

NPA/26/17

Title of Proposal: Review of RA4815 to incorporate QMS removal from CAA regulation and improve regulation structure.

RA(s) or Manual Chapter(s): RA4815

Organizations and / or business sectors affected: All AMOs working to CAA regulations

RFC Serial No: MAA/RFC/2024/211, 2025/069, 2025/164

MAA Author

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N/A	N/A	N/A	N/A

Cross-references to Other Documents or Relevant Sources

Other MRP Amendments: N/A

Service Inquiry Recommendations: N/A

AAIB Recommendations: N/A

Other Investigation Recommendations: N/A

Any Other Document: MAA 25/26 and 26/27 Programme of Work

Feedback Notes for the Regulated Community

The Regulated Community are invited to offer feedback about the proposed amendment in the following areas:

- Air or Flight Safety impact
- Operational impact
- Errors or omissions

- Timescale for implementation
- Cost of implementation
- Amendment to internal processes/orders
- Resourcing the outcome of change
- (Contract amendments because of the change)

The format for feedback is available within a single Excel Template file on both internal and external MAA websites; it is important to use this format to ensure that your responses are considered and answered correctly.

Summary of Proposed Amendment

Objective:

- To address findings from 25/26 MAA PoW investigating impact of CAA introduction of Safety Management Systems (SMS) / Compliance Monitoring (CM) Part 145.A.200, and CAA removal of Part 145.A.65(c) Quality Management System (QMS) from CAA regulation.
- Simplify RA and optimise to support RC and MAA Assurance activities.
- Better alignment with RA4951 – (Quality System – MRP Part M Subpart G) where applicable.
- Implement 3 x RFCs
- Correct errors and improve grammar

Changes made:

Full review of content, structure and presentation:

- Change regulation Title to reflect restructured content.
- Amended Regulation 4815(1) to ensure appropriate responsibility for development of AMOs Safety and Quality Policy.
- 4815(1) GM moved to AMC.
- Restructuring of sub-Regulations to improve flow and align with RA 4951 – Quality System (MRP Part M Subpart G) where appropriate: Moved RA 4815(2) - Procedures for Good Maintenance Practices to follow RA 4815(3) - Quality Management System, and retitled to “RA 4815(4) – Maintenance Procedures” to better reflect content and align with CAA terminology.
- Added requirement within RA 4815(3)a for Quality plan to include assurance of resourcing within independent Quality audits.
- Extant RA 4815(2), AMC paras 21 – 23, revised and moved to RA 4815(3), AMC para 19 – 20, to better reflect intent.
- Added requirement to use RCA when investigating finding non-conformities and non-compliances.
- Removed Surface Finish element of GM from RA 4815(4) under Specialised Services as no longer deemed appropriate for Regulation and available from other sources.

Added clarification for organisations working to CAA regulations, that Safety and Quality requirements may be met through compliance with CAA Part 145.A.200 Management System, but that for consistency Quality terminology will continue to be used throughout.

Incorporation of 3 x RFCs:

- Removed definitions of “Tradesperson”, “Supervisor” and “Coordinating / Certifying Staff” that are now standardised in RA 4800.
- Updated reference from DSA 01.1 to JSP 815.
- Added provision to increase independent Quality Audit period/schedule by up to 100% to align with RA 4951 / CAA equivalent regulation, and better define scope of QMS wrt applicable RAs.

Removal of “(MRP 145.A.XXX)” from 4800 Series RA titles and references: Increasing divergence between CAA and MRP Part 145 regulations have made inclusion of these references less relevant and misleading. Change will be implemented for all 4800 series RAs concurrently to maximise MRP coherency, with negligible impact on RC.

Format issues:

- Replaced all “z” form spellings with “s” form spelling iaw MOD and MAA policy.
- Minor grammatical changes to reduce ambiguity

Impact Assessment: Minimal expected impact to the wider MRP. Reordering of sub-regulation, moving 4815(2) to 4815(4), affects only 1 RA (5407) and the MAPCIM in the MRP for which we will raise RFCs. All external references to 4800 series RAs that include “(MRP 145.A.XXX)” will remain functionally correct, as the RA number and title is sufficient to uniquely identify the referenced RA. Therefore, there is no immediate requirement to change the MRP. External references and contents can be amended at next appropriate review.

Minor impact to RC due to restructure as internal documentation may require amendment to correctly reference MRP. While RC will have to review compliance with some changes, all either increase flexibility, ease compliance and/or improve assurance. Removal of “(MRP 145.A.XXX)” does not affect RC, as the RA number and title is sufficient to uniquely identify any referenced RA.

Consultation Period Ends: 4 weeks

The consultation period for this proposed amendment ends on the stated date. Please send your feedback, using the Response Form, via email to DSA-MAA-MRPEnquiries@mod.gov.uk

MAA Approval

Post	Name	Rank	Signature
DSA-MAA-OpAssure-Eng-DepHd	Redacted	Redacted	Redacted - Original Signed

► This RA has been re-formatted for clarity. Other amendments have been made and change marks presented ◀

RA 4815 - ► Safety and Quality Policy, and Maintenance Procedures ◀

Rationale

Maintenance organisations 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 organisation to operate with a defined ► Safety and ◀ Quality Policy and establish a Quality Management System (QMS) to deliver Assurance of Approved Maintenance procedures.

Contents

Definitions Relevant to this RA

4815(1): Organisation Safety and Quality Policy ► ◀

4815(2): ► Withdrawn – Incorporated into RA 4815(4) ◀

4815(3): Quality Management System ► ◀

4815(4): ► Maintenance Procedures ◀

Definitions

Definitions Relevant to this RA

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

Regulation 4815(1)

Organisation Safety and Quality Policy ► ◀

4815(1) Military Maintenance Organisations (MMOs) **shall** operate within the Air Safety Management System (ASMS)² ◀ developed by the relevant Duty Holder and the applicable single-Service Quality Policy ► ◀. Approved Maintenance Organisations (AMOs) **shall** establish a Safety ► ◀ and Quality Policy ►^{3, 4} ◀ for the organisation, ► developed by the relevant Accountable Manager (Maintenance) (AM(M)), ◀ to be included in the Maintenance Organisation Exposition (MOE)⁵.

Acceptable Means of Compliance 4815(1)

Organisation Safety and Quality Policy ► ◀

Common AMC

4. ► All DAE organisations **should** establish an ASMS² to achieve the Secretary of State's Safety Policy⁶ and the ASMS requirements read in conjunction with this Regulation. ◀

Additional AMC - MMOs only

5. Nil.

¹ Refer to RA 4812 – Certification of Air System Release and Component Release ► ◀.

² Refer to RA 1200 – Air Safety Management.

³ ► The principles of ISO 9001 are recommended best practice for assessing the requirements for process development, Assurance and Continuous Improvement.

⁴ For organisations working to Civil Aviation Authority (CAA) Regulations, it is recognised that Safety and Quality requirements may be met through compliance with CAA Part 145.A.200 Management System. For consistency Quality terminology will be used throughout this RA. ◀

⁵ Refer to RA 4816 – Maintenance Organisation Exposition ► ◀ – Approved Maintenance Organisations only.

⁶ ► Refer to JSP 815 – Defence Safety Management System. ◀

Acceptable Means of Compliance 4815(1)

Additional AMC - AMOs only

6. The Safety and Quality Policy **should**, as a minimum, include a statement committing the organisation to:
- Recognise Safety as a prime consideration ▶◀.
 - Apply Human Factors (HF) principles.
 - Encourage personnel to report Maintenance related errors / Incidents.
 - Recognise that compliance with procedures, Quality standards, Safety standards and Regulations is the duty of all personnel.
 - Recognise the need for all personnel to co-operate with the Quality Auditors.
7. ▶ The Safety and Quality Policy required by this Regulation **should** be coherent with the organisation's ASMS. ◀

Guidance Material 4815(1)

Organisation Safety and Quality Policy ▶◀

Common GM

8. ▶ Nil. ◀

Additional GM - MMOs only

9. Nil.

Additional GM - AMOs only

10. ▶ Nil. ◀

Regulation 4815(2)

Procedures for Good Maintenance Practices ▶◀

- 4815(2) ▶ Withdrawn – Incorporated into RA 4815(4). ◀

Acceptable Means of Compliance 4815(2)

Procedures for Good Maintenance Practices ▶◀

11. ▶ Withdrawn – Incorporated into RA 4815(4). ◀

Guidance Material 4815(2)

Procedures for Good Maintenance Practices ▶◀

12. ▶ Withdrawn – Incorporated into RA 4815(4). ◀

Regulation 4815(3)

Quality Management System ▶◀

- 4815(3) The organisation⁷ ▶◀ **shall** establish a QMS^{3, 4} ▶◀ that as a minimum:
- Establishes a Quality plan which includes independent Quality Audits ▶◀ to Assure:
 - The organisation's, and its Subcontractors⁸, compliance with MRP Part 145 Regulations.
 - The organisation's Alternative Acceptable Means of Compliance, Waivers and Exemption (AWE)

⁷ Contracted organisations **shall** refer to any further QMS requirements detailed within RA 1005 – Contracting with Competent Organisations.

⁸ AMOs may Subcontract Maintenance activities ▶ within their scope of Approval ◀ to a non-MRP Part 145 organisation but in doing so the Subcontracted organisation's facilities, personnel and procedures involved with the AMO's Products, Parts and Appliances undergoing Maintenance are effectively subsumed into the AMO in that it works under the contracting AMO's Quality ▶ Management ◀ 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 organisation in the Maintenance of the AMO's Products, Parts and Appliances. All Subcontracted organisations **shall** be listed within the Contracting AMO's Maintenance Organisation Exposition.

Regulation 4815(3)

submissions and any subsequent AWE management.

- (3) The organisation's, and its Subcontractors', 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 organisations.
 - (6) The compliance of Subcontracted tasks, processes and procedures to Regulations.
 - (7) ► The organisation, and its Subcontractors, have the capacity 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 organisation⁹. ◀
- b. ► Establishes ◀ a Quality feedback reporting system to the person or group of persons specified¹⁰ and ultimately to the AM(M) that ensures proper and timely corrective action is taken in response to reports resulting from the independent ► Quality ◀ Audits established to meet RA 4815(3)(a) ► ◀.

Acceptable Means of Compliance 4815(3)

Quality Management System ► ◀

Common AMC

13. 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.
14. Independent Quality Audits **should** be conducted across all working environments and working patterns to ensure that ► they ◀ are reflective of the varied ► ◀ conditions ► under which ◀ Maintenance is carried out.
15. The QMS **should** ensure that all aspects of MRP Part 145 compliance and ► applicable RA 1000 series¹¹ ◀ Regulation is ► Assured ◀ every 12 months, either as a complete single exercise or subdivided over the 12-month period in accordance with (jaw) a scheduled plan. ► Provided that there are no Safety related findings, the Audit period specified may be increased by up to 100%, subject to a Risk Assessment and / or mitigation actions, and agreement by the AM(M). ◀
16. The independent Quality Audit does not require each procedure to be checked against each product line when it can be shown that the ► ◀ procedure is common to more than one product line and the procedure has been checked ► during the Audit cycle ◀ without resultant findings. However, where findings have been identified, the procedure **should** be rechecked against other product lines until the findings have been rectified, after which the independent Quality Audit ► schedule ◀ may revert to ► the agreed Audit period ◀ for the procedure.

⁹ ► Refer to 4806(4): Maintenance Working Hours Plan. ◀

¹⁰ Refer to RA 4806(2): Personnel Responsible to the Accountable Manager (Maintenance) ► ◀.

¹¹ ► Applicable 1000 series RAs include, but are not limited to, RA 1002 – Airworthiness Competent Persons, RA 1006 – Delegation of Engineering Authorisations, RA 1200 – Air Safety Management, RA 1410 – Occurrence Reporting and Management, and RA 1440 – Air Safety Training. ◀

Acceptable Means of Compliance 4815(3)

17. 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.
18. 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.
19. ► All procedures **should** be reviewed and updated at an appropriate periodicity to ensure that they reflect current best practice. It is the Responsibility of all organisations' employees to report any unauthorised deviation from Approved procedures via their organisation's internal Occurrence reporting mechanisms.
20. All procedures, and changes to those procedures, **should** be managed and presented iaw HF principles, then validated and verified before use. ◀

Additional AMC - MMOs only

21. Nil.

Additional AMC - AMOs only

22. A small organisation (one with a maximum of 10 personnel actively engaged in Maintenance) ► may elect ◀ to Contract the independent Quality Audit element of the QMS iaw RA 4815(3)(a) ►, but ◀ **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.
23. Where the organisation has line stations listed¹², the QMS **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 that line station. The maximum period between independent Quality Audits of each line station **should not** exceed 12 months.
24. The Quality feedback system **should not** be Contracted to outside persons.
25. ► All non-conformities and non-compliances **should** be investigated and rectified using a Root Cause Analysis (RCA) approach, tool, or technique¹³, and instructions for the use of RCA detailed in the MOE. ◀ The Quality department or nominated Quality Auditor ► **should** be informed of both containment and preventative actions. ◀
26. The AM(M) **should** hold regular meetings with staff to check progress on rectification except that, for large organisations ► ◀, 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.

Guidance Material 4815(3)

Quality Management System ► ◀

Common GM

27. The primary objective of the QMS is to enable the organisation to ensure that it can deliver a safe product and that the organisation remains in compliance with applicable Regulation and policy. Essential elements of the QMS are the independent Quality Audit and the Quality feedback system.

Additional GM - MMOs only

28. Self-Audits, Internal Quality Audits and External Quality Audits each constitute independent Quality Audits within the scope of this Regulation.
29. This Regulation requires an MMO to have its own QMS that incorporates a schedule of independent Quality Audits with a formal reporting mechanism to management. The 'Self Audit' and reporting processes satisfies this requirement, with independence being achieved by using staff independent of the process being Self Audited.

¹² Refer to RA 4817 – Privileges of the Organisation ► ◀.

¹³ ► 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. ◀

**Guidance
Material
4815(3)**

Additional GM - AMOs only

30. Nil.

The Quality Audit

Common GM

31. The independent Quality Audit is an objective process of routine sample checks of all aspects of the organisation's ability to carry out ►◄ Maintenance, to the required standards, and includes ►◄ product sampling as this is the 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 requirement ►◄ for Coordinating / Certifying Staff ►¹⁴◄ to be satisfied that all required Maintenance has been properly carried out, before endorsement of the Certification of Air System Release ►¹⁵◄.

32. 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 the result is an airworthy product.

33. 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

34. Nil.

Additional GM - AMOs only

35. For ►an◄ independent Quality Audit, a product line includes any product under an Approval class rating¹⁶, as specified in the Approval schedule issued to the ►◄ organisation. ►For example,◄ a Maintenance organisation Approved under MRP Part 145 with the capability to maintain Air Systems and Repair engines, brakes and autopilots would need to carry out four complete independent Quality Audit sample checks each year. This is unless a different interval of Quality Audits has been stipulated by the MAA.

36. ►Methods to achieve independent Quality Audits could be as follows:◄

- a. A large Maintenance organisation Approved under MRP Part 145 ►◄ 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 organisation Approved under MRP Part 145 ►◄ may use 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 organisations with a maximum of 10 Maintenance staff actively engaged in carrying out Maintenance, may Contract the independent Quality Audit element of the QMS to another organisation approved under MRP Part 145, or a suitably qualified and Competent Person.

37. The table at Annex ►A◄ provides guidance on an 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

38. The principal function of the Quality feedback system is to ensure that all findings resulting from the independent Quality Audits of the organisation are properly

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

¹⁵ Refer to RA 4812(1): Certification of Air System Release ►◄.

¹⁶ Refer to RA 4804 – Terms of Approval ►◄ – Approved Maintenance Organisations only.

**Guidance
Material
4815(3)**

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.

39. A key part of this feedback system is sending the independent Quality Audit reports to the relevant departments for rectification action giving target rectification dates. Rectification dates may be discussed with such departments before the Quality department or nominated Quality Auditor confirms such dates in the report.

**Regulation
4815(4)**

► Maintenance Procedures ◀

4815(4) The organisation **shall** follow Approved procedures, **► considering ◀** HF, to ensure good Maintenance practices and compliance with MRP Part 145. Procedures **shall** include a clear process, work order or Contract¹⁷ 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 organisation under this Regulation **shall** cover all aspects of carrying out the Maintenance activity, including the provision and control of Specialised Services and lay down the standards to which the organisation intends to work.
- b. **► ◀** The organisation **shall** establish procedures to minimise the Risk of multiple errors and capture errors on critical Systems **► during Air System Maintenance. ◀** The organisation **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 organisation'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.
- c. Maintenance procedures **shall** be established to ensure that **► Approved TI is used to assess damage, and to carry out Modifications and Repairs as required. ◀**
- 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)¹⁸ Approved instruction.

**Acceptable
Means of
Compliance
4815(4)**

► Maintenance Procedures ◀

Common AMC

40. For Air Systems and Air System structural components that are beyond the Repair capability of the Maintenance organisation the Military Continuing

¹⁷ AMOs may Contract Maintenance works to other MRP Part 145 organisations whose Approval covers the scope of the required works. Contracted Maintenance Organisations carry out works under their own Approval and Quality **► Management ◀** System and retain Accountability of their actions and outputs. A list of Contracted organisations is to be held within the Contracting AMO's MOE; refer to RA 4816 – Maintenance Organisation Exposition **► ◀** – Approved Maintenance Organisations only.

¹⁸ Where the Air System is not UK MOD-owned, Type Airworthiness (TAA) 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 TAA Responsibilities TAM may be read in place of TAA as appropriate throughout this RA.

Acceptable Means of Compliance 4815(4)

Airworthiness Manager (Mil CAM) **should** be informed and ►◄ direct alternate means to implement a Repair.

41. The Repair categories and definitions at Annex ►B◄ **should** be used to categorise a Repair in consultation with the Mil CAM.

42. Specialised Services **should** be:

- a. Performed by appropriately qualified¹⁹ personnel.
- b. Carried out under the control of the AM(M) for the Air System or Air System component under Maintenance.

43. Organisations **should** establish aviation engineering orders and / or local procedures that cover the control of any Specialised Services.

44. Surface finish **should** be conducted iaw the appropriate Air System or Air System component TI.

Additional AMC - MMOs only

45. MMOs **should** ensure that all established Maintenance procedures and processes pertaining to good Maintenance practices achieve compliance with MRP Part 145.

46. With respect to ►RA 4815(4) 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.

47. An Independent Inspection **should** be sufficient to verify correct assembly and functionality covering the level of disturbance to the System.

48. An Independent Inspection **should** be conducted by an individual suitably Competent and Authorised²⁰ who was not involved with the original Maintenance task requiring the Independent Inspection.

49. An organisation performing Maintenance work **should** remove, change, or replace identification information only iaw Approved procedures.

50. Any removed identification plate **should** be re-installed only on the assembly from which it was removed.

Additional AMC - AMOs only

51. ►◄

52. ►◄

53. ►◄

54. With respect to ►RA 4815(4) 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.

¹⁹ Refer to RA 4806(6): Specialised Services ►◄.

²⁰ Refer to RA 4806 – Personnel Requirements ►◄ and RA 4807 – Certifying Staff and Support Staff ►◄.

Acceptable Means of Compliance 4815(4)

- b. Information arising from the 'Occurrence reporting system'²¹.
- c. TAA and / or Mil CAM requirements to capture errors, if applicable.

55. ▶◀ 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 Unauthorised personnel (eg temporary staff or a trainee), **should** be checked by Authorised personnel before the Authorised personnel complete the sign-off. The grouping of tasks for the purpose of signing-off **should** allow critical steps to be clearly identified.

56. The Maintenance organisation **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 organisation. The Maintenance organisation **should** pay attention to possible adverse effects of any wiring changes.

Guidance Material 4815(4)

▶ Maintenance Procedures ◀

Common GM

57. ▶ With respect to RA 4815(4) b, ◀ 'to self-supervise a Maintenance task' means to both carry out and inspect / supervise that Maintenance task.

Specialised Services

58. Specialised Services are any specialised Maintenance activity, such as, but not limited to, Non-Destructive Testing (NDT), surface finish and welding. Specialised Services require skills and / or qualifications, outside of that normally taught as part of Air System Maintenance training such as CAA Part-66 or military Aerospace engineering trade training.

▶◀

59. ▶◀

60. ▶◀

61. ▶◀

62. ▶◀

a. ▶◀

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j. ▶◀

63. ▶◀

64. ▶◀

65. ▶◀

Independent Inspections

66. 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 ▶¹⁴◀ may require an Independent Inspection of a System if they consider it justified by the nature or circumstances of the Maintenance work being undertaken.

²¹ Refer to RA 4814 – Occurrence Reporting ▶◀.

**Guidance
Material
4815(4)**

67. 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 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. ► Air data Systems. ◀
- 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 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.

68. A list of those Systems subject to Independent Inspections for ► an ◀ Air System will be detailed in the relevant TI.

69. ► RA 4815(4) b reduces ◀ 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.

70. 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. 'Authorised personnel' means personnel formally Authorised by the Maintenance organisation Approved under MRP Part 145 to sign-off tasks. Authorised personnel are not necessarily staff with Certification Authorisation²².

71. When Approved by the Commands, Expedient Repair (ER) may be used²³.

Additional GM - MMOs only

72. Nil.

Additional GM - AMOs only

73. Nil.

²² Refer to RA 4807(7): Issue of Certification Authorisation ► ◀.

²³ ► Refer to Manual of Airworthiness Maintenance – Processes (MAM-P) Chapter 4.7 Expedient Repair. ◀

Annex ►A◄

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 each situation and more than one list may be necessary.
2. Each list will need to be shown against a timetable to indicate when each 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 ►◄	RA 4800(1) RA 4800(2)				
RA 4801 ►◄	RA 4801(1)				
RA 4802 ►◄	RA 4802(1)				
RA 4803 ►◄	RA 4803(1)				
RA 4804 ►◄	RA 4804(1)				
RA 4805 ►◄	RA 4805(1) RA 4805(2) RA 4805(3) RA 4805(4)				
RA 4806 ►◄	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 ►◄	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 ►◄	RA 4808(1) RA 4808(2) RA 4808(3)				
RA 4809 ►◄	RA 4809(1) RA 4809(2) RA 4809(3) ►◄				
RA 4810 ►◄	RA 4810(1) RA 4810(2) RA 4810(3) RA 4810(4) RA 4810(5) RA 4810(6) RA 4810(7)				
RA 4811 ►◄	RA 4811(1) RA 4811(2) RA 4811(3)				
RA 4812 ►◄	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 ▶◀	RA 4813(1) RA 4813(2) RA 4813(3) RA 4813(4)				
RA 4814 ▶◀	RA 4814(1) RA 4814(2) RA 4814(3)				
RA 4815 ▶◀	RA 4815(1) ▶◀ RA 4815(3) ◀▶ ▶ RA 4815(4) ◀				
RA 4816 ▶◀	RA 4816(1) RA 4816(2) RA 4816(3) RA 4816(4) RA 4816(5)				
RA 4817 ▶◀	RA 4817(1)				
RA 4818 ▶◀	RA 4818(1)				
RA 4819 ▶◀	RA 4819(1)				
RA 4820 ▶◀	RA 4820(1) RA 4820(2)				
RA 4821 ▶◀	RA 4821(1) ▶ RA 4821(2) ◀ 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					

Item	Sub-Item	Hangar	Engine Workshop	Mech Workshop	Avionic Workshop
MOE Part 3.8					
MOE Part 3.9					
MOE Part 3.10					
MOE Part 3.11					
MOE Part 3.12					
MOE Part 3.13					
MOE Part 3.14					
▶MOE Part 3.15◀					
▶MOE Part 4.1◀					
▶MOE Part 4.2◀					
▶MOE Part 4.3◀					
▶MOE Part 5.1◀					
▶MOE Part 5.2◀					
▶MOE Part 5.3◀					
▶MOE Part 5.4◀					

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Annex ► B ◄

Air System Repair Categories and Definitions

Repair Category	Definition
1	The Air System is Repairable within the Maintenance organisation's capabilities.
2	The Air System is Repairable within the Maintenance organisation's capabilities, or the Maintenance capabilities of any Forward ► Maintenance ◄ organisation to which it may be allotted.
3 (PROV)	The Air System is Repairable on site, but the work is considered by the Maintenance organisation to be beyond their Forward Maintenance organisation capability.
3 (SER)	The Air System is Repairable on site, but the work has been confirmed as beyond the Maintenance organisation or their Forward Maintenance organisation's capability and will be done by a Service Repair Organisation (SRO).
3 (DEPTH)	The Air System is Repairable on site, but the work has been confirmed as beyond the capability of the Maintenance organisation, their Forward Maintenance organisation and the relevant SRO: the work will be done by a Depth Maintenance organisation.
3 (FLY)	Post-categorisation, 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 categorisation is required. The Repair may be carried out at a MOD facility or Contractor's facility upon categorisation.
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 Organisation (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 organisation.
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:

1. The Maintenance organisation 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 organisation.

2. Applicable to 1710 Naval Air Squadron (NAS) only.

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