 Direction générale de l'aviation civile France GSAC publication	AIRWORTHINESS DIRECTIVE No F-2004-117 R1		Distribution: B	Issue date: June 08, 2005	Page : 1/4
	This Airworthiness Directive is published by the DGAC on behalf of EASA, Airworthiness Authority of the State of Design for the affected product, part or appliance.			<i>Translation of « Consigne de Navigabilité » of same number. In case of difficulty, reference should be made to the French issue.</i>	
<p style="text-align: center;">No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive, unless otherwise agreed with the Authority of the State of Registry.</p>					
Corresponding foreign Airworthiness Directive(s): Not applicable			Airworthiness Directive(s) replaced: F-2004-117 original issue		
Person in charge of airworthiness: AIRBUS SAS			Type(s): A330 and A340 aircraft		
Type certificate(s) No. EASA.A.004, EASA.A.015 TCDS No EASA.A.004, EASA.A.015					
ATA chapter: 31, 34		Subject: Indicating/Recording Systems - Temporary loss of all display units			

1. EFFECTIVITY:

AIRBUS aircraft A330 and A340, all certified models, all serial numbers:

- that have embodied AIRBUS modification 47524, 50161, 50183, 50616 or 51153 in production, or AIRBUS Service Bulletin (SB) A330-31-3056, A330-31-3057 or A340-31-5001 in service,

except those which have received :

- AIRBUS modification 51974, or AIRBUS SB A330-31-3069 or A340-31-4087 or A340-31-5012,
and
 - AIRBUS modification 53923, or AIRBUS SB A330-31A3080 or A340-31A4094 or A340-31A5016.

2. REASONS:


An A320 operator reported the misbehaviour of all EIS2 LCD Display Units in cruise for duration of 3 minutes with a total loss LCD Display Units for 30 seconds. The autopilot was disconnected as a precaution by the pilot and standby instruments were used. All Display Units were finally recovered and the flight continued normally.

Analysis confirmed that the 3 Display Management Computers have received an erroneous data from one LCD Unit.

AIRBUS issued Operators Information Telex (OIT) and Flight Operations Telex (FOT) SE 999.0114/03/VHR Revision 1, which gives the Master Minimum Equipment List (MMEL) repercussions of this event and operational recommendations to be followed in case of all Display Units failed with INVALID DATA display.

Airworthiness Directive (AD) 2003-373 mandated the MMEL repercussions of this event.

Since the AD issuance, the high number of loss of Display Units events, with one event on an A340 aircraft, show the need to make the flight crew aware of the procedure to apply in such situation. This procedure "Loss of all display units" is detailed in Flight Manual Temporary Revision (AFM TR) 4.02.00/23 and 4.02.00/38.

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An equivalent procedure detailed in AFM TR 4.02.00/24 has also been developed for A330 aircraft fitted with FWC STD K7/486. In fact, there is a risk to lose these FWCs with this standard in approach phase if one of the ECAM DUs must remain OFF by application of the procedure "Loss of all display units".

This AD at original issue recalled the requirements of AD 2003-373 and mandated the above AFM TRs.

The Revision 1 of this AD introduces the new EIS2 standard "L5" and the associated activation of a monitoring function (CRC) which allows to cancel the operational limitations (AFM and MMEL TR) mentioned in paragraphs 3.1 and 3.2 here below and therefore reduces the applicability field as stated in paragraph 1.

Reference to A340 aircraft equipped with FWC STD L10/486 (MOD 49192) is deleted as this standard is not in service any longer.

3. **MANDATORY ACTIONS AND COMPLIANCE TIMES:**

3.1. From September 24, 2003 [the effective date of AD 2003-373], the following operational limitations are rendered mandatory for all flights:

"MMEL REPERCUSSIONS:

For aircraft equipped with EIS2 LCD Display Units, and with conventional standby instruments:

- *Dispatch with the standby IAS (Indicated Airspeed) indicator inoperative (MMEL 34-21-01) is no longer authorized.*
- *Dispatch with inoperative standby horizon or inoperative standby altimeter may be authorised provided that the crew maintains VMC conditions during the entire flight and day-light conditions.*

For aircraft equipped with EIS2 LCD Display Units, and with the Integrated Standby Instrument System (ISIS):

- *Dispatch with the ISIS airspeed function inoperative (MMEL 34-22-03-C) is no longer authorized.*
- *Dispatch with inoperative ISIS horizon function or inoperative ISIS altitude function may be authorised provided that the crew maintains VMC conditions during the entire flight and day-light conditions.*

Reminder: *for dispatch with one Display Unit inoperative as per MMEL 31-63-01, it is reminded that the subject Display Unit must be switched-off as per associated MMEL operational procedure."*

Note 1: Incorporation of the MMEL repercussions or a copy of this AD in the Aircraft Operations Manual and strict adherence to MMEL repercussions by the crew allows complying with this AD.

3.2. From the effective date of this AD at original issue, the following operational limitations are rendered mandatory for all flights:

A330 aircraft not equipped with FWC STD K7/486 (MOD 49193) and A340

"LOSS OF ALL DISPLAY UNITS

This Temporary Revision gives the procedure to be followed in case of loss of all Display Units (DU).

*Autopilot, autothrust and MCDU navigation data are still available and may be used.
Monitor the flight by using standby instruments.*


Wait at least 40 seconds for automatic DU recovery.

- *If one or more DU is not automatically recovered after 40 seconds:
Set the non-recovered DUs to OFF.*

After 40 seconds, sequentially switch them back to ON.

- *If all DUs are lost again when switching a given DU back to ON:
Set all the DUs to OFF.*

After 40 seconds, switch them back to ON except the given DU which must be left permanently OFF."

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A330 aircraft equipped with FWC STD K7/486 (MOD 49193)

"LOSS OF ALL DISPLAY UNITS

This Temporary Revision gives the procedure to be followed in case of loss of all Display Units (DU) for A330 aircraft fitted with FWC K7 (MOD 49193)

*Autopilot, autothrust and MCDU navigation data are still available and may be used.
Monitor the flight by using standby instruments.*

Wait at least 40 seconds for automatic DU recovery.

- *If one or more DU is not automatically recovered after 40 seconds:
Set the non-recovered DUs to OFF.
After 40 seconds, sequentially switch them back to ON.*
- *If all DUs are lost again when switching a given DU back to ON :
Set all the DUs to OFF.
After 40 seconds, switch them back to ON except the given DU which must be left permanently OFF.*
- *If one or more ECAM DU must remain OFF:*
- *If ECAM DUAL DU reconfiguration is possible :
Set the ECAM/ND selector to CAPT or F/O.*
- *If ECAM DUAL DU reconfiguration is not possible or if the possible DU configuration is not appropriate for the type of approach:
Both FWC will be lost during approach so monitor systems on overhead panel.*

*Note: ECAM cautions and warnings, aural warnings, master caution, warning lights, auto callouts and altitude alerts are lost during approach.
Only CAT I approach is allowed."*


Note 2: Incorporation of the AFM TR 4.02.00/23, AFM TR 4.02.00/24 or AFM TR 4.02.00/38 or a copy of this AD in the Aircraft Operations Manual and strict adherence by the crew allows complying with this AD.

4. REFERENCE PUBLICATIONS:

Operators Information Telex and Flight Operations Telex
SE 999.0114/03/VHR Revision 1 dated September 19, 2003.
A330 Flight Manual Temporary Revision 4.02.00/23 approved by EASA on June 28, 2004
A330 Flight Manual Temporary Revision 4.02.00/24 approved by EASA on June 28, 2004
A340 Flight Manual Temporary Revision 4.02.00/38 approved by EASA on June 28, 2004
(Any later approved revision of these AFM TR is acceptable)
AIRBUS Service Bulletin A330-31-3069
AIRBUS Alert Service Bulletin A330-31A3080
AIRBUS Service Bulletin A340-31-4087
AIRBUS Alert Service Bulletin A340-31A4094
AIRBUS Service Bulletin A340-31-5012
AIRBUS Alert Service Bulletin A340-31A5016
(Any later approved revision of these SBs is acceptable).

5. EFFECTIVE DATES:

Original issue : July 31, 2004
Revision 1 : June 18, 2005.

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6. REMARK:

For questions concerning the technical contents of this AD's requirements, contac :

AIRBUS SAS - Office of Airworthiness - EAL - Fax : 33 5 61 93 45 80.

7. APPROVAL:

This AD Revision is approved under EASA reference No 2005-4752 dated May 31, 2005.