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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: February 8, 1984

Forwarded to:

Honorable Michael J. Fenello
Acting Administrator
Federal Aviation Administration
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-84-12 and -13

On May 1, 1979, the National Transportation Safety Board issued to the Federal Aviation Administration (FAA) a series of Safety Recommendations pertaining to airplane passenger evacuation systems. These recommendations resulted from the Safety Board's investigation of the March 1, 1978, accident involving a Continental Airlines DC-10 which caught fire after it overran the departure end of runway 6R following a rejected takeoff at the Los Angeles International Airport. All of the airplane passenger evacuation devices eventually failed as a result of flame impingement, radiant heat, and a girt fabric overload.

In part, the thrust of these recommendations was to encourage the FAA (1) to develop a test project for fabrics used in passenger evacuation devices in order to establish certification standards for fire-resistant fabrics for these devices, (2) to issue a Technical Standard Order (TSO) prescribing use of fire-resistant fabrics, and (3) to take appropriate action to require that all passenger evacuation devices on air carrier airplanes, including those already in service, ultimately meet improved fire resistance standards.

On June 3, 1983, the FAA issued TSO-C69a, "Emergency Evacuation Slides, Ramps, and Slide/Raft Combinations." This TSO requires use of materials which meet specified flammability criteria and prescribes the test requirements and test method to be used for determining a fabric's resistance to radiant heat. This TSO is responsive to Safety Recommendations A-79-16, A-79-18, and A-79-19; accordingly, the Safety Board places these Safety Recommendations in a "Closed—Acceptable Action" status.

With respect to Safety Recommendation A-79-17 which asked for the issuance of an Airworthiness Directive to strengthen the girt fabric of the PICO 26-foot slide/raft, we note that the new TSO requires an additional asymmetrical load test for devices which are equipped with outrigger pontoons, such as the PICO 26-foot slide/raft. That section of the TSO states in part that "additional test loads must be applied to account for

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asymmetrical loads which would result from evacuees inadvertently entering the pontoon areas during an emergency evacuation." We believe that the new TSO strength requirement will suffice for newly manufactured evacuation slide/raft devices.

However, the Safety Board is concerned that the girt strength of in-service pontoon-equipped devices has not been addressed. As we stated in our May 1, 1979, Safety Recommendation letter, "The failed slide involved a PICO 26-foot slide/raft. Its girt width was about 3 1/2 feet wide, while the slide, including the raft extensions (sponsons), was about 14 1/2 feet wide. Because of its shallow angle, passengers were unable to escape from the bottom of the slide as fast as others entered from the aircraft. Consequently, passengers attempted to climb across one of the sponsons to escape from the slide. Because of the additional width of the slide created by the sponsons, an unusually high torsional moment caused uneven tensile loads on the girt fabric and it tore at the girt bar." Since no action has been taken with respect to in-service evacuation devices to prevent a recurrence of the unsafe evacuation conditions encountered during the March 1, 1978, Continental accident, the Safety Board reiterates to the Federal Aviation Administration (FAA) Safety Recommendation A-79-17:

> Issue an Airworthiness Directive requiring the strengthening of the girt fabric of the PICO 26-foot slide/raft to insure its reliability when the unit is deployed at its most critical angle.

Furthermore, notwithstanding the issuance of TSO-C69a, the Safety Board is concerned (1) that current slides which do not meet the heat resistant requirements are to be taken out of service only on an attrition basis, (2) that under the authority of TSO-C69 manufacturers can continue to produce slides which do not meet the TSO-C69a specifications until December 3, 1984, and (3) that TSO-C69 slides can continue to be installed on airplanes as long as they are available. Since the FAA has not set a date by which the slides on older airplanes must be replaced with slides meeting the requirements of TSO-C69a and these devices have a service life of about 15 years, equipment which does not meet the new TSO could conceivably remain in service until the year 2000.

Moreover, slide raft devices which do not utilize the more fire resistant materials can continue to be manufactured indefinitely under specific provisions of several airplanes' type certificates until FAA acts to rescind the authority to manufacture evacuation slides conferred by these airplanes' type certificates.

While the Safety Board has closed its earlier Safety Recommendations on the basis that the FAA's actions have met their thrust, the Board believes nevertheless, that requirements for timely universal installation of evacuation slides meeting the newly prescribed standards must be instituted if realistic improvement in this area of passenger safety is to result.

Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

> **Require that after December 3, 1984, only devices which meet the standards of TSO-C69a will be acceptable for installation on newly manufactured airplanes which are to be equipped with passenger evacuation devices. (Class II, Priority Action) (A-84-12)**

Specify a date by which airplane passenger evacuation devices which do not meet the standards of TSO-C69a must be taken out-of-service or upgraded to meet the standards of TSO-C69a. (Class II, Priority Action) (A-84-13)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, ENGEN, and GROSE, Members, concurred in these recommendations.

By: Jim Burnett
Chairman