

NTSB Recommendation A-83-048

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Rec #: A-83-048

NTSB Status: Closed - Acceptable Alternate Action

Issue date: 7/19/1983

Accident Date: 6/2/1983

Source Event: ACCIDENT

Location: CINCINNATI Ohio

Mode: AVIATION

Most Wanted List: No

Closed date: 11/17/1986

Report Number: AAR-84-09

Accident ID: DCA83AA028

Background Synopsis:

ON JUNE 2, 1983, AN IN-FLIGHT FIRE OCCURRED ON BOARD AIR CANADA FLIGHT 797, AND FOLLOWING AN EMERGENCY LANDING AT THE GREATER CINCINNATI AIRPORT, THE CABIN INTERIOR OF THE MCDONNELL DOUGLAS DC-9-32 CONTINUED TO BURN. FIVE CREWMEMBERS AND 18 PASSENGERS WERE ABLE TO EVACUATE THE BURNING CABIN; THE REMAINING 23 PASSENGERS DIED IN THE FIRE.

Recommendation:

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ESTABLISH, IN CONJUNCTION WITH THE FLUSH PUMP MOTOR, TIMER, AND AIRFRANE MANUFACTURERS, A PROCEDURE WHICH AIRLINE MAINTENANCE PERSONNEL COULD EMPLOY TO VERIFY THAT THE ELECTRICAL CIRCUITRY OF LAVATORY FLUSHING PUMP MOTORS HAS BEEN DAMAGED BY CORROSION OR OTHER CAUSES SO AS TO PRODUCE EXCESSIVE HEAT DURING MOTOR OPERATION.

Correspondence:

Response Date: 10/21/1983 From: Addressee

Response:

As mentioned in our comment to Recommendation A-83-47, the FAA's investigation has not indicated that a safety problem exists with respect to corrosion of the lavatory flushing pump motor units and associated wiring or deterioration of the wire insulation. Therefore, requiring an additional inspection procedure is not considered necessary. On July 20, 1983, the FAA issued General Notice (GENOT) Number 8320.285, Aircraft Lavatory Maintenance/Inspection Program (copy enclosed). This GENOT which amends GENOT Number 8320.283 (issued July 1, 1983, was enclosed in our response to Recommendation A-83-46) requests that principal maintenance inspectors assure that assigned operators have adequate programs for the removal of waste from all areas of the lavatory with particular attention to enclosed areas in and around waste receptacles. Also, the GENOT requires that the principal maintenance inspectors assure that their assigned operators have adequate programs to inspect areas susceptible to the accumulation of fluids which can cause corrosion in the vicinity of wire harnesses and other electrical components. The FAA considers action complete on these recommendations.

Response Date: 11/17/1986 From: Addressee

Response:

THE FAA HAS WITNESSED COMPONENT TESTING OF LAVATORY FLUSHING PUMP MOTORS, INCLUDING TEST CONDITIONS IN WHICH THE MOTORS WERE INTENTIONALLY OVERHEATED. BOTH NEW AND USED MOTOR UNITS WERE

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TESTED. THE RESULTS INDICATED THAT OVERHEATING OF THE MOTORS IS NOT SUFFICIENT TO GENERATE A FIRE, ALTHOUGH SMOKE DOES DEVELOP. THE SMOKE IS THE PRODUCT OF BURNED WINDINGS. NUMEROUS TRANSPORT CATEGORY AIRPLANES WERE INSPECTED IN THE AREA OF THE LAVATORIES WITH SPECIAL EMPHASIS ON THE FLUSHING PUMP MOTOR AND ASSOCIATED WITH (2) ELECTRICAL WIRING AND CIRCUITRY. FROM THESE INSPECTIONS AND THE LACK OF FURTHER DATA PRESENTED TO DETERMINE THE FIRE SOURCE ON AIR CANADA FLIGHT 797, THE FAA HAS DETERMINED THAT THE TRANSPORT CATEGORY AIRPLANES ARE SUFFICIENT FOR DETECTING DETERIORATED OR CORROSION-DAMAGE CONDITIONS. (3) ACCUMULATION OF FLUIDS WHICH CAN CAUSE CORROSION OF WIRE HARNESSSES AND OTHER ELECTRICAL COMPONENTS. ADDITIONALLY, IN RESPONSE TO SAFETY RECOMMENDATION A-83-73, WHICH ALSO RESULTED FROM THE BOARD'S INVESTIGATION OF THE AIR CANADA INFLIGHT FIRE, THE FAA INFORMED THE BOARD THAT IT HAD PERFORMED A DETAILED EVALUATION OF THE LAVATORY PUMP MOTOR SYSTEMS OF TRANSPORT CATEGORY AIRPLANES. THIS EVALUATION LEAD TO THE DEVELOPMENT OF TOILET FLUSH MOTOR POWER WIRE HARNESSSES ON CERTAIN MODELS OF MCDONNELL DOUGLAS DC-9 AIRPLANES.

Response Date: 11/17/1987 From: NTSB

Response:

In its letter to the Safety Board of October 21, 1983, the FAA informed the Board that it had tested both new and used lavatory pump motor units and found that an overheated unit would not produce sufficient heat to generate a fire. Additionally, while the FAA's inspections of numerous transport category aircraft did not disclose any maintenance or cleaning problems, the FAA issued a General Notice (GENOT 8320.283) which requested that the principal inspectors assure that assigned operators have adequate programs to inspect areas susceptible to the accumulation of Data Source: NTSB Recommendations to FAA and FAA Responses waste materials or the accumulation of fluids which can cause corrosion of wire harnesses and other electrical components. In our letter of June 12, 1984, the Board informed the FAA that it would withhold comment on the FAA's actions pending completion of our investigation of the subject accident. In response to Safety Recommendation A-83-73, which also resulted from the Board's investigation of the Air Canada inflight fire, the FAA informed the Board that it had performed a detailed evaluation of the lavatory pump motor systems of transport category airplanes. This evaluation led to the development of an Airworthiness Directive which required the modification of toilet flush motor power wire harnesses on certain models of McDonnell Douglas DC-9 airplanes. The Safety Board has considered the FAA's actions with regard to the lavatory flushing pump motor and its associated electrical components and wiring harness, and finds that these actions comply with the intent of the above recommendations. Therefore, Safety Recommendations A-83-47 and A-83-48 have been classified as "Closed--Acceptable Alternate Action." Your efforts to improve aviation safety are appreciated.