



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: August 30, 2004

In reply refer to: A-04-53 and -54

The Honorable Marion C. Blakey
Administrator
Federal Aviation Administration
Washington, D.C. 20591

On September 28, 2003, Emirates Airlines flight EK404, a Boeing 777-300, was in level cruise flight when the flight crew received a fire warning in the aft/bulk cargo compartment. The airplane was on a regularly scheduled flight from Dubai, United Arab Emirates, to Singapore with 380 passengers, 16 cabin crew and 2 flight crew on board. The flight crew followed the instructions in the quick-reference handbook checklist and discharged fire extinguishing agent into the aft and bulk cargo compartments. The flight crew diverted¹ the airplane to Chennai, India, where an overweight landing was accomplished. After landing in Chennai, the airplane taxied to a remote parking stand, and the passengers were rapidly disembarked. No injuries to the passengers or crew were reported.²

To determine the source of the cargo fire warning, the airplane's aft and bulk cargo hold doors were opened under airport fire services observation, and the containers and baggage were removed. A small piece of luggage was found smoldering in the bulk cargo compartment where it had been in direct contact with a ceiling light fixture, which contained a halogen light bulb. Emirates Airlines' final report concluded that the intense heat from the halogen bulb caused the ignition of the bag, which was the source of the subsequent cargo fire warning during the flight. Although Emirates Airlines' investigation of this incident has concluded, the Safety Board continues to examine the facts and circumstances of the event and the performance of the cargo compartment smoke detection and cargo compartment fire extinguishing system. In the meantime, findings to date have identified a potential hazard that needs immediate action by the Federal Aviation Administration (FAA).

As a result of the September 28, 2003, event, Boeing issued Fleet Team Digest 777-FTD-33-03003 (last revised March 2, 2004) informing 777 operators that it was evaluating the replacement of the halogen light bulbs with lower temperature incandescent lamps. Boeing's

¹ The flight crew decided to divert to Chennai after the first illumination of the fire warning; the warning illuminated two more times after the crew discharged the extinguishing agent.

² Emirates Airlines conducted the investigation of this event. The National Transportation Safety Board learned of the incident after the final report was published.

fleet team digest also includes a section, titled "Operator Actions," which notes that Emirates Airlines has implemented a temporary procedure to prohibit loading material within 2 inches of the cargo compartment ceiling. The procedure is intended to prevent the combustion of materials due to the heat from halogen light bulbs.

Since issuing the fleet team digest, Boeing has indicated to the Safety Board that it will issue a service bulletin (SB) by July 2004 directing 777 operators to replace the halogen light bulbs in cargo compartment light fixtures with the lower temperature incandescent light bulbs. Incandescent bulbs are currently used in 737-600/700/800 (next generation) cargo compartment light fixtures, which are identical to the 777 light fixtures. Therefore, 777 light fixtures would need no alteration to accommodate the incandescent bulb. In addition, the FAA has indicated that it will issue an airworthiness directive (AD) within 6 to 12 months of the SB's issuance mandating compliance with the SB.

The Safety Board agrees with Boeing's and the FAA's planned actions but is concerned that during the time needed for the FAA to issue an AD, a fire risk exists in 777 cargo compartments that warrants more urgent action. Because replacing halogen bulbs with incandescent light bulbs does not require modifying the light fixture and can be accomplished with a bulb that is in stock, the Safety Board believes that the FAA should require Boeing 777 operators to replace halogen light bulbs in the cargo compartment with incandescent light bulbs on an expedited schedule. In addition, all Boeing 777 operators should adopt a temporary restriction of placing material near the cargo compartment ceiling until the halogen bulbs are replaced. Therefore, the Safety Board believes that the FAA should issue to all Boeing 777 operators an immediate restriction on placing baggage or other material near cargo compartment light fixtures with halogen light bulbs until the halogen bulbs are replaced with incandescent light bulbs.

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

Require Boeing 777 operators to replace halogen light bulbs in the cargo compartment with incandescent light bulbs on an expedited schedule.
(A-04-53)

Issue to all Boeing 777 operators an immediate restriction on placing baggage or other material near cargo compartment light fixtures with halogen light bulbs until the halogen bulbs are replaced with incandescent light bulbs. (A-04-54)

Chairman ENGLEMAN CONNERS, Vice Chairman ROSENKER, and Members CARMODY, HEALING, and HERSMAN concurred with these recommendations.

By: Ellen Engleman Connors
Chairman