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DATE: Dec.21/06

V2500-D5 SERIES PROPULSION SYSTEMS NON-MODIFICATION SERVICE BULLETIN

This document transmits the Initial Issue of Service Bulletin EV2500-72-0533

Bulletin Initial Issue

Remove	Incorporate	Reason for change
	Pages 1 to 6 of the Service Bulletin	Initial Issue

V2500-ENG-72-0533

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 are as follows:

Page	Revision Number	Revision Date
Bulletin		
1		Dec.21/06
2		Dec.21/06
3		Dec.21/06
4		Dec.21/06
5		Dec.21/06
6		Dec.21/06

International Aero Engines

SERVICE BULLETIN

ENGINE - HIGH PRESSURE (HP) COMPRESSOR ROTOR BLADES AND STATOR VANES - REPLACEMENT OF BLADES AND VANES FOR SAND EROSION - NON-MODIFICATION SERVICE BULLETIN

1. Planning Information

A. Effectivity

(1) For Boeing MD-90

In-service engines

V2528-D5 engines operated by Saudi Arabian Airlines (SVA).

B. Reason

To date there have been several events of significant High Pressure (HP) compressor damage and subsequent engine removals due to sand erosion on desert operated engines within the SVA MD-90 fleet.

C. Description

In order to prevent erosion damage which has been known to cause HP compressor blade and vane fractures, all rotor blades and stator vanes should be periodically replaced with new parts. Engineering assessment of service run rotor blades and stator vanes has indicated that these parts should be replaced before they achieve 4500 cycles of operation in a desert environment.

D. Compliance

Category Code 4

Accomplish at the first visit of an engine or module to a maintenance base capable of compliance with the accomplishment instructions regardless of the planned maintenance action or the reason for the engine removal.

The accomplishment of this Non-Modification Service Bulletin is to be carried out in accordance with the following instructions and given life limit:

(1) All HP compressor rotor blades and all HP compressor stator vanes are to be replaced with new parts once the components have achieved 4500 cycles of operation in a desert environment.

(2) All HP compressor rotor blades and all HP compressor stator vanes are to be replaced if the next planned shop visit of the engine is in excess of 4500 cycles of component life.

NOTE: The replacements of stage 6, 7 and 8 HP compressor rotor blades and HP compressor stage 8 stator vanes must be to Service Bulletin V2500-ENG-72-0433 standard.

NOTE: All removed and/or rejected HP compressor airfoils are to be discarded.

E. Approval

The compliance statement in paragraph 1.D. Compliance and the procedures in paragraph 3. Accomplishment Instructions of this Non-Modification Service Bulletin comply with the Federal Aviation Regulations and are FAA-approved for the engine model listed.

F. Manpower

(1) In Service

Not applicable.

(2) At Overhaul

Applicable (Hours not affected).

G. Material Price and Availability

Not affected - all replaced parts are delivered as single line items.

H. Tooling Price and Availability

None.

I. References

(1) V2500 D5 Engine Manual, E-V2500-3IA, Chapter 72-41.

(2) V2500-ENG-72-0433 - ENGINE - HP COMPRESSOR BLADES AND VANES - INTRODUCTION OF STAGE 6, 7 AND 8 BLADES AND STAGE 8 STATOR VANES WITH EROSION RESISTANT COATINGS

(3) Internal Reference No.

Engineering Change No. 06VR1055.

(4) ATA Locators - 72-41-15, 72-41-22 and 72-41-32.

2. Material Information

A. Parts to be replaced:

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
			72-41-32			
			HP compressor variable inlet guide vane	-		(A)(S1)
			HP compressor variable stator vane stage 3	-		(A)(S1)
			HP compressor variable stator vane stage 4	-		(A)(S1)
			HP compressor variable stator vane stage 5	-		(A)(S1)
			72-41-22			
			HP compressor stator vane stage 6 to stage 7	-		(A)(S1)
			HP compressor vane stage 8	-		(A)(S2)
			HP compressor stator vane stage 9 to stage 11	-		(A)(S1)
			72-41-15			
			HP compressor rotor blade stage 3 to 5	-		(A)(S1)
			HP compressor rotor blade stage 6 to 8	-		(A)(S2)
			HP compressor rotor blade stage 9 to 12	-		(A)(S1)

B. Instruction disposition codes:

(A) For relevant part numbers and fig/item positions refer to the relevant Engine Illustrated Parts Catalog Chapter.

(S1) The old part must be replaced by the new part.

(S2) The old part must be replaced by the new by the new part in accordance with Service Bulletin V2500-ENG-72-0433.

3. Accomplishment Instructions

A. Inspection Instructions

(1) General

(a) Obey all the WARNINGS and CAUTIONS in the procedures that are referred to.

(b) Consumable Materials

(i) Refer to the related Manual tasks given in this instruction.

(c) Tools and Equipment

(i) Refer to the related Manual tasks given in this instruction.

(2) Get access to the High Pressure (HP) compressor rotor blades and stator vanes

(a) If disassembly to piece part level is required

(i) Remove all HP compressor rotor blades and stator vanes (Refer to the Engine Manual, Chapter 72-41).

NOTE: All removed HP compressor airfoils are to be discarded.

(ii) Install new HP compressor rotor blades and stator vanes (Refer to the Engine Manual, Chapter 72-41).

NOTE: The replacements of HP compressor stage 6, 7 and 8 rotor blades and HP compressor stage 8 stator vanes must be to Service Bulletin V2500-ENG-72-0433 standard.

(b) If disassembly to piece part level is not required

(i) Visual inspect all HP compressor rotor blades not removed from the HP compressor rotor and all HP compressor stator vanes not removed from the HP compressor casings (Refer to the Engine Manual, Chapter 72-41 and to the following inspection limits)

(1) Damage from vane platform to 1/3 vane height

A Nicks or tears on individual airfoils - Reject.

B Cracks - Reject.

C Loss of material from trailing edge - Reject.

D Sharp, thin trailing - Reject.

E Evidence of erosion on the platform - Reject.

(ii) If the HP compressor rotor blades and HP compressor stator vanes are rejected, these parts need to be replaced by new parts (Refer to the Engine Manual, Chapter 72-41).

NOTE: All rejected HP compressor airfoils are to be discarded.

NOTE: The replacements of HP compressor stage 6, 7 and 8 rotor blades and HP compressor stage 8 stator vanes must be to Service Bulletin V2500-ENG-72-0433 standard.

(iii) If the HP compressor airfoils have not been rejected and/or replaced at this shop visit, the next shop visit to replace the HP compressor airfoils with new parts is to be planned before the HP compressor airfoils reach a life of not more than 4500 cycles since new.

NOTE: All removed and/or rejected HP compressor airfoils are to be discarded.

NOTE: The replacements of HP compressor stage 6, 7 and 8 rotor blades and HP compressor stage 8 stator vanes must be to Service Bulletin V2500-ENG-72-0433 standard.

B. Recording Instructions

(1) The accomplishment of this Non-Modification Service Bulletin V2500-ENG-72-0533 is to be recorded in the applicable engine records.

(2) In case of a workscope of the HP compressor module not including a piece part inspection in accordance with the applicable engine manual inspection task, the maintenance base must state the accumulated life of the non-replaced HP compressor airfoils in the applicable engine records to ensure the correct monitoring of the airfoil lives and to ensure a replacement of these HP compressor airfoils within the given life limits.