



DEFENCE AVIATION SAFETY AUTHORITY

**COMMENT RESPONSE DOCUMENT TO NPA 2020-023 DASR
PART 145 PROPOSED AMENDMENTS AND DELETIONS AS
IDENTIFIED BY DASR GREEN TEXT REVIEW**

INTRODUCTION

1. **General.** Readers should note that this Comment Response Document (CRD) outlines DASA's agreed policy and intended regulation changes and finalises the public consultation process in respect of this NPA. Only under extreme or unusual circumstances will DASA consider views or arguments opposing the views expressed in the CRD. Any member of the public having views or arguments to support an appeal against the decisions documented in this CRD may petition DASA to consider such an appeal.

2. **Background.** On 29 Jan 21, DASA released NPA 2020-023 DASR Part 145 Proposed Amendments and Deletions as Identified by DASR Green Text Review for comment. The period for public comment on the proposals contained in this NPA closed on 26 Feb 21.

ANALYSIS OF COMMENTS

General

3. DASA received responses to the NPA from seven stakeholders and all responses were assessed by DASA with a formal position agreed to for changes to DASR 145 Requirements for Maintenance Organisations. A summary of the replies raised along with DASA's responses are highlighted below.

4. One response to the NPA stated 'the proposal is not acceptable but would be acceptable if the following changes were made:' and is further discussed below. All other responses stated 'The proposal is acceptable' with the following caveats:

- a. 'without change' – provided in one response.
- b. 'but would be improved if the following changes were made' – provided by five respondents, and further discussed below.

Comment 1

5. Four respondents disagreed with the proposal to delete the green text in relation to Line and Base maintenance in AMC 145.A.20 Terms of approval (AUS). The consensus was that the green text provides useful information that is not included in AC 007/2018 Line and Base Maintenance.

6. **DASA Response.** Agree.

7. **Disposition.** Green text in relation to line and base maintenance will be retained however it will be relocated as AMC 145.A.10 Scope as this aligns with EMAR AMC 145.A.10 Scope which contains the EMAR definition of line and base maintenance.

8. The proposed change to AMC 145.A.20 Terms of approval is as follows:

- a. Delete paragraph 3 from AMC 145.A.20 Terms of approval and insert the deleted paragraph 3 text as new AMC to 145.A.10 Scope as follows:

1. Line maintenance should be understood as any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight.

- a. Line maintenance may include:

- Trouble shooting.
- Defect rectification.



- Component replacement with use of external test equipment if required. Component replacement may include components such as engines and propellers.
 - Scheduled 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.
 - Minor repairs and modifications which do not require extensive disassembly and can be accomplished by simple means.
- b. For temporary or occasional cases (AD's, SB's) the Quality Manager may accept base maintenance tasks to be performed by a line maintenance organisation provided all requirements are fulfilled as defined by the NMAA.
 - c. Maintenance tasks falling outside these criteria are considered to be base maintenance.
 - d. Aircraft maintained in accordance with "progressive" type programmes should be individually assessed in relation to this paragraph. In principle, the decision to allow some "progressive" checks to be carried out should 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.

Comment 2

9. There was one response that disagreed to changing the green regulatory text in DASR 145.A.35(i) from "The person responsible for the quality system shall also" to "The maintenance organisation shall nominate an individual who shall".

10. **DASA Response.** Disagree.

11. **Disposition.** The reason for the proposed change is that the current text is prescriptive in that only the person responsible for the quality system can issue certification authorisations. DASR are outcome based and the change to EMAR black text provides flexibility for how the regulatory text outcome is achieved. The change to "The maintenance organisation shall nominate an individual who shall" does not prevent the person responsible for the quality system being nominated as the person responsible.

Comment 3

12. There was a comment that GM 145.A.35(i) was unnecessary, does not amplify the associated regulatory text and the specific nomination of the WOE is too prescriptive and should be removed.

13. **DASA Response.** Agree.

14. **Disposition.** No changes were proposed for GM 145.A.35(i) in NPA 2020-023. However it has been proposed to delete this GM as part of the next round of DASR 145 green text amendments.

Comment 4

15. There was a comment that AMC 145.A.35(n) paragraph 4 should not be deleted as the current text provides an acceptable alternate and is of benefit.

16. **DASA Response.** Disagree.

17. **Disposition.** DASA considers AMC 145.A.35(n) paragraph 4 is one option to conform with the regulation. The regulation requires that the appropriate task training be conducted, if type training meets the regulation's requirement for task training then it would be acceptable. There is no need to highlight this one method as long as the intent of appropriate task training is maintained. Green text to be removed as per the NPA.

Comment 5

18. There was a comment in regards to changing AMC 145.A.40(a)(1) to GM that the text “The procedure should include:” does not align with the concept of guidance material.

19. **DASA Response.** Agree.

20. **Disposition.** The proposed change to AMC 145.A.40(a)(1) is to amend the green text as follows:

a. From AMC 145.A.40(a)(1)

‘The agreement by the NMAA for the use of alternative tooling by the Approved Maintenance Organisation should be formalised through the approval of a detailed procedure in the Maintenance Organisation Exposition. This AMC contains principles and conditions to be taken into account for the preparation of an acceptable procedure. The procedure should include:

- Demonstration of equivalence between design/manufacturing data of alternate tools and the data/features of the tools recommended in the maintenance data of the manufacturers.
- In-house identification rules for alternate tools (manufacturers reference number and serial number).
- Alternate tools validation process.
- Register of alternate tools / tagging / relation between the references of original tools and alternate tools.
- Treatment of possible changes of maintenance data according to the new references of alternative tooling (modifications limited to the references of the tooling to be used and/or adaptation of maintenance data regarding alternative tooling). Refer to DASR AMC 145.A.45(d) paragraph 1(c).
- Use/storage/maintenance manuals according to the need.
- In-house approval of each alternate tooling before servicing.
- Storage of the records of alternative tooling.’

b. To GM 145.A.40(a)(1)

‘The agreement by the NMAA for the use of alternative tooling by the Approved Maintenance Organisation should be formalised through the approval of a procedure in the Maintenance Organisation Exposition. This GM provides guidelines on information that could be included in the procedure:

- Demonstration of equivalence between alternate tools and the tools recommended in the maintenance data of the manufacturer.
- Demonstrate that the alternate tools will be clearly and uniquely identified.
- Alternate tools validation process.
- Register of alternate tools / tagging / relation between the references of original tools and alternate tools.
- Treatment of possible changes of maintenance data according to the new references of alternative tooling (modifications limited to the references of the tooling to be used and/or adaptation of maintenance data regarding alternative tooling). Refer to DASR AMC 145.A.45(d) paragraph 1(c).
- Use/storage/maintenance manuals if required.
- In-house approval of each alternate tooling before servicing.

- Storage of the records of alternative tooling.'

Comment 6

21. There was a comment in regards to AMC 145.A.42(a)(1) that AC 008/2018 Acceptance of Aircraft Components needs to be reviewed as it contains outdated references.
22. **DASA Response.** Agree.
23. **Disposition.** AC 008/2018 will be revised to amend incorrect references.

Comment 7

24. There was a comment that agreed with the insertion of new green text in AMC 145.A.42(a)(2) based on EASA AMC but suggested it would be better placed within AMC 145.A.42(a)(3)(i).
25. **DASA Response.** Agree
26. **Disposition.** The proposed change is to amend AMC 145.A.42(a)(2) as per NPA 2020-023 except inserting the new EASA based text to 145.A.42(a)(3)(i). The proposed changes are as follows:

- a. From AMC 145.A.42(a)(2)

The maintenance organisation performing maintenance should ensure proper identification of any unserviceable components.

The unserviceable status of the component should be clearly declared on a tag or other suitable means together with the component identification data and any information useful to define actions necessary to be taken. Such information should state, as applicable, in-service times, maintenance status, preservation status, failures, defects or malfunctions reported or detected, exposure to adverse environmental conditions or if the component has been involved in or affected by an accident/incident. Means should be provided to prevent unwanted separation of this tag from the component.

Procedures shall be defined by the organisation describing the decision process for the status of unserviceable components. This procedure shall identify at least the following:

- a. role and responsibilities of the persons managing the decision process;
- b. description of the decision process to choose between maintaining, storing or mutilating a component;
- c. traceability of decision.

Storage / segregation and management of any unserviceable component shall be ensured according to the pertinent procedure approved to that organisation.

Where the unserviceability has resulted in an occurrence report, the component shall be retained by the maintenance organisation until such time as investigation into the failure, malfunction or defect has determined that the component is not required to be retained for further examination.

NOTE: 'A secure location under the control of an approved maintenance organisation' means a secure location for which security is the responsibility of the approved maintenance organisation. This may include facilities established by the approved maintenance organisation at locations different from the main maintenance facilities. These locations should be identified in the relevant procedures of the approved maintenance organisation.

- b. To AMC 145.A.42(a)(2)

The maintenance organisation performing maintenance should ensure proper identification of any unserviceable components.

The unserviceable status of the component should be clearly declared on a tag or other suitable means together with the component identification data and any information useful to define actions necessary to be taken. Such information should state, as applicable, in-service times, maintenance status, preservation status, failures, defects or malfunctions reported or detected, exposure to adverse environmental conditions or if the component has been involved in or affected by an accident/incident. Means should be provided to prevent unwanted separation of this tag from the component.

Procedures shall be defined by the organisation describing the decision process for the status of unserviceable components. This procedure shall identify at least the following:

- a. role and responsibilities of the persons managing the decision process;
 - b. description of the decision process to choose between maintaining, storing or mutilating a component;
 - c. traceability of decision.
- c. New AMC to 145.A.42(a)(3)(i) (AUS)

Once components or materials have been identified as unsalvageable, the organisation should establish secure areas in which to segregate such items and to prevent unauthorised access. Unsalvageable components should be managed through a procedure to ensure that these components receive the appropriate final disposal. The person responsible for the implementation of this procedure should be identified.

Comment 8

27. There was a comment that disagreed with the removal of a green text paragraph from AMC 145.A.42(a)(2) "Where the unserviceability has resulted in an occurrence report, the component shall be retained by the maintenance organisation until such time as investigation into the failure, malfunction or defect has determined that the component is not required to be retained for further examination." The reason provided is that DASR 145 organisations may dispose of a component without confirming if it is required for further examination.

28. **DASA Response.** Disagree.

Disposition. The associated regulation text to this AMC is related to the circumstances that a component should be considered unserviceable. The reason for deleting the AMC green text is it is not related to the regulation text. In addition the sentence after 145.A.42(a)(2) states 'Unserviceable components shall be identified and stored in a secure location under the control of a maintenance organisation until a decision is made on the future status of such component.' and would cover situations such as an occurrence report.

Comment 9

29. There were two related comments one for AMC 145.A.42(a)(1) and one for AMC2 145.A.42(a)(4) that rather than deleting the associated AMC, the AMC should remain but reference AC 008/2018 Acceptance of Aircraft Components.

30. **DASA Response.** Disagree

31. **Disposition.** The reason AMC 145.A.42(a)(1) is being deleted is that it repeats AMC 145.A.42(b) and the reason for deleting AMC2 145.A.42(a)(4) is the content is covered by AMC1 145.A.42(a)(4) and AC 008/2018 Acceptance of Aircraft Components. Including AMC that just references an AC would not simplify or improve the clarity of DASR.

Comment 10

32. There was a comment that GM 145.A.55(c)(2) should not be deleted but it would be acceptable if the GM was relocated as it contains useful information.

33. **DASA Response.** Disagree.

34. **Disposition.** The GM to be deleted is "When hardware or software changes take place, special care should be taken that all necessary data continues to be accessible at least through the required retention period." The reason the GM is to be deleted is it is unrelated to the regulation text "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." Also there is regulation text 145.A.55(c)(1) which states that the records must readable and accessible for the duration of storage and its GM includes the green text to be deleted from GM 145.A.55(c)(2).

Comment 11

35. There was a comment that instead of the proposed change to AMC 145.A.85(a) of inserting a link in the AMC that refers to the required DASR Form 2, that the link be direct to the DASR Form 2.

36. **DASA Response.** Agree.

37. **Disposition.** Agree with suggestion, the intent of the proposed change was to link directly to the DASR Form 2 from the regulatory text. However the link may not be clear if placed in the regulatory text. Therefore it is proposed to change the current AMC as follows:

- a. From: 'An application for change to the AMO, for those listed in DASR 145.A.85(a), shall be made in a form and manner established by the MAA, see AMC 145.A.15.'
- b. To: 'The AMO should notify the NMAA of any change using a DASR Form 2' with a link inserted to DASR Forms.

Comment 12

38. There was a comment that GM 145.A.90(a)(1) contained useful information for maintenance organisations to understand the conditions that would invalidate a 145 maintenance organisations approval and should be retained.

39. **DASA Response.** Agree.

40. The reason the GM was proposed for deletion is that is more applicable to DASA than maintenance organisations, however as the information is deemed to be useful it is to be retained.

Comment 13

41. There was a comment that the AMC and GM from 145.A.95 in relation to AMO Findings by the NMAA (AUS) provides clarity and guidance to AMO findings by the NMAA. It was also suggested that the AMC and GM could reference similar black text in M.A.716.

42. **DASA Response.** Agree.

43. For standardisation between M and 145 it is proposed to change the current AMC and GM as follows:

- a. From:
 - (1) Delete AMC 145.A.95(a):

The corrective action plan defined by the organisation should address the effects of the non-compliance, as well as its root cause(s) and contributing factors.
 - (2) Delete GM 145.A.95(a)

1. 'Preventive action' is the action to eliminate the cause of a potential non-compliance, or other undesirable potential situation.'

2. 'Corrective action' is the action to eliminate or mitigate the root cause(s), and prevent recurrence of an existing detected non-compliance, or other undesirable condition or situation. Proper determination of the root cause(s) is crucial for defining effective corrective actions to prevent reoccurrence.

3. 'Correction' is the action to eliminate a detected non-compliance

(3) Delete GM 145.A.95(a)(1)

ROOT CAUSE ANALYSIS

1. It is important that the analysis does not primarily focus on establishing who or what caused the non-compliance but why it was caused. Establishing the root cause or causes of a non-compliance often requires an overarching view of the events and circumstances that lead to it, to identify all possible systemic and contributing factors (regulatory, human factors, organisational, managerial, cultural, technical, etc.) in addition to the direct factors. A narrow focus on single events or failures, or the use of a simple, linear model, such as fault tree, to identify the chain of events that lead to the non-compliance may not properly reflect the complexity of the issue, and, therefore, bears the risk that important factors required to be addressed in order to prevent reoccurrence will be ignored.

2. Such inappropriate or partial root cause analysis often leads to defining 'quick fixes' addressing the symptoms of the nonconformity only. A peer review of the results of the root cause analysis may increase its reliability and objectivity.

3. A system description of the organisation considering organisational structures, processes and their interfaces, procedures, staff, equipment, facilities, and the environment in which the organisation operates will support both effective root cause (reactive) and hazard (proactive) analysis.

b. To:

(1) New GM 145.A.95:

'Information in regards to actions in regards to AMO Findings by the NMAA are detailed in GM M.A.716' with a link to GM M.A.716.

For information the content of GM M.A.716 is as follows:

1. General

a. Preventive action is the action to eliminate the cause of a potential non-compliance, or other undesirable potential situation.

b. Corrective action is the action to eliminate or mitigate the root cause(s) and prevent recurrence of an existing detected non-compliance, or other undesirable condition or situation. Proper determination of the root cause is crucial for defining effective corrective actions to prevent reoccurrence.

c. Correction is the action to eliminate a detected non-compliance.

2. Root-cause analysis

a. It is important that the analysis does not primarily focus on establishing who or what caused the non-compliance but why it was caused. Establishing the root-cause or causes of a non-compliance often requires an overarching view of the events and circumstances that lead to it, to identify all possible systemic and contributing factors (regulatory, human factors, organisational, managerial, cultural, technical, etc.) in addition to the direct factors. A narrow focus on single events or failures, or the use of a simple method such as fault tree, to identify the chain of events that lead to the non-compliance may not properly reflect the complexity of the issue, and, therefore bears the risk that important factors required to be addressed in order to prevent reoccurrence will be ignored.

b. Such inappropriate or partial root-cause analysis often leads to defining 'quick fixes' addressing the symptoms of the nonconformity only. A peer review of the results of the root-cause analysis may increase its reliability and objectivity.

c. A system description of the organisation considering organisational structures, processes and their interfaces, procedures, staff, equipment, facilities and the environment in which the organisation operates will support both effective root-cause (reactive) and hazard (proactive) analysis.

c. From:

(1) GM 145.A.95(a)(2)

'The corrective action plan defined by the organisation should address the effects of the non-compliance, as well as its root cause.'

d. To:

(1) AMC 145.A.95(a)(2) 'Information in regards to a corrective action plan is detailed in AMC M.A.716(a)(2)' with a link to AMC M.A.716(a)(2) inserted in the text.

For information the content of AMC M.A.716(a)(2) is as follows:

'The corrective action plan defined by the CAMO should address the effects of the non-compliance, as well as its root cause.'

ADDENDUM

44. DASA advises that an additional DASR change proposal (DCP 2021-003) was submitted during the consultation period. This was done as part of a more comprehensive change to how Aircraft Structural Integrity Management Plans (ASIMPs) and Engine Structural Integrity Management Plans (ESIMPs) are to be used as part of the means of satisfying DASR requirements. DCP 2021-003 proposed that AMC to DASR 145.A.50 – Certification of maintenance, that currently reads:

'Endanger flight safety' means any instance 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 (including overheating), electrical arcing, significant hydraulic fluid or fuel leakage and any emergency system or total system failure. An AD overdue for compliance is also considered a hazard to flight safety.

For Aircraft Structural and Propulsion Systems Integrity, unless you have pre-approved data from a DASR 21J approved military design organisation, or equivalent (including pre-approved repairs in the Structural Repair manual, Service Bulletins, Airworthiness Directives, etc.), you should assume that any structural non-compliance to Critical Structure, Primary Structure or Principle Structural Elements (PSE), could 'endanger flight safety'. Definition of what constitutes Critical Aircraft Structure may be found in the weapon system approved Aircraft Structural Integrity Management Plan (ASIMP), while Critical Propulsion System Parts may be found in the DASR **GM DASR 21.A.41**.

Be amended to read:

'Endanger flight safety' means any instance 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 (including overheating), electrical arcing, significant hydraulic fluid or fuel leakage and any emergency system or total system failure. An AD overdue for compliance is also considered a hazard to flight safety.

45. The rationale for the proposed change is that paragraph 1 'Endanger flight safety' with an "unsafe condition" which is already sufficiently defined elsewhere in DASR. Para 1 also then provides sufficient examples for the endanger flight safety assessment. Para 2 is also potentially too broad and extends beyond the conditions that should be associated with endangering flight safety.

46. As this change simplifies policy and improves clarity, DASA has consulted selectively and found that there are no objections. DASA has accepted the proposal for incorporation.

AUTHORITY

47. The content of this Summary of Responses has been reviewed and is authorised.

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Annex:

A. List of Respondents

NOTICE OF PROPOSED AMENDMENT – NPA 2020-023

LIST OF RESPONDENTS

1. HQAC
2. HQAWC
3. HQSRG
4. HQAMG
5. DASA Internal
6. BAE Systems Australia
7. Boeing Defence Australia