Ultra Electronics

TO: HOLDERS OF ULTRA ELECTRONICS SERVICE BULLETIN 6647-32-7

This page transmits Revision No. 1, dated Mar 1/96, to Service Bulletin 6647-32-7. Pages which have been revised are outlined below, together with the highlights of the revision. Remove and insert the affected pages as listed. This revision is applicable to all models. There have been no previous revisions to or reissues of this Service Bulletin.

Page	Description
1	Revised to reflect the issuance of this Revision.
4	Operator's attention is drawn to fault logging data in the Aircraft Maintenance Manual.
5	Editorial change only.

Ultra Electronics
SERVICE BULLETIN

This Service Bulletin complies with British Civil Airworthiness Requirements, Sect. A, Chapter A5-3.

Signed ..... A. Maybank .....

CAA Approval No. DAI/1501/39
1 October 1995

SERVICE BULLETIN No. 6647-32-7

LANDING GEAR - EXTENSION AND RETRACTION - CONTROL AND INTERFACE

INTRODUCTION OF LGCIU PT. NO. 664700500A4C

1. Planning Information

A. Effectivity

Airbus Industrie A319, A320 and A321 aircraft, all models.

Landing Gear Control and Interface Units (LGCIUs), Part Nos. 664700500A4A and 664700500A4B, all serial numbers.

B. Reason

The LGCIU receives signals from proximity sensors in the landing gear system. Proximity sensors have a failure mechanism whereby a cracked ferrite core prevents them changing state from FAR to NEAR. This failure mechanism does not generate a BITE signal because the sensor's electrical circuit is still functioning correctly. This failure mechanism can therefore lead to landing gear control difficulties on one LGCIU system and/or spurious ECAM warnings from other aircraft systems, depending on the position of the failed proximity sensor.

The new LGCIU introduced by this Service Bulletin will detect a failure of this kind through a comparison with similarly-located sensors. The LGCIU will then be able to identify the location of a failed sensor.

C. Description

This Service Bulletin introduces LGCIU Pt. No. 664700500A4C, which embodies improved proximity sensor monitoring. The new LGCIU will identify a cracked ferrite core sensor failure which results in the sensor outputting a permanent target FAR signal.

The monitor function is controlled by the LGCIU software, located in the OBRM. The improvement in monitoring is achieved by comparing the sensors in similar locations in all three gear assemblies. On detection of sensor disagreement, the LGCIU will set bit 29 of ARINC label 021 to logic '1', except under the following conditions :

- the disagreement is with the gear downlocks and the landing gear control lever is set to DOWN.

- the disagreement is with the gear uplocks and the landing gear control lever is set to UP.

- at wheel speeds below 70 kts, landing gear door disagreements will not set bit 29 of ARINC label 021 to logic '1'.

LGCIUs of Pt. No. 664700500A4A and 664700500A4B are converted to Pt. No. 664700500A4C by replacing the OBRM, Pt. No. 6650002004A or 6650002004B with Pt. No. 6650002004C. No other work is required and it is not necessary to disassemble the LGCIU to accomplish this Service Bulletin.

D. Compliance

Compliance with this Service Bulletin is recommended.

Compliance is achieved by fitting a new OBRM. This may be either an exchange unit from the manufacturer, or an OBRM which has been reprogrammed by the aircraft Operator or a Service Agent.

The manufacturer will also accomplish this Service Bulletin, on request, on LGCIUs returned for investigation and/or repair.

E. Approval

The technical data in this Service Bulletin is approved by authority of CAA Approval No. DAI/1501/39.

F. Manpower

The work necessary to accomplish this Service Bulletin is :

- Fit exchange OBRM 0.1 man-hours
- Reprogram and fit existing OBRM 1.1 man-hours

G. Material Cost and Availability

OBRM Pt. No. 6650002004C will be made available to Operators on exchange. Alternatively, a master OBRM will be provided to Operators who wish to reprogram their own OBRMs. New OBRM identification labels will be supplied for fitting to the reprogrammed OBRMs - Operators must inform Ultra Electronics of the quantity required.

Price and delivery data for the OBRMs is available from Ultra Electronics Controls Division (address on page 5 of this Service Bulletin).

H. Tooling - Price and Availability

Operators who wish to reprogram their own OBRMs must have access to an Aerospatiale Firmware Data Loader, Type RMR PRECIS B, Pt. No. 37A0D0-3000-000. Data on price and availability of this device can be obtained from Aerospatiale Avionics and System Division.

J. Weight and Balance

Weight and balance are not affected.

K. Electrical Load Data

This Service Bulletin does not change the aircraft electrical load.

L. References

Ultra Electronics Component Maintenance Manual Ref. No. 32-31-39.

2. Accomplishment Instructions

A. OBRM Change

Accomplishment of this Service Bulletin is achieved by removing OBRM Pt. No. 66550002004A or 6650002004B and replacing it with OBRM Pt. No. 6650002004C.

Refer to Ultra Electronics Component Maintenance Manual 32-31-39, Page 301, para. 2.A for OBRM removal instructions.

Refer to Ultra Electronics Component Maintenance Manual 32-31-39, Page 701, para. 2.A for OBRM installation instructions.

Correct functioning of the new OBRM will automatically be checked during the start-up BITE tests when the LGCIU is next powered up.

Note that previously-logged faults in the LGCIU's NOVOL RAM may be reported incorrectly after the new OBRM is fitted.

B. OBRM Reprogramming

Remove the original identification labels from the OBRM. Make a note of the OBRM Serial Number.

Refer to the Aerospatiale Instruction Manual for the RMR PRECIS B Firmware Data Loader and carry out the erasing, reprogramming and test procedures as directed, using the 6650002004C master OBRM supplied by Ultra Electronics.

Fit the new identification labels to the reprogrammed OBRM. Endorse the OBRM serial number, month/year of modification and software suffix '4C' onto the main identification label. Endorse the software suffix '4C' onto the software label.

Fit the reprogrammed OBRM into the LGCIU as described in para. 2.A above.

C. Notification

After accomplishment of this Service Bulletin, the Operator must tell the manufacturer this data :

- Service Bulletin Number.
- Serial Number(s) of the LGCIU(s) modified.
- Serial number(s) of the OBRM(s) reprogrammed.
- Date of modification(s).

Send this data to :

Project Support Manager (A320),
Ultra Electronics Controls Division,
Bridport Road, Greenford, Middlesex,
UB6 8UA
United Kingdom

3. Material Information

New Part Number	Qty.	Keyword	Old Part Number	Inst.-Disposition
664700500A4C	1	LGCIU	664700500A4A or 664700500A4B	Reworked part
6650002004C	1	OBRM	6650002004A or 6650002004B	Reworked part or exchange item
001LG01-0448	1	Label, ident	Not applicable	Discard old part
001LG00-0443	1	Label, s/w	Not applicable	Discard old part

Accomplishment of this Service Bulletin does not change the LGCIU modification state.