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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: June 1, 1979

Forwarded to:

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

SAFETY RECOMMENDATION(S)

A-79-35 through -39

On May 8, 1978, a National Airlines Boeing 727 crashed during an approach to the Pensacola Regional Airport at Pensacola, Florida. The aircraft came to rest in 12 feet of water in the Escambia Bay about 3 miles off shore. The 52 passengers and 6 crewmembers successfully evacuated from the aircraft, and 3 passengers drowned. Two flight attendants and two passengers were injured seriously, and seven passengers were injured slightly.

There was no warning of the impact and no "preditching" preparation was made. Although decelerative forces were moderate, the cabin floor under the last two seat rows was destroyed and the aft tail cone access door (with its jumpseat) separated from the aircraft structure. The aft cabin was inundated almost immediately and water was about 4 feet deep in the forward cabin when the aircraft came to rest on the bottom of the bay.

As the aircraft settled tail-first in the water, the occupants evacuated from six of the eight exits. The survivors experienced several difficulties with emergency equipment both during and after the evacuation.

Seat Cushions -- The aircraft was not equipped, nor was it required to be equipped, with approved flotation-type seat cushions. However, at least 14 passengers said that they used or attempted to use the cushions for flotation; several passengers assumed that seat cushions in all aircraft could be used for flotation. Two crewmembers said that they had assumed that the cushions were approved flotation devices and two other crewmembers were not sure.

At the Safety Board's request, the Air Transport Association surveyed 25 member airlines to determine which air carriers equip their aircraft with flotation-type cushions. The survey revealed that of the ~~23~~ 33 air carriers, 13 have approved flotation cushions on all aircraft, 3 have no flotation cushions, and 9 have a mixed fleet -- some aircraft equipped with these devices and others not so equipped. The Board is of the opinion that all passenger

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carrying aircraft should be equipped with flotation-type seat cushions so that passengers will have an immediate means of flotation when insufficient time is available to obtain more conventional flotation equipment.

Lifevests -- The survivors experienced numerous problems with locating, removing, unpacking, donning, and inflating lifevests, because they either did not have time to obtain them or they did not realize that the aircraft was in the water. Crewmembers either threw lifevests to passengers who were in the water or swam and carried lifevests to the passengers.

Forty-nine passengers responded to a Safety Board questionnaire that elicited information on difficulties experienced with the flotation devices. Twenty-two percent of the respondents had never seen a demonstration of how to don a lifevest. Demonstrations were not required and none were given on the previous two legs of this flight; however, 20 passengers who were onboard the aircraft for the Tampa-New Orleans segment of the flight did receive such a demonstration. Fourteen percent had no problems obtaining vests from beneath their seats, but others had difficulty locating and removing vests from the fabric pouches underneath their seats. Over 32 percent of those responding had difficulty donning their lifevests and at least 8 percent reported difficulty in unpacking their vests from the sealed plastic bags. Over 18 percent had difficulty inflating their vests. Most of the lifevests recovered after the accident had only one of the two chambers inflated. Few passengers were able to properly fasten and tighten the vest adjustment straps.

Almost 9 years ago, as a result of the Overseas National Airlines DC-9 ditching in the Caribbean on May 2, 1970, the Safety Board, in Safety Recommendation CY-70-46, recommended that the FAA "Reexamine the methods utilized aboard aircraft for holding lifevests with a view towards eliminating any obstructions to expeditious access in the event of an emergency requiring them." The accident at Pensacola shows that this problem still exists. The Safety Board believes that inadequate maintenance of the closure devices of the storage pockets may cause this problem.

On June 28, 1972, the Safety Board recommended that the FAA "Reexamine the applicable Technical Standard Order governing the design and manufacture of lifevests with a view toward development of more comfortable, standardized, and less complicated lifevests for use in air carrier aircraft." (Recommendation A-72-64)

Our staff has learned informally that the FAA is preparing a Notice of Proposed Rule Making which is based largely on Aerospace Recommended Practice 1354 entitled "Individual Inflatable Life Preservers," issued in January 1976 by the Society of Automotive Engineers' Cabin Safety Provisions Committee.

Our informal information from FAA personnel suggests that the modification of TSO - C13c for lifevests addressed in this NPRM may alleviate many of the problems common to both the Overseas National and National Airlines accidents.

Liferafts and Slides -- The aircraft was not equipped with liferafts. Although the Tampa - New Orleans segment of this flight involved extended overwater operations as defined by 14 CFR 1.1, an amendment to the carrier's Operations Specifications granted by the FAA on July 19, 1977, authorized National Airlines to operate this flight without liferafts. The aircraft was equipped with four evacuation slides; none were deployed, however, despite the fact that the crewmembers had received training and instructions in the value and use of these slides as emergency flotation devices. The Safety Board believes that, had one or more of these evacuation slides been used, fewer persons might have died in the accident.

The adequacy of flotation equipment availability in air carrier aircraft goes beyond this immediate accident. Almost 7 years ago, as a result of a Special Study on the Overseas National accident, the Safety Board recommended that the FAA expedite the development and installation of slide/raft combinations in air carrier aircraft. (Recommendation A-72-65) In that accident, none of the liferafts were launched successfully; however, an evacuation slide was deployed which saved many lives by serving as a rallying point for the survivors. The Safety Board believes that technology presently is available to develop slide/rafts for narrow-bodied aircraft as has been done for the wide-bodied aircraft; however, the FAA must provide the impetus for such a project if it is to be brought about in a timely fashion. We believe that the issuance of a Technical Standard Order (TSO) on slide/raft devices for all large passenger-carrying aircraft would be a step in that direction. Safety Recommendation A-79-19, recommending the issuance of such a TSO was issued by the Board on April 17, 1979.

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

> Issue an Air Carrier Operations Bulletin requesting Principal Operations Inspectors to insure that air carrier training programs include instructions to crewmembers with respect to the availability, capabilities, and use of flotable seat cushions on their aircraft. (Class II - Priority Action) (A-79-35)

> Amend 14 CFR 121.340 to require that all passenger-carrying air carrier aircraft be equipped with approved flotation-type seat cushions. (Class II - Priority Action) (A-79-36)

Amend 14 CFR 121.571 to require that passengers be briefed on the location of approved flotation devices before each flight that requires the aircraft to pass over a large body of water during takeoff, departure, approach, or landing. (Class II - Priority Action) (A-79-37)

Issue an Air Carrier Maintenance Bulletin instructing Maintenance Inspectors to emphasize to their assigned air carrier maintenance departments the need to maintain in a workable condition the closures of lifevest stowage pockets. (Class II - Priority Action) (A-79-38)

Expedite the issuance of the Notice of Proposed Rule Making which addresses revisions to TSO - C13c (14 CFR 37.123) for lifevests. The revisions to this TSO should eliminate the difficulties identified in this accident with respect to the packaging, donning, and operation of lifevests by uninstructed subjects under stress. (Class II - Priority Action) (A-79-39)

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-79-036	1	SS-85-02	6/12/1985	safety study of Air Carrier Overwater Emergency Equipment and Procedures	N/A	N/A	N/A