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/D5 SERIES PROPULSION SYSTEM NON-MODIFICATION SERVICE BULLETIN

This document transmits the Revision 2 of Non-Modification Service Bulletin V2500-ENG-72-0585.

Document History
Non-Modification Service Bulletin Revision Status

Initial Issue	Dec. 16/08
Revision 1	Jan. 27/09

Non-Modification Service Bulletin Initial Issue

Remove	Incorporate	Reason for change
All Pages of this Non-Modification Service Bulletin.	Pages 1 to 12 of the Non-Modification Service Bulletin.	Deletion of measurement requirements Introduction of focused crack inspection.

V2500–ENG–72–0585

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

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NON-MODIFICATION SERVICE BULLETIN – ENGINE – HP COMPRESSOR BLADES - INSPECTION OF THE HPC STAGE 5 ROTOR BLADE RETAINING PLATE SLOT

1. Planning Information

A. Effectivity Data

(1) Airbus A319, A320, A321

(a) V2500-A5 Engines

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

V10002, V10058, V10090, V10235, V10236, V10237, V10249, V10253, V10270, V10671, V10672, V10674, V10675, V10677, V10678, V10679, V10680, V10682, V10683, V10685, V10687, V10690, V10691, V10693, V10696, V10697, V10698, V10699, V10700, V10702, V10703, V10705, V10707 and V10708.

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

V10018, V10020, V10029, V10030, V10032, V10045, V10046, V10048, V10061, V10086, V10092, V10104, V10108, V10178, V10183, V10293, V10294, V10296, V10298, V10299, V10301, V10302, V10304, V10305, V10306, V10307, V10309, V10310, V10312, V10314, V10321, V10322 and V10323.

Note: Any engine that has had full incorporation of new Service Bulletin ENG-72-0490 (P/N 6A8451) HPC stage 5 rotor blades with a delivery date post 30th June 2006 is not affected.

(2) Boeing MD-90

(b) V2500-D5 Engines

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

V20009, V20011, V20015, V20043, V20058, V20117, V20118, V20121, V20162 and V20241.

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

V20017, V20069, V20127, V20177 and V20192.

Note: Any engine that has had full incorporation of new Service Bulletin ENG-72-0490 (P/N 6A8451) HPC stage 5 rotor blades with a delivery date post 30th June 2006 is not affected.

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B. Reason

Two (2) HPC Stage 5 Rotor blade fractures have occurred in service. Investigation has revealed the blade fracture initiated from an abrupt transition in the retaining plate slot. A non-conforming tool induced the abrupt transition during blade manufacture. The investigation has shown that a number of blades manufactured using this tool were fitted during new production V2500-A5 HPC module build and also during V2500-A5 and V2500-D5 shop visits after 1st March 1997.

To date, an additional nineteen (19) HPC stage 5 rotor blades have been found cracked in the retaining plate slot. Four (4) of them were P/N 6A8451, not covered by initial issue of this Non Modification Service Bulletin.

Revision 2 of this Non-Modification Service Bulletin has been issued to introduce a focused crack inspection of the retaining plate slot and the requirement to reject the entire set of HPC stage 5 rotor blades in case a single or multiple blades are found cracked in the retaining plate slot. The requirement to take replica of the retaining plate slot has been deleted.

C. Description

This Non-Modification Service Bulletin details the inspection procedure for the retaining plate slot of HPC stage 5 rotor blade.

Note: EM TASK 72-41-00-040-001, and TASK 72-41-00-440-001 HPC Surgical Strike Procedures may used to Gain Access to the HPC Stages 5 rotor blades.

Engines listed in 1. A.

Engines with HPC stage 5 blades manufactured in a specific time frame that were installed during new production Module build.

Engines with HPC stage 5 blades manufactured in a specific time frame that were installed during a shop visit.

D. Compliance

Category 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 ENGINE REMOVAL.

Engines listed in paragraph 1.A. Effectivity Data that have already been at overhaul shop visit and that removed the suspect HP compressor stage 5 rotor blades comply with this Non-Modification Service Bulletin. In this case, Non-Modification Service Bulletin V2500-ENG-72-0585 has to be recorded in the relevant engine documentation.

For spare HP compressor stage 5 rotor blades of pre Service Bulletin V2500-ENG-72-0490 standard accomplish before installation.

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E. Approval

The compliance statement at paragraph E. (Compliance) and the procedures in Section 3 (Accomplishment Instructions) of this Non-Modification Service Bulletin comply with the Federal Aviation Regulations and are FAA-approved for the engine models listed.

F. References

(1) V2500 A5/D5 Engine Manual, Chapter 72-41-10, Assembly/Disassembly.

(2) V2500 A5/D5 Engine Manual, Chapter 72-41-15, Inspection/Check.

(3) V2500 A5/D5 Engine Manual,

(a) TASK 72-00-40-020-000, Remove the HP System Module.

(b) TASK 72-41-00-040-001, HPC Surgical Strike Procedure to Gain Access to the HPC Stages 3 to 6 Area.

(c) TASK 72-41-00-440-001, Replace HP Compressor Stage 3, 4, 5 and 6 Blades - Surgical Strike Workscope Procedure.

(d) TASK 72-41-15-100-002, Clean the HP Compressor Stage 5 Rotor Blades.

(4) V2500 Standard Practices/Processes Manual, Chapters 70-09-00, 70-21-00 and 70-22-03.

(5) V2500 Overhaul Processes and Consumable Index, Section 06.

(6) SEN5085.

(7) Internal Reference No. Stage 5 blade Replica Report TRV83140
Engineering Change No. 08VR922, 08VR922A, 08VR922B.

(8) ATA locator 72-41-15.

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G. Manpower

Estimate of man-hours necessary to embody this service bulletin in full:

(1) In Service

Not affected.

(2) At overhaul

Ninety (90) hours for disassembly of the engine/HPC module.

Eight (8) hours for one set (64) of blades.

H. Tools and Equipment

None.

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2. Material Information

None.

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3. Accomplishment Instructions

A. Remove the HP System Module from the engine

(1) Remove the HP System Module in accordance with EM 72-00-40-020-000.

B. Gain access

(1) Remove the HP Compressor Front Cases.

Note: EM 72-41-00-040-001, HPC Surgical Strike Procedure may be used.

C. Removal of HPC stage 5 rotor blades

(1) Remove all HPC stage 5 rotor blades from the HPC rotor assembly.

Note: EM TASK 72-41-00-440-001, Surgical Strike Workscope procedure may be used.

D. Cleaning of HPC stage 5 rotor blades

(1) Clean each parts in accordance with SPP TASK 70-11-16-300-503.

E. Inspection of HPC stage 5 rotor blades

(1) All parts

Note: HPC stage 5 rotor blades shall be inspected as a complete set from the same engine.

(a) Examine the Stage 5 Rotor Blade retaining plate slots for cracks in accordance with SPM TASK 70-23-01-230-501.

(b) If any blade is found cracked in the retaining plate slot, reject the whole set of HPC stage 5 rotor blades.

(c) Quarantine the whole set of HPC stage 5 blades and inform your local IAE office.

Note: Any blade set found with a cracked blade may need to be returned to IAE Technical Services for further investigation.

(d) Complete the Feedback Form to record the number of HPC stage 5 rotor blades that have been rejected due to a crack in the retaining plate slot.

If no blade is found cracked in the retaining plate slot, refer to Step 3. E (2).

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(2) HPC stage 5 rotor blades that passed inspection in 3.E (1).

(a) Visually examine the retaining plate slot of the HPC stage 5 rotor blade with minimum 10x magnification.

(b) Examine the Stage 5 Rotor Blade retaining plate slots for cracks.

(c) Compare each blade to Figure 1 and Figure 2.

(d) Reject any HP compressor stage 5 rotor blade with a crack or an abrupt transition in accordance with Figure 1.

(e) If any blade is found cracked in the retaining plate slot, reject the whole set of HPC stage 5 rotor blades.

(f) Quarantine the whole set of rejected HPC stage 5 blades and inform your local IAE office.

Note: Any blade set found with a cracked blade may need to be returned to IAE Technical Services for further investigation.

(g) Complete the Feedback Form to record the number of HPC stage 5 rotor blades that have been rejected due to a crack or suspect retaining plate slot.

(3) HPC stage 5 rotor blades that passed inspection in 3.E (1) and 3.E (2).

(a) Examine HP Compressor Stage 5 Rotor Blades in accordance with EM TASK72-41-15-200-003-B00.

Note: Detailed crack inspection of the retaining plate slot accomplished as per 3.E (1) does not need to be repeated.

Note: Any rejection during inspection as per EM TASK 72-41-15-200-003-B00 other than a crack in the retaining plate slot is not subject of this Non-Modification Service Bulletin and does not need to be reported in the Feedback Form.

(b) Identify the inspected HP compressor stage 5 blades (Refer to the Standard Practices/Processes Manual, Chapter 70-09-00).

(c) Vibro peen 'N 585' on each HPC stage 5 rotor blade that passed inspection in 3.E(1), 3.E.(2) and 3.E.(3) in allocated area (Fig.5).

Note: Do not vibro peen outside the marking area.

Note: Any blade marked outside the marking area must be scrapped.

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(4) HPC stage 5 rotor blades that failed inspection in 3.E (1), 3.E (2) and 3.E (3).

(a) Reject all HPC stage 5 rotor blades that failed inspection in 3. E (1), 3.E (2) and 3.E (3).

F. Record of Accomplishment

(1) Record “NMSB-ENG-72-0585” in the applicable engine records.

Note: Para 3.F.(1) must be performed prior to engine dispatch.

(2) Complete the feedback form on page 11 of this Non-Modification Service Bulletin.

(a) When the accomplishment instructions are completed, inform the local IAE office that this Non-Modification-Service Bulletin has been accomplished.

(b) Pass the Feedback Form and any available pictures to the local IAE office.

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Figure 1 – Appearance of Abrupt Transition

Figure 2 – Appearance of Nominal Slot

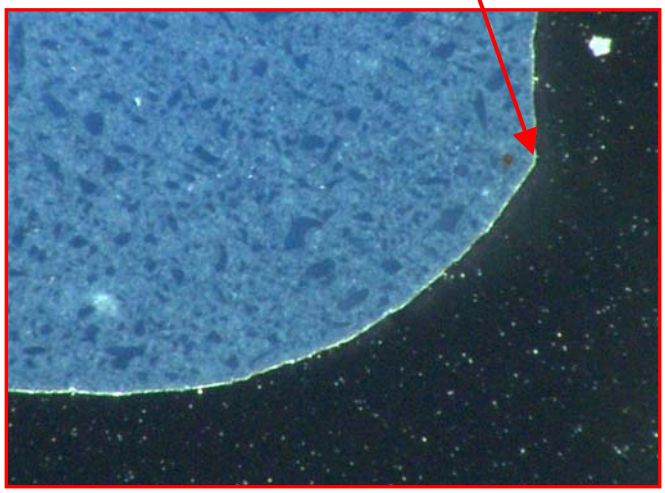

Figure 3 – Sectioned Replica of Abrupt Transition

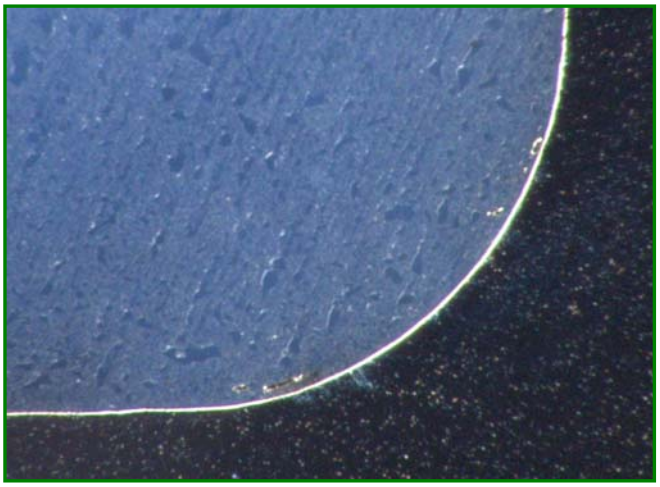

Figure 4 - Sectioned Replica of Nominal Slot

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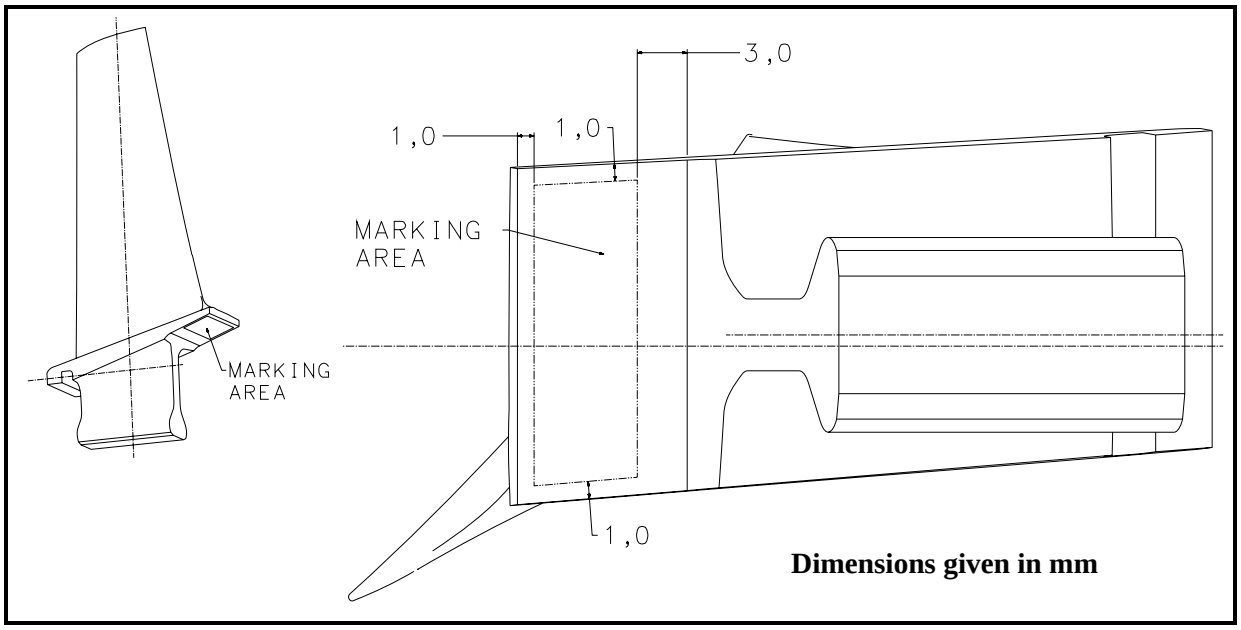

Figure 5 – Area Allocated for Part Marking (N 585)

Note: Do not vibro peen outside the marking area.

Note: Any blade marked outside the marking area must be scrapped.

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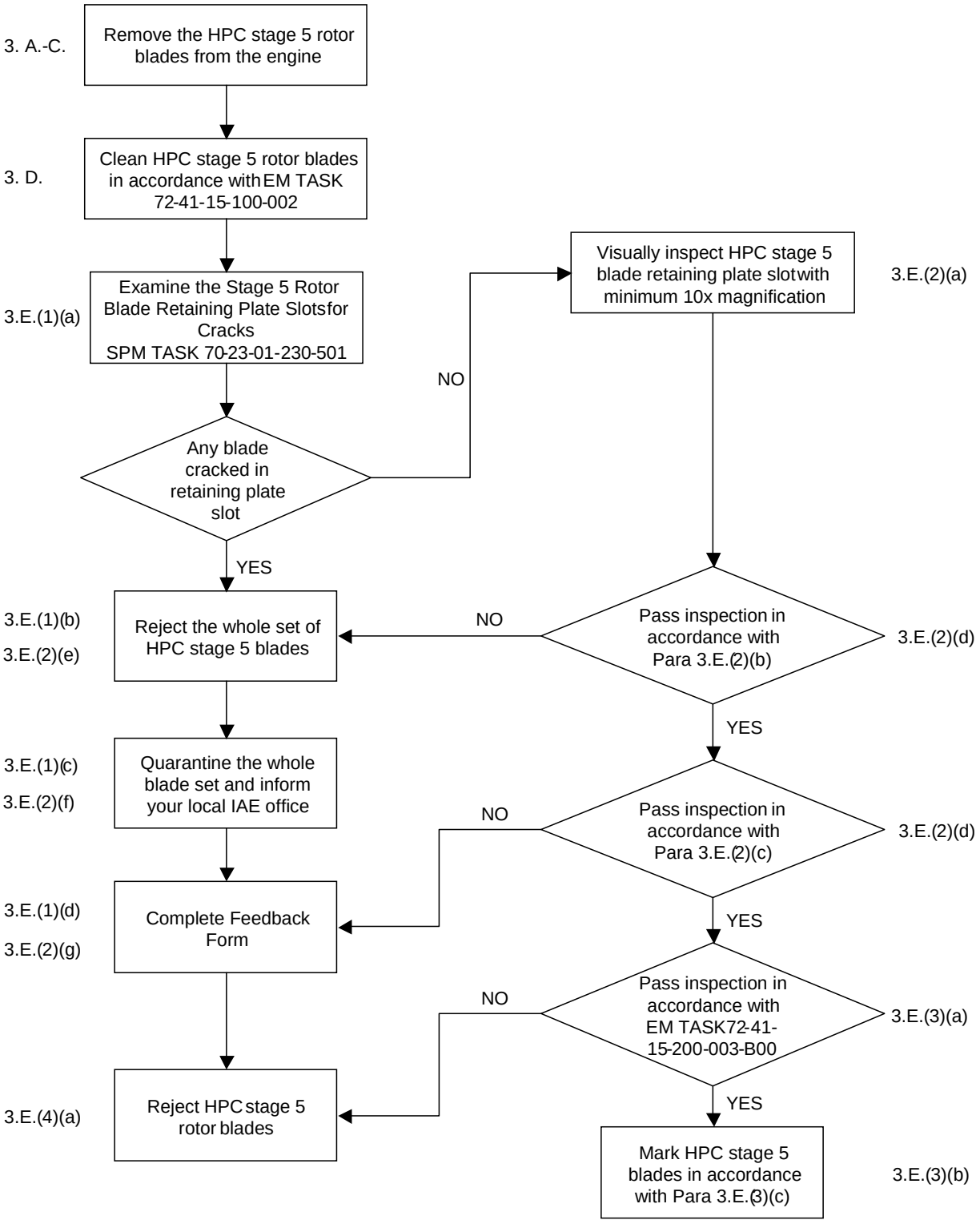

Figure 6 Flow Chart of Inspection Procedure

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Stage 5 Blade Inspection Feedback Form

Engine Details

Engine Serial Number: _____ TSN: _____ CSN: _____

Overhaul shop: _____

Inspection Details

NOTE: If any blade is found cracked in the retaining plate slot, reject the whole set of HPC stage 5 rotor blades

Crack tested as per	Para 3.E.(1) (a)	Para 3.E.(2) (c)
P/N	Total number of cracked blades	Total number of cracked blades

Full set of HPC stage 5 rotor blades rejected	
Yes	No

Date _____
Crack tested by _____ Signature _____

Inspected as per Para 3.E.(2) (b)		
P/N	Number of passed blades	Number of rejected blades

NOTE: Total number of blades inspected must equal 64 or none

Date _____
Inspected by _____ Signature _____

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