



SERVICE BULLETIN

ENGINE - DIFFUSER AND COMBUSTION GROUP AND STAGE 1 TURBINE NOZZLE ASSEMBLY - INTRODUCE
THERMAL BARRIER COATING ON INNER AND OUTER COMBUSTION CHAMBER LINERS - CATEGORY CODE
5 - MOD.ENG-72-0060

1. Planning InformationA. Effectivity

- (1) Aircraft: Airbus A320
- (2) Engine: V2500-A1 Engine Serial No's. before V0122 except Engine
Serial No.V0121*

* Engine Serial No.V0121 has 2A1618 Outer Combustion Chamber
Assembly.

B. Reason

(1) Condition

It is possible for segments without ceramic coating to burn and crack,
before the usual time, because there is not sufficient thermal
protection.

(2) Background

Development testing has shown that the thermal loading on segments which
are not ceramic coated is higher than predicted. When thermal barrier
coating is applied to segments which are not ceramic coated the number of
burns and cracks is decreased and the segment life is increased.

(3) Objective

To improve the durability of segments for both the inner and outer burner
liners by adding ceramic coating to noncoated segments.

(4) Substantiation

Many hours of tests were completed on experimental engines with coated
segments.

(5) Effects of Bulletin on Workshop Procedures:

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Removal/Installation	Not affected
Disassembly/Assembly	Not affected
Cleaning	Not affected
Inspection/Check	Not affected
Repair	Not affected
Testing	Not affected

(6) Supplemental Information:

None

C. Description

- (1) The durability of noncoated Inner and Outer Burner Liner Segments is increased by the addition of ceramic coated liners.

D. 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.

E. Compliance

Category Code 5

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

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
(1) In service	Not applicable
(2) At Overhaul (Note: The parts affected by this Service Bulletin are accessible at Overhaul.)	
(a) To accomplish the removal and installation of Inner and Outer Combustion Chamber Liner Segments ..	11 Hours, 42 Minutes
TOTAL	11 Hours, 42 Minutes

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Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).



- (2) The V2500 Engine Manual, Chapter/Section 72-42-61 and 72-44-30, Cleaning, are revised to add the new parts.
- (3) The V2500 Engine Manual, Chapter/Section 72-42-61 and 72-44-30 Inspection/Check, are revised to add the new parts.
- (4) The V2500 Engine Manual, Chapter/Section 72-42-61 and 72-44-30 Repair, are revised to add the new parts.
- (5) The V2500 Engine Manual, Chapter/Section 72-42-61 and 72-44-30 Assembly, are revised to add the new parts.



2. Accomplishment Instructions

A. Disassembly Instructions

- (1) Remove the Outer Combustion Chamber Liner Segments for Engines that do not include the modification given in Reference (1).
 - (a) Remove the Outer Combustion Chamber Liner Segments (2A1073, 2A1076, 2A1077, 2A1078, 2A1079, 2A1080, 2A1323 and 2A1324) by the approved procedure in Reference (2), Chapter/Section 72-42-60, Disassembly.
- (2) Remove the Outer Combustion Chamber Liner Segments for Engines which include the modification given in Reference (1).
 - (a) Remove the Outer Combustion Chamber Liner Segments (2A1073, 2A1079, 2A1080, 2A1391, 2A1392, 2A1393, 2A1394 and 2A1395) by the approved procedure in Reference (2), Chapter/Section 72-42-60, Disassembly.

NOTE: Combustion Chamber Liners modified by the instructions in Reference (1) will have coated segments (2A1391, 2A1392, 2A1393, 2A1394 and 2A1395) installed at the applicable locations. Keep the serviceable coated segments and install them again at assembly.

- (3) Remove the Inner Combustion Chamber Liner Segments for Engines that do not include the modification given in Reference (1).
 - (a) Remove the Inner Combustion Chamber Liner Segments (2A1081, 2A1084, 2A1085, 2A1325 and 2A1326) by the approved procedure in Reference (2), Chapter/Section 72-44-30, Disassembly).
- (4) Remove the Inner Combustion Chamber Liner Segments for Engines which include the modification given in Reference (1).
 - (a) Remove the Inner Combustion Chamber Liner Segments (2A1081, 2A1085, 2A1326, 2A1396 and 2A1397) by the approved procedure in Reference (2), Chapter/Section 72-44-30, Disassembly.

NOTE: Combustion Chamber Liners modified by the instructions in Reference (1) will have coated segments (2A1396 and 2A1397) installed at the applicable locations. Keep the serviceable coated segments and install them again at assembly.

B. Assembly Instructions

- (1) Install the Outer Combustion Chamber Liner Segments 2A1391 (10 off), 2A1392 (10 off), 2A1393 (8 off), 2A1394 (1 off), 2A1395 (1 off), 2A1611 (9 off), 2A1612 (1 off) and 2A1613 (10 off) as necessary by the approved procedure in Reference (2), Chapter/Section 72-42-60, Assembly. See Figure 1.

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NOTE: For Outer Combustion Chamber Liners which have the modification given in Reference (1), coated segments (which were remove and kept) will be installed again at the applicable locations.

- (2) Install the Inner Combustion Chamber Liner Segments 2A1396 (10 off), 2A1397 (10 off), 2A1614 (10 off), 2A1615 (10 off), and 2A1616 (10 off) as necessary by the approved procedure in Reference (2), Chapter/Section 72-44-30, Assembly. See Figure 2.

NOTE: For Inner Combustion Chamber Liners which have the modification given in Reference (1), coated segments (which were remove and kept) will be installed again at the applicable locations.

C. Identification Instructions

- (1) Identify the modified Outer Combustion Chamber Assemblies as follows:

Old Part Number	New Part Number
2A1383	2A1666
2A1385	2A1618
2A1399	2A1618
2A2013	2A1666

- (2) Identify the modified Inner Combustion Chamber Assemblies as follows

Old Part Number	New Part Number
2A1374	2A1617
2A1398	2A1617

- (3) Make a mark adjacent to the old part number to show the new part number by the approved procedure in Reference (3), Chapter/Section 70-09-00, Marking of Parts. Use the vibration peen method.

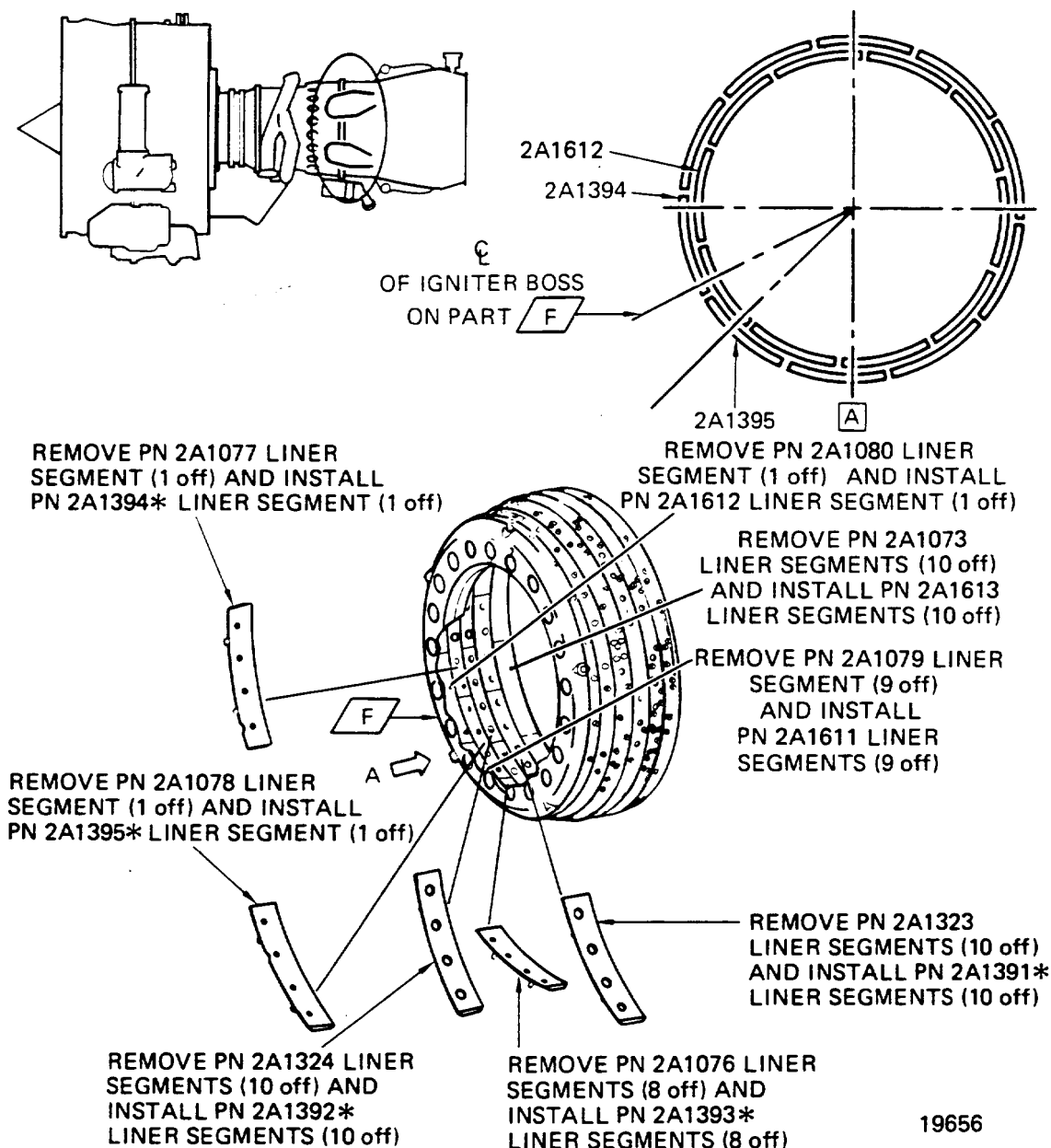
D. Recording Instructions

- (1) A record of accomplishment is necessary.



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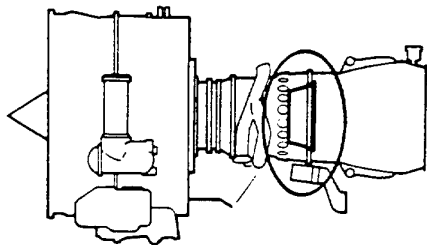
*IF THE MODIFICATION GIVEN IN REFERENCE (1) WAS DONE, THESE PARTS WERE INSTALLED BEFORE. KEEP THESE PARTS AND INSTALL AGAIN AT ASSEMBLY.

Location of Outer Combustion Chamber Liner Segments
Fig.1

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REMOVE PN 2A1325 LINER SEGMENTS
(10 off) AND INSTALL PN 2A1397*
LINER SEGMENTS (10 off)

REMOVE PN 2A1326 LINER
SEGMENTS (10 off)
AND INSTALL
PN 2A1615 LINER
SEGMENTS (10 off)

REMOVE PN 2A1084 LINER
SEGMENTS (10 off) AND
INSTALL PN 2A1396*
LINER SEGMENTS (10 off)

REMOVE PN 2A1085 LINER
SEGMENTS (10 off) AND INSTALL
PN 2A1614 LINER SEGMENTS (10 off)

REMOVE PN 2A1081 LINER
SEGMENTS (10 off)
AND INSTALL PN 2A1616 LINER
SEGMENTS (10 off)

*IF THE MODIFICATION GIVEN IN REFERENCE (1)
WAS DONE, THESE PARTS WERE INSTALLED
BEFORE. KEEP THESE PARTS AND INSTALL
AGAIN AT ASSEMBLY.

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Location of Inner Combustion Chamber Liner Segments
Fig.2

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3. Material Information

New Part No. (ATA No.)	Qty	Est'd Unit Price (\$)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
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Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated with this Bulletin:

None

B. Parts affected by this Bulletin:

For Engines which incorporate V2500-ENG-72-0006

2A1618 (72-42-61)	1	-	Chamber - Combustion, Outer, Assy	2A1399 (01-501)	(S1)(1D)(A) (B)
or			or		
2A1666 (72-42-61)	1	-	Chamber - Combustion, Outer, Assy	2A2013 (01-501)	(S1)(1D)(B)
2A1611 (72-42-61)	1	242.00	.Liner Segment - CC	2A1079 (01-630)	(S1)(2D)(A) (B)
2A1612 (72-42-61)	1	242.00	.Liner Segment - CC	2A1080 (01-640)	(S1)(2D)(A) (B)
2A1613 (72-42-61)	10	242.00	.Liner Segment - CC	2A1073 (01-600)	(S1)(2D)(A) (B)
2A1617 (72-44-30)	1	-	Chamber - Combustion, Inner, Assy	2A1398 (01-401)	(S1)(1D)(A) (B)
2A1614 (72-44-30)	10	242.00	.Liner Segment - CC	2A1085 (01-540)	(S1)(2D)(A) (B)
2A1616 (72-44-30)	10	242.00	.Liner Segment - CC	2A1081 (01-560)	(S1)(2D)(A) (B)
2A1615 (72-44-30)	10	242.00	.Liner Segment - CC	2A1326 (01-580)	(S1)(2D)(A) (B)

For Engines which do not incorporate V2500-ENG-72-0006

2A1666 (72-42-61)	1	-	Chamber - Combustion, Outer, Assy	2A1383 (01-501)	(S2)(1D)(B)
or			or		
2A1618 (72-42-61)	1	-	Chamber - Combustion, Outer, Assy	2A1385 (01-501)	(S2)(1D)(A) (B)
2A1611 (72-42-61)	1	242.00	.Liner Segment - CC	2A1079 (01-630)	(S2)(2D)(A) (B)
2A1612 (72-42-61)	1	242.00	.Liner Segment - CC	2A1080 (01-640)	(S2)(2D)(A) (B)
2A1613 (72-42-61)	10	242.00	.Liner Segment - CC	2A1073 (01-600)	(S2)(2D)(A) (B)
2A1391	10	242.00	.Liner Segment - CC	2A1323	(S2)(A)(B)

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(72-42-61)				(01-610)	
2A1392	10	242.00	.Liner Segment - CC	2A1324	(S2)(A)(B)
(72-42-61)				(01-620)	
2A1393	8	242.00	.Liner Segment - CC	2A1076	(S2)(A)(B)
(72-42-61)				(01-650)	
2A1394	1	242.00	.Liner Segment - CC	2A1077	(S2)(A)(B)
(72-42-61)				(01-660)	
2A1395	1	242.00	.Liner Segment - CC	2A1078	(S2)(A)(B)
(72-42-61)				(01-670)	
2A1617	1	-	Chamber - Combustion,	2A1374	(S2)(1D)(A)
(72-44-30)			Inner, Assy	(01-401)	(B)
2A1614	10	242.00	.Liner Segment - CC	2A1085	(S2)(2D)(A)
(72-44-30)				(01-540)	(B)
2A1616	10	242.00	.Liner Segment - CC	2A1081	(S2)(2D)(A)
(72-44-30)				(01-560)	(B)
2A1615	10	242.00	.Liner Segment - CC	2A1326	(S2)(2D)(A)
(72-44-30)				(01-580)	(B)
2A1397	10	242.00	.Liner Segment - CC	2A1325	(S2)(A)(B)
(72-44-30)				(01-600)	
2A1396	10	242.00	.Liner Segment - CC	2A1084	(S2)(A)(B)
(72-44-30)				(01-620)	

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C. Instruction/Disposition Code Statements:

- (S1) New Parts coded (S1) must replace Old Parts coded (S1) in a COMPLETE SET per Engine.
- (S2) New Parts coded (S2) must replace Old Parts coded (S2) in a COMPLETE SET per Engine except Inner and Outer Combustion Chamber Assemblies are directly interchangeable.
- (1D) Old part can be modified and identified to the New Part Number by replacement of the liner segments.
- (2D) The old parts which have not been used in service can be modified and identified to the new part numbers. Return the old parts to the vendor given in Paragraph D. for modification and identification to the new part numbers.
- (A) New part is currently available.
- (B) Old part will no longer be available.

NOTE: The estimated 1990 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.

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- D. The Source Demonstration requirements of this rework means that any facility not authorized to accomplish this rework either utilize the Authorized Rework Vendors listed below or contact IAE Technical Services to determine if a qualification program can be initiated at their facility.

IAE - INTERNATIONAL AERO ENGINES AG
Corporate Center II
628 Hebron Ave.
Glastonbury, CT 06033-2595 USA
ATTN: Director Technical Services

- (1) Authorized Rework Vendors for this Bulletin are listed below:

PRATT AND WHITNEY
Overhaul and Repair Centre
Newell Street
Southington, CT 06489 USA
ATTN: Mr Albert Danielson - Business Unit 6

- (2) The designation by IAE of an authorized rework vendor indicates that the vendor has demonstrated the necessary capability to enable it to carry out the rework. However, IAE makes no warranties or representations concerning the qualifications or quality standards of the vendors to carry out the rework, and accepts no responsibility whatsoever for any work that may be carried out by a rework vendor, other than when IAE is listed as the vendor. Authorized rework vendors do not act as agents or representatives of IAE.

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