ENGINE - FAN CASE FIRE RAIL AND ECS SENSE LINE WITH MODIFIED BRACKETS - CATEGORY CODE 6 - MOD.ENG-72-0287

1. Planning Information

A. Effectivity

(1) Aircraft: (a) McDonnell Douglas MD-90

(2) Engine: (a) V2525-D5 Engines prior to Serial No.V20007
(b) V2528-D5 Engines prior to Serial No.V20007

B. Concurrent Requirements

None.

C. Reason

(1) Condition

(a) During a Transient Acoustic Propagation (TAP) test of the fancase fire-detection rail, resonance was recorded.

The problem is caused by the stiffness of the support bracket, which is not sufficient.

(b) Also, the clearance between the ECS line and a stub-bracket installed at bolt holes 10 and 11 of the LP-turbine FN flange, is not sufficient.

The problem is caused by the route of the ECS line. To increase the clearance, a change to the bracket is necessary.

(2) Background

See Condition (1)

(3) Objective

The purpose of this Service Bulletin is to maintain reliability.

(4) Substantiation

A satisfactory engineering analysis and a trial installation on a V2500 mock-up engine have been done on the changes contained in this Service Bulletin.

(5) Effect of Bulletin on Workshop Procedures

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

(6) Supplemental Information

None.

D. Description

(1) To make the support of the fire detection rail better, three brackets have been changed. Two of the brackets are installed on the case of the gearbox. The other is installed on the flange for the HP-fuel servo tube and FMU. The changes are as follows:

(a) The material of the brackets has been changed from titanium (TAK) to stainless steel (EBM).

(b) To increase the area of the support, the length of the brackets installed to the gearbox have increased.

(c) The bend radius of one of the brackets installed to the gearbox, has increased.

(d) The contour of the web of the two remaining brackets has increased.

(2) The stub-bracket installed at bolt holes 10 and 11 of flange FN of the LP turbine has changed. To give additional clearance between the bracket and the ECS line, the length of the mating flange has increased.

E. Approval

The part number changes and/or part modifications are given in Section 2 and 3 of this Service Bulletin. They obey the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model listed.

F. Compliance

Category Code 6

This Service Bulletin can be done when the subassembly (That is: modules, accessories, components, build groups) is disassembled sufficiently to get access to the affected parts.

G. Manpower

Estimate of manhours necessary to do this Service Bulletin in full:

Venue	Estimated Manhours
(1) In service	Not applicable
(2) At overhaul	45 minutes

H. Material - Price and Availability

(1) A modification kit is not necessary.

(2) See "Material Information" section for prices and availability of spares.

I. Tooling - Price and Availability

Special tools are not necessary.

J. Weight and Balance

(1) Weight change	Plus 0,14 Kg (0.3 lb)
(2) Moment arm	457 mm (18.0 in.) forwards
(3) Datum	Engine front mount centreline (Power Plant Station - PPS 100)

K. Electrical Load Data

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

L. References

(1) Internal Reference No.

EC93VR086

M. Other Publications Affected

(1) Illustrated Parts Catalog (IPC), Chapter/Sections, 71-71-49, 72-00-50, 72-60-21 and 73-11-49.

(2) V2500-D5 Engine Manual (EM), Chapter/Sections 71-71-42 and 72-00-50, Removal/Installation and 72-60-21, Disassembly/Assembly.

(3) MD-90 Aircraft Maintenance Manual (AMM), Chapter/Section, 73-21-52, Removal/Installation.

2. Accomplishment Instructions

A. Rework Instructions

None.

B. Assembly Instructions

For the removal and installation of the applicable brackets, refer to the manuals that follow:

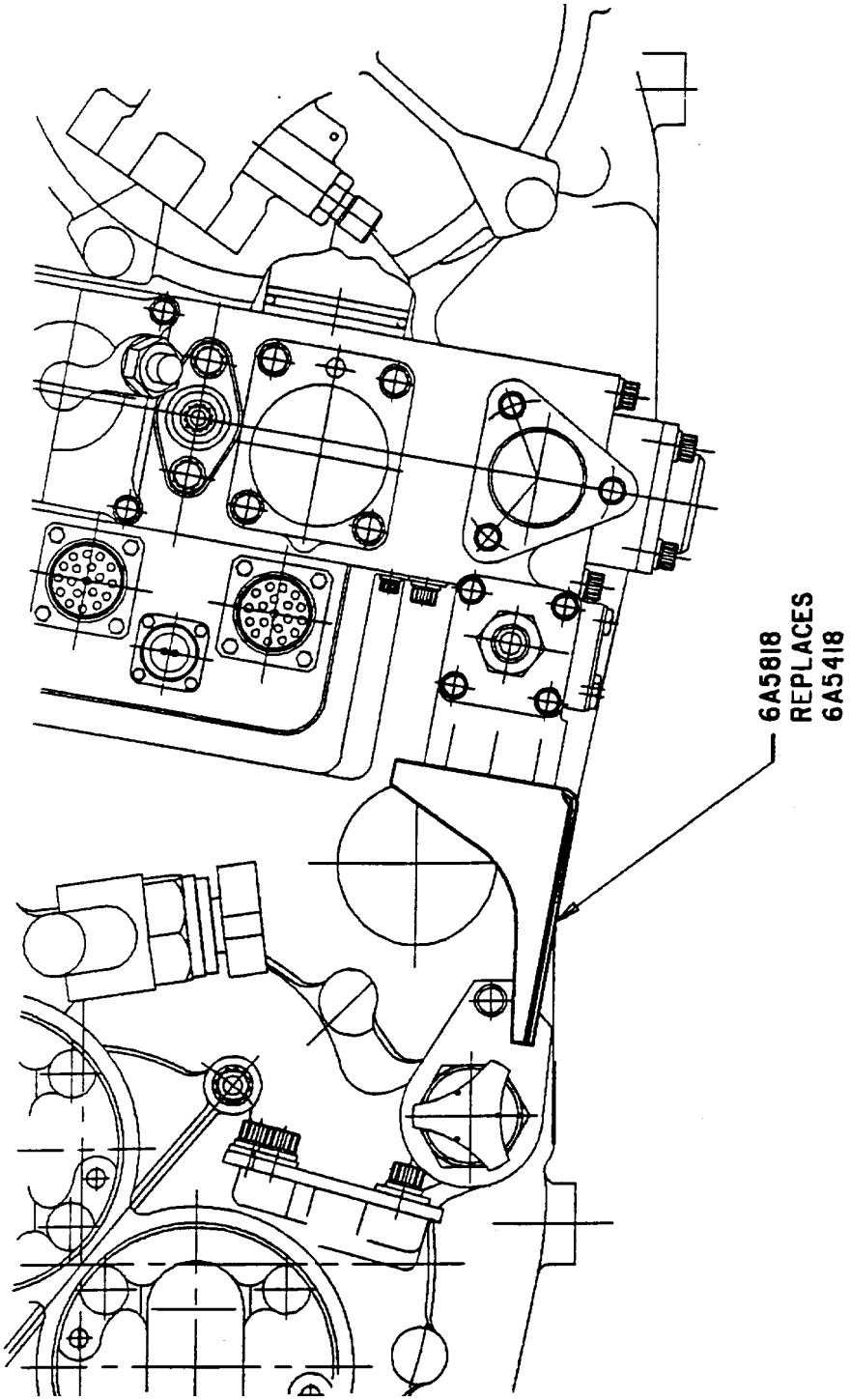
(1) V2500-D5 Engine Manual (EM), Chapter/Sections 71-71-42 and 72-00-50 Removal/Installation and 72-60-21 Disassembly/Assembly.

or

(2) MD-90 Aircraft Maintenance Manual (AMM), Chapter/Section, 73-21-52, Removal/Installation.

C. Recording Instructions

A record of accomplishment is necessary.



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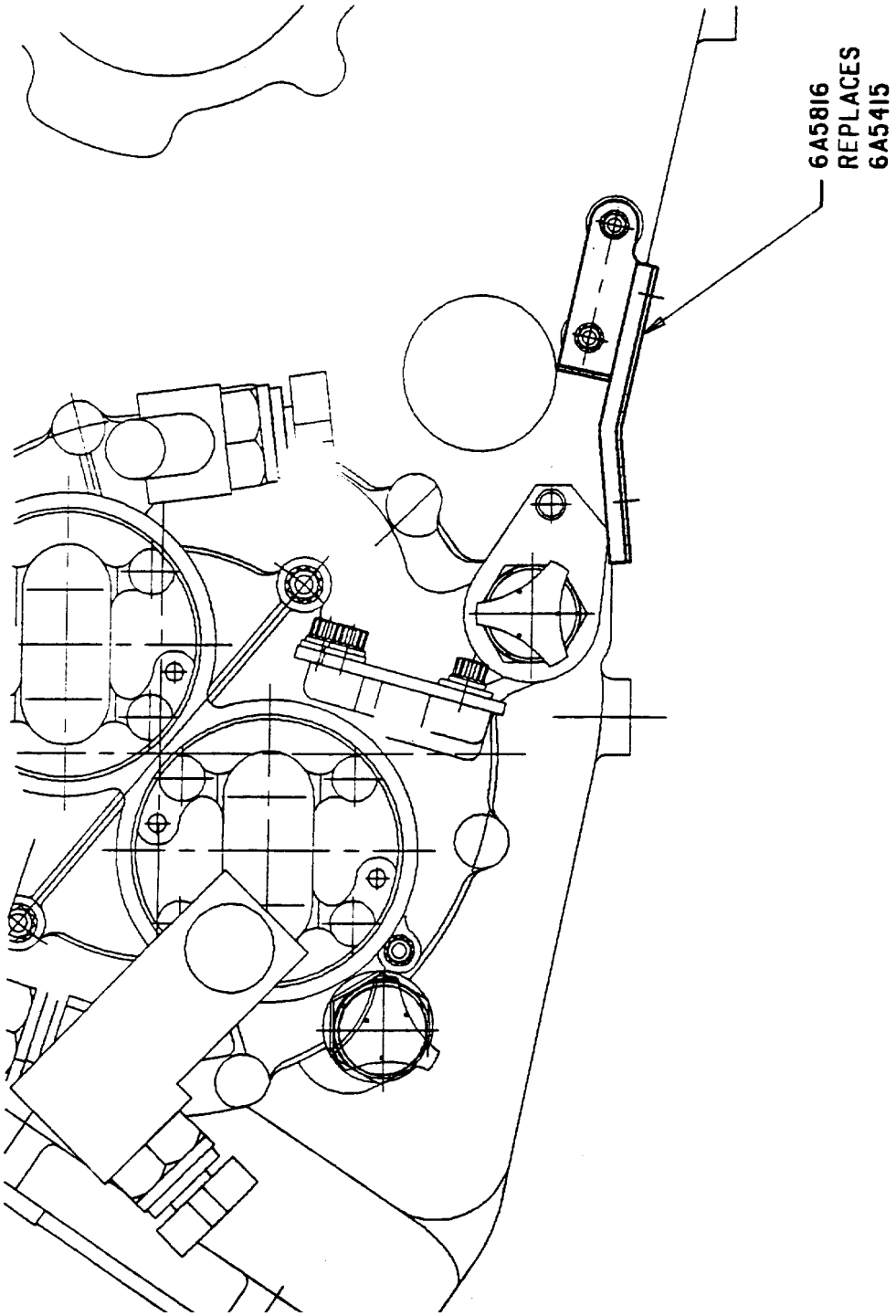
View looking forward on gearbox - Before and after alteration
Fig.1



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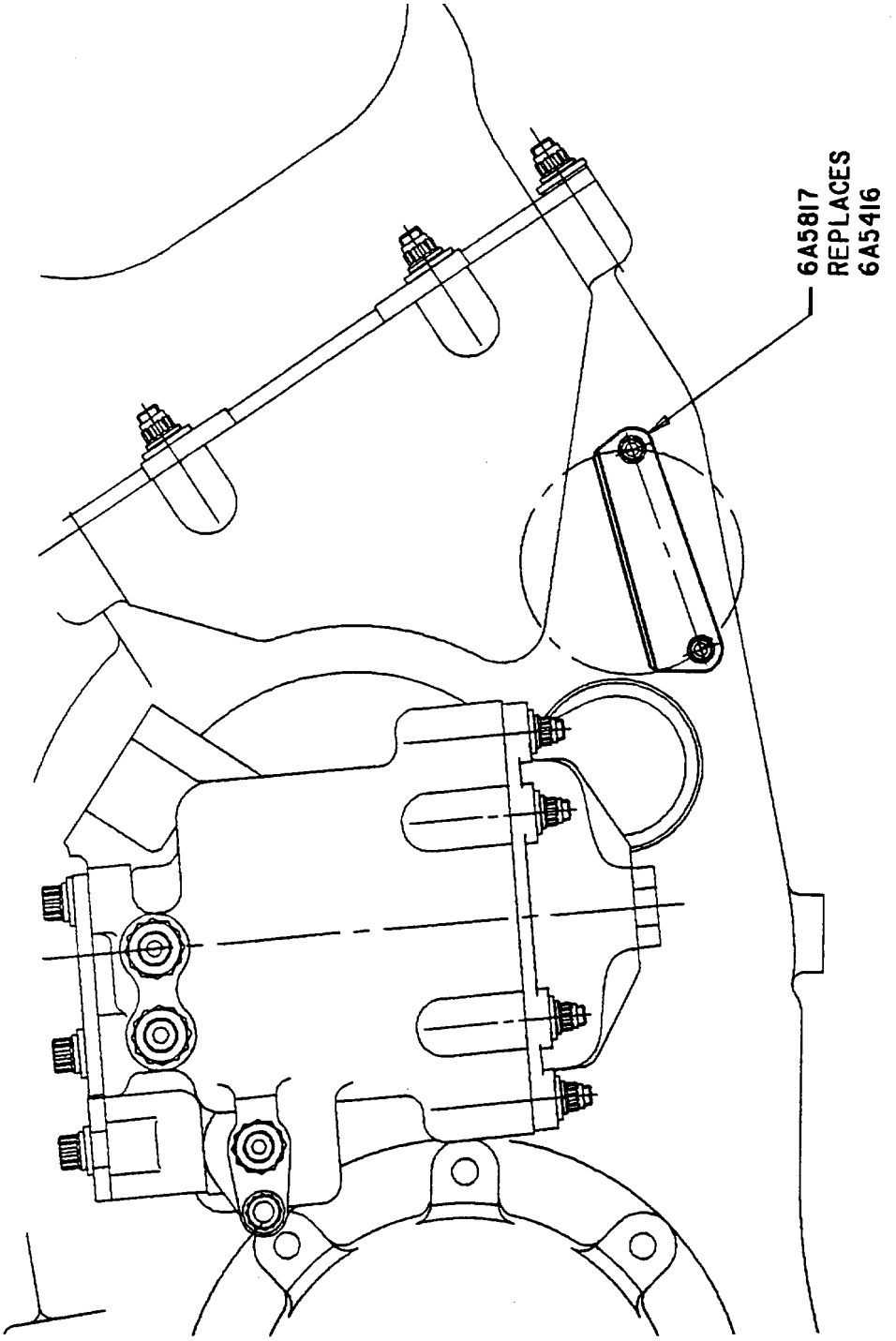
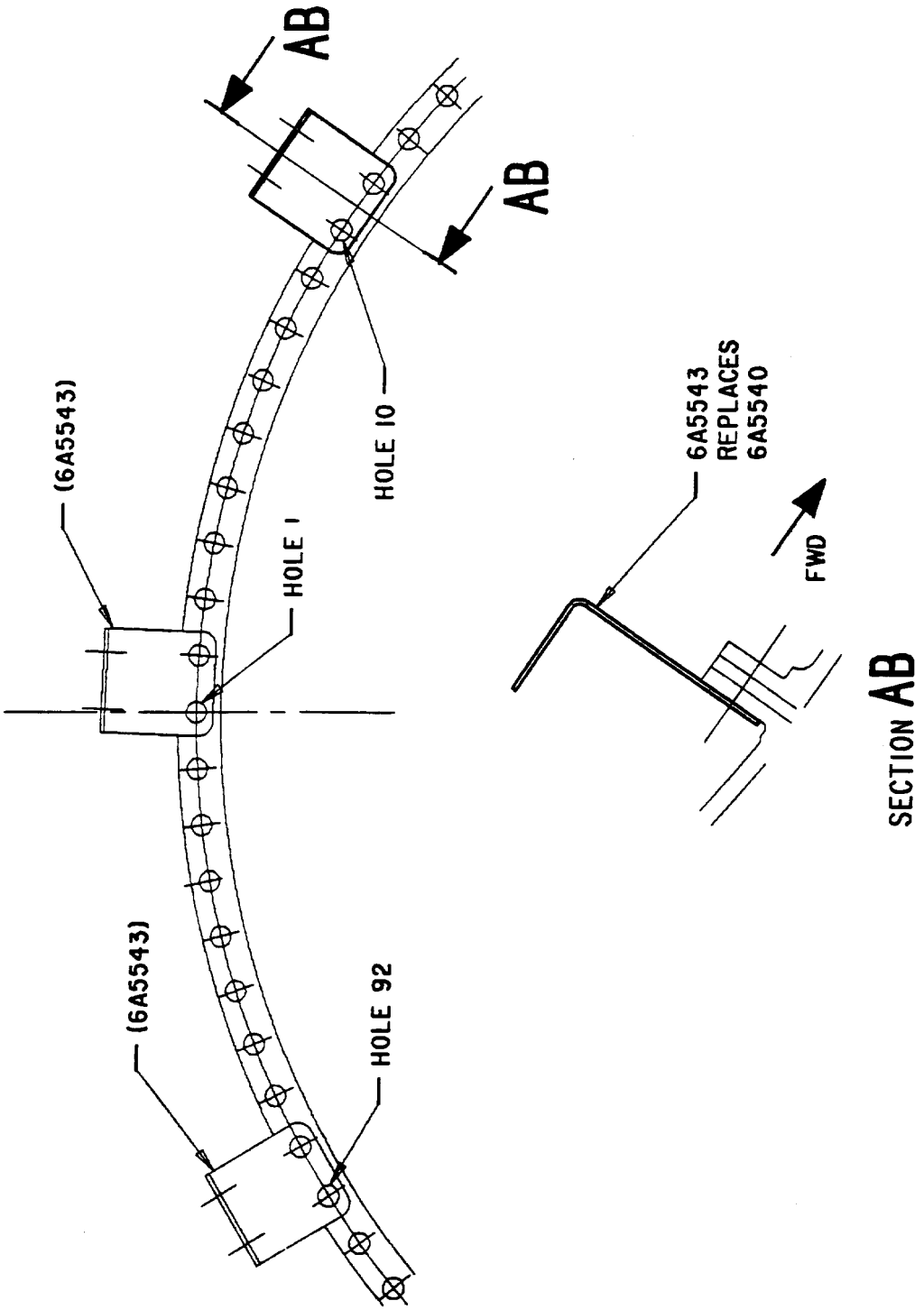
View looking forward on gearbox (FMU Removed) - Before and after alteration
Fig.2



View looking rearward on gearbox - Before and after alteration
Fig.3



View looking forward on flange FN - Before and after alteration
Fig.4

3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated with this Bulletin:

None

B. Parts affected by this Bulletin:

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
6A5816 (71-71-49)	1	54.40	Bracket - Assembly of	6A5415 (06-170)	(A)(B)(S1)
6A5543 (72-00-50)	1	27.20	Bracket, stub	6A5540 (01-560)	(A)(B)(S1)
6A5817 (72-60-21)	1	42.00	Bracket	6A5416 (01-905)	(A)(B)(S1)
6A5818 (73-11-49)	1	90.70	Bracket	6A5418 (20-490)	(A)(B)(S1)

NOTE: The unit prices, if shown, are an estimate and they are given for the purpose of planning only. For information about actual prices, refer to the IAE Price Catalog or contact IAE's Spare Parts Sales Department.

C. Instructions Disposition Codes

(A) New parts are currently available.
(B) Old parts are no longer available.
(S1) Old and new parts are freely and fully interchangeable.