



## DEF STAN 00-970 NOTICE OF PROPOSED AMENDMENT (Def Stan 00-970-NPA)

### TITLE OF PROPOSAL:

Proposed amendment to Def Stan 00-970 Part 11 to incorporate latest changes of CS-E (Amendment 3 dated 23 Dec 10)

Stage of Amendment: Select Current Stage

Def Stan 00-970 NPA Serial No:	2012-001		
Unsatisfactory Report Serial No:	N/A		
MAA Originator:	Sqn Ldr	H M PARKER	MAA-Cert-MPS1

Affected Part: (including paragraphs)	Various		
Cross-reference to other relevant amendment proposals or documents:	N/A		
Proposed Issue Date	Feb 2012		

Weblink of where this document can be accessed [20120207-Proposed 970 Part 11 Amendment-PSI2-U](#)

### ADS Point of Contact details

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### Part 1 (for issue to Regulated Community)

#### INTRODUCTION (*Not more than 250 words*)

The fundamental airworthiness requirements contained in Section 3 of Def Stan 00-970 Part 11 were based on the European Aviation Safety Agency (EASA) Certification Specification for Engines; CS-E Issue 01 dated 24<sup>th</sup> October 2003. Since the initial issue of Def Stan 00-970 in Jan 2006 however, there have been 3 amendments to CS-E which have yet be reflected in Def Stan 00-970 including:

Amendment 1: In addition to minor editorial changes, the more significant changes include the addition of a “bonding” requirement (CS-E 145) to clarify the overall intent of electrical bonding requirements (CS-E/1 NPA 03/2005 and NPA 04/2005 refer). Another significant change within Amendment 1 was enhancement of the requirements for certification of electronic engine control systems. The changes to CS-E in this case

were a direct consequence of the changes to AMC 20.

Amendment 2: Addition of AMC 520 (c)(2) Engine Model Validation introduced to ensure that data provided by the engine manufacture is aligned with changes introduced in CS-25 and that responsibilities and interface issues are better defined. Changes to CS-25 resulted from the requirement to adequately define the full loading imposed by the larger high-bypass ratio turbofan engines being developed in order to maintain the level of safety intended.

Amendment 3: Addition of ETOPS requirement, not applicable to military aircraft.

This request has been raised to incorporate the amendments to CS-E within Def Stan 00-970.

## SUMMARY OF PROPOSED AMENDMENT

**Change:** Recommended changes are presented within a table at Annex A. The recommended changes come as a result of changes to CS-E, which directly impact the content of Def Stan 00-970 Part 11. The changes to CS-E were issued under amendments 1, 2 and 3.

### Impact Assessment:

#### Objective:

The objective of this amendment is better alignment with CS-E on which Def Stan 00-970 Part 11 is based.

### Risk Assessment:

The impact of not incorporating the recommended changes is a further undesirable diversion between CS-E and Def Stan 00-970.

### Courses of Action:

1. **Do nothing.** The option to do nothing is not desirable for the following reasons. Not incorporating the administrative changes will result in inaccurate references to CS-E within the Def Stan 00-970, leading to possible ambiguity of the requirements and lack of full compliance. Not including the more significant changes would not take into account the consequences of engine technological and configuration changes and would not provide the necessary guidance material for the interpretation of the Certification Specifications. This course of action does not contribute to the overall objective.

2. **Partial Amendment – Incorporation of Administration Changes only.** There is an option to incorporate administration/paragraph format changes only which will remove possible ambiguity currently within 00-970 Part 11, thus improving ease of use and likely compliance. Not including the more technical changes would not take into account the consequences of engine technological and configuration changes and would not provide the necessary guidance material for the interpretation of the Certification Specifications. Partial amendment will not fully satisfy the objective above. No retrospective action required.

3. **Partial Amendment – Technical Changes only.** There is an option to incorporate technical changes only. This will result in the addition of electrical bonding requirements which were previously covered under JAR-E requirements but were subsequently lost in translation within CS-E. It is highly likely that the additional detail will be complied with. Not incorporating the administrative changes however, will result in inaccurate references to CS-E within the Def Stan 00-970 leading to possible ambiguity of the requirements. Furthermore, partial amendment will not fully satisfy the objective above. Retrospective mandation would not be considered necessary.

4. **Full Amendment.** There is no reason that full implementation of all the changes should not be completely feasible. The administrative changes will remove possible ambiguity within 00-970. It is highly likely that the additional detail will be complied with in full. Full amendment will further align Def Stan 00-970 with CS-E thus fully satisfying the objective above. Retrospective mandation would not be considered necessary.

**Preferred Course of Action.**

The preferred course of action is option 4, Full Amendment.

**Benefits and Costs:**

1. **Do nothing.** There is little benefit of this option and could result in increased non compliance with Def Stan 00-970 Part 11.
2. **Partial Amendment – Incorporation of Administration Changes only.** Some benefit will result from this option but it will not fully align Def Stan 00-970 Part 11 with CS-E.
3. **Partial Amendment – Technical Changes only.** Some benefit will result from this option but it will not fully align Def Stan 00-970 Part 11 with CS-E.
4. **Full Amendment.** Full amendment will align Def Stan 00-970 Part 11 with CS-E and will reduce ambiguity, possibly resulting in improved overall compliance with the document. The changes proposed here represent current practice by engine manufacturers and would have no or little economic impact.

**Post Implementation Review:**

**Consultation period ends:**

The consultation period for this proposed amendment ends on the stated date. Please send your feedback via email to MAA-Tech-Cert-ADS groupmailbox @mod.uk.



**Part 2 (for MAA internal use)**

**Log of Comments** (to be completed once the consultation period has ended).

Comment reference	Date	From (name)	Post	Précis or Topic of Comment	MAA Response

**Recap of Proposal:** *A short summary of the proposal amendment including what changes were incorporated following the consultation period.*

**Recommendation.** *This section will be completed once all the comments have been received. The recommendation is for the relevant Head of Division to approve the proposal.*

**Approval.** *This section will detail exactly what has been approved and by whom, and confirm the date for the amendment to be incorporated as well as the date the NPA should be reviewed to determine what the effects of the amendment were in terms of meeting the objective of the change, if there were any unintended consequences and establishing whether the estimated costs were correct.*

Accepted changes will be authorised at the following levels:

- Changes requiring retrospective mandate: 2 \*
- Changes not requiring retrospective mandate but having an engineering impact: 1\*
- Changes deemed as administrative only: Authorised C1 or Equivalent.

Approved by:

Signature	
Name	
Rank/Grade	
Post	
Date signed	
Date for amendment to be incorporated	
Date for NPA review to take place	



### **Part 3 - NOTIFICATION OF AUTHORIZED AMENDMENT (Def Stan 00-970 NAA)**

Document Part:		Sub-Part	
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Unsatisfactory Report Reference		NPA Reference	
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Originator		Date	
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Amendment to be Incorporated on	<b>XX/XXX/XX</b>
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### **INTRODUCTION**

### **AUTHORIZED AMENDMENT**

### **FURTHER ACTION**

### **APPROVAL**

*This Def Stan 00-970 NPA has been approved by the xxxx on behalf of DG MAA*

### **INCORPORATION**

*The amendment will be incorporated in....*

***Signed (IAW with part 2).***

**for DG MAA**

**Annex A.**

**Proposed change.**

#	pg	Paragraph	<u>Original</u>	<u>Change to</u>
1	25	3.02	CS-E Issue 1 dated 24th October 2003	CS-E Amendment 3 dated 23rd December 2010
2	26	3.E.10		
3	26	3.E.20		
4	27	3.E.25	See AMC to CS-E 25	See AMC E 25
5	27	3.E.30	See AMC to CS-E 30	See AMC E 30
6	27	3.E.40	See AMC to CS-E 40	See AMC E 40
7	27	3.E.50	See AMC to CS-E 50	See AMC E 50
8	28	3.E.60	See AMC to CS-E 60	See AMC E 60
9	29	3.E.70	See AMC to CS-E 70	See AMC E 70
10	29	3.E.80	See AMC to CS-E 80	See AMC E 80
11	31	3.E.130	See AMC to CS-E 130	See AMC E 130
12	31	Nil	Nil	<b>Add additional requirement:</b> 3.E.135 Electrical Bonding -> See AMC E 135
13	31	3.E.140	See AMC to CS-E 140	See AMC E 140
14	32	3.E.150	See AMC to CS-E 150	See AMC E 150
15	34	3.E.180	See AMC to CS-E 180	See AMC E 180
16	34	3.E.200 - 3.E.470	Piston Engines	PISTON ENGINES 3.E.210 - 3.E.290 Design and Construction 3.E.300 - 3.E.470 Type Substantion
17	34	3.E.500	3.E.500 Functioning	TURBINE ENGINES 3.E.500 Functioning
19	35	3.E.510	See AMC to CS-E 510	See AMC E 510
20	37	3.E.515	See AMC to CS-E 515	See AMC E 515
21	37	3.E.520	See AMC to CS-E 520	See AMC E 520
22	37	3.E.525	See AMC to CS-E 525	See AMC E 525
23	38	3.E.530	Blank para	Remove para. As CS-E 530 does not exist.
24	38	3.E.540	See AMC to CS-E 540	See AMC E 540
25	39	3.E.550	Blank para	Remove para. As CS-E 550 does not exist.
26	39	3.E.560	See AMC to CS-E 560	See AMC E 560
27	41	3.E.570	See AMC to CS-E 570	See AMC E 570
28	41	3.E.580	AIR SYSTEMS AND COMPRESSOR AND TURBINE BLEEDS	AIR SYSTEMS
29			Requirement- paras (a) and (b)	<b>Remove</b> (a) and (b) as CS-E 580 no longer has sub-paras. Compliance statement wrt duct failures should remain as should guidance statement.
30	42	3.E.610	Blank para	<b>Remove</b> para. As CS-E 610 does not exist.
31	43	3.E.620	See AMC to CS-E 620	See AMC E 620
32	43	3.E.630	Blank para	<b>Remove</b> para. As CS-E 630 does not exist.
33	43	3.E.640	See AMC to CS-E 640	See AMC E 640

34	44	3.E.650	See AMC to CS-E 650	See AMC E 650
35	44	3.E.660	See AMC to CS-E 660	See AMC E 660
36	48	3.E.670	See AMC to CS-E 670	See AMC E 670
37	48	3.E.680	See AMC to CS-E 680	See AMC E 680
38	50	3.E.690	See AMC to CS-E 690	See AMC E 690
39	52	3.E.700	See AMC to CS-E 700	See AMC E 700
39	52	3.E.710	See AMC to CS-E 710	See AMC E 710
40	53	3.E.720	See AMC to CS-E 720	See AMC E 720 (a)
41	53	3.E.730	See AMC to CS-E 730	See AMC E 730
42	57	3.E.740	See AMC to CS-E 740	See AMC E 740
43	62	3.E.745	See AMC to CS-E 745	See AMC E 745
44	67	3.E.750	See AMC to CS-E 750	See AMC E 750 (b)
45	67	3.E.770	See AMC to CS-E 770	See AMC E 770
46	67	3.E.780	See AMC to CS-E 780	See AMC E 780
47	68	3.E.790	See AMC to CS-E 790	See AMC E 790
48	69	3.E.800	See AMC to CS-E 800	See AMC E 800
49	71	3.E.800	AMC to CS-E 800 (1)(b)(iv)	AMC E 800 (1)(b)(iv)
50	72	3.E.810	See AMC to CS-E 810	See AMC E 810
51	74	3.E.840	See AMC to CS-E 840	See AMC E 840
52	74	3.E.850	See AMC to CS-E 850	See AMC E 850
53	76	3.E.890	See AMC to CS-E 890	See AMC E 890
54	78	3.E.920	See AMC to CS-E 920	See AMC E 920
55	78	3.E.1000	3.E.1000 General	ENVIRONMENTAL AND OPERATIONAL DESIGN REQUIREMENTS 3.E.1000 General
56	78	3.E.1020	See AMC to CS-E 1020	See AMC E 1020
57	81	3.E.1030	Blank para	See AMC E 1030
58	81	Nil	Nil	To reflect CS-E, <b>Add requirement:</b> 3.E.1040 ETOPS <b>Compliance:</b> N/A for all military aircraft types.