

NTSB Recommends Fire Suppression Systems on All Cargo Airplanes

The National Transportation Safety Board has recommended that the Federal Aviation Administration (FAA) require all cargo airplanes operating under Part 121 Code of Federal Regulations install fire suppression systems. This recommendation is a result of the Board's investigation of a UPS DC-8 cargo fire in Philadelphia last year.

The Safety Board released a final report on December 4, 2007 that determined the probable cause of this accident was an in-flight fire that initiated from an unknown source within one of the containers in the main cargo compartment. The report concluded that the threat from cargo fires could be mitigated by the installation of fire suppression systems.

On February 7, 2006, United Parcel Service Company (UPS) flight 1307, a McDonnell Douglas DC-8-71F, landed at Philadelphia International Airport (PHL), Philadelphia, Pennsylvania, after a cargo smoke indication in the cockpit. The captain, first officer, and flight engineer evacuated from the airplane after landing. The flight crewmembers sustained minor injuries, and the airplane and most of the cargo were destroyed by fire after landing.

"While we may not know the source of the fire which caused this accident, our investigators have done an excellent job of highlighting possible solutions that will address hazards associated with in-flight fires," said NTSB Chairman Mark V. Rosenker.

The report states that examinations of the recovered components revealed no evidence of any preexisting power plant, structural, or system failures. Also noted was that given the length of time that the fire burned and the resulting destruction of potentially helpful evidence, the post-fire condition of the cargo containers and contents and the surrounding airplane



structure provided no evidence that indicated what initiated the fire.

The investigation also revealed that several electronic devices containing secondary lithium batteries were on board the airplane. Unfortunately, the lack of information about the devices or the batteries prevented any determination of whether these batteries were associated with previously known recalls and contributory and/or causal to the fire. The exact origin and cause of the in-flight fire onboard the airplane could not be determined due to the destruction of potentially helpful evidence; however, available evidence suggests that the fire most likely originated in the main cargo compartment.

Safety Board investigators reviewed the fire and smoke detection system certification requirements. The examination revealed that the current certification test standards and guidance for smoke or fire detection systems on board many aircraft are not adequate. They do not account for the effects of cargo containers on airflow

around the detection sensors and on the containment of smoke from a fire inside a container.

The report states that evidence indicates that the fire initially did not generate a significant amount of smoke and most likely initiated as a smoldering fire inside a cargo container. The construction of the cargo containers, which results in restricted airflow in or out of the container, likely inhibited the growth and detection of the fire in its initial stages.

"We have identified several safety issues where improvements in the aviation cargo industry could make transporting of goods safer. Our safety recommendations are essential tools that if implemented can ensure that this will happen," Rosenker said.

A synopsis of the Board's report, including the probable cause and recommendations, is available on the NTSB's website, www.ntsbt.gov, under "Board Meetings."

Source: NTSB