P U B L I C A T I O N T R A N S M I T T A L

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V2500-A5 SERIES PROPULSION SYSTEM NON-MODIFICATION SERVICE BULLETIN

This document transmits the Revision 1 of Non-Modification Service Bulletin V2500-ENG-73-0221.

Document History

Non-Modification Service Bulletin Revision Status

Initial Issue. Apr.12/10.

Non-Modification Service Bulletin Revision 1

Remove	Incorporate	Reason for change
All pages of the Non-Modification Service Bulletin.	Pages 1 to 13 of the Non-Modification Service Bulletin.	To update Table 3 in the Accomplishment Instruction.

V2500–ENG–73–0221

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
If any have not been received please advise IAE International Engines AG

NON-MODIFICATION SERVICE BULLETIN - ENGINE - EPR MODIFIER CLASS CORRECTION DUE TO TEST CELL CALIBRATION SHIFT

1. Planning Information

A. Effectivity Data

(1) Airbus A319, A320, A321

(a) V2500-A5 Engines

For the affected engine serial numbers refer to the list given below.

V10360, V10391, V10425, V10481, V10567, V10650, V10689, V10722, V10794, V10811, V10872, V10891, V10922, V11066, V11094, V11134, V11165, V11180, V11356, V11366, V11371, V11472, V11538, V11539, V11542, V11645, V11708, V11787, V11814, V11825, V11843, V11855, V11856, V11861, V11876, V11936, V12098, V12140, V12233, V12266, V12497, V12631, V12644, V12673, V12856.

B. Concurrent Requirements

None.

C. Reason

R Condition: A total of 45 V2500-A5 engines (whose last engine test dates back to mid 1999) tested at one test facility using one specific piece of test equipment were shipped with an error in the EPR Modifier Class.

Background: During recalibration of a test facility, V2500-A5 engines from the suspect test cell were seen to have EPR modifier classes lower than specified by the Engine Manual.

Solution: Data has been analysed for all engines that were tested in the suspect test cell with the specific test equipment since the discovery of the EPR modifier classing discrepancy. The issue was identified as starting in mid 1999. Results of this review has determined that there are 45 engines affected whose EPR modifier class setting is incorrect due to the test cell calibration shift. Since discovery of this issue the test cell has been re-calibrated.

Corrective Action: Change the data entry plug (DEP) EPR Modifier Class on engine serial numbers listed in Effectivity per the procedures and data provided.

D. Description

Inspect and provide procedure to re-wire the Data Entry Plug to change EPR Modifier only which will provide correct EPR/Thrust ratio for affected engines.

E. Compliance

Category 3

For Engine serial numbers classified as Priority A in Table 1, accomplish within 10 weeks of bulletin receipt.

For Engine serial numbers classified as Priority B in Table 2 accomplish within 20 weeks of bulletin receipt.

F. Approval

The part number changes and/or part modifications specified in the Accomplishment Instructions and Material Information sections of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model(s) given.

The compliance statement and the procedures described in this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the Engine Model listed.

G. References

(1) IAE V2500 Service Bulletin V2500-ENG-70-0209.

(2) IAE V2500 Service Bulletin V2500-ENG-73-0208.

(3) Aircraft Maintenance Manual 73-22-34.

(4) Aircraft Maintenance Manual 73-22-35.

(5) V2500 Standard Practices/Processes Manual (E-V2500-1IA), 70-09-00, Marking of parts.

(6) Internal Reference No. -10VR591A.

(7) ATA Locator - 73-22-00.

H. Manpower

Estimated man-hours to incorporate the full intent of this Bulletin:

(1) In Service

To do a modification and test the DEP
13 minutes.

(2) At overhaul

Not applicable.

I. Tools and Equipment

None.

J. Electrical Load Data

This Service Bulletin has no effect on the aircraft electrical load.

K. Software Accomplishment Summary

Not Applicable.

L. Interchangeability of Parts

Not Applicable.

2. Material Information

A. Material - Price and Availability

(1) The estimated price of new material to do this Service Bulletin using new replacement parts is determined by the quantity of jumpers required.

(2) There is no kit provided to do this Service Bulletin.

(3) Part availability information is provided in material data Instructions - Disposition.

B. Industry Support Program

Not Applicable.

C. The material data that follows is for each engine

NOTE: The prices shown are for estimating purposes only and as such are given in good faith without commercial liability for advanced planning purposes only. Refer to IAE Spares and/or current Price Catalog for current prices.

For V2500-A5 Engines

P/N	Qty	Estimate of Unit Price ($)	Keyword	P/N (ATA / Figure / item)	Insts-Disp
2A2315 (HAA18704)	AR	59.30	Lead, Electrical (Jumper 1)	2A2315 (HAA18704) (73-22-35-01-145)	(3) (A) (I)
2A2304 (HAA19931)	AR	112.00	Lead, Electrical (Jumper 2)	2A2304 (HAA19931) (73-22-35-01-155)	(3) (A) (I)
2A2305 (HAA19932)	AR	142.00	Lead, Electrical (Jumper 3)	2A2305 (HAA19932) (73-22-35-01-165)	(3) (A) (I)
2A2306 (HAA19933)	AR	168.00	Lead, Electrical (Jumper 4)	2A2306 (HAA19933) (73-22-35-01-175)	(3) (A) (I)
5A1465	AR	N/A	Engine Identification Plate	5A1465 (72-32-85-03-120)	(3) (C) (I)

5A1855	AR	N/A	Engine Identification Plate	5A1855 (72-32-85-03-120)	(3) (C) (I)
5A1874	AR	590.00	Engine Identification Plate (multi-rated)	5A1874 (72-32-85-03-120)	(3) (B) (I)
5A1875	AR	590.00	Engine Identification Plate (multi-rated)	5A1875 (72-32-85-03-120)	(3) (D) (I)
5A1942	AR	590.00	Engine Identification Plate	5A1942 (72-32-85-03-120)	(3) (B) (I)

D. Instructions/Disposition Code Statements

Parts Modification Conditions

(3) This part may be required to accomplish this Service Bulletin.

Spare Parts Availability

(A) The new part is available.

(B) The new Engine Identification Plate can be obtained through your IAE Representative.

(C) Stock of old parts has been exhausted, no longer supplied.

(D) Old parts will continue to be supplied until stocks have been depleted.

Cleaning, Inspection and Repair Information

(I) The cleaning, inspection and repair requirements are the same for the old and new part.

E. Tooling - Price and Availability

Special tools are listed in the Aircraft Maintenance Manual references 1 and 2.

F. Reidentified Parts

Not Applicable.

3. Accomplishment Instructions

A. This service bulletin is complied with if the engine was tested in accordance with V2500-Engine Manual 71-00-00 Test No. 10, Performance Test after 26th of August 2009. In this case, the test results can be used as record of bulletin accomplishment and the following notes and steps 2 through 9 are skipped. If the previous test was not accomplished after 26th August 2009, continue with the following notes and steps 2 through 10.

NOTE: Accomplishment of this Service Bulletin requires modifying the Engine Identification Plate. In certain instances this may require obtaining a new Engine Identification Plate from your IAE representative. Before beginning work on this Service Bulletin make sure there is enough time to obtain a new Identification Plate if required.

NOTE: Service bulletin incorporation on engines installed on aircraft may be desirable and should be individually evaluated.

B. Gain access and remove the Data Entry Plug (DEP) in accordance with the Aircraft Maintenance Manual (AMM) 73-22-35-401.

C. Confirm that all data marked on the DEP agrees with the information on the Engine Identification Plate. Also confirm that the Engine Pressure Ratio (EPR) Modifier Class marked on the DEP agrees with the existing EPR Modifier Class in Tables 1 and 2 for that engine serial number. If not, contact your local IAE Representative.

D. Disassemble and re-wire the DEP to change the EPR Modifier Class according to the information in Tables 1 and 2. Tables 1 and 2 provides the existing EPR Modifier Class and the new EPR Modifier Class for each affected engine by serial number.

(1) Disassemble the DEP Assembly per procedure specified in AMM 73-22-35-801.

(2) Make two photo copies of Figure 1 of this Service Bulletin, DEP Contact Hole Locations.

(3) Mark all existing jumper connections from the DEP connectors on one copy of the figure and label it 'Pre SB ENG-73-0221 Pin Connectors'.

(4) Find the existing EPR Modifier Class marked on the DEP and confirm that the Data Entry Plug wiring agrees with the jumpers according to Table 3.

CAUTION: IF THE ENGINE HAS EEC SOFTWARE STANDARD SCN20A/Z (SB ENG-73-0208) INCORPORATED, ENSURE YOU TAKE NOTE OF THE ENGINE EPR CLASS BIAS WHEN CONFIRMING THE CURRENT JUMPER WIRING.

(5) Find the new EPR Modifier Class for the engine serial number in Table 1 or 2.

(6) Mark the jumper locations for the new EPR Modifier Class (see Table 3) on the second copy of the Contact Hole Location Sheet. Mark all other existing jumper locations that are not affected by the EPR Modifier Class Change. Label this copy 'Post SB ENG-73-0221 Pin Connectors'.

CAUTION: IF THE ENGINE HAS EEC SOFTWARE STANDARD SCN20A/Z (SB ENG-73-0208) INCORPORATED, ENSURE YOU TAKE NOTE OF THE ENGINE EPR CLASS BIAS WHEN CONFIRMING THE CURRENT JUMPER WIRING.

(7) Remove the jumpers to change from the existing EPR Modifier Class and install the jumpers needed for the new EPR Modifier Class according to the procedures in AMM 73-22-35-801.

NOTE: When following the procedures in AMM 73-22-35-801 you will be installing different jumpers than the original configuration to accommodate the changes in Table 1 or 2.

(8) Assemble and test the DEP per AMM 73-22-35-601.

(9) Cross out the existing EPR Modifier Class on the DEP and mark the new EPR Modifier Class on the DEP using vibropeen method, reference Standard Practices/Processes Manual (SPP) 70-09-00 Marking Of Parts.

E. Cross out the existing EPR Modifier Class on the Engine Identification plate with a single line so it is still legible. Mark the new EPR Modifier Class on the Engine Identification plate. Use vibropeen method, reference SPP 70-09-00, Marking Of Parts. If there is not sufficient room to mark the new EPR Modifier Class on the Engine Identification plate contact your local IAE Representative for a new Engine Identification plate.

F. If required, install a new Engine Identification Plate. See reference 1

CAUTION: MAKE SURE THAT THE DATA ON THE NEW ENGINE IDENTIFICATION PLATE IS CORRECT FOR THE ENGINE IT IS INSTALLED ON.

(1) Remove the four bolts that secure the old Engine Identification Plate to the bracket located on the fan case at the 9 o'clock position. See Figure 2.

(a) Return the old Engine Identification Plate to the IAE representative.

(b) Obtain a new Engine Identification Plate from the IAE representative.

(2) Install the new Engine Identification Plate to the bracket located on the fan case at the 9 o'clock position with part number 4W0102 Bolts (4 off). See Figure 2

(3) Torque bolts between 32-36 lbfin (3,61-4,07Nm).

G. Check the DEP wiring by interrogating the Multipurpose Control Display Unit (MCDU) and comparing the Electronic Engine Control (EEC) configuration information output to the Engine Data Plate information when the EEC and DEP are installed on the aircraft. Use the procedure in the AMM 73-22-34.

H. Do an operational test of the EEC by the procedures given in AMM 73-22-34, Operation Test of the EEC.

I. Close Up Actions.

J. Recording Instructions

(1) A record of accomplishment is required.

Table 1: Engines with 2 EPR Modifier Class Changes

Engine S/N	Current EPR Modifier class	Revised EPR Modifier class	Change in EPR Modifier class	Priority
V10360	8	10	2	A
V10481	7	9	2	A
V10567	7	9	2	A
V10689	6	8	2	A
V10811	8	10	2	A
V10872	7	9	2	A
V10891	7	9	2	A
V10922	8	10	2	A
V11066	8	10	2	A
V11094	7	9	2	A
V11134	7	9	2	A
V11645	6	8	2	A
V11843	7	9	2	A
V11855	6	8	2	A
V11876	5	7	2	A
V11936	7	9	2	A
V12098	6	8	2	A
V12140	7	9	2	A
V12233	7	9	2	A

Table 2: Engines with 1 EPR Modifier Class Changes

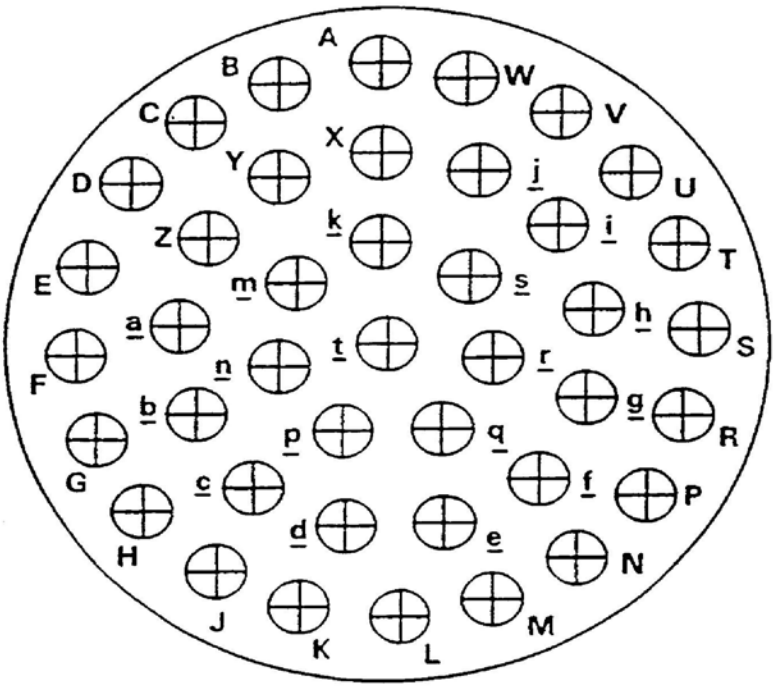
Engine S/N	Current EPR Modifier class	Revised EPR Modifier class	Change in EPR Modifier class	Priority
V10391	8	9	1	B
V10425	9	10	1	B
V10650	8	9	1	B
V10722	7	8	1	B
V10794	8	9	1	B
V11165	7	8	1	B
V11180	10	11	1	B
V11356	9	10	1	B
V11366	8	9	1	B
V11371	7	8	1	B
V11472	7	8	1	B
V11538	7	8	1	B
V11539	8	9	1	B
V11542	8	9	1	B
V11708	6	7	1	B
V11787	6	7	1	B
V11814	8	9	1	B
V11825	7	8	1	B
V11856	7	8	1	B
V11861	6	7	1	B
V12266	6	7	1	B
V12497	7	8	1	B
V12631	7	8	1	B
V12644	7	8	1	B
V12673	7	8	1	B
V12856	7	8	1	B

Table 3: DEP Pin Selection for EPR Modifier Classes

EPR Modifier Class	EPR Class Bias	Channel A	Channel B	Jumper	Quantity	EEC Software**
4	0	No Jumper	g* to r	2 Pin	1	SCN9A
5	0	Z* to a	No Jumper	2 Pin	1	SCN9A
6	0	Z* to m	No Jumper	2 Pin	1	SCN9A
7	0	Z* to m c* to a	g* to r	2 Pin	3	SCN9A
R 8	0	No Jumper	g* to P	2 Pin	1	SCN9A
9	0	Z* to a	g to r j* to P	2 Pin	3	SCN9A
10	0	Z* to m	g* to r j* to P	2 Pin	3	SCN9A
11	0	Z* to m c* to a	g* to P	2 Pin	3	SCN9A
5	1	Z* to a	g* to r h to T	2 Pin	3	SCN20/Y
6	1	Z* to m	g* to r h to T	2 Pin	3	SCN20/Y
7	1	Z* to m c* to a	h to T	2 Pin	3	SCN20/Y
8	1	No Jumper	g* to r h to T j* to P	2 Pin	3	SCN20/Y
9	1	Z* to a	h to T j* to P	2 Pin	3	SCN20/Y
10	1	Z* to m	h to T j* to P	2 Pin	3	SCN20/Y
11	1	Z* to m c* to a	g* to r h to T j* to P	2 Pin	5	SCN20/Y
6	2	b to G Z* to m	g* to r	2 Pin	3	SCN20/Y
7	2	b to G Z* to m c* to a	No Jumper	2 Pin	3	SCN20/Y
8	2	b to G	g* to r j* to P	2 Pin	3	SCN20/Y
9	2	b to G Z* to a	j* to P	2 Pin	3	SCN20/Y
10	2	b to G Z* to m	g* to r j* to P	2 Pin	4	SCN20/Y
11	2	b to G Z* to m c* to a	g* to r j* to P	2 Pin	5	SCN20/Y

* NOTE: In some cases, connector holes g and Z are used in the variant number connector holes c and j are used in the engine serial number wiring. Find which are to be connected for engine serial number, EPR modifier and variant number you choose the necessary jumpers.
** NOTE: Indicated EEC software standard or later must be installed.

Figure 1: DEP Jumper wire Contact Hole Locations



NOTE: Upper case I, O, and Q are not used.
Lower case i and o are not used.

ENGINE NO. _____

RATING - BUMP _____

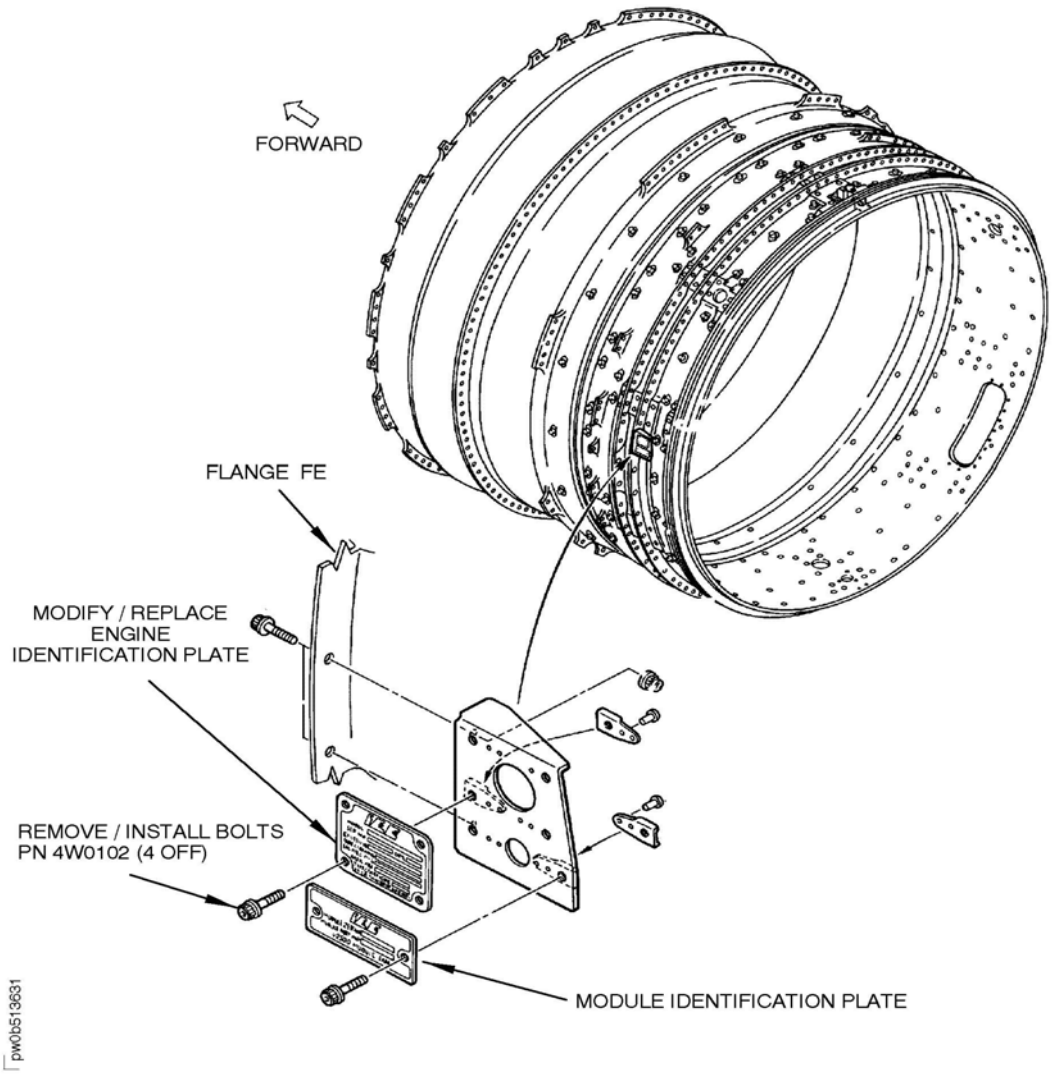
VARIANT _____

EPR MOD. _____

P/N _____

pw0b513601

Figure 2: Location of the Engine Identification Plate (Ref. IPC Sequence No. 72-32-85, Figure 3, Item 120)



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We thank you for the time you spent in completing this form.

Please rate on a scale of 1 to 5, with 5 being the highest score:

- General quality rating of this Service Bulletin	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Quality rating of the Accomplishment Instructions	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Quality rating of the Illustration	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Is this Service Bulletin easy to understand ?	☐ Yes ☐ No

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Planning Information Section:		Material Information Section:	Accomplishment Instruction Section:
☐ 1.A.	☐ 1.I.	☐ 2.A.	☐ General
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Operator:	Overhaul Site:
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