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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: May 1, 1979

Forwarded to:

Honorable Langhorne M. Bond
Administrator
Federal Aviation Administration
Washington, D. C. 20591

SAFETY RECOMMENDATION(S)

A-79-12 through -15

The National Transportation Safety Board's investigation of a Columbia Pacific Airlines Beechcraft model B-99 accident at the Richland Airport, Richland, Washington, on February 10, 1978, disclosed problems that could adversely affect the timely egress of passengers and could reduce the effectiveness of crash/fire/rescue personnel.

Although the Safety Board classified this accident as nonsurvivable because the crash forces exceeded the tolerable limits of the human body, the outcome could well have been equally fatal had impact forces been survivable. The Safety Board reached this conclusion after predictable evacuation and rescue problems were discovered in the aircraft because of a safety chain on the airstair door; the absence of external markings and operating instruction for the emergency exits; and the lack of training of CFR personnel.

The Safety Chain

Since the cabin of the accident aircraft was destroyed by fire, the Safety Board examined an identical B-99 owned by the airline. This examination revealed that when the door was lowered with the safety chain attached, the weight of the door prevented unlatching the chain. The airstair door opens outward, with hinges at its base. The proper sequence to open the door consists of two operations -- first, unlatch the safety chain located at the rear edge of the door, and second, rotate the door handle located in the middle of the door.

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Since the safety chain was not identified on the door, an untrained passenger could first rotate the door handle. This action opens the door to the limit of the safety chain, or about 6 inches. With the door in this position, the safety chain cannot be unlatched unless sufficient slack is created in the chain by pulling the door toward the closed position.

In November 1977, the Beech Aircraft Corporation issued Class I Service Instruction Notice No. 0956, which instructed all Beechcraft owners with aircraft series 65, 70, 80, 88, 90, 99, and 100 to remove and discard the safety chain. Beechcraft considered this to be a mandatory modification. The FAA, as operators of Beechcraft series B-80 and 65A-90 aircraft, also received copies of this Service Instruction Notice. However, because of a negative evaluation of this Notice by the Aircraft Engineering Division of the Aircraft Services Base in Oklahoma City, Oklahoma, the FAA elected to ignore the Beechcraft Instruction; thus, FAA's aircraft are being operated with the safety chains installed.

The Board learned during this investigation that the FAA, while not objecting to the chain's removal, had required Columbia Pacific to use the safety chains on its two B-99's and its Piper Navajos, as long as the company retained the chain on the door. A Safety Board survey of 9 commuter airlines operating 45 B-99 aircraft revealed that 36 percent of these aircraft still have the safety chain installed.

This is not the first time that cabin door safety chains have come to the FAA's attention. The Flight Standards Technical Division addressed this subject with respect to the Beechcraft Model 18 aircraft in November 1976 in the General Aviation Inspection Aids, which were issued as Advisory Circular AC-20-7N CH-3. The problem was again addressed in the August 1977 AIDS Summary, and operators of the Model 18 were advised to remove the safety chains. Part of the reason given by FAA for the removal of the chain was that the safety chain was "not adequate for any particular load" and that it could obstruct egress as well as hinder ground crew entry in an emergency.

Since both the FAA and the Beech Aircraft Corporation have recognized the potential hazard of the safety chain on Beech aircraft, the Safety Board believes that a positive directive to remove the safety chains is needed and that the aircraft of other manufacturers should be investigated to determine if they have similar hazardous features.

Exit Identification

Our investigation also found that none of the exits were marked on the outside of the Beech 99 aircraft and no operating instructions were provided. Thus, had there been survivors who were unable to evacuate the aircraft for various reasons, they could have perished if rescue personnel had been unable to identify or open the exits from the outside. The Safety Board concludes that the location and operating instructions of the cabin emergency exits on air taxi aircraft should be marked on the outside of the fuselage so that they are readily apparent in an emergency. This requirement is included in the proposed Part 24 of the Federal Aviation Regulations for Light Transport Aircraft. However, we believe that it should be made a retroactive requirement for all larger air taxi and commuter aircraft. Since air taxi operators often operate from small airports where crash/fire/rescue response may vary considerably in quantity and sophistication, outside marking of exits could insure that untrained rescue personnel can readily identify and operate these exits.

Crash/Fire/Rescue Training

The investigation also revealed that some of the Richland firefighters who responded to the accident had no knowledge of the existence of the safety chain or of the location, number, or proper operation of the emergency exits on the aircraft. Therefore, the Safety Board reiterates its Recommendation A-77-12, dated March 14, 1977, in which it recommended that the FAA: "Formulate, in cooperation with the National Fire Protection Association, a training program for use by local fire departments as a minimum standard for firefighting personnel involved in CFR activities at noncertificated airports." The FAA has indicated that, while it has taken steps to implement our recommendation, the formulation of a training program is at a very preliminary stage and the completion date is unknown. The Board urges expeditious completion of this training program.

In view of the above, the National Transportation Safety Board recommends that the Federal Aviation Administration:

> Issue an Airworthiness Directive to require compliance with Beechcraft Service Instruction Notice No. 0956. (Class II - Priority Action)(A-79-12)

Evaluate the safety of removing door safety chains from other aircraft so equipped and used in passenger revenue operations with a view toward simplified exit of passengers and entry by CFR personnel. (Class II - Priority Action)(A-79-13)

Amend 14 CFR 135.169 by incorporating the general provisions of 14 CFR 121.310 (g) (1), (2), and (3) with regard to exit conspicuity and operability on air taxi aircraft with a capacity of 10 or more passengers. (Class II - Priority Action)(A-79-14)

Amend 14 CFR 135 Appendix A (paragraph 32) by incorporating the general provisions of 14 CFR 25.811 (f) (1), (2), (3) with regard to exit conspicuity and operability. (Class II - Priority Action)(A-79-15)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and HOGUE, Members, concurred in the above recommendations.

By: James B. King
Chairman

Safety Recommendation Reiteration List

SR Number	Reiteration Number	Report Number	Report Date	Accident Description	Accident City	Accident State	Accident Date
A-79-15	1	AAR-82-09	8/14/1982	Lufkin Industries, Inc., Beechcraft Super King Air, BE-200, N456L	Parker	CO	3/27/1980