



## SERVICE BULLETIN

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# SERVICE BULLETIN No. 007LG-32-4

## LANDING GEAR - EXTENSION AND RETRACTION - CONTROL AND INTERFACE

### INTRODUCTION OF LANDING GEAR CONTROL AND INTERFACE UNIT PART NUMBER: 007LG027G

#### 1. Planning Information

##### A. Effectivity

Landing Gear Control and Interface Units (LGCIUs), PNR: 007LG027D, all serial numbers.

##### B. Concurrent Requirements

Not Applicable.

##### C. Reason

This Service Bulletin introduces a new LGCIU PNR: 007LG027G, containing a new On-Board Replaceable Module (OBRM) PNR: 007LG02-0200. The new OBRM incorporates revised software which implements changes requested by Airbus to remove A340-500/600 Operations Engineering Bulletin (OEB) 25, Issue 1 and to offer enhanced maintenance troubleshooting ability. No LGCIU hardware changes are incorporated.



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### D. Description

This Service Bulletin introduces a new OBRM which contains new software (identified as the 7G standard) with improvements to the 007LG027D variant. LGCIUs PNR: 007LG027D are modified to PNR: 007LG027G by replacing OBRM PNR: 007LG02-0050, with OBRM PNR: 007LG02-0200 following instructions in this Service Bulletin.

The new software introduces the following changes:

- (1) On A340-500/600 aircraft the change inhibits hydraulics selector valve commands if the extension sequence including door closure has not completed within the maximum extension time of 40 seconds. This prevents potential door closing on landing and contacting the forward Centre Line Gear (CLG) tyres; it removes OEB 25/1. The inhibit is removed by moving landing gear lever up or resetting on ground using the Menu Mode options. Inclusion of fault code and Built In Test message indicate the inhibit condition.
- (2) The change fixes an issue on the A340-500/600 which now displays a previously missing ECAM 'L/G GEAR NOT DOWNLOCKED' alert if, in the abnormal case, the CLG is jammed in the up-lock after the extension sequence.
- (3) On all Long Range aircraft types new fault codes and messages help, in the abnormal event, to identify the cause of a lever baulk in flight. This also helps to eliminate any possible dormant faults after extension prior to the next flight.
- (4) On all Long Range aircraft types new fault codes and messages help identify which out of a pair of proximity sensor target alignments is in need of maintenance, currently only a pair is indicated at fault rather than the individual sensor/target alignment.
- (5) On all Long Range aircraft types the troubleshooting data recorded at the time of a fault captures individual gear, gear components and door positions to help in determining the system configuration. Currently only all door/gear position as a group is recorded.
- (6) The change introduces maintenance messages to accompany the ECAM alerts 'L/G DOORS NOT CLOSED', 'L/G GEAR NOT DOWNLOCKED', 'L/G GEAR NOT UNLOCKED' which identifies the cause (gear, door, bogie) of the above alert occurring.



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### E. Compliance

Compliance with this Service Bulletin is Recommended for A340-500/600.  
For A330-200/300 and A340-300/400 it is Desirable.

Compliance is achieved by fitting a new OBRM following the instructions in this Service Bulletin. The OBRM may be either by an exchange from the Ultra Electronics – Controls or an OBRM which has been reprogrammed.

Ultra Electronics – Controls will also accomplish this Service Bulletin, on request, on LGCIUs returned for investigation and/or repair. Normal conditions and warranty terms for repair items will apply. If necessary, Operators may also carry out the replacement procedure.

### F. Approval

The technical content of this Vendor Service Bulletin has been Approved under the authority of EASA Design Organisation Approval No: EASA.21J.031.

### G. Manpower

The time estimates given in the Service Bulletin are based on the direct labour to do the work. The estimates do not include the time to prepare, plan or inspect the work. Also procurement of parts and general administration work for the task are not included. The estimated time necessary to embody this Service Bulletin is as follows:

1. Initial test and NVM erasure: 1 hr.
2. Reprogram and refit OBRM: 1.1 hrs or Replace OBRM: 10 min.
3. Final Test: 1 hr.

### H. Weight and Balance

Weight and balance are not affected.

### I. Electrical Load Data

This Service Bulletin does not change the aircraft electrical load.



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### J. Software Accomplishment Summary

The Software Accomplishment Summary has been amended for VSB 007LG-32-4 as detailed in the Declaration of Design and Performance document.

### K. References

Airbus Equipment Definition Evolution Sheet 2, EDES 007-LG/16, Issue 3, Introducing LGCIU PNR: 007LG027G.

Ultra Electronics LGCIU Component Maintenance Manual Ref. No. 32-31-83 (Latest Revision).

Airbus Operations Engineering Bulletin No: 25, Issue 1 - L/G Doors Not Closed.

This Service Bulletin is subject of aircraft modification No: 56048 and is covered by the following aircraft Service Bulletins:

- A330-200/300, Service Bulletin No: 32-3209
- A340-200/300, Service Bulletin No: 32-4253
- A340-500/600, Service Bulletin No: 32-5076

Under no circumstances shall the modified equipment, resulting from the application of this Service Bulletin, be installed on the aircraft type unless the corresponding modification, and if applicable, its aircraft Service Bulletin are approved.

### L. Other Publications Affected

Not applicable

### M. Interchangeability or Intermixability of Parts

On A330-200/300 and A340-200/300 accomplishment of this Service Bulletin does not affect interchangeability or intermixability, refer to Airbus Service Bulletin No: 32-3209 and 32-4253.

On A340-500/600 both LGCIUs must be replaced concurrently and are one way interchangeable, refer to Airbus Service Bulletin No: 32-5076.



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### 2. Material Information

#### A. Material – Price and Availability

Price: The necessary material is detailed in paragraph 2.C.

Availability: Contact Ultra Electronics Controls for availability.

#### B. Industry Support Information

Units returned to Ultra Electronics Controls can have this Service Bulletin carried out on request from Operators, or during repair of the unit. Normal conditions and warranty terms for repair items will apply.

#### C. Material Necessary for Each Component(Unit)

The following parts from Ultra Controls are necessary to accomplish this Service Bulletin.

##### (1) Material to be Purchased

<u>New PNR</u>	<u>Key Word</u>	<u>Old PNR</u>	<u>Qty</u>	<u>Unit Price</u>	<u>Inst/Disp</u>
007LG027G	LGCIU	007LG027D	1	N/A	Reworked LRU
007LG02-0200	OBRM	007LG02-0050	1	\$6506.68 2011 World List Price	Reworked SRU or Exchanged Item
007LG02-0201	Label, OBRM Ident (7G)	N/A	1	Standard Cost Item	Discard Old Part
007LG02-0202	Label, PNR (7G)	N/A	1	Standard Cost Item	Discard Old Part

NOTE: Only the Labels are Required If OBRMs are Reprogrammed and Reworked.

NOTE: Operator Must Provide the OBRM Serial Number and Date of Manufacture When Procuring OBRM Identity Label. Refer to Paragraph 3.C.(1)



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(2) Material Supplied by the Operator (Consumables)

(a) Standard Material

Refer to the related sections of the CMM – Tools and Materials.

(b) Specific Material

Nil.

D. Material Necessary for Each Spare

Not applicable.

E. Re-identified Parts

Not applicable

F. Tooling – Price and Availability

Operators who wish to reprogram OBRMs must have access to an Aerospatiale RMR PRECIS Firmware Data Loader, PNR. 37A0D0-3000-000 or other suitable Firmware Data Loader. If required, contact Ultra Electronics Controls for support.

3. Accomplishment Instructions

**CAUTION:** YOU MUST WORK ON THE LGCIU ONLY UNDER CLEAN ROOM CONDITIONS. ALL WORK MUST BE CARRIED OUT AN APPROVED METAL OXIDE SEMICONDUCTOR WORK STATION, IN ACCORDANCE WITH STANDARD ANTISTATIC PROCECURES TO PREVENT DAMAGE BY STATIC DISCHARGE

Full description of the procedures is described in the LGCIU CMM, ATA Ref. 32-31-83 (Latest Revision). In the procedures which follow, use Illustrated Parts List (IPL) Figure, as detailed at the start of each procedure. The item numbers in parentheses are the same as those in the IPL Figure.

**CAUTION:** BEFORE THE OBRM IS CHANGED THE NON-VOLATILE MEMORY (NVM) IN THE LGCIU MUST BE ERASED



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### A. NVM Erasure

- (1) Refer to the LGCIU CMM, TESTING and FAULT ISOLATION, page 1001.
- (2) Erase the LGCIU NVM as instructed in Para 21 of the CMM. Make sure the LGCIU serial number is correctly displayed at the completion of the NVM erasure.

### B. OBRM Change (IPL Fig. 1)

- (1) Refer to the LGCIU CMM, DISASSEMBLY page 3001.
- (2) Remove the OBRM (5) as instructed in Para 2.A of the CMM.

### C. OBRM Reprogramming (Go to Para 3.D below. if using new OBRM)

- (1) Remove the original identification labels from the OBRM. Record the OBRM Serial Number and month/year of manufacture.

**NOTE:** Operator Must Send the OBRM Serial Number and Date of Manufacture Information to Ultra Electronics Controls When Procuring new OBRM Identity Labels.

- (2) Using an appropriate Firmware Data Loader and carry out erasing, reprogramming and test procedures as directed by the Firmware Data Loader instruction manual, using the PNR: 007LG02-0200 OBRM supplied by Ultra Electronics Controls.
- (3) Fit new identification labels to the reprogrammed OBRM. Make sure the OBRM serial number and the month/year of manufacture are the same as recorded in the paragraph above.

### D. Assembly (IPL Fig.1)

- (1) Refer to the LGCIU CMM, ASSEMBLY page 7004.
- (2) Fit OBRM (5) programmed with new 7G software, as instructed in Para 4.F of the CMM.

**NOTE:** The LGCIU is now identified by PNR: 007LG027G

### E. Final Test

- (1) Refer to the LGCIU CMM, TESTING AND FAULT ISOLATION page 1001.



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- (2) Perform a full acceptance test on the LGCIU as instructed in the CMM for LGCIU PNR: 007LG027G, TESTING AND FAULT ISOLATION page 1001.

### 4. Notification

After accomplishment of this Service Bulletin, the Operator must tell the Ultra Electronics Controls this data:

- Service Bulletin number.
- Serial number(s) of the LGCIU(s) amended.
- Serial number(s) of the OBRM(s) amended.
- Date of amendment(s).

Send this data to:

Customer Support Manager,  
Ultra Electronics Controls  
417 Bridport Road, Greenford, Middlesex,  
UB6 8UE  
United Kingdom

### 5. Further information

If you need more information about this Service Bulletin, or to obtain price/delivery data, contact the Customer Support Manager at:

Ultra Electronics Controls  
417 Bridport Road, Greenford, Middlesex  
UB6 8UE  
United Kingdom

Telephone: +44 (0) 20 8813 4444      Fax: +44 (0) 20 8813 4351  
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