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DATE **Apr.16/03****V2500-A1/A5/D5 SERIES PROPULSION SYSTEM SERVICE BULLETIN**

Printed in Great Britain

This document transmits Revision 3 to Service Bulletin EV2500-72-0271 and
 Revision 3 to the Supplement

Document History**Service Bulletin Revision Status**

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 Revision 1 Aug.8/97
 Revision 2 Sep.4/98

Supplement Revision Status

Initial Issue Jul.18/97
 Revision 1 Aug.8/97
 Revision 2 Sep.4/98

Bulletin Revision 3**Remove**

All pages of the
 Service Bulletin

Incorporate

Pages 1 to 7 of the
 Service Bulletin

Reason for change

To add ATA Locator to
 References, add parts
 prices Supplement, reformat
 to latest standard.

Supplement Revision 3**Remove**

All pages

Incorporate

Page 1

Reason for change

To add ATA Locator to
 References, add parts
 prices Supplement, reformat
 to latest standard.

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CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED

If any have not been received please advise Publication Services, Rolls-Royce plc, Derby, England

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LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 3 to the Bulletin and Revision 3 to the Supplement are as follows:

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ENGINE – LP COMPRESSOR BLADES AND FILLERS – INTRODUCTION OF REVISED PRESSURE AND SUCTION AIRFOIL PANELS

1. Planning Information

A. Effectivity

(1) Aircraft

- (a) Airbus A319.
- (b) Airbus A320.
- (c) Airbus A321.
- (d) McDonnell Douglas MD-90.

(2) Engines

- (a) V2500-A1 Engines prior to Serial No.V0362.
- (b) V2522-A5 Engines prior to Serial No.V10243.
- (c) V2524-A5 Engines prior to Serial No.V10243.
- (d) V2527-A5 Engines prior to Serial No.V10243.
- (e) V2527E-A5 Engines prior to Serial No.V10243.
- (f) V2530-A5 Engines prior to Serial No.V10243.
- (g) V2533-A5 Engines prior to Serial No.V10243.
- (h) V2525-D5 Engines prior to Serial No.V20139.
- (i) V2528-D5 Engines prior to Serial No.V20139.

B. Concurrent Requirements

None.

C. Reason

(1) Condition

Cracks have been found on the panels of the LP Compressor wide-chord blades of the V2500-A1 engines.



The problem is caused by micro-cracks in the thin alloy bonding-layer of the honeycomb nodes. The cracks go along areas of the blade where the grain of the blade is in the same direction as the cracks.

(2) Background

The problem was found by the Ultrasonic Transient Acoustic Propagation (TAP) inspection procedure.

(3) Objective

The purpose of this Service Bulletin is to continue serviceability.

(4) Substantiation

Satisfactory development engine tests have been done on the changes in this Service Bulletin. Bird strike and high cycle fatigue (HCF) tests were included. Analysis of low cycle fatigue (LCF) has been done on blades almost the same as those in this Service Bulletin.

(5) Effect of Bulletin on Workshop Procedures:

(a) Removal/Installation

Not affected.

(b) Disassembly/Assembly

Not affected.

(c) Cleaning

Not affected.

(d) Inspection/Check

Affected.

(e) Repair

Affected.

(f) Testing

Affected.

(6) Supplemental Information

None.



D. Description

(1) The changes in this Service Bulletin are as follows:

(a) Different rotor blade assemblies are to be installed on the LP Compressor. The changes to the blades are as follows:

- (i) The titanium material of the pressure and suction panels of the blades has changed from a cross-rolled to a uni-directional rolled standard. This does not affect the composition of the blade, but the microstructure gives better resistance to cracks from radial loads.
- (ii) Because the static frequency of the blade has been reduced, the thickness of the blade tiop has been reduced by 0,10 mm on each surface.
- (iii) The production acceptance limit for the minimum first-flap (1F) frequency has been reduced from 46.5 Hz to 45.6 Hz.
- (iv) To obey the new Manufacturing Sensitive Part Plan (MSSP), the bonding technique has changed.
- (v) A blue circle 25 mm in diameter, has been marked on the suction surface of each blade. The circle is positioned 50 mm down and inboard of the tip leading edge. The purpose of the circle is to identify modified blades which can have different inspection intervals to the pre-mod blades.

E. 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.

F. Compliance

Category Code 7

This Service Bulletin can be done when there are no initial parts remaining.



G. Manpower

In service

Not applicable.

At overhaul

Not affected.

NOTE: The parts affected by this Service Bulletin are accessible at overhaul.

H. Material Price and Availability

(1) Modification kit is not necessary.

(2) For prices and availability of spares refer to Supplement to this bulletin.

I. Tooling Price and Availability

Special tools are not necessary.

J. Weight and Balance

(1) Weight Change

Minus 2.1 lb (0,95 kg).

(2) Moment Arm

31.5 in. (800 mm.) forwards.

(3) Datum

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

K. Electrical Load Data

The aircraft electrical load is not affected by this Service Bulletin.

L. Software Accomplishment Summary

Not applicable.

M. References

(1) Engine Manual, 72-31-00, Assembly/Disassembly.

R (2) Internal reference Nos. 96VR031, 96VR031A, 96VR031B.



R (3) ATA Locator - 72-00-00.

(4) Aircraft modification No. 26527

N. Other Publications Affected

(1) Illustrated Parts Catalogue (IPC), Chapter/Section 72-31-11.

(2) Engine Manual (EM), Chapter/Section 72-31-11, Page Blocks 601, 801 and 901.Config-01.

(3) Repair Schemes: VRS1002, VRS1003, VRS1021, VRS1022, VRS1023, VRS1025, VRS1028, VRS1723 and VRS1724.

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2. Material Information

A. The kit required consists of the following parts:

None.

B. Parts affected by this bulletin:

V2500-A1 Model

72-31-11

| FIG ITEM NO. | NEW PART NO. | QTY | PART TITLE | MAT | OLD PART NO. | INSTR DISP |
|--------------------|--------------------|-----|--------------------------------------|-----|----------------------------|---------------|
| 01300 | 6A6519 | 22 | Blade assy - rotor, LP Compressor | - | 6A3494 6A3971 6A5485 | (A)(B)(S1) |

A5 and D5 Models

72-31-11

| FIG ITEM NO. | NEW PART NO. | QTY | PART TITLE | MAT | OLD PART NO. | INSTR DISP |
|--------------------|--------------------|-----|--------------------------------------|-----|--------------------|---------------|
| 01300 | 6A6521 | 22 | Blade assy - rotor, LP Compressor | - | 6A4700 | (A)(B)(S1) |

C. Instructions disposition codes:

(A) New part is currently available.

(B) Old part will be discontinued.

(S1) New and old parts are freely and fully interchangeable.



3. Accomplishment Instructions

A. Rework Instructions

None.

B. Assembly Instructions

For the correct removal/installation procedures refer to V2500 Engine Manual (EM), Chapter/Section 72-31-00, Assembly/Disassembly.

C. Recording Instructions

A record of accomplishment is necessary.



ENGINE - LP COMPRESSOR BLADES AND FILLERS - INTRODUCTION OF REVISED PRESSURE AND
SUCTION AIRFOIL PANELS

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. | Desc. | Unit Price US Dollars |
|----------|-------------------------|--------------------------|
| 6A6519 | Blade, LP Compressor | 32,220.00 |
| 6A6521 | Blade, LP Compressor | 35,460.00 |

