

Follow-up Action on Occurrence Report

INCIDENTS RESULTING FROM DAMAGE TO ELECTRICAL WIRING – 2002 & 2003

CAA FACTOR NUMBER : F33/2004
FACTOR PUBLICATION DATE : 13 July 2004
OPERATOR : UK AOC Holders
CAA OCCURRENCE NUMBER : Various
AAIB REPORT : Bulletin 6/2004

SYNOPSIS

(From AAIB Report)

A number of accident and incident reports in recent years have identified causal factors that include electrical arcing and damage to aircraft wiring. Significant accidents include a Boeing 747-131, N93119, near East Moriches, New York on July 17, 1996 (TWA 800 - NTSB/AAR-00/03), a Boeing 767-322ER N653UA at London Heathrow Airport on 9 January 1998 (AAIB/AAR 5/2000) and McDonnell Douglas MD-11 HB-IWF near Peggy's Cove, Nova Scotia on 2 September 1998 (Flight 111 - Canadian Report Number A98H0003). Ageing and maintenance related wiring incidents continue to occur despite, generally, an enhanced awareness of the problems associated with aircraft wiring systems. Four such incidents are presented together in the AAIB Bulletin; all feature damage to electrical wiring and identify similar causal factors. Although each incident may be read as a stand alone report, this overview document draws together the common issues and makes four additional Safety Recommendations. The four incidents are as follows:

EW/C2002/11/02 Boeing 737-436, G-DOCH 8 November 2002
EW/C2003/05/06 Boeing 737-436, G-DOCE 30 May 2003
EW/C2003/06/03 Concorde Type 1 V102, G-BOAC 13 June 2003
EW/C2003/07/07 Boeing 737-300, G-LGTI 30 July 2003

FOLLOW UP ACTION

The four Safety Recommendations, made by the AAIB following their investigation, are reproduced below, together with the CAA's responses.

Recommendation 2003-108

It is recommended that the Federal Aviation Administration (FAA) expedite a requirement for the replacement of existing thermal/mechanical type circuit breakers by arc fault circuit breakers, in appropriate systems on in-service and new build Civil Air Transport aircraft for which they have issued type certificates, when these devices are judged to have been developed to an acceptable standard and where the Safety Objectives for the circuits would be enhanced.

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed

Recommendation 2003-128

It is recommended that European Aviation Safety Agency (EASA), on behalf of the member countries which have issued type certificates for Civil Air Transport aircraft, expedite a requirement for the replacement of existing thermal/mechanical type circuit breakers by arc fault circuit breakers, in appropriate systems on in-service aircraft and new build aircraft, when these devices are judged to have been developed to an acceptable standard and where the Safety Objectives for the circuits would be enhanced.

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed

Recommendation 2004-18

It is recommended that the Federal Aviation Administration (FAA) accelerate the publication and adoption of the guidance material produced by the Ageing Transport Systems Rulemaking Advisory Committee (ATSRAC) on developing an electrical systems standard wiring practices manual, developing an effective wiring systems training programme and on changes to existing maintenance practices and analysis methods, which could be applied to both in-service aircraft and new design, to ensure adequate consideration of the potential deterioration of electrical wiring systems.

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed

Recommendation 2004-19

It is recommended that the European Aviation Safety (EASA) expedite the transcription by Agency the European Ageing Systems Co-ordination Group (EASCG) of the material in the FAA Advisory Circulars (ACs) produced by the Ageing Transport Systems Rulemaking Advisory Committee (ATSRAC), which gives guidance for operators and maintenance organisations on developing an electrical systems standard wiring practices manual, developing an effective wiring systems training programme and on changes to existing maintenance practices and analysis methods. This guidance should be applied to both in-service aircraft and new designs, to ensure adequate consideration is given to potential in-service deterioration of electrical wiring systems.

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed