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V2500-A1 SERIES PROPULSION SYSTEMS SERVICE BULLETIN

This document transmits Revision 1 to Service Bulletin EV2500-72-0532 and Revision 1 to the Supplement

Document History

Service Bulletin Revision Status		Supplement Revision Status	
Initial Issue	Feb.19/07	Initial Issue	Feb.19/07

Bulletin Revision 1

Remove	Incorporate	Reason for change
All pages of the Service Bulletin	Pages 1 to 7 of the Service Bulletin	To change the Effectivity.

Supplement Revision 1

Remove	Incorporate	Reason for change
All pages	Page 1	To change the Effectivity.

V2500-ENG-72-0532

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
If any have not been received please advise Customer Data Services, Rolls-Royce plc, Derby, England

LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 1 to the Bulletin and Revision 1 to the Supplement are as follows:

	Page	Revision Number	Revision Date
	Bulletin		
R	1	1	Feb.23/07
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R	3	1	Feb.23/07
R	4	1	Feb.23/07
R	5	1	Feb.23/07
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	Supplement		
R	1	1	Feb.23/07

International Aero Engines

SERVICE BULLETIN

ENGINE - HIGH PRESSURE (HP) COMPRESSOR - HP COMPRESSOR STAGE 6 ROTOR BLADES WITH IMPROVED ROOT DEFINITION

1. Planning Information

A. Effectivity

(1) Airbus A320

R (a) V2500-A1 Engines prior to Serial No.V0362.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

A number of High Pressure (HP) compressor stage 6 rotor blade root fractures have occured on engines in service. The primary cause of these fractures has been identified to be a tight radii between the pressure flank and the adjacent face of the HP compressor stage 6 rotor blade root which could lead to stress concentration increase.

At worst tolerance conditions it is possible that there could be difficulties to install the HP compressor stage 6 rotor blades into the disc groves with subsequent irregular loading of the HP compressor stage 6 rotor blade flanks with the result of local stress concentrations.

For the current standard of HP compressor stage 6 rotor blades, Non-Modification Service Bulletin V2500-ENG-72-0473 recommends to replace subject blades before 10,000 flight cycles.

(2) Evidence

The problem has been experienced on engines in service.

(3) Substantiation

The changes introduced by this Service Bulletin were the subject of satisfactory engineering analysis. This Service Bulletin complies with the applicable engine certification basis.

(4) Objective

Incorporation of this Service Bulletin is designed to improve the reliability.

(5) Effect of Bulletin on:

(a) Operation

Not affected.

(b) Maintenance

Not affected.

(c) Overhaul

Not affected.

(d) Repair Schemes

Affected (The Repair Schemes VRS6012, VRS6052, VRS6068, VRS6150, VRS6151 and VRS6495 are affected).

(e) Interchangeability

Not affected.

(f) Fits and Clearances

Not affected.

D. Description

This Service Bulletin introduces new designed HP compressor stage 6 rotor blade nominal, undersize, left hand and right hand locking blades. The new blades have a modified root radius definition and a new inspection process is introduced. To ensure there is sufficient clearance between the HP compressor stage 6 rotor blade root and the disc groove the nominal thickness of the HP compressor stage 6 rotor blade neck is reduced with incorporation of this Service Bulletin.

Introduction of this Service Bulletin deletes the necessity for the Non-Modification Service Bulletin V2500-ENG-72-0473.

E. Compliance

Category Code 6

Accomplish when the sub-assembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected spare parts.

F. Approval

The part number changes and/or part modifications described in sections 2 and 3 of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model listed.

G. Manpower

(1) In Service

Not applicable.

(2) At Overhaul

Applicable (Hours not affected).

H. Material Price and Availability

Modification kit is not required; parts supplied as single line items.

For prices and availability of spares, refer to supplement to this Service Bulletin.

I. Tooling Price and Availability

Special tools are not required.

J. Industry Support Information

Not applicable.

K. Weight and Balance

(1) Weight Change

None.

(2) Moment Arm

No effect.

(3) Datum

Engine Front Mount Centreline (Power Plant Station (PPS) 100).

L. Electrical Load Data

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

M. Software Accomplishment Summary

Not applicable.

N. References

(1) IAE V2500 Engine Manual (E-V2500-1IA), Chapters 72-00-40, 72-41-00 and 72-41-10.

(2) V2500 Non-Modification Service Bulletin:

V2500-ENG-72-0473 - HP COMPRESSOR, STAGE 6 ROTOR - REMOVAL OF BLADES.

(3) Internal Reference No.

Engineering Change No. 05VR008.

(4) ATA Locator - 72-41-15.

O. Other Publications Affected

(1) For effect on Illustrated Parts Catalogue (IPC), refer to 2. Material Information.

(2) IAE V2500 Engine Manual (E-V2500-1IA), Chapter 72-41-15 Inspection and Repair.

(3) The following Repair Schemes will be revised to include the new parts introduced by this Service Bulletin: VRS6012, VRS6052, VRS6068, VRS6150, VRS6151 and VRS6495.

P. Interchangeability of Parts

Affected (Refer to paragraph 2.E. Instruction disposition codes).

2. Material Information

A. The kit required consists of the following parts:

None.

B. Parts to be reworked:

None.

C. New production parts:

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
72-41-15						
02-170	6A8463	2	Blade, stage 6 LH lock	-	6A5586	(1)(S1)
02-185	6A8464	2	Blade, stage 6 RH lock	-	6A5587	(1)(S1)
02-200	6A8461	59	Blade, stage 6 nominal	-	6A5583C01	(1)(S1)
02-215	6A8461	26	Blade, stage 6 nominal	-	6A5583C01	(1)(2)(S1)
02-217	6A8462	26	Blade, stage 6 undersize	-	6A5583C02	(1)(2)(S1)

D. Redundant parts:

None.

E. Instruction disposition codes:

(1) The new parts will be available from the 1st March 2007 onwards.

(2) The quantity of the parts to be installed must be calculated during the assembly of the High Pressure (HP) compressor rotor assembly.

(S1) Old and new parts are fully interchangeable as a whole set only.

3. Accomplishment Instructions

A. Rework Instructions

(1) None.

B. Assembly Instructions

(1) Remove the High Pressure (HP) compressor assembly from the engine (Refer to the Engine Manual, Chapter 72-00-41).

(2) Disassemble the HP compressor assembly (Refer to the Engine Manual, Chapter 72-41-00).

(3) Disassemble the HP compressor rotor assembly (Refer to the Engine Manual, Chapter 72-41-10)

(a) Remove the HP compressor stage 6 rotor blades from the HP compressor stage 6 rotor disc

(i) Remove the two old HP compressor stage 6 rotor blades, LH lock (72-41-15, 02-170), P/N 6A5586.

(ii) Remove the two old HP compressor stage 6 rotor blades, RH lock (72-41-15, 02-185), P/N 6A5587.

(iii) Remove the 59 old HP compressor stage 6 rotor blades, nominal, (72-41-15, 02-200), P/N 6A5583C01.

(iv) Remove the installed quantity of old HP compressor stage 6 rotor blades, nominal, (72-41-15, 02-215), P/N 6A5583C01.

(v) Remove the installed quantity of old HP compressor stage 6 rotor blades, undersize, (72-41-15, 02-217), P/N 6A5583C02.

(4) Assemble the HP compressor rotor assembly (Refer to the Engine Manual, Chapter 72-41-10)

(a) Install the HP compressor stage 6 rotor blades to the HP compressor stage 6 rotor disc

(i) Install the two new HP compressor stage 6 rotor blades, LH lock (72-41-15, 02-170), P/N 6A8463.

(ii) Install the two new HP compressor stage 6 rotor blades, RH lock (72-41-15, 02-185), P/N 6A8464.

(iii) Install the 59 new HP compressor stage 6 rotor blades, nominal, (72-41-15, 02-200), P/N 6A8461.

(iv) Install the required quantity of new HP compressor stage 6 rotor blades, nominal, (72-41-15, 02-215), P/N 6A8461.

(v) Install the required quantity of new HP compressor stage 6 rotor blades, undersize, (72-41-15, 02-217), P/N 6A8462.

(5) Assemble the HP compressor assembly (Refer to the Engine Manual, Chapter 72-41-00).

(6) Install the HP compressor assembly to the engine (Refer to the Engine Manual, Chapter 72-00-41).

(7) Make sure that the work area is clean and clear of tools, equipment and other unwanted materials.

C. Recording Instructions

(1) A record of accomplishment is required.

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SERVICE BULLETIN

ENGINE - HIGH PRESSURE (HP) COMPRESSOR - HP COMPRESSOR STAGE 6 ROTOR BLADES WITH IMPROVED ROOT DEFINITION

SUPPLEMENT - PRICES AND AVAILABILITY

The prices (if 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 catalogue for current prices.

1. Modification Kit:

Not applicable.

2. New Production Parts:

Part No.	Description	Unit Price US Dollars
6A8461	Blade, stage 6 nominal	321.00
6A8462	Blade, stage 6 undersize	321.00
6A8463	Blade, stage 6 LH lock	377.00
6A8464	Blade, stage 6 RH lock	377.00

3. Tools

None.