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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DATE: Sep.24/12

V2500-A1/A5 SERIES PROPULSION SYSTEM NON-MODIFICATION SERVICE BULLETIN

This document transmits the Revision 2 of Non-Modification Service Bulletin V2500-ENG-72-0617.

Document History

Non-Modification Service Bulletin Revision Status

Initial Issue	Dec. 9/10.
Revision 1	Sep.28/11.

Non-Modification Service Bulletin Revision 2

Remove	Incorporate	Reason for change
All pages of the Non-Modification Service Bulletin.	Pages 1 to 15 of the Non-Modification Service Bulletin.	To remove D5 engines from the Effectivity. To update the accomplishment instructions. Editorial changes.

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

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All pages of the Appendix.	Page 1 of the Appendix.	To remove the alternate accomplishment instructions.

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SERVICE BULLETIN

NON-MODIFICATION SERVICE BULLETIN - X-RAY INSPECTION OF THE NO. 4 BEARING SCAVENGE TUBE ASSEMBLY

1. Planning Information

A. Effectivity Data

(1) Airbus A319

R (a) V2522-A5, V2524-A5, V2527M-A5

R Engine Serial Nos. - All except V15481, V15483, V15485, V15487 and
R V15489

(2) Airbus A320

(a) V2500-A1

R Engine Serial Nos. - All

R (b) V2527-A5, V2527E-A5

R Engine Serial Nos. - All except V15481, V15483, V15485, V15487 and
R V15489

(3) Airbus A321

R (a) V2530-A5, V2533-A5

R Engine Serial Nos. - All except V15481, V15483, V15485, V15487 and
R V15489

B. Concurrent Requirements

There are no concurrent requirements.

C. Reason

(1) Condition:

Two oil loss events, one In-Flight Shut Down (IFSD) and one Unscheduled Engine Removal (UER) occurred due to fractured No. 4 bearing scavenge tube assemblies.

(2) Background:

Inspection of the fractured tube assembly found incomplete weld penetration.

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(3) Objective:

Perform a one-time X-ray inspection of the tube assembly to find whether the tube weld has full weld penetration. Suspect parts must be removed from service.

(4) Effects of Bulletin on:

(a) Removal/Installation:

Not affected.

(b) Disassembly/Assembly:

Not affected.

(c) Cleaning:

Not affected.

(d) Inspection/Check:

Not affected.

(e) Repair:

Not affected.

(f) Testing:

Not affected.

(5) Supplemental Information

None.

D. Description

Do a one-time X-ray inspection of the No.4 bearing scavenge tube assembly.

E. Compliance

Category 6

Accomplish when the subassembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected part and to all affected spare parts.

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F. Approval Data

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

G. Manpower

(1) In Service

(a) Not Applicable

(2) At Overhaul

(a) Necessary to Take Two X-Ray Exposures and Inspect: 18 minutes

Necessary to Mark Flange with NMSB Number if Serviceable: 1 minute

(b) Necessary to Remove Heatshields, Repeat X-Ray Inspection, and Re-install Heatshields if Initial X-Ray Failed: 33 minutes

Necessary to Mark Flange with NMSB Number if Serviceable: 1 minute

(c) Necessary to Perform VRS3775 on the Tube and Inspect: 2 hours 45 minutes

Necessary to Mark Flange with NMSB Number: 1 minute

(d) Necessary to Record Results and Report to IAE: 5 minutes

H. Weight and Balance

(1) Weight Change

None.

(2) Moment Arm

No effect.

(3) Datum

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

I. Electrical Load Data

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

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J. Software Accomplishment Summary

Not Applicable.

K. References

(1) V2500 Engine Illustrated Parts Catalogs (S-V2500-1IA, S-V2500-2IA,
R S-V2500-2IB, S-V2500-5IA, S-V2500-5IB, S-V2500-6IA, S-V2500-6IB,
S-V2500-7IA and S-V2500-7IB), Chapter/Section 72-42-20.

(2) V2500 Engine Illustrated Parts Catalogs (S-V2500-2SA, S-V2500-2SB,
S-V2500-5SA, S-V2500-5SB, S-V2500-6SA, S-V2500-6SB, S-V2500-7SA,
S-V2500-7SB), Chapter/Section 72-42-20.

(3) V2500 Component Maintenance Manual - Tubes, Hoses and Ducts
(THD-V2500-1IA), Chapter/Section 72-42-20.

(4) V2500 Standard Practices/Processes Manual (E-V2500-1IA), Chapter/Section
70-09-00.

(5) Internal Reference No. - IEN 10VC147, IEN 10 VC147A, IEN 10VC147B, PSAF
R 10VC147C, IEN 10VC147D, EA 10VC147E, EA 08VC232A, EA 12VC131.

(6) ATA Locator - 72-42-20.

L. Other Publications Affected

(1) V2500 Component Maintenance Manual - Tubes, Hoses and Ducts
(THD-V2500-1IA), Chapter/Section 72-42-20.

M. Interchangeability of Parts

Not applicable.

N. Information in the Appendix

Alternate Accomplishment Instructions (Yes)

Progression Charts (No)

Added Data (Yes)

Revision to Table of Limits (No)

Inspection Procedures (No)

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2. Material Information

A. Material - Price and Availability

Not applicable.

B. Industry Support Program

Not applicable.

C. The material data that follows is for each engine.

This Non-Modification Service Bulletin is for X-ray inspection only.

D. Instructions/Disposition Code Statements:

Parts Modification Conditions

Not applicable.

Spare Parts Availability

Not applicable.

Cleaning, Inspection and Repair Information

Not applicable.

E. Tooling - Price and Availability

Special tools are not required to accomplish this Non-Modification Service Bulletin.

F. Re-identified Parts

Not applicable.

G. Other Material Information Data

Not applicable.

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3. Accomplishment Instructions

NOTE: See Figure 3 for a decision tree that highlights the steps that follow.

(1) Perform a one-time X-ray inspection of the No.4 Bearing Scavenge Tube Assembly, PN 2A2074-01, as follows. See Figure 1, Sheet 1 for the location of the assembly.

(a) Do an inspection of the tube flange and find the production date. See Figure 1, Sheet 2 for the location of the production date.

NOTE: Production date will be engraved in mmddyyyy format.

(i) If the production date is on or after 04212010, then do the following:

NOTE: If the production date is on or after 04212010, do not mark the tube with this Non-Modification Service Bulletin number as "0617".

(1) Return the tube assembly to service.

(2) Make a copy of Figure 2, No. 4 Bearing Scavenge Tube Inspection Results, select "NA" at appropriate places, and send it to the IAE (Hot Section) representative via PSCOMM.

(ii) If the production date is prior to 04212010, then proceed to the next step.

(b) Take two exposures of the weld joints. The first exposure should be at 0 (zero) degrees and the second exposure should be taken at 90 degrees from the first. See Figure 1, Sheet 2 for the location of the weld joints and an example of the direction of the first and second exposures. Each exposure is to be taken with the following recommended settings:

NOTE: Removal of the heatshield from the No.4 Bearing Scavenge Tube Assembly, PN 2A2074-01 is not required to perform this step.

145 kilovolts

10 milliamps

60 seconds

48 inches (1219,200 mm)

AGFA D4 or equivalent

Film density to be 1.5 - 4.0

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.10 thru .20 penetrometer and block size

NOTE: The material is nickel based.

NOTE: Adjustments to the above parameters can be made provided 2-2T or equivalent sensitivity is archived. Wire Image Quality Indicators can be utilized.

(c) X-ray requirements. See Figure 1, Sheet 2 for the location of the weld joints: Weld A and Weld B.

(i) Requirements for Weld A and Weld B:

(1) No cracks, incomplete (lack of) penetration or incomplete (lack of) fusion allowed.

(2) Porosity, low density inclusions, or high density inclusions are acceptable provided:

A The maximum discontinuity size does not exceed 0.015 in. (0,381 mm).

B The total allowable number of discontinuities, regardless of type, must not exceed 4 per weld.

C The separation between discontinuities in linear alignment must be more than 0.050 in. (1,27 mm).

Definitions:

Crack: A narrow break or fissure caused by internal stresses, external stresses, or fatigue acting independently or in combination.

Incomplete Fusion: Failure of the weld material to fuse either with the parent metal or itself.

Incomplete Penetration: Failure of the weld material to penetrate completely to the root of the joint.

Porosity: An unfilled space such as one which occurs when gas is entrapped during the casting or welding process.

Inclusion: A solid impurity (foreign material) which is alien to and enclosed in the base material.

Discontinuity: An interruption in the normal structure of a part configuration which must be evaluated for acceptance to an assigned standard.

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Linear Alignment: Three or more aligned discontinuities separated from one another by less than three times the maximum discontinuity dimension.

(d) If the X-ray results meet the requirements of the previous X-ray requirements step, then do the following:

(i) Mark the tube flange at the location shown in Figure 1, Sheet 2 with this Non-Modification Service Bulletin number as "0617".
R See Reference 4, Standard Practices Manual, Chapter/Section
R 70-09-00, Marking of Parts. Approved marking methods are deep electrolytic etch, metal stamp (press or roll), or drag impression.

(ii) Return the tube assembly to service.

(iii) Make a copy of Figure 2, No.4 Bearing Scavenge Tube Inspection Results, record the results for each inspection, and send it to the IAE (Hot Section) representative via PSCOMM.

(e) If the X-ray results do not meet the requirements of the previous X-ray requirements step, then do the following:

(i) Remove the heatshields and insulation from the tube assembly by
R the applicable steps in the procedure provided in Reference 3,
R Component Maintenance Manual - Tubes, Hoses and Ducts,
R Chapter/Section 72-42-20, Repair 027, VRS3775. See Figure 1, Sheet 3 for the location of heatshields.

(ii) Repeat the X-ray inspection per the previous X-ray step.

(iii) If the X-ray results meet the requirements of the previous X-ray requirements step, then do the following:

(1) Re-install the insulation and heatshields on the No.4 Bearing Scavenge Tube Assembly, PN 2A2074-01 by the
R applicable steps in the procedure provided in Reference 3,
R Component Maintenance Manual - Tubes, Hoses and Ducts,
R Chapter/Section 72-42-20, Repair 027, VRS3775.

(2) Mark the tube flange at the location shown in Figure 1, Sheet 2 with this Non-Modification Service Bulletin number
R as "0617". See Reference 4, Standard Practices Manual, Chapter/Section 70-09-00, Marking of Parts. Approved marking methods are deep electrolytic etch, metal stamp (press or roll), or drag impression.

(3) Return the tube assembly to service.

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(4) Make a copy of Figure 2, No. 4 Bearing Scavenge Tube Inspection Results, record the results for each inspection, and send it to the IAE (Hot Section) representative via PSCOMM.

(iv) If the X-ray results do not meet the requirements of the previous X-ray requirements step, then perform the applicable steps in the procedure provided in Reference 3, Component Maintenance Manual - Tubes, Hoses and Ducts, Chapter/Section 72-42-20, Repair 027, VRS3775 on the tube body weld joints. Make sure the part is within the repairable requirements per Repair 027, VRS3775. Do not perform weld repair on the tube body weld joints if all the conditions specified in Repair 027, VRS3775 are not met.

NOTE: If the Operator or Repair Shop does not have the capability to perform the procedure provided in Reference 3, Component Maintenance Manual - Tubes, Hoses and Ducts, Chapter/Section 72-42-20, Repair 027, VRS3775, then remove the tube assembly from service and contact IAE Tech Services (Hot section) representative.

(1) If the tube assembly is within serviceable limits after completing the applicable steps in the procedure provided in Reference 3, Component Maintenance Manual - Tubes, Hoses and Ducts, Chapter/Section 72-42-20, Repair 027, VRS3775, then do the following:

A Mark the tube flange at the location shown in Figure 1, Sheet 2 with this Non-Modification Service Bulletin number as "0617". See Reference 4, Standard Practices Manual, Chapter/Section 70-09-00, Marking of Parts. Approved marking methods are deep electrolytic etch, metal stamp (press or roll), or drag impression.

B Return tube assembly to service.

C Make a copy of Figure 2, No.4 Bearing Scavenge Tube Inspection Results, record the results for each inspection, and send it to the IAE (Hot Section) representative via PSCOMM.

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(2) If the tube assembly was not qualified for, or found not serviceable after completing the applicable steps in the
R procedure provided in Reference 3, Component Maintenance
R Manual - Tubes, Hoses and Ducts, Chapter/Section 72-42-20,
R Repair 027, VRS3775, remove the tube assembly from service and replace it with a new No.4 Bearing Scavenge Tube Assembly, PN 2A2074-01.

NOTE: If the tube was replaced with a new tube manufactured on or after 04212010, do not mark the tube with this Non-Modification Service Bulletin number as "0617".

NOTE: If the tube was replaced with a new tube manufactured before 04212010, then do a X-ray inspection per the procedure contained in this Service Bulletin and if found serviceable, mark the tube with this Non-Modification Service Bulletin number as "0617".

(2) Recording Instructions

(a) A record of accomplishment is required.

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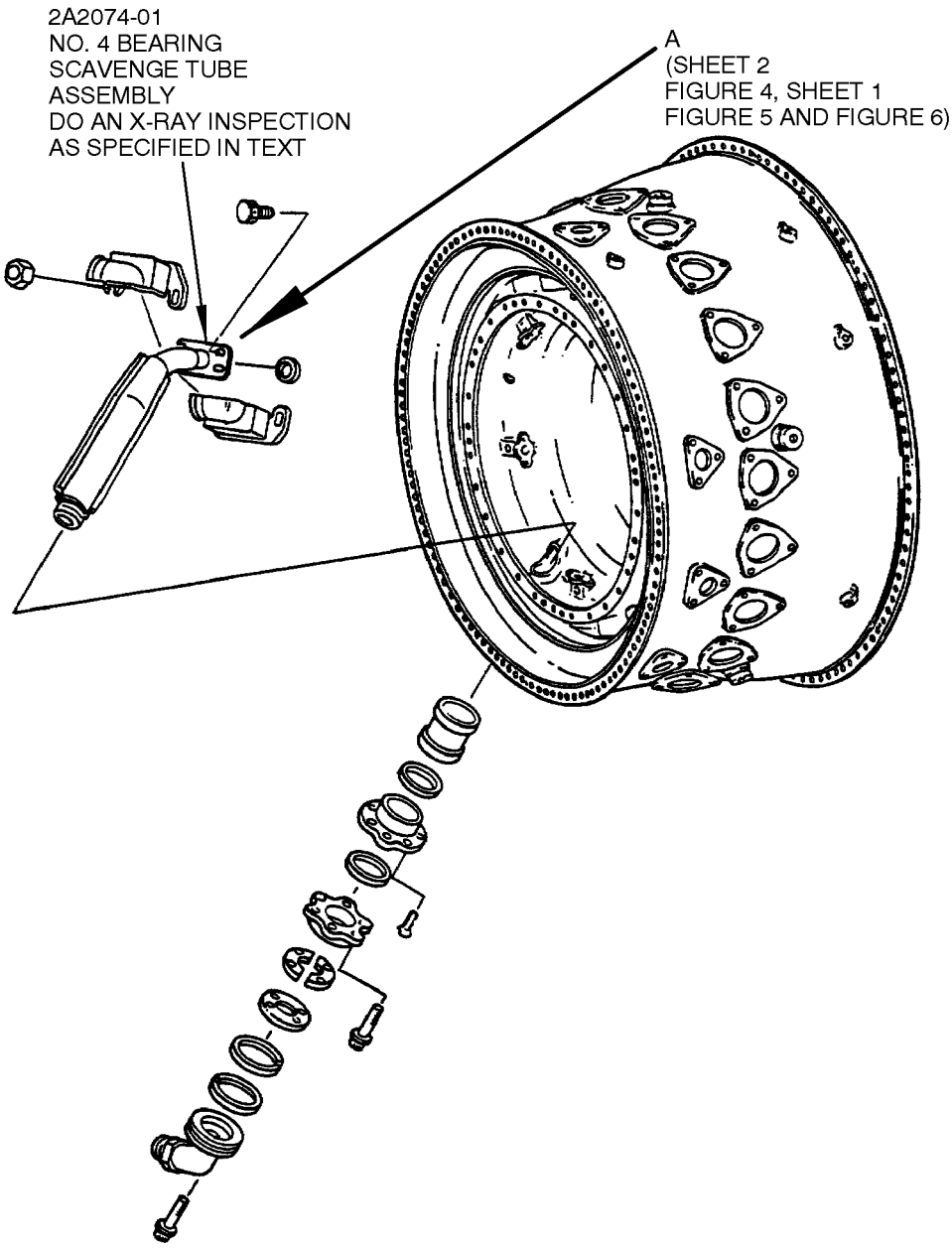

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R LOCATION, INSPECTION AND IDENTIFICATION OF THE NO.4 BEARING SCAVENGE TUBE ASSEMBLY
R 72-42-20
R FIGURE 1, SHEET 1

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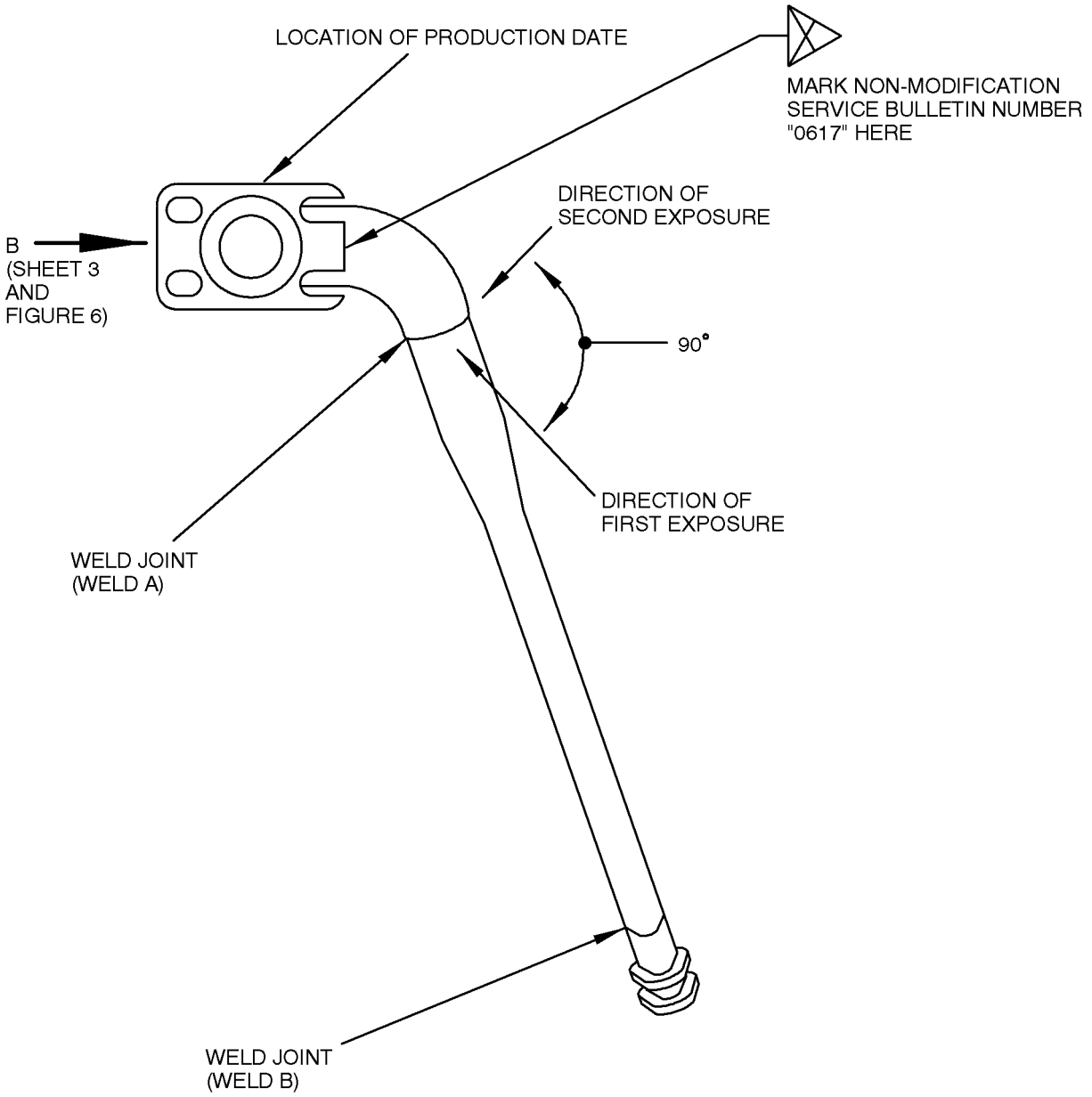

VIEW IN DIRECTION A
(HEATSHIELDS NOT SHOWN FOR CLARITY)

pw0b522932b

R LOCATION, INSPECTION AND IDENTIFICATION OF THE NO.4 BEARING SCAVENGE TUBE ASSEMBLY
R FIGURE 1, SHEET 2

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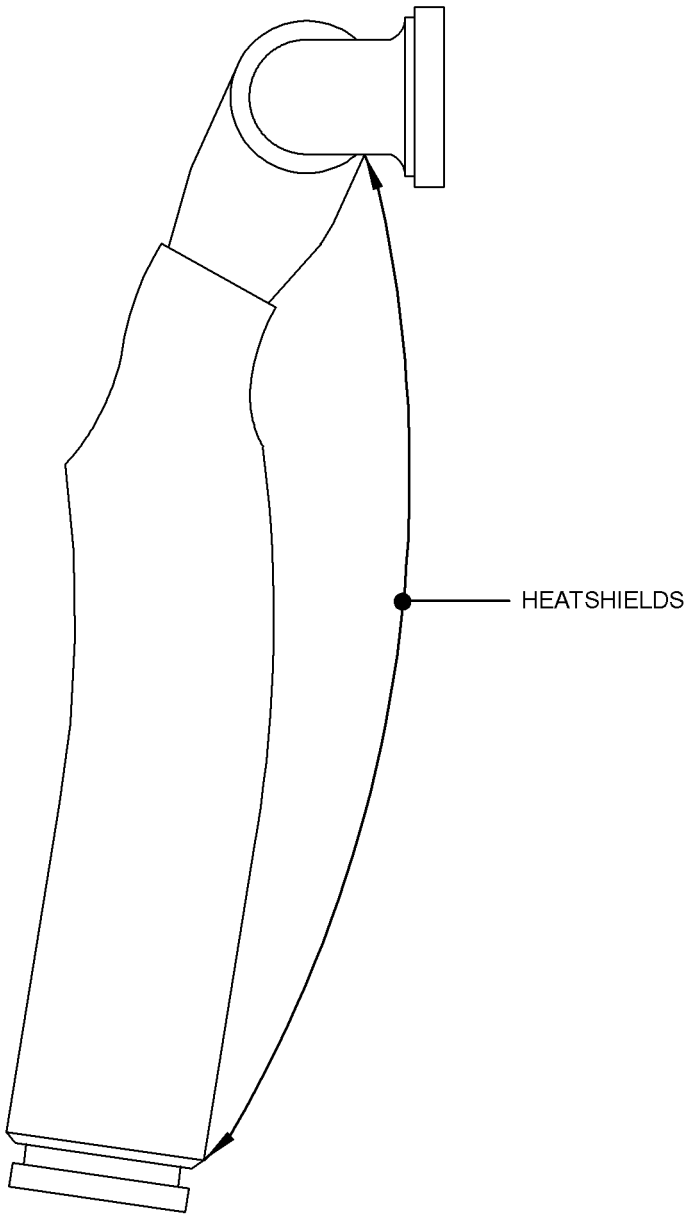

VIEW IN DIRECTION B
(WITH HEATSHIELDS INSTALLED)

pw0b523099

LOCATION, INSPECTION AND IDENTIFICATION OF THE NO.4 BEARING SCAVENGE TUBE ASSEMBLY
FIGURE 1, SHEET 3

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INSPECTION DETAILS	RESULTS
ENGINE MODEL	
ENGINE SERIAL NUMBER	
TOTAL CYCLES / TOTAL HOURS ON: (A) ENGINE (B) TUBE ASSEMBLY, IF AVAILABLE	
PRODUCTION DATE ON TUBE ASSEMBLY (USE THE FORMAT - MMDDYYYY)	
DATE OF INSPECTION	
X-RAY INSPECTION RESULTS WITH HEATSHIELDS	PASS ☐ FAIL ☐ NA ☐
X-RAY INSPECTION RESULTS WITHOUT HEATSHIELDS	PASS ☐ FAIL ☐ NA ☐
DID YOU PERFORM VRS3775?	YES ☐ NO ☐
WAS THE TUBE ASSEMBLY SERVICEABLE AFTER VRS3775?	YES ☐ NO ☐

NOTE: CHECK THE APPROPRIATE BOXES AS INDICATED BELOW.
DON'T CHECK MORE THAN ONE BOX IN A FIELD.

NOTE: SEND A COMPLETED COPY OF THIS INSPECTION REPORT TO THE IAE (HOT SECTION, EEC) REPRESENTATIVE VIA PSCOMM.

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R NO.4 BEARING SCAVENGE TUBE INSPECTION RESULTS
R FIGURE 2

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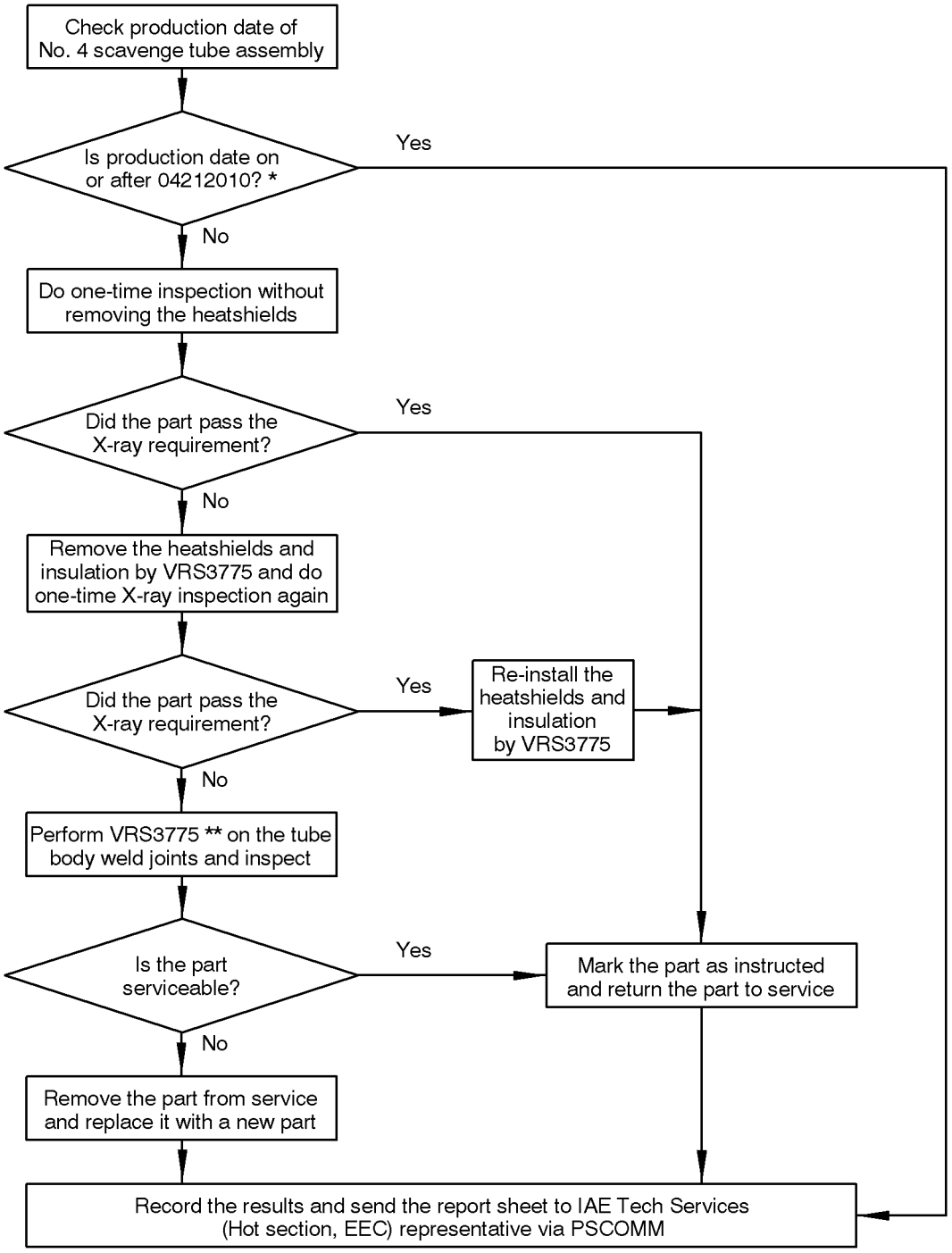

DECISION TREE
FIGURE 3

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APPENDIX

R Alternate Accomplishment Instructions

R NOTE: Reference 3, Component Maintenance Manual - Tubes, Hoses and Ducts, Chapter/Section 72-42-20, Revision 87, dated February 1, 2012 incorporated the new Repair 027, VRS3775. The procedure has been removed from this Service Bulletin.

R Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
R Original	IEN10VC147 IEN10VC147A IEN10VC147B PSAF10VC147C	RG/JDH
1	IEN10VC147D EA10VC147E EA08VC232A	JK/JDH
R 2	EA12VC131	JK/CMS

R Number values shown in parentheses adjacent to U.S. values are International System R of units (SI) equivalents.

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SERVICE BULLETIN FEEDBACK FORM

Please use this form to give feedback on the quality of this Service Bulletin. The input you provide will be used to analyse areas of improvement and to take action to further improve on the quality of our Service Bulletins.

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

If you have had difficulties to perform this Service Bulletin please quote below the area(s) and give a short description of the issue:

Planning Information Section:		Material Information Section:	Accomplishment Instruction Section:
☐ 1.A.	☐ 1.I.	☐ 2.A.	☐ General
☐ 1.B.	☐ 1.J.	☐ 2.B.	☐ Get Access
☐ 1.C.	☐ 1.K.	☐ 2.C.	☐ Removal/Installation
☐ 1.D.	☐ 1.L.	☐ 2.D.	☐ Inspection
☐ 1.E.	☐ 1.M.	☐ 2.E.	☐ Test
☐ 1.F.	☐ 1.N.	☐ 2.F.	☐ Close the Access
☐ 1.G.	☐ 1.O.		☐ Log Book Entry
☐ 1.H	☐ 1.P.		

Explanatory notes:

Operator:	Overhaul Site:
Name/Title:	Date:

Please send the completed Service Bulletin Feedback Form to IAE, Customer Support.
Email: GPIAECUSTCOM@IAEV2500.COM

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