

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: January 10, 1974

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Forwarded to:

Honorable Alexander P. Butterfield  
Administrator  
Federal Aviation Administration  
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-73-119 thru 122

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Investigation of the Pan American World Airways, Inc., Boeing 707 accident at Boston, Massachusetts, on November 3, 1973, has disclosed some findings about which the National Transportation Safety Board is concerned.

Our review of the involved cargo compartment ventilation system leads us to believe that sections 25.855(e)(2) and 25.857(e)(3) and (4) of the Federal Aviation Regulations (FAR), regarding cargo and baggage compartments, are not complied with in the present Boeing 707 configurations.

Two Boeing 707's involved in accidents this year had smoke or fire in the cabin area. On each flight the crewmember in the left seat opened the cockpit side window for visibility and ventilation. In each case the smoke from the cabin area was drawn forward into the cockpit and out through the window.

According to FAR 25.857, a class "E" cargo compartment must have a "means to exclude hazardous quantities of smoke, flames, or noxious gases from the flight compartment." The smoke chute installed in this aircraft by the manufacturer provides no means to contain smoke or fumes that emanate from the cabin or cargo area, nor to prevent smoke or fumes from entering the cockpit through the lower electronic compartment. Therefore, the installation of the smoke chute and the open grill access to the lower electronics compartment in the cockpit floor does not appear to comply with the intent of FAR 25.857.

The Boeing Company has issued Service Bulletin 2695 for 707 aircraft, on January 8, 1968, which permits installation of a smoke chute in the passenger-cargo configuration similar to that used in the all-cargo configuration. The cargo compartment in the passenger-cargo

configuration is ventilated down through the cabin floor forward into the lower avionics area. No mechanical means exist for shutting off air flowing from the cabin-cargo areas into the avionics compartment.


Our staff learned also that the associated flight tests required in FAR 25.855 had not been made during the approval of the Boeing 707 - 321C.

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

1. Take immediate steps to determine whether the present smoke chute installation on Boeing 707 cargo and cargo-passenger aircraft satisfies the provisions of FAR 25.855 and 25.857.
2. Effect retroactive modifications on all subject aircraft to ensure full compliance with provisions of FAR 25.855 and 25.857 pertaining to prevention of hazardous quantities of smoke, flames, or noxious gases from entering the flightcrew compartment.
3. Provide operators of the subject aircraft with data to enable flightcrews to identify smoke sources, and require operators to establish procedures in their operating manuals to control and evacuate smoke effectively during the specific flight regimes.
4. Reevaluate previous smoke evacuation tests conducted during certification relative to the quantity and source of smoke as applicable to smoke evacuation procedures currently employed by operators of Boeing 707 aircraft.

Our Bureau of Aviation Safety staff is available for further consultation.

McADAMS, BURGESS, and HALEY, Members, concurred in the above recommendations. REED, Chairman, and THAYER, member, were absent, not voting.

  
By: William R. Haley  
Acting for the Chairman