supplemented by several separate plans to cater for differing circumstances, for example, Air System Maintenance organizations supporting expeditionary operations or exercises. However, in all instances the plan will demonstrate that staff levels are adequate to safely perform the functions specified in this Regulation.

Additional GM – AMOs only

41. For ►◄ this Regulation, 'employed' means the person is directly employed by the Maintenance organization Approved under MRP Part 145, or the person is a Contractor who has been engaged in one role for a minimum of 6 months. 'Contracted' means the person is employed by another organization and Contracted by that organization to the Maintenance organization Approved under MRP Part 145 (►unless the person has been engaged in one role for a minimum of 6 months,◄ where the Contracted person is considered to be 'employed' ►as stated above◄).

42. In the case of MOD / industrial partnered support arrangements in an AMO, the MOD element of the organization will be considered, for the purpose of this clause, as part of the AMO's 'employed' workforce.

43. Turnover rate is calculated as the number of persons who departed divided by the average number of persons who performed Maintenance, over the rolling 12-month period.

44. 'Maintenance workload' includes all necessary work such as, but not limited to, planning, Maintenance record checks, production of worksheets / cards in paper or electronic form, accomplishment of Maintenance, inspection and the completion of Maintenance records.

45. Significant deviation means more than a 25% shortfall in available working hours during a calendar month for any one of the functions specified in this Regulation.

**Regulation
4806(5)**

Personnel Competences and Authorization (MRP 145.A.30(e))

4806(5) The organization **shall** establish the Competence and control the Authorization of personnel involved in any Maintenance, management and / or Quality Audits. In addition to the necessary expertise related to the job function, Competence **shall** include ►an understanding of the application of Human Factors (HF) and human performance issues that affect an individual or team function in an organization.◄

a. ►◄

b. ►◄

AMOs **shall** detail the procedure for such Competence assessment and the standard to be achieved in their MOE.

**Acceptable
Means of
Compliance
4806(5)**

Personnel Competences and Authorization (MRP 145.A.30(e))

Common AMC

Electrical Wiring Interconnection System (EWIS) Training

46. Personnel¹³ who maintain, ► or inspect ◀ Air Systems with ► EWIS ◀, **should** receive EWIS awareness training, ► to reduce inadvertent damage to the electrical Systems. ◀ Refresher training **should** be completed every 2 years as a minimum.
47. As a minimum this training **should** include the following topics:
- General EWIS Safety practises.
 - Wires - typical damage and areas found (Air System specific), Electrical Bonding and grounds.
 - Housekeeping - know the contamination sources, materials, cleaning and protection procedures.
 - Connective devices - know or demonstrate the procedures to identify, inspect, and find the correct Repair for typical types of connective devices found on the applicable Air System.

Additional AMC – MMOs only

Competence Assessment and Authorization

48. Tradespersons ►¹⁴ ◀ who maintain Air Systems ►¹⁵ ◀, including Contractor staff, **should** be trained, assessed as Competent¹⁶ and Authorized for specific tasks and roles, including, but not limited to:
- All personnel required to sign Maintenance documentation, noting the additional requirements detailed in paras 49-51.
 - Self-supervisors.
 - Elementary self-supervisors.
 - Personnel using ground Maintenance Systems.
 - Personnel required to carry out ground runs on engines and / or Auxiliary Power Units, whether installed in Aircraft, in an engine training facility, or in an Uninstalled Engine Test Facility.
 - Aircraft Ground Engineers, ► ie Aircraft Technicians deployed with Air Systems to undertake a range of Maintenance activities with minimal technical support. ◀
 - Survival Equipment ► and Aircrew Equipment Assemblies ◀ Maintenance staff.
 - Ground Support Equipment Maintenance staff.
49. The individuals conducting a Competence assessment of personnel employed in Air System Maintenance **should** ► confirm ◀ that those being assessed have received an appropriate level of training or familiarization on the Air System type before being Authorized to undertake Maintenance or servicing activities as Tradesperson, Supervisor ►¹⁴ ◀ or Coordinator / Certifying Staff ►¹⁴ ◀, on that Air System type.
50. Individuals receiving an Authorization to undertake the duties of the Tradesperson, **should** first receive an element of type-specific training and / or familiarization appropriate to the scope of their Authorization. Good practice is for such training to ► lead ◀ to the award of a formal qualification ► on ◀ the Air System type; consideration to introducing this qualifying ► criterion ◀ for Tradespersons **should** be given by the Chief Air Engineer.

¹³ This includes Aircrew who carry out Maintenance.

¹⁴ ► Refer to RA 4800 – General Requirements (MRP Part 145) for standardized definitions.

¹⁵ Refers to Air Systems (including their Products, Parts and Appliances) and Aircrew Equipment Assemblies, Airborne Equipment and Air Launched Weapons. ◀

¹⁶ Refer to RA 1002 – Airworthiness Competent Persons.

**Acceptable
Means of
Compliance
4806(5)**

51. The individuals conducting a Competence assessment of personnel employed in Air System component / equipment Maintenance **should** ►confirm◄ that those being assessed have received training and / or familiarization on the relevant component(s) / equipment(s) appropriate to their level of Authorization.

52. Engineering Authorizations **should** be recorded using a system that is Auditable.

53. Tradespersons ►◄ who are required to undertake Maintenance on Air Systems from another Service or nation **should** only do so if appropriately Authorized ►for the Maintenance through Recognition or in accordance with (iaw) MMO procedures.

HF Training

54. MMO personnel **should** receive HF training iaw RA 1440¹⁷. Personnel from another nation required to undertake Maintenance on UK Air Systems **should** have received equivalent training.◄

Additional AMC – AMOs only

Competence Assessment and Authorization

55. The MOE procedure **should** require, amongst others, that planners, Tradespersons, Specialized Services staff, Supervisors and Coordinating / Certifying Staff are assessed for Competence by 'on the job' evaluation and / or by examination relevant to their job role within the organization, before unsupervised work is permitted.

56. A record of the qualification and Competence assessment **should** be kept.

57. The Maintenance organization **should** have in place procedures for:

- a. Ensuring that all personnel are Competent by virtue of their training and experience for the tasks on which they are employed.
- b. Ensuring staff are trained, assessed and Authorized for specific tasks.
- c. Providing initial and continuation training by a suitable organization.
- d. Maintaining a record system detailing the training and qualification of all staff.
- e. Maintaining a record of all personnel Authorizations.

58. The MOE procedure **should** include a method of assessing the training and experience of personnel joining the organization. ►This◄ **should** include as a minimum:

- a. Verification of any qualifications and experience.
- b. A formal technical interview.
- c. A period of on the job assessment.

59. Adequate initial and recurrent training **should** be provided and recorded to ensure continued Competence.

60. To assist in the assessment of Competence, job descriptions are recommended for each job role in the organization. The Competence assessment **should** establish that:

- a. Planners ►can◄ interpret Maintenance requirements into Maintenance tasks and ►know◄ they have no authority to deviate from the Technical Information (TI).
- b. Tradespersons ►can◄ carry out Maintenance tasks to ►the◄ standard specified in the TI and will notify Supervisors of mistakes requiring rectification to re-establish required Maintenance standards.
- c. Specialized Services staff ►can◄ carry out specialized Maintenance tasks to the standard specified in the TI, and will both inform and await

¹⁷ ►Refer to RA 1440 – Air Safety Training.◄

**Acceptable
Means of
Compliance
4806(5)**

instructions from their Supervisor in any case where it is not possible to complete the specialized Maintenance iaw the TI.

d. Supervisors are able to ensure that all required Maintenance tasks are carried out and where not completed or where it is evident that a ►◄ Maintenance task cannot be carried out to the TI, then such problems will be reported to the Quality manager⁹ for appropriate action. In addition, for those Supervisors who also carry out Maintenance tasks, that they understand such tasks **should not** be undertaken when incompatible with their management Responsibilities.

e. Coordinating / Certifying Staff ►can◄ determine when the Air System or Air System component is Serviceable and when it is Unserviceable.

61. Planners, Specialized Services staff, Supervisors and Coordinating / Certifying Staff **should** have a knowledge of organization procedures relevant to their ►◄ role in the organization. The ►above◄ list is not exclusive and can include other categories of personnel.

62. Quality Audit►7◄ staff **should** monitor compliance with MRP Part 145, identifying non-compliance in an effective and timely manner in order that the organization remains in compliance with MRP Part 145.

HF Training

63. ►◄ Maintenance, management, and Quality Audit personnel in AMOs **should** be assessed for the need to receive initial HF training¹⁷, ►and◄ receive HF continuation training. As a minimum, this **should** concern:

- a. Post-holders, managers.
- b. Tradespersons, Supervisors and Coordinating / Certifying Staff.
- c. Technical support personnel, such as, planners and technical record staff.
- d. Quality control / Assurance staff.
- e. Specialized Services staff.
- f. HF staff / HF trainers.
- g. Store department staff and purchasing department staff.
- h. Ground equipment operators.
- i. Contract staff in the above categories.

64. Depending on the result of the Competence assessment ►◄, initial training **should** be provided to personnel during their induction into the Maintenance organization. Consideration **should** be given to training temporary staff soon after they join the organization ►◄.

65. Personnel being recruited from another AMO and temporary staff **should** be assessed for the need to receive any additional HF training to meet the HF training standard of the new AMO.

66. The purpose of HF continuation training is ►to help◄ ensure that staff remain current in terms of HF and ►◄ to collect feedback on HF issues. Training **should** have the involvement of the Quality department. There **should** be a procedure to ensure that feedback is formally passed from the trainers to the Quality department to initiate action where necessary.

67. HF continuation training **should** be of an appropriate duration in each 2-year period ►and relate◄ to Quality Audit findings, and other internal / external sources of information available to the organization, ►concerning◄ human errors in Maintenance.

68. HF training **should** be conducted by the AMO itself, independent trainers, or a suitable training organization.

69. The HF training procedures **should** be specified in the MOE.

**Guidance
Material
4806(5)**

Personnel Competences and Authorization (MRP 145.A.30(e))

Common GM

70. CAA ► **UK AMC¹⁸** ◄ provides useful material for personnel creating EWIS training syllabi.

71. 'Human Factors' is defined in MAA02¹⁹. 'Human performance' means human capabilities and limitations which have an impact on the Safety and efficiency of aeronautical operations.

72. For all relevant personnel in the Defence Air Environment, HF training requirements¹⁷ must be followed.

Additional GM – MMOs only

73. ► ◄

Additional GM – AMOs only

74. Initial HF training will cover the topics of the training syllabus specified in Annex A to this Regulation, either as a dedicated course or else integrated within other training. The syllabus may be adjusted to reflect the ► **nature and functions of the organization.** ◄

**Regulation
4806(6)**

Specialized Services (MRP 145.A.30(f))

- 4806(6) The organization **shall** ensure that ► **personnel who carry out and / or control Specialized Services are appropriately qualified iaw an officially recognized standard.** This includes:
- a. **Non-Destructive Testing (NDT) of Air System Structures for the method of NDT carried out.**
 - b. **Application of surface finish of Air System Structures and / or components for the surface finish task carried out.**
 - c. **Any other Specialized Services where there is an officially recognized standard.** ◄

**Acceptable
Means of
Compliance
4806(6)**

Specialized Services (MRP 145.A.30(f))

Common AMC

75. **NDT.** Personnel who carry out and / or control NDT of Air System Structures and / or components **should** be appropriately qualified iaw BS EN 4179²⁰, or equivalent.

76. ► ◄

► Aircraft Surface Finish. ◄

77. ► ◄ Surface finish activities **should** be carried out by Competent specialized organizations with appropriately qualified personnel. Training for persons undertaking and authorizing surface finish activities **should** as a minimum, meet the national standards for Aircraft surface finish²¹:

- a. SEMAER233 – Preparing Aircraft components for surface finishing / coating.
- b. SEMAER234 – Preparing Aircraft component coatings / finishes for application.
- c. SEMAER235 – Applying coatings / finishes to Aircraft components by hand.

¹⁸ ► **CAA UK AMC for Airworthiness of Products, Parts and Appliances: AMC 20-22 Aeroplane EWIS Training Programme.** ◄

¹⁹ Refer to MAA02: MAA Master Glossary.

²⁰ BS EN 4179 – Aerospace series. Qualification and approval of personnel for non-destructive testing.

²¹ National Occupational Standards (NOS) are detailed at <https://www.ukstandards.org.uk/>.

Acceptable Means of Compliance 4806(6)

- d. SEMAER236 – Applying coatings / finishes to Aircraft components by spray gun.
- e. SEMAER237 – Carrying out the application of transfers, decals and livery to Aircraft components.

78. Tradesperson, Supervisors, Coordinating / Certifying Staff¹⁴ can carry out minor surface finish activities as Maintenance tasks iaw the Air System Document Set.

Additional AMC – MMOs only

79. Nil.

Additional AMC – AMOs only

► NDT ◀

80. ► ◀ Notwithstanding the general references in BS EN 4179 to a national aerospace NDT board, all examinations and training **should** be conducted by personnel or organizations under the general control of such a board. The referenced standards, methods, training, experience levels and procedures **should** be specified in the MOE.

81. An AMO that carries out NDT **should** establish NDT specialist qualification procedures, detailed in the MOE and accepted by the MAA.

82. ► For non-destructive inspections, such as Boroscopying and tap testing (also referred to as 'coin tapping'), ◀ AMOs **should** establish a procedure in their MOE, accepted by the MAA, to ensure that personnel who carry out and interpret such inspections are properly trained and assessed for their Competence with the process. Organizations undertaking non-destructive inspections do not require a D1 class rating Approval²².

Guidance Material 4806(6)

Specialized Services (MRP 145.A.30(f))

► NDT ◀

Common GM

83. 'Continued Airworthiness NDT' means such testing specified by TI for the purpose of determining the continued fitness of the product to operate safely.

84. ► Whilst ◀ the organization's Responsible Level 3 may be qualified to establish and authorize ► NDT ◀ methods, techniques, etc, this does not permit ► deviation ◀ from methods and techniques published by the Type Airworthiness Authority in the form of TI, such as in NDT manuals or Service Bulletins, unless the manual or Service Bulletin expressly permits such deviation.

85. ► 'Method of ◀ NDT' means any one or more of the following:

- a. Penetrant testing.
- b. Magnetic testing.
- c. Eddy current testing.
- d. Ultrasonic testing.
- e. Radiographic testing.
- f. Thermographic testing.
- g. Shearographic testing.

Additional GM – MMOs only

86. Personnel will become qualified on the successful completion of NDT training, consolidation, and examinations appropriate to the level of NDT qualification being sought.

87. Authorization to conduct NDT will be withdrawn if an individual's qualification becomes invalid. The relevant authorizing individual may re-authorize personnel once

²² Refer to RA 4804 – Terms of Approval (MRP 145.A.20) - Approved Maintenance Organizations only.

**Guidance
Material
4806(6)**

the lapsed qualification element(s) has been reassessed and certified as being complete. A Responsible Level 3 can advise on the re-Authorization action required. Under exceptional or operational requirements, the relevant authorizing individual may extend the validity of an NDT Authorization to meet a specific need.

88. NDT Authorizations will be recorded²³.

89. When MMOs do not have the necessary organic NDT capability, additional services may be requested from specialist organizations (such as 1710 NAS, 71(IR) Squadron or an appropriate AMO with a D1 rating) that are ► **Authorized to undertake the relevant NDT task.** ◀

Additional GM – AMOs only

90. Nil.

**Regulation
4806(7)**

Air System Certifying Staff (Line Maintenance) (MRP 145.A.30(g)) - Approved Maintenance Organizations only

4806(7) An AMO undertaking Air System Line Maintenance **shall** have appropriate Coordinating / Certifying Staff qualified on each relevant Air System type and, where applicable, Tradespersons and Supervisors, suitably Authorized ►²³◀ for Line Maintenance activities ►²⁴◀.

**Acceptable
Means of
Compliance
4806(7)**

Air System Certifying Staff (Line Maintenance) (MRP 145.A.30(g)) - Approved Maintenance Organizations only

91. In the case of an AMO using certifying staff licensed iaw CAA Part 66, a suitable number of Category B1 and B2 Certifying Staff **should** be employed and Authorized. The use of appropriately qualified Category A personnel to conduct minor preventative Line Maintenance and simple Fault rectification **should not** replace this requirement for Category B1 and B2 staff.

92. In the case of an AMO adopting military processes, including the use of the MOD Form 700 as the Air System technical log, and the associated Authorization framework, a suitable number of personnel **should** be employed who are Authorized to:

- a. Undertake the Responsibilities of '1st signature', '2nd signature' and '3rd signature' (Tradesperson, Supervisor and Coordinating / Certifying Staff) ►¹⁴◀ for Maintenance tasks.
- b. Undertake and coordinate flight servicing activities.
- c. Endorse the Certification of Air System Release ►²⁵◀.

**Guidance
Material
4806(7)**

Air System Certifying Staff (Line Maintenance) (MRP 145.A.30(g)) - Approved Maintenance Organizations only

93. The following Guidance Material is applicable to AMOs employing certifying staff licensed iaw CAA Part 66 in a Line Maintenance environment:

- a. 'Minor scheduled Line Maintenance' means any minor scheduled inspection / check up to and including a weekly check specified in the Approved Aircraft Maintenance Programme²⁶ (or equivalent), in a Line Maintenance environment²⁷.
- b. Where the AMO uses appropriately Authorized Category A Tradespersons to carry out minor scheduled Line Maintenance and simple Fault

²³ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

²⁴ ► Refer to RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

²⁵ Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50). ◀

²⁶ Refer to RA 4961 – Aircraft Maintenance Programme ► and Military Continuing Airworthiness Management Organization Responsibilities for Air System Release - MRP Part M Subpart C. ◀

²⁷ Refer to RA 4802(1): Scope of the MRP Part 145 (MRP 145.A.10(a)).

**Guidance
Material
4806(7)**

rectification, Category B1 and B2 staff need not always be present at the line station during such activity.

c. The following list contains typical tasks that a Category A Tradesperson could carry out after appropriate task training, as part of minor scheduled Line Maintenance or simple Fault rectification:

- (1) Replacement of wheel assemblies and brake units.
- (2) Replacement of simple crew escape and emergency equipment (excluding Aircraft Assisted Escape Systems (AAES)).
- (3) Replacement of internal and external lights, filaments and flash tubes.
- (4) Replacement of windscreen wiper blades.
- (5) Replacement of seats (excluding AAES), seat belts and harnesses.
- (6) Closing of cowlings and re-fitment of quick access inspection panels.
- (7) Replacement of static wicks / static dischargers.
- (8) Replacement of Air System batteries.
- (9) Routine lubrication and replenishment of fluids and gases.

**Regulation
4806(8)**

Air System Certifying Staff (Base Maintenance) (MRP 145.A.30(h)) - Approved Maintenance Organizations only

4806(8) An AMO undertaking Air System Base Maintenance **shall** have appropriate Coordinating / Certifying Staff qualified on each relevant Air System type and, where applicable, Tradespersons and Supervisors, suitably Authorized^{▶23◀} for Base Maintenance activities^{▶24◀}.

**Acceptable
Means of
Compliance
4806(8)**

Air System Certifying Staff (Base Maintenance) (MRP 145.A.30(h)) - Approved Maintenance Organizations only

94. In the case of an AMO using certifying staff licensed iaw CAA Part 66 to conduct Base Maintenance, a suitable number of appropriate Air System type-qualified Category C Certifying Staff **should** be employed and Authorized. In addition, the AMO **should** have sufficient Air System type-qualified staff qualified as Category B1 and B2 and Authorized to support the Category C Coordinating / Certifying Staff^{▶14◀}. In this instance, the following process **should** be followed:

- a. The Category B1 and B2 Tradespersons^{▶14◀} and Supervisor^{▶14◀} **should** ensure that all relevant tasks or inspections have been carried out to the required standard before the Category C Certifying Staff endorses the Certification of Air System Release.
- b. The Category C Coordinating / Certifying Staff **should** ensure compliance with sub-para ▶◀a above, and that all work required by the customer has been accomplished during the ▶◀ work package. They **should** also assess the impact of any work not carried out with a view to either requiring its accomplishment or agreeing with the Military Continuing Airworthiness Management Organization or MOD Contracting Authority to defer such work to another specified check or time limit.

95. In the case of an AMO adopting military processes, including the use of the MOD Form 700 as the Air System technical log, and the associated Authorization framework, a suitable number of personnel **should** be employed who are Authorized to:

- a. Undertake the responsibilities of '1st signature', '2nd signature' and '3rd signature' (Tradesperson, Supervisor and Coordinating / Certifying Staff) Maintenance tasks.
- b. Endorse the Certification of Air System Release^{▶25◀}.

Guidance Material 4806(8)	Air System Certifying Staff (Base Maintenance) (MRP 145.A.30(h)) - Approved Maintenance Organizations only 96. Nil.
--------------------------------------	---

Regulation 4806(9)	Component Certifying Staff (MRP 145.A.30(i)) 4806(9) Any organization undertaking component Maintenance shall have appropriately qualified Tradesperson, Supervisor and Coordinating / Certifying Staff, to be suitably Authorized ^{▶23◀} for component Maintenance activities ^{▶24◀} .
-------------------------------	--

Acceptable Means of Compliance 4806(9)	Component Certifying Staff (MRP 145.A.30(i)) Common AMC 97. Nil. Additional AMC – MMOs only 98. Persons certifying the Certification of Component Release following Maintenance should be appropriately Authorized. Additional AMC – AMOs only 99. Certification of Component Release following Maintenance should be by appropriately Authorized Coordinating / Certifying Staff ^{▶14◀} .
---	---

Guidance Material 4806(9)	Component Certifying Staff (MRP 145.A.30(i)) 100. Nil.
--------------------------------------	--


Regulation 4806(10)	Non-engineering Staff (MRP 145.A.30(j)) 4806(10) Non-engineering staff, including Aircrew, shall only be permitted to undertake Air System Maintenance and / or flight servicing when Authorized. Where applicable, AMOs shall detail the procedure to grant such Authorization in the MOE.
--------------------------------	---

Acceptable Means of Compliance 4806(10)	Non-engineering Staff (MRP 145.A.30(j)) Common AMC 101. Nil. Additional AMC – MMOs only 102. Aircrew required to undertake Maintenance and / or flight servicing tasks should undertake a Competence assessment prior to Authorization. Additional AMC – AMOs only 103. The MOE procedure should ensure that the scope of permitted Air System Maintenance and / or flight servicing is specified in the Authorization.
--	---

Guidance Material 4806(10)	Non-engineering Staff (MRP 145.A.30(j)) 104. The requirements for the Authorization of personnel who undertake Maintenance tasks on Air Systems must be adhered to.
---------------------------------------	---

Annex A**HF Training Syllabus (AMOs Only)**

1. The training syllabus below identifies the topics and sub-topics to be addressed during HF training for personnel in an AMO. The Maintenance organization may combine, divide, or change the order of any subject of the syllabus to suit its own needs, so long as all subjects are covered to a level of detail appropriate to the organization and its personnel. ► If ◀ topics ► are ◀ covered in separate training (Health and Safety, Management, Supervisory Skills, etc.), ► ◀ duplication of training is not necessary.
2. Where possible, practical illustrations and examples will be used, especially Accident and Incident reports. Topics will also need to be related to Maintenance where possible; too much unrelated theory will need to be avoided.
3. Required training topics and sub-topics are as follows:
 - a. General / Introduction to HF:
 - (1) Need to address HF.
 - (2) Statistics.
 - (3) Incidents.
 - b. Safety Culture / Organizational factors.
 - c. Human Error:
 - (1) Error models and theories.
 - (2) Types of errors in Maintenance tasks.
 - (3) Violations.
 - (4) Implications of errors.
 - (5) Avoiding and managing errors.
 - (6) Human reliability.
 - d. Human performance and limitations:
 - (1) Vision.
 - (2) Hearing.
 - (3) Information-processing.
 - (4) Attention and perception.
 - (5) Situational awareness.
 - (6) Memory.
 - (7) Claustrophobia and physical access.
 - (8) Motivation.
 - (9) Fitness / Health.
 - (10) Stress.
 - (11) Workload management.
 - (12) Fatigue.
 - (13) Alcohol, medication, drugs.
 - (14) Physical work.
 - (15) Repetitive tasks / complacency.
 - e. Environment:
 - (1) Peer pressure.
 - (2) Stressors.
 - (3) Time pressure and deadlines.
 - (4) Workload.

- (5) Shift Work.
- (6) Noise and fumes.
- (7) Illumination.
- (8) Climate and temperature.
- (9) Motion and vibration.
- (10) Complex Systems.
- (11) Hazards in the workplace.
- (12) Lack of workforce.
- (13) Distractions and interruptions.
- f. Procedures, information, tools and practices:
 - (1) Visual Inspection.
 - (2) Work logging and recording.
 - (3) Procedure – practice / mismatch / norms.
 - (4) Technical documentation – access and Quality.
- g. Communication:
 - (1) Shift / Task handover.
 - (2) Dissemination of information.
 - (3) Cultural differences.
- h. Teamwork:
 - (1) Responsibility.
 - (2) Management, supervision and leadership.
 - (3) Decision making.
- i. Professionalism and integrity:
 - (1) Keeping up to date / currency.
 - (2) Error provoking behaviour.
 - (3) Assertiveness.
- j. Organization's HF programme:
 - (1) Reporting errors.
 - (2) 
 - (3) Error investigation.
 - (4) Action to address problems.
 - (5) Feedback.

RA 4807 - Certifying Staff¹ and Support Staff (MRP 145.A.35)

Rationale

Within a Maintenance organization, those personnel required to undertake Maintenance tasks and those that certify successful completion of Maintenance are required² to be Suitably Qualified and Experienced Persons (SQEP). Without a system to ensure that staff employed in the Maintenance of Air Systems and components are Competent, personnel leadership and management of essential functions could be compromised. This could increase the Risk of Maintenance Occurrences; the organization operating outside its scope of work; and potentially increasing Risk to Life. This RA details the requirements for Maintenance organizations to ensure that ► all Tradespersons, Supervisors and Coordinating / Certifying Staff ◀ are suitably qualified, experienced, assessed as Competent and appropriately authorized to undertake their duties.

Contents

► Definitions Relevant to this RA ◀

4807(1): Staff Knowledge (MRP 145.A.35(a))

4807(2): Certification and Supervisory Authorizations (MRP 145.A.35(b))

4807(3): Staff Experience Requirements (MRP 145.A.35(c))

4807(4): Staff Continuation Training (MRP 145.A.35(d))

4807(5): Continuation Training Programme (MRP 145.A.35(e))

4807(6): Certifying Staff Competence Assessment (MRP 145.A.35(f))

4807(7): Issue of Certification Authorization (MRP 145.A.35(g))

4807(8): Certification Authorization Codes (MRP 145.A.35(h))

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

4807(10): Record of Staff (MRP 145.A.35(j))

4807(11): Provision to Staff of a Copy of Their Authorizations (MRP 145.A.35(k))

4807(12): Requirement to Produce Certification Authorization (MRP 145.A.35(l))

4807(13): Withdrawn – Not deemed regulatory material

Definitions

► Definitions Relevant to this RA

1. **Tradesperson.** Suitably Competent and authorized staff responsible for executing Air System Maintenance activities. This role may also be known as Support Staff within Approved Maintenance Organizations (AMOs) or 1st Signature within Military Maintenance Organizations (MMOs).
2. **Supervisor.** Suitably Competent and authorized staff responsible for carrying out supervision of Tradespersons in the execution of their Maintenance activities. This role may also be known as the 2nd Signature within MMOs.
3. **Coordinating / Certifying Staff.** Staff holding Authorization by the Maintenance organization to endorse the appropriate Certification of Air System Release and / or Component Release (Air System coordination / Work Order coordination)³. This term will not be confused with the term certifying staff used uncapitalised or on its own, this is the collective noun for Maintenance personnel with responsibilities for signing Maintenance documentation as either Tradesperson, Supervisor or Coordinating / Certifying Staff. ◀

¹ Refer to RA 4801 – Certifying Staff.

² Refer to RA 1002 – Airworthiness Competent Persons.

³ ► Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50). ◀

**Regulation
4807(1)****Staff Knowledge (MRP 145.A.35(a))**

4807(1) In addition to the appropriate certifying staff requirements⁴, the organization **shall** ensure that ► **all Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀ have an adequate understanding of the relevant Air Systems and / or components to be maintained, together with the associated organization procedures.

**Acceptable
Means of
Compliance
4807(1)****Staff Knowledge (MRP 145.A.35(a))****Common AMC**

4. The organization **should** hold copies of all documents that attest to qualification, and to recent experience.

Additional AMC –MMO only

5. Nil.

Additional AMC –AMO only

6. In the case of ► **Coordinating / Certifying Staff** ◀, this **should** be accomplished before the issue or re-issue of Certification Authorization.

**Guidance
Material
4807(1)****Staff Knowledge (MRP 145.A.35(a))****Common GM**

7. 'Adequate understanding of the relevant Air Systems and / or components to be maintained together with the associated organization procedures' means that the person has received training and has relevant Maintenance experience on the product type and associated organization procedures such that the person understands how the product functions and what the more common Faults with associated consequences are.

Additional GM – MMOs only

8. Nil.

Additional GM – AMOs only

9. 'Certification Authorization' means the Authorization issued to ► **Coordinating / Certifying Staff** ◀ by the organization and which specifies the fact that they may endorse the Certification of Air System Release⁵ within the limitations stated in such Authorization on behalf of the organization.

**Regulation
4807(2)****Certification and Supervisory Authorizations (MRP 145.A.35(b))**

4807(2) Excepting those cases listed in RA 4806(10)⁶ the organization **shall** only issue Certification and supervisory Authorizations to ► **Coordinating / Certifying Staff and Supervisors** ◀ in accordance with (iaw) the following criteria:

- (a) Authorization **shall** relate to the basic categories or subcategories for which they are qualified.
- (b) Authorization **shall** be limited to those Air System types on which they have been qualified.
- (c) Where Certification Authorization is being granted to individuals holding an Aircraft Maintenance licence in

⁴ Refer to RA 4806(7): Air System Certifying Staff (Line Maintenance) (MRP 145.A.30(g)) - Approved Maintenance Organizations only and RA 4806(8): Air System Certifying Staff (Base Maintenance) (MRP 145.A.30(h)) - Approved Maintenance Organizations only.

⁵ Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50).

⁶ Refer to RA 4806(10): Non-engineering Staff (MRP 145.A.30(j)).

**Regulation
4807(2)**

compliance with Civil Aviation Authority (CAA) ► **Part 66** ◀, such Authorization **shall** only be issued subject to the Aircraft Maintenance licence remaining valid throughout the validity period of the Authorization and the certifying staff remaining in compliance with their licence.



**Acceptable
Means of
Compliance
4807(2)**

**Certification and Supervisory Authorizations (MRP 145.A.35(b))
Common AMC**

10. The organization **should** only issue the Certification Authorization when satisfied that compliance has been established with the appropriate clauses of MRP Part 145 and that the person meets the applicable eligibility criteria¹.

Additional AMC – MMOs only

To be read in conjunction with the Common AMC.

11. In derogation to RA 4807(2)(a), MMOs may, in exceptional circumstances, authorize an individual to undertake the ► **Supervisor role** ◀ outside of their trade boundary. Such Authorization **should** be limited by task and period and **should** only be undertaken when the ► **Tradesperson** ◀ for the task:

- a. Is working within their trade boundary; and
- b. Meets the qualification criteria (Refer to RA 4807 Sub-Regulation (2)(b)).

12. In order to meet the qualification criteria stipulated, individuals **should** only be issued ► **Supervisor or Coordinating / Certifying Staff** ◀ Authorizations after they have completed the applicable Air System type training and had the associated qualification annotated on their training record.

Additional AMC – AMOs only

13. Nil.

**Guidance
Material
4807(2)**

**Certification and Supervisory Authorizations (MRP 145.A.35(b))
Common GM**

14. This Regulation ensures that staff can only be granted Certification Authorization while they meet the qualification requirements for certifying staff.

Additional GM – MMOs only

15. The Responsibility for establishing the content of the Air System type training courses detailed at paragraph ► **12** ◀ remains the Responsibility of the relevant Training Requirements Authorities. However, as a minimum, the training will provide the individual with a general understanding of the Air System type, together with the location and function of its principal components / assemblies, as applicable to the individual's trade. Such training will also draw attention to the Hazards associated with these Systems. Successful completion of this training will lead to such fact being recorded as a qualification on the individual's training or Competence record. The means of delivering such training is at the discretion of the Commands and may include, but is not limited to, pre-employment training, a standalone training course or an appropriate element / module of a longer, modular type training course.

Additional GM – AMOs only

16. Nil.

**Regulation
4807(3)****Staff Experience Requirements (MRP 145.A.35(c))**

4807(3) The organization **shall** ensure that all ► **Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀ have at least 6 months of actual relevant Air System or component Maintenance experience in any consecutive 2 year period following initial Authorization.

**Acceptable
Means of
Compliance
4807(3)****Staff Experience Requirements (MRP 145.A.35(c))****Common AMC**

17. Nil.

Additional AMC – MMOs only

18. Where unpredictable variations in operational military tasking require the use of personnel not meeting the 6-month experience requirement, agreement from the Accountable Manager (Maintenance) **should** be sought. Such Authorization **should** be on a temporary basis only, with suitable precautionary measures put in place, and the Military Continuing Airworthiness Management Organization informed. Alternatively, personnel will require their Competence to be reassessed prior to reauthorization; further detail is contained below in Paragraph 20.

Additional AMC – AMOs only

19. Nil.

**Guidance
Material
4807(3)****Staff Experience Requirements (MRP 145.A.35(c))**

20. For the purpose of this Regulation, 'have...actual relevant Air System or component Maintenance' means that the person has worked in an Air System or component Maintenance environment and has either exercised the privileges of the Certification / supervision Authorization or has actually carried out Maintenance on at least some of the Air System type Systems specified in the particular Certification / supervision Authorization.

21. This Regulation does not apply to the initial Authorization or reauthorization of certifying staff and support staff with supervisory responsibilities; the experience levels of these individuals will be considered as part of the Competence assessment⁷.

22. RA 4807(5): Continuation Training Programme (MRP 145.A.35(e)) applies once an Authorization has been granted, necessitating an experience 'currency' requirement (also known as 'recency') for ► **Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀ to maintain their Authorization.

**Regulation
4807(4)****Staff Continuation Training (MRP 145.A.35(d))**

4807(4) The organization **shall** ensure that all ► **Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀ receive sufficient continuation training in each 2 year period to ensure that such staff have up-to-date knowledge of relevant technology, organization procedures and Human Factor issues.

**Acceptable
Means of
Compliance
4807(4)****Staff Continuation Training (MRP 145.A.35(d))****Common AMC**

23. Nil.

Additional AMC – MMOs only

⁷ Refer to: RA 1002 – Airworthiness Competent Persons; RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)); and RA 4807(6): Certifying Staff Competence Assessment (MRP 145.A.35(f)).

**Acceptable
Means of
Compliance
4807(4)**

24. Single-Service orders **should** detail the continuation training requirements within each 2 year period in order to:
- a. Ensure that staff are familiar with any changes made to relevant Regulation, policy and procedures (including Maintenance procedures) and the Modification standard of the Air System and / or components being maintained.
 - b. Learn from the experience of instances where staff failed to follow procedures, using evidence obtained from Quality Audits where appropriate, and the reasons why particular procedures are not always followed.
25. As part of staff continuation training, all personnel who undertake flight servicing **should** periodically undergo flight servicing Competency checks at least every 12 months.

Additional AMC – AMOs only

26. Continuation training is a 2-way process to ensure that certifying staff remain current in terms of procedures, Human Factors and technical knowledge and that the organization receives feedback on the adequacy of its procedures and Maintenance instructions. Due to the interactive nature of this training, it **should** have involvement from the Quality department to ensure that feedback is actioned. Alternatively, there **should** be a procedure to ensure that feedback is formally passed from the training department to the Quality department to initiate action.
27. Continuation training **should**:
- a. Cover changes in relevant requirements such as MRP Part 145 changes, changes in organization procedures and the Modification standard of the products being maintained, plus Human Factor issues identified from any internal or external analysis of Incidents.
 - b. Address instances where staff failed to follow procedures and the reasons why particular procedures are not always followed. In many cases the continuation training will reinforce the need to follow procedures and ensure that incomplete or incorrect procedures are identified to the organization in order that they can be corrected. This does not preclude the possible need to carry out a Quality Audit of such procedures.
28. Continuation training **should** be of sufficient duration in each 2 year period to meet the intent of this Regulation, and may be split into a number of separate elements.
29. The method of training is intended to be a flexible process and could, for example, include an external continuation training course, aeronautical college courses, internal short duration courses, seminars etc. The elements, general content and length of such training **should** be specified in the Maintenance Organization Exposition (MOE).

**Guidance
Material
4807(4)**

Staff Continuation Training (MRP 145.A.35(d))

Common GM

30. Regulating the need for continuation training to keep staff updated in terms of relevant technology, procedures and Human Factors issues is one part of ensuring Quality. Therefore, its content and duration will be related to relevant Quality Audit findings and other internal / external sources of information available to the organization on human errors in Maintenance. It is recommended that the content and duration of continuation training is reviewed at least once in every 24 month period.
31. Defence Air Environment continuation training requirements⁸ for Human Factors must be followed.

⁸ Refer to RA 1440 – Air Safety Training.

**Regulation
4807(5)**

Continuation Training Programme (MRP 145.A.35(e))

4807(5) The organization **shall** establish a programme of continuation training for ► **all Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀, including a procedure for issuing Certification Authorizations under MRP Part 145 to certifying staff.

**Acceptable
Means of
Compliance
4807(5)**

Continuation Training Programme (MRP 145.A.35(e))

Common AMC

32. Nil.

Additional AMC – MMOs only

33. The continuation training programme may be established by a higher military formation than the MMO, particularly if continuation training is provided under single-Service arrangements. Nevertheless, MMOs **should** ensure that their staff comply with such programmes and that applicable training is completed prior to the issue of engineering Authorizations⁹.

Additional AMC – AMOs only

34. The programme for continuation training **should** list all ► **all Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀, when training will take place, the elements of such training and an indication that it was carried out reasonably on time as planned. Such information **should** subsequently be transferred to the certifying staff and support staff record¹⁰.

**Guidance
Material
4807(5)**

Continuation Training Programme (MRP 145.A.35(e))

35. Nil.

**Regulation
4807(6)**

Certifying Staff Competence Assessment (MRP 145.A.35(f))

4807(6) The organization **shall** assess all prospective and current certifying staff for their Competence, qualification and capability to carry out their intended certifying duties prior to the issue or re-issue of a Certification Authorization under MRP Part 145. For AMOs, this **shall** be iaw a procedure specified in the MOE.

**Acceptable
Means of
Compliance
4807(6)**

Certifying Staff Competence Assessment (MRP 145.A.35(f))

Common AMC

36. Nil.

Additional AMC – MMOs only

37. MMOs **should** conduct such assessments iaw the applicable requirements^{2, 9}.

Additional AMC – AMOs only

38. Qualification assessment means collecting copies of all documents that attest to qualification, such as the licence and / or any Authorization held. This **should** be followed by a confirmation check with the organization(s) that issued such document(s) and finally a comparison check for differences between the product type ratings on the qualification documents and the relevant product types maintained by the organization. This latter point may reveal a need for additional training to cover any differences in product type.

⁹ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

¹⁰ Refer to RA 4807(10): Record of Staff (MRP 145.A.35(j)).

**Guidance
Material
4807(6)**

Certifying Staff Competence Assessment (MRP 145.A.35(f))

Common GM

39. The requirement of this Regulation for a Competence assessment of ► **Coordinating / Certifying Staff** ◀ is in addition to the Competence assessment⁹ applicable to all personnel involved in any Maintenance, management and / or Quality Audits.

Additional GM – MMOs only

40. Nil.

Additional GM – AMOs only

41. Competence and capability may be assessed by working the person under the supervision of either another ► **Coordinating / Certifying Staff** ◀ person or a Quality Auditor for sufficient time to arrive at a conclusion. Sufficient time could be as little as a few weeks if the person is fully exposed to relevant work. It is not required to assess against the complete spectrum of intended duties.

42. When the person has been recruited from another Maintenance organization approved under MRP Part 145, and was ► **Coordinating / Certifying Staff** ◀ in that organization, then the receiving organization may accept a written confirmation from the person responsible for running the Quality System about the person.

**Regulation
4807(7)**

Issue of Certification Authorization (MRP 145.A.35(g))

4807(7) When the conditions of RA 4807 – Certifying Staff and Support Staff Sub-Regulations (1) to (4) and (6) (MRP 145.A.35(a) to (d) and (f)) have been fulfilled by the certifying staff, the organization **shall** issue a Certification Authorization that clearly specifies the scope and limits of such Authorization.

**Acceptable
Means of
Compliance
4807(7)**

Issue of Certification Authorization (MRP 145.A.35(g))

43. Continued validity of the Certification Authorization **should** be dependent upon continued compliance with this Regulatory Article.

**Guidance
Material
4807(7)**

Issue of Certification Authorization (MRP 145.A.35(g))

44. Nil.

**Regulation
4807(8)**

Certification Authorization Codes (MRP 145.A.35(h))

4807(8) The Certification Authorization **shall** be in a style that makes its scope clear to the ► **Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀ and any person who **shall** be required to examine the Authorization. Where codes are used to define scope, the organization **shall** make a code translation readily available.

**Acceptable
Means of
Compliance
4807(8)**

Certification Authorization Codes (MRP 145.A.35(h))

Common AMC

45. Nil.

Additional AMC – MMOs only

46. MMOs **should** adopt a common system of Authorization(s) to provide their personnel the authority to carry out engineering tasks and sign Maintenance documentation once assessed as Competent.

Acceptable Means of Compliance 4807(8)

Additional AMC – AMOs only

47. Nil.

Guidance Material 4807(8)

Certification Authorization Codes (MRP 145.A.35(h))

Common GM

48. Nil.

Additional GM – MMOs only

49. The benefit of using a common system of Authorization is to provide universally recognisable Authorization codes that can support in-Service ► **Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀ being employed across each Command. Such a common Authorization system will be strictly controlled, with any deviation appropriately managed by the Commands.

Additional GM – AMOs only

50. Nil.

Regulation 4807(9)

Responsibility for Issuing Certification Authorization (MRP 145.A.35(i))

4807(9) Certification Authorizations **shall** be issued in a controlled manner. For AMOs, the person responsible for the Quality System **shall** also remain responsible on behalf of the organization for issuing Certification Authorizations to certifying staff. Such person may nominate other persons to actually issue or revoke the Certification Authorizations iaw a procedure as specified in the MOE.

Acceptable Means of Compliance 4807(9)

Responsibility for Issuing Certification Authorization (MRP 145.A.35(i))

Common AMC

51. Nil.

Additional AMC – MMOs only

52. The delegation of Authorizations¹¹ within an MMO **should** be controlled by a nominated person to retain oversight of the Authorization issued, reviewed and, where necessary, revoked.

Additional AMC – AMOs only

53. Nil.

Guidance Material 4807(9)

Responsibility for Issuing Certification Authorization (MRP 145.A.35(i))

54. Nil.

Regulation 4807(10)

Record of Staff (MRP 145.A.35(j))

4807(10) The organization **shall** maintain a record of all ► **Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀. The record **shall** be retained by the organization for at least 2 years after any individual has ceased employment

¹¹ Refer to RA 1006 – Delegation of Engineering Authorizations.

**Regulation
4807(10)**

with the organization, or from when the Authorization has been withdrawn. The staff records **shall** contain:

- (a) Details of any Aircraft Maintenance licence held.
- (b) All relevant training completed.
- (c) The scope of the Certification Authorizations issued, where relevant.
- (d) Particulars of staff with limited or one-off Certification Authorizations.

**Acceptable
Means of
Compliance
4807(10)**

Record of Staff (MRP 145.A.35(j))

Common AMC

55. Nil.

Additional AMC – MMOs only

56. Nil.

Additional AMC – AMOs only

57. The following minimum information as applicable **should** be kept on record in respect of each certifying person:

- a. Name.
- b. Date of Birth.
- c. Basic Training.
- d. Type Training.
- e. Continuation Training.
- f. Experience.
- g. Qualifications relevant to the Authorization.
- h. Scope of the Authorization.
- i. Date of first issue of the Authorization.
- j. If appropriate - expiry date of the Authorization.
- k. Identification Number of the Authorization.
- l. Security clearance, where applicable.

58. The record **should** be controlled by the organization's Quality department. This does not mean that the Quality department runs the record system.

59. Persons authorized to access the system **should** be maintained at a minimum to ensure that records cannot be altered in an unauthorized manner or that such confidential records become accessible to unauthorized persons.

60. In the case of an Approval based on one person using a subcontracted Quality monitoring arrangement, the requirement for a record of certifying and support staff is satisfied by the submission to and acceptance by the MAA of the MAA Form 4¹². With only one person, the requirement for a separate record of Authorization is unnecessary because the MAA Approval Schedule defines the Authorization. Where applicable, an appropriate statement to reflect this situation **should** be included in the MOE.

¹² The MAA Form 4 can be found on the MAA website, within the Approvals section, at the following link: <https://www.gov.uk/government/publications/maintenance-approved-organization-scheme-maas>.

**Guidance
Material
4807(10)**

Record of Staff (MRP 145.A.35(j))

Additional GM – AMOs only

61. The record may be kept in any format.

**Regulation
4807(11)**

Provision to Staff of a Copy of Their Authorizations (MRP 145.A.35(k))

4807(11) Personnel **shall** be given a copy of their Authorizations, where applicable.

**Acceptable
Means of
Compliance
4807(11)**

Provision to Staff of a Copy of Their Authorizations (MRP 145.A.35(k))

62. The organization **should** either provide staff with a copy of their Authorizations (including copies of any subsequent Authorizations) in hard copy or provide access to their Authorizations by issuing a personal account for an approved Information System, where used to retain such records.

**Guidance
Material
4807(11)**

Provision to Staff of a Copy of Their Authorizations (MRP 145.A.35(k))

63. Nil.

**Regulation
4807(12)**

Requirement to Produce Certification Authorization (MRP 145.A.35(l))

4807(12) ► **Tradespersons, Supervisors and Coordinating / Certifying Staff** ◀ or, where applicable, the organization, **shall** produce their Certification Authorization to the MAA within 24 hours of request.

**Acceptable
Means of
Compliance
4807(12)**

Requirement to Produce Certification Authorization (MRP 145.A.35(l))

64. Nil.

**Guidance
Material
4807(12)**

Requirement to Produce Certification Authorization (MRP 145.A.35(l))

65. Nil.

**Regulation
4807(13)**

Minimum Age of Certifying Staff (MRP 145.A.35(m))

4807(13) Withdrawn – Not deemed regulatory material.

**Acceptable
Means of
Compliance
4807(13)**

Minimum Age of Certifying Staff (MRP 145.A.35(m))

66. Withdrawn – Not deemed regulatory material.

**Guidance
Material
4807(13)**

Minimum Age of Certifying Staff (MRP 145.A.35(m))

67. Withdrawn – Not deemed regulatory material.

RA 4808 - Equipment, Tools and Material (MRP 145.A.40)

Rationale

Air Systems require the availability of a range of equipment, tools and material to maintain them in accordance with (iaw) Technical Information (TI). Failure to adequately control all such items, especially when considering the potential Hazard of a lost tool, could significantly increase the Risk to Air Safety. This RA details the requirements for a Maintenance organization to use correct and Serviceable equipment, tools and materials, in a controlled manner.

Contents

4808(1): Accounting of Equipment, Tools and Materials (MRP 145.A.40(a))

4808(2): Availability of Equipment, Tools and Materials (MRP 145.A.40(b))

4808(3): Management and Calibration of Equipment and Tools (MRP 145.A.40(c))

Regulation 4808(1)

Accounting of Equipment, Tools and Materials (MRP 145.A.40(a))

4808(1) The organization **shall**:

- a. Ensure that it can account for any equipment, tool or material used on an Air System or component.
- b. Ensure that the Air System or component is clear of all equipment, tools and materials on completion of any Continuing Airworthiness activity.

Acceptable Means of Compliance 4808(1)

Accounting of Equipment, Tools and Materials (MRP 145.A.40(a))

1. The organization **should** define and document a process that readily identifies when equipment, tools or materials are in-use on an Air System or component.
2. The organization **should** define and document a process to readily identify on which Air System or component any equipment, tools or materials are in-use and by whom.
3. The organization **should** define and document a process that identifies the whereabouts of all equipment, tools and materials at the following points, as a minimum:
 - a. At the start and cease of the working day.
 - b. At any handover or takeover of a task or shift personnel.
 - c. When the loss of any equipment, tools or materials is suspected.
4. All records of stocktake and accounting of equipment, tools or materials, to meet the requirements of Paragraph 3, **should** be retained. Retention periods **should** be at the discretion of a suitably nominated individual(s)¹, but as a minimum, records **should** be retained for a period not less than the frequency of any additional checks.
5. The organization **should** define and document a process that controls equipment, tools and materials used within its facilities by another organization's personnel.

Guidance Material 4808(1)

Accounting of Equipment, Tools and Materials (MRP 145.A.40(a))

6. The intent of the Regulation and Paragraphs 1, 2 and 3 are to ensure that there is documented process for the appropriate control of all equipment, tools and materials used for the Maintenance of Air Systems and / or components. It is not expected that this process will involve the strict control and / or recording for the use of large Ground Support Equipment (GSE) (eg staging, crash mats and power supply units), which

¹ Refer to RA 4806(2): Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b)).

Guidance Material 4808(1)

may be controlled differently to hand tools. However, GSE that could pose a higher Airworthiness impact if used incorrectly or is more likely to introduce a Fault to the Air System and / or component (eg a risbridger) will be strictly controlled.

7. For the purpose of this Regulation, 'materials' include consumables that are used in the preparation for Maintenance work and any engineering hygiene that is necessary before its completion.

8. In the event of any equipment, tool or material not being accounted for, the Loose Article requirements² will be followed.

9. The process referred to in Paragraph 5 is intended to ensure that equipment, tools or materials, other than what is already under the control of the loaned organization, are controlled to at least the same standard as undertaken by the originating Maintenance organization.

Regulation 4808(2)

Availability of Equipment, Tools and Materials (MRP 145.A.40(b))

4808(2) The organization **shall** have available and use the necessary equipment, tools and materials to perform its intended (or, for Approved Maintenance Organizations (AMOs), approved) scope of work.

- a. Where the Air System Document Set (ADS) specifies a particular tool or equipment, the organization **shall** use that tool or equipment, unless the use of alternative tooling or equipment is agreed by the Type Airworthiness Authority (TAA)³, via approved procedures. For AMOs, such procedures **shall** be detailed in the Maintenance Organization Exposition (MOE)⁴.
- b. Equipment and tools **shall** be permanently available, except in the case of any tool or equipment that is so infrequently used that its permanent availability is not necessary. For AMOs, such cases **shall** be detailed in a MOE procedure.
- c. An organization carrying out Air System Maintenance **shall** have sufficient Air System access equipment and inspection platforms / docking available such that the Air System can be properly inspected when required.

Acceptable Means of Compliance 4808(2)

Availability of Equipment, Tools and Materials (MRP 145.A.40(b))

Common AMC

10. Nil.

Additional AMC - Military Maintenance Organizations (MMOs) only

11. Only Defence provided hand tools and Test and Measuring Equipment (TME) **should** be used. Such tools, including Precision Termination Tooling, and TME **should** be appropriately managed.

² Refer to RA 4253 – Loose Articles – Recovery Procedures.

³ ► 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. ◀

⁴ Refer to RA 4816 – Maintenance Organization Exposition (MRP 145.A.70) – Approved Maintenance Organizations Only.

Acceptable Means of Compliance 4808(2)

Additional AMC - AMOs only

12. Once the organization has determined the intended scope of Approval for consideration by the MAA, it **should** be able to show that all tools and equipment as specified in the TI can be made available when needed.

Guidance Material 4808(2)

Availability of Equipment, Tools and Materials (MRP 145.A.40(b))

13. Nil.

Regulation 4808(3)

Management and Calibration of Equipment and Tools (MRP 145.A.40(c))

4808(3) The organization **shall** ensure that all tools, equipment and particularly test equipment, as appropriate, are controlled and calibrated according to an officially recognized standard, at a frequency to ensure serviceability and accuracy. Records of such calibrations and traceability to the standard used **shall** be kept by the organization.

Acceptable Means of Compliance 4808(3)

Management and Calibration of Equipment and Tools (MRP 145.A.40(c))

Common AMC

14. The organization **should** have a procedure to inspect / service and, where appropriate, calibrate tools and equipment on a regular basis and indicate to users that the item(s) is within any inspection, service or calibration expiry limit. A clear system of labelling all tooling, equipment and test equipment **should** be employed and provide information on when the next inspection, service or calibration is due and if the item is Unserviceable for any other reason that may not be obvious.

15. Any tools and equipment that the organization authorizes for use **should** be clearly identified and listed in a control register.

16. ▶ Hand torque tools **should** be tested prior to use, using an appropriate and calibrated torque analyzer, to ensure the tool meets the required torque setting, as detailed within the respective Air System or Air System component TI, considering any tolerances.

17. Hand torque tools provided as Government Furnished Equipment **should** be managed and used iaw Hand Torque Tools General and TI⁵. ◀

Additional AMC - MMOs only

18. All hand tools and TME **should** be uniquely identified and stored in an authorized location.

Additional AMC - AMOs only

19. Inspection, service or calibration on a regular basis **should** be iaw the equipment manufacturer's instructions ▶ as a minimum. ◀

Guidance Material 4808(3)

Management and Calibration of Equipment and Tools (MRP 145.A.40(c))

20. For the purpose of this Regulation, 'officially recognized standard' will normally mean those standards established by the manufacturer ▶ ◀.

⁵ ▶ AP119G-0128-1 – This is available through the Technical Documents On-Line (TDOL) Viewer at <https://plm.web.logis.r.mil.uk/viewer/>. ◀

**Guidance
Material
4808(3)**

21. Additional checks may be instigated by appropriately authorized individuals and / or iaw a tool manufacturer's TI.
22. ▶ The use of an extension bar / adapter with a hand torque tool will increase the amount of torque being applied to the fastener / component being torque loaded and this length needs to be taken in account. Pre-use testing is to be done with the extension bar / adapter fitted. When unable to carry out pre-use testing with the extension bar / adapter fitted, the tool's torque setting needs to be calculated, the necessary formula can be found within AP119G-0128-1. ◀

RA 4809 - Acceptance of Components (MRP 145.A.42)

Rationale

The Maintenance of Air Systems requires the replacement and subsequent movement of components between organizations. Failure to correctly identify, classify and trace the history of components could lead to unauthorized and unsuitable items being accepted by Maintenance organizations, potentially compromising Airworthiness and increasing Risk to Life. This RA requires a Maintenance organization to only accept components if they have been correctly identified and classified.

Contents

Definitions Relevant to this RA

4809(1): Component Classification and Documentation (MRP 145.A.42(a))

4809(2): Suitability of Components (MRP 145.A.42(b))

4809(3): Local Manufacture / Fabrication of Components (MRP 145.A.42(c))

4809(4): Withdrawn incorporated into RA 4809(1)

Definitions

Definitions Relevant to this RA

1. **Airworthy Certified Item (ACI)**. A logistical term and marker that indicates that an item is airworthy Air System materiel¹, that when fitted to or used on an Air System, enables it to operate safely in flight and on the ground without significant Hazard to Aircrew, ► **Supernumerary Crew**, ◀ ground crew, Passengers or third parties throughout its lifecycle.

Regulation 4809(1)

Component Classification and Documentation (MRP 145.A.42(a))

4809(1) Components **shall** be classified through documentation and appropriately segregated into the following categories:

- a. Serviceable condition:
 - i. New components, sub-categorized as:
 - (1) Standard Parts² used on aviation Products, Parts and Appliances when specified in the Instructions for Sustaining Type Airworthiness (ISTA)³ released by the Type Airworthiness Authority (TAA)⁴. ► **These can be referred to as Air System General Spares (AGS) and include nuts, bolts, washers, split pins, etc.** ◀
 - (2) Material both raw and consumable used in the course of Maintenance when the Maintenance organization is satisfied that the material meets the required specification and has appropriate traceability.
 - (3) Non-Standard Parts, being those parts that do not fall under the definition of Standard Parts or material. ► **Non-Standard Parts are normally more**

¹ All Products, Parts, Appliances along with Equipment Not Basic to the Air System (Refer to RA 1340 - Equipment Not Basic to the Air System) which supports its operation as authorized in the Air System Release To Service (Refer to RA 1300 – Release To Service) and listed in the appropriate Air System Document Set (ADS).

² Refer to MAA02: MAA Master Glossary for definition.

³ Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

⁴ Where the Air System is ► **not UK MOD-owned, Type Airworthiness (TAw) management** ◀ regulatory Responsibility by either the TAA or Type Airworthiness Manager (TAM) needs to be agreed within the Sponsor's approved model ► ◀; refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems, or refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems. Dependent on the agreed delegation of TAw Responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

**Regulation
4809(1)**

complex components subject to Modification, Repair and / or overhaul schemes. ◀

- ii. Used non-Standard Part components following test, Maintenance, Modification, overhaul or Repair.
- b. Unserviceable components.
- c. Unsalvageable / Scrap components which have reached their certified life limit or contain a non-repairable Fault **shall not** be permitted to re-enter the component supply system as a Serviceable component unless the TAA or a Military Aviation Authority (MAA) approved Design Organization (DO) has either:
 - i. Extended certified life limits; or
 - ii. Approved a recovery solution.

**Acceptable
Means of
Compliance
4809(1)**

**Component Classification and Documentation (MRP 145.A.42(a))
Common AMC**

2. The identification, serviceability state and traceability of Products, Parts and Appliance components for an Air System is vital in maintaining the Airworthiness and operational role of an Air System. As such all components **should** be accompanied by appropriate documentation accurately reflecting their classification.

3. **Appropriate Documentation.** Within this RA two primary component documentation terms are used throughout for the classification of a component:

a. **Certificate of Conformity (CoC)².** A CoC **should** meet all the following conditions:

- (1) It is issued from the Original Equipment Manufacturer (OEM) for new components only.
- (2) It contains the information requirements of Defence Condition (DEFCON) 627⁵.
- (3) Traceability of Certification can be maintained.
- (4) CoCs for Air System's Products, Parts or Appliances **should** be retained dependent upon its through life traceability:
 - (a) For items not traceable through Serial Numbers, for a minimum of 5 years beyond the Out of Service Date⁶ of the Air System⁷.
 - (b) For items traceable through Serial Numbers, to the same retention period of that of an Authorized Release Certificate (ARC), see paragraph 3.h(3).

b. Original CoCs **should** be retained by the ▶MOD◀ Organization that receipted the item into the MOD (eg Delivery Team (DT), ▶MOD supply depot◀ or Main Operating Base (MOB)). A copy of the CoC **should** be provided within the MOD, as required, to allow confirmation of the conformity of the component.

c. ▶Approved Maintenance Organizations (AMOs) receiving components from outside of MOD supply chains **should** retain a copy of the CoC. A copy of the CoC **should** be sent with any forward movement of the component. ◀

d. Standard Parts **should** be supplied in OEM primary packaging, unless it has been necessary to broach the primary packaging to satisfy a demand for a partial quantity. In this case a correctly completed MOD Form 3910

⁵ DEFCONs can be found within The Commercial Toolkit in the ▶Knowledge in Defence,◀ hosted on the Defence Gateway. ▶◀

⁶ This is 5 years beyond the de-registration from the UK Military Aircraft Register of the last Air System of type.

⁷ Refer to Defence Logistics Framework Retention of Material Accounting Records:

<https://dlf.defencegateway.mod.uk/publisher.kc/Rule Knowledge Centre/20190301-Retention of Materiel Accounting Records.pdf>.

**Acceptable
Means of
Compliance
4809(1)**

(Consumable Equipment Item Label)⁸ **should** be attached to the item that is being dispatched to provide traceability to the original CoC.

Note:

The MOD Form 3910 itself does not constitute a CoC or ARC, it is a Consumable Equipment Item Label only, that replaces the component's original packaging label to provide the necessary identification and traceability to the CoC.

e. MOD Form 3910s for Air System components (Airworthy Certified Items⁹) are differentiated from non-Air System components by the completion of the mandatory asterisked fields of "Batch No"^{▶10◀} and "Manufacturer / Contract No", along with the "North Atlantic Treaty Organization (NATO) Stock Number (NSN)" and the "Short Item Name". It is these details that **should** be completed to provide traceability to the original CoC.

f. NSNs may be served by multiple Part Numbers which in some cases has included a mixture of Air Certified Items and Non-Air Certified Items¹¹. An amendment has been submitted to the MOD Form 3910 to include Part Number as a separate field, however, in the interim to enable positive identification of items as Air Certified Items personnel **should** include the Part Number within brackets after the NSN on MOD Form 3910 compilation.

g. **ARC.** An ARC contains the same information as a CoC with additional sections relevant to Repairable or life-limited non-Standard Parts, where accurate recording and traceability is essential in determining their Airworthiness throughout their lifetime.

h. An ARC **should** meet all the following conditions:

- (1) Clearly identify the classification category of the component ie Serviceable, Unserviceable or unsalvageable / scrap.
- (2) Meet all the applicable¹² requirements of DEFCON 627⁵ paragraph 4.
- (3) Be retained until such time as the information contained is replaced, transferred or cleared and is therefore no longer of any Airworthiness value^{13, 14}.
- (4) Provides life limiting data information or cross reference to its accessible Engineering Record Card data (hardcopy or digital), as appropriate.
- (5) Be supported by clear instructions for use, to ensure accuracy of completion.
- (6) Not contain a mixture of both Production and Maintenance (new and used) items.
- (7) Be signed (hardcopy or digital) by an individual authorized by the Organization to release the component under the appropriate classification.
- (8) **▶ Be an MAA approved ARC detailed in Annex A or a form that has an approved MAA's Alternative Acceptable Means of Compliance (AAMC), Waiver or Exemption (AWE)¹⁵. ◀**

⁸ Found in the Defence Logistics Framework.

⁹ Refer to Defence Logistics Framework: <https://dlf.defencegateway.mod.uk/Processes.htm>.

¹⁰ **▶ Batch numbers may also be referred to on documentation or packaging in other terms such as lot, run, or series numbers / references, if in doubt advice should be sought from the appropriate DT or vendor. ◀**

¹¹ Refer to DATIN-17 Risk and Resolution Management of Non Conforming Air System Items in the Joint Supply Chain V2.0.

¹² ARCs raised from non-contracted sources will not attract contractual detail requirements.

¹³ Refer to RA 4813 – Maintenance Records (MRP 145.A.55).

¹⁴ ARCs are to be retained, as a minimum, to the same category D retention classification for a MOD Form 731 - Equipment Conditioning Label, Manual of Airworthiness Maintenance – Documentation (MAM-D) refers.

¹⁵ **▶ Refer to MAA03: MAA Regulatory Processes. ◀**

**Acceptable
Means of
Compliance
4809(1)**

- i. Forms detailed within Annex A have been reviewed by the MAA and **should** be accepted as ARCs when correctly completed within the defined contexts and signed by an authorized individual¹⁶.
4. **Component Classification.** Components **should** be classified within the following classifications:
- a. **Serviceable Components.** All Serviceable components **should** be accompanied by appropriate documentation as:
- (1) **New Components.** New components **should** be accompanied into Service by a CoC or an ARC dependent upon the component type:
- (a) **Standard Parts.** Standard Parts **should** only be considered Serviceable providing they **are either**:
- i. **Accompanied by an appropriate CoC or an ARC which provides full batch / liting details, as appropriate.**
- ii. **Accompanied by an appropriate MOD issue voucher, the parts are in unbroached primary packaging and traceability to the CoC is maintained. When not in unbroached primary packaging, a correctly completed MOD Form 3910 **should** be present in lieu of the original packaging label. ◀**
- (b) Standard Parts with MOD Form 3910s missing any of the data as detailed in paragraph 3.e, **should not** be issued to any Defence Aviation Maintenance Organization, or installed into any Air System or Air System component. Provenance (traceability to the original CoC that matches the items details in the ADS) **should** be established or clearance to issue **should** be obtained from the appropriate TAA or Commodity Chief Engineer (Commodity CE).
- (c) Where TAAs or Commodity CEs evaluate there is a need to use Standard Parts without Airworthiness provenance they **should** apply for a Waiver / Exemption¹⁵ against RA 4809(1) for 'The Use of Standard Parts Without Provenance'.
- (d) Any Waiver / Exemption application **should** include as a minimum:
- i. A Safety Assessment which **should** consider the criticality of the Standard Parts, taking into account the impact of failure of the component, including second and third order implications.
- ii. Instructions which **should** be implemented for Maintenance organizations, providing details of:
- (i) Areas where these Standard Parts **should**, or conversely, **should not** be fitted.
- (ii) Checks that **should** be performed to ensure that the Standard Part is of the correct NSN and Part Number.
- (iii) The minimum training and experience criteria and any local Authorization requirements that personnel **should** meet for determining if Standard Parts are appropriate for fitment in points (i) and (ii) above.
- (e) **Raw and Consumable Material.** Raw and consumable material **should** only be considered Serviceable if accompanied by documentation clearly relating to the material and containing the 'conformity to specification' statement as well as both the

¹⁶ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

**Acceptable
Means of
Compliance
4809(1)**

manufacturer and supplier¹⁷ source details. Examples of raw and consumable materials are:

- i. Raw material is any material that requires further work to make it into a component part of the Air System, such as metal, plastic, wood, fabric.
- ii. Consumable material is any material which is only used once, such as lubricants, cements, compounds, paints, chemical dyes and sealants.

(f) **►New◄ Non-Standard Parts.** ►New◄ Non-Standard Parts **should** be accompanied by ►an appropriate CoC or◄ ARC and contain correct and sufficient detail to enable the Organization to determine the parts suitability for use / installation.

(2) **Used Components.** Used components released following test, Maintenance, Modification, overhaul or Repair **should** be released on an appropriate ARC, containing correct and sufficient detail to enable the Organization to determine the parts suitability for use / installation.

b. **Unserviceable Components.** The organization **should** ensure the identification of any Unserviceable components by means of an 'Unserviceable' document, which **should**:

- (1) Be clearly identifiable as applying to an Unserviceable component.
- (2) Clearly pertain to the component by use of identifiable part / reference number¹⁸ and serial number details where applicable.
- (3) Provide a description of the Fault, defect or malfunctions reported or detected or cross reference to where these details are held.
- (4) Contain life limiting data information or cross reference to its accessible Engineering Record Card data (hardcopy or digital), as appropriate.
- (5) Be affixed by means to prevent unintentional separation from the component.

c. **Unsalvageable / Scrap Components.** The following types of components **should** typically be classified as unsalvageable / scrap:

- (1) Components with non-Repairable Faults, whether visible or not to the naked eye.
- (2) Components that do not meet Design Specifications and cannot be brought into conformity with such specifications and are not approved for use as part of a DO's Concession.
- (3) Components subjected to unacceptable Modification or rework that is irreversible.
- (4) Certified life-limited components that have reached or exceeded their certified life limits or have missing or incomplete records.
- (5) Components that cannot be returned to an airworthy condition due to exposure to extreme forces, heat or an adverse environment.
- (6) Components for which conformity with an applicable Airworthiness Directive (AD) or Special Instruction (Technical) (SI(T)) cannot be accomplished.
- (7) Components for which Maintenance records and / or traceability to the manufacturer cannot be retrieved.

¹⁷ Within the boundaries of MRP Part 145 Regulations a supplier is defined as any source providing components, Standard Parts or materials to be used for Maintenance. ►◄

¹⁸ Part Number, NATO Stock Number or Section Reference details.

Acceptable Means of Compliance 4809(1)

- d. Unsalvageable / scrap components **should** be segregated and clearly labelled as unsalvageable / scrap until they are disposed of in accordance with (iaw) extant Regulations and approved processes.
- e. As part of the disposal process consideration **should** be given to mutilation of the component to ensure it is beyond economical salvage or Repair.

5. Prior to the return and / or transfer of a non-Standard Part between Maintenance organizations or into the supply / logistics organization, the item **should** have its serviceability classification state determined¹⁹ by an appropriately authorized individual¹⁶.

6. ► **Annex B provides a summary of how components should be classified and the appropriate document that should be used to allow a Maintenance organization to accept the part.** ◀

Guidance Material 4809(1)

Component Classification and Documentation (MRP 145.A.42(a))

7. **Certificate of Conformity.** For clarification, the CoC² is the document produced by the component manufacturer that contains a mark (normally a signature or stamp) to certify its Quality to an approved standard. It may also be known as the Certificate of Conformance, ►◀ Certificate of Compliance ► or similar. ◀

8. A CoC may be utilized for new Standard and Non-Standard Parts.

9. A CoC is not to be confused with a MOD Form 640 (Advice and Inspection Note) / 650 (GFE) (Advice and Receipt Note), United States Department of Defence Form DD250 or other asset management form. These documents are not CoCs and do not fulfil the requirements for a CoC²⁰.

10. MOD logistics policy permits CoCs to be held at DT / ► **MOD supply depot** ◀ / MOB where the item(s) is initially received. Components may be dispatched to Maintenance organizations without a copy of their respective CoC attached, provided that all of the following conditions are met:

- a. The component was accompanied by a CoC on receipt into the MOD. If required, the DT / ► **MOD supply depot** ◀ / MOB can provide the original CoC for clarification in this regard.
- b. The component has been received by the Maintenance organization through the MOD, with an accompanying issue voucher, as a Serviceable item.
- c. The component is delivered to the Maintenance organization in unbroached primary packaging, unless it is for Standard Part(s) where the quantity demanded required the primary packaging to be broached, and is accompanied by a correctly completed MOD Form 3910.
- d. All ISTA Maintenance data (Modification state, component life, etc), as applicable, is available on certified documentation elsewhere.

11. The MOD Form 3910 is used on broached consumable Standard Parts to replace the packaging label to readily identify the package contents. The CoC held at DT / ► **MOD supply depot** ◀ / MOB remains the documentary proof that the component meets the requisite standard, therefore iaw paragraph 3 above the MOD Form 3910 must include manufacturer / contract and batch ►¹⁰◀ details. This provides necessary traceability to the original CoC, to enable the correct identification and provenance of Standard Parts when required.

12. Where an organization cannot meet condition 3.h(8) of an ARC they may apply to the MAA through the ► **AWE process**¹⁵◀ for its use.

¹⁹ Within Military Maintenance Organizations (MMOs) the process of determining and assigning a serviceability classification state to an item of technical equipment is known as conditioning, refer to the Manual of Airworthiness Maintenance – Process (MAM-P), Chapter 4.10 - Technical Equipment – Conditioning and Preparation for Movement or Storage.

²⁰ Refer to Knowledge in Defence: Certificate of Conformity (CoC) - Managing Quality - KiD - UK MOD: <https://www.gov.uk/guidance/knowledge-in-defence-kid>.

**Guidance
Material
4809(1)**

13. ► **Components Without Documentary Provenance.** As detailed in para 4.a(1)(c) TAAs and Commodity CEs may apply to the MAA for an AWE for the use of Standard Parts without provenance. The AWE submission will include:
- A detailed process of how the determination of a components suitability for installation / use is undertaken.
 - The criteria required for an individual to be able to authorize installation / use.
 - Limitations to where Standard Parts without provenance cannot be installed / used.
14. Para 4.c(7) above states that “typically” components for which Maintenance records and / or traceability to the manufacturer cannot be retrieved, will be classified as Unsalvageable / Scrap, however TAAs may authorize the use of these following appropriate investigations and / or tests. ◀
15. **Unsalvageable / Scrap Components.** Caution is to be exercised to ensure that unsalvageable / scrap components are disposed of in a manner that does not allow them to be returned to service, such as mutilation of the component. Mutilation, is to be accomplished in such a manner that the components become permanently unusable for their originally intended use and cannot be reworked or camouflaged to provide the appearance of being Serviceable by:
- Replating.
 - Shortening and rethreading long bolts.
 - Welding.
 - Straightening.
 - Machining.
 - Cleaning.
 - Polishing.
 - Repainting.
16. Mutilation may be accomplished by one or a combination of the following procedures:
- Grinding.
 - Burning.
 - Removal of a major lug or other integral feature.
 - Permanent distortion of parts.
 - Cutting a hole with cutting torch or saw.
 - Melting.
 - Sawing into many small pieces.
17. The following procedures are examples of mutilation that are often less successful because they may not be consistently effective:
- Stamping or vibro-etching.
 - Spraying with paint.
 - Small distortions, incisions, or hammer marks.
 - Identification by tags or markings.
 - Drilling small holes.
 - Sawing into two pieces only.

Regulation 4809(2)

Suitability of Components (MRP 145.A.42(b))

- 4809(2) Prior to the installation of a component, ► or use of a material, ◀ the organization **shall** satisfy itself that the ► ◀ component ► / material ◀ is suitable ► for installation / use. ◀ To be considered suitable ► it ◀ **shall** be:
- In an acceptable state.
 - Within any applicable life limitations for use.
 - Appropriately conditioned / released.
 - At the correct Modification or AD / SI(T) standard, as applicable. ◀

Acceptable Means of Compliance 4809(2)

Suitability of Components (MRP 145.A.42(b))

Common AMC

- Where components are not supplied through MOD contractual supply sources, Maintenance organizations **should** have a procedure in place for assessing suppliers¹⁷ as part of its acceptance of components procedures. ◀
- The organization **should** check all supporting documentation for accuracy against the received component ► / material. ◀
- The organization **should** carry out a physical inspection of the component ► / material ◀, prior to installation ► / use. ◀
- The organization **should** ensure that the component meets technical standards, such as the required design and Modification standard. This may be accomplished by reference to ISTA.
- The organization **should** also ensure that the component ► / material ◀, complies with applicable SI(T)s or AD and be aware of the status of any life limited parts fitted to the Air System component.
- For components that require an Engineering Record Card (ERC), the ERC **should** be controlled.
- For component / material subject to lifing, it **should** be within its life limitations. ◀

Guidance Material 4809(2)

Suitability of Components (MRP 145.A.42(b))

- The following list, although not exhaustive, contains typical checks to be performed during the physical inspection of the component prior to its installation to the Air System.
 - Verify the general condition of the component ► / material ◀ and it's packaging in relation to damage that could affect ► its ◀ integrity.
 - Verify that any life limitations of the component ► / material ◀ have not expired, and it is accompanied by the appropriate ERC if applicable.
 - Verify that items are received in the appropriate package in respect of the type of the component (eg correct Air Transport Association (ATA) 300²¹ or electrostatic sensitive devices packaging), when necessary.
 - Verify that the component has all plugs and caps appropriately installed to prevent damage or internal contamination. Care will be taken if tape has been used to cover electrical connections or fluid fittings / openings to remove any adhesive residues which can insulate electrical connections and contaminate hydraulic or fuel units.

²¹ ATA 300: Specification for Packaging of Airline Supplies. Provides packaging and testing guidelines for repairable and expendable units and components.

**Guidance
Material
4809(2)**

e. Verify that any packaging or accompanying documentation states the applicable specification / standard, Part Number, batch number¹⁰, serial number, Modification state, embodiment of SI(T) and the quantity of the items and the manufacturing sources. If the material is acquired from different batches, acceptance documentation for each batch will be provided.

26. "Be appropriately conditioned / released" means that the component's serviceability has been confirmed²².

27. When used, the UK MAA Form 1, UK Civil Aviation Authority (CAA) Form 1, European Union Aviation Safety Agency (EASA) Form 1, National Military Airworthiness Authority (NMAA) European Military Airworthiness Requirements (EMAR) Form 1 template derivative or Federal Aviation Administration (FAA) Form 8130-3 identifies the status of an Air System component. The "Remarks" block 12 on the forms may contain vital Airworthiness related information, which may need appropriate and necessary actions. The MOD Form 731 or CoC may also contain additional Airworthiness related information beyond that prescribed.

**Regulation
4809(3)**

Local Manufacture / Fabrication of Components (MRP 145.A.42(c))

4809(3) The local manufacture / fabrication of Air System Parts and Airborne Equipment by a Maintenance Organization **shall** require specific Authorization. Such Parts / Equipment **shall** only be manufactured / fabricated iaw ISTA.

**Acceptable
Means of
Compliance
4809(3)**

Local Manufacture / Fabrication of Components (MRP 145.A.42(c))

Common AMC

28. Local manufacture / fabrication, inspection, assembly and test **should** be undertaken within the technical and procedural capability of the Maintenance Organization. All personnel **should** be specifically assessed as Competent¹⁶ for the tasks they are expected to complete.

29. Any locally manufactured / fabricated Part **should** be subjected to an inspection stage before, and preferably independently from, any inspection of its installation. The inspection **should** establish full compliance with the relevant manufacturing data, and the component **should** be unambiguously identified as fit for use by stating conformity to the relevant ISTA.

30. Adequate records **should** be maintained of all such local manufacture / fabrication processes including heat treatment and the final inspection.

31. All Parts, unless size prohibits it, **should** carry a Part Number which clearly relates it to the manufacturing / inspection data. Additional to the Part Number, the Organization's identity **should** be marked on the component for traceability purposes.

Additional AMC - MMOs only

32. The local manufacture / fabrication of Air System Parts **should** be undertaken iaw approved orders and procedures²³.

Additional AMC - AMOs only

33. The agreement by the MAA for the local manufacture / fabrication of Parts by the AMO **should** be formalized through the Approval of a detailed procedure²⁴ in the Maintenance Organization Exposition (MOE).

34. AMOs **should** only locally manufacture / fabricate Parts within its own facilities iaw procedures identified in the Exposition and approved by the MAA.

35. Items locally manufactured / fabricated by an AMO **should** only be used by that organization in the course of test, Maintenance, Modification, overhaul or Repair of Air Systems or Parts undergoing work within its own facility. The permission to locally manufacture / fabricate does not constitute Approval to manufacture multiple items, or

²² Refer to RA 4812(4): Certification of Component Release and Cannibalization (MRP 145.A.50(d)).

²³ Refer to RA 4815(2): Procedures for Good Maintenance Practices (MRP 145.A.65(b)).

²⁴ Refer to RA 4965 – Local Manufacture Assurance – MRP Part M Sub Part C.

Acceptable Means of Compliance 4809(3)

to supply externally. A MOD Form 731 (or equivalent) annotated in red ink, "FABRICATED ITEM IAW RA 4809(3) (MRP 145.A.42(c)) FOR EXCLUSIVE USE BY THE FABRICATING ORGANIZATION WITHIN ITS OWN FACILITIES" **should** be attached to the Part. This prohibition also applies to the bulk transfer of surplus inventory, in that locally manufactured / fabricated components are physically segregated and excluded from any delivery Certification.

36. Local manufacture / fabrication of Parts, Modification kits, etc, for onward supply and / or sale, **should not** be conducted by an AMO, unless they have been specifically Contracted to produce items by the MOD.

37. If an AMO is separately Contracted to produce items by the MOD, the AMO **should** be aware that the production contract falls outside of the MRP Part 145 Approval.

38. When locally manufacturing / fabricating Parts, care **should** be taken to ensure that the data used includes details of Part Numbering, dimensions, materials, processes, and any special manufacturing techniques, special raw material specification and / or incoming inspection requirement and that the approved organization has the necessary capability. That capability **should** be defined in the MOE. Where special processes or inspection procedures are defined in the ISTA, which are not available at the organization, the organization **should not** locally manufacture / fabricate the Part unless the Air System TAA gives an approved alternative. This principle also applies to the technique of 3D printing / additive manufacturing.

39. All locally manufactured / fabricated Parts ►(including those locally manufactured / fabricated to pattern) ◀ **should** be manufactured / fabricated iaw ISTA approved by the TAA.



40. For civil-derivative Air Systems, where a Type Certificate holder, DO or an approved Production Organization is prepared to make available complete data which is not referred to in ISTA, but provides manufacturing drawings for items specified in Parts lists, the local manufacture / fabrication of these items **should not** be considered as within the scope of an organization's Approval, unless agreed otherwise by the TAA iaw a procedure specified in the Exposition.

Guidance Material 4809(3)

Local Manufacture / Fabrication of Components (MRP 145.A.42(c))

Common GM

41. Nil.

Additional GM - MMOs only

42. Nil.

Additional GM - AMOs only

43. Examples of local manufacture / fabrication permitted for AMOs can include, but are not limited to, the following:

- a. Fabrication of bushes, sleeves and shims.
- b. Fabrication of secondary structural elements and skin panels.
- c. Fabrication of control cables.
- d. Fabrication of flexible and rigid pipes.
- e. Fabrication of electrical cable looms and assemblies.
- f. Formed or machined sheet metal panels for Repairs.

Regulation 4809(4)

Certification of Components as Unsalvageable / Scrap (MRP 145.A.42(d))

4809(4) Withdrawn incorporated into RA 4809(1).

**Acceptable
Means of
Compliance
4809(4)**

**Certification of Components as Unsalvageable / Scrap (MRP
145.A.42(d))**

44. Withdrawn incorporated into RA 4809(1).

**Guidance
Material
4809(4)**

**Certification of Components as Unsalvageable / Scrap (MRP
145.A.42(d))**

45. Withdrawn incorporated into RA 4809(1).

- (1) **New parts.** Issued under Part 21 Regulations:
- (a) By a FAA Part 21 approved organization for Products, Parts and Appliances with dual applicability²⁷ within the scope of the issuing organization's Approval.
 - (b) By a CAA Part 21 approved US-based organization for Products, Parts and Appliances with dual applicability²⁷ within the scope of the issuing organization's Approval.
 - (c) By an EASA Part 21 approved US-based organization, ²⁷ for components with dual applicability²⁷ within the scope of the issuing organizations Approval ²⁷.
 - i. ²⁷
 - ii. ²⁷
- (2) **Used parts.** Only when conforming to the conditions specified in the Bilateral Aviation Safety Agreement (BASA) using the Dual Release process between the US FAA and:
- (a) CAA³¹.
 - (b) EASA³². ²⁷
- (3) The 'Dual Release' process³³ allows a Maintenance organization (also known as a Repair Station in FAA rules) to certify the release of a component on a FAA Form 8130-3 such that the component can be accepted by a ²⁷CAA or EASA³² Part 145 approved Maintenance organization. Used components (ie tested, inspected, Repaired or overhauled), **should** only be certified under the Dual Release process if the following conditions are assured:
- (a) The FAA Form 8130-3 certifying Maintenance organization holds both a UK CAA Part 145 Approval and a FAA 14 Code of Federal Regulations Part 145 Approval, with the scope of both Approvals allowing for the Certification of such components.
 - (b) The FAA Form 8130-3 Dual Release certificate is issued by an approved Repair Station located in the USA or by an approved Maintenance organization located in the UK (or EU member states listed in an Appendix of the BASA, for EU EASA transitional arrangements).
 - (c) The component being certified and accepted for use on a UK military registered Air System can only be accepted under these rules if they have dual applicability²⁷.
- g. **Transport Canada Civil Aviation (TCCA) Form 1.** A TCCA Form 1 **should** only be ²⁷accepted²⁷ for components, having dual applicability²⁷ under the following conditions³⁴:
- (1) **New parts.** Issued by a TCCA Part 21 approved organization within the scope of such an Approval using the Dual release process.
 - (2) **Used parts.** Released iaw the dual release arrangement described in the bi-lateral agreements between the TCCA and:
 - (a) EASA,
 - (b) CAA.
- h. **EMAR Form 1.** Another nation's nationally implemented derivative of the EMAR Form 1 template can only be issued within the MRP when it complies with the following:
- (1) The UK MAA has an extant Recognition³⁵ with the NMAA that issued the relevant Maintenance organization Approval, and

³¹ CAA International Agreements ²⁷<https://www.caa.co.uk/commercial-industry/aircraft/airworthiness/organisation-and-maintenance-programme-approvals/bilateral-agreements/what-is-a-bilateral-agreement/>.²⁷

³² The EU-USA BASA can be located at the following link: <https://www.easa.europa.eu/document-library/bilateral-agreements/eu-usa>.

³³ Detail on the Dual Release process can be found within the Maintenance Annex Guidance to the UK – USA BASA at the following link: ²⁷<https://www.easa.europa.eu/en/document-library/bilateral-agreements/eu-usa>.²⁷

³⁴ Working Arrangement Between the Civil Aviation Directorate of the Department of Transport of Canada and the Civil Aviation Authority of the United Kingdom of Great Britain And Northern Ireland For the Promotion of Aviation Safety: [https://publicapps.caa.co.uk/docs/33/EN Canada-UK Working Arrangement - 5 November 2020.pdf](https://publicapps.caa.co.uk/docs/33/EN%20Canada-UK%20Working%20Arrangement%20-%205%20November%202020.pdf).

³⁵ The list of National Authorities that have Recognition agreements with the UK MAA is at the following link: <https://www.gov.uk/government/publications/maa-recognition>.

- (2) The scope of that UK MAA Recognition (as detailed on the relevant Recognition Certificate) includes the acceptability of that NMAA's Maintenance organization Approval, and
- (3) The nationally implemented derivative of the EMAR Form 1 was issued within the oversight and authority of that NMAA's Maintenance organization Approval.

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

**ANNEX B
COMPONENT ACCEPTANCE DOCUMENTATION MATRIX**

Classification	Description / Examples	Receipt Documentation	RA 4809 Paragraph Reference
Serviceable New Standard Parts	Nuts, Bolts, Washers, split pins etc.	CoC	Note 1
Serviceable New Material	Raw material is any material that requires further work to make it into a component part of the Air System, such as metal, plastic, wood, fabric.	CoC	Note 1
Serviceable New Material	Consumable material is any material which is only used once, such as lubricants, cements, compounds, paints, chemical dyes and sealants.	CoC	Note 1
Serviceable New Non-Standard Parts	Technical components normally subjected to Maintenance,	CoC or ARC	Note 1 or Note 2
Serviceable Used Non-Standard Parts	Used Components / Assemblies released following Test, Maintenance, Modification, Overhaul or Repair.	ARC	Note 2
Unserviceable	Faulty components: Repairable or life-limited (Hours, Flying Hours, Landings etc.)	Unserviceable identifying document (MOD Form 731)	Note 3
Unsalvageable / Scrap	Components which have reached their certified life limit or contain a non-repairable Fault.	Unsalvageable / Scrap identifying document	Note 4

Note 1 – Refer to paragraphs 3.a to 3.f for the requirements of a CoC and conditions of its use. Refer to paragraph 4.a(1) for specific AMC applicable to new Serviceable components.

Note 2 – Refer to paragraph 3.h for the requirements of an ARC and Annex A details recognized ARCs and their conditions of use.

Note 3 – Refer to paragraph 4.b for the requirements of an Unserviceable component identifying document.

Note 4 – Refer to paragraph 4.c for typical conditions for identifying a component as Unsalvageable / Scrap.

▶ ANNEX C ◀

UK MAA FORM 1
AUTHORIZED RELEASE CERTIFICATE
FORMATING INSTRUCTIONS

Applicability

1. These instructions pertain only to the use of the UK MAA Form 1.

Purpose and Use.

2. The primary purpose of the Certificate is to declare the Airworthiness of Maintenance work undertaken on Products, Parts and Appliances (hereafter referred to as "item(s)").
3. Correlation **should** be established between the Certificate and the item(s). The originator **should** retain a Certificate in a form that allows verification of the original data.
4. The Certificate may be acceptable to many Airworthiness authorities but may be dependent on the existence of bilateral or multilateral agreements and / or policy of the respective NMAA. The "approved design data" mentioned in this Certificate then means that which is approved by the Competent authority of the importing country.
5. The Certificate is not a delivery or shipping note.
6. Air Systems or Aircraft are not to be released using the Certificate.
7. The Certificate does not constitute Approval to install the item(s) on a particular Aviation Product, Part or Appliance but indicates to the end user the serviceability state of the item(s).
8. A mixture of Production released, and Maintenance released item(s) is not permitted on the same Certificate.

General Format.

9. The Certificate **should** comply with the UK MAA Form 1 format hosted on the MAA's website²⁶, including block numbers and the location of each block.
10. The Certificate **should** be in A4 'landscape' format, but the overall size may be increased so long as the Certificate remains recognisable and legible.
11. The user / installer Responsibility statement can be placed on either side of the Certificate.
12. All printing **should** be clear and legible to permit easy reading.
13. The Certificate may either be pre-printed, or computer generated but in either case the printing of lines and characters **should** be clear and legible and iaw the defined format.
14. The Certificate **should** be in English and, if appropriate, may be in one or more additional languages.
15. The details to be entered on the Certificate may be either machine / computer printed or hand-written using block letters and **should** permit easy reading.
16. Limit the use of abbreviations to a minimum to aid clarity.
17. The space remaining on the reverse side of the Certificate may be used by the originator for any additional information but **should not** include any Certification statement. Any use of the reverse side of the Certificate **should** be referenced in the appropriate block on the front side of the Certificate.
18. The use of continuation forms is permitted for clarity as long as they are referenced in the appropriate block on the Certificate. Any use of continuation forms **should** reference the appropriate block 13a or 14a release statement on the Certificate and contain reference to the Certificate's form tracking number.

The UK MAA Form 1 instructions for use are hosted on the MAA's website²⁶ and contain the detailed description of the entries to be made when using the UK MAA Form 1.

RA 4810 - Technical Information (MRP 145.A.45)

Rationale

The Maintenance of Air Systems can be complex and involve activity that requires the use of accurate, detailed Technical Information (TI) in order to ensure Maintenance personnel are working to current processes and procedures. Failure to use and adhere to the TI published in the Air System Document Set (ADS) will adversely affect the Continuing Airworthiness of an Air System or component, increasing the likelihood of an Occurrence and potentially Risk to Life. This RA requires a Maintenance organization to use current and approved TI and to employ systems that enable the reporting of unsatisfactory features and amendments.

Contents

► Definitions Relevant to this RA ◀

4810(1): Use of Approved and Current Technical Information (MRP 145.A.45(a))

4810(2): Scope of Applicable Technical Information (MRP 145.A.45(b))

4810(3): Requirement to Inform Technical Information Author of Errors (MRP 145.A.45(c))

4810(4): Modification of Technical Information (MRP 145.A.45(d))

4810(5): Common Work Card or Work Sheet (MRP 145.A.45(e))

4810(6): Availability of Technical Information (MRP 145.A.45(f))

4810(7): Maintaining the Amendment State of Technical Information (MRP 145.A.45(g))

Definitions

► Definitions Relevant to this RA

1. **Tradesperson.** Suitably Competent and authorized staff responsible for executing Air System Maintenance activities. This role may also be known as Support Staff within Approved Maintenance Organizations (AMOs) or 1st Signature within Military Maintenance Organizations (MMOs).
2. **Supervisor.** Suitably Competent and authorized staff responsible for carrying out supervision of Tradespersons in the execution of their Maintenance activities. This role may also be known as the 2nd Signature within MMOs.
3. **Coordinating / Certifying Staff.** Staff holding Authorization by the Maintenance organization to endorse the appropriate Certification of Air System Release and / or Component Release (Air System coordination / Work Order coordination)¹. ◀

Regulation 4810(1)

Use of Approved and Current Technical Information (MRP 145.A.45(a))

4810(1) The organization **shall** hold and use applicable, approved and current TI in the performance of Maintenance, including Modifications and Repairs. In the case of TI provided by the Military Continuing Airworthiness Management Organization (Mil CAMO), the organization **shall** hold such data when the work is in progress, noting the additional requirements of RA 4813(3)².

¹ ► Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50). ◀

² Refer to RA 4813(3): Management of Retained Maintenance Records (MRP 145.A.55(c)).

Acceptable Means of Compliance 4810(1)

Use of Approved and Current Technical Information (MRP 145.A.45(a))

4. Nil.

Guidance Material 4810(1)

Use of Approved and Current Technical Information (MRP 145.A.45(a))

5. Nil.

Regulation 4810(2)

Scope of Applicable Technical Information (MRP 145.A.45(b))

4810(2) To complement its MAA02³ definition, for the purposes of MRP Part 145, applicable TI⁴ **shall** also include, but not be limited to, any of the following:

- a. Any applicable requirement, procedure, operational directive or information issued by the authority responsible for the oversight of the Air System or component.
- b. Any applicable Special Instructions (Technical) (SI(T)) or Airworthiness Directives (AD) issued by the authority responsible for the oversight of the Air System or component.
- c. Continuing Airworthiness instructions issued by the MAA-approved Design Organization, or the Military Continuing Airworthiness Manager (Mil CAM).
- d. Any applicable standard, such as, but not limited to, Maintenance standard practices recognized by the MAA as a good standard for Maintenance.
- e. Any applicable information issued in accordance with (iaw) RA 4810(4)⁵.

Acceptable Means of Compliance 4810(2)

Scope of Applicable Technical Information (MRP 145.A.45(b))

6. An organization undertaking Air System and / or uninstalled engine / Auxiliary Power Unit (APU) Maintenance **should** hold and use the following additional TI, where published:

- a. The appropriate sections of the ADS⁶, including all relevant Technical Publications, or engine / APU Technical Publications, depending on the organization's planned scope of work whether a MMO or a Contracted Maintenance organization seeking Approval.
- b. Service Bulletins, Service Letters and service instructions (all covered in the MOD system by SI(T)s).
- c. Modification leaflets.
- d. Non-Destructive Testing / Non-Destructive Inspection manual.

7. An organization undertaking component Maintenance, other than complete engines / APUs, **should** hold and use the following additional TI, where published:

- a. The appropriate sections of the vendor Maintenance and Repair manual.
- b. MOD SI(T)s, Service Bulletins and Service Letters.

³ Refer to MAA02: MAA Master Glossary.

⁴ Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

⁵ Refer to RA 4810(4): Modification of Technical Information (MRP 145.A.45(d)).

⁶ Refer to RA 1310(1): The Air System Document Set.

**Acceptable
Means of
Compliance
4810(2)**

8. An organization undertaking only specialized services (eg Non-Destructive Testing) **should** hold and use all applicable specialized service(s) process specifications.

**Guidance
Material
4810(2)**

Scope of Applicable Technical Information (MRP 145.A.45(b))

Common GM

9. 'Applicable' means relevant to any Air System, component or process specified in the organization's Approval class rating schedule or planned scope of work and in any associated capability list.

10. In relation to Paragraphs ►6◄ and ►7◄, 'appropriate sections' means the TI relevant to the scope of Maintenance undertaken at each particular Maintenance facility.

Additional GM - MMOs only

11. Nil.

Additional GM - Approved Maintenance Organizations (AMOs) only

12. 'Technical Information', as defined in MAA02, comprises a wider range of documentation than the civil aviation term 'Maintenance Data', which may be more familiar to those AMOs utilizing traditional civil aviation processes. However, within the context of its use in MRP Part 145, the term 'Maintenance Data' may be used in lieu of the term 'Technical Information' in such AMO's documentation.

**Regulation
4810(3)**

Requirement to Inform Technical Information Author of Errors (MRP 145.A.45(c))

4810(3) The organization **shall** use a recognized procedure to ensure that, if found, any errors⁷ in TI used by Maintenance personnel are recorded and notified to the TI sponsor.

**Acceptable
Means of
Compliance
4810(3)**

Requirement to Inform Technical Information Author of Errors (MRP 145.A.45(c))

13. The procedure **should** ensure that when Maintenance personnel discover inaccurate, incomplete or ambiguous information in the TI they will record the details. The procedure **should** then ensure that the Maintenance organization notifies the problem to the authorized sponsor of the TI in a timely manner.

14. A record of such communications to the authorized sponsor of the TI **should** be retained by the Maintenance organization until such time as the authorized sponsor has clarified the issue by, for example, amending the TI.

15. The procedure **should** be specified in the Maintenance organization Exposition (MOE) or orders as applicable.

**Guidance
Material
4810(3)**

Requirement to Inform Technical Information Author of Errors (MRP 145.A.45(c))

16. The preferred process for proposing amendments to TI is through submission of a MOD Form 765, Unsatisfactory Feature Report (UFR). The MOD Form 765 UFR is used to notify and document subsequent actions relating to the proposed amendments to TI in the Defence Air Environment.

17. When there is a perceived Risk to personnel or equipment as a result of a TI shortfall, the organization may use a more expedient method to notify the TI sponsor; for example, by phone or by E-Mail. The process to conduct such activity ►will◄ be agreed with the TI sponsor and will be included in associated orders and the MOE where appropriate.

⁷ Including inaccurate, incomplete or ambiguous TI.

**Regulation
4810(4)**

Modification of Technical Information (MRP 145.A.45(d))

4810(4) The organization **shall** only modify TI iaw an approved procedure. For all Modifications to TI, the organization **shall** demonstrate that they result in equivalent or improved Maintenance standards and **shall** inform the Type Airworthiness Authority (TAA)⁸ and Mil CAMO or other approved organization of such changes.

**Acceptable
Means of
Compliance
4810(4)**

Modification of Technical Information (MRP 145.A.45(d))

Common AMC

18. Nil.

Additional AMC - MMOs only

19. Nil.

Additional AMC - AMOs only

20. The procedure **should** address the need for the organization to seek authority from the originating organization to deviate from relevant TI.

21. The procedure **should** include a requirement to retain a paper / electronic record of the complete process from start to finish and ensure that the relevant TI clearly identifies the Modification.

**Guidance
Material
4810(4)**

Modification of Technical Information (MRP 145.A.45(d))

22. For the purposes of this Regulation, 'relevant Technical Information' means instructions on how to carry out the particular Maintenance task; they exclude the engineering design of Repairs and Modifications.

23. Deviation from TI must be appropriately authorized⁹ ▶,10◀.

**Regulation
4810(5)**

Common Work Card or Work Sheet (MRP 145.A.45(e))

4810(5) The organization **shall** provide a common work card or work sheet system to be used throughout relevant parts of the organization, to be used as follows:

a. The organization **shall** either transcribe accurately the TI¹¹ onto such work cards or work sheets, or make precise reference to the particular Maintenance task or tasks contained in such TI.

b. Work cards and work sheets that are computer generated and held on an electronic database **shall** be subject to both adequate safeguards against unauthorized alteration and a back-up electronic database, which **shall** be updated within 24 hours of any entry made to the main electronic database.

c. Complex Maintenance tasks **shall** be transcribed onto the work cards or work sheets and subdivided into clear

⁸ 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.

⁹ Refer to RA 4812(5): Deferred and Incomplete Maintenance (MRP 145.A.50(e)).

¹⁰ ▶ Refer to RA 4812(6): Component Concessions.◀

¹¹ Refer to RA 4810(2): Applicable Technical Information (MRP 145.A.45(b)) and RA 4810(4): Modification of Technical Information (MRP 145.A.45(d)).

**Regulation
4810(5)**

stages to ensure a record of the accomplishment of the complete Maintenance task.

d. The organization **shall** establish processes to ensure that all work cards and / or work sheets are completed in a correct and consistent manner.

**Acceptable
Means of
Compliance
4810(5)**

Common Work Card or Work Sheet (MRP 145.A.45(e))

24. Maintenance organizations **should** only record Maintenance on sponsor¹² approved forms, work cards and work sheets. Such documents **should** be completed iaw the sponsor's respective Instructions for Use and processes.

25. Work cards **should** differentiate and specify, when relevant, disassembly, accomplishment of task, reassembly and testing.

**Guidance
Material
4810(5)**

Common Work Card or Work Sheet (MRP 145.A.45(e))

Common GM

26. The terms 'work card' and 'work sheet' refer to the document on which a Maintenance task or scheduled sequence of tasks have been pre-populated. Examples include, but are not limited to, a Topic 5 Maintenance schedule, a MOD F707MP and an authorized pre-printed Maintenance work order.

27. In the case of a lengthy Maintenance task involving a succession of personnel completing the task, it may be necessary to use supplementary forms, work cards or work sheets to indicate what was accomplished by each individual person.

Additional GM - MMOs only

28. Nil.

Additional GM - AMOs only

29. The term 'relevant parts of the organization' is used to mean, for example, Air System Base Maintenance, Air System Line Maintenance, engine workshops, mechanical workshops, avionics workshops, etc. Therefore, for example, engine workshops will have a common system throughout such engine workshops, but this may be different to the System used in Air System Base Maintenance.

30. Where an AMO is Contracted to use the same form, work card or work sheet system as an MMO, they will comply with the same Instructions for Use and processes.

**Regulation
4810(6)**

Availability of Technical Information (MRP 145.A.45(f))

4810(6) The organization **shall** ensure that all applicable TI is readily available for use when required by Maintenance personnel.

**Acceptable
Means of
Compliance
4810(6)**

Availability of Technical Information (MRP 145.A.45(f))

31. TI **should** be available in close proximity to the Air System being maintained, for the relevant staff to study.

32. Where TI is held electronically, or on microfilm / microfiche, the number of terminals to access the data **should** be sufficient in relation to the size of the work programme to enable easy access for ► **Tradespersons, Supervisors and Coordinating / Certifying Staff.** ◀

¹² Air System and Air System equipment specific MOD Form 700 numerical series forms are sponsored by an authorized individual within a Delivery Team. The MAA sponsors all other MOD Form 700 numerical series forms.

**Guidance
Material
4810(6)****Availability of Technical Information (MRP 145.A.45(f))**

33. Nil.

**Regulation
4810(7)****Maintaining the Amendment State of Technical Information
(MRP 145.A.45(g))**

4810(7) The organization **shall** establish a procedure to ensure that the TI it controls is kept up to date. In the case of an AMO using MOD-sponsored TI, the AMO **shall** be able to show that either it has written confirmation from the MOD that all such TI is up to date, or it has work orders specifying the amendment status of the TI to be used, or it can show that it is on the MOD-sponsored TI amendment list.

**Acceptable
Means of
Compliance
4810(7)****Maintaining the Amendment State of Technical Information
(MRP 145.A.45(g))**

34. To keep data up to date, a procedure **should** be set up to monitor the amendment status of all data and maintain a check that all amendments are being received by being a subscriber to any document amendment scheme. Alternatively, a suitable arrangement **should** be made with the relevant Mil CAMO to receive data amendments.

35. Where Electronic Technical Publications, Logistic Information Systems or microfilm / microfiche readers are used, a control procedure **should** also be in place to ensure that, where prints are produced, out of date data is not used.

**Guidance
Material
4810(7)****Maintaining the Amendment State of Technical Information
(MRP 145.A.45(g))**

36. Nil.

RA 4811 - Maintenance Planning (MRP 145.A.47)

Rationale

In order to successfully complete Air System and Air System component Maintenance, an organization ►will◄ consider the resources needed to achieve such tasks in order to ensure Air System availability and compliance with MRP Part 145. If a Maintenance organization fails to undertake adequate planning or implement an appropriate system of work, which considers Human Factors, there is an increased Risk of Maintenance error and Risk to Airworthiness. ►This RA◄ details the requirements for a Maintenance organization to have adequate management systems in place, tailored to meet the complexity of the work required in order to ensure its safe completion.

Contents

4811(1): Maintenance Planning System (MRP 145.A.47(a))

4811(2): Human Factors Limitations (MRP 145.A.47(b))

4811(3): Handover of Maintenance Tasks (MRP 145.A.47(c))

Regulation 4811(1)

Maintenance Planning System (MRP 145.A.47(a))

4811(1) The organization **shall** have a system appropriate to the amount and complexity of work to plan the availability of all necessary personnel, tools, equipment, material, Technical Information (TI) and facilities in order to ensure the safe completion of the Maintenance work.

Acceptable Means of Compliance 4811(1)

Maintenance Planning System (MRP 145.A.47(a))

1. For the purpose of MRP Part 145, the Maintenance planning function **should** include 2 complementary elements:
 - a. Scheduling the Maintenance work ahead, to ensure that it will not adversely interfere with other work with regards to the availability of all necessary personnel, tools, equipment, material, TI and facilities.
 - b. During Maintenance work, organizing Maintenance teams and shifts and provide all necessary support to ensure the completion of Maintenance without undue time pressure.
2. When establishing the Maintenance planning procedure, consideration **should** be given to the following, where applicable:
 - a. Logistics, supply coordination and inventory control.
 - b. Square metres of working accommodation.
 - c. ►Working hours◄ estimation.
 - d. ►Working hours◄ availability.
 - e. Preparation of work.
 - f. Hangar availability.
 - g. Environmental conditions (access, lighting standards and cleanliness).
 - h. Scheduling of Safety critical tasks.

Guidance Material 4811(1)

Maintenance Planning System (MRP 145.A.47(a))

Common GM

3. Nil.

Additional GM - Military Maintenance Organizations (MMOs) only

4. Due to the unpredictable variations in the scheduled work that most MMOs experience, a documented Maintenance Planning System is not mandatory. However, the MMO ►has◄ to demonstrate that it has established a system of work (shift

**Guidance
Material
4811(1)**

patterns, internal logistics processes, etc) that is appropriate to the scope of work it intends to conduct.

Additional GM - Approved Maintenance Organizations (AMOs) only

5. Depending on the amount and complexity of work generally performed by the Maintenance organization, the planning system may range from a very simple procedure to a complex organizational set-up, including a dedicated planning function in support of the Maintenance function.

**Regulation
4811(2)**

Human Factors Limitations (MRP 145.A.47(b))

4811(2) The planning of Maintenance tasks, and the organizing of shifts, **shall** take into account Human Factors Limitations.

**Acceptable
Means of
Compliance
4811(2)**

Human Factors Limitations (MRP 145.A.47(b))

6. Human Factors Limitations, in the context of this Regulation, refers to the upper and lower limits, and variations, of certain aspects of human performance (circadian rhythm, 24 hours body cycle, etc.) which personnel **should** be aware of when planning work and shifts.

**Guidance
Material
4811(2)**

Human Factors Limitations (MRP 145.A.47(b))

7. Nil.

**Regulation
4811(3)**

Handover of Maintenance Tasks (MRP 145.A.47(c))

4811(3) When it is required to hand over the continuation or completion of Maintenance tasks for reasons of a shift or personnel changeover, relevant information **shall** be adequately communicated between outgoing and incoming personnel.

**Acceptable
Means of
Compliance
4811(3)**

Handover of Maintenance Tasks (MRP 145.A.47(c))

8. Maintenance organizations **should** have a procedure for shift and task handover, addressing the following 3 elements:
- a. The outgoing person's ability to understand and communicate the important elements of the job or task being passed over to the incoming person.
 - b. The incoming person's ability to understand and assimilate the information being provided by the outgoing person.
 - c. A formalized process for exchanging information between outgoing and incoming persons and a planned shift overlap and a place for such exchanges to take place.

**Guidance
Material
4811(3)**

Handover of Maintenance Tasks (MRP 145.A.47(c))

9. Nil.

RA 4812 - Certification of Air System Release and Component Release (MRP 145.A.50)

Rationale

There is a chain of organizational and individual Responsibility for all Maintenance of military registered Air Systems and components carried out within the Defence Air Environment (DAE). Without a system for recording the Certification and release of all completed Maintenance, Configuration Control could be lost and Risk to Life increased. This RA details the requirement for a Maintenance organization to record the Certification and Release of Air Systems and components from Maintenance.

Contents

Definitions Relevant to this RA

4812(1): Certification of Air System Release (MRP 145.A.50(a))

4812(2): Air System Release for Flight (MRP 145.A.50(b))

4812(3): New Faults (MRP 145.A.50(c))

4812(4): Certification of Component Release and Cannibalization (MRP 145.A.50(d))

4812(5): Deferred and Incomplete Maintenance (MRP 145.A.50(e))

▶ 4812(6): Component Concessions ◀

Definitions

Definitions Relevant to this RA

1. **Tradesperson.** Suitably Competent and authorized staff¹ responsible for executing Air System Maintenance activities. This role may also be known as Support Staff within Approved Maintenance Organizations (AMOs).
2. **Supervisor.** Suitably Competent and authorized staff¹ responsible for carrying out supervision of Tradespersons in the execution of their Maintenance activities. This role may also be known as Support Staff with supervisory responsibilities within AMOs.
3. **Coordinating / Certifying Staff.**² Staff holding Authorization by the Maintenance organization to endorse the appropriate Certification of Air System Release and / or Component Release (Air System coordination / Work Order coordination).

Regulation

4812(1)

4812(2)

Certification of Air System Release (MRP 145.A.50(a))

4812(1) The Certification of Air System Release **shall** be endorsed by appropriately authorized Coordinating / Certifying Staff on behalf of the organization when it has been verified that all Maintenance has been properly carried out by the organization in accordance with (iaw) approved procedures, taking into account the availability and use of the Technical Information (TI)³, and that there are no non-compliances which are known to endanger Air Safety.

Air System Release for Flight (MRP 145.A.50(b))

4812(2) The Certification of Air System Release **shall** be endorsed before flight at the completion of any Maintenance on the Air System.

¹ Refer to RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

² Refer to RA 4801(1): Certifying Staff.

³ Refer to RA 4810 – Technical Information (MRP 145.A.45).

**Acceptable
Means of
Compliance
4812(1)
4812(2)**

Certification of Air System Release (MRP 145.A.50(a))

Air System Release for Flight (MRP 145.A.50(b))

Common AMC

4. The person endorsing the Certification of Air System Release and Air System Release for Flight **should** use their normal signature except in the case where electronic Certification is used. Electronic signatures **should** be unique to an individual, provide traceability of Certification and only permit Certification in line with the individuals Authorizations.

Additional AMC - Military Maintenance Organizations (MMOs) only

5. Certification of Air System Release and Air System Release for Flight **should** be recorded using MOD Form 700 or electronic Information System (IS) equivalent⁴ documentation.

Additional AMC - AMOs only

6. The Certification of Air System Release **should** be accompanied by a statement declaring that the work has been carried out iaw the appropriate Regulations, as follows:

a. In the case of Air Systems using the MOD Form 700 as the technical log, this statement is made by virtue of completing the paperwork iaw the relevant processes and the Instructions for Use of each form; no further statement is required.

b. Where alternative documentation is used, the following statement **should** be used: 'Certifies that the work specified except as otherwise specified was carried out iaw MRP Part 145 and in respect to that work the Air System is considered ready for use'.

7. The document on which the Certification of Air System Release is endorsed **should**:

a. Relate to the Maintenance task ordered or the appropriate elements of the Air System Maintenance manual, which itself may cross-refer to other Technical Publications, Special Instructions (Technical) (SI(T)s), etc.

b. Include or refer to the date such Maintenance was carried out and when the Maintenance took place relative to any life or overhaul limitation in terms of date / Flying Hours / cycles / landings etc. as appropriate.

8. When extensive Maintenance has been carried out and the document containing the Certification of Air System Release summarizes this Maintenance, a unique cross-reference to the work package **should** be included. This work package **should** contain full details of Maintenance carried out, retaining any dimensional information.

**Guidance
Material
4812(1)
4812(2)**

Certification of Air System Release (MRP 145.A.50(a))

Air System Release for Flight (MRP 145.A.50(b))

9. The Certification of Air System Release⁵ is the act of completing the final signature / electronic Authorization confirming the completion of the preceding Maintenance processes and every care is to be taken in ensuring that such Certification is correctly endorsed. For Air Systems using the MOD Form 700 as the technical log, the Certification of Air System Release is the signature on the appropriate MOD Form 707B by an appropriately authorized individual. Where authorized, Air System Release for Flight is the signature on the appropriate MOD Form 705.

10. 'Endanger Air Safety' means any instances where safe operation could not be assured or which could lead to an unsafe condition. It typically includes, but is not limited to, significant cracking, deformation, corrosion or failure of primary Structure, any evidence of burning, electrical arcing, significant hydraulic fluid or fuel leakage

⁴ Refer to RA 1223 – Airworthiness Information Management.

⁵ Refer to RA 4961(1): Aircraft Maintenance Programme.

**Guidance
Material**
4812(1)
4812(2)

and any emergency System or total System failure. It does not include any Faults for which rectification has been deferred⁶ by an authorized individual.

11. A Type Airworthiness Authority (TAA)⁷ endorsed electronic system that ensures uniqueness, security and traceability may be used. A Certification stamp is optional.
12. In the case of Air Systems being maintained through traditional civilian aviation Systems, the document on which the Certification of Air System Release is endorsed may be named the 'Certificate of Release To Service'.

Regulation
4812(3)

New Faults (MRP 145.A.50(c))

- 4812(3) New Faults or incomplete Maintenance work orders identified during Air System Maintenance **shall** be brought to the attention of the appropriate engineering manager and / or the Military Continuing Airworthiness Management Organization (Mil CAMO) for the specific purpose of obtaining agreement to rectify such Faults or completing the missing elements of the Maintenance work order. In the case where the appropriate engineering manager and / or the Military Continuing Airworthiness Management Organization (Mil CAM) declines to have such Maintenance carried out under this paragraph, RA 4812(5)⁵ **shall** be applicable.

**Acceptable
Means of
Compliance**
4812(3)

New Faults (MRP 145.A.50(c))

13. Referral to the Mil CAMO **should** take place when the rectification of such Fault or completion of such Maintenance will affect the Air System's availability to the respective Front Line Command.
14. An Air System **should** be considered Unserviceable and therefore requiring Corrective Maintenance (unless such Maintenance is deferred⁵) whenever:
 - a. A Fault is reported to, or detected by, the Maintenance organization.
 - b. A loose article is suspected or confirmed⁸.
 - c. A component / item is cannibalized⁹.

**Guidance
Material**
4812(3)

New Faults (MRP 145.A.50(c))

15. Nil.

Regulation
4812(4)

**Certification of Component Release and Cannibalization
(MRP 145.A.50(d))**

- 4812(4) A document containing the Certification of Component Release **shall** be issued on the following occasions:
- a. At the completion of any Maintenance on a component whilst off the Air System.

Note:

When an AMO maintains a component for its own use, a formal Certificate of Component Release may not be necessary, but the

⁶ Refer to RA 4812(5): Deferred and Incomplete Maintenance (MRP 145.A.50(e)).

⁷ 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.

⁸ **Refer to RA 4253 – Loose Article Recovery.**

⁹ **Refer to RA 4812(4): Certification of Component Release and Cannibalization.**

Regulation 4812(4)

organization's internal release procedures **shall** be defined in the Maintenance Organization Exposition (MOE).

- b. When a component is removed as serviceable from an Air System or assembly.

Note:

Personnel making Airworthiness decisions on behalf of the Mil CAM for the Cannibalization of components from an Air System or assembly **shall** have their Competence assessed and be authorized iaw RA 4945(3)¹⁰.

Acceptable Means of Compliance 4812(4)

Certification of Component Release and Cannibalization (MRP 145.A.50(d))

Common AMC

16. A component which has been maintained off the Air System **should** be endorsed by ►an◄ appropriately authorized¹¹ ►person¹²◄ on a MOD Form 731¹³ or equivalent¹⁴, for such Maintenance, with one exception as detailed in the Regulatory Statement¹⁵.

Additional AMC - MMOs only

17. Cannibalization of components from Air Systems and uninstalled Air System equipment **should** be strictly controlled and documented by appropriately authorized personnel¹¹.

Additional AMC - AMOs only

18. The appropriately-rated AMO **should** ensure that all reasonable measures have been taken to ensure that only approved and Serviceable Air System components are endorsed with a Certification of Component Release. Such Certification **should not** be endorsed for any item when it is known that the item is Unserviceable, except ►:

- a. In the case of an item undergoing a series of Maintenance processes at several Maintenance organizations and a document containing a Certification of Component Release is required to accompany the component to enable an organization to accept the item for subsequent Maintenance processes. In this instance, a clear mark of the component's serviceability (or a Statement of Limitation) **should** be endorsed with the Certification of Component Release.
- b. When an authorized TAA approved Concession approves the use of the component¹⁶. ◄

19. The Certification of Component Release endorsed iaw this Regulation **should** be annotated with a statement confirming that the item has been inspected. In addition, the following **should** be specified:

- a. When the last Maintenance was carried out and by whom.
- b. If the component is unused, when the component was manufactured and by whom with a cross reference to any original documentation, which **should** be included with the certificate.
- c. A list of all Airworthiness Directives (ADs) / SI(T)s, Repairs and Modifications known to have been incorporated or, if no ADs / SI(T)s, Repairs or Modifications are known to be incorporated, then this **should** be so stated.
- d. Detail of life used for service life limited components being any combination of fatigue, overhaul or storage life.

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

¹¹ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(d)).

¹² ►Refer to RA 4806(9): Component Certifying Staff (MRP 145.A.30(i)).

¹³ Refer to MOD Form 731 - Equipment Conditioning Label. ◄

¹⁴ Refer to RA 4809(1): Component Classification (MRP 145.A.42(a)).

¹⁵ Refer to the note to RA 4812(4)a (MRP 145.A.50(d)a).

¹⁶ ►Refer to RA 4812(6): Component Concessions. ◄

**Acceptable
Means of
Compliance
4812(4)**

e. Details, if applicable, of the Air System component's Maintenance history record, as long as the record contains details that would otherwise be required on the Certificate of Component Release. The Maintenance history record and acceptance test report or statement, if applicable, **should** be attached to the Certificate of Component Release.

Note:

Where the Certification of Component Release is endorsed on a MOD Form 731, completed iaw the appropriate Instructions for Use, it meets the requirements of paragraph 19.

New / Unused Air System components - AMOs only

20. If a Certification of Component Release is to be endorsed for a stored and unused Air System component without an existing Certification of Component Release endorsed iaw this Regulation, the following **should** be contained within the procedure for endorsing the Certification of Component Release, which **should** be defined within the MOE:

- a. An acceptance test report or statement **should** be available for all used and unused Air System components that are subjected to acceptance testing after manufacturing or Maintenance.
- b. The Air System component **should** be inspected for compliance with the manufacturer's instructions and limitations for storage and condition, including any requirement for limited storage life, inhibitors, controlled climate and special storage containers. In addition, or in the absence of specific storage instructions, the Air System component **should** be inspected for damage, corrosion and leakage to ensure good condition.
- c. The storage life used of any storage life limited components **should** be established.
- d. If it is not possible to establish satisfactory compliance with all applicable conditions specified in sub-paragraphs 20.a to 20.c inclusive, the Air System component **should** be disassembled by an appropriately rated AMO and subjected to a check for incorporated ADs / SI(T)s, Repairs and Modifications and inspected / tested iaw the manufacturer's Maintenance instructions to establish satisfactory condition and, if relevant, all seals, lubricants and life limited components replaced. On satisfactory completion after reassembly, a Certification of Component Release may be endorsed stating what was carried out and the reference of the manufacturer's Maintenance instructions included.

21. The Certification / release of a stored but unused Air System component iaw paragraph 20 **should** be considered as a Maintenance release under MRP Part 145 and not a production release. It is not intended to bypass a production release procedure agreed by the MAA for components intended for fitment on the manufacturer's own production line.

Components removed as serviceable from an Air System - AMOs only

22. If a Certification of Component Release is to be endorsed for a Serviceable Air System Component removed from a UK military registered Air System, the following **should** be complied with:

- a. The AMO **should** ensure that the component was removed from the Air System by an appropriately authorized¹¹ person.
- b. The Air System component **should** only be deemed serviceable if there were no Faults of that component / related system evident during its most recent period of operation.
- c. The Air System component **should** be inspected for satisfactory condition including in particular damage, corrosion or leakage and compliance with any additional manufacturer's Maintenance instructions.
- d. The Air System Maintenance records **should** be researched for any unusual events that could affect the serviceability of the Air System component such as involvement in Accidents, Incidents, heavy landings or lightning strikes.

**Acceptable
Means of
Compliance
4812(4)**

Under no circumstances **should** a Certification of Component Release be endorsed if it is suspected that the Air System component has been subjected to extremes of stress, temperatures or immersion.

- e. A Maintenance history record **should** be available for all used serialized Air System components.
- f. Any Modification embodiment and previous Repairs **should** be established.
- g. The flight hours / cycles / landings as applicable of any service life limited components including time since overhaul **should** be established.
- h. Compliance with known applicable ADs / SI(T)s **should** be established.
- i. Any Maintenance required by the TAA or Mil CAM **should** be carried out (for example, a Standard Serviceability Test).
- j. The document containing the Certification of Component Release **should** contain the information as specified in paragraph 20, including the identification of the Air System from which the Air System component was removed.

23. Certification of Component Release for serviceable Air System components removed from any Air System other than a UK military registered Air System **should** only be endorsed if the components are leased or loaned from a Maintenance organization approved under MRP Part 145, who retains control of the Airworthiness status of the components.

Components removed from an Air System withdrawn from service - AMOs only

24. If a Certification of Component Release is to be endorsed for a Serviceable Air System component removed from a UK military registered Air System withdrawn from service, the following **should** be complied with:

- a. Air Systems withdrawn from service and dismantled for spares **should** only be accomplished under the control of an AMO, employing procedures approved by the MAA.
- b. To be eligible for installation, components removed from such Air Systems **should** be endorsed with a Certification of Component Release by an appropriately rated AMO following a satisfactory assessment, as detailed in this AMC.
- c. As a minimum, the assessment **should** satisfy the standards set out in paragraphs 22 and 23, as appropriate. This **should**, where known, include the possible need for the alignment of Preventive Maintenance that may be necessary to comply with the Maintenance programme applicable to the Air System on which the component is to be installed.
- d. The AMO responsible for certifying any removed components **should** satisfy itself that the manner in which the components were removed and stored are compatible with the requirements of MRP Part 145.
- e. A structured plan **should** be formulated to control the Air System disassembly process. The disassembly **should** be carried out by an appropriately rated AMO, under the supervision of Coordinating / Certifying Staff, who **should** ensure that the Air System components are removed and documented in a structured manner in accordance with the appropriate TI and disassembly plan.
- f. All recorded Air System Faults **should** be reviewed and the possible effects these may have on both normal and standby functions of removed components are to be considered.
- g. Dedicated control documentation **should** be used as detailed by the disassembly plan, to facilitate the recording of all Maintenance actions and component removals performed during the disassembly process. Components found to be Unserviceable **should** be identified as such and quarantined pending a decision on the actions to be taken. Records of the Maintenance accomplished to establish serviceability **should** form part of the component Maintenance history.

**Acceptable
Means of
Compliance
4812(4)**

h. Suitable MRP Part 145 facilities for the removal and storage of removed components **should** be used, which include suitable environmental conditions, lighting, access equipment, Air System tooling and storage facilities for the work to be undertaken. While it may be acceptable for components to be removed, given local environmental conditions, without the benefit of an enclosed facility, subsequent disassembly (if required) and storage of the components **should** be iaw manufacturer's recommendations.

Components maintained by organizations without MAA approval - AMOs only

25. When an AMO subcontracts Maintenance activities to a non-MRP Part 145 organization the Subcontracted organization's facilities, personnel and procedures involved with the AMO's Products, Parts and Appliances undergoing Maintenance **should** be subsumed into the AMO. These Subcontracted facilities, personnel and procedures **should** work under the contracting AMO's Quality System and the AMO's MRP Part 145 Approval is effectively extended to include the subcontractor.

26. It therefore follows that those parts of the subcontractor's facilities, personnel and procedures **should** meet MRP Part 145 requirements for the duration of that Maintenance. It remains the contracting AMO's Responsibility to ensure such requirements are satisfied, as it retains Accountability for all actions and outputs of the Subcontracted organization.

27. All Subcontracted organizations **should** be listed within the contracting AMO's Maintenance Organization Exposition.

28. If a Certification of Component Release is to be endorsed for a component maintained by a Maintenance organization without MRP Part 145 Approval, the Accountable Manager (Maintenance) **should** establish satisfactory conditions by ensuring that:

- a. The Subcontracted Maintenance organization carrying out the component Maintenance is listed in the AMO's MOE¹⁷.
- b. The Competency of the Subcontracted Maintenance organization has been assessed¹⁸.
- c. Procedures are in place to control the use of subcontractors, which **should** include sample audits¹⁹.

Components removed from an Air System involved in an accident or incident - AMOs only

29. Components removed from Air Systems involved in an Accident or Incident (including, but not limited to heavy landings and lightning strikes) **should** only be endorsed with a Certification of Component Release when processed iaw paragraph 22 and a specific work order including all additional tests and inspections made necessary by the Accident or Incident. Such a work order may require input from the TAA or MAA-approved Design Organization, as appropriate. This work order **should** be referenced with the Certification of Component Release.

**Guidance
Material
4812(4)**

Certification of Component Release and Cannibalization (MRP 145.A.50(d))

Common GM

30. The MOD Form 731 or equivalent²⁰ are the only documents upon which the Certification of Component Release can be made. They serve as an official certificate for items released from an AMO or MMO to users. The Certification of Component Release is not a delivery or shipping note.

¹⁷ Refer to RA 4816 – Maintenance Organization Exposition (MRP 145.A.70) - Approved Maintenance Organizations only.

¹⁸ Refer to RA 1005 – Contracting with Competent Organizations.

¹⁹ Refer to RA 4817(1): Privileges of the Organization (MRP 145.A.75(a)), paragraph 5.

²⁰ Refer to RA 4809 – Acceptance of Components (MRP 145.A.42).

**Guidance
Material
4812(4)****Additional GM - MMOs only**

31. Personnel endorsing the Certification of Component Release must comply with the Maintenance policy of the items concerned, as specified in the item's specific TI and any other instructions issued by the appropriate TAA .
32. Items will be endorsed with a Certification of Component Release:
- Prior to transfer between Maintenance organizations.
 - Prior to movement within the same Maintenance organization from one work location to another, for the purpose of further Maintenance or reinstallation.
 - When the item is the subject of Cannibalization and is transferred between a Station, Ship or Unit.
 - Prior to return to the supply / logistic organization for whatever reason.
33. The person endorsing the Certification of Component Release for an item ►will◀ ensure that the item is correctly prepared for subsequent movement or storage on Unit.
34. Removal of components as Serviceable from an Air System for Cannibalization purposes will only be authorized when all of the following circumstances apply:
- The item is required urgently to restore another Air System to serviceability.
 - Engineering or supply personnel, as appropriate, have checked all possible sources of uninstalled spares on the Station / Ship / Unit, considered local manufacture²⁰, Repair or local purchase.
 - A logistics demand of the appropriate priority has been placed and the delivery forecast is such that the item will not be available within the required timescale.
 - Where possible, if the component is to be transferred between lifed assemblies, including engines, the residual life on the item fitted is to be at least equal to that of the item being removed.

Additional GM - AMOs only

35. The purpose of the Certification of Component Release is to:
- Release assemblies / items / components / parts (referred to throughout this Regulation as 'item(s)') after Maintenance.
 - Allow items removed from one Air System or Air System component to be fitted to another Air System or Air System component following Cannibalization.
36. The Certification of Component Release for a component does not remove the need for further Certification²¹ to be carried out in regard to a component being installed properly on the Air System when such action occurs.
37. In addition to the Certification of Component Release for a component maintained by the organization, an appropriately rated organization under MRP Part 145 may also endorse a Certification of Component Release for an Air System component on the following occasions, as detailed in the AMC to this Regulation:
- A component maintained before the Maintenance Approved Organization Scheme became effective or manufactured before the Design Approved Organization Scheme became effective.
 - A component used on an Air System and removed in a serviceable condition (a process known in the DAE as Cannibalization).
 - A component removed from an Air System which has been withdrawn from service, or from an Air System which has been involved in abnormal Occurrences such as Accidents, Incidents, heavy landings or lightning strikes.

²¹ Refer to RA 4812(1): Certification of Air System Release (MRP 145.A.50(a)) and RA 4812(2): Air System Release for Flight (MRP 145.A.50(b)).

**Guidance
Material
4812(4)**

d. Components maintained by an organization not approved under MRP Part 145.

38. The certificate containing the Certification of Component Release may be used as a rotatable tag / label by utilizing the available space for any additional information and despatching the item with 2 copies of the certificate so that one copy may be eventually returned with the item to the Maintenance organization. The alternative solution is to use existing rotatable tags / label and also supply a copy of the certificate.

39. For the purposes of this Regulation, 'appropriately rated' means an organization with an Approval class rating for the Air System, type of component or uninstalled Air System equipment in which it may be installed.

**Regulation
4812(5)**

Deferred and Incomplete Maintenance (MRP 145.A.50(e))

4812(5) By derogation to RA 4812(1)²², an organization may endorse a Certification of Air System Release on the following occasions:

- a. When an appropriately authorized individual agrees to defer outstanding corrective or preventive Maintenance. Such Maintenance **shall** only be deferred if considered justifiable and safe.
- b. When an AMO is unable to complete all Maintenance ordered, it may endorse a Certification of Air System Release within the approved Air System limitations. The organization **shall** enter such fact on the document containing the Certification of Air System Release before its issue.

Note:

Personnel making Airworthiness decisions on behalf of the Mil CAM for the deferment of outstanding Corrective or Preventative Maintenance **shall** have their Competence assessed and be authorized iaw RA 4945(3)¹⁰.

In all instances, details of any deferred or incomplete Maintenance **shall** be entered in the technical log by appropriately authorized individuals, who have made the judgement that the Air System is safe to fly, with appropriate limitations and constraints caveated, despite incomplete Maintenance.

**Acceptable
Means of
Compliance
4812(5)**

Deferred and Incomplete Maintenance (MRP 145.A.50(e))

Common AMC

40. Nil.

Additional AMC - MMOs only

41. Out-of-limit Faults and damage **should** be notified to the Mil CAMO²³ using processes that are documented in the relevant Continuing Airworthiness Management Exposition (CAME).

42. In cases where a Fault or damage is not recognized in the Air System Document Set or TI, the Mil CAMO **should** be notified using processes that are documented in the relevant CAME.

²² Refer to RA 4812(1): Certification of Air System Release (MRP 145.A.50(a)).

²³ Refer to RA 4947(1): Military Continuing Airworthiness Management Organization Responsibilities.

Acceptable Means of Compliance 4812(5)

Additional AMC - AMOs only

43. If an appropriately authorized individual agrees to the deferment of Maintenance, then details of the deferment, including, where applicable, reference to such Approval for deferment, **should** be entered in the technical log (eg MOD Form 700) and sanctioned by an authorized individual.

Note:

Whether or not the individual authorizing the deferment has such authority to defer Maintenance is an issue between the organization and the contracting organization²⁴, where applicable. In case of doubt concerning such a decision the AMO **should** inform the Mil CAMO of such doubt, before releasing the Air System.

44. The procedure for complying with this Regulation **should**:

- a. Draw attention to the fact that RA 4812(1)²² does not normally permit the endorsement of the Certification of Air System Release in the case of non-compliance.
- b. State what action the Tradesperson, Supervisor and Coordinating / Certifying Staff are required to take to bring the matter to the attention of the Mil CAMO, so that the issue may be discussed and resolved with the Mil CAMO.
- c. Ensure that the appropriate person(s)²⁵ is kept informed in writing of such possible non-compliance situations.

Guidance Material 4812(5)

Deferred and Incomplete Maintenance (MRP 145.A.50(e))

Common GM

45. On occasions when a Maintenance activity cannot comply with relevant TI, or there is insufficient resource, the Maintenance will remain incomplete. However, an operational requirement may necessitate a Maintenance activity being completed prior to resources becoming available or prior to an approved and promulgated TI amendment being issued³ by the TAA. In such cases, the Mil CAM will be consulted for deferment of such Maintenance and / or deviation from the TI.

46. Deferring Maintenance and deviating from TI carries Risk. When considering deferment or deviation, the authorized individual will assess the associated Risks and consider all factors that will mitigate the Risk and ensure the Air System is airworthy. The mitigating factors will be adequately documented in the appropriate Maintenance work order.

Additional GM - MMOs only

47. Nil.

Additional GM - AMOs only

48. Where the Military Authorization system is adopted by an AMO, the Authorization to defer Maintenance ►will◀ be controlled²⁴.

49. Being unable to establish full compliance with RA 4812(1)²² means that the Maintenance required by the Air System operator could not be completed due either to running out of available Air System Maintenance downtime for the scheduled check or by virtue of the condition of the Air System requiring additional Maintenance downtime.

50. The purpose of this Regulation is to govern the situation when a Mil CAM permits an AMO to endorse a Certification of Air System Release, but further Maintenance is required before the Air System can be declared Serviceable.

²⁴ Refer to RA 1006 – Delegation of Engineering Authorizations.

²⁵ Refer to RA 4806(2): Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b)).

**Regulation
4812(6)**

► Component Concessions

- 4812(6) By derogation to RA 4812(4)⁹, an organization may endorse a Certification of Component Release when the relevant Commodity Chief Engineer and / or TAA approves a Concession. In such circumstances:
- a. The Concession **shall** detail and fully accept the specific Fault and / or incomplete Maintenance to which it relates.
 - b. A copy of the approved Concession **shall** accompany the component and be referenced on the applicable component Engineering Record Card (eg MOD Form 700 or electronic IS equivalent).
 - c. Components with Concessions **shall** only be installed into Air Systems for which the Concession is approved by the relevant TAA.
 - d. Once satisfactorily installed into the Air System an authorized copy of the Concession **shall** be entered into the Air System technical log (eg MOD Form 700 or electronic IS equivalent).
 - e. When the Concession granted imposes a limitation on Air System operation, the Maintenance organization **shall** record details of any such limitation into the Air System's Limitations Log (MOD Form 703) or electronic IS equivalent⁴.

**Acceptable
Means of
Compliance
4812(6)**

Component Concessions

Common AMC

51. Applications for Concessions **should** be documented and submitted to the appropriate Delivery Team.
52. Mil CAMOs **should** monitor and control all Concessions for their Air Systems²⁶.
53. Where a component's Concession imposes a limitation to Air System operation the Limitation Log entry **should** make direct reference to the Concession by its reference number.

Additional AMC - MMOs only

54. Nil.

Additional AMC - AMOs only

55. The organization **should** detail within its MOE how it will control Concessions in its procedures¹⁷.

²⁶ ► Refer to RA 4963 – Modifications and Repairs - MRP Part M Sub Part C. ◀

**Guidance
Material
4812(6)**

Component Concessions

Common GM

56. Nil.

Additional GM - MMOs only

57. Nil.

Additional GM - AMOs only

58. Nil. ◀

RA 4813 - Maintenance Records (MRP 145.A.55)

Rationale

A record of all Maintenance activities carried out on military registered Air Systems and Air System components is required to provide an Audit trail of the work and to enable Quality Assurance, data exploitation and investigations. Without a sufficient level of Maintenance recording, the Continuing Airworthiness of an Air System could be compromised, potentially increasing Risk to Life. This RA establishes the requirement for the minimum level of work recording, record retention and the management of such records.

Contents

4813(1): Recording and Retention of Maintenance Work (MRP 145.A.55(a))

4813(2): Copies of Maintenance Records (MRP 145.A.55(b))

4813(3): Management of Retained Maintenance Records (MRP 145.A.55(c))

4813(4): Management of Maintenance Documentation on Delivery or Transfer of an Air System

Regulation 4813(1)

Recording and Retention of Maintenance Work (MRP 145.A.55(a))

4813(1) The organization **shall** record all details of Maintenance work carried out. As a minimum, the organization **shall** retain records necessary to prove that all requirements have been met for endorsing the Certification of Air System / Component Release, including subcontractor's¹ certificates / release documents, where applicable.

Acceptable Means of Compliance 4813(1)

Recording and Retention of Maintenance Work (MRP 145.A.55(a))

Common AMC

1. Maintenance records **should** include a description of the work carried out to include the following:
 - a. Reference to any Technical Instruction (TI) that was used to aid the task (including the amendment state of the publication).
 - b. Serial number, and appropriate life recording data, of any item / component fitted / removed as part of that task.
 - c. The batch number **▶**²**◀** of Standard Parts and consumables used as part of the item / component refit or reconnection, as detailed on un-broached equipment packaging, or on acceptable accompanying documentation.
 - d. The serial number of any calibrated tools, equipment, and **▶****◀** test equipment, used **▶** *within the task.* **◀**
2. When electronic means are used to record Maintenance carried out, Electronic Signatures **should** be considered as equivalent to those made on hardcopy Maintenance documents.
3. When more than one person is detailed to work on a Maintenance task, each person **should** be identified and sign for the work they complete within that task.

¹ Approved Maintenance Organizations (AMO) may subcontract Maintenance activities to a non-MRP Part 145 organization but in doing so the subcontracted organization's facilities, personnel and procedures involved with the AMO's products undergoing Maintenance is effectively subsumed into the AMO in that it works under the contracting AMO's Quality Management System and the AMOs MRP Part 145 approval is extended to include the subcontractor. It therefore follows that those parts of the subcontractor's facilities, personnel and procedures **shall** meet MRP Part 145 requirements for the duration of that Maintenance. It remains the contracting AMO's responsibility to ensure such requirements are satisfied, as it retains accountability for all actions and outputs of the subcontracted organization in the Maintenance of the AMO's products. All subcontracted organizations **shall** be listed within the contracting AMO's Maintenance Organization Exposition (MOE).

² **▶** Batch numbers may also be referred to on documentation or packaging in other terms such as lot, run, or series numbers / references. If in doubt advice **should** be sought from the appropriate Delivery Team or vendor. **◀**

**Acceptable
Means of
Compliance
4813(1)**

4. Parts dismantled or components removed for access or if replaced require an appropriate record to this effect. The record **should** contain the complete nomenclature and serial number of such items and **should** refer to any associated TI³ references that describe its removal / refit / replace.

Additional AMC - Military Maintenance Organizations (MMO) only

5. MMOs **should** record details of Maintenance work using the MOD Form 700 documentation and / or electronic Information System equivalent in accordance with (iaw) the appropriate Instructions for Use and procedures.

6. All Maintenance work carried out on Air Systems and Air System equipment **should** be recorded and certified by an appropriately authorized person⁴.

7. MMOs **should** retain Maintenance records if the information they contain continues to be pertinent to the Continuing Airworthiness of an Air System. Maintenance records **should** be retained for a period determined by the form sponsor and, if relevant, in consultation with the relevant Type Airworthiness Authority (TAA)⁵.

Additional AMC - AMOs only

8. To ensure traceability to installed Air System component documentation and associated TI³, records **should** contain basic details of all serialized Air System components installed.

9. The Maintenance record **should** be either a paper or computer system or any combination of both⁶:

- a. Paper systems **should** use robust material which can withstand normal handling and filing. The record **should** remain legible throughout the required retention period.

10. AMOs **should** describe document retention and transfer procedures, as directed by the relevant TAA, within the MOE.

**Guidance
Material
4813(1)**

Recording and Retention of Maintenance Work (MRP 145.A.55(a))

Common GM

11. Certification of Air System or Air System equipment Maintenance is required to provide a fully auditable record of the work carried out. It will identify uniquely, those responsible for the work in a manner that can be authenticated. When certifying a Maintenance record, a person is implicitly stating that they have completed or supervised the Maintenance task iaw applicable TI³, orders, Instructions for Use, procedures and processes.

12. Completed documentation that continues to be relevant in support of Airworthiness investigations will also be retained.

13. Properly executed and retained records provide information essential in controlling Corrective and Preventive Maintenance and troubleshooting to eliminate the need for re-inspection and additional work to establish Airworthiness. The prime objective is to have secure and easily retrievable records with comprehensive and legible contents.

Additional GM - MMOs only

14. To maintain Configuration Control, new forms will not be created and used within the MOD Form 700 series unless endorsed by the MAA⁷.

³ Refer to RA 4810 – Technical Information (MRP 145.A.45).

⁴ Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30(e)).

⁵ 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.

⁶ Refer to RA 1223 – Airworthiness Information Management.

⁷ Refer to MAA03: MAA Regulatory Processes.

Guidance Material 4813(1)	Additional GM - AMOs only 15. Nil.
Regulation 4813(2)	Copies of Maintenance Records (MRP 145.A.55(b)) 4813(2) The AMO shall provide a copy of each document relating to the Certification of Air System / Component Release to the relevant Military Continuing Airworthiness Management Organization (Mil CAMO), together with a copy of any specific approved Repair / Modification instructions used for Repairs / Modifications carried out.
Acceptable Means of Compliance 4813(2)	Copies of Maintenance Records (MRP 145.A.55(b)) 16. Nil.
Guidance Material 4813(2)	Copies of Maintenance Records (MRP 145.A.55(b)) 17. Nil.
Regulation 4813(3)	Management of Retained Maintenance Records (MRP 145.A.55(c)) 4813(3) The organization shall manage retained copies of all detailed Maintenance records and any associated TI, as instructed by the MAA, such that: <ol style="list-style-type: none"> a. Records under this Regulation shall be stored in a safe way with regard to fire, flood and theft. b. Computer backup discs, tapes etc shall be stored in a different location from that containing the working discs, tapes etc, in an environment that ensures they remain in good condition. c. Where a Maintenance organization terminates its operation, all retained Maintenance records shall be transferred to the relevant Mil CAMO.
Acceptable Means of Compliance 4813(3)	Management of Retained Maintenance Records (MRP 145.A.55(c)) Common AMC 18. Some gas turbine engines are assembled from modules and a true total time in service for a total engine is not kept. When such an engine is being maintained, the total time in service and Maintenance records for each module should be kept. The Maintenance records as specified should be kept with the module and show compliance with any mandatory requirements pertaining to that module. 19. In the event that Maintenance records are lost, corrupted or inaccurate, the Mil CAMO should be consulted ⁸ . Additional AMC - MMOs only 20. The MOD Form 700 documents should be kept in safe custody, kept free from defacement and kept legible at all times. 21. Maintenance records can be scanned and stored electronically, but should be subject to Certification that the electronic copy is a true, legible and complete facsimile

⁸ Refer to RA 4964(2): Continuing Airworthiness Records.

**Acceptable
Means of
Compliance
4813(3)**

of the original. Such electronic storage of documentation **should** meet the same requirements as those for the hard copy.

Additional AMC - AMOs only

22. Maintenance records **should** be retained until the work it records has been invalidated by documented work carried out subsequently (for example, Preventive Maintenance, Depth Maintenance, Base Maintenance or equivalent Maintenance).

23. In addition, Maintenance records for Air Systems subject to Civil Aviation Authority (CAA) oversight **should** be kept for a minimum of 3 years from the date the Air System or component to which the work relates was released from the organization.

24. Any reconstructed records **should** be submitted to the Military Continuing Airworthiness Manager (Mil CAM) for acceptance.

**Guidance
Material
4813(3)**

Management of Retained Maintenance Records (MRP 145.A.55(c))

Common GM

25. 'Associated Technical Information' is specific information such as Repair and Modification instructions. This does not necessarily require the retention of all Technical Publications.

Additional GM - MMOs only

26. Nil.

Additional GM - AMOs only

27. The term "terminates its operation" in this Regulation is deemed to mean the ending of the contractual relationship with the MOD and thus the cessation of an AMO's Approval.

28. Reconstruction of lost or destroyed records can be done by reference to other records which reflect the time in service, research of records maintained by Repair facilities and reference to records maintained by individual mechanics etc. When these things have been done and the record is still incomplete, the Mil CAM may make a statement in the new record describing the loss and establishing the time in service based on the research and the best estimate of time in service.

Note:

Additional Maintenance may be required.

**Regulation
4813(4)**

Management of Maintenance Documentation on Delivery or Transfer of an Air System

4813(4) On delivery or transfer of any Air System the organization **shall** despatch the original copies of all relevant Maintenance documentation, forms and certificates (including MOD Form 700 series documents or equivalent agreed with the TAA) to the receiving unit.

**Acceptable
Means of
Compliance
4813(4)**

Management of Maintenance Documentation on Delivery or Transfer of an Air System

29. On delivery or transfer of any Air System all relevant current Air System documentation, forms and certificates that are required for the operation or planned agreed Maintenance of the Air System **should** be dispatched to the receiving organization.

30. All engineering documentation forms transferred **should** be listed on a transfer document completed by the organization's authorized signatory. Documentation **should** be dispatched promptly to the receiving unit without delay.

31. Documents sent by post **should** be sent by Registered Mail or a similar recorded and trackable method.

**Acceptable
Means of
Compliance
4813(4)**

32. When Air Systems and related Products, Parts and Appliances are transferred to a Contracted organization for Modification, Repair, major Maintenance etc, the associated forms **should** also be returned on completion of the Modification, Repair, major Maintenance etc. In the event of non-receipt of the forms the receiving organization **should** advise the despatching unit who **should** investigate and provide the necessary information.

33. Original documents **should not** be carried in the Aircraft to which they refer. RA 2201⁹ **should** be read in conjunction with this Regulation.

34. Any document bearing an original signature required to be carried on an Aircraft, including forms for the completion by the Aircrew on arrival at the destination, **should** be duplicated and a copy held at the despatching unit.

**Guidance
Material
4813(4)****Management of Maintenance Documentation on Delivery or Transfer of an Air System**

35. Closed forms for Air Systems and related Products, Parts and Appliances ► **will** ◀ be returned to the parent Unit of the Air System on transfer (not in any circumstances on the Aircraft to which they refer) for disposal iaw Service instructions.

⁹ Refer to RA 2201 – Carriage of Maintenance Documents in UK Military Aircraft.

Intentionally Blank for Print Pagination

RA 4814 - Occurrence Reporting (MRP 145.A.60)

Rationale

Accurate and timely Occurrence reporting and effective investigation is fundamental to identifying Air Safety risks and delivering effective mitigation. Unreported Occurrences, or failure to correctly capture and analyze such reporting, could lead to preventable and avoidable accidents, which compromise Air Safety and potentially increase Risk to Life. ► This RA ◀ requires Maintenance organizations to establish and utilize a reporting system for all Air Safety Occurrences, reportable Faults and quality issues.

Contents

- 4814(1): Unsafe Condition Reporting (MRP 145.A.60(a))
- 4814(2): Internal Occurrence reporting (MRP 145.A.60(b))
- 4814(3): MOD Sponsored Reporting Action (MRP 145.A.60(c))

Regulation 4814(1)

Unsafe Condition Reporting (MRP 145.A.60(a))

4814(1) The organization **shall** report any condition of the Air System or component that has resulted, or may result, in an unsafe condition that is a hazard to Air Safety.

Acceptable Means of Compliance 4814(1)

Unsafe Condition Reporting (MRP 145.A.60(a))

1. ► Nil. ◀

Guidance Material 4814(1)

Unsafe Condition Reporting (MRP 145.A.60(a))

2. This Regulation must be read in conjunction with:
 - a. The requirements¹ for MOD Occurrence reporting.
 - b. The requirements² for ► reporting occurrences and compliance monitoring. ◀
 - c. ► ◀
 - d. The Requirements► ◀ for Fault reporting ► and investigation³. ◀

Regulation 4814(2)

Internal Occurrence Reporting (MRP 145.A.60(b))

4814(2) The organization **shall** establish an internal Occurrence reporting system to enable the collection and evaluation of such reports, including the assessment and extraction of those Occurrences to be reported► ◀.

Acceptable Means of Compliance 4814(2)

Internal Occurrence Reporting (MRP 145.A.60(b))

Common AMC

3. The system **should** identify adverse trends, corrective actions taken, or to be taken, by the organization to address deficiencies and include evaluation of all known relevant information relating to such Occurrences including a method to circulate the information as necessary.
4. An organization **should** ensure that personnel are not reprimanded for reporting or co-operating with Occurrence investigations.
5. The internal reporting process **should** be closed-loop, ensuring that actions are taken internally to address safety hazards.

¹ Refer to RA 1410 – Occurrence Reporting.

² ► Refer to RA 1200 – Air Safety Management.

³ Refer to RA 5825 – Fault Reporting and Investigation. ◀

**Acceptable
Means of
Compliance
4814(2)**

6. The process **should** provide feedback to report originators, both on an individual and more general basis, since it is important to ensure their continued support for the scheme.

7. Defence Air Safety Occurrence Reports (DASORs), raised using the Aviation Safety Information Management System (ASIMS), **should** be used to report those internal Occurrences that are deemed 'reportable Air Safety Occurrences'¹.

Additional AMC - Military Maintenance Organizations (MMOs) only

8. Nil.

Additional AMC - Approved Maintenance Organizations (AMOs) only

9. The system **should** be defined in the Maintenance Organization Exposition.

**Guidance
Material
4814(2)**

Internal Occurrence Reporting (MRP 145.A.60(b))

Common GM

10. The aim of Occurrence reporting is to identify the factors contributing to incidents and to make the system resistant to similar errors. An Occurrence reporting system **will** therefore enable and encourage free and frank reporting of any (potentially) safety related Occurrence. This will be facilitated by the establishment of a 'Just Culture'.

11. MOD Occurrence reporting requirements¹ must be read in conjunction with this Regulation, noting that the requirements¹ do not differentiate between internal and external Occurrence reporting. Adherence to these processes will satisfy the requirements of this Regulation when augmented by a suitable internal closed-loop system to report Occurrences that do not necessarily require a DASOR to be raised.

Additional GM - MMOs only

12. Where implemented by the relevant Operating Duty Holder Flight Safety Organization, MMOs may utilize hardcopy Error Management System Report Forms, to report internal Occurrences where Air Safety was not compromised, but the potential for Air Safety to be compromised in the future was recognized. Further guidance is available on the MAA Website⁴.

Additional GM - AMOs only

13. Nil.

**Regulation
4814(3)**

MOD Sponsored Reporting Action (MRP 145.A.60(c))

4814(3) The organization **shall** ensure that all reports are submitted in a form and manner established by the MAA and ensure that they contain all required information.

**Acceptable
Means of
Compliance
4814(3)**

MOD Sponsored Reporting Action (MRP 145.A.60(c))

14. Extant MOD procedures for Occurrence reporting **should** be used, including the use of ASIMS.

**Guidance
Material
4814(3)**

MOD Sponsored Reporting Action (MRP 145.A.60(c))

15. Further details of Occurrence¹, quality² and Fault reporting⁴ are published within the applicable MAA Regulatory Publications.

⁴ www.gov.uk/government/collections/reporting-air-safety-concerns.

RA 4815 - Maintenance Procedures and Safety and Quality Policy (MRP 145.A.65)

Rationale

Maintenance organizations within the Defence Air Environment (DAE) undertake a wide range of complex Maintenance activity on Air Systems and Air System components in the course of their duty or contract. Without a system of Assurance that such Maintenance is being undertaken to a standard directed by procedures and Technical Information (TI), the validity of any release statement¹ may be undermined. This RA details the requirements for a Maintenance organization to operate with a defined Quality Policy and establish a Quality Management System to deliver Assurance of approved Maintenance procedures.

Contents

Definitions Relevant to this RA

4815(1): Organization Safety and Quality Policy (MRP 145.A.65(a))

4815(2): Procedures for Good Maintenance Practices (MRP 145.A.65(b))

4815(3): Quality Management System (MRP 145.A.65(c))

Definitions

Definitions Relevant to this RA

1. **Tradesperson.** Suitably Competent and authorized staff² responsible for executing Air System Maintenance activities. This role may also be known as Support Staff within Approved Maintenance Organizations (AMOs).
2. **Supervisor.**² Suitably Competent and authorized staff, responsible for carrying out supervision of Tradespersons in the execution of their Maintenance activities. This role may also be known as Support Staff with supervisory responsibilities within AMOs.
3. **Coordinating / Certifying Staff.**³ Staff holding Authorization by the Maintenance organization to endorse the appropriate Certification of Air System Release and / or Component Release (Air System coordination / Work Order coordination).

Regulation 4815(1)

Organization Safety and Quality Policy (MRP 145.A.65(a))

4815(1) Military Maintenance Organizations (MMOs) **shall** operate within the Air Safety Management System (ASMS) developed by the relevant Duty Holder and the applicable single-Service Quality Policy⁴.
AMOs **shall** establish a Safety and Quality Policy for the organization, to be included in the Maintenance Organization Exposition (MOE)⁵.

Acceptable Means of Compliance 4815(1)

Organization Safety and Quality Policy (MRP 145.A.65(a))

Common AMC

4. Nil.

Additional AMC - MMOs only

5. Nil.

Additional AMC - AMOs only

6. The Safety and Quality Policy **should**, as a minimum, include a statement committing the organization to:

¹ Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50).

² Refer to RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

³ Refer to RA 4801(1): Certifying Staff.

⁴ Refer to RA 1200 – Air Safety Management.

⁵ Refer to RA 4816 – Maintenance Organization Exposition (MRP 145.A.70) - Approved Maintenance Organizations Only.

**Acceptable
Means of
Compliance
4815(1)**

- a. Recognize Safety as a prime consideration at all times.
- b. Apply Human Factors principles.
- c. Encourage personnel to report Maintenance related errors / Incidents.
- d. Recognize that compliance with procedures, Quality standards, Safety standards and Regulations is the duty of all personnel.
- e. Recognize the need for all personnel to co-operate with the Quality auditors.

**Guidance
Material
4815(1)**

Organization Safety and Quality Policy (MRP 145.A.65(a))

Common GM

7. All Defence Aviation organizations are required⁴ to establish an ASMS in order to achieve the Secretary of State's Safety Policy⁶ and the ASMS requirements⁴ must be read in conjunction with this Regulation.

Additional GM - MMOs only

8. Nil.

Additional GM - AMOs only

9. The Safety and Quality Policy required by this Regulation will be coherent with the organization's ASMS.

**Regulation
4815(2)**

Procedures for Good Maintenance Practices (MRP 145.A.65(b))

4815(2) The organization **shall** follow approved procedures, taking into account Human Factors, to ensure good Maintenance practices and compliance with MRP Part 145. Procedures **shall** include a clear process, work order or contract⁷ such that Air Systems and components may be released for use¹. AMOs **shall** detail such procedures in their MOE.

a. The Maintenance procedures established or to be established by the organization under this Regulation **shall** cover all aspects of carrying out the Maintenance activity, including the provision and control of specialized services and lay down the standards to which the organization intends to work.

b. With regard to Air System Maintenance, the organization **shall** establish procedures to minimize the Risk of multiple errors and capture errors on critical Systems. In particular, the organization **shall** have procedures to ensure that no one person is required to self-supervise a Maintenance task that involves some element of disassembly / reassembly and then repeat that same Maintenance task on identical or similar Systems on the same Air System. However, when only one person is available to carry out these tasks, then the organization's work card or work sheet **shall** include an additional stage for re-inspection of the work by this person after completion of all the same tasks.

⁶ Refer to DSA01.1 – Defence Policy for Health, Safety and Environmental Protection.

⁷ AMOs may contract Maintenance works to other MRP Part 145 organizations whose Approval covers the scope of the required works. Contracted Maintenance Organizations carry out works under their own Approval and Quality System and retain accountability of their actions and outputs. A list of Contracted organizations is to be held within the contracting AMO's MOE, refer to RA 4816 – Maintenance Organization Exposition (MRP 145.A.70) - Approved Maintenance Organizations only.

**Regulation
4815(2)**

c. Maintenance procedures **shall** be established to ensure that damage is assessed and Modifications and Repairs are carried out using approved TI.

d. No person **shall** remove, change, or replace identification information on any Product, Part or Appliance unless detailed as part of a Type Airworthiness Authority (TAA) **▶**⁸**◀** approved Instruction.

**Acceptable
Means of
Compliance
4815(2)**

Procedures for Good Maintenance Practices (MRP 145.A.65(b))

Common AMC

10. For Air Systems and Air System structural components that are beyond the Repair capability of the Maintenance organization the Military Continuing Airworthiness Manager (Mil CAM) **should** be informed and **should** direct alternate means to effect a Repair.

11. The Repair categories and definitions at Annex A **should** be used to categorize a Repair in consultation with the Mil CAM.

12. **▶ Specialized services should be:**

a. **Performed by appropriately qualified⁹ personnel.**

b. **Carried out under the control of the Accountable Manager (Maintenance) AM(M) for the Air System or Air System component under Maintenance.**

13. **Organizations should establish aviation engineering orders and / or local procedures that cover the control of any specialized services.**

14. **Surface finish should be conducted in accordance with (iaw) the appropriate Air System or Air System component Technical Information (TI). ◀**

Additional AMC - MMOs only

15. MMOs **should** ensure that all established Maintenance procedures and processes pertaining to good Maintenance practices achieve compliance with MRP Part 145.

16. With respect to RA 4815(2)(b) (MRP 145.A.65(b)(b)), an Independent Inspection **should** be carried out on Air Systems or Air System components on occasions that include, but are not limited to, Maintenance work involving disconnection, replacement, connection, assembly or adjustment of the following systems:

a. Those stipulated by the TAA in the Air System Document Set (ADS).

b. Any element of an Air System control System.

c. Those additionally mandated by an Aviation Duty Holder (ADH) Chief Air Engineer (CAE) or the Mil CAM.

17. An Independent Inspection **should** be sufficient to verify correct assembly and functionality covering the level of disturbance to the System.

18. An Independent Inspection **should** be conducted by an individual suitably Competent and authorized¹⁰ who has had no involvement with the original Maintenance task requiring the Independent Inspection.

19. An organization performing Maintenance work **should** remove, change, or replace identification information only iaw approved procedures.

⁸ 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.

⁹ **▶ Refer to RA 4806(6): Specialized Services (MRP 145.A.30(f)). ◀**

¹⁰ Refer to RA 4806 – Personnel Requirements (MRP 145.A.30) and RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

**Acceptable
Means of
Compliance
4815(2)**

20. Any removed identification plate **should** be re-installed only on the assembly from which it was removed.

Additional AMC - AMOs only

21. Maintenance Procedures **should** be reviewed and updated at an appropriate periodicity to ensure that they reflect current best practice. It is the Responsibility of all organizations' employees to report any unauthorized deviation from approved procedures via their organization's internal Occurrence reporting mechanisms.

22. All procedures, and changes to those procedures, **should** be verified and validated before use where practical.

23. All Maintenance procedures governing technical activity **should** be designed and presented iaw good Human Factors principles.

24. With respect to RA 4815(2)(b) (MRP 145.A.65(b)(b)), procedures **should** be established to detect and rectify Maintenance errors that could, as a minimum, result in a failure, malfunction, or Fault endangering the safe operation of the Air System if not performed properly. The procedure **should** identify the method for capturing errors, and the Maintenance tasks or processes concerned. This procedure **should** apply to any Maintenance work that involves disconnection, replacement, connection, assembly or adjustment of any element of an Air System control System, or any additional task that may be generated from, for example:

- a. Previous experiences of Maintenance errors, depending on the consequence of the failure.
- b. Information arising from the 'Occurrence reporting system'¹¹.
- c. TAA and / or Mil CAM requirements to capture errors, if applicable.

25. In order to prevent omissions, every Maintenance task or group of tasks **should** be signed-off. To ensure the task or group of tasks is completed, it **should** only be signed-off after completion. Work by unauthorized personnel (eg temporary staff or a trainee), **should** be checked by authorized personnel before the authorized personnel complete the sign-off. The grouping of tasks for the purpose of signing-off **should** allow critical steps to be clearly identified.

26. The Maintenance organization **should** ensure that when carrying out a Modification, Repair or Maintenance, the limits expressed within the approved TI provided are not compromised; this will require the development of appropriate procedures, where necessary, by the organization. The Maintenance organization **should** pay particular attention to possible adverse effects of any wiring changes.

**Guidance
Material
4815(2)**

Procedures for Good Maintenance Practices (MRP 145.A.65(b))

Common GM

27. For the purpose of RA 4815(2)(b) (MRP 145.A.65(b)(b)), 'to self-supervise a Maintenance task' means to both carry out and inspect / supervise that Maintenance task.

► Specialized Services ◀

28. Specialized services ► are any specialized Maintenance activity, ◀ such as, but not limited to, Non-Destructive Testing (NDT), ► surface finish and welding. Specialized services require particular skills and / or qualification, outside of that normally taught as part of Air System Maintenance training such as Civil Aviation Authority (CAA) Part-66 or military Aerospace engineering trade training.

Surface Finish

29. Surface finish includes the removal and application of paint and polishing. Tasks to prepare for surface finish activities and subsequent checks and tests afterwards, are Maintenance tasks and not surface finish activities.

30. The MAA does not currently have an Approval scheme for surface finish.

¹¹ Refer to RA 4814 – Occurrence Reporting (MRP 145.A.60).

**Guidance
Material
4815(2)**

31. The TAA or Commodity Chief Engineer must provide the Maintenance policy¹² for surface finish activities which details all tasks, application specifications, tooling and equipment and procedures. They must ensure that the surface finish task(s) are carried out in an appropriate facility / environment¹³ which meets the requirements of the specific Air System or Air System component.
32. Inadequate care and control during surface finish activities can cause damage and affect the Structural Integrity or operation of the Air System or Air System component. Care will be exercised to prevent:
- a. Reduction in fastener head size by uncontrolled use of power tools and abrasive media.
 - b. Surface scratching by use of paint scrapers.
 - c. Use of incorrect tools and equipment to remove paint and aerodynamic sealant from lap and butt joints.
 - d. Degrading of composite or plastic surfaces by abuse of particle blasting techniques.
 - e. Aluminium surface contamination by steel wool particles.
 - f. Use of incorrect chemical paint strippers.
 - g. Damage to transparencies, composites and sealants by solvent and paint removers, due to inadequate protection and / or the retention of these products in crevices.
 - h. Inadvertent deletion of placards and markings, failure to renew them, or failure to comply with the required specification for, eg Registration Marks, mandatory door markings and break in zone identification.
 - i. Blockage of vents, drains and other openings by debris, masking tape and residues of paint remover, paint or particle blast material; the possible ingress of water into fuel tanks through vent apertures or past filler cap seals when using high pressure hoses for washing down.
 - j. Loss of correct mass balance moments on flight control surfaces.
33. Following any surface finish activities, the AM(M) will ensure a Maintenance inspection of affected areas is carried out for any damage as detailed above, taking appropriate recording and remedial actions as necessary.
34. Significant surface finish activity can have an appreciable effect on an Aircraft's mass and balance. In such circumstance the requirement for the Aircraft to be measured for weight and Centre of Gravity needs to be considered iaw the applicable ADS.
35. Maintenance organizations may carry out surface finish at forward establishments¹⁴. This is limited to minor removal of paint by hand abrasion or chemicals and touching up of damaged paint finish, for areas up to 0.1m² where the Repairs do not overlap. The Repair will be sufficient to prevent corrosion until the next appropriate surface finish Maintenance.

Independent Inspections ◀

36. The integrity of Air System control systems is vital to Air Safety. The AM(M), the ADH CAE and the Mil CAM may mandate the requirement for an Independent Inspection on any System. Additionally, a Tradesperson or Supervisor may require an Independent Inspection of a System if they consider it justified by the nature or circumstances of the Maintenance work being undertaken.
37. For the purpose of this Regulation, 'Air System control system' means any System, whether electrical, mechanical or optical, operated by user input or automation, by which an Aircraft's speed, direction, flight attitude or propulsive force are changed in the air or on the ground or by which the undercarriage is retracted or

¹² ▶ Refer to RA 5407 – Support Policy Statement.

¹³ Refer to RA 4805 – Facility Requirements (MRP 145.A.25).

¹⁴ MMOs are to refer to Manual of Airworthiness Maintenance – Processes (MAM-P) – Chapter 5.2 – Surface Finish of Defence Air Environment Equipment. ◀

**Guidance
Material
4815(2)**

lowered. The term includes power operated and assisted controls, including the immediate connections between those controls and their power Systems, and may further extend to the Systems that provide power to such controls. Automatic Systems that can be instantly overridden by the pilot are not considered to be Air System control Systems within the meaning of this Regulation, unless their failure, either in the air or on the ground, would place life or the Air System at Risk. Any elements of a System, including attachment points to the Aircraft structure, linking the appropriate pilot's control to any of the following, ►will◄ be considered as Air System control Systems. Although the list is not exhaustive, examples of Air System control systems are:

- a. Primary flying controls and reaction control Systems.
- b. Tabs, flaps, slats and airbrakes.
- c. Wing sweep control actuators.
- d. Primary power unit control mechanisms, including those for throttles, variable intakes, reverse thrust, high-pressure fuel cocks, propeller constant speed units and rotating nozzles.
- e. Helicopter rotor blade transmission and tail rotor transmission and pitch change mechanisms, including automatic blade fold systems.

Note:

The functioning of a blade folding and / or spreading System may not necessarily constitute 'disturbance' of that particular system or of the associated flying control / transmission systems.

- f. Undercarriage retraction and lowering and undercarriage steering mechanisms.
- g. Aircraft wheel brakes.
- h. Automatic flight control Systems.

38. A list of those Systems subject to Independent Inspections for a particular Air System will be detailed in the relevant TI.

39. One purpose of RA 4815(2)(b) (MRP 145.A.65(b)) is to minimize the possibility of an error being repeated whereby the identical Air System components are not reassembled correctly thereby compromising more than one system. An example is the remote possibility of failure to reinstall engine gearbox access covers or oil filler caps on all engines of a multi-engine Aircraft resulting in major oil loss from all engines.

40. A 'sign-off' is a statement or signature by the Competent Person performing or supervising the work, that the task or group of tasks has been correctly performed. A sign-off relates to one step in the Maintenance process and is therefore different from the Certification of Air System Release. 'Authorized personnel' means personnel formally authorized by the Maintenance organization approved under MRP Part 145 to sign-off tasks. Authorized personnel are not necessarily staff with certification authorization¹⁵.

41. When approved by the Commands, Expedient Repair (ER) may be used¹⁶.

Additional GM - MMOs only

42. Nil.

Additional GM - AMOs only

43. Nil.

¹⁵ Refer to RA 4807(7): Issue of Certification Authorization (MRP 145.A.35(g)).

¹⁶ ER may include the application of Aircraft Battle Damage Repair Techniques. Refer to AP101A-1500-0 – Joint Service Aircraft Battle Damage Repair Manual.

**Regulation
4815(3)**

Quality Management System (MRP 145.A.65(c))

- 4815(3) The organization¹⁷, ►¹⁸ ◀ **shall** establish a Quality Management System¹⁹ that as a minimum:
- a. Establishes a Quality plan which includes independent ►**Quality** ◀ Audits in order to assure:
- (1) The organization's and its subcontractor's²⁰ compliance with MRP Part 145 Regulations.
 - (2) The organization's Alternative Acceptable Means of Compliance, Waivers and Exemption (AWE) submissions and any subsequent AWE management.
 - (3) The organization's and its subcontractor's compliance with required Air System / Air System component standards and adequacy of the procedures to ensure that such procedures invoke good Maintenance practices and airworthy Air System / Air System components.
 - (4) The accurate recording and retention of all Continuing Airworthiness records.
 - (5) The Competence of all Maintenance personnel, including those of Subcontracted organizations
 - (6) The compliance of Subcontracted²⁰ tasks, processes and procedures to Regulations.
- b. A Quality feedback reporting system to the person or group of persons specified²¹ and ultimately to the AM(M) that ensures proper and timely corrective action is taken in response to reports resulting from the independent Audits established to meet RA 4815(3)(a) (MRP 145.A.65(c)(a)).

**Acceptable
Means of
Compliance
4815(3)**

Quality Management System (MRP 145.A.65(c))

Common AMC

44. ► **The independence of the Quality Audit **should** be established by always ensuring that independent Quality Audits are carried out by personnel not involved in the function, procedure or products being checked.**
45. **Independent Quality Audits **should** be conducted across all working environments and working patterns to ensure that a percentage of independent Quality Audits are reflective of the varied working conditions and shift patterns that Maintenance is carried out.**
46. **The Quality Management System **should** ensure that all aspects of MRP Part 145 compliance and other applicable Regulation is checked every 12 months, either**

¹⁷ Contracted organizations **shall** refer to any further Quality Management System requirements detailed within RA 1005 – Contracting with Competent Organizations.

¹⁸ ► **Refer to RA 4806(3): Quality Manager (MRP 145.A.30(c)).** ◀

¹⁹ The principles of ISO 9001 are recommended best practice for assessing the requirements for process development, Assurance and Continuous Improvement.

²⁰ AMOs may subcontract Maintenance activities to a non-MRP Part 145 organization but in doing so the Subcontracted organization's facilities, personnel and procedures involved with the AMO's Products, Parts and Appliances undergoing Maintenance is effectively subsumed into the AMO in that it works under the contracting AMO's Quality System, and the AMO's MRP Part 145 approval is extended to include the subcontractor. It therefore follows that those parts of the subcontractor's facilities, personnel and procedures **shall** meet MRP Part 145 requirements for the duration of that Maintenance. It remains the contracting AMO's responsibility to ensure such requirements are satisfied, as it retains accountability for all actions and outputs of the Subcontracted organization in the Maintenance of the AMO's Products, Parts and Appliances. All Subcontracted organizations **shall** be listed within the contracting AMO's Maintenance Organization Exposition.

²¹ Refer to RA 4806(2): Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b)).

**Acceptable
Means of
Compliance
4815(3)**

as a complete single exercise or subdivided over the 12 month period iaw a scheduled plan.

47. The independent Quality Audit does not require each procedure to be checked against each product line when it can be shown that the particular procedure is common to more than one product line and the procedure has been checked every 12 months without resultant findings. However, where findings have been identified, the particular procedure **should** be rechecked against other product lines until the findings have been rectified, after which the independent Quality Audit procedure may revert back to 12 monthly for the particular procedure.

48. A report **should** be raised each time an independent Quality Audit is carried out, describing what was checked and the resulting findings against applicable requirements, procedures and products.

49. All records pertaining to the independent Quality Audit and the Quality feedback system **should** be retained for at least 2 years after the date of clearance of the finding to which they refer. ◀

Additional AMC - MMOs only

50. ▶ Nil. ◀

Additional AMC - AMOs only

51. ▶◀

52. ▶◀

53. ▶◀

54. ▶◀

55. ▶◀

56. A small organization (one with a maximum of 10 personnel actively engaged in Maintenance) that chooses to contract the independent ▶ Quality ◀ Audit element of the Quality Management System iaw RA 4815(3)(a) (MRP 145.A.65(c)) **should** only do so with agreement from the MAA and under the condition that the ▶ independent Quality ◀ Audit is carried out twice in every 12 month period.

57. Where the organization has line stations listed²², the Quality Management System **should** describe how these are integrated into the System and include a plan to ▶ independently Quality ◀ Audit each listed line station at a frequency consistent with the extent of flight activity at the particular line station. The maximum period between ▶ independent Quality ◀ Audits of a particular line station **should not** exceed 12 months.

58. ▶◀

59. The Quality feedback system **should not** be Contracted to outside persons.

60. On receiving the independent Quality Audit report, the relevant department(s) **should** rectify findings and inform the Quality department or nominated Quality auditor of such rectification.

61. The AM(M) **should** hold regular meetings with staff to check progress on rectification except that, for large organizations (with more than about 500 Maintenance staff), such meetings may be delegated on a day-to-day basis to the Quality manager, subject to the AM(M) meeting at least twice per year with the senior staff involved to review the overall performance and receiving at least a half yearly summary report on findings of non-compliance.

62. ▶◀

**Guidance
Material
4815(3)**

Quality Management System (MRP 145.A.65(c))

Common GM

63. ▶ The primary objective of the Quality Management System is to enable the organization to ensure that it can deliver a safe product and that the organization

²² Refer to RA 4817 – Privileges of the Organization (MRP 145.A.75).

**Guidance
Material
4815(3)**

remains in compliance with applicable Regulation and policy. Essential elements of the Quality Management System are the independent Quality Audit and the Quality feedback system. ◀

Additional GM - MMOs only

64. ▶ Self-Audits, Internal Quality Audits (IQA) and External Quality Audits (EQA) each constitute independent Quality Audits within the scope of this Regulation. ◀

65. This Regulation requires an MMO to have its own Quality Management System¹⁹ that incorporates a schedule of independent ▶ Quality ◀ Audits with a formal reporting mechanism to management. The 'Self Audit' and reporting processes¹⁹ satisfies this requirement, with independence being achieved by using staff independent of the process being ▶ Self ◀ Audited.

Additional GM - AMOs only

66. ▶ Nil ◀

The ▶ Quality ◀ Audit ▶ ◀

▶ Common GM ◀

67. The independent ▶ Quality ◀ Audit is an objective process of routine sample checks, of all aspects of the organization's ability to carry out all Maintenance, to the required standards and includes some product sampling, as this is the end result of the Maintenance process. It represents an objective overview of the complete Maintenance related activities. ▶ It ◀ is intended to complement, ▶ but in no way replace, ◀ the requirement²³ for Coordinating / Certifying Staff to be satisfied that all required Maintenance has been properly carried out, before endorsement of the Certification of Air System Release.

68. Procedures and product ▶ independent Quality ◀ Audits may be combined by selecting a specific product example. ▶ This may be ◀ an Air System, engine or instrument, and sample checking all the procedures and requirements associated with the specific product example. ▶ This ◀ ensures that the end result is an airworthy product.

69. ▶ ◀

70. The sample check of a product means to witness any relevant testing and visually inspect the product and associated documentation. It is not intended for the sample check to involve repeat disassembly or testing, unless the sample check identifies findings requiring such action.

▶ Additional GM - MMOs only

71. Nil.

Additional GM - AMOs only

72. For the purpose of the independent Quality Audit, a product line includes any product under an Approval class rating²⁴, as specified in the Approval schedule issued to the particular organization. It therefore follows, that a Maintenance organization approved under MRP Part 145 with a capability to maintain Air Systems and Repair engines, brakes and autopilots would need to carry out 4 complete independent Quality Audit sample checks each year. This is unless a different interval of Quality Audits has been stipulated by the MAA. ◀

73. In order to ensure the independence of the auditor(s), it follows that:

a. A large Maintenance organization approved under MRP Part 145, being an organization with more than about 500 Maintenance staff, will most likely have a dedicated Quality Audit group. ▶ Their ◀ sole function ▶ would be ◀ to conduct ▶ Quality ◀ Audits, raise finding reports and follow up to check that findings are being rectified.

b. A medium-sized Maintenance organization approved under MRP Part 145, being an organization with less than about 500 Maintenance staff, may use

²³ Refer to RA 4812(1): Certification of Air System Release (MRP 145.A.50(a)).

²⁴ Refer to RA 4804 – Terms of Approval (MRP 145.A.20) – Approved Maintenance Organizations Only.

**Guidance
Material
4815(3)**

Competent personnel from one section / department ► to Quality Audit another ◀ section / department. ► This is on the proviso that the Auditing personnel are not responsible for the production function, procedure or product under Audit and ◀ the overall planning and implementation ► is ◀ under the control of the Quality manager.

c. Small organizations with a maximum of 10 Maintenance staff actively engaged in carrying out Maintenance, may contract the independent ► Quality ◀ Audit element of the Quality Management System, to another organization approved under MRP Part 145, or a suitably qualified and Competent Person.

74. The table at Annex B provides guidance on one acceptable working outline ► Quality ◀ Audit plan, to meet part of the needs of this Regulation. There are ► many ◀ other acceptable working Audit plans ► which will comply with this Regulation. ◀

The Quality feedback system ► ◀

► Common GM ◀

75. The principal function of the Quality feedback system is to ensure that all findings resulting from the independent Quality Audits of the organization are properly investigated and corrected in a timely manner and to enable the AM(M) to be kept informed of any Safety issues and the extent of compliance with MRP Part 145.

76. A key part of this feedback system is sending the independent Quality Audit reports to the relevant department(s) for rectification action giving target rectification dates. Rectification dates may be discussed with such department(s) before the Quality department or nominated Quality auditor confirms such dates in the report.

ANNEX A

AIR SYSTEM REPAIR CATEGORIES AND DEFINITIONS

Repair Category	Definition
1	The Air System is repairable within the Maintenance organization's capabilities.
2	The Air System is repairable within the Maintenance organization's capabilities, or the Maintenance capabilities of any Forward organization to which it may be allotted.
3 (PROV)	The Air System is repairable on site, but the work is considered by the Maintenance organization to be beyond their Forward Maintenance organization capability.
3 (SER)	The Air System is repairable on site, but the work has been confirmed as beyond the Maintenance organization or their Forward Maintenance organization's capability and will be done by a Service Repair Organization (SRO).
3 (DEPTH)	The Air System is repairable on site, but the work has been confirmed as beyond the capability of the Maintenance organization, their Forward Maintenance organization and the relevant SRO: the work will be done by a Depth Maintenance organization.
3 (FLY)	Post-categorization, the Air System may be flown (or may have temporary Repairs effected so that it can be flown), if necessary under special conditions, either to another site for Repair or until a suitable date can be arranged for Repair at its normal base (See Note 1). In exceptional circumstances, the Air System may be flown post-Repair but prior to final SRO Repair clearance (See Notes 1 and 2).
4 (PROV)	The Air System may be repairable but further strip, assessment and categorization is required. The Repair may be carried out at a MOD facility or Contractors facility upon categorization.
4 (SER)	The Air System is repairable, but it is considered to need special facilities or Products, Parts and Appliances not available on site. The Repair will be carried out by a Repair Organization (RO) at a MOD facility.
4 (WKS)	The Air System is repairable, but it is considered to need special facilities or Products, Parts and Appliances not available on site. The Repair will be carried out at a Contractor's works.
4 (FLY)	The Air System is not fully repairable on site but may have temporary repairs effected so that it can be flown, if necessary under special conditions, to the appropriate RO. This category tends to be a one flight only return to works. A CAT 4 (FLY) recommendation will be made by the SRO but Responsibility for Risk to Life (RtL) will remain with the Maintenance organization.
5 (PROV)	The Air System is considered beyond economic Repair.
5 (COMP)	The Air System is beyond economic Repair, or is surplus, but is recoverable for breakdown to components and spare parts.
5 (GI)	The Air System is beyond economic Repair, or is surplus, but is suitable for ground instructional use.
5 (SCRAP)	The Air System is beyond economic Repair, or is surplus, and is fit for scrap or disposal only.
5 (MISSING)	The ►Aircraft◄ is missing from a flight.

Notes:

- The Maintenance organization will ensure that any deferment or limitations detailed in the SRO's recommendation are recorded in the Air System Limitations Log (MOD Form 703) or Acceptable Deferred Faults Log (MOD Form 704) or Electronic Information System equivalent. The applicable SRO task number ►will◄ be recorded in any such

entry. The SRO can provide Structural Integrity advice, a recommendation and / or proposed limitations, but Responsibility for RtL will remain with the Maintenance organization.

- 2 Applicable to 1710 Naval Air Squadron (NAS) only.

ANNEX B

EXAMPLE OUTLINE AUDIT PLAN (AMOs only)

1. The example outline Audit plan at Table A-1 lists the subject matter that will be covered by the Audit; its applicability to the various types of workshops and Air System facilities will have to be assessed. The list will therefore be tailored for the particular situation and more than one list may be necessary.
2. Each list will need to be shown against a timetable to indicate when the particular item is scheduled for Audit and when the Audit was completed.

Table A-1. Example Outline Audit Plan.

ITEM	Sub-Item	HANGAR	ENGINE WORKSHOP	MECH WORKSHOP	AVIONIC WORKSHOP
RA 4800 (MRP Part-145)	RA 4800(1) RA 4800(2)				
RA 4801 (MRP 145.A.01)	RA 4801(1)				
RA 4802 (MRP 145.A.10)	RA 4802(1)				
RA 4803 (MRP 145.A.15)	RA 4803(1)				
RA 4804 (MRP 145.A.20)	RA 4804(1)				
RA 4805 (MRP 145.A.25)	RA 4805(1) RA 4805(2) RA 4805(3) RA 4805(4)				
RA 4806 (MRP 145.A.30)	RA 4806(1) RA 4806(2) RA 4806(3) RA 4806(4) RA 4806(5) RA 4806(6) RA 4806(7) RA 4806(8) RA 4806(9) RA 4806(10)				
RA 4807 (MRP 145.A.35)	RA 4807(1) RA 4807(2) RA 4807(3) RA 4807(4) RA 4807(5) RA 4807(6) RA 4807(7) RA 4807(8) RA 4807(9) RA 4807(10) RA 4807(11) RA 4807(12)				
RA 4808 (MRP 145.A.40)	RA 4808(1) RA 4808(2) RA 4808(3)				
RA 4809 (MRP 145.A.42)	RA 4809(1) RA 4809(2) RA 4809(3) RA 4809(4)				
RA 4810 (MRP 145.A.45)	RA 4810(1) RA 4810(2) RA 4810(3) RA 4810(4) RA 4810(5) RA 4810(6) RA 4810(7)				
RA 4811 (MRP 145.A.47)	RA 4811(1) RA 4811(2) RA 4811(3)				
RA 4812 (MRP 145.A.50)	RA 4812(1) RA 4812(2) RA 4812(3) RA 4812(4) RA 4812(5) ▶ RA 4812(6) ◀				

ITEM	Sub-Item	HANGAR	ENGINE WORKSHOP	MECH WORKSHOP	AVIONIC WORKSHOP
RA 4813 (MRP 145.A.55)	RA 4813(1) RA 4813(2) RA 4813(3) RA 4813(4)				
RA 4814 (MRP 145.A.60)	RA 4814(1) RA 4814(2) RA 4814(3)				
RA 4815 (MRP 145.A.65)	RA 4815(1) RA 4815(2) RA 4815(3)				
RA 4816 (MRP 145.A.70)	RA 4816(1) RA 4816(2) RA 4816(3) RA 4816(4) RA 4816(5)				
RA 4817 (MRP 145.A.75)	RA 4817(1)				
RA 4818 (MRP 145.A.80)	RA 4818(1)				
RA 4819 (MRP 145.A.85)	RA 4819(1)				
RA 4820 (MRP 145.A.90)	RA 4820(1) RA 4820(2)				
RA 4821 (MRP 145.A.95)	RA 4821(3)				
MOE Part 2.1					
MOE Part 2.2					
MOE Part 2.3					
MOE Part 2.4					
MOE Part 2.5					
MOE Part 2.6					
MOE Part 2.7					
MOE Part 2.8					
MOE Part 2.9					
MOE Part 2.10					
MOE Part 2.11					
MOE Part 2.12					
MOE Part 2.13					
MOE Part 2.14					
MOE Part 2.15					
MOE Part 2.16					
MOE Part 2.17					
MOE Part 2.18					
MOE Part 2.19					
MOE Part 2.20					
MOE Part 2.21					
MOE Part 2.22					
MOE Part 2.23					
MOE Part 2.24					
MOE Part 2.25					
MOE Part 2.26					
MOE Part 2.27					
MOE Part 2.28					
MOE Part L2.1					
MOE Part L2.2					
MOE Part L2.3					
MOE Part L2.4					
MOE Part L2.5					
MOE Part L2.6					
MOE Part L2.7					
MOE Part 3.1					
MOE Part 3.2					
MOE Part 3.3					
MOE Part 3.4					
MOE Part 3.5					
MOE Part 3.6					
MOE Part 3.7					
MOE Part 3.8					
MOE Part 3.9					
MOE Part 3.10					

ITEM	Sub-Item	HANGAR	ENGINE WORKSHOP	MECH WORKSHOP	AVIONIC WORKSHOP
MOE Part 3.11					
MOE Part 3.12					
MOE Part 3.13					
MOE Part 3.14					

Intentionally Blank for Print Pagination

RA 4816 - Maintenance Organization Exposition (MRP 145.A.70) - Approved Maintenance Organizations only

Rationale

In order to ensure compliance with the RA 4800-4849 (MRP Part 145) series of Regulations and that employed personnel adhere to correct Maintenance practices, a Maintenance organization will consider creating their own set of procedures. Failure to fully define how an organization will meet the requirements of the RA 4800-4849 (MRP Part 145) series of Regulations could lead to incorrect Maintenance practices or Maintenance Occurrences, potentially compromising Air Safety. This RA details the requirements for contractor-run Maintenance organizations to submit a Maintenance Organization Exposition (MOE) to the MAA with a minimum level of detail that defines the scope of work and the procedures they will adhere to in order to comply with RA 4800-4849 (MRP Part 145) series of Regulations.

Contents

Definitions Relevant to this RA

4816(1): Content of a Maintenance Organization Exposition (MRP 145.A.70(a))

4816(2): Amendment of a Maintenance Organization Exposition (MRP 145.A.70(b))

4816(3): Minor Amendment of a Maintenance Organization Exposition (MRP 145.A.70(c))

4816(4): Exemption to Content of a Maintenance Organization Exposition due to Civil Aviation Authority Part 145 Approval (MRP 145.A.70(d))

4816(5): Distribution of Approved Maintenance Organization Exposition

Definitions

Definitions Relevant to this RA

1. **Tradesperson.** Suitably Competent and authorized staff¹ responsible for executing Air System Maintenance activities. This role may also be known as Support Staff within Approved Maintenance Organizations (AMOs).
2. **Supervisor.** Suitably Competent and Authorized staff¹ responsible for carrying out supervision of Tradespersons in the execution of their Maintenance activities. This role may also be known as Support Staff with supervisory responsibilities within AMOs.
3. **Coordinating / Certifying Staff.**² Staff holding authorization by the Maintenance organization to endorse the appropriate Certification of Air System Release and / or Component Release. This role may also be known as the Air System and / or Work Order Coordinator within military parlance.

Regulation 4816(1)

Content of a Maintenance Organization Exposition (MRP 145.A.70(a))

4816(1) The contractor-run organization **shall** provide the MAA with a MOE, containing the following information:

- a. A statement signed by the Accountable Manager (Maintenance) (AM(M)) confirming that the MOE and any referenced associated manuals define the organization's compliance with RA 4800-4849 series (MRP Part 145) and will be complied with at all times. When the AM(M) is not the

¹ Refer to RA 4807 – Certifying Staff and Support Staff (MRP 145.A.35).

² Refer to RA 4801(1): Certifying Staff.

**Regulation
4816(1)**

Chief Executive Officer (CEO) of the organization, then such CEO **shall** countersign the statement.

- b. The organization's Safety and Quality Policy, as specified by RA 4815 (MRP 145.A.65)³.
- c. The title(s) and name(s) of the persons nominated under RA 4806(2) (MRP 145.A.30(b))⁴.
- d. The duties and responsibilities of the persons nominated under RA 4806(2) (MRP 145.A.30(b)), including matters on which they may deal directly with the MAA on behalf of the organization.
- e. An organization chart showing associated chains of responsibility between the persons nominated under RA 4806(2) (MRP 145.A.30(b)).
- f. A list of Coordinating / Certifying Staff, Tradespersons and Supervisors.
- g. A general description of workforce resources.
- h. A general description of the facilities located at each address specified in the organization's Approval certificate.
- i. A specification of the organization's scope of work relevant to the extent of Approval required by RA 4804 (MRP 145.A.20)⁵.
- j. The notification procedure of RA 4819 (MRP 145.A.85)⁶ for organization changes.
- k. The MOE amendment procedure.
- l. The procedures and Quality System established by the organization under RA 4805 (MRP 145.A.25) to RA 4821 (MRP 145.A.95).
- m. A list of operators, to which the organization provides an Air System Maintenance service.
- n. A list of Subcontracted⁷ organizations, where applicable, as specified in RA 4817(1)(b) (MRP 145.A.75(a)(b))⁸.
- o. A list of line stations, where applicable, as specified in RA 4817(1)(d) (MRP 145.A.75(a)(d)).

³ Refer to RA 4815 – Maintenance Procedures and Safety and Quality Policy (MRP 145.A.65).

⁴ Refer to RA 4806(2): Personnel Responsible to the Accountable Manager (Maintenance) (MRP 145.A.30(b)).

⁵ Refer to RA 4804 – Terms of Approval (MRP 145.A.20) – Approved Maintenance Organizations Only.

⁶ Refer to RA 4819 – Changes to the Organization (MRP 145.A.85) – Approved Maintenance Organizations Only.

⁷ AMOs may subcontract Maintenance activities to a non-MRP Part 145 organization but in doing so the Subcontracted organization's facilities, personnel and procedures involved with the AMO's Products, Parts and Appliances undergoing Maintenance is effectively subsumed into the AMO in that it works under the contracting AMO's Quality System, and the AMO's MRP Part 145 approval is extended to include the subcontractor. It therefore follows that those parts of the subcontractor's facilities, personnel and procedures **shall** meet MRP Part 145 requirements for the duration of that Maintenance. It remains the contracting AMO's responsibility to ensure such requirements are satisfied, as it retains accountability for all actions and outputs of the Subcontracted organization in the Maintenance of the AMO's Products, Parts and Appliances. All Subcontracted organizations **shall** be listed within the contracting AMO's Maintenance Organization Exposition.

⁸ Refer to RA 4817 – Privileges of the Organization (MRP 145.A.75).

**Regulation
4816(1)**

- p. A list of Contracted⁹ organizations, where applicable.

**Acceptable
Means of
Compliance
4816(1)**

Content of a Maintenance Organization Exposition (MRP 145.A.70(a))

4. If the MOE is split into several documents or data files, as detailed in the Guidance Material below, the management part of said Exposition **should** contain a clear cross-reference to such documents or electronic data files.
5. The Exposition **should** contain the information, as applicable, specified in Annex A. The information may be presented in any subject order so long as all applicable subjects are covered. Where an organization uses a different format, for example, to allow the Exposition to serve for more than one Approval, then the Exposition **should** contain an Annex to explain where in the Exposition the subject matter can be found. Small Maintenance organizations may combine the various items to form a simple Exposition more relevant to their needs.
6. While Electronic Data Processing (EDP) may be used for publication of the MOE, the MOE **should** be made available to the MAA in a form acceptable to the MAA. Attention **should** be paid to the compatibility of EDP publication systems with the necessary dissemination of the MOE, both internally and externally.
7. Where a separate procedures manual is used to support the MOE, the organization **should** specify in the MOE who is responsible for amending the manual, particularly in the case where there are several parts. A copy of the procedures manual **should** be provided in a format agreed with the MAA¹⁰.
8. If an organization has existing MAA Approval against a different part of the MRP, and that Approval required the submission of an Exposition, the submission of a supplement to detail the differences required for RA 4800-4849 series (MRP Part 145) Approval will suffice; however, that supplement **should** have an index showing where those parts missing from the supplement are covered.

**Guidance
Material
4816(1)**

Content of a Maintenance Organization Exposition (MRP 145.A.70(a))

9. The MOE is the document or documents that contain the material specifying the scope of work deemed to constitute Approval and showing how the organization intends to comply with RA 4800-4849 series (MRP Part 145). In producing the MOE the organization will be aware of the meaning of Rationale, Regulation, Acceptable Means of Compliance (AMC) and Guidance Material (GM) as defined within MAA01¹¹, and understand the exceptions process described in MAA03¹².
10. RA 4816(1)(a) to (k) (MRP 145.A.70(a)(a) to (k)), constitutes the 'management' part of the MOE and therefore may be produced as one document and made available to the person(s) specified under RA 4806(2) (MRP 145.A.30(b)), in order for them to be familiar with its contents.
11. RA 4816(1)(f) (MRP 145.A.70 (a)(f)), list of Coordinating / Certifying Staff, Tradespersons and Supervisors, may be produced as a separate document.
12. RA 4816(1)(l) (MRP 145.A.70 (a)(l)), constitutes the working procedures of the organization and therefore may be produced as any number of separate procedures manuals provided they are cross-referenced from the management MOE.
13. Personnel are expected to be familiar with those parts of the manuals that are relevant to the Maintenance work they carry out.
14. The AM(M)'s Exposition statement as specified under RA 4816(1)(a) (MRP 145.A.70 (a)(a)), will embrace the intent of the following clause; this statement

⁹ AMOs may contract Maintenance works to other MRP Part 145 organizations whose Approval covers the scope of the required works. Contracted Maintenance Organizations carry out works under their own Approval and Quality Management System and retain accountability of their actions and outputs. A list of Contracted organizations is to be held within the contracting AMO's MOE.

¹⁰ Preferably MS Word or PDF. Contact DSA-MAA-OA-ACC@mod.gov.uk for further information.

¹¹ Refer to MAA01: MAA Regulatory Principles.

¹² Refer to MAA03: MAA Regulatory Processes.

**Guidance
Material
4816(1)**

may be used without amendment. Any Modification to the statement will not alter the intent:

This Exposition and any associated referenced manuals defines the organization and procedures upon which the MAA RA 4800-4849 (MRP Part 145) Approval is based as required by RA 4816 (MRP 145.A.70). These procedures are approved by the undersigned and should be complied with, as applicable, when work / orders are being progressed under the terms of the RA 4800-4849 (MRP Part 145) Approval.

It is accepted that these procedures do not override the necessity of complying with any new or amended Regulation published by the MAA from time to time where these new or amended Regulations are in conflict with these procedures.

It is understood that the MAA will approve this organization whilst the MAA is satisfied that the procedures are being followed and work standards maintained. It is further understood that the MAA reserves the right to suspend, limit or revoke the Approval of the organization if the MAA has evidence that procedures are not followed or standards not upheld.

Signed

Dated

Accountable Manager (Maintenance) and [quote position]

For and on behalf of [quote organization's name]

15. Whenever the AM(M) changes it is important to ensure that the new AM(M) signs the statement detailed at Paragraph 14 (or alternative) at the earliest opportunity. Failure to carry out this action could invalidate the RA 4800-4849 series (MRP Part 145) Approval.

16. The compliance matrix detailed at Annex A paragraph 3.15 is an essential part of the MOE that will be presented in the format contained within Annex B to this Regulation.

**Regulation
4816(2)**

Amendment of a Maintenance Organization Exposition (MRP 145.A.70(b))

4816(2) The Exposition **shall** be amended as necessary to remain an up-to-date description of the AMO. The Exposition and any subsequent amendment **shall** be approved by the MAA, with one exception stated at RA 4816(3) (MRP 145.A.70(c)).

**Acceptable
Means of
Compliance
4816(2)**

Amendment of a Maintenance Organization Exposition (MRP 145.A.70(b))

17. The Quality Manager (QM) **should** be responsible for monitoring the amendment of the MOE (unless otherwise agreed by the MAA), including associated procedures manuals and submission of the proposed amendments to the MAA.

18. The QM **should** submit an MAA MAOS Form 2¹³ to request Approval by the MAA of amendments to the MOE.

**Guidance
Material
4816(2)**

Amendment of a Maintenance Organization Exposition (MRP 145.A.70(b))

19. Nil

¹³ MAA MAOS Form 2: Application for MRP Part 145 Approval can be found at the following link: <https://www.gov.uk/government/publications/maintenance-approved-organization-scheme-maos>.

**Regulation
4816(3)**

Minor Amendment of a Maintenance Organization Exposition (MRP 145.A.70(c))

4816(4) In derogation to RA 4816(2) (MRP 145.A.70(b)), minor amendments to the MOE might be approved without specific MAA Approval; the process for incorporating such amendments **shall** be detailed in the MOE.

**Acceptable
Means of
Compliance
4816(3)**

Minor Amendment of a Maintenance Organization Exposition (MRP 145.A.70(c))

20. This procedure, if required, **should** be contained within the amendment section of the MOE and define the type of amendments to which it might be applied.

**Guidance
Material
4816(3)**

Minor Amendment of a Maintenance Organization Exposition (MRP 145.A.70(c))

21. The Approval of amendments to the MOE through an Exposition procedure is known as 'Indirect Approval'.

**Regulation
4816(4)**

Exemption to Content of a Maintenance Organization Exposition due to Civil Aviation Authority Part 145 Approval (MRP 145.A.70(d))

4816(4) A Maintenance organization with extant Civil Aviation Authority (CAA) Part 145 Approval, which wishes to be granted an exemption to specific MOE content, **shall** cross-reference the appropriate sections of their CAA Exposition document in their MOE.

**Acceptable
Means of
Compliance
4816(4)**

Exemption to Content of a Maintenance Organization Exposition due to Civil Aviation Authority Part 145 Approval (MRP 145.A.70(d))

22. MOE content covered by the read across of sections from the CAA Exposition document **should** be identified in the MOE, with reference to the corresponding CAA document Clause.

23. All military-specific content **should** be addressed in the MOE, as required by RA 4816(1) (MRP 145.A.70(a)).

**Guidance
Material
4816(4)**

Exemption to Content of a Maintenance Organization Exposition due to Civil Aviation Authority Part 145 Approval (MRP 145.A.70(d))

24. Where a Maintenance organization has an extant CAA Part 145 Approval, those parts of the organization's CAA Part 145 Exposition that are equally applicable to satisfy the RA 4800-4849 series (MRP Part 145) requirements will generally be accepted by the MAA as equivalent in respect of the RA 4800-4849 series (MRP Part 145) Exposition.

25. RA 4816(4) (MRP 145.A.70(d)) does not apply to those cases where the MAA has agreed for an organization to apply for an MRP Part 145 Approval in accordance with the MRP Part 145 Supplement - Requirements Document¹⁴.

¹⁴ Refer to RA 4800 – General Requirements (MRP Part 145).

**Regulation
4816(5)**

Distribution of Approved Maintenance Organization Exposition

4816(5) AMOs **shall** provide the Type Airworthiness Authority (TAA)¹⁵ and the Military Continuing Airworthiness Manager (Mil CAM) with a current and up to date copy of the approved MOE.

**Acceptable
Means of
Compliance
4816(5)**

Distribution of Approved Maintenance Organization Exposition

26. Following Approval of the MOE the AMO **should** distribute an up to date copy of the MOE to the TAA▶◀ and Mil CAM within 10 working days.

**Guidance
Material
4816(5)**

Distribution of Approved Maintenance Organization Exposition

27. Distribution of the MOE ensures the TAA▶◀ and Mil CAM are aware of the scope of an AMO's Approval and the procedures to which they will adhere to in order to meet the requirements set by the RA 4800-4849 (MRP Part 145) series of Regulations.

28. Where there are Commercial In Confidence considerations the AMO may provide a redacted copy to protect its commercial interests.

¹⁵ 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.

ANNEX A**MAINTENANCE ORGANIZATION EXPOSITION (MOE) CONTENT****Part 0 – General Organization**

This section is reserved for:

0.1 A Maintenance organization seeking Approval under RA 4800-4849 series (MRP Part 145), which is also an operator (eg in the case of a 'line' Maintenance organization).

0.2 An Original Equipment Manufacturer (OEM) seeking Approval as a Maintenance organization under RA 4800-4849 series (MRP Part 145). Among other organizational aspects, the OEM **should** also illustrate how the Maintenance organization will be independent from the OEM's design and production / engineering organizations.

Part 1 – Management

1.1 Corporate commitment by the Accountable Manager (Maintenance).

1.2 Safety and Quality Policy.

1.3 Management personnel.

1.4 Duties and responsibilities of the management personnel.

1.5 Management organization chart.

1.6 List of Coordinating / Certifying Staff, Tradespersons and Supervisors.

1.7 Workforce resources.

1.8 General description of the facilities at each address intended to be approved.

1.9 Organization's intended scope of work.

1.10 Notification procedure to the MAA regarding changes to the organization's activities / Approval / location / personnel.

1.11 Exposition amendment procedures including, if applicable, delegated procedures.

Part 2 – Maintenance Procedures

2.1 Supplier¹⁶ evaluation and subcontract control procedure.

2.2 Acceptance / inspection of Air System components and material from outside Contractors.

2.3 Storage, tagging and release of Air System components and material to Air System Maintenance.

2.4 Acceptance of tools and equipment.

2.5 Calibration of tools and equipment.

2.6 Use of tooling and equipment by staff (including alternate tools).

2.7 Cleanliness standards of Maintenance facilities.

2.8 Maintenance instructions and relationship to Air System / Air System component manufacturers' instructions, including updating and availability to staff.

2.9 Repair procedure.

2.10 Air System Maintenance programme compliance.

2.11 Procedure for complying with Special Instructions (Technical) and Airworthiness Directives, as applicable.

2.12 Optional Modification procedure.

2.13 Maintenance documentation in use and completion of same.

2.14 Technical record control.

2.15 Rectification of Faults arising during Maintenance.

¹⁶ Within the boundaries of MRP Part 145 Regulations a supplier is defined as any source providing components or materials to be used for Maintenance. The list of suppliers is not considered an MOE associated list and can be managed under direct control of the Quality Department. Services are Contracted / Subcontracted as appropriate but not supplied.

- 2.16 The procedure for endorsing the Certification of Air System / Component Release or issuing a Certificate of Maintenance.
- 2.17 Records for the MOD.
- 2.18 Reporting of Faults to the TAA / Mil CAM.
- 2.19 Return of faulty Air System components to store.
- 2.20 Faulty components to outside Contractors.
- 2.21 Control of computer Maintenance record systems.
- 2.22 Control of working hours planning versus Preventive Maintenance work.
- 2.23 Control of critical tasks.
- 2.24 Reference to specific Maintenance procedures such as:
 - 2.24.1 Engine running procedures.
 - 2.24.2 Aircraft pressure run procedures.
 - 2.24.3 Aircraft towing procedures.
 - 2.24.4 Aircraft taxiing procedures.
- 2.25 Procedures to detect and rectify Maintenance errors.
- 2.26 Shift / task handover procedures.
- 2.27 Procedures for notification of Technical Information / Maintenance data inaccuracies and ambiguities, to the TAA / Mil CAM.
- 2.28 Maintenance planning procedures.

Part L2 – Additional Line Maintenance Procedures

- L2.1 Line Maintenance control of Air System components, tools, equipment etc.
- L2.2 Line Maintenance procedures related to servicing / fuelling / de-icing etc.
- L2.3 Line Maintenance control of Faults and repetitive Faults.
- L2.4 Line procedure for completion of technical log.
- L2.5 Line procedure for pooled parts and loan parts.
- L2.6 Line procedure for return of faulty parts removed from Air System.
- L2.7 Line procedure control of critical tasks.

Part 3 –Quality Management System Procedures

- 3.1 Quality Audit of organization procedures.
- 3.2 Quality Audit of Air System and / or components.
- 3.3 Quality Audit remedial action procedure.
- 3.4 Coordinating / Certifying Staff, Tradespersons and Supervisors qualification and training procedures.
- 3.5 Coordinating / Certifying Staff, Tradespersons and Supervisors records.
- 3.6 Quality Audit personnel.
- 3.7 Qualifying inspectors.
- 3.8 Qualifying Tradespersons.
- 3.9 Air System or Air System component Maintenance tasks exemption process control.
- 3.10 Concession control for deviation from organization's procedures.
- 3.11 Qualification procedure for specialized activities such as None Destructive Testing, welding, etc.
- 3.12 Control of manufacturers' and other Maintenance working teams.
- 3.13 Human Factors training procedure.

3.14 Competence assessment of personnel.

3.15 Compliance matrix.

Part 4

4.1 Contracted operators.

4.2 Operator procedures and paperwork.

4.3 Operator record completion.

Part 5

5.1 Sample of documents.

5.2 List of subcontractors⁷ as per RA 4817(1)(b) (MRP 145.A.75(a)(b)).

5.3 List of Line Maintenance locations as per RA 4817(1)(d) (MRP 145.A.75(a)(d)).

5.4 List of Contracted⁹ organizations as per RA 4816(1)(p) (MRP 145.A.70(a)(p)).

Part 6 – Operator’s Maintenance Procedures

This section is reserved for those Maintenance organizations approved under RA 4800-4849 (MRP Part 145) who are also operators.

Part 7 – Not used

Part 8 – Not used

ANNEX B

MANDATORY MOE COMPLIANCE MATRIX FORMAT

1. The following matrix is a tool to assist the Contractor to demonstrate compliance with the RA 4800 series (MRP Part 145), including evidence of the MAA acceptance of any Alternative Acceptable Means of Compliance (AAMC), Waiver or Exemption and will be populated as follows:

- (a) MOE Reference: Detail the article(s) within the organization's MOE that pertain to the RA and / or sub RAs that, when followed, ensure full compliance with the Regulations.
- (b) Applicable Procedures: Where the MOE refers to a procedure, the procedure ►will◀ be listed.
- (c) AMC Compliance Status: State whether the AMC has been adopted to demonstrate compliance with the Regulation. If an AAMC / Waiver / Exemption has been granted ensure it is listed.

Table 1. Compliance Matrix Mandatory Format.

RA Number	RA Description	SUB RA	MOE REFERENCE	APPLICABLE PROCEDURES	AMC adopted YES / NO or AAMC / WAIVER / EXEMPTION Ref
RA 4800	General Requirements (MRP Part 145)	RA 4800(1) RA 4800(2)			
RA 4801	Certifying Staff	RA 4801(1)			
RA 4802	Scope of the MRP Part 145 (MRP 145.A.10) – Approved Maintenance Organizations only	RA 4802(1)			
RA 4803	Method of Application for Approval (MRP 145.A.15) - Approved Maintenance Organizations only	RA 4803(1)			
RA 4804	Terms of Approval (MRP 145.A.20) - Approved Maintenance Organizations only	RA 4804(1)			
RA 4805	Facility Requirements (MRP 145.A.25)	RA 4805(1) RA 4805(2) RA 4805(3) RA 4805(4)			

RA Number	RA Description	SUB RA	MOE REFERENCE	APPLICABLE PROCEDURES	AMC adopted YES / NO or AAMC / WAIVER / EXEMPTION Ref
RA 4806	Personnel Requirements (MRP 145.A.30)	RA 4806(1) RA 4806(2) RA 4806(3) RA 4806(4) RA 4806(5) RA 4806(6) RA 4806(7) RA 4806(8) RA 4806(9) RA 4806(10)			
RA 4807	Certifying Staff and Support Staff (MRP 145.A.35)	RA 4807(1) RA 4807(2) RA 4807(3) RA 4807(4) RA 4807(5) RA 4807(6) RA 4807(7) RA 4807(8) RA 4807(9) RA 4807(10) RA 4807(11) RA 4807(12)			
RA 4808	Equipment Tools and Material (MRP 145.A.40)	RA 4808(1) RA 4808(2) RA 4808 (3)			
RA 4809	Acceptance of Components (MRP 145.A.42)	RA 4809(1) RA 4809(2) RA 4809(3) RA 4809(4)			
RA 4810	Technical Information (MRP 145.A.45)	RA 4810(1) RA 4810(2) RA 4810(3) RA 4810(4) RA 4810(5) RA 4810(6) RA 4810(7)			
RA 4811	Maintenance Planning (MRP 145.A.47)	RA 4811(1) RA 4811(2) RA 4811(3)			

RA Number	RA Description	SUB RA	MOE REFERENCE	APPLICABLE PROCEDURES	AMC adopted YES / NO or AAMC / WAIVER / EXEMPTION Ref
RA 4812	Certification of Air System Release and Component Release (MRP 145.A.50)	RA 4812(1) RA 4812(2) RA 4812(3) RA 4812(4) RA 4812(5) ▶ RA 4812(6) ◀			
RA 4813	Maintenance Records (MRP 145.A.55)	RA 4813(1) RA 4813(2) RA 4813(3) RA 4813(4)			
RA 4814	Occurrence Reporting (MRP 145.A.60)	RA 4814(1) RA 4814(2) RA 4814(3)			
RA 4815	Maintenance Procedures and Safety and Quality Policy (MRP 145.A.65)	RA 4815(1) RA 4815(2) RA 4815(3)			
RA 4816	Maintenance Organization Exposition (MRP 145.A.70) – Approved Maintenance Organizations only	RA 4816(1) RA 4816(2) RA 4816(3) RA 4816(4) RA 4816(5)			
RA 4817	Privileges of the Organization (MRP 145.A.75)	RA 4817(1)			
RA 4818	Limitations on the Organization (MRP 145.A.80) – Approved Maintenance Organizations only	RA 4818(1)			
RA 4819	Changes to the Organization (MRP 145.A.85) – Approved Maintenance Organizations only	RA 4819(1)			

RA Number	RA Description	SUB RA	MOE REFERENCE	APPLICABLE PROCEDURES	AMC adopted YES / NO or AAMC / WAIVER / EXEMPTION Ref
RA 4820	Continued Validity of Approval (MRP 145.A.90) – Approved Maintenance Organizations only	RA 4820(1) RA 4820(2)			
RA 4821	Findings (MRP 145.A.95) – Approved Maintenance Organizations only	RA 4821(1)			

Intentionally Blank for Print Pagination

RA 4817 - Privileges of the Organization (MRP 145.A.75)

Rationale

To ensure conformity to applicable Regulatory Articles (RAs) and adherence to correct Maintenance practices, Military Maintenance Organizations (MMOs) work according to established orders and Approved Maintenance Organizations (AMOs) carry out their scope of work according to their Maintenance Organization Exposition (MOE). Failure to follow these procedures may increase the Risk to Air Safety and associated Risk to Life. This RA sets out the privileged tasks that may be carried out by an MMO, and those that may be carried out by a contractor-run Maintenance Organization subject to initial MAA RA 4800-4849 series (MRP Part 145) approval.

Contents

► Definitions Relevant to this RA ◀

4817(1): Privileges of the Organization (MRP 145.A.75(a))

Definitions

Definitions Relevant to this RA

1. ► **Coordinating / Certifying Staff.**¹ Staff holding authorization by the Maintenance Organization to endorse the appropriate Certification of Air System Release and / or Component Release. This role may also be known as the Air System and / or Work Order Coordinator within military parlance. ◀

Regulation 4817(1)

Privileges of the Organization (MRP 145.A.75(a))

- 4817(1) An MMO **shall** be entitled to maintain any Air System and / or Air System component for which it has been established to do so by the relevant Front Line Command (FLC). An AMO **shall** be entitled to carry out the following tasks in accordance with the exposition:
- a. Maintain any Air System and / or Air System component for which it is approved at the locations identified in the approval certificate and in the exposition.
 - b. Arrange for Maintenance of any Air System or Air System component, for which it is approved, at another organization that is working under the Quality System of the AMO. This work scope for the non-approved organization **shall not** include a Base Maintenance check (or equivalent Maintenance package) of an Air System or a complete workshop Maintenance check or overhaul of an engine or engine module.
 - c. Maintain any Air System or Air System component for which it is approved at any location subject to the need for such Maintenance arising either from the un-serviceability of the Air System or from the necessity of supporting occasional Line Maintenance, subject to the conditions specified in the exposition.
 - d. Maintain any Air System and / or Air System component for which it is approved at a location identified as a Line Maintenance location capable of supporting applicable Maintenance and only if the organization exposition both permits such activity and lists such locations.

¹ ► Refer to RA 4801(1): Certifying Staff. ◀

**Regulation
4817(1)**

- e. Issue certificates of Air System / Air System Component Maintenance Release in respect of completion of Maintenance².

**Acceptable
Means of
Compliance
4817(1)**

Privileges of the Organization (MRP 145.A.75(a))

Common AMC

2. Nil.

Additional AMC - MMOs only

3. Maintenance activity carried out by an MMO **should** be conducted under the control of the relevant Continuing Airworthiness Manager (CAM)³.

Additional AMC - AMOs only

4. When Maintenance is carried out under the subcontract control system it means that, for the duration of such Maintenance, the RA 4800-4849 series (MRP Part 145) approval has been temporarily extended to include the subcontractor. It therefore follows that those parts of the subcontractor's facilities, personnel and procedures involved with the AMO's products undergoing Maintenance **should** meet RA 4800-4849 series (MRP Part 145) requirements for the duration of that Maintenance and it remains the organization's responsibility to ensure such requirements are satisfied.

5. The AMO is not required to have complete facilities for Maintenance that it needs to subcontract, but it **should** have its own expertise to determine that the subcontractor meets the necessary standards. However, an organization cannot be approved unless it has the in-house facilities, procedures and expertise to carry out the majority of Maintenance for which it wishes to be approved in terms of the number of class ratings.

6. To be appropriately approved to subcontract, the organization **should** have a procedure for the control of such subcontractors, as follows:

- a. A pre-audit procedure **should** be established whereby the AMO's subcontract control section, which may also be the Quality System⁴ independent Audit section, carry out an Audit of the prospective subcontractor to determine whether those services of the subcontractor that it wishes to use meets the intent of RA 4800-4849 series (MRP Part 145).
- b. The AMO **should** assess to what extent it will use the subcontractor's facilities.
- c. Unless the Subcontracted Maintenance work can be fully inspected on receipt by the AMO the organization **should** supervise the inspection and release it from the subcontractor. Such activities **should** be fully described in the AMO's procedure. The AMO **should** consider whether to use its own staff or authorize the subcontractor's staff.
- d. The certification of Air System Maintenance Release or Air System Component Maintenance Release **should** always be endorsed under the AMO's approval reference.
- e. The subcontract control procedure **should** record Audits of the subcontractor, have a corrective action follow up plan and know when subcontractors are being used. The procedure **should** include a clear revocation process for subcontractors who do not meet the AMO's requirements.
- f. The AMO's Quality Audit staff **should** Audit the subcontract control section and sample Audit subcontractors unless this task is already carried out by the Quality Audit staff as stated in Paragraph ► 6.a Where the Quality Audit section and the subcontract control section are one and the same, to maintain independence, the Accountable Manager (Maintenance) (AM(M)) **should** have

² Refer to RA 4812 – Certification of Air System and Component Maintenance Release (MRP 145.A.50).

³ Refer to RA 4947 – Continuing Airworthiness Management – MRP Part M Sub Part G.

⁴ Refer to RA 4815(3): Quality ► Management ◄ System (MRP 145.A.65 (c)).

**Acceptable
Means of
Compliance
4817(1)**

in place alternative arrangements for the auditing of the Quality Audit section and the sample auditing of subcontractors, these **should** be detailed within the MOE. ◀

g. The contract between the AMO and the subcontractor **should** contain a provision for MAA staff to have right of access to the subcontractor.

**Guidance
Material
4817(1)**

Privileges of the Organization (MRP 145.A.75(a))

Common GM

7. Nil.

Additional GM - MMOs only

8. MMOs may conduct relevant Air System and / or Air System component Maintenance at any location determined appropriate by the relevant FLC, subject to the facilities meeting the applicable requirements⁵.

Additional GM – AMOs only

9. With reference to RA 4817(1)(b) – Privileges of the Organization (MRP 145.A.75(a)(b)), 'working under the Quality System of the AMO' refers to the case of one organization, not itself, appropriately approved under RA 4800-4849 series (MRP Part 145) that carries out one (or more) of the following services for an AMO:

- a. Air System Line Maintenance.
- b. Minor engine Maintenance.
- c. Maintenance of other Air System components.
- d. A specialized service as a subcontractor.

10. Any AMO that carries out Maintenance for another AMO within its own approval scope is not considered to be subcontracting for the purpose of this Regulation.

11. Maintenance of engines or engine modules other than a complete workshop Maintenance check or overhaul is intended to mean any Maintenance that can be carried out without disassembly of the core engine or, in the case of modular engines, without disassembly of any core module.

12. The fundamental reasons for allowing an AMO to subcontract certain Maintenance tasks are:

- a. To permit the acceptance of specialized Maintenance services, such as, but not limited to, plating, heat treatment, plasma spray, fabrication of specified parts for minor repairs / modifications, etc. without the need for direct approval by the MAA in such cases.
- b. To permit the acceptance of Air System Maintenance up to, but not including, a Base Maintenance check (or equivalent)⁶ by organizations not appropriately approved under RA 4800-4849 series (MRP Part 145) when it is unrealistic to expect direct approval by the MAA. The MAA will determine when it is unrealistic but in general it is considered unrealistic if only one or 2 organizations intend to use the Subcontracted organization.
- c. To permit the acceptance of component Maintenance.
- d. To permit the acceptance of engine Maintenance up to, but not including, a workshop Maintenance check or overhaul of an engine or engine module⁶ by organizations not appropriately approved under RA4800-4849 series (MRP Part 145) when it is unrealistic to expect direct approval by the MAA. The determination of unrealistic is as per Paragraph ▶ 12.b. ◀

13. The AMO may find it necessary to include several specialist subcontractors to enable it to be approved to completely certify the Maintenance of a particular product. Examples could be specialist welding, electro-plating, painting etc. To authorize the

⁵ Refer to RA 4805 – Facility Requirements (MRP 145.A.25).

⁶ Refer to RA 4817(1)(b): Privileges of the Organization (MRP 145.A.75(a)(b)).

**Guidance
Material
4817(1)**

use of such subcontractors, the MAA will need to be satisfied that the AMO has the necessary expertise and procedures to control such subcontractors.

14. An AMO working outside the scope of its approval schedule is deemed to be not approved. Such an organization will, in this circumstance, operate only under the subcontract control of another AMO.

15. Authorization to subcontract is indicated by the MAA accepting the MOE containing a specific procedure on the control of subcontractors.

16. In relation to Paragraph ►6.b, ◀ the AMO will generally require its own paperwork, Technical Information (TI) and material / spare parts to be used, but it could permit the use of tools, equipment and personnel from the subcontractor as long as such tools, equipment and personnel meet the requirements of RA 4800-4849 series (MRP Part 145). In the case of subcontractors who provide specialized services, it may, for practical reasons, be necessary to use their specialized services personnel, TI and material, subject to acceptance by the AMO.

17. The certification of Air System Maintenance Release or Air System Component Maintenance Release may be endorsed either at the subcontractor or at the organization facility by staff issued a certification authorization⁷, as appropriate, by the AMO. Such staff would normally come from the AMO but may otherwise be a person from the subcontractor who meets the AMO's ►Coordinating / Certifying Staff◀ standard, which itself is approved by the MAA via the MOE.

18. ► In the circumstances where the subcontract Audit department and the Quality Audit department are one and the same it is acceptable to:

- a. Use competent personnel from a different department in the same organization not responsible for the Quality function / procedure, or,
- b. Contract the independent Audit element of the Quality Management System, including sample auditing of subcontractors to another organization or a qualified competent person. ◀

19. AMOs may conduct temporary Air System and / or Air System component Maintenance at any location determined appropriate by the relevant CAMO, agreed by the Accountable Manager (Maintenance), the MAA notified⁸, subject to facilities meeting the applicable requirements⁵ and supported by a procedure within the MOE.

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

⁸ Via DSA-MAA-OA-ACC@mod.gov.uk.

RA 4818 - Limitations on the Organization (MRP 145.A.80) ▶ - Approved Maintenance Organizations (AMOs) only ◀

Rationale *This RA is intended to cover the situation where the larger ▶AMO◀ may temporarily not hold all the necessary tools, equipment etc., for an aircraft type or variant specified in the organization's approval.*

Contents 4818(1): Limitations on the Organization (MRP 145.A.80(a))

**Regulation
4818(1)**

Limitations on the Organization (MRP 145.A.80(a))

4818(1) ▶An AMO◀ shall only maintain an aircraft or component for which it is approved when all the necessary facilities, equipment, tooling, material, ▶technical Information/maintenance data◀ and certifying staff are available.

**Acceptable
Means of
Compliance
4818(1)**

Limitations on the Organization (MRP 145.A.80(a))

1. Nil.

**Guidance
Material
4818(1)**

Limitations on the Organization (MRP 145.A.80(a))

2. This RA means that the MAA need not amend the approval to delete the aircraft type or variants on the basis that it is a temporary situation and there is a commitment from the ▶AMO◀ to re-acquire tools, equipment, etc before maintenance on the type may recommence.

Intentionally Blank for Print Pagination

RA 4819 - Changes to the Organization (MRP 145.A.85) ► - Approved Maintenance Organizations (AMOs) only ◀

Rationale

The primary purpose of this clause is to enable the ►AMO◀ to remain approved, if agreed by the MAA, during negotiations about any of the specified changes. Without this Clause, the approval would automatically be suspended in all cases.

Contents

4819(1): Changes to the Organization (MRP 145.A.85(a))

Regulation 4819(1)

Changes to the Organization (MRP 145.A.85(a))

- 4819(1) The ►AMO◀ shall notify the MAA of any proposal to carry out any of the following changes in order for the MAA to determine continued compliance with RA4800-4849 (MRP Part 145) and to amend, if necessary, the approval certificate:
- (a) The ownership of the organization or its parent company.
 - (b) The name of the organization.
 - (c) The relationship with the design organization.
 - (d) The main location of the organization.
 - (e) Additional locations of the organization.
 - (f) The Accountable Manager ► (Maintenance). ◀
 - (g) Any of the persons nominated under RA4806(2) (MRP 145.A.30(b)).
 - (h) The facilities, equipment, tools, material, procedures, work scope or certifying staff that could affect the approval.

Acceptable Means of Compliance 4819(1)

Changes to the Organization (MRP 145.A.85(a))

1. Notification **should** occur before such changes take place, except in the case of proposed changes in personnel not known to the management beforehand; these changes **should** be notified at the earliest opportunity.

Guidance Material 4819(1)

Changes to the Organization (MRP 145.A.85(a))

2. Nil.

Intentionally Blank for Print Pagination

RA 4820 - Continued Validity of Approval (MRP 145.A.90) - Approved Maintenance Organizations only

Rationale

This RA determines the duration of an approval in accordance with (iaw) the RA 4800-4849 (MRP Part 145) series to an Approved Maintenance Organizations (AMO) and actions to be carried out by the AMO on surrender, suspension or revocation of such approval.

Contents

4820(1): Continued Validity of Approval (MRP 145.A.90(a))
4820(2): Approval Surrender, Suspension or Revocation (MRP 145.A.90(b))

Regulation 4820(1)

Continued Validity of Approval (MRP 145.A.90(a))

- 4820(1) An approval **shall** be issued for an unlimited duration. It **shall** remain valid subject to:
- The organization remaining in compliance with RA 4800-4849 (MRP Part 145), iaw the provisions related to the handling of findings; and
 - The MAA being granted access to the organization to determine continued compliance with RA 4800-4849 (MRP Part 145); and
 - The approval certificate not being surrendered, suspended or revoked.

Acceptable Means of Compliance 4820(1)

Continued Validity of Approval (MRP 145.A.90(a))

- Organizations **should** confirm in writing at least every 3 years and prior to any formal MAA surveillance audit that the contents of their approval certificate and exposition remain valid. Failure to provide the required confirmation may result in the suspension of the approval.
- Organizations that do not exercise the privileges of their approval within a 2 year period **should** surrender the approval unless a contractual requirement for its retention can be demonstrated.

Guidance Material 4820(1)

Continued Validity of Approval (MRP 145.A.90(a))

- The 3 year period, detailed within RA 4820(1) AMC paragraph 1, commences from whichever is the later date of either initial approval or last formal MAA surveillance audit. The confirmation of continued validity must be sent in writing to MAA ► **Operating Assurance Head** ◀ for action.

Regulation 4820(2)

Approval Surrender, Suspension or Revocation (MRP 145.A.90(b))

- 4820(2) Upon surrender, suspension or revocation, the approval certificate **shall** be returned to the MAA.

Acceptable Means of Compliance 4820(2)

Approval Surrender, Suspension or Revocation (MRP 145.A.90(b))

- Nil.

Guidance Material 4820(2)

Approval Surrender, Suspension or Revocation (MRP 145.A.90(b))

- Nil.

Intentionally Blank for Print Pagination

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

RA 4821 - Findings and Observations (MRP 145.A.95)

Rationale

Following the Notification of an Assurance finding against a Maintenance organization, it is essential that the Regulatory non-compliance or other non-conformance is appropriately addressed and actioned by the Accountable Manager (Maintenance) (AM(M)). If findings are not acted upon, the Continuing Airworthiness of the Air System(s) may be compromised. This RA requires Root Cause Analysis (RCA) to be carried out on all findings, and observations (where applicable), to enable the identification and rectification of issues, to reduce the likelihood of Reoccurrence.

Contents

4821(1): Findings (MRP 145.A.95)

4821(2): Corrective Actions (MRP 145.A.95)

4821(3): Observations (MRP 145.A.95)

Regulation

4821(1)

Findings (MRP 145.A.95)

4821(1) After receipt of Notification of an MAA finding the AM(M) **shall** devise and execute a Corrective Action Plan (CAP) to demonstrate how the finding and the root Cause will be rectified to reduce the likelihood of Reoccurrence.

Acceptable Means of Compliance 4821(1)

Findings (MRP 145.A.95)

Common AMC

1. All findings **should** be investigated and rectified using an RCA approach, tool, or technique¹.
2. Where necessary the organization **should** take immediate containment actions to preserve Air Safety.
3. The CAP **should** be provided to the MAA in accordance with MAA03² and include the RCA, corrective actions, preventive actions, and the implementation plan.

Additional AMC – Military Maintenance Organizations only

4. Nil.

Additional AMC – Approved Maintenance Organizations only

5. Instructions for the use of RCA **should** be detailed in the Maintenance Organization Exposition.

Guidance Material 4821(1)

Findings (MRP 145.A.95)

6. There are 2 types of MAA findings, non-compliance and non-conformance, each of which can lead to the MAA raising a Corrective Action Requirement (CAR). Findings are sub-divided into 2 levels as follows:

- a. Non-compliance:
 - (1) Level 1: A failure to meet MRP Part 145 Regulation, that could lead to a major Risk to Air Safety.
 - (2) Level 2: A non-compliance that is judged not to be a Level 1.
- b. Non-conformance:

¹ Guidance can be found in Civil Aviation Authority – [CAP 1760 Effective Problem Solving and Root Cause Identification Stage 6](#) or [JSP 940 MOD Policy for Quality: Part 2: Guidance](#) and training is available through [MAA Training Courses](#) as applicable.

² Refer to MAA03: MAA Regulatory Processes, Annex F: MAA Assurance.

**Guidance
Material
4821(1)**

- (1) Level 1: A deviation from or an omission of a requirement that may contribute to a major Air Safety Risk.
- (2) Level 2: A non-conformity that is judged not to be a Level 1.

Route Cause Analysis

7. RCA focuses on why the finding occurred not who or what were responsible. Establishing the root Cause(s) often requires an overarching view of the events and circumstances that led to it, to identify all the possible systemic and contributing factors (regulatory, technical, human, organizational, etc.) in addition to the direct factors.

8. A narrow focus on single events or failures, or the use of a simple, linear model, such as a Fault Tree Analysis, to identify the chain of events that led to the finding may not properly reflect the complexity of the issue, increasing the Risk that important factors to be addressed to prevent a Reoccurrence will be missed. An inappropriate or partial RCA could lead to 'quick fixes' that only address the symptoms of the finding.

9. A peer review of the results of the RCA may increase its reliability and objectivity.

**Regulation
4821(2)**

Corrective Actions (MRP 145.A.95)

4821(2) The actions in the CAP **shall** be implemented to the satisfaction of the MAA and within the agreed timescales².

**Acceptable
Means of
Compliance
4821(2)**

Corrective Actions (MRP 145.A.95)

10. After receipt and acceptance of the CAP has been confirmed by the MAA, the organization **should** implement the actions within the agreed period.

11. The organization **should** inform the MAA when the CAP has been completed and provide sufficient evidence to justify closure.

**Guidance
Material
4821(2)**

Corrective Actions (MRP 145.A.95)

12. Nil.

**Regulation
4821(3)**

Observations (MRP 145.A.95)

4821(3) Any observations² noted during MAA Audits **shall** be given due consideration by the organization, and any decisions taken in respect of those observations recorded.

**Acceptable
Means of
Compliance
4821(3)**

Observations (MRP 145.A.95)

13. For each negative observation notified by the MAA, the organization **should** analyse the related issues and determine when actions are needed.

14. The organization **should** record the analysis and the outputs, such as the actions taken or the reasons for not taking actions.

**Guidance
Material
4821(3)**

Observations (MRP 145.A.95)

15. The handling of the observations may follow a process similar to the handling of findings by the organization.

RA 4941 - Application - MRP Part M Subpart G

Rationale *Delivery Duty Holders or Accountable Managers (Military Flying) cannot operate their military registered Air Systems safely without the support of an MAA approved Military Continuing Airworthiness Management Organization (Mil CAMO). Uncontrolled Air System configuration and mismanaged Maintenance planning will undermine the Continuing Airworthiness of an Air System and significantly increase the Risk to Life.*
 ► *This RA mandates Approval for all Mil CAMOs from the MAA, confirming Regulatory compliance is achieved to maintain Airworthiness.* ◀

Contents 4941(1): Application - MRP Part M Subpart G

Regulation 4941(1) Application - MRP Part M Subpart G

4941(1) An application for issue or change of a Mil CAMO Approval **shall** be made to the MAA.

Acceptable Means of Compliance 4941(1) Application - MRP Part M Subpart G

1. An application **should** be made on an MAA Part M Form 2: Application for MRP Part M Approval¹ to become an MRP Part M Subpart G organization (Mil CAMO).

Guidance Material 4941(1) Application - MRP Part M Subpart G

2. The requirement to use an MAA Part M Form 2: Application for MRP Part M Approval includes proposed ► **significant** ◀ changes to the Continuing Airworthiness Management Exposition²◀.

¹ This can be found on the MAA websites.

² ► Refer to RA 4943 – Continuing Airworthiness Management Exposition - MRP Part M Subpart G. ◀

Intentionally Blank for Print Pagination

RA 4943 - Continuing Airworthiness Management Exposition - MRP Part M Subpart G

Rationale

To obtain MAA Approval the Delivery Duty Holder (DDH) or Accountable Manager (Military Flying) (AM(MF)) sets forth the procedures, means and methods which their Military Continuing Airworthiness Management Organization (Mil CAMO) will follow. This document is known as the Continuing Airworthiness Management Exposition (CAME) and is the primary means for establishing compliance with the MAA Regulatory Publications (MRP). Without an approved CAME there is a Risk that Air Safety could be undermined and Risk to Life increased. This RA mandates the use of an approved CAME to articulate the scope of Continuing Airworthiness (CAw) and the fundamental procedures required to sustain it throughout an Air System's operating life.

Contents

4943(1): Provision of the Continuing Airworthiness Management Exposition

4943(2): Continuing Airworthiness Management Exposition Approval

Regulation 4943(1)

Provision of the Continuing Airworthiness Management Exposition

- 4943(1) The Military Continuing Airworthiness Manager (Mil CAM) **shall** provide a CAME to the MAA containing the following information:
- a. A statement signed by the relevant DDH¹ or AM(MF)¹ to confirm that the Mil CAMO will work in accordance with the CAME at all times.
 - b. The Mil CAMO's scope of work.
 - c. The titles and names of the Mil CAM, Deputy Mil CAMs and Mil CAMO Quality Manager.
 - d. An organizational chart showing associated chains of Responsibility within the Mil CAMO and linkage to the accountable¹ DDH or AM(MF).
 - e. A reference to a document listing Military Airworthiness Review (Mil AR) Surveyors if applicable.
 - f. A general description and location of the facilities.
 - g. Procedures specifying how the Mil CAMO ensures the Continuing Airworthiness management of their Air Systems and compliance with MRP Continuing Airworthiness Regulations.
 - h. Reference to a list of all Air Systems managed by the Mil CAMO noting serial number, type, and mark or build standard.
 - i. The CAME amendment procedure.

¹ Refer to RA 1016 – Military Continuing Airworthiness Management.

**Acceptable
Means of
Compliance
4943(1)**

Provision of the Continuing Airworthiness Management Exposition

1. The CAME **should** comprise of:
 - a. Part 0 - General organization.
 - b. Part 1 - Continuing Airworthiness procedures.
 - c. Part 2 - Quality System.
 - d. Part 3 - Contracted Maintenance.
 - e. Part 4 - Mil AR procedures.
2. Personnel **should** be familiar with those parts of the CAME that are relevant to their tasks.
3. The person responsible for monitoring and amending the CAME, including associated procedural manuals, and the submission of proposed amendments to the MAA, **should** be nominated by the Mil CAM and identified in the CAME.
4. Part 0 "General organization" of the CAME **should** include a DDH or AM(MF)'s statement that contains²:
 - a. A corporate commitment by the Mil CAMO.
 - b. A signature from the DDH or AM(MF).
 - c. That the CAME and any associated manuals define the Mil CAMO's compliance with MRP Part M.
 - d. Confirmation that the CAME will be complied with at all times.
5. If the DDH or AM(MF) changes, the new DDH or AM(MF) **should** sign the CAME statement at the earliest opportunity within 30 calendar days from changeover.
6. The CAME **should** contain information on how the Mil CAMO complies with the military configuration control processes for the Air Systems listed within its CAME.
7. CAME procedures **should** be written in a format that provides sufficient detail for individuals to undertake the task, allowing Mil CAMO tasks to be undertaken in a consistent manner.
8. The CAME **should** include a compliance matrix, detailing how each Acceptable Means of Compliance (AMC) paragraph in the MRP Part M ►◄ and applicable RA 1000 series³ is met. An example format of a CAME compliance matrix can be found at Annex A.
9. The CAME **should** be in a digital ►format◄ and made available to the MAA in a file format acceptable to the MAA.
10. The CAME **should** define the Mil CAMO's scope of work in terms of achieving the requirements of MRP Part M (RA 4900 series). The Mil CAMO facilities requirement is defined by what is necessary to achieve the Mil CAMO's scope of work.

**Guidance
Material
4943(1)**

Provision of the Continuing Airworthiness Management Exposition

11. The MAA website contains an example of a CAME layout, titled "Military Anybody's CAME"⁴, which may be used as appropriate.
12. An example DDH or AM(MF)'s CAME statement is below:

This CAME defines the Mil CAMO and procedures upon which the Subpart G Mil CAMO Approval is based. These procedures are approved by the undersigned and should be complied with, as applicable, to ensure that all

² An example statement is available in guidance material paragraph 12.

³ Applicable 1000 series RAs include but are not limited to RA 1006 – Delegation of Engineering Authorizations, RA 1011 – Military Continuing Airworthiness Manager Responsibilities, RA 1016 – Military Continuing Airworthiness Management and RA 1023 – Chief Air Engineers – Air Safety Responsibilities.

⁴ <https://www.gov.uk/government/publications/continuing-airworthiness-management-organization-camo-approval-supporting-documentation>.

**Guidance
Material
4943(1)**

Continuing Airworthiness tasks of the . . . (Quote Mil CAMO's name) . . . fleet of Air Systems are carried out on time to an approved standard.

It is accepted that these procedures do not override the necessity of complying with any new or amended Regulation where these new or amended Regulations are in conflict with these procedures.

It is understood that the MAA will approve this organization whilst the MAA is satisfied that the procedures are being followed and the work standard is maintained. It is understood that the MAA reserves the right to suspend, vary or revoke the Subpart G Mil CAMO Approval of the organization if the MAA has evidence that the procedures are not followed and the standards not upheld.

Signed

Dated

DDH or AM(MF) (as appropriate) and . . . (quote position) . . .

13. A CAME that only references back to the RAs is not deemed an effective means of compliance demonstration. The CAME will detail how compliance is met in line with the RAs stating the who, what, when and how.

**Regulation
4943(2)**

Continuing Airworthiness Management Exposition Approval

- 4943(2) The Mil CAM **shall** seek Approval for the CAME, and any significant amendments to its contents, from the MAA.

**Acceptable
Means of
Compliance
4943(2)**

Continuing Airworthiness Management Exposition Approval

14. The Mil CAM **should** seek Approval, through submission of a MAA Part M Form 2: Application for MRP Part M Approval⁵, for the following significant amendments to the CAME prior to enacting the change:

- a. The Mil CAMO becoming responsible for additional Air System types or marks.
- b. A change of location of the Mil CAMO and / or Air System support arrangements.
- c. Changes to the Mil CAMO's Exposition and the associated procedures that could affect the Regulatory means of compliance.
- d. Other significant changes deemed appropriate by the Mil CAM.

15. Changes to the following personnel⁶ **should** be treated as a minor change:

- a. DDH.
- b. AM(MF).
- c. Mil CAM.
- d. Deputy Mil CAM.
- e. Mil CAMO Quality Manager.
- f. All other CAMO personnel ► if listed in the CAME as having specified CAw responsibilities. ◀

16. Following changes of personnel listed in paragraph 15a-f, the MAA **should** be sent a copy of the updated CAME with the relevant amended details within 30 calendar days of the change taking place⁷. The MAA will acknowledge receipt of the CAME within 30 calendar days.

17. Where a CAMO holds an Approval based on an earlier version of the CAME but has submitted an MAA Form 2 to request Approval of a later version, the DDH or AM(MF) may choose to use the latest revision of the CAME if they consider the Risk to

⁵ Refer to RA 4941 – Application – MRP Part M Subpart G.

⁶ This does not remove any regulatory requirements for the MAA to interview / endorse individuals for suitability for any of these posts.

⁷ If required a revised timeline may be agreed through engagement with the relevant MAA desk officer.

**Acceptable
Means of
Compliance
4943(2)**

be As Low As Reasonably Practicable and Tolerable. This decision **should** be formally documented and categorized as a Continuing Airworthiness Record⁸ by the Mil CAMO.

**Guidance
Material
4943(2)****Continuing Airworthiness Management Exposition Approval**

18. Approval of the amendment procedure in the CAME may be taken as authorization of indirect Approval of minor amendments to the CAME, ie those amendments not listed at AMC paragraph 14 above. A copy of the updated CAME ► **needs to** ◀ be sent to the MAA⁹ for information.
19. Major changes to the CAME will be prioritized but may take longer than 30 calendar days for the MAA to approve.

⁸ Refer to RA 4964 – Continuing Airworthiness Management Records – MRP Part M Subpart C.

⁹ DSA-MAA-OA-ACC@mod.gov.uk.

**Annex A
CAME Compliance Matrix Format**

1. All CAMEs ► **should** ◀ include a compliance matrix, but the following format is not mandatory and may be amended to suit organizational needs. The following example format may be used to assist the Mil CAMO to demonstrate compliance with the RA 4900 series (MRP Part M) and any other applicable RAs. It can be populated as follows:

- (a) RA Number and Description: Detail the contents of the RA AMC that is required to be complied with. Always refer to extant RAs for the current wording rather than the example text used below.
- (b) Section: Detail the section within the organization’s CAME that achieves the AMC paragraph listed.
- (c) Para: Detail the paragraph in the previously noted section within the organization’s CAME that achieves the AMC paragraph listed.
- (d) Notes: A section to provide any additional information. This could include any authorised Alternative Acceptable Means of Compliance / Waiver / Exemption references.

*Table 1. CAME Compliance Matrix Format Example – Note that the below text is an example and extant RA wording **should** always be used.*

RA Number, ► Issue Number ◀ and Description			Section	Para	Notes
RA 4941 ► ◀ Application – MRP Part M Subpart G					
RA 4941 (1)	► [Insert Issue Number] ◀	An application for issue or change of a Mil CAMO approval shall be made to the MAA.			
AMC Para 1	► [Insert Issue Number] ◀	An application should be made on an MAA Part M Form 2: Application for MRP Part M Approval to become an MRP Part M Subpart G organization (Mil CAMO).	[Insert CAME section]	[Insert CAME para]	
RA 4943 ► ◀ Continuing Airworthiness Management Exposition – MRP Part M Subpart G					
RA 4943 (1)	► [Insert Issue Number] ◀	The Military Continuing Airworthiness Manager (Mil CAM) shall provide a CAME to the MAA containing the following information: <i>Specific details are contained in the RA.</i>			
AMC Para 1	► [Insert Issue Number] ◀	Specific details contained in AMC-4943-(1)	[Insert CAME section]	[Insert CAME para]	
AMC Para 2	► [Insert Issue Number] ◀		[Insert CAME section]	[Insert CAME para]	

RA Number, ► Issue Number ◀ and Description		Section	Para	Notes
AMC Para 3	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	
AMC Para 4	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	
AMC Para 5	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	
AMC Para 6	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	
AMC Para 7	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	
AMC Para 8	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	
AMC Para 9	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	
AMC Para 10	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	
RA 4943 (2)	► [Insert Issue Number] ◀	The Mil CAMO shall seek Approval for the CAME, and any significant amendments to its contents, from the MAA.		
AMC Para 14	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	The Mil CAM should seek Approval, through submission of a MAA Part M Form 2: Application for MRP Part M Approval, for the following significant amendments to the CAME prior to enacting the change: <i>Specific details contained in AMC-4943-(2)</i>
AMC Para 15	► [Insert Issue Number] ◀	[Insert CAME section]	[Insert CAME para]	Changes to the following personnel should be treated as a Minor Change: <i>Specific details contained in AMC-4943-(2)</i>

RA Number, ► Issue Number ◀ and Description			Section	Para	Notes
AMC Para 16	► [Insert Issue Number] ◀	Following changes of personnel listed in paragraph 16, the MAA should be sent a copy of the updated CAME with the relevant amended details within 30 calendar days of the change taking place. The MAA will acknowledge receipt of the CAME within 30 calendar days.	[Insert CAME section]	[Insert CAME para]	
AMC Para 17	► [Insert Issue Number] ◀	Where a CAMO holds an Approval based on an earlier version of the CAME but has submitted an MAA Form 2 to request Approval of a later version, the DDH or AM(MF) may choose to use the latest revision of the CAME if they consider the Risk to be As Low As Reasonably Practicable and Tolerable. This decision should be formally documented and categorised as a Continuing Airworthiness Record by the Mil CAMO.	[Insert CAME section]	[Insert CAME para]	

Intentionally Blank for Print Pagination

RA 4945 - Personnel Requirements - MRP Part M Subpart G

Rationale

To contribute to the preservation of Airworthiness all personnel working in a Military Continuing Airworthiness Management Organization (Mil CAMO) are required to be suitably qualified, experienced and, where appropriate, authorized to carry out their role. Without competent and knowledgeable personnel, both leading and supporting the Mil CAMO, the Continuing Airworthiness (CAw) of the supported organizations' Air Systems may be compromised. This RA requires Military Continuing Airworthiness Managers (Mil CAM) to be supported by sufficient Suitably Qualified and Experienced Persons (SQEP) to support the Maintenance of CAw.

Contents

4945(1): Requirements for the Military Continuing Airworthiness Manager

4945(2): Qualification of Personnel

4945(3): Personnel Competence and MRP Part M Authorization

Regulation 4945(1)

Requirements for the Military Continuing Airworthiness Manager

4945(1) The Mil CAM **shall**:

- a. Either:
 - (1) Where they are within a construct supporting a Delivery Duty Holder (DDH) who has direct Air Safety Responsibility, be a Crown Servant; or,
 - (2) Where they are within a construct supporting a Defence Contractor Flying Organization¹ (DCFO) have their appointment endorsed by the MAA through the submission and Approval of a MAA Maintenance Approved Organization Scheme (MAOS) / Continuing Airworthiness Management Organization (CAMO) Form 4².
- b. Be responsible to the DDH³ and / or Accountable Manager (Military Flying) (AM(MF))³ and ensure that the organization is always in compliance with MRP Part M Subparts C and G, and when approved, Subpart I.
- c. Be responsible for the management and oversight of all CAw activities.
- d. Be able to show relevant knowledge and appropriate experience related to Air System CAw.

Acceptable Means of Compliance 4945(1)

Requirements for the Military Continuing Airworthiness Manager

1. The Mil CAM **should** have:
 - a. Practical experience and expertise in the application of Air Safety standards and safe operating practices in the CAw environment.
 - b. A comprehensive knowledge⁴ of:
 - (1) Relevant operational requirements and procedures.
 - (2) The DDH's or AM(MF)'s Air System operations and procedures.

¹ Refer to ► RA 1028 ◀ – Contractor Flying Approved Organization Scheme.

² MAA MAOS / CAMO Form 4 – Details of Nominated Personnel.

³ Refer to RA 1016 – Military Continuing Airworthiness Management.

⁴ Refer to RA 1002 – Airworthiness Competent Persons.

Acceptable Means of Compliance 4945(1)

- (3) Quality Systems.
 - c. Either:
 - (1) Have been a previous holder of Authority Level J; or,
 - (2) Had five years' relevant work experience of which at least two **should** be from the aeronautical industry in an appropriate position.
 - d. Engineering Council Professional Registration as detailed in RA 1002⁴.
 - e. A thorough knowledge of the organization's Continuing Airworthiness Management Exposition (CAME).
 - f. Knowledge of the type(s) of Air System(s) for which Responsibility is held, gained through a formalized training course. Such courses **should** cover typical Systems embodied in those Air Systems being within the scope of Approval.
 - g. Successfully completed all relevant Air Safety training courses⁵.
 - h. Knowledge of applicable Regulations.
2. ► Any nominated Deputy Mil CAM (DCAM) expected to personally exercise delegated Mil CAM authorizations **should** also meet the SQEP criteria detailed in paragraph 1 of this Regulation. ◀

Guidance Material 4945(1)

Requirements for the Military Continuing Airworthiness Manager

- 3. The Mil CAM is responsible for all CAw management functions. Depending on the size of the operation and Structure of the organization, these functions may be divided between separate managers or combined under one individual. However, the Mil CAMO Quality Management System⁶, ► needs to ◀ be independent from the other functions.
- 4. ► Though overarching responsibility remains with the Mil CAM, a DCAM may be nominated by the Mil CAM to undertake delegated CAw management activities to increase the resilience of an organization. This could be appropriate in a number of circumstances, including but not limited to;
 - a. When a single Mil CAM is responsible for more than one platform type.
 - b. When a Mil CAM is responsible for Air Systems based at locations remote from them. ◀
- 5. An adequate formalized type training course for the Mil CAM would typically be expected to be of several days' duration.
- 6. The MAA MAOS / CAMO Form 4² can be found on the MAA Website⁷.
- 7. In some circumstances DCFOs may need to utilize a Crown Servant Mil CAM and Mil CAMO under a bespoke written agreement³. In such cases the Contracted Crown Servant Mil CAM will not be required to undergo Approval by the MAA using the MAA MAOS / CAMO Form 4 process.

Regulation 4945(2)

Qualification of Personnel

- 4945(2) The Mil CAMO **shall** have sufficient SQEP for the expected work:
- a. The Competence of all personnel involved in Mil CAMO activities **shall** be established by the Mil CAM and recorded.
 - (1) The Mil CAM **shall** establish and control the continued Competence of personnel involved in

⁵ Refer to RA 1440 – Air Safety Training.

⁶ Refer to RA 4951 – Quality System - MRP Part M Subpart G.

⁷ <https://www.gov.uk/government/publications/regulatory-article-ra-4806-personnel-requirements-mrp-145a30>.

**Regulation
4945(2)**

the Mil CAMO, Military Airworthiness Review and / or Quality Audits in accordance with approved procedures and to a standard agreed by the MAA.

**Acceptable
Means of
Compliance
4945(2)**

Qualification of Personnel

8. To gain MAA Approval for the number of individuals and their requisite qualifications, the Mil CAMO **should**:
- a. Make an analysis of the tasks to be performed and the way in which it intends to divide and / or combine these tasks. This **should** include any Mil CAMO Subcontracted tasks⁸ carried out by other organizations on the Mil CAMO's behalf.
 - b. Indicate how it intends to assign responsibilities.
 - c. Establish the workforce resource and the qualifications needed to perform the tasks.
 - d. This analysis **should** be updated when significant changes in the tasks occur, relevant to the number and qualifications of persons needed.
9. Adequate initial and recurrent training **should** be provided and recorded to demonstrate continued Competence.

**Guidance
Material
4945(2)**

Qualification of Personnel

10. The actual number of people to be employed and their necessary qualifications are dependent upon:
- a. The size and complexity of the organization.
 - b. The number, complexity and age of the Air Systems.
 - c. The operational profiles and the amount and complexity of Maintenance to be carried out.
11. The number of people needed and their qualifications may differ greatly from one organization to another and a simple formula covering the whole range of possibilities is not feasible.

**Regulation
4945(3)**

Personnel Competence and MRP Part M Authorization

- 4945(3) The Mil CAM **shall** establish the Competence and control the Authorization⁹ of personnel making Airworthiness or Aircraft Maintenance Programme (AMP) decisions on behalf of the Mil CAM, or conducting other specific tasks for which the Mil CAM is responsible. In addition to the necessary expertise related to the job function, Competence **shall** include the understanding of relevant Mil CAMO governance, procedures and MRP Part M Regulation.

⁸ Refer to RA 4961(2): Military Continuing Airworthiness Management Organization Responsibilities Prior to the Release of an Air System.

⁹ Refer to RA 1006 – Delegation of Engineering Authorizations.

**Acceptable
Means of
Compliance
4945(3)**

Personnel Competence and MRP Part M Authorization

12. All personnel who perform tasks or make decisions on behalf of the Mil CAM, including Contracted¹⁰ staff, **should** be trained, assessed as Competent⁶ and authorized for specific Part M tasks, including, but not limited to:
- a. The extension of Preventive Maintenance, or the deferment of Corrective Maintenance⁸.
 - b. Cannibalizations.
 - c. The amendment or replacement of CAw Records, or access to quarantined CAw Records¹¹.
 - d. The Audit of Airworthiness data in support of Airworthiness Information Management processes¹².
 - e. The Approval of Mil CAMO Instructions¹³.
13. Individuals conducting a Competence assessment of personnel employed in specific Part M tasks, **should** ensure that those being assessed have received an appropriate level of training or familiarization on the Air System type and relevant organization procedures prior to being authorized.
14. Part M Authorizations **should** be recorded using a system that is auditable.
15. Where Part M activity is formally Subcontracted outside of the Mil CAMO the Mil CAM **should** seek Assurance that those Subcontracted staff are suitably trained, assessed as Competent and authorized. This **should** be detailed within the organization's CAME.

**Guidance
Material
4945(3)**

Personnel Competence and MRP Part M Authorization

16. There is no requirement to issue separate Authorizations for tasks listed at Para ► 12 ◀ a-c where Civil Aviation Authority (CAA) Part-66 – Aircraft Maintenance Licencing and / or CAA nominated personnel Approvals via an SRG 1769 are in place¹⁴.

¹⁰ Refer to RA 4956 – Military Continuing Airworthiness Management Organization Tasks Performed by Other Organizations – MRP Part M Subpart G.

¹¹ Refer to RA 4964(2): Continuing Airworthiness Records.

¹² Refer to RA 1223(2): Airworthiness Information Management.

¹³ Refer to RA 4966(1): Use of Military Continuing Airworthiness Management Organization Instructions.

¹⁴ CAA Part-66 Aircraft Maintenance License holders may exercise privileges, as governed by CAA 66.A.20, without the need for Mil CAMO to issue separate MRP Part M authorizations to those personnel.

RA 4947 - Continuing Airworthiness Management - MRP Part M Subpart G

Rationale

For a Military Continuing Airworthiness Management Organization (Mil CAMO) to be approved by the MAA it will have adequate procedures for ensuring the Continuing Airworthiness Management of its Air Systems. If these procedures do not address all of the tasks required to maintain Airworthiness, an Air System could be released for flight in a non-airworthy condition. This RA identifies the minimum activity ►required for◀ a Mil CAMO ►◀ to ensure the Airworthiness of Air Systems in their Area of Responsibility, ►and to support the Air Safety Management System (ASMS), and provide Continuing Airworthiness (CAw) evidence into the Air System Safety Case (ASSC).◀

Contents

4947(1): Military Continuing Airworthiness Management Organization Responsibilities

Regulation 4947(1)

Military Continuing Airworthiness Management Organization Responsibilities

- 4947(1) For all Air Systems within the organization's Continuing Airworthiness Management Exposition (CAME), the approved Mil CAMO **shall**:
- a. Develop and control an Aircraft Maintenance Programme (AMP), support any applicable reliability programme and propose amendments and additions to the Maintenance schedule to the Type Airworthiness Authority (TAA)¹.
 - b. Manage the embodiment of Modifications and Repairs.
 - c. Ensure that all Maintenance is carried out to the required Quality and in accordance with (iaw) the AMP, and correctly released^{2, 3}.
 - d. Ensure that all applicable Special Instructions (Technical) (SI(T)) have their requirements fulfilled.
 - e. Ensure that Military Maintenance Organizations (MMOs) and / or MRP Part 145 Approved Maintenance Organizations (AMOs) correctly manage Faults reported, or discovered, during scheduled Maintenance².
 - f. Co-ordinate scheduled Maintenance, fulfilling the requirements of SI(T)s and the replacement of ►parts that have reached their certified life limit.◀
 - g. Manage and archive all CAw records and the operator's technical log.

¹ 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..

² Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50).

³ Refer to RA 4961 – Aircraft Maintenance Programme and Military Continuing Airworthiness Management Organization Responsibilities for Air System release - MRP Part M Subpart C.

**Regulation
4947(1)**

- h. Conduct Assurance that the weight and moment statement reflects the current status of the Aircraft.
- i. Initiate and coordinate any necessary actions and follow-up activity highlighted by an Occurrence report.

**Acceptable
Means of
Compliance
4947(1)**

Military Continuing Airworthiness Management Organization Responsibilities

4947(1)

1. For those Mil CAMOs which use Civil Aviation Authority Approved organizations via a Contracted arrangement⁴, the Mil CAM **should** rigorously demonstrate what Assurance and control measures will be employed by the Mil CAMO to ensure the Airworthiness of the Air System for any CAW Responsibilities conducted by other parties⁵.

4947(1)a

2. For all Air Systems within the organization's CAME, the approved Mil CAMO **should** refer to RA 4961³.

3. The Military Continuing Airworthiness Manager (Mil CAM) **should** support the TAA with CAW decisions when an Out of Service Date Extension Programme is being developed. Specific consideration **should** be given to any previous cost benefit analysis on Modifications not carried out⁶.

4947(1)b

4. For all Air Systems within the organization's CAME, the approved Mil CAMO **should** refer to RA 4963⁷.

4947(1)c

5. For all Maintenance activity the Mil CAMO **should** agree the work package content with the Maintenance Organization (MO) conducting the work and receive Assurance of its satisfactory completion.

6. The Mil CAMO **should**:

- a. Facilitate access for the MO to the applicable current Approved Data, including that relating to Modifications and Repairs.
- b. Be responsible for the management and oversight of any issues arising from Maintenance including the delivery and acceptance processes.
- c. Conduct input and output meetings for each Air System to establish the required Maintenance (including any applicable Modifications, Repairs, SI(T)s and upgrades) and receive Assurance of its satisfactory completion.
- d. Manage the completion or deferment of emergent work, seeking and obtaining Technical Information (TI).

7. The Mil CAMO **should** maintain an airworthy fleet, and conduct Assurance on the standard of output from any MO.

- a. Where the Mil CAMO and MO share the same Quality ► **Management** ◀ System ► (QMS), ◀ this could be achieved through the internal ► QMS ◀ process. For Contracted organizations, the Mil CAMO **should** ensure appropriate Contract cover is in place to provide equivalent levels of Assurance.
- b. Where the Mil CAMO and MO do not share the same ► QMS, ◀ such Assurance **should** be achieved through either formal visits to the organization or external 2nd / 3rd party Assurance or Auditing.

⁴ Refer to RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered ► Aircraft. ◀

⁵ Refer to RA 4956 – Military Continuing Airworthiness Management Organization Tasks Performed by Other Organizations – MRP Part M Subpart G.

⁶ Refer to RA 5725 – Out of Service Date Extension Programme.

⁷ Refer to RA 4963 – Modifications and Repairs – MRP Part M Subpart C.

**Acceptable
Means of
Compliance
4947(1)**

c. ► If Aircraft Cross Maintenance (ACM)⁸ by MMOs of foreign nations is conducted on a UK Air System, the Mil CAMO **should** detail in the CAME any necessary Assurance arrangements iaw the Recognition⁹ Implementing Arrangement (RIA) and associated Technical Annexes, and / or Command level agreement. ◀

8. The Mil CAMO **should** conduct Assurance of the support Contract and framework where the Air System and / or component Maintenance has been Contracted out to an MO on behalf of the CAMO by a Contracting agent (eg Delivery Team (DT)).

9. The Mil CAMO **should** acknowledge receipt if notified by a MO that they intend to deviate from TI². The Mil CAMO **should** consider the implications, providing comment on the deviation with a view to advising appropriate remedial action.

4947(1)d

10. For all Air Systems within the organization's CAME, the approved Mil CAMO **should** refer to RA 4962¹⁰.

4947(1)e

11. The Mil CAMO **should** ensure the use of a ► **Competent** ◀ MO to conduct Corrective Maintenance. The Mil CAMO **should** conduct Assurance to check that the MOs use appropriately Authorized personnel for the tasks.

12. The Mil CAMO **should** review Limitations / Acceptable Deferred Faults to:

- a. Highlight and address adverse trends, notifying these to the TAA, Delivery Duty Holder (DDH) or Accountable Manager (Military Flying) (AM(MF)) as appropriate.
- b. Identify any cumulative Risk.
- c. Ensure that, for out-of-limits Faults and damage, advice has been sought from the TAA on Airworthiness Risk.

13. The Mil CAMO **should** ensure that a register is maintained of reported instances of Air Systems displaying Uncommanded Flying Control Movements, Control Restrictions or other abnormal flying characteristics, with any detected trends being thoroughly investigated¹¹.

4947(1)f

14. The Mil CAMO **should** plan and control all Maintenance activity, including the use of latitudes, deferments or Concessions as part of the fleet management task.

15. The Mil CAMO **should** inform the ► **DDH** ◀ or AM(MF) if there are any significant aspects of Maintenance that cannot be carried out and advise of the implications.

16. Where a ► **part's certified life limit** ◀ cannot be ascertained, the Mil CAMO **should** ensure that it is not used until such life can be determined, recovered or the part disposed of.

4947(1)g

17. For all Air Systems within the organization's CAME, the approved Mil CAMO **should** refer to RA 4964¹².

4947(1)h

18. The Mil CAMO **should** conduct Assurance of the weight and moment statement to check that it reflects the current status of the Air System.

⁸ ► Refer to 4800 – General Requirement (MRP Part 145)

⁹ Recognition is the process used to evaluate other Military aviation regulators and assess the potential to use their Airworthiness outputs within MAA processes, see [MAA Recognition](#). ◀

¹⁰ Refer to RA 4962 – Special Instructions (Technical) – MRP Part M Subpart C.

¹¹ Refer to RA 4061 – Air Systems Displaying Abnormal Flying Characteristics.

¹² Refer to RA 4964 – Continuing Airworthiness Management Records – MRP Part M Subpart C.

**Acceptable
Means of
Compliance
4947(1)**

4947(1)i

19. The Mil CAMO **should** maintain oversight of Occurrence reports¹³ raised and subsequent action. Occurrence reports include, but are not limited to, Defence Air Safety Occurrence Reports (DASORs), Narrative Fault Reports and Serious Fault Reports.

20. The Mil CAMO **should** report to the TAA, any identified condition of an Air System, component or Maintenance procedure that endangers Air Safety as identified by the Mil CAMO.

21. Where an Air System Occurrence report has an Airworthiness aspect, the Mil CAMO **should** ensure the investigation of the Occurrence and subsequent recovery of the Air System (including any associated components) is robust.

22. Where the Occurrence report has a CAW implication for the fleet, the Mil CAMO **should** ensure that appropriate remedial action is taken to minimize ► **the likelihood of repetition of the Occurrence**. ◀ This could include:

- a. Changes to the AMP.
- b. Addressing Human Factors issues (which could include training, working conditions, etc).

23. Where the Occurrence report has a TAW implication the Mil CAMO **should** confirm that appropriate remedial action is being taken by the TAA / Original Equipment Manufacturer. This could be achieved by:

- a. Raising a MOD Form 760¹⁴ or equivalent.
- b. Identifying the requirement for a Follow Up Report to the Occurrence report to be carried out by the TAA¹³.

24. The Mil CAMO **should** ensure that appropriate follow-up activity to relevant Occurrence reports is completed, keeping the DDH or AM(MF) apprised of any significant Airworthiness issues. This includes ensuring the satisfactory completion of the Maintenance aspects of the Air System's DASOR.

**Guidance
Material
4947(1)**

Military Continuing Airworthiness Management Organization Responsibilities

4947(1)

25. MRP Part M Subpart C is designed to directly support the Airworthiness tasks required by this RA. Compliance with Subpart C is necessary to achieve an Approval for MRP Part M Subpart G. Consequently, a separate Subpart C Approval is not required.

4947(1)a

26. Nil.

4947(1)b

27. Nil.

4947(1)c

28. Nil.

4947(1)d

29. Nil.

4947(1)e

30. Nil.

4947(1)f

31. Nil.

¹³ Refer to RA 1410 – Occurrence Reporting and Management.

¹⁴ Refer to MOD Form 760 – Narrative Fault Report.

**Guidance
Material
4947(1)****4947(1)g**

32. Nil.

4947(1)h

33. Although assured by the Mil CAMO, the Mil CAMO itself is not responsible for carrying out the weighing activity.

4947(1)i

34. Nil.

Intentionally Blank for Print Pagination

RA 4948 - Documentation - MRP Part M Subpart G

Rationale

Approved Data includes Technical Information (TI) and any approved associated documentation that is deemed essential to meet the requirements for sustaining Continuing Airworthiness. This can include the information necessary to operate, maintain, Repair, support and dispose of equipment throughout its operating life. Without careful management of Approved Data there is an increased likelihood of Maintenance activity being missed, completed incorrectly or not completed. This will undermine the Continuing Airworthiness of the Air System. ► **This RA** ◀ provides clear direction to the Military Continuing Airworthiness Management Organization (Mil CAMO) to hold and use up to date TI regardless of the medium used and where or who is required to use it.

Contents

4948(1): Documentation

Regulation 4948(1)

Documentation

4948(1) The Mil CAMO **shall** hold and use applicable current TI in the performance of RA 4947¹ Continuing Airworthiness Management tasks.

Acceptable Means of Compliance 4948(1)

Documentation

1. The ► **Military Continuing Airworthiness Manager (Mil CAM)** ◀ **should** establish appropriate procedures for ensuring that the TI is current.
2. Where hard-copy publications are employed, the ► **Mil CAM** ◀ **should** ensure that they are available in sufficient quantity, quality and are at the correct amendment state.
3. Where digital publications are employed, the ► **Mil CAM** ◀ **should** ensure that the Maintenance organization has ► **unrestricted** ◀ access to TI, which includes sufficient quantities of IT equipment appropriate to the environment.
4. Where pre-printed Maintenance Work Orders are developed, the ► **Mil CAM** ◀ **should** ensure that these continue to reflect the requirements of the Aircraft Maintenance Programme and Air System Document Set (ADS).

Guidance Material 4948(1)

Documentation

5. Applicable TI is:
 - a. ► ◀ Instructions for Continuing Airworthiness contained within the ADS►²◀, issued by the Type Airworthiness Authority (TAA) ►³◀, noting particular emphasis, but not limited to, any applicable Special Instructions (Technical) (SI(T)).
 - b. Mil CAMO Instructions⁴ ► ◀ to satisfy a temporary need in lieu of a change to the ADS or the production of a SI(T) by the TAA.
 - c. Any applicable data issued in accordance with RA 4810⁵. Obsolescent Defence Standards will not be updated ► **but may** ◀ be referenced for the Maintenance of legacy equipment. ► **They may not be used for the**

¹ Refer to RA 4947 – Continuing Airworthiness Management - MRP Part M Subpart G.

² ► Refer to RA 5815 – Instructions for Sustaining Type Airworthiness.

³ 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. ◀

⁴ Refer to RA 4966 – Military Continuing Airworthiness Management Organization Instructions – MRP Part M Sub Para C.

⁵ Refer to RA 4810 – Technical Information (MRP 145.A.45).

**Guidance
Material
4948(1)**

Maintenance of newly procured equipment. ◀

d. Any applicable requirement, procedure, ▶ **process**, ◀ standard or information issued by the MAA.

RA 4951 - Quality ► Management ◀ System - MRP Part M Subpart G

Rationale

An effective Quality ► Management ◀ System ► (QMS) ◀ is a vital element of the Military Continuing Airworthiness Management Organization (Mil CAMO) and underpins the Continuing Airworthiness of all the Air Systems identified in the Continuing Airworthiness Management Exposition (CAME). Regardless of who or where Subcontracted Airworthiness tasks are being conducted, the purview of the ► QMS needs ◀ to encompass all activities and relevant supporting organizations to ensure the Airworthiness management of its Air Systems is at the required standard. Unmonitored or unassured activity can lead to a loss of configuration, which could significantly increase the Risk to Life ► ◀. This RA provides for the establishment of an independent ► QMS ◀ and Mil CAMO Quality Manager (Mil CAMO QM) which is essential Assurance activity for sustaining Airworthiness of Air Systems and ensuring Air Safety.

Contents

4951(1): Establishing a Quality ► Management ◀ System

4951(2): Functions of the Quality ► Management ◀ System

4951(3): Retention of Quality ► Management ◀ System Records

Regulation

4951(1)

Establishing a Quality ► Management ◀ System

4951(1) The Military Continuing Airworthiness Manager (Mil CAM) **shall** establish an independent ► QMS ◀ and designate a Mil CAMO QM to monitor compliance with, and the adequacy of, procedures required to ensure Airworthy Air Systems. Compliance monitoring **shall** include a feedback system to the Delivery Duty Holder (DDH) or Accountable Manager (Military Flying) (AM(MF)) to ensure corrective action is completed as necessary.

Acceptable Means of Compliance

4951(1)

Establishing a Quality ► Management ◀ System

1. The Mil CAM **should** appoint a Mil CAMO QM. The Mil CAMO QM **should**:
 - a. Be able to demonstrate ► ◀ direct access to the DDH or AM(MF) on matters concerning the ► QMS, ◀ with that relationship reflected in the CAME.
 - b. Highlight non-compliances and poor standards to the Mil CAM.
 - c. Be responsible for follow up or closure of any ► QMS ◀ findings.
 - d. Have successfully completed all relevant Air Safety training courses¹. ► If the designated QM is not yet fully qualified, the relevant DDH / AM(MF) **should** consider the additional residual Risk introduced by the appointment and;
 - (1) 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 MAA².
 - (2) 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 application³. ◀
 - e. Have a thorough knowledge of the organization's CAME.

¹ Refer to RA 1440 – Air Safety Training.

² DSA-MAA-OA-ACC@mod.gov.uk.

³ ► Refer to MAA03: MAA Regulatory Processes Annex B: Air Safety Alternative Acceptable Means of Compliance, Waivers and Exemptions. ◀

Acceptable Means of Compliance 4951(1)

- f. Where they are non-Crown Servants, have their appointment endorsed by the MAA through the submission and Approval of a MAA MAOS / CAMO Form 4⁴.
2. The scope of the ►QMS◄ **should** cover all Continuing Airworthiness activities including those Subcontracted.
 3. Procedures **should** be subject to periodic review. It is the Responsibility of all personnel to report any difficulties with the procedures via their organization's internal feedback mechanisms.
 4. The feedback part of the system **should** address who is required to rectify any non-compliance in each particular case and the procedure to be followed if rectification is not completed within appropriate timescales; the feedback system **should** be directed to the DDH or AM(MF) through the Mil CAM.
 5. The independent Quality Audit reports **should** be sent to the relevant department for rectification action giving target deadline dates. These dates **should** have been previously discussed with the department. The relevant department is required to rectify findings and inform the Mil CAMO QM or the Quality Auditor of such rectification.
 6. The Mil CAM **should** hold regular meetings with corrective action plan owners to check progress on rectification. Such meetings may be delegated on a routine basis to the Mil CAMO QM, subject to the Mil CAM meeting at least twice per year with the personnel involved to review the overall performance.
 7. ►The Mil CAMO QMS **should** operate as an integrated part of its parent organization's Air Safety Management System (ASMS)⁵, and any necessary implementing arrangements **should** be clearly articulated in the CAME.◄

Guidance Material 4951(1)

Establishing a Quality ►Management◄ System

8. The Mil CAMO ►QMS◄ may be combined with the ►QMS◄ of other Service or MAA-approved organizations if appropriate. Such arrangements ►will◄ be clearly articulated in the CAME.
9. The scope of the Mil CAMO ►QMS◄ will cover all Maintenance activity on Air Systems that the Mil CAMO is responsible for, both on and off platform, including Contracted Depth Maintenance.
10. The term independence in respect of this RA refers to the need of those undertaking Quality activity to be independent from the task rather than from the Mil CAMO.
11. The MAA MAOS / CAMO Form 4 can be found on the MAA Website►4◄.

Regulation 4951(2)

Functions of the Quality ►Management◄ System

- 4951(2) The ►QMS◄ **shall** monitor all Mil CAMO activities. It **shall** include the following functions, as a minimum:
- a. Assurance of personnel Competence.
 - b. Assurance of all CAMO tasks, processes, orders and procedures.
 - c. Assurance of CAME compliance with Regulation.
 - d. Assurance of Alternative Acceptable Means of Compliance, Waivers and Exemption (AWE) submissions and subsequent AWE management.

⁴ Refer to the MAOS / CAMO Form 4 – Details of Nominated Personnel ► <https://www.gov.uk/government/publications/regulatory-article-ra-4806-personnel-requirements-mrp-145a30>.◄

⁵ ►Refer to RA 1200 - Air Safety Management.◄

Regulation 4951(2)

- e. Assurance of Maintenance activity conducted by Maintenance Organizations (MO) is adequate for maintaining the Continuing Airworthiness of their Air Systems.
- f. Assurance of all Contracted Maintenance carried out in accordance with (iaw) the Air System Document Set (ADS).
- g. Assurance of continued compliance with the requirements of MAA Approval of the Mil CAMO.
- h. Assurance of all Mil CAMO activities being performed iaw RA 4900 - 4974 (MRP Part M).

Acceptable Means of Compliance 4951(2)

Functions of the Quality ► Management ◀ System

12. The independent Quality Audit **should**:
 - a. Conduct Verification and Validation of all procedures and changes to the procedures within the CAME.
 - b. Use product sampling and sample checks.
 - c. Reach across applicable organizations, including MO(s) (Forward and Depth (or Line and Base)), Delivery Team(s) (DT) and all Mil CAMO activity.
 - d. Ensure that all aspects of compliance are checked annually, including all the Subcontracted activities⁶. This may be carried out as a complete single exercise or subdivided over the annual period iaw a scheduled plan.
13. Where findings have been identified, the relevant procedure **should** be rechecked until the findings have been rectified, after which the independent Audit schedule may revert back to the annual interval for that procedure. Provided that there are no Safety related findings, the Audit time periods specified may be increased by the Mil CAM but this **should not** exceed 100% (ie to a 2 year cycle).
14. Where the organization has more than one location approved, the ► QMS ◀ **should** describe how these are integrated into the system and include a plan to Audit each location every year.
15. A report **should** be raised each time an Audit is carried out describing what was checked and the resulting findings against applicable requirements, procedures and products.
16. The independence of the Audit **should** be established by always ensuring that Audits are carried out by personnel not involved with the function, procedure or products being checked.
17. An organization **should** establish a Quality plan to show when and how often the Mil CAMO activities will be Audited.
18. All non-conformities and non-compliances **should** be investigated and rectified using a Root Cause Analysis (RCA) approach, tool, or techniques⁷. Instructions for the use of RCA **should** be detailed in Part 2 of the CAME.

Guidance Material 4951(2)

Functions of the Quality ► Management ◀ System

19. The independent Audit represents an objective overview of all Mil CAMO related activities. It is intended to complement the Military Airworthiness Review, to ensure that all Air Systems managed by the organization remain Airworthy. The independent Auditor cannot be directly involved with the task being Audited, though may be a part of the organization.

⁶ Refer to RA 4956 – Military Continuing Airworthiness Management Organization Tasks Performed by Other Organizations - MRP Part M Subpart G.

⁷ Further information may be found in Civil Aviation Authority - CAP1760 – Effective Problem Solving and Root Cause Identification Stage 6, refers. Available at: [http://publicapps.caa.co.uk/docs/33/CAP1760 Root Cause Identification Paper \(Issue 02 April 19\).pdf](http://publicapps.caa.co.uk/docs/33/CAP1760%20Root%20Cause%20Identification%20Paper%20(Issue%2002%20April%2019).pdf).

**Guidance
Material
4951(2)**

20. The independent Audit does not require each procedure to be checked against each Air System when it can be shown that the particular procedure is common to more than one Air System and the procedure has been checked every year without resultant findings.

21. In regards to Contracted Maintenance it may not be necessary for the Mil CAMO QM to Audit the supply chain through multiple levels of Subcontractors. ►◀ The Mil CAMO QM ►needs◀ to monitor the directly Contracted organization►8◀ and receive Assurance that Subcontractors are being appropriately monitored if the Contracted organization's own ►QMS◀ extends to cover their activity and the Mil CAM is able to monitor such Audit reports.

22. The Mil CAMO QM ►needs◀ to be mindful of the arrangements for access to Contracted and Subcontracted organizations. Where access for the Mil CAMO is not clearly stipulated in the contract, the Mil CAMO QM ought to pursue the contracting DT to amend the contract accordingly. The Mil CAMO QM may utilize a wide range of sources to monitor such organizations; for example where a DT utilizes a Government Quality Assurance Organization Contract Monitoring Team to conduct Assurance of Contracted Maintenance, evidence from such activity may be acceptable for Assurance purposes. In the event of disputed access to a Contracted organization, the Government Quality Assurance Representative (GQAR) may undertake Assurance activity, or alternatively may apply for GQAR status; further information may be found on the Knowledge in Defence (KiD)⁹ website typing 'Managing Quality' in the search bar.

**Regulation
4951(3)**

Retention of Quality ►Management◀ System Records

4951(3) The records of these activities **shall** be stored for at least two years.

**Acceptable
Means of
Compliance
4951(3)**

Retention of Quality ►Management◀ System Records

23. Mil CAMO Quality System Records **should** be categorized as Continuing Airworthiness Records¹⁰ and retained for at least two years.

**Guidance
Material
4951(3)**

Retention of Quality ►Management◀ System Records

24. RA 4964(2)¹⁰ provides additional details on record keeping requirements.

⁸ ► Refer to RA 1005 – Contracting with Competent Organizations. ◀

⁹ Refer to Knowledge in Defence at website - <https://www.gov.uk/guidance/knowledge-in-defence-kid>.

¹⁰ Refer to RA 4964(2): Continuing Airworthiness Records.

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

RA 4954 - Continued Validity of Approval - MRP Part M Sub Part G

Rationale

If a Military Continuing Airworthiness Management Organization (Mil CAMO) remains in compliance with the MRP and allows access to the Authority for Assurance purposes, it will retain its initial Approval for an unlimited duration. Non-compliance may result in loss of Approval and forfeiture of the controlled environment for the military registered Air Systems identified in its Continuing Airworthiness Management Exposition. This RA describes the requirements needed for Mil CAMOs to retain their Approval and provides direction following surrender, suspension or revocation of their Approval certificate.

Contents

4954(1): Continued Validity of Approval

4954(2): Approval Surrender, Suspension or Revocation

Regulation 4954(1)

Continued Validity of Approval

- 4954(1) An Approval **shall** be issued for an unlimited duration. It **shall** remain valid subject to:
- a. The Mil CAMO remaining in compliance with the MRP Part M Subpart G (and Subpart I where applicable), in accordance with (iaw) the provisions related to the handling of findings¹.
 - b. The MAA being granted access to the Mil CAMO to determine continued compliance with MRP Part M Subpart G (and Subpart I where applicable).
 - c. The Approval not being surrendered, suspended or revoked.

Acceptable Means of Compliance 4954(1)

Continued Validity of Approval

1. The Military Continuing Airworthiness Manager (Mil CAM) **should** confirm by email² at least every 3 years and prior to any formal MAA surveillance Audit that the contents of their Approval certificate and Exposition remain valid. Failure to provide the required confirmation may result in the suspension of the Approval.
2. Mil CAMOs that do not exercise their Approval within a 2 year period **should** surrender the Approval unless a contractual requirement for its retention can be demonstrated.

Guidance Material 4954(1)

Continued Validity of Approval

3. The 3 year period, detailed within paragraph 1, commences from whichever is the later date of either initial Approval or last formal MAA surveillance Audit.

Regulation 4954(2)

Approval Surrender, Suspension or Revocation

- 4954(2) Upon surrender, suspension or revocation, the Approval certificate **shall** be returned to the MAA.

¹ Refer to RA 4955 – Findings - MRP Part M Sub Part G.

² Confirmation of continued validity is to be sent to DSA-MAA-OA-ACC@mod.gov.uk.

**Acceptable
Means of
Compliance
4954(2)****Approval Surrender, Suspension or Revocation**

4. The Mil CAM **should** return the Approval certificate to the MAA upon surrender, suspension, or revocation.

**Guidance
Material
4954(2)****Approval Surrender, Suspension or Revocation**

5. Mil CAMO Approvals may only be suspended or revoked by the MAA, iaw MAA01³.

³ Refer to MAA01: Military Aviation Authority Regulatory Principles.

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

RA 4955 - Findings - MRP Part M Subpart G

Rationale

Following the Notification of an Assurance finding by the MAA on a Military Continuing Airworthiness Management Organization, it is essential that the Regulatory non-compliance or other non-conformance is appropriately addressed and actioned by the Military Continuing Airworthiness Manager (Mil CAM). If the findings are not acted upon by the Mil CAM, the Continuing Airworthiness of the Air System(s) may be compromised. This RA requires Root Cause Analysis (RCA) to be carried out on all findings, and observations (where applicable), to enable the identification and rectification of all issues, to reduce the likelihood of Reoccurrence.

Contents

4955(1): Findings

4955(2): Corrective Actions

4955(3): Observations

Regulation 4955(1)

Findings

4955(1) After receipt of notification of MAA findings the Mil CAM **shall** devise and execute a Corrective Action Plan (CAP) to demonstrate how the Finding and the Root Cause will be rectified to reduce the likelihood of Reoccurrence.

Acceptable Means of Compliance 4955(1)

Findings

1. All findings **should** be investigated and rectified using an RCA approach, tool, or technique¹. Instructions for the use of RCA **should** be detailed in Part 2 of the Continuing Airworthiness Management Exposition.
2. Issues or required work identified in an Aircraft Product Sample (APS) report², **should** be actioned to the satisfaction of the MAA within the period stipulated in the notification.
3. Where necessary the Mil CAM **should** take immediate containment actions to preserve Air Safety.
4. The CAP **should** be provided to the MAA in accordance with MAA03³ and include the RCA, corrective actions, preventative actions and the implementation plan.

Guidance Material 4955(1)

Findings

Findings

5. There are 2 types of MAA findings³, non-compliance and non-conformance, each of which can lead to the MAA raising a Corrective Action Requirement (CAR). Findings are sub-divided into 2 levels as follows:
 - a. Non-compliance:
 - (1) Level 1: A failure to meet MRP Part M Regulation, that could lead to a major Risk to Air Safety.
 - (2) Level 2: A non-compliance that is judged not to be a Level 1.
 - b. Non-conformance:
 - (1) Level 1: A deviation from or an omission of a requirement that may contribute to a major Air Safety Risk.

¹ Guidance can be found in Civil Aviation Authority – [CAP 1760 Effective Problem Solving and Root Cause Identification Stage 6](#) or [JSP 940 MOD Policy for Quality; Part 2: Guidance](#) and training is available through [MAA Training Courses](#) as applicable.

² Details of issues and work required are found in the APS Report Annex A: MAA APS Summary of Areas Requiring Further Attention.

³ Refer to MAA03: MAA Regulatory Processes: Annexe F: MAA Assurance.

**Guidance
Material
4955(1)**

(2) Level 2: A non-conformity that is judged not to be a Level 1.

6. Issues or required work identified in an APS report² may not be non-conformities or non-compliances that necessarily lower the Safety standard and possibly compromise Air Safety. The action taken by the Mil CAM against each Annex A serial needs to be proportionate following evaluation. An entry in the Air System Technical Log, receipt of Type Airworthiness Authority (TAA)⁴ technical advice or similar action, may be all that is required to close out an individual APS Report Annex A serial to the satisfaction of the MAA. Following evaluation, in some circumstances it will be necessary to conduct further investigation, RCA and develop a Corrective Action Plan.

Route Cause Analysis

7. RCA is meant to focus on why the finding occurred not the who or what was responsible. Establishing the root Cause(s) often requires an overarching view of the events and circumstances that led to it, to identify all the possible systemic and contributing factors (regulatory, technical, human, organizational, etc.) in addition to the direct factors.

8. A narrow focus on single events or failures, or the use of a simple, linear model, such as a Fault Tree Analysis, to identify the chain of events that led to the finding may not properly reflect the complexity of the issue, increasing the Risk that important factors to be addressed to prevent a Reoccurrence will be missed. An inappropriate or partial RCA could lead to 'quick fixes' that only address the symptoms of the finding.

9. A peer review of the results of the RCA may increase its reliability and objectivity.

**Regulation
4955(2)**

Corrective Actions

4955(2) The actions in the CAP **shall** be implemented to the satisfaction of the MAA and within the agreed timescales³.

**Acceptable
Means of
Compliance
4955(2)**

Corrective Actions

10. After receipt and acceptance of the CAP has been confirmed by the MAA, the Mil CAM **should** implement the actions within the agreed period.

11. The Mil CAM **should** inform the MAA when the CAP has been completed and provide sufficient evidence to justify closure.

**Guidance
Material
4955(2)**

Corrective Actions

12. CAPs generated by the Mil CAM in response to issues identified in an APS report Annex A that are not non-compliances or non-conformances as per Guidance Material Paragraph 6 of this RA, do not need to be submitted to the MAA but will be retained as a record.

**Regulation
4955(3)**

Observations

4955(3) Any observations³ noted during MAA Audits **shall** be given due consideration by the Mil CAM, and any decisions taken in respect of those observations recorded.

**Acceptable
Means of
Compliance
4955(3)**

Observations

13. For each negative observation notified by the MAA, the Mil CAM **should** analyse the related issues and determine when actions are needed.

14. The Mil CAM **should** record the analysis and the outputs, such as the actions taken or the reasons for not taking actions.

⁴ Where the Air System is not UK MOD-owned, Type Airworthiness (TAW) management regulatory Responsibility by either the TAA or Type Airworthiness Manager (TAM) needs to be agreed within the Sponsor's approved model; refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems, or refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems. Dependent on the agreed delegation of TAW Responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

**Guidance
Material
4955(3)****Observations**

15. The handling of the observations may follow a process similar to the handling of findings by the Mil CAM.

Intentionally Blank for Print Pagination

RA 4956 - Military Continuing Airworthiness Management Organization Tasks Performed by Other Organizations - MRP Part M Subpart G

Rationale

The Continuing Airworthiness (CAw) management of Air Systems is a complex task, which is to be solely managed by a single organization – namely the Military Continuing Airworthiness Management Organization (Mil CAMO). Many CAw tasks may be conducted by other parties, such as contractors. The mismanagement or the loss of control of these tasks will compromise Air Safety and undermine any Risk to Life arguments presented by the Aviation Duty Holder or Accountable Manager (Military Flying) (AM(MF)). ► This RA ◀ requires ► ◀ all Subcontracted CAw tasks remain the responsibility of the Military Continuing Airworthiness Manager (Mil CAM) regardless of who or where they are being conducted, ensuring the Air Systems remain Airworthy.

Contents

4956(1): Subcontracting of Military Continuing Airworthiness Management Organization Tasks

Regulation 4956(1)

Subcontracting of Military Continuing Airworthiness Management Organization Tasks

4956(1) The Mil CAM **shall** retain responsibility for all CAw tasks carried out on behalf of the Mil CAMO by other parties.

Acceptable Means of Compliance 4956(1)

Subcontracting of Military Continuing Airworthiness Management Organization Tasks

1. Where tasks are carried out on behalf of the Mil CAMO by other parties, the Mil CAM **should** ensure that such activity is sufficient to fulfil CAw requirements and that adequate Assurance and control measures are in place.
2. Where another department within the same organization is performing tasks for which the Mil CAMO is responsible ► ◀, eg typically within a Ministry of Defence (MOD) Delivery Team (DT), then the Mil CAM **should** establish a documented agreement with that department to demonstrate sufficient control of their responsibilities. The agreement **should**:
 - a. Explicitly name the department and the Mil CAMO.
 - b. Define what responsibilities the department fulfils on behalf of the Mil CAMO and the post title of the person responsible for their delivery.
 - c. Define the number and Competence of personnel committed to these tasks to the satisfaction of the Mil CAMO¹.
 - d. Define a ► procedure ◀ by which changes to the resourcing of tasks are communicated and agreed.
 - e. Be referenced in the Continuing Airworthiness Management Exposition (CAME).
 - f. ► Be endorsed by both parties. ◀
3. Commercial contracts for the completion of Mil CAMO tasks **should not** authorize the Subcontracted organization to further Subcontract elements of the CAw management tasks to other organizations. In this regard however, the documented agreement in paragraph 2 above is not considered a level of commercial contract.
4. Contracts placed for the conduct of Mil CAMO activity **should** guarantee access for the conduct of Quality Audits².

¹ Refer to RA 4945 – Personnel Requirements - MRP Part M Subpart G.

² Refer to RA 4951 – Quality System - MRP Part M Subpart G.

**Guidance
Material
4956(1)****Subcontracting of Military Continuing Airworthiness Management
Organization Tasks**

5. ▶ In this RA ◀ the term “another department within the same organization” refers to arrangements that are made across Top Level Budget holders. Within a large contractor organization, the term may be interpreted as being where the department is not under the control of the AM(MF). The intent of the documented agreement is to ensure that the Mil CAMOs are able to demonstrate appropriate ▶ control ◀ of CAw activity on their Air Systems. The documented agreement may be a separate contract referenced in the CAME, or an Annex to the CAME. ▶ ◀

6. Depending on the construct of the organization it may be appropriate for some Mil CAMO functions to be Subcontracted, delegated to, or carried out by, other organizations (MOD or Contractor) on behalf of the Mil CAMO. This may include ▶ Civil Aviation Authority ◀ approved CAMOs³ ▶ within the defined ◀ scope, conducting tasks on behalf of the Mil CAM.

7. For the avoidance of doubt, the Mil CAM retains responsibility for all Mil CAMO functions irrespective of who is discharging them or where they are being discharged. Eg Mil CAMO tasks may be discharged by a variety of MOD departments such as a DT, and it may be appropriate for these tasks to be Subcontracted ▶ (see paragraph 3) ◀ to commercial organizations. However, the conduct of these ▶ Mil CAMO ◀ tasks remains the responsibility of the Mil CAM and ▶ ◀ may not be further Subcontracted by the contracted commercial entity.

³ Refer to ▶ RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered Air Systems. ◀

RA 4961 - Aircraft Maintenance Programme and Military Continuing Airworthiness Management Organization Responsibilities for Air System Release - MRP Part M Subpart C

Rationale

The Type Airworthiness Authority (TAA)¹ publishes the Air System Maintenance requirements in the Air System Technical Information (TI). If these requirements are not carried out, the Airworthiness of the Air System may be compromised. **This RA** requires the Military Continuing Airworthiness Management Organization (Mil CAMO) to use an Aircraft Maintenance Programme (AMP) to ensure all necessary Air System Corrective and Preventive Maintenance is carried out before flight. This requires consideration of several factors, including the environment the Air System is operated in. Where this is not possible, the Maintenance is to be formally deferred by a Competent and authorized individual who has assessed the Air System as airworthy.

Contents

4961(1): Aircraft Maintenance Programme

4961(2): Military Continuing Airworthiness Management Organization Responsibilities Prior to the Release of an Air System

4961(3): Reliability Programme

Regulation 4961(1)

Aircraft Maintenance Programme

4961(1) The Military Continuing Airworthiness Manager (Mil CAM) **shall** ensure all Air Systems identified in their Continuing Airworthiness Management Exposition (CAME) are maintained to the requirements of the applicable TI.

Acceptable Means of Compliance 4961(1)

Aircraft Maintenance Programme

1. The **Mil CAM** **should** ensure that each Air System's Maintenance is planned using an AMP. The AMP **should** detail all the Maintenance requirements for that Air System, including as a minimum:
 - a. TAA approved Maintenance schedules².
 - b. Other TAA produced TI (including Special Instructions (Technical³)).
 - c. Locally produced TI (including Mil CAMO Instructions⁴).
 - d. Environmental factors².
 - e. Embodiment of Modifications.
 - f. Deferred Corrective Maintenance requirements that have been identified.
2. The **Mil CAM** **should** have a **procedure**⁵ for continually maintaining the AMP **and checking its effectiveness**. The **procedure** **should** ensure the AMP is compliant with the applicable TI and in concurrence with the protocols required by the TAA⁶.
3. Where the operating environment may affect the Continuing Airworthiness of the Air System and no mitigating action is included in the TI, the Mil CAMO **should**

¹ **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.**

² **Including body fluid removal, refer to RA 4103 – Removal of Body Fluid Contamination from Aircraft.**

³ Refer to RA 4962 – Special Instructions (Technical) – MRP Part M Subpart C.

⁴ Refer to RA 4966 – Military Continuing Airworthiness Management Organization Instructions – MRP Part M Sub Para C.

⁵ Refer to RA 4943 – Continuing Airworthiness Management Exposition – MRP Part M Subpart G.

⁶ Refer to RA 5320 – Air System Maintenance Schedule – Design **and Validation**.

Acceptable Means of Compliance 4961(1)

consult with the TAA to determine appropriate mitigating activity for subsequent inclusion in the AMP.

4. The ►Mil CAM◀ **should** agree the AMP work package content with the relevant Maintenance organization and ensure its satisfactory completion before flight.

Guidance Material 4961(1)

Aircraft Maintenance Programme

Producing the AMP

5. The AMP is a planning system that may be managed through a series of tools incorporating different levels of detail (eg combining a high-level fleet plan, a more detailed long forecast and a highly detailed short forecast). The AMP as a whole needs to be of sufficient detail to ensure an Air System does not fly without completing or formally deferring each serial of Maintenance that is due.

6. Flight Servicing is considered to be Preventive Maintenance, which is to be managed according to the principles laid out in this Regulation and hence described in the AMP.

7. In addition to the minimum requirements at paragraph 1, the AMP may include elements such as Ageing Air System Audits, specific integrity inspection programmes, sampling requirements and any other actions the Mil CAMO or TAA require to ensure the Airworthiness of the Air System.

8. For Air Systems not operating in the Service Environment►7◀ it is accepted that the TAA may not publish all Air System Maintenance requirements. In such circumstances the Sponsor of the Air System will ►conduct Assurance to confirm◀ that appropriate Air Safety arrangements are in place►7◀ and where necessary the TAA will ensure that the operator receives all relevant TI►7◀.

Review

9. ►The Mil CAM may check the effectiveness of the AMP through a number of different processes, such as◀ the Military Airworthiness Review ►procedures◀, other Mil CAMO tasks, the condition of individual Air Systems, product sampling, sample checks, receipt checks from Depth and the condition of the fleet as a whole.

Regulation 4961(2)

Military Continuing Airworthiness Management Organization Responsibilities Prior to the Release of an Air System

4961(2) The ►Mil CAM◀ **shall** ensure all planned Corrective and Preventive Maintenance has been completed and documented prior to an Air System being Released for Flight.

Acceptable Means of Compliance 4961(2)

Military Continuing Airworthiness Management Organization Responsibilities Prior to the Release of an Air System

10. The ►Mil CAM◀ **should** ensure that prior to an Air System being released for Flight, all Corrective and Preventive Maintenance due before the end of the planned Period of Operation has been completed and documented in the Air System technical log⁸.

11. The ►Mil CAM◀ **should** have ►a procedure◀ in place to ensure all tasks have been completed prior to flight.

12. ►The Mil CAM **should** ensure appropriate loose article recovery actions have been completed prior to flight, if required⁹.◀

13. Where extensions to Preventive Maintenance are permitted by the applicable TI, the ►Mil CAM◀ **should** detail the ►◀ procedures for assessing the Airworthiness impact and recording¹⁰ the applied latitude. This **should** include as a minimum:

⁷ ►Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.◀

⁸ Refer to RA 4964(1): Continuing Airworthiness Record Keeping.

⁹ ►Refer to RA 4253 – Loose Article Recovery.◀

¹⁰ In the MOD Form 700 / Air System technical log.

**Acceptable
Means of
Compliance
4961(2)**

- a. Why the deferment applies.
- b. Why the deferment does not compromise Airworthiness¹¹.
- c. When the Maintenance is to be conducted.
- d. The Competent¹² and authorized individual who approved the decision.

14. Where Corrective Maintenance or Faults that exceed the limits laid down in TI are deferred, the ►Mil CAM◄ **should** detail the ►◄ procedures for assessing the Airworthiness impact and recording⁵ the applied latitude as described in paragraph ►13◄.

**Guidance
Material
4961(2)**

Military Continuing Airworthiness Management Organization Responsibilities Prior to the Release of an Air System

15. Following the Certification of Air System Release¹³, a check that there is no more Maintenance outstanding before the end of the next flight needs to be carried out and recorded by a suitably Competent Person.
16. For Maintenance organizations using MOD Form 700 Series paperwork ►14◄ to record Air System Maintenance, the requirement for recording the check outlined in paragraph ►15◄ is met through co-ordination of the documentation using the MOD Form 705.
17. If anticipating Maintenance, the Mil CAMO will consider any Airworthiness Risk that may be inadvertently introduced.
18. Individuals deferring Preventive Maintenance are subject to the appropriate Competence requirements¹².

**Regulation
4961(3)**

Reliability Programme

4961(3) The Mil CAM **shall** ensure all Air Systems identified in their CAME are subject to a reliability programme.

**Acceptable
Means of
Compliance
4961(3)**

Reliability Programme

19. If the reliability programme identifies Airworthiness Risks due to applying the Preventive Maintenance periodicity in the TI, the ADH / AM (MF) and the TAA **should** be informed.

**Guidance
Material
4961(3)**

Reliability Programme

20. The reliability programme's principal use is to validate the Preventive Maintenance periodicity in the TI. Where the TI is not optimal, the Mil CAMO can propose amendments and additions to existing Maintenance programmes to the TAA.
21. The Mil CAMO undertakes trending and analysis of Maintenance data as part of a reliability programme. This will enable it to act upon Faults and arising rates, deferred Fault trends, etc ►◄ to highlight and address any concerns proactively.
22. The data gathered may show that efficiency savings can be made by increasing the periodicity of Preventive Maintenance. This information and data can be shared with the TAA who may use it as evidence to adjust the TI. The AMP is not to be updated to incorporate these changes without the approval of the TAA.

¹¹ Refer to RA 4947 – Continuing Airworthiness Management – MRP Part M Subpart G. In particular, note the requirement in AMC to RA 4947(1)f to inform the Aviation Duty Holder (ADH) or Accountable Manager (Military Flying) (AM(MF)) of significant aspects of Maintenance that cannot be carried out.

¹² Refer to RA 4806(5): Personnel Competences and Authorization (MRP 145.A.30 (e)) and RA4807(2): Certification and Supervisory Authorizations (MRP 145.A.35(b)).

¹³ Refer to RA 4812 – Certification of Air System Release and Component Release (MRP 145.A.50).

¹⁴ ►Refer to the Manual of Airworthiness Maintenance - Documentation (MAM-D)
<https://www.gov.uk/government/publications/manual-of-airworthiness-maintenance-documentation-mam-d>◄

Intentionally Blank for Print Pagination

RA 4962 - Special Instructions (Technical) - MRP Part M Subpart C

Rationale

Special Instructions (Technical) (SI(T)) are instructions, issued by, or on behalf of, the Type Airworthiness Authority (TAA)¹ or Commodity Delivery Team (DT), to undertake a work package to identify, monitor, Repair or prevent the Occurrence or reoccurrence of a potential Fault². Failure to complete a SI(T) on all applicable Air Systems could render this action ineffective, therefore compromising Airworthiness. Some SI(T) have recurrent actions that make management of them more complex. Effective ►fulfilment◄ and management of SI(T) controlled by the Military Continuing Airworthiness Management Organization (Mil CAMO) will ensure that the Air System remains airworthy.

Contents

4962(1): Special Instructions (Technical)

Regulation 4962(1)

Special Instructions (Technical)

4962(1) The Military Continuing Airworthiness Manager (Mil CAM) **shall** ensure all SI(T), applicable to Air Systems identified in their Continuing Airworthiness Management Exposition (CAME), are correctly ►fulfilled◄ as required by the TAA or Commodity DT.

Acceptable Means of Compliance 4962(1)

Special Instructions (Technical)

1. The ►Mil CAM◄ **should** ensure ►all◄ SI(T) ►are fulfilled within◄ the mandated timescales. If the ►Mil CAM◄ cannot meet the mandated timescale, deferment **should** be obtained from the TAA or Commodity DT issuing the SI(T).
2. The ►Mil CAM◄ **should** manage the compliance of such instructions by:
 - a. Arranging for the distribution and ensuring the receipt of the SI(T)³.
 - b. Incorporation of the SI(T) into applicable Aircraft Maintenance Programmes (AMP).
 - c. Tasking appropriate Maintenance organizations.
 - d. Recording applicability and ►fulfilment◄ for each individual Air System.
3. The ►Mil CAM◄ **should** consider any follow-up action that may be required post SI(T) ►fulfilment.◄
4. The ►Mil CAM◄ **should** support the development of SI(T) by advising of any impact on availability, capability and sustainability.
5. The ►Mil CAM◄ **should** maintain records of extant SI(T) and advise the TAA or Commodity DT and DDH / AM(MF) of ►fulfilment◄ of the requirement. Where the SI(T) cannot be ►fulfilled◄ within required timescales and no deferment has been issued by the TAA or Commodity DT, the ►Mil CAM◄ **should** inform the TAA or Commodity DT and the DDH / AM(MF).
6. The ►Mil CAM◄ **should** develop and define a ►procedure within◄ the CAME to ensure recurrent SI(T) are ►fulfilled◄ at the prescribed intervals and prevent Air Systems flying if they have not had an applicable SI(T) ►fulfilled.◄

¹ ►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. ◄

² Refer to RA 5405 – Special Instructions (Technical).

³ To key stakeholders, possibly including the Delivery Duty Holder (DDH) / ►Accountable Manager (Military Flying) (AM(MF))◄ and relevant Chief Air Engineer.

**Acceptable
Means of
Compliance
4962(1)**

7. The ► **Mil CAM** ◀ **should** ensure that SI(T) actions no longer required by the TAA or Commodity DT are correctly removed from the AMP.
8. The ► **Mil CAM** ◀ **should** ensure the satisfaction of ► **Mil CAMO Instructions** ◀ using the same principles as for an SI(T) ►⁴◀.
9. ► **When issued as a SI(T) by the TAA, the Mil CAM should manage the fulfilment of all Airworthiness Directives (AD) and Service Bulletins (SB).** ◀

**Guidance
Material
4962(1)**

Special Instructions (Technical)

10. ► ◀
11. For MOD owned civil-derived Air Systems, the TAA ► ◀ assesses whether ADs or SBs need to be satisfied and issued as SI(T) ►²◀, however, consultation between the Mil CAMO and the TAA ► **is** ◀ necessary to ensure all Continuing Airworthiness Risks outlined in the AD or SB are captured or mitigated effectively.
12. For civil owned civil-derived Air Systems the TAA ►²◀, in conjunction with the Mil CAMO and the civilian owner (generally via the supporting ► **Civil Aviation Authority** ◀ approved Part M ► **equivalent** ◀ organization), ► ◀ assess whether all ADs and SBs need to be ► **fulfilled.** ◀
13. SI(T) can have a recurrent element. It is important to note that although recurrent ► **fulfilment** ◀ of a SI(T) has much in common with the management of scheduled Maintenance, deferral of SI(T) recurrence may only be ► **permitted** ◀ where specifically allowed in the SI(T) or agreed by the TAA or Commodity DT.
14. For Air Systems ► **in the Special Case Flying Operating Category, the responsibilities to ensure appropriate Air Safety arrangements regarding Air System Maintenance requirements and TI are in place, are detailed in RA 1160⁵ and RA 1163⁶.** ◀

⁴ ► Refer to RA 4966(1): Use of Military Continuing Airworthiness Management Organization Instructions.

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

⁶ Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems. ◀

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

RA 4963 - Modifications and Repairs - MRP Part M Subpart C

Rationale

Air System Modification and Repair instructions will be developed in accordance with (iaw) the RA 5000 Series (Type Airworthiness Engineering) Regulations. If Modifications and Repairs are not conducted according to these instructions the Airworthiness of the Air System will be compromised. Additionally, the operational situation may require deferral of a Modification or Repair which could compromise Airworthiness if not correctly managed. Oversight by the Military Continuing Airworthiness Management Organization (Mil CAMO) is critical to ensure Air Systems remain airworthy after undergoing Modifications or Repairs or when deferral of these activities is required.

Contents

4963(1): Modifications and Repairs

Regulation 4963(1)

Modifications and Repairs

4963(1) The Military Continuing Airworthiness Manager (Mil CAM) **shall** ensure all Modifications and Repairs on Air Systems identified in their Continuing Airworthiness Management Exposition (CAME) are correctly embodied in compliance with the instructions issued by the Type Airworthiness Authority¹ (TAA).

Acceptable Means of Compliance 4963(1)

Modifications and Repairs

1. The Mil CAM **should** maintain oversight of individual Air System Airworthiness and trends across all similar Air Systems identified in their CAME. The Mil CAM **should** coordinate the scheduling of Modifications and Repairs and manage their approvals where suitable data is not available. This **should** be achieved by:

- a. All requests for Approved Data / Repair schemes being made to the TAA through the Mil CAMO.
- b. Performing the function of fleet manager / controller.
- c. Consulting with the Maintenance organizations conducting Modifications and Repairs to determine priorities.
- d. Deciding where Modifications and Repairs are carried out and managing the tasking and transfer process where appropriate.
- e. Managing all Cannibalizations.
- f. Authorizing Cannibalizations from Category 3² and 4³ Air Systems undergoing Repair.

Modifications

2. For all planned Airworthiness and non-Airworthiness Modifications the Mil CAM **should**:
 - a. Assess the impact of the Modification.

¹ 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.

² The Air System is repairable, but the work is considered beyond the Air System custodian's Maintenance organization's capability. The repair **should** be carried out on site or by a Depth Maintenance organization.

³ The Air System is repairable, but it is considered to need special facilities or equipment not available on site. The repair **should** be carried out by a specialist Repair Organization at an MOD facility or a contractor's works.

**Acceptable
Means of
Compliance
4963(1)**

- b. Consider the implications of the Modification for the Delivery Duty Holder (DDH) / Accountable Manager (Military Flying) (AM(MF)), including the impact of non-Airworthiness Modifications and the scheduling of embodiment where applicable⁴.
 - c. Develop an implementation strategy in consultation with the TAA and the Maintenance organization embodying the Modification.
3. The Mil CAM **should** schedule Modifications and then manage Modification embodiment in support of the TAA's Regulatory requirements⁵:
- a. For Modifications with an Airworthiness impact, the Mil CAM **should** ensure that the embodiment is completed within the TAA's recommended timescales for the platform.
 - b. The Mil CAM **should** monitor progress throughout the embodiment process.
 - c. The Mil CAM **should** ensure configuration control of the Modification and that the overall Modification state and Airworthiness condition of the Air System is documented.
 - d. Maintain oversight of the assembly, storage and issue of Modification kits.

Repairs

4. The Mil CAM **should**:
- a. Ensure all known and suspected Faults are assessed to confirm if they require a Repair.
 - b. Report Serious Faults to the TAA^{6, 7}.
 - c. Schedule the Repair and then manage its embodiment in conjunction with the organization conducting the Repair.
 - d. Request an appropriate Repair scheme or Concession for damage outside Approved Data from the TAA or appropriately approved Design Organization.
 - e. Monitor the use of Repair schemes and Concessions and report issues to the DDH / AM(MF) and inform the TAA of any additional requirements.
5. The Mil CAM **should** ensure all Repair deferrals and limitations are assessed by a suitably Competent individual and are correctly recorded. The procedure for managing this **should** be detailed in the CAME.

**Guidance
Material
4963(1)**

Modifications and Repairs

6. The Mil CAMO is not responsible for identifying the requirement for capability Modifications.
7. There are a number of reasons for modifying an Air System, including Airworthiness, reliability, efficiency, survivability and capability.
8. The Mil CAMO may need to consider issues associated with embodiment of Modifications and Repairs, taking into account DDH / AM(MF) fleet capability / availability requirements to meet operational and training commitments.
9. For Air Systems not operating in the Service Environment⁸ it is accepted that the TAA may not publish all Air System Maintenance requirements and TI. In such circumstances the Sponsor of the Air System conducts Assurance to confirm that appropriate Air Safety arrangements are in place⁸ and where necessary the TAA ensure that the operator receives all relevant TI⁸.

⁴ The Mil CAM **should** support the TAA as described in RA 5305 – In service Design Changes.

⁵ Refer to RA 5301 – 5320 Series – Control of Design and Design Records, for further details.

⁶ Refer to RA 5825 – Fault Reporting and Investigation.

⁷ In addition to the general reporting requirements in RA 1410 – Occurrence Reporting and Management.

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

RA 4964 - Continuing Airworthiness Management Records - MRP Part M Subpart C

Rationale

A record of Continuing Airworthiness (CAw) activity carried out on Air Systems and Air System components informs Airworthiness decision making, provides a legal record, and enables Quality Assurance, data exploitation and investigations. Without effective control of CAw management records, the data may be unusable, leading to the CAw of an Air System being prejudiced and Air Safety undermined. Therefore, it is necessary for the Military Continuing Airworthiness Management Organization (Mil CAMO) to manage CAw management records so that they are fit for purpose.

Contents

4964(1): Continuing Airworthiness Record Keeping
4964(2): Continuing Airworthiness Records

Regulation 4964(1)

Continuing Airworthiness Record Keeping

4964(1) The Military Continuing Airworthiness Manager (Mil CAM) **shall** ensure CAw records enable the completion and Assurance of the Mil CAMO responsibilities¹.

Acceptable Means of Compliance 4964(1)

Continuing Airworthiness Record Keeping

1. The ► **Mil CAM** ◀ **should** ensure that all CAw activity is recorded and includes, as a minimum:
 - a. Details of the Air System type, the registration mark and the date, together with:
 - (1) Total flight time.
 - (2) Total flight cycles.
 - (3) Total number of landings.
 - (4) Any other Airworthiness data specified by the Type Airworthiness Authority (TAA) ►²◀.
 - b. The current Air System status, including:
 - (1) Status of Special Instructions (Technical) (SI(T)s)³.
 - (2) Status of Modifications and Repairs⁴.
 - (3) Status of compliance with the Aircraft Maintenance Programme (AMP)⁵.
 - (4) Status of service life limited components, including life remaining.
 - (5) Weight and balance report.
 - (6) Status of deferred Maintenance and operational limitations.
 - (7) Symmetry check report (if required by the Air System Document Set).
 - (8) Status of the Military Airworthiness Review Certificate (MARC) and supporting information.

¹ Refer to RA 4947 – Continuing Airworthiness Management – MRP Part M Subpart G.

² ► 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. ◀

³ Refer to RA 4962 – Special Instructions (Technical) – MRP Part M Subpart C.

⁴ Refer to RA 4963 – Modifications and Repairs – MRP Part M Subpart C.

⁵ Refer to RA 4961 – Aircraft Maintenance Programme – MRP Part M Subpart C.

**Acceptable
Means of
Compliance
4964(1)**

- c. A technical log for each Air System, including:
- (1) Information about each flight, necessary to ensure continued Flight Safety.
 - (2) The document containing the Certification of Air System Release.
 - (3) The current Maintenance statement. If the Air System is declared serviceable this **should** include a declaration that no Maintenance is outstanding and state when the next scheduled Maintenance is due.
 - (4) A copy of the current MARC.
 - (5) List of deferred Maintenance and operational limitations.
 - (6) Any necessary guidance instructions on Maintenance support arrangements.
2. The ►Mil CAM◀ **should** ensure records are maintained of all competence assessments and Authorizations issued⁶.
3. The ►Mil CAM◀ **should** ensure Maintenance records and any associated Technical Information (TI) are retained by the Maintenance organization⁷.
4. The ►Mil CAM◀ **should** ensure records are maintained of any CAw activities and decisions taken in line with its responsibilities►¹◀ or MRP Part M Subpart C (eg Maintenance programme development, Modification and Repair management, SI(T) application, Fault management and Occurrence report management).
5. The ►Mil CAM◀ **should** ensure CAw records:
- a. Are present.
 - b. Can be accessed by those entitled.
 - c. Can be understood⁸.
 - d. Can be trusted as being authentic⁹.
 - e. Can be disposed of when no longer required.
6. In addition to these requirements, Airworthiness documentation **should** indicate, where appropriate, the source of the record, higher authority and associated references and / or TI¹⁰.
7. The ►Mil CAM◀ **should** present the records to the MAA upon request.

**Guidance
Material
4964(1)**

Continuing Airworthiness Record Keeping

8. CAw record keeping will normally be conducted using a formal method of Airworthiness Information Management (AIM) that has been developed by the TAA¹¹. The CAw aspects of the AIM system are controlled by the Mil CAMO. Where a system used for AIM does not provide the capability to maintain the records required under this Regulation, the Mil CAMO is responsible for the provision of alternative means and identifying the gap to the TAA.

**Regulation
4964(2)**

Continuing Airworthiness Records

4964(2) The Mil CAM **shall** ensure procedures are in place for the management and retention of CAw records.

⁶ Refer to RA 4945 – Personnel Requirements – MRP Part M Subpart G.

⁷ Refer to RA 4813(3): Management of Retained Maintenance Records (MRP 145.A.55(c)).

⁸ Be unambiguous, accurate, entered in English and clearly legible.

⁹ Denote the accountable individual and the time and date of approval for each record and be certified with a legally acceptable signature. An Advanced Electronic Signature is considered to be equivalent to a handwritten signature.

¹⁰ Refer to RA 4948 – Documentation – MRP Part M Subpart G.

¹¹ Refer to RA 1223 – Airworthiness Information Management.

**Acceptable
Means of
Compliance
4964(2)**

Continuing Airworthiness Records

9. **Configuration Control.** CAw records **should** be configuration controlled¹². Responsibility and Accountability for maintaining configuration control of CAw records **should** be specified in the Continuing Airworthiness Management Exposition (CAME).
10. **Retention of records.** The ►Mil CAM◄ **should** ensure ►that all retained◄ CAw records meet the following conditions:
- AIM records **should** be categorized into one of the categories detailed by the TAA in the AIM instructions and retained for at least the minimum retention periods specified for each documentation category.
 - Other CAw records that are classified as “significant Air Safety documentation”¹³, **should** be retained ►in accordance with RA 1225¹³.
 - Quality System¹⁴ records and Military Airworthiness Review Surveyor¹⁵ records **should** be retained for the duration stated in the relevant RA. ◄
 - Records **should** be stored in a manner that ensures protection from damage, alteration and theft.
 - The records **should** remain readable and accessible for the duration of the retention period.
 - Physical separation of live and backup records **should** be maintained.
 - MARCs¹⁶, together with all supporting documents, **should** be classified as significant Air Safety documentation.
11. **Records Audit.** All CAw records that have been mandated for retention **should** be available for Audit purposes.
12. **Quarantine of records.** Whenever the requirement arises¹⁷, the ►Mil CAM◄ **should** quarantine the CAw records:
- The records **should** be made available to Accident investigators on request.
 - Access to quarantined records, including copies and the live information system, **should** be controlled through a means specified by the ►Mil CAM◄, so as not to prejudice any investigation.
 - Release of the records for full read / write access post quarantine **should** be strictly controlled and meet the needs of Accident investigators.
13. **Lost, corrupted or inaccurate records.** The ►Mil CAM◄ **should** manage the actions to be taken in the event that CAw records are lost, corrupted or inaccurate, to mitigate the impact on Air Safety.
14. **Records transfer.** The ►Mil CAM◄ **should** ensure that, where a Maintenance organization terminates its operation, all retained Maintenance records are transferred to the relevant Mil CAMO, which **should** retain the records for the prescribed retention period. Details of the transfer **should** be recorded to show who effected the transfer and who receives the records.
15. **Organization closure.** Where a Mil CAMO terminates its operation, all retained records **should** be transferred to the operating organization, unless determined otherwise by the MAA.
16. **Air System transfer.** Where CAw management of an Air System is transferred to another Mil CAMO, all retained records **should** be transferred to the new Mil CAMO. Details of the transfer **should** be recorded.

¹² Version and amendment controls.

¹³ Refer to RA 1225 – Air Safety Documentation Audit Trail.

¹⁴ ►Refer to RA 4951 – Quality System - MRP Part M Subpart G.

¹⁵ Refer to RA 4972 – Military Airworthiness Review Surveyors - MRP Part M Subpart I. ◄

¹⁶ Refer to RA 4971 – Airworthiness Review and Certification – MRP Part M Subpart I.

¹⁷ For example; in the event of an Air System Accident.

**Acceptable
Means of
Compliance
4964(2)**

17. **Records disposal.** The ► **Mil CAM** ◀ **should** ensure a CAw records disposal procedure is included in the CAME.
18. ► **Hard copy records scanning.** Completed hard copy records may be scanned and stored electronically but **should** be subject to certification¹⁸ that the electronic copy is a true, legible and complete facsimile of the original. ◀

**Guidance
Material
4964(2)****Continuing Airworthiness Records**

19. ► ◀
20. All aspects of the management of Defence data must also be controlled in accordance with ► **applicable** ◀ civil legislation, wider MOD requirements and AIM instructions.
21. When a Mil CAMO arranges for an organization to retain copies of the CAw records on its behalf, it will nevertheless continue to be responsible for the records specified in this RA.
22. ► **Air System Sale and Disposal.** Where an Air System is sold by the MOD, the CAw records may need to accompany the Air System so its new operator can prove the Air System's Airworthiness. Whether the Air System is sold or otherwise disposed of¹⁹, CAw records from the Air System's time on the UK Military Aircraft Register are still required to be retained as outlined in the Acceptable Means of Compliance above. To achieve this, a suitable MOD organization (Mil CAM, TAA, Sponsor, Command etc, depending what remains in existence following Air System disposal) may store a copy of the CAw records or specify in the sale contract that the MOD retain access to the transferred records for the entire record retention period. ◀

¹⁸ ► Refer to the Manual of Airworthiness Maintenance – Documentation (MAM-D), Part 1 – Governance and Guidance, Chapter 2.3.

¹⁹ Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment. ◀

RA 4965 – Local Manufacture Assurance – MRP Part M Subpart C

Rationale

Local manufacture may be necessary to affect a Repair to an Air System (Operational necessity may also require local manufacture to affect a Repair). If the Assurance of the local manufacture of parts is not conducted according to this Regulation, the Airworthiness of the Air System will be compromised. ► This RA ◄ provides the direction to the Military Continuing Airworthiness Manager (Mil CAM) to ensure Air Systems remain airworthy.

Contents

4965(1): Military Continuing Airworthiness Management Organization Responsibilities for Local Manufacture

Regulation 4965(1)

Military Continuing Airworthiness Management Organization responsibilities for local manufacture

4965(1) The Mil CAM **shall** promulgate ► ◄ procedures to ensure that the local manufacture¹ of parts to be fitted to Air Systems are of an appropriate Quality and are traceable.

Acceptable Means of Compliance 4965(1)

Military Continuing Airworthiness Management Organization responsibilities for local manufacture

1. To adequately trace locally manufactured parts, the Mil CAM **should** develop ► ◄ procedures to maintain a centralised record of all locally manufactured parts in use, on Air Systems, across their Maintenance organizations.
2. Records **should** include, but are not limited to:
 - a. Authorizations required and any arrangements with Specialist Repair Organizations.
 - b. Quality control checks.
 - c. Concessions (if applicable).
 - d. Component identification.
 - e. Date of manufacture and fit.
 - f. Description and part / drawing number.
 - g. Serial Number of Work for component manufacture and if applicable: details of heat treatment and proof testing, specification and conformity references.
 - h. Source Technical Information reference.

Guidance Material 4965(1)

Military Continuing Airworthiness Management Organization responsibilities for local manufacture

3. Nil.

¹ Refer to RA 4809(3): Local Manufacture / Fabrication of Components (MRP 145.A.42(c)).

Intentionally Blank for Print Pagination

RA 4966 – Military Continuing Airworthiness Management Organization Instructions – MRP Part M Subpart C

Rationale

When a Continuing Airworthiness engineering requirement for Technical Information (TI) arises, local instructions may be developed to meet the immediate need. Where such a need is identified a Military Continuing Airworthiness Manager (Mil CAM) may raise a Military Continuing Airworthiness Management Organization (Mil CAMO) Instruction. If not rigorously controlled, these instructions may cause deviation from the Type Design or mask the demand for revision of TI leading to degradation in the Airworthiness of the Air System. This RA details the minimum requirements for raising a Mil CAMO Instruction to give authority to undertake a work package necessary to maintain the Continuing Airworthiness of the Air System.

Contents

4966(1): Use of Military Continuing Airworthiness Management Organization Instructions

4966(2): Management of Military Continuing Airworthiness Management Organization Instructions

Regulation 4966(1)

Use of Military Continuing Airworthiness Management Organization Instructions

4966(1) Local procedures developed to overcome the absence of appropriate TI **shall** be issued as Mil CAMO Instructions.

Acceptable Means of Compliance 4966(1)

Use of Military Continuing Airworthiness Management Organization Instructions

1. Mil CAMO Instructions **should** be approved by the Mil CAM prior to issue unless that Approval has been delegated under the appropriate authority¹ to an individual meeting the Competency requirement of RA 4945(3)².
2. Mil CAMO Instructions **should not** be used to make or Approve changes to Type Design³, Repairs to an Air System or to make Configuration changes other than with Role Equipment. All Mil CAMO Instructions **should** be considered within the bounds of the Air System Safety Case (ASSC)^{4, 5}.
3. Mil CAMO Instructions are TI⁶ and **should** satisfy a local Airworthiness, availability or capability concern.
4. Mil CAMO Instructions **should** only be issued for Air Systems within the issuing authority's Area of Responsibility.
5. Mil CAMO Instructions **should** be shared with other organizations, operating the same Air System, to inform their decision making.
6. Mil CAMO instructions **should not** be used to promulgate or supersede Type Airworthiness Instructions that **should** be issued by the Type Airworthiness Authority (TAA)^{7, 8}.

¹ Refer to Manual of Airworthiness Maintenance – Processes (MAM-P), Chapter 0.6 – Authority Levels and Tasks, MAMP-K1030 – Authorize personnel to issue Mil CAMO Instructions, or civilian equivalent for those operating under the Contractor Flying Approved Organization Scheme arrangements.

² Refer to RA 4945(3): Personnel Competence and MRP Part M Authorization.

³ Refer to RA 5820 – Changes in Type Design (MRP Part 21 Subpart D).

⁴ Refer to RA 1205 – Air System Safety Cases.

⁵ Refer to RA 1020(1): Roles and Responsibilities of the Aviation Duty Holder.

⁶ Refer to RA 4810(2): Scope of Applicable Technical Information (MRP 145.A.45(b)).

⁷ Refer to RA 5405 – Special Instruction (Technical).

⁸ 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.

**Acceptable
Means of
Compliance
4966(1)**

7. Where an organization operates under Leaflet B40⁹, the Mil CAM **should** instruct the civil CAM to release the CAMO Instruction or civil equivalent^{10, 11}.

Responsibilities

8. Prior to issuing a Mil CAMO Instruction, the Mil CAM **should** assess whether it **► generates additional Risk to the Airworthiness of the affected Air System, or affects the Equipment¹² Safety Assessment. The Mil CAM **should** ensure all reasonable efforts are made by the Mil CAMO to engage the TAA or Commodity Delivery Team Chief Engineer for support and procedural Validation. If required due to the assessed potential effect on the ASSC⁴, the Mil CAM **should** consult and seek Risk acceptance from the Delivery Duty Holder (DDH) / Accountable Manager (Military Flying) (AM(MF)). ◀**

9. Where TI affects the ASSC, the mechanism for management **should** be included within the Air Safety Management System^{5, 13}.

10. The Mil CAM **should** ensure that any impact on availability and operational capability is understood.

11. The Mil CAM **should** ensure that:

- a. The TAA or Commodity Delivery Team **► Chief Engineer ◀** is notified **► on issue, amendment or cancellation of the Mil CAMO Instruction. ◀**
- b. The Mil CAMO Instruction is cancelled once the updated TI is promulgated, drawings amended, or the requirement is satisfied.

**Guidance
Material
4966(1)**

Use of Military Continuing Airworthiness Management Organization Instructions

General

12. Mil CAMO Instructions are intended to provide a controlled means to introduce procedural instructions¹⁴ as a temporary solution when appropriate TI does not exist or where there is a need for TI to be released as a Special Instruction (Technical) (SI(T))⁷ that cannot be provided in the required timescale. The issue of a Mil CAMO Instruction does not replace the requirement to report Air Safety Occurrences¹⁵ or to request amendment to TI¹⁶.

13. The use of a Mil CAMO Instruction to address an engineering requirement instead of waiting for the generation of TI may carry some additional Risk to the Airworthiness of the affected Air System(s). Control measures are therefore required to ensure that Mil CAMO Instructions are used only within strict boundaries and to manage any additional Risk correctly.

14. Mil CAMO Instructions may be used for but not limited to:

- a. A scoping mechanism to determine the extent of a technical issue or to disseminate information of a technical administrative or policy nature¹⁷.
- b. Local processes outside of Aviation Engineering Standing Orders / Aviation Engineering Routine Orders.
- c. Maintenance Organization guidance and instruction.
- d. Clarification of TI pending formal amendment.
- e. Requesting any Continuing Airworthiness activities and actions from a Maintenance Organization.

⁹ Refer to RA 1165 – **► UK ◀** Civil Aviation Authority Oversight of **► UK ◀** Military Registered **► Aircraft. ◀**

¹⁰ Ensuring the instruction stays within the bounds of Leaflet B-40.

¹¹ Unless managed under the requirements of Leaflet B-40, using the Exception process.

¹² Refer to RA 5013 – Air Safety Management of Equipment and Commodity Items

¹³ Refer to RA 1200 – Air Safety Management.

¹⁴ This includes formalising an inspection or check for local management purposes.

¹⁵ Refer to RA 1410 – Occurrence Reporting and Management.

¹⁶ Refer to RA 4810(3): Requirement to Inform Technical Information Author of Errors (MRP 145.A.45(c)) **► ◀**.

¹⁷ The SI(T) generic template is available on the MAA websites and is appropriate.

**Guidance
Material
4966(1)**

15. The proposed means of closure will be included in the 'follow-up' paragraph of the Mil CAMO Instruction.
16. A Mil CAMO Instruction remains extant until the Mil CAM withdraws or amends it.

Layout

17. ▶◀ The following ▶sub-headings may be used depending on the context:◀
- a. Title.
 - b. Application.
 - c. Reason.
 - d. Compliance timelines.
 - e. Safety precautions.
 - f. Action required.
 - g. Recording.
 - h. Reporting.
 - i. Follow up – including a route to closure.
 - j. Additional Requirements.
 - k. Authorization.

**Regulation
4966(2)**

**Management of Military Continuing Airworthiness Management
Organization Instructions**

- 4966(2) Mil CAMs **shall** ensure that suitable procedures are in place to control Mil CAMO Instructions.

**Acceptable
Means of
Compliance
4966(2)**

**Management of Military Continuing Airworthiness Management
Organization Instructions**

18. The Mil CAM **should** have procedures to:
- a. Set the boundaries within which Mil CAMO Instructions are permitted.
 - b. Specify the requirements for consultation of the following personnel, or their nominated representatives, regarding the content of a Mil CAMO Instruction:
 - (1) The DDH ▶or AM(MF).◀
 - (2) The DDH Senior Operator ▶or AM(MF)'s nominated Flight Operations post holder.◀
 - (3) The DDH Chief Air Engineer.
 - (4) The TAA, ▶TAM◀ or Commodity ▶Delivery Team Chief Engineer.◀
 - (5) Civil CAM (for those operating under Leaflet B-40).
 - c. Control the validity of Mil CAMO Instructions, by:
 - (1) Maintaining a register of all Mil CAMO Instructions including an accurate distribution list to ensure they can actively manage compliance, retaining an Audit trail of all actions relating to the Instruction.
 - (2) Limiting the length of time for which a Mil CAMO Instruction is valid after initial issue, setting a maximum cumulative period of validity and specifying who may extend the validity following the initial issue period.
 - (3) Ensuring appropriate follow up action is initiated as required, to ensure the Mil CAMO Instruction remains extant for the minimum

**Acceptable
Means of
Compliance
4966(2)**

required period; issuing clear instructions when they are superseded, time expired, fully completed, or otherwise cancelled.

**Guidance
Material
4966(2)**

Management of Military Continuing Airworthiness Management Organization Instructions

19. The Mil CAM's system to monitor and proactively manage Mil CAMO Instructions directs that these remain extant for the minimum practical period. Extensions to Mil CAMO Instructions undermine this principle and careful consideration is key prior to any extension being approved.

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

RA 4970 – Baseline Military Airworthiness Review - MRP Part M Subpart I

Rationale

Prior to commencing flying operations, Delivery Duty Holders (DDH) or Accountable Managers (Military Flying) (AM(MF)) are to establish the baseline configuration and state of Airworthiness for all their military registered Air Systems. This baseline is the fundamental starting point for all subsequent Military Airworthiness Reviews (Mil AR). Configuration variations will occur throughout the life of an Air System and failure to understand its configuration will make Continuing Airworthiness virtually impossible. This RA requires a Baseline Military Airworthiness Review (BMAR) be carried out to highlight configuration and Airworthiness concerns; allowing them to be rectified, re-establishing the baseline configuration.

Contents

4970(1): Military Continuing Airworthiness Manager Responsibilities

4970(2): Delivery Duty Holder / Accountable Manager (Military Flying) Responsibilities

Regulation 4970(1)

Military Continuing Airworthiness Manager Responsibilities

4970(1) The Military Continuing Airworthiness Manager (Mil CAM) **shall** ensure that a BMAR is conducted for each individual military registered Air System for which they are responsible before it is flown¹.

Acceptable Means of Compliance 4970(1)

Military Continuing Airworthiness Manager Responsibilities

1. The BMAR **should** consider all areas stipulated by the Military Airworthiness Review Process². The level to which the review activity in each area is conducted **should** be justified and recorded.
2. The depth and scope of the BMAR **should** be documented and referenced within Part 4 of the Continuing Airworthiness Management Exposition (CAME)³.
3. On completion of a BMAR for an Air System the Mil CAM **should** incorporate the results into the Air System Safety Case (ASSC)⁴ at the next suitable point. This will support the associated ASSC argument(s) and show how the Risks associated with any gaps or issues in the Air System's history have been assessed as being As Low As Reasonably Practicable and Tolerable.
4. Military Continuing Airworthiness Management Organizations (Mil CAMOs) **should** allow a sufficient period to plan BMAR activity for Air Systems whose entry into service is imminent.
5. For civil-derivative Air Systems where 'shadow' Airworthiness Review Certificates (ARCs) are conducted by approved organizations as part of civil oversight arrangements agreed with the Civil Aviation Authority⁵, the Mil CAM may utilize such activity as part of the BMAR process. In such cases, the Mil CAM **should** demonstrate that MRP Part M Subpart I requirements have been met and that any military deltas have been adequately accounted for.

¹ Refer to RA 1016 – Military Continuing Airworthiness Management.

² Refer to RA 4973 – Military Airworthiness Review Process - MRP Part M Subpart I.

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

⁴ Refer to RA 1205 – Air System Safety Cases.

⁵ Refer to RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered Air Systems.

**Guidance
Material
4970(1)**

Military Continuing Airworthiness Manager Responsibilities

6. For all new, used or converted Air Systems being brought onto the UK Military Aircraft Register (MAR), close liaison is required as soon as possible between the receiving Mil CAMO and the delivering Delivery Team (DT), to facilitate the DDH or AM(MF)'s issuance of the Statement of Acceptance (SofA). The DT will provide guidance on accompanying documentation and the suitability of the contents in establishing a baseline Airworthiness level.
7. BMARs may not be completed before Mil CAMO Approval is granted.
8. Whilst it is recognized that a wide range of personnel may be involved in the BMAR process, including contracted support, oversight of all activity remains a responsibility of Military Airworthiness Review surveyors, meeting the requirements of the Mil CAMO⁶.
9. As soon as an individual Air System's BMAR data is available it can form useful evidence to support the associated ASSC argument(s). The next suitable point to include BMAR data into the ASSC could be after each individual tail number has had its BMAR but may also be at a set point during the ASSC review cycle so as to capture multiple BMAR results at the same time. The definition of the most suitable point will be dictated by individual Mil CAMOs, aiming to achieve efficient and timely inclusion to the ASSC, so as to keep the ASSC a living body of evidence.

**Regulation
4970(2)**

Delivery Duty Holder / Accountable Manager (Military Flying) Responsibilities

4970(2) The DDH or AM(MF) **shall**:

- a. Satisfy themselves that the Mil CAM has made every practicable effort to review the Airworthiness history of the Air System, with mitigation and justification as appropriate.
- b. On satisfactory completion of a BMAR, issue a SofA, which authorizes the Military Continuing Airworthiness Manager to issue the initial Military Airworthiness Review Certificate⁷ (MARC).

**Acceptable
Means of
Compliance
4970(2)**

Delivery Duty Holder / Accountable Manager (Military Flying) Responsibilities

10. For new-production Air Systems, the SofA **should** be issued on the basis of the recognized Statement of Conformity or civilian equivalent accompanying the airframe.
11. For previously used Air Systems brought on to the MAR, a BMAR **should** be conducted. Any previous Certificate of Airworthiness, valid civil ARC, or suitable Export Certificate of Airworthiness provided with the Air System may be used as evidence.
12. For an Air System, which has been converted to a new "Mark" with a new Type Certificate, a BMAR **should** be conducted. The Air System's previous MARC may be used as part of the supporting evidence.

⁶ Refer to RA 4972 – Military Airworthiness Review Surveyors - MRP Part M Subpart I.

⁷ Refer to RA 4971 – Military Airworthiness Review and Certification - MRP Part M Subpart I.

**Guidance
Material
4970(2)**

**Delivery Duty Holder / Accountable Manager (Military Flying)
Responsibilities**

13. Tail numbers may be batched for the DDH or AM(MF)'s SofA.
14. It may be desirable for the SofA to be endorsed by the appropriate Type Airworthiness Authority in addition to the DDH or AM(MF), therefore providing a link to the configuration level of the BMAR undertaken.
15. Factors to be taken into account may include, but not be limited to, access to or availability of historical information, platform maturity, expected Out of Service Date of the Air System and complexity of procurement.

16. The DDH or AM(MF)'s SofA ought to take the form of the following paragraph:

“As the Delivery Duty Holder* / Accountable Manager (Military Flying)* for tail number...(quote tail number)..., this Statement of Acceptance confirms that a Baseline Military Airworthiness Review has been conducted to my satisfaction and that every practicable effort has been taken to review the Airworthiness history of the Air System.

Signed:

Dated :

Delivery Duty Holder* / Accountable Manager (Military Flying)* and (Post Title)”

[optional]

“As the Type Airworthiness Authority for this platform, I concur with the Delivery Duty Holder* / Accountable Manager (Military Flying)* and endorse the Baseline Military Airworthiness Review.

Signed:

Dated:

(Post Title) ”

* *Delete as Appropriate*

Intentionally Blank for Print Pagination

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

RA 4971 - Military Airworthiness Review and Certification - MRP Part M Subpart I

Rationale

To re-validate the configuration and Airworthiness of Air Systems on the UK Military Aircraft Register, a Military Airworthiness Review (Mil AR) is required to be carried out at least annually. Following a successful Mil AR, a Military Airworthiness Review Certificate (MARC) can be issued on behalf of the relevant Delivery Duty Holder (DDH) or Accountable Manager (Military Flying) (AM(MF)). Without a reassessment of an Air System's configuration and establishing whether it has been maintained in a controlled environment, Continuing Airworthiness cannot be guaranteed. This RA requires a valid MARC be maintained; providing confidence in the integrity and Airworthiness of an Air System.

Contents

4971(1): Military Continuing Airworthiness Manager Responsibilities

4971(2): Military Airworthiness Review Certificate

Regulation 4971(1)

Military Continuing Airworthiness Manager Responsibilities

4971(1) The Military Continuing Airworthiness Manager (Mil CAM) **shall** ensure that:

- a. A Mil AR of the Air System, together with its Continuing Airworthiness records, is carried out periodically¹, by suitably approved and authorized Mil AR Surveyors².
- b. Mil AR procedures are incorporated into the Continuing Airworthiness Management Exposition (CAME)³.

Acceptable Means of Compliance 4971(1)

Military Continuing Airworthiness Manager Responsibilities

1. The Mil AR **should** be recorded on the MOD Form 710⁴.
2. For civil-derivative Air Systems where 'shadow' Airworthiness Reviews are conducted⁵, the Airworthiness Review activity **should** be used as part of the Mil AR process⁶. However, the Mil CAM **should** still document that they have confirmed that the MRP Part M Subpart I requirements have also been met.
3. Notwithstanding paragraph 2 above, Mil AR tasks **should** remain the responsibility of the Mil CAM even when support arrangements as described in paragraph 5 are used.
4. In addition to the annual requirement, the Mil CAM **should** consider the need to instigate a Mil AR whenever it is considered appropriate.

Guidance Material 4971(1)

Military Continuing Airworthiness Manager Responsibilities

5. The ability to recognize 'shadow' Airworthiness Review activity is accepted by the MAA on the basis of satisfactory analysis and evidence presented in the CAME. The MARC is still signed by the Mil CAM who is to be satisfied with the robustness of

¹ Refer to RA 4973 – Military Airworthiness Review Process - MRP Part M Subpart I.

² Refer to RA 4972 – Military Airworthiness Review Surveyors - MRP Part M Subpart I.

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

⁴ Refer to MOD Form 710 – Military Airworthiness Review Certificate, available from the Manual of Airworthiness Maintenance - Documentation (MAM-D).

⁵ By approved organizations as part of civil oversight arrangements agreed with the Civil Aviation Authority and conducted in accordance with Civil Aviation Authority Regulation.

⁶ Refer to RA 1165 – UK Civil Aviation Authority Oversight of UK Military Registered Air Systems.

**Guidance
Material
4971(1)**

the work conducted in accordance with (iaw) the civil oversight arrangements and that all military deltas pertaining to the platform have been identified.

6. Individual contracted personnel may be used as Mil AR Surveyors where the Mil CAM is personally satisfied that the individual concerned meets the specified requirements², and is authorized as such. Such procedures are to be described in the CAME and records kept of contracted individuals used.

7. A MARC may be anticipated as required with a validity of 12 months from date of issue.

8. Examples of when further Mil ARs may be appropriate could be as a result of certain Modifications, Repair programmes or when the Military Continuing Airworthiness Management Organization (Mil CAMO) does not believe it has had adequate visibility of Continuing Airworthiness activity.

**Regulation
4971(2)**

Military Airworthiness Review Certificate

4971(2) On completion of a satisfactory Mil AR, the Mil CAM **shall** issue a MARC on behalf of the DDH or AM(MF). Thereafter:

a. A MARC **shall** remain valid for a period of 1 year from date of issue, but with the potential to be extended or revoked⁷.

b. A MARC validity may be extended for a period not exceeding 90 calendar days; any such extension **shall** be approved by the Mil CAM.

c. A Mil CAM **shall** revoke the MARC if there is reason to believe that the Air System is not airworthy⁷.

**Acceptable
Means of
Compliance
4971(2)**

Military Airworthiness Review Certificate

9. The Mil CAM **should** sign the MARC. A Deputy Mil CAM (DCAM), meeting the same requirements of the Mil CAM⁸, may sign the MARC when authorized by the DDH or AM(MF).

10. The Mil CAM **should** justify all MARC extensions that have been granted on the appropriate MOD Form 710.

11. The Mil CAM **should not** apply any MARC extensions for Air Systems subject to CAP 562 Leaflet B-40 arrangements⁶.

**Guidance
Material
4971(2)**

Military Airworthiness Review Certificate

12. The Mil CAM holds the automatic responsibility of issuing the MARC on behalf of the DDH or AM(MF) as part of the Mil CAMO Approval.

13. It is expected that routine maximum extensions will not be granted.

14. In the temporary absence of a Mil CAM or authorized DCAM, the DDH or AM(MF) may sign the MARC.

15. The MARC is not a statement of serviceability, but it is required to be valid for all flying⁹.

⁷ Refer to RA 4974 – Circumstances when Military Airworthiness Review Certificates become invalid - MRP Part M Subpart I.

⁸ Refer to RA 4945 – Personnel Requirements - MRP Part M Subpart G.

⁹ Refer to RA 1016 – Military Continuing Airworthiness Management.

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

RA 4972 - Military Airworthiness Review Surveyors - MRP Part M Subpart I

Rationale

To conduct independent platform configuration and Airworthiness assessments of UK Military Aircraft Registered Air Systems, Military Continuing Airworthiness Management Organizations (Mil CAMO) require the support of Competent and authorized Military Airworthiness Review (Mil AR) Surveyors. A periodic, impartial and objective survey of an Air System is fundamental to assessing its Airworthiness and without it, Air Safety could be undermined. This RA details the suitability and Competence of Mil AR Surveyors to conduct appropriate Mil ARs.

Contents

4972(1): Requirements of the Military Continuing Airworthiness Management Organization

4972(2): Military Airworthiness Review Surveyor Records

Regulation 4972(1)

Requirements of the Military Continuing Airworthiness Management Organization

4972(1) The Military Continuing Airworthiness Manager (Mil CAM) **shall** have available appropriate Mil AR surveyors to conduct Mil ARs and provide Military Airworthiness Review Certificate (MARC) recommendations.

Acceptable Means of Compliance 4972(1)

Requirements of the Military Continuing Airworthiness Management Organization

1. Mil AR surveyors **should** have the following qualifications and experience:
 - a. At least 10 years' experience in Continuing Airworthiness (CAW)¹.
 - b. At least 5 years' experience in Air System Maintenance at supervisory level.
 - c. For Service personnel:
 - (1) Be of Senior Non-Commissioned Officer (SNCO) rank or above².
 - (2) Have a level of Competence deemed comparable to that required to hold an Authorization³ which would allow them to defer Corrective Maintenance by raising appropriate entries in the MOD Form 700C or equivalent⁴.
 - d. For non-Service personnel working on Air System maintained under Civil Aviation Authority (CAA) oversight, currently hold nominated staff status approved by the CAA SRG 1769 process⁵.
 - e. For non-Service personnel working on an Air System maintained under MAA oversight, hold either:
 - (1) A valid CAA Part 66 category B or C licence.
 - (2) An equivalent Company based B or C licence Authorization.
 - (3) For those conducting Mil ARs on Gliders only, hold a current British Gliding Association Glider Inspector Licence with Chief Engineer /

¹ As defined in Guidance Material paragraph 5.

² This includes Commissioned Officers.

³ Refer to RA 4806 – Personnel Requirements (MRP Part 145.A.30).

⁴ There is no requirement to hold or have held this authorization.

⁵ As detailed on the CAA's website: <http://www.caa.co.uk>.

Acceptable Means of Compliance 4972(1)

Airworthiness Review Certificate Signatory endorsement (BGA) on appointment.

Note:

For clarity, Para 1.e. (1) and (2) are also acceptable alternative qualifications for non-Service Glider Mil AR staff.

2. In derogation to paragraph 1, ex-Service personnel who have previously met paragraphs 1 a-c may be exempt from the requirement in para 1 d-e. In such cases the Mil CAM **should** apply robust assessment criteria:
 - a. As a minimum, the Mil CAM **should** take into consideration the length of time since the individual in question left the Service and whether they have been employed in CAw in the interim. It is not generally expected that personnel who left the Service more than 5 years previously and have not worked in CAw since then will be authorized.
3. Mil AR surveyors **should**:
 - a. Be able to demonstrate independence from the Airworthiness management of the Air System concerned.
 - b. Only be issued an Authorization by the current approved Mil CAM following:
 - (1) An assessment of their Competence.
 - (2) Completion of any training deemed appropriate for the individual.
 - (3) Satisfactory completion of a Mil AR under appropriate supervision.
 - c. Have conducted at least one Mil AR in the last 6 month period to maintain the validity of the Mil AR surveyor's Authorization.
 - d. Have their Authorizations reviewed within 3 months of a change of Mil CAM.
 - e. Conduct Mil AR surveyor continuation training as deemed appropriate by the Mil CAM⁶.
4. The Mil CAM **should** ensure that Mil AR surveyors can demonstrate appropriate recent CAw experience.

Guidance Material 4972(1)

Requirements of the Military Continuing Airworthiness Management Organization

5. Experience in CAw means any appropriate combination of experience in tasks related to Air System Maintenance and / or CAw management and / or surveillance / Assurance of such tasks.
6. "Independence from the Airworthiness management" means any position within the organization (for example, a Quality Assurance post) where the incumbent has not been actively involved in the Maintenance or Maintenance management of the particular tail number being reviewed since the last MARC.
7. Mil AR surveyors will be expected to show relevant experience in the broad category of Air Systems (eg rotary wing, fast jet, wide-bodied), though not necessarily of the specific type being reviewed.
8. In line with the Mil CAM responsibility for devising suitable Mil AR procedures⁷ the Mil CAM also assesses the need for appropriate further training for new Mil AR surveyors prior to Authorization. The scope of such training is entirely dependent on the fleet specific Mil AR procedures and nature of any necessary tools (eg Logistic Information Systems).

⁶ Further information may be found in CAA - Civil Aviation Publication (CAP) 1742 – Continuation Training (Guidance Document) available at <https://publicapps.caa.co.uk/docs/33/CAP%201742%20Continuation%20Training%20Guidance%20Document%20Issue%202.pdf>.

⁷ Refer to RA 4973 – Military Airworthiness Review Process - MRP Part M Subpart I.

**Regulation
4972(2)****Military Airworthiness Review Surveyor Records**

4972(2) The Mil CAM **shall** maintain a record of all current Mil AR surveyors, referenced in the Continuing Airworthiness Management Exposition (CAME).

**Acceptable
Means of
Compliance
4972(2)****Military Airworthiness Review Surveyor Records**

9. Mil AR surveyor records **should** include:
 - a. Details of any appropriate qualifications held.
 - b. A summary of relevant CAW management experience.
 - c. A summary of relevant training.
 - d. A copy of the Mil AR surveyor's Authorizations.
10. Mil AR surveyor records **should** be categorized as CAW Records⁸ and retained until two years after the Mil AR surveyor has left the Mil CAMO.

**Guidance
Material
4972(2)****Military Airworthiness Review Surveyor Records**

11. RA 4964(2)⁸ provides details on record keeping requirements.

⁸ Refer to RA 4964(2): Continuing Airworthiness Records.

Intentionally Blank for Print Pagination

RA 4973 - Military Airworthiness Review Process - MRP Part M Subpart I

Rationale

Military Airworthiness Reviews (Mil AR) are structured to ensure consistency and completeness across all military registered Air Systems, regardless of their type. A mixture of physical and record reviews, including confirmation of the correlation of the two for certain Maintenance tasks, has proven to be the best process for determining Air System configuration and Airworthiness. Without a detailed, comprehensive and approved review process, Airworthiness cannot be sustained. ► This RA ◀ defines the Mil AR process ensuring the Military Continuing Airworthiness Manager (Mil CAM) achieves satisfactory Assurance of the Continuing Airworthiness of their Air Systems.

Contents

4973(1): Military Airworthiness Review Process

Regulation 4973(1)

Military Airworthiness Review Process

- 4973(1) To satisfy the Mil AR process a Mil CAM **shall** ensure that:
- a. A documented review of the Air System's records is carried out.
 - b. A documented physical review of the Air System is carried out.

Acceptable Means of Compliance 4973(1)

Military Airworthiness Review Process

1. A review of the Air System records **should** provide ► Assurance to the Mil CAM ◀ that:
 - a. Air System usage data ► has been properly recorded. This **should include** ◀ airframe, engine and propeller flying hours and associated flight cycles ► ◀.
 - b. All the Maintenance due on the Air System according to the Aircraft Maintenance Programme has been carried out and appropriately managed in accordance with (iaw) the applicable Air System Document Set (ADS).
 - c. All known Faults have been corrected to the required standard or, where applicable, carried forward in a controlled manner.
 - d. All applicable Special Instructions (Technical) (SI(T)) or Airworthiness Directives (AD) ► (including any follow up action) have been fulfilled ◀, properly recorded and maintained.
 - e. All Modifications and Repairs applied to the Air System are approved according to the Design Approved Organization Scheme¹ or appropriate MOD procedures, embodied according to Approved Data and have been appropriately recorded.
 - f. All service life limited components installed on the Air System are properly identified and recorded and have not exceeded their approved service life limit iaw the applicable ADS.
 - g. All Maintenance has been planned and controlled, including the use of latitudes, deferrals or Concessions².
 - h. The current weight and moment statement:
 - (1) ► Reflects the configuration of the Aircraft.
 - (2) Is valid.
 - (3) Has been accurately calculated and recorded if there have been any changes to weight and moment since the last weigh. ◀

¹ Refer to RA 1005 – Contracting with Competent Organizations.

² Refer to RA 4947 – Continuing Airworthiness Management - MRP Part M Subpart G.

**Acceptable
Means of
Compliance
4973(1)**

- i. The ► **Air System** ◀ configuration complies with the latest revision of its Release To Service, or Certificate of Usage and / or approved design.
2. ► The review of the Air System records **should** check the following categories of documents where applicable as a minimum:
 - a. The MOD Form 700 or technical / operators log system, including Maintenance Work Orders, limitations and deferred Faults, Minimum Equipment List, and configuration deviation list.
 - b. Any applicable Logistic Information System.
 - c. Local Maintenance requirements as directed by the Mil CAM³.
 - d. Maintenance Data including fatigue index data and condition monitoring data.
 - e. Relevant work packages - SI(T) / AD status.
 - f. Modification and Repair documentation.
 - g. List of service life limited components.
 - h. Weight and moment report and sheets.
 - i. Engineering Record Cards.
 - j. Aircraft, engine and propeller Type Certificate data sheets⁴, if applicable. ◀
3. The physical review **should** include a structured and thorough examination of the external and internal areas of the Air System, consisting of as a minimum:
 - a. Air System general condition⁵ and Husbandry.
 - b. Appropriate standards of Maintenance.
 - c. Appropriate Husbandry standards of wiring looms.
 - d. Appropriate Husbandry standards of pipes.
 - e. Sample checking of components against the ADS.
 - f. Evidence of damage, wear and Repairs to the Aircraft structure.
 - g. Sample checking of Modifications and Repairs.
 - h. Verification that all flight safety software⁶ is at the correct version or standard.
4. The physical review **should** ► provide Assurance to the Mil CAM ◀ that:
 - a. The Air System configuration complies with Approved Data.
 - b. The configuration as detailed in the Air System Technical Log / MOD Form 700 matches the actual configuration of the Air System.
 - c. No Fault can be found that could reasonably be expected to have been recorded and addressed iaw the MRP, including Husbandry defects.
 - d. No inconsistencies can be found between the Air System and the documented review of records.

³ ► Refer to RA 4966 – Military Continuing Airworthiness Management Organization Instructions – MRP Part M Sub Para C.

⁴ The Type Certificate Data Sheet (TCDS) is a civil aviation document that defines the Aircraft, Engine or Propeller Operating Limits, Certification Basis, Manuals, etc. Only civil derived Air Systems will have a TCDS. ◀

⁵ When assessing the general condition of the Air System, the Mil AR Surveyor is to inspect for evidence of leaks, damage (dents, bumps and buckles), chaffing, corrosion, poor surface finish and cleanliness.

⁶ ► Flight Safety Software includes all software that has the potential to affect the safe operation of Air Systems in the air and on the ground. It is for the Type Airworthiness Authority (or Type Airworthiness Manager if applicable) and Mil CAM to determine the associated Risk level and what they deem to be in scope. ◀

**Acceptable
Means of
Compliance
4973(1)**

- e. All required safety markings and placards are properly installed iaw the applicable ADS.
5. ▶ The Mil CAM **should** develop procedures, detailed in the Continuing Airworthiness Management Exposition, for the Mil AR Surveyor to produce a compliance report that confirms the results of both record and physical reviews have been found to be in compliance with this Regulation.
6. The Maintenance organization **should** provide qualified personnel as required to assist the Mil AR Surveyor with Mil AR activity. However, the function of such personnel is limited to performing and certifying the Maintenance action requested by the Mil AR surveyor and not performing the physical survey of the Air System.
7. The Mil CAM **should**, as a minimum, specify sample checks within each category of both the Air System record and physical reviews to be carried out. ◀

**Guidance
Material
4973(1)**

Military Airworthiness Review Process

8. ▶◀
- a. ▶◀
- b. ▶◀
- c. ▶◀
- d. ▶◀
- e. ▶◀
- f. ▶◀
- g. ▶◀
- h. ▶◀
- i. ▶◀
- j. ▶◀
9. ▶◀
10. The physical review could require actions categorized as Maintenance (eg operational tests, tests of Emergency Equipment, crew escape and weapons systems, visual inspections requiring panel opening, etc). In this case, during the Mil AR process the correct Maintenance recording procedures must be followed, iaw 4000 Series RAs.
11. During the physical review it is entirely appropriate that, where necessary, the Mil AR surveyor ask for a sample amount of internal cladding to be removed to give visibility of the structure behind.
12. Inspection of mission system software is good practice and may be inspected at the direction of the Mil CAM.
13. ▶◀
14. Mil ARs may be conducted on ▶ Air Systems ◀ 'as flown' or during periods of Maintenance.
15. ▶◀
16. It is expected that the Mil AR process will have been completed within 21 days prior to the issue of the Military Airworthiness Review Certificate.

**Guidance
Material
4973(1)**

17. ► For civil-derivative Air Systems where 'shadow' Airworthiness reviews are conducted, evidence from the Civil Aviation Authority (CAA) defined Airworthiness review process⁷ is acceptable, noting the Mil CAM requirements in RA 4971⁸.
18. Local Maintenance requirements may include Aviation Engineering Standing Orders, Aviation Engineering Routine Orders and Military Continuing Airworthiness Management Organization (Mil CAMO) Instructions, etc. ◀

⁷ ► Refer to CAA Civil Aviation Publication 562, Leaflet B-40, Airworthiness Review section.

⁸ Refer to RA 4971 - Military Airworthiness Review and Certification - MRP Part M Subpart I, Regulation 4971(1): Military Continuing Airworthiness Manager Responsibilities. ◀

RA 4974 - Circumstances when Military Airworthiness Review Certificates Become Invalid - MRP Part M Subpart I

Rationale

Under certain conditions or direction, Military Airworthiness Review Certificates (MARC) are to be rendered invalid or revoked ►◄ to prevent further flying. When an Air System's configuration or Airworthiness is unknown, revoking its MARC is vital, to ensure Air Safety is not compromised and Risk to Life (RtL) therefore minimized.

► This RA ◄ details the requirement when an Air System's Military Airworthiness Review becomes invalid.

Contents

4974(1): Circumstances when Military Airworthiness Review Certificates Become Invalid

Regulation 4974(1)

Circumstances when Military Airworthiness Review Certificates Become Invalid

- 4974(1) A MARC **shall** become invalid if:
- a. Revoked by the Military Continuing Airworthiness Manager (Mil CAM) or MAA.
 - b. The Air System is registered as inactive on the UK Military Aircraft Register.
 - c. Its validity date is exceeded.
 - d. The Air System is not under the management of a Military Continuing Airworthiness Management Organization (Mil CAMO).
 - e. The Type Certificate becomes invalid or is revoked.

Acceptable Means of Compliance 4974(1)

Circumstances when Military Airworthiness Review Certificates Become Invalid

1. A MARC **should** be revoked if:
 - a. The Air System does not remain in conformity with the approved design, unless otherwise approved in accordance with MAA Regulatory Publications.
 - b. The Air System has been operated beyond the limitations of the Air System Documentation Set (ADS), without appropriate action being taken.
 - c. The Air System has been involved in an Accident or Incident that affects the Airworthiness of the Aircraft, without subsequent appropriate action to restore Airworthiness.
 - d. A Modification or Repair has not been approved according to Design Approved Organization Scheme requirements¹, ► or Modification / repair ◄ procedures detailed within the ADS provided by the Type Airworthiness Authority ►²◄ (TAA).
 - e. The Air System has gone through a Mark conversion programme with a corresponding new Type Certificate being issued.

¹ Refer to RA 1005 – Contracting with Competent Organizations.

² ► 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. ◄

**Acceptable
Means of
Compliance
4974(1)**

2. The ► **Mil CAM** ◀ **should** inform the appropriate authorities (MAA►³◀ and TAA) when a MARC is revoked.

**Guidance
Material
4974(1)****Circumstances when Military Airworthiness Review Certificates Become Invalid**

3. It is acceptable for the MARC of an Air System to lapse (eg in storage, extended Maintenance) however, flight restrictions⁴ will apply.

³ ► Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment. ◀

⁴ Refer to RA 1016 – Military Continuing Airworthiness Management.