



400 MAIN STREET, MAIL STOP 121-10
EAST HARTFORD, CT 06108, USA.
TELEPHONE:- 860 565 5515
FAX:- 860 565 0600

DATE: Sep.26/08

P.O. BOX 31, DERBY
TELEGRAMS - 'ROYCAR' DERBY
TELEX - 37645
TELEPHONE:- 44 (0) 1332 242424
FAX:- 44 (0) 1332 249936

V2500-A5 SERIES PROPULSION SYSTEM NON-MODIFICATION SERVICE BULLETIN

Printed in Great Britain

This document transmits Revision 4 to Non-Modification Service Bulletin
V2500-ENG-72-0459

Document History

Service Bulletin Revision Status

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V2500-ENG-72-0459

Transmittal - Page 1 of 2

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Service Bulletin Revision 4

| Remove | Incorporate | Reason for change |
|-----------------------------------|--------------------------------------|--|
| All pages of the Service Bulletin | Pages 1 to 5 of the Service Bulletin | To add alternate PN 2A4022, No. 3 Bearing introduced by Service Bulletin V2500-ENG-70-0926. To delete engine serial numbers that have FAG Hybrid bearings installed. |
| All pages of Appendix 1 | Pages 1 to 3 of Appendix 1 | To add alternate PN 2A4022, No. 3 Bearing introduced by Service Bulletin V2500-ENG-70-0926. To delete engine serial numbers that have FAG Hybrid bearings installed. |

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NON-MODIFICATION SERVICE BULLETIN – ENGINE – IN SHOP ACTION FOR ENGINES IN THE RANGE
V10600 TO V11365 WITH P/N 2A1165 (FAG) NUMBER 3 BEARINGS INSTALLED

1. Planning Information

A. Effectivity

(1) Airbus A319, A320, A321

V2500-A5 Engines within the serial number range V10600 to V11365 with bearing p/n 2A1165 (FAG) installed at new production.

B. Concurrent Requirements

None.

C. Reason

To mitigate against the risk of further In Flight Shut Downs (IFSD's) due to No.3 Bearing Outer Race fractures.

D. Description

The Accomplishment Instructions must be completed for both the rework of the Stubshaft for engines listed in Appendix 1 Table 1 (in accordance with SB V2500-ENG-72-0421) and replacement of the No.3 Bearing Part No. 2A1165 with a Part No. 2A1170 or Part No 2A4022 Bearing. Once both of these actions have been completed then the requirements of this NMSB are no longer applicable.

Appendix 1 table 1 provides a list identifying which engines within the range V10600 to V11365. known to have had 2A1165 Bearings installed at new production build in conjunction with a low energy coated HPC stubshaft.

Appendix 1 table 2 provides a list identifying engines within the engine range V10600 to 11365 known to have had 2A1165 bearings installed at new production but not in conjunction with a low energy coated HPC stubshaft.

E. 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.

(1) Replacement of (low energy standard of hard face coating) High Pressure (HP) Compressor Stubshafts with new or reworked stub-shafts for engine population listed in Appendix 1, table 1 in accordance with SB V2500-ENG-72-0421.

- R (2) Replacement of 2A1165 bearings with 2A1170 or 2A4022 bearings for engine
R population listed in Appendix 1, tables 1 and 2.

F. Approval

The Compliance statement at 1.E. and the procedures in Section 3 of this Non-Modification Service Bulletin comply with Federal Aviation Regulations (FAA) and are FAA approved for the engine models listed.

G. Manpower

Estimated man-hours to embody this Non-Modification Service Bulletin in full:

- (1) To rework the Stubshaft

(a) Rework only – 10 hours

(b) Rework through approved sources – 15 days

NOTE: Time to rework the actual shaft having been removed from the engine.

- (2) To remove/install the No.3 Bearing – 350 hours

H. References

- (1) Service Bulletin V2500-ENG-72-0421 – Engine – HP Compressor front stubshaft – Introduction of a revised HP Compressor front stubshaft with high energy plasma coating.
- (2) V2500 Engine Manual (EM) (E-V2500-1IA):
- (a) 72-00-31, Removal/Installation
 - (b) 72-00-40, Removal/Installation
 - (c) 72-00-50, Removal/Installation
 - (d) 72-00-60, Removal/Installation
 - (e) 72-32-00, Disassembly/Assembly
 - (f) 72-32-10, Disassembly/Assembly
 - (g) 72-32-20, Disassembly/Assembly
- (3) Appendix 1 table 1 – List identifying engines within the range V10600 to V11365 known to have had 2A1165 Bearings installed at new production build in conjunction with a low energy coated HPC stubshaft.

- (4) Appendix 1 table 2 – List identifying engines within the engine range V10600 to 11365 known to have had 2A1165 bearings installed at new production but not in conjunction with a low energy coated HPC stubshaft.
- (5) IAE Internal Reference Number EC 03VR862C and 06VC074.
- (6) IAE Internal Reference Number IEN 08VC105.
- (7) ATA Locator – 72-32-20.

2. Material Information

None.

3. Accomplishment Instructions

- (1) Disassembly instructions for the No.3 Bearing and HP Compressor Stubshaft:

NOTE: Inspect all removed bearings and components in accordance with applicable engine manual referenced below to assure no defective hardware is reinstalled into the engine.

- (a) Remove the LPT Module. Refer to Engine Manual (EM), TASK 72-00-50.
- (b) Remove the Fan Module. Refer to Engine Manual (EM), TASK 72-00-31.
- (c) Remove the External Gearbox Module. Refer to Engine Manual (EM), TASK 72-00-60.
- (d) Remove the HP System Module. Refer to Engine Manual (EM), TASK 72-00-40.
- (e) Remove the No.3 Bearing, Internal Gearbox and Support Assembly. Refer to Engine Manual (EM), TASK 72-32-00.
- (f) Disassemble the No.3 Bearing, Internal Gearbox and Support Assembly. Refer to Engine Manual (EM), TASK 72-32-10.
- (g) Disassemble the No.3 Bearing, Rotor Centre and Support Assembly. Refer to Engine Manual (EM), TASK 72-32-20.

- (2) Replacement of existing High Pressure (HP) Compressor Stubshaft with new or reworked Stubshafts. (Only applicable to engine population in Appendix 1 table 1)

- (a) Existing Stubshafts should be reworked in accordance with Service Bulletin V2500-ENG-72-0421.

- R (3) Replacement of the Part No. 2A1165 Bearing with Part No. 2A1170 or Part
R No. 2A4022 Bearing (Applicable to engine populations in Appendix 1 tables 1 and 2)

- (a) Replace the Part No. 2A1165 Bearing (72-32-24, 01-100) with Part No. 2A1170 Bearing (72-32-24, 01-100).
- (b) The removed Part No. 2A1165 Bearing (72-32-24, 01-100) must be scrapped locally. A photograph or digital image of the mutilated Bearing and a copy of the scrap tag must be provided to IAE Warranty. Contact IAE Service Representative for Warranty address.

- (4) Assembly Instructions

- (a) The assembly/installation instructions are the reverse of the disassembly/removal instructions stated above.

APPENDIX 1

Table 1 : List identifying engines within the engine range V10600 to V11365 known to have had 2A1165 bearings installed at new production build in conjunction with a low energy coated HPC stubshaft.

NOTE: Operators should check their records for Part No. 2A1165 Bearings, particularly those engines with Stubshafts in range specified, that have had a shop visit.

| | | | | | | | | | | |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | V10600, | V10601, | V10602, | V10603, | V10604, | V10610, | V10611, | V10612, | V10613, | V10614, |
| | V10615, | V10616, | V10619, | V10620, | V10621, | V10622, | V10623, | V10624, | V10625, | V10626, |
| R | V10628, | V10629, | V10632, | V10634, | V10641, | V10642, | V10644, | V10646, | V10654, | V10656, |
| | V10657, | V10658, | V10659, | V10662, | V10665, | V10670, | V10679, | V10682, | V10683, | V10684, |
| | V10692, | V10693, | V10696, | V10697, | V10702, | V10703, | V10711, | V10719, | V10721, | V10723, |
| | V10730, | V10731, | V10732, | V10734, | V10737, | V10738, | V10741, | V10742, | V10743, | V10744, |
| | V10745, | V10746, | V10749, | V10758, | V10759, | V10760, | V10761, | V10767, | V10768, | V10769, |
| | V10770, | V10771, | V10772, | V10774, | V10777, | V10778, | V10779, | V10780, | V10781, | V10783, |
| | V10786, | V10787, | V10788, | V10790, | V10791, | V10792, | V10793, | V10801, | V10805, | V10807, |
| | V10812, | V10813, | V10814, | V10815, | V10816, | V10817, | V10818, | V10819, | V10820, | V10821, |
| | V10825, | V10829, | V10830, | V10831, | V10832, | V10833, | V10834, | V10837, | V10838, | V10839, |
| | V10841, | V10842, | V10843, | V10844, | V10845, | V10846, | V10847, | V10848, | V10849, | V10850, |
| | V10851, | V10857, | V10858, | V10859, | V10875, | V10880, | V10886, | V10887, | V10888, | V10889, |
| | V10890, | V10901, | V10902, | V10903, | V10904, | V10905, | V10906, | V10907, | V10908, | V10909, |
| | V10910, | V10911, | V10912, | V10913, | V10914, | V10915, | V10916, | V10917, | V10918, | V10919, |
| | V10920, | V10921, | V10922, | V10924, | V10925, | V10927, | V10929, | V10931, | V10932, | V10933, |
| | V10934, | V10935, | V10937, | V10938, | V10941, | V10943, | V10945, | V10946, | V10948, | V10949, |
| | V10950, | V10951, | V10952, | V10953, | V10954, | V10955, | V10956, | V10957, | V10958, | V10959, |
| | V10960, | V10963, | V10966, | V10970, | V10971, | V10972, | V10974, | V10980, | V10983, | V10986, |
| | V10987, | V10988, | V10989, | V10990, | V10991, | V10992, | V10993, | V10994, | V10995, | V10996, |
| | V10997, | V10998, | V10999, | V11000, | V11001, | V11002, | V11003, | V11004, | V11005, | V11006, |
| | V11007, | V11008, | V11009, | V11010, | V11011, | V11012, | V11013, | V11014, | V11015, | V11016, |
| | V11017, | V11018, | V11019, | V11020, | V11023, | V11024, | V11025, | V11026, | V11027, | V11032, |
| | V11033, | V11034, | V11035, | V11036, | V11037, | V11043, | V11044, | V11045, | V11048, | V11049, |
| | V11051, | V11052, | V11054, | V11055, | V11056, | V11057, | V11058, | V11059, | V11060, | V11061, |
| | V11062, | V11067, | V11068, | V11070, | V11073, | V11075, | V11076, | V11077, | V11078, | V11079, |
| | V11080, | V11081, | V11082, | V11083, | V11084, | V11085, | V11086, | V11087, | V11088, | V11089, |
| | V11090, | V11091, | V11092, | V11093, | V11094, | V11095, | V11096, | V11097, | V11098, | V11099, |
| | V11100, | V11101, | V11102, | V11103, | V11104, | V11105, | V11106, | V11107, | V11108, | V11109, |
| | V11110, | V11111, | V11112, | V11113, | V11114, | V11115, | V11116, | V11117, | V11118, | V11119, |
| | V11120, | V11121, | V11122, | V11123, | V11124, | V11125, | V11126, | V11127, | V11128, | V11129, |
| | V11130, | V11131, | V11132, | V11133, | V11135, | V11136, | V11137, | V11138, | V11139, | V11140, |
| | V11143, | V11144, | V11149, | V11150, | V11151, | V11152, | V11153, | V11154, | V11155, | V11156, |
| | V11158, | V11159, | V11160, | V11161, | V11162, | V11163, | V11166, | V11167, | V11168, | V11169, |
| | V11170, | V11171, | V11172, | V11173, | V11174, | V11175, | V11176, | V11181, | V11182, | V11185, |
| R | V11186, | V11187, | V11188, | V11189, | V11191, | V11192, | V11198, | V11199, | V11201, | V11202, |
| R | V11203, | V11211, | V11213, | V11214, | V11215, | V11216, | V11217, | V11218, | V11220, | V11221, |
| | V11222, | V11223, | V11224, | V11225, | V11226, | V11227, | V11228, | V11229, | V11230, | V11231, |
| R | V11234, | V11235, | V11236, | V11240, | V11246, | V11248, | V11249, | V11251, | V11253, | V11254, |
| R | V11255, | V11256, | V11257, | V11262, | V11263, | V11264, | V11265, | V11268, | V11269, | V11271, |
| R | V11272, | V11274, | V11275, | V11276, | V11277, | V11278, | V11279, | V11283, | V11284, | V11285, |
| R | V11286, | V11287, | V11288, | V11289, | V11290, | V11291, | V11293, | V11294, | V11295, | V11296, |
| R | V11297, | V11298, | V11299, | V11300, | V11303, | V11315, | V11330, | V11335 | | |

Table 2 : List identifying engines within the engine range V10600 to known to have had 2A1165 bearings installed at new production build but not in conjunction with a low energy coated HPC stubshaft.

NOTE: The engine population listed do not have low-energy coated HPC stubshafts but do have FAG bearings targetted for removal at next shop visit.

R V11280, V11307, V11310, V11311, V11312, V11313, V11314, V11316, V11318, V11319,
R V11320, V11321, V11322, V11323, V11324, V11325, V11326, V11327, V11329, V11331,
R V11332, V11333, V11334, V11336, V11337, V11338, V11340, V11341, V11343, V11345,
R V11346, V11348, V11350, V11352, V11353, V11354, V11355, V11356, V11357, V11358,
R V11359, V11362, V11363, V11364, V11365