Date : Mar.24/97

Subject: Transmittal of Revision 1 to Service Bulletin No. V2500-ENG-72-0208

Service Bulletin Revision History:

Event	Date
Basic Issue	Jul.25/95
Revision 1	Mar.24/97

Reason for Issuance of Revision:

(1) To change the effectivity of this Service Bulletin.

Effect on Past Compliance:

None

List of Effective Pages:

Bulletin Page No.	Rev. No.	Effective Date
1 and 2	1	Mar.24/97
3 to 9	Basic	Jul.25/95

V2500 International Aero Engines
SERVICE BULLETIN

ENGINE - LP TURBINE ROTOR AND STATOR ASSEMBLY - INCORPORATE A REVISED TORQUING PROCEDURE FOR THE NO.5 BEARING REAR LOCK NUT

MODEL APPLICATION

V2500-A1
V2522-A5
V2524-A5
V2527-A5
V2527E-A5
V2530-A5
V2525-D5
V2528-D5

BULLETIN INDEX LOCATOR

72-50-00

Compliance Category Code	Internal Reference No.
4	EC94VJ040
R	ECM94VJ040-01

ENGINE - LP TURBINE ROTOR AND STATOR ASSEMBLY - INCORPORATE A REVISED TORQUING PROCEDURE FOR THE NO.5 BEARING REAR LOCK NUT

1. Planning Information

A. Effectivity

(1) Aircraft:
(a) Airbus A320
(b) Airbus A321
(c) McDonnell Douglas MD-90

(2) Engine:
(a) V2500-A1 Engines prior to Serial Number V0362
R (b) V2522-A5 Engines, Serial Numbers V10001 through V10075,
R V10077, V10078, V10081, V10095 through V10163 and V10165
R (c) V2524-A5 Engines, Serial Numbers V10001 through V10075,
R V10077, V10078, V10081, V10095 through V10163 and V10165
R (d) V2527-A5 Engines, Serial Numbers V10001 through V10075,
R V10077, V10078, V10081, V10095 through V10163 and V10165
R (e) V2527E-A5 Engines, Serial Numbers V10001 through V10075,
R V10077, V10078, V10081, V10095 through V10163 and V10165
R (f) V2530-A5 Engines, Serial Numbers V10001 through V10075,
R V10077, V10078, V10081, V10095 through V10163 and V10165
(g) V2525-D5 Engines prior to Serial Number V20013
(h) V2528-D5 Engines prior to Serial Number V20013

B. Reason
The loose stacking between LP turbine shaft and carbon seal spacers may cause oil leakage from the No.5 bearing compartment chamber. This problem can be solved by changing tightening method from torque-set method to angle-of-turn method for tightening the Rear Lock Nut.

C. Compliance
Category Code 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 reason for engine removal.

D. Approval
The 'compliance' statement and the procedures described in paragraph F 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. References

(1) IAE Engineering Change 94VJ040.
(2) V2500 Engine Maintenance Manual (M-V2500-1IA).
(3) V2500 Engine Maintenance Manual (M-V2500-3IA).

F. Action

(1) For V2500-A1 and V2500-A5 Engines which are installed onto Aircraft (Refer to Figure 1).

(a) Open the Fan Cowls by the approved procedures in Reference (2), 71-13-00, Maintenance Practices Page 201.

NOTE: For uninstalled engine (without the Fan Cowls), this step is not applicable.

(b) Deactive the Thrust Reverser Hydraulic Control Unit (HCU) by the approved procedures in Reference (2), 78-30-00, Maintenance Practices Page 401.

NOTE: For uninstalled engine (without the Reverser), this step is not applicable.

(c) Remove the Exhaust Cone by the approved procedures in Reference (2), 78-11-12, Maintenance Practices Page 401.

(d) Remove the No.5 Bearing Compartment Cover from the engine by the approved procedures in Reference (2), Chapter/Section 72-50-00 Removal-01,Config-1 and Config-2.

(e) Re-torque the No.5 Bearing Rear Lock Nut by the following procedures;

1 Attach the IAE 1F10037 wrench support 1 off to the inner rear flange of the Turbine Exhaust Case (TEC).

2 Install the IAE 1F10038 torque wrench 1 off through the wrench support. Engage the torque wrench with rear lock nut of the LP turbine shaft.

3 Install the IAE 1F10039 anti-torque adaptor 1 off through the torque wrench. Lock the anti-torque adaptor to the LP turbine shaft.

4 Install the IAE 1F10016 mechanical wrench 1 off to the torque wrench. Safety the anti-torque adaptor to the mechanical wrench with IAE 1F10040 anchor wrench plate 1 off.

5 Operate the mechanical wrench to release the rear lock nut.

6 Operate the mechanical wrench and torque the rear lock nut to 4000 to 6000 lbfin (452 to 678 Nm).

7 Put an angle-of-turn of five to eight degrees to the rear lock nut.

8 Operate the mechanical wrench to release the torque until the torque value to zero.

9 Torque the rear lock nut to 4000 to 6000 lbfin (452 to 678 Nm) again.

10 Make a correlation mark between the IAE 1F10016 mechanical wrench and the IAE 1F10038 torque wrench.

11 Put an angle-of-turn of five to eight degrees to the rear lock nut.

12 Do step 8 again.

13 Do step 9 again and check the correlation mark. The correlation mark must be within two degrees maximum on the same place.

14 If the correlation mark within limit, apply last angle-of-turn of five to eight degrees to the rear lock nut and go to step 17.

15 If the correlation mark is out of limit, delete the correlation mark and do steps 10 to 13 again until correlation mark is within limit.

16 Apply last angle-of-turn of five to eight degrees to the rear lock nut.

17 Align the slot of the rear lock nut with the slot of the LP turbine shaft rear end. The alignment of the rear lock nut must be in torque direction.

18 Remove the tools from the engine as follows;

(I) Remove the anchor wrench plate and the mechanical wrench.

(II) Disengage the lock mechanism of the anti-torque adaptor and remove the adaptor.

(III) Remove the torque wrench.

(IV) Remove the wrench support.

19 Safety the rear lock nut with the locking ring and the internal retaining ring.

(f) Install the No.5 Bearing Compartment Cover on to the engine by the approved procedures in Reference (2), Chapter/Section 72-50-00 Installation-01, Config-1 and Config-2.

(g) Install the Exhaust Cone by the approved procedures in Reference (2), Chapter/Section 78-11-12, Maintenance Practices Page 401.

(h) Active the Thrust Reverser Hydraulic Control Unit (HCU) by the approved procedures in Reference (2), Chapter/Section 78-30-00, Maintenance Practices Page 401.

(i) Close the Fan Cowls by the approve procedures in Reference (2), 71-13-00, Maintenance Practices Page 201.

(j) Do an oil leak test by the approved procedures in Reference (2), Chapter/Section 71-00-00, Adjustment/Test, Config-1 and Config-2, Page 501.

(2) For V2500-D5 Engine which are installed onto aircraft (Refer to Figure 1).

(a) Open the Cowl Doors by the approved procedures in Reference (3), Chapter/Section 71-13-00, Maintenance Practices, Page 201.

NOTE: For uninstalled engine (without the Cowl Doors), this step is not applicable.

(b) Open the Thrust Reverser Halves by the approved procedures (3), Chapter/Section 78-32-00, Maintenance Practices, Page 201.

NOTE: For uninstalled engine (without the Reverser), this step is not applicable.

(c) Remove the Exhaust Cone by the approved procedures in Reference (3), 78-10-02, Maintenance Practices Page 401.

(d) Remove the No.5 Bearing Compartment Cover from the engine by the approved procedures in Reference (3), Chapter/Section 72-00-50, Removal-02.

(e) Re-torque the No.5 Bearing Rear Lock Nut by the following procedures;

1 Attach the IAE 1F10037 wrench support 1 off to the inner rear flange of the Turbine Exhaust Case (TEC).

2 Install the IAE 1F10038 torque wrench 1 off through the wrench support. Engage the torque wrench with rear lock nut of the LP turbine shaft.

3 Install the IAE 1F10039 anti-torque adaptor 1 off through the torque wrench. Lock the anti-torque adaptor to the LP turbine shaft.

4 Install the IAE 1F10016 mechanical wrench 1 off to the torque wrench. Safety the anti-torque adaptor to the mechanical wrench with IAE 1F10040 anchor wrench plate 1 off.

5 Operate the mechanical wrench to release the rear lock nut.

6 Operate the mechanical wrench and torque the rear lock nut to 4000 to 6000 lbfin (452 to 678 Nm).

7 Put an angle-of-turn of five to eight degrees to the rear lock nut.

8 Operate the mechanical wrench to release the torque until the torque value to zero.

9 Torque the rear lock nut to 4000 to 6000 lbfin (452 to 678 Nm) again.

10 Make a correlation mark between the IAE 1F10016 mechanical wrench and the IAE 1F10038 torque wrench.

11 Put an angle-of-turn of five to eight degrees to the rear lock nut.

12 Do step 8 again.

13 Do step 9 again and check the correlation mark. The correlation mark must be within two degrees maximum on the same place.

14 If the correlation mark within limit, apply last angle-of-turn of five to eight degrees to the rear lock nut and go to step 17.

15 If the correlation mark is out of limit, delete the correlation mark and do steps 10 to 13 again until correlation mark is within limit.

16 Apply last angle-of-turn of five to eight degrees to the rear lock nut.

17 Align the slot of the rear lock nut with the slot of the LP turbine shaft rear end. The alignment of the rear lock nut must be in torque direction.

18 Remove the tools from the engine as follows;

(I) Remove the anchor wrench plate and the mechanical wrench.

(II) Disengage the lock mechanism of the of the anti-torque adaptor and remove the adaptor.

(III) Remove the torque wrench.

(IV) Remove the wrench support.

19 Safety the rear lock nut with the locking ring and the internal retaining ring.

(f) Install the No.5 Bearing Compartment Cover on to the engine by the approved procedures in Reference (3), Chapter/Section 72-50-00.

(g) Install the Exhaust Cone by the approved procedures in Reference (3), Chapter/Section 78-10-02, Maintenance Practices Page 401.

(h) Close the Thrust Reverser Halves by the approved procedures (3), Chapter/Section 78-32-00, Maintenance Practices, Page 201.

NOTE: For uninstalled engine (without the Reverser), this step is not applicable.

(i) Close the Cowl Doors by the approved procedures in Reference (3), Chapter/Section 71-13-00, Maintenance Practices, Page 201.

NOTE: For uninstalled engine (without the Cowl Doors), this step is not applicable.

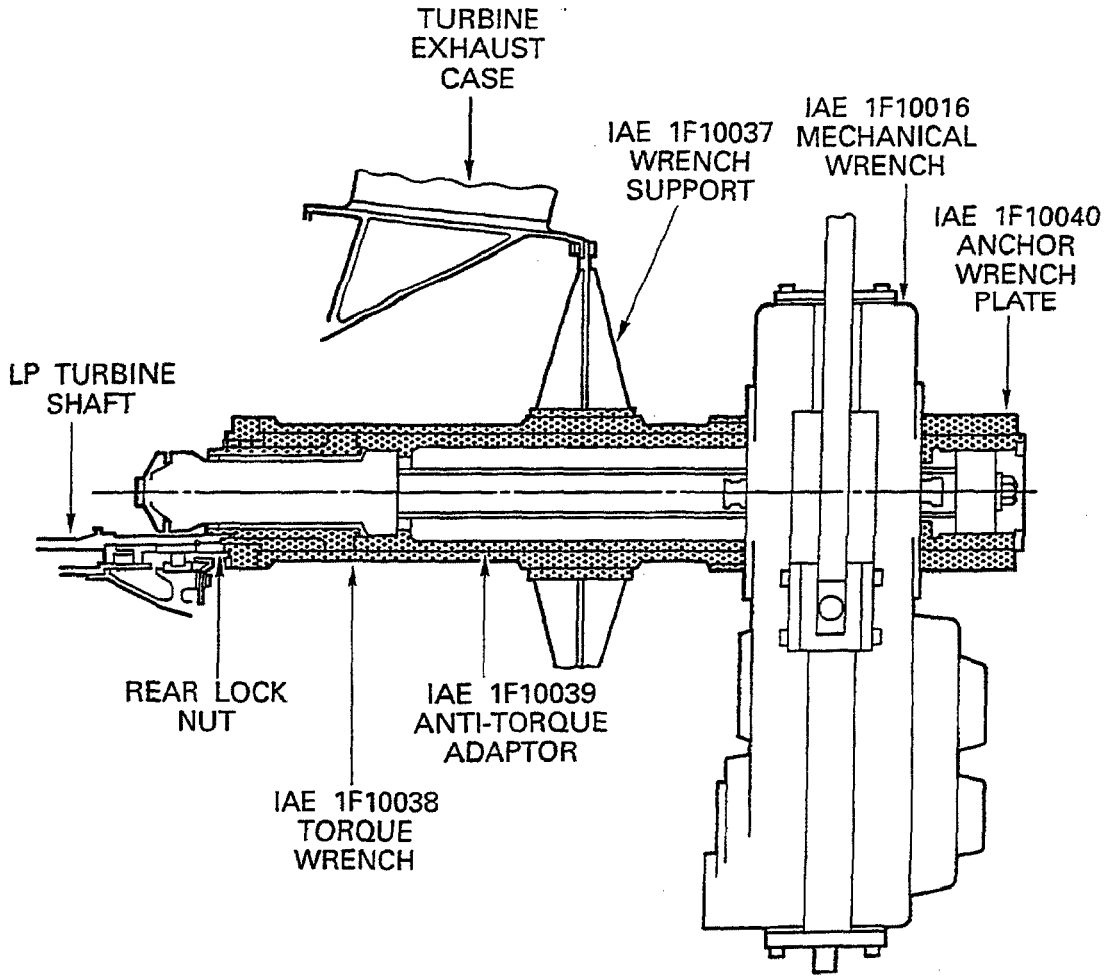
(j) Do an oil leak test by the approved procedures in Reference (3), Chapter/Section 71-00-00, Adjustment/Test, Page 501.

G. Recording Instructions

A record of accomplishment is necessary.

H. Special tool required to incorporate this Bulletin:

Part No.	Nomenclature	Qty
IAE 1F10016	Mechanical wrench	1 off
IAE 1F10037	Wrench support	1 off
IAE 1F10038	Torque wrench	1 off
IAE 1F10039	Anti-torque adapter	1 off
IAE 1F10040	Anchor wrench plate	1 off



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Install the turbine shaft rear lock nut
Figure 1