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DATE ~~R~~ Nov.14/02

V2500-A5 PROPULSION SYSTEMS SERVICE BULLETIN

Printed in Great Britain

This document transmits Revision 2 to Service Bulletin EV2500-73-0127

Document History

Service Bulletin Revision Status	Supplement Revision Status
Initial Issue Oct.25/99	
Revision 1 Jun.21/02	

Bulletin Revision 2

Remove	Incorporate	Reason for change
Pages 1 to 7 of the	Pages 1 to 8 of the	To revise 1.B. Concurrent
Service Bulletin	Service Bulletin	Requirements and 1.M.
		References.

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CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED

If any have not been received please advise Publication Services, Rolls-Royce plc, Derby, England

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LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 2 are as follows:

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ENGINE FUEL AND CONTROL – FUEL METERING UNIT – INTRODUCTION OF A LUCAS FUEL METERING UNIT WITH REVISED MAXIMUM FUEL FLOW STOP (AIRBUS A319-131/132 AND /133 APPLICATIONS)

1. Planning Information

A. Effectivity

(1) Airbus A319-131/132

(a) V2522-A5 Engines prior to Serial No. V10650, but excluding V10638 and V10639

(b) V2524-A5 Engines prior to Serial No. V10650, but excluding V10576, V10581, V10583, V10587, V10600, V10601, V10625, V10626, V10631 and V10634

(2) Airbus A319-133

V2527M-A5 Engines prior to Serial No. V10650.

(3) ATA Locator 73-22-00

B. Concurrent Requirements

(1) V2522-A5, V2524-A5 and V2527M-A5 Engines

This Service Bulletin must only be incorporated on engines which embody either IAE V2500 modification 99VZ002 (IAE Service Bulletin 73-0159) or IAE V2500 modification 99VZ009 (IAE Service Bulletin 73-0160) (see 1.M. References).

(2) V2527M-A5 Engines only

With the introduction of the above model, the Data Entry Plug must be re-wired in accordance with IAE Service Bulletin ENG-72-0285 (see 1.M. References).

C. Reason

(1) Condition

(a) A Lucas Aerospace supplied Fuel Metering Unit with revised maximum flow potential is required for new IAE V2500 engine model V2527M-A5 which has been introduced for Airbus A319 Corporate Jet applications.

(b) As a result, the opportunity has been taken to introduce this revised FMU as a common standard for Airbus A319 and A320 applications.

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(2) Background

See (1) Condition

(3) Objective

R
R

Incorporation of this Service Bulletin (Modification) is designed to satisfy customer requirements.

(4) Substantiation

The changes introduced by this Service Bulletin have been the subject of satisfactory engineering analysis and vendor rig testing.

(5) Effect of Bulletin on:

(a) Operation

Not affected

(b) Maintenance

Not affected

(c) Overhaul

Not affected

(d) Repair Schemes

Not affected.

(e) Interchangeability

Affected (See Interchangeability of Parts 1.0).

(f) Fits and Clearances

Not affected.

(6) Supplemental Information

R

This Service Bulletin is considered 'Essential' for V2527M-A5 engines with an Installation Arrangement Number (IAN) AQ02 For Airbus A319-133 aircraft.

**D. Description**

- (1) This Service Bulletin introduces a Lucas Aerospace FMU for revenue service similar to the existing unit except for the following:
 - (a) A revised pre-set maximum flow stop
 - (b) The two position low flow/high flow feature has been deleted and the associated setting instruction for new production engine pass-off testing has been deleted.
- (2) Existing fuel meters may be reworked – Refer to vendor service bulletin at 1.M.(5).
- (3) Units embodying this modification will be identified by a new type number (see 2.B.).

E. Compliance

Category Code 7

Accomplish when supply of superseded parts has been depleted.

F. Approval

The part number changes and/or part modification 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 models listed.

G. Manpower**(1) In Service**

(a) To get access	16 minutes
(b) To embody	3 hours 06 minutes
(c) To return engine to a serviceable status	20 minutes
Total	3 hours 42 minutes

(2) At Overhaul

To embody	2 hours 10 minutes
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NOTE: The part affected by this Service Bulletin are accessible at overhaul

H. Material Price and Availability

A modification kit is not necessary



For prices and availability of future spares refer to the IAE Price Catalogue or contact the IAE spare parts sales department

I. Tooling Price and Availability

Special tools are not required

J. Industry Support Information

None

K. Weight and Balance

(1) Weight Change

Minus 0.2lb (0,09kg).

(2) Moment Arm

16.5in. (419mm) forwards of datum.

(3) Datum

Engine front mount centreline (Power Plant Station PPS 100).

L. Electrical Load Data

The aircraft electrical load is not affected by this Service Bulletin

M. References

(1) V2522-A5, V2524-A5 and V2527M-A5 Engines

R Either of the following IAE V2500 Service Bulletins must be fitted prior
R to or concurrently with this Service Bulletin:

R ENG 73-0159 - To provide a new electronic engine control with A5SCN14/S
R software (EC99VZ002)

R ENG 73-0160 - To provide a new electronic engine control with A5SCN14B/S
R software (EC99VZ009)

(2) V2522-A5, V2524-A5 and V2527M-A5 Engines

The following IAE Service Bulletins may be applied to the new vendor unit introduced by this Service Bulletin:

73-0091 Engine fuel and control - Fuel metering unit - Introduction of revised overspeed valve with increased bypass flow - EC95VR003



73-0099 Engine fuel and control - Fuel metering unit - Introduction of fuel metering unit with revised microswitch and plunger return spring - EC96VI006

R 73-0107 Engine fuel and control - Fuel metering unit - Introduction of fuel metering unit with revised HP SOV torque meter - EC97VI003

73-0123 Engine fuel and control - Fuel metering unit - Introduction of a revised fuel metering unit with tungsten/carbide coated SOV/PRS0V push rods - EC97VI009

R (3) V2527M-A5 Engines

R 72-0285 - Provide instructions to change the V2500-A5 engine rating by
R modifying the Data Entry Plug

(4) The following Lucas Service Bulletins may be applied to the new vendor unit introduced by this Service Bulletin:

93VR057A Fuel metering unit - Improved microswitch covers (Lucas Service Bulletin FMU 530-73-6883)

93VR084A FMU530mk1 - Introduction of A1 standard SSV filter (Lucas Service Bulletin FMU 530-73-6884)

93VR103A Fuel metering unit type 530mk2 - Introduction of a desensitised overspeed valve (Lucas Service Bulletin FMU-73-6935)

(5) Refer to Vendor Service Bulletins:

FMU-540-73-8059 - Conversion from FMU 540 Mk2 to FMU 530 Mk2

FMU-530-73-8060 - Conversion from FMU 530 Mk2 to FMU 550 Mk1

R (6) Refer to Airbus Service Bulletin A320-73-1071.

R (7) Refer to Airbus Aircraft Modification 27146.

(8) Internal reference 97VI007

N. Other Publications Affected

(1) V2500 Engine Illustrated Parts Catalogue (IPC), 73-22-52

(2) V2500 Engine Manual, 72-00-60, Removal and Installation 06, Config-02

(3) V2500 Aircraft Maintenance Manual, 73-22-52, Removal/Installation, Config-02



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0. Interchangeability of Parts

Affected (Refer to 2. Material Information)

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2. Material InformationA. The kit required consists of the following parts:

None

B. Units affected by this Bulletin:

73-22-52

The type of equipment affected by this Service Bulletin is listed for information only

FIG ITEM NO.	NEW PART NO.	QTY	PART TITLE	MAT	OLD PART NO.	INSTR DISP
01100	FMU550MK1	1	Meter, fuel (VK0131)	-	FMU540MK2	(A)(B)(S1) (1D)

C. Instructions disposition codes:

(A) New standard of unit is currently available

(B) Old standard of unit will be discontinued

(S1) Old and new standards of unit are only interchangeable on engines which embody either IAE V2500 Service Bulletin 73-0159 or 73-0160, until the limitations described in EADS Airbus aircraft modification apply (see 1.M. References)

(1D) Old unit may be reworked and re-identified to the new part number (V2522-A5 and V2524-A5 models only)

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3. Accomplishment Instructions

A. Rework Instructions

Refer to the Lucas Vendor Service Bulletin at 1.M.(5). Lucas units FMU540 Mk2 can be modified free of charge to FMU550 Mk1 by returning the units to any of the addresses listed below for the attention of the Customer Support Manager.

The free of charge purchase order must quote the IAE tracking number S541UI and write 'For upgrade to FMU550Mk1'

Lucas Aerospace Customer Support Centers:

Lucas Aerospace Customer Support Americas
Englewood Repair Base
30 Van Nostrand Avenue
Englewood
New Jersey 07631
USA

Lucas Aerospace Customer Support Europe
Marston Green Repair Base
The Radleys
Marston Green
Birmingham B33 0HZ
England

Lucas Aerospace Customer Support Asia Pacific
Xiamen Repair Base - China
Taeco Maintenance Hanger
Gaoqi International Airport
Xiamen
Fujian
Peoples Republic of China

B. Assembly Instructions

For the correct Removal/Installation procedures refer to the:

- (1) A5 Engine Manual (EM), 72-00-60, Removal/Installation-06, Config-02 or
- (2) A319 Aircraft Maintenance Manual (AMM), 73-22-52, Removal/installation, Config-02

C. Recording Instructions

A record of accomplishment is required.

IAE 73-0127 ✓

TRW Lucas Aerospace
SERVICE BULLETIN
PUBLICATION TRANSMITTAL

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SHAFTMOOR LANE, BIRMINGHAM, B28 8SW
ENGLAND.

TELEPHONE: 0121-707-7111
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Date: 15 Sept 1999

FUEL METERING UNIT
TYPE FMU 540

THIS DOCUMENT TRANSMITS SERVICE BULLETIN FMU 540-73-8059.

<u>Remove</u>	<u>Insert</u>	<u>Reason</u>
Bulletin Index Sheet Page 1	Bulletin Index Sheet Page 1, dated Sept 15/99	Index revised to current standard.
	Service Bulletin FMU 540-73-8059 Pages 1 thru 4 dated Sept 15/99	This Modification Introduces a Customer request to allow the conversion of the FMU 540 Mk2 to the FMU 530 Mk2 Standard.

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FUEL METERING UNIT, TYPE FMU 540

BULLETIN INDEX SHEET

SERVICE BULLETIN NUMBER	MOD CP NUMBER	DESCRIPTION	DATE OF ISSUE	DATE OF LAST REVISION
FMU 540-73-8061	8061	This Modification Introduces Tungsten/ Chromium Carbide coated push rods and seals. Ground spacer replaces the multiple shims.	July 26/99	-
FMU 540-73-8059	8059	This Modification Introduces a Customer request to allow the conversion of the FMU 540 Mk2 to the FMU 530 Mk2 Standard.	Sept 15/99	-

SERVICE BULLETIN INDEX SHEET

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FUEL METERING UNIT, TYPE FMU 540

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SERVICE BULLETIN INDEX SHEET

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SERVICE BULLETIN

Date 15/9/99

NUMBER FMU 540-73-8059

ENGINE - FUEL AND CONTROL - FUEL METERING UNIT - CONVERSION
FROM FMU 540MK2 TO FMU 530MK2

MOD NO CP8059

1. Planning Information

A. Effectivity

(1) Engine:

(a) V2522-A5, V2524-A5 and V2527M-A5.

(2) Equipment:

(a) Fuel Metering Unit - Type FMU 540 Mk 2.

B. Reason

(1) Condition

Customer request to allow the conversion of the FMU 540Mk2 to the FMU 530 Mk2 standard

(2) Background

The FMU 540 maximum flow stop arrangement is being superseded to enable conversion to a FMU 530 Mk 2 which can be subsequently converted to the 'common flow' FMU 550 by modification CP8060.

NOTE: No modification exists to directly convert an FMU 540 to an FMU 550.

(3) Objective

Incorporation of this modification is to convert the existing FMU 540 Mk2 to FMU 530 Mk2.

(4) Substantiation

The change introduced by this Service Bulletin has been demonstrated by engineering assessment and extensive rig testing.

C. Description

This modification converts the FMU 540 Mk2 to a FMU 530 Mk2.

D. Approval

Service Bulletin No. FMU 540-73-8059 (Mod CP8059) was technically agreed by IAE on 2/9/99. The procedures described in this bulletin have been shown to comply with the appropriate Federal Aviation Regulations, and are FAA approved for those units listed in this bulletin.

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E. Compliance

Category Code 8

In accordance with the customer request.

F. Manpower

Estimated manhours:

(1) In Service Not applicable

(2) At Overhaul Facility:

(a) To gain access No change.

(b) To embody No change.

(c) To return the unit to flyable status No change.

G. Material - Price and Availability

Modification CP8059 is required (see Section 3 of this Bulletin for details).

For price and availability see Supplement to this Bulletin.

H. Tooling - Price and Availability

Additional special tools are not required.

I. Weight

(1) Unit weight change Minus 0.2 lb (0,09 kg).

(2) Moment arm 16.5 in (419 mm) forwards of datum.

(3) Datum Engine front mount centreline
Power Plant Station (PPS)100.

J. Electrical Load Data

No change.

K. References

(1) Lucas Fuel Metering Unit Component Maintenance Manual Ref FMU 530 Chapter 73-28-02.

(2) Lucas Fuel Metering Unit Component Maintenance Manual Ref FMU 540 Chapter 73-28-07.

(3) IAE Service Bulletin V2500-ENG 73-0127.

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L. Other Publications Affected

None.

M. Family Tree Charts

Not applicable.

2. Accomplishment Instructions

A. Disassembly

Disassemble the unit as detailed in the Component Maintenance Manual FMU 540Mk2 (Ref 1. K. References (2)).

B. Assembly

Assemble the FMU in accordance with the relevant Component Maintenance Manual FMU 530 Mk2 (Ref 1. K. References (1)). All checks, setting and testing procedures must be performed.

C. Recording Action

(1) Fuel Metering Unit

On accomplishment of this modification, endorse the unit modification plate with Mod. CP8059 plus CP6877 CP6883 CP6884 CP6932 CP6946 CP6968 CP8002 and CP8037.

(2) Engine

A record of accomplishment is required.

3. Material Information

This is a technical document, not a quotation. Prices are FOB UK and are for budgetary purposes only and are in US dollars (\$).

NOTE: The tabulation below includes code numbers in the 'Instructions/Dispositions' column identified as 'I/D Code'. These code numbers designate the following dispositions:

1-Added Part

2-Scrap Part

3-Return to Lucas for Rework and Re-identify the Part

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4-Use for Other Applications.

A. New Parts Required for Modification Only

<u>New P/N</u>	<u>Qty</u>	<u>Unit Price</u>	<u>Lead Time</u>	<u>Nomenclature</u>	<u>Old P/N</u>	<u>I/D Code</u>
77872821	1	TBA	TBA	Name Plate	77872821	2
				Double Ended Cap	77152850	2
				Stop Screw	77152756	2
				Shim	GTS 51-3 C/H	2
				Plunger Assembly	77152753	2
77139315	1	TBA	TBA	Max. Flow Stop Housing	77152865	1
				Spring	77152758	2
				Retaining Collar	77152757	2
				Locking Ring	77873227	2
77139316	1	TBA	TBA	Screwed Adjuster	77152755	1
				Wire Locking Tab	AS 4561-3	2
				Shim	GTS51-4 C/H	2
				Wire Locking	77855038	2
SP 123E	1	TBA	TBA	Plain Washer		1
77139496	1	TBA	TBA	Anti Tamper Cap		1
GTS 149-2	1	TBA	TBA	Self-Locking Nut		1
GTS 345-010	1	TBA	TBA	Seal		1
GTS 345-113	1	TBA	TBA	Seal		1

B. Parts to be reworked and re-identified:

None

C. Consumable Parts

None

D. New production parts available as future spares in addition to those listed under A.

None

E. The type of equipment affected by this modification is:

<u>Description</u>	<u>Type No</u>
Fuel Metering Unit	FMU 540 Mk 2

FMU 540-73-8059

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