**DREAMLINER FIRE**

**Firefighter injured when battery explodes**

An internal short circuit within a cell of a Boeing 787 Dreamliner’s auxiliary power unit (APU) battery spread to adjacent cells and led to a thermal runaway which released fire and smoke aboard the just deplaned flight. A firefighter responding to the fire was injured when the battery exploded.

"Validation of assumptions related to failure conditions that can impact safety is a critical step in the development and certification of an aircraft. The validation process must employ a level of rigor that is consistent with the potential hazard to the aircraft in case an assumption is incorrect." - NTSB report

---

**Problem**

**What**

**Date**

January 7, 2013

**When**

10:21 EST

**Where**

Boston, Massachusetts Airport

Boeing 787 Dreamliner

Cleaning airplane after deplaning

**Task being performed**

Firefighter injured when battery explodes

---

**Analysis**

**More Detailed Cause Map**

Add detail as information becomes available.

---

**Solutions**

Immediate actions that were required by the NTSB prior to a return to flight were to enclose the battery case, vent from the interior of the enclosure containing the battery to the exterior of the plane (keeping smoke out of the occupied spaces), and modify the battery to minimize the most severe effects from an internal short circuit. The NTSB also made multiple safety recommendations to the manufacturer, subcontractor and the FAA.

One of these recommendations was to ensure that assumptions are validated. According to the NTSB report, "Validation of assumptions related to failure conditions that can impact safety is a critical step in the development and certification of an aircraft. The validation process must employ a level of rigor that is consistent with the potential hazard to the aircraft in case an assumption is incorrect."