

CAST Cargo Fire Protection



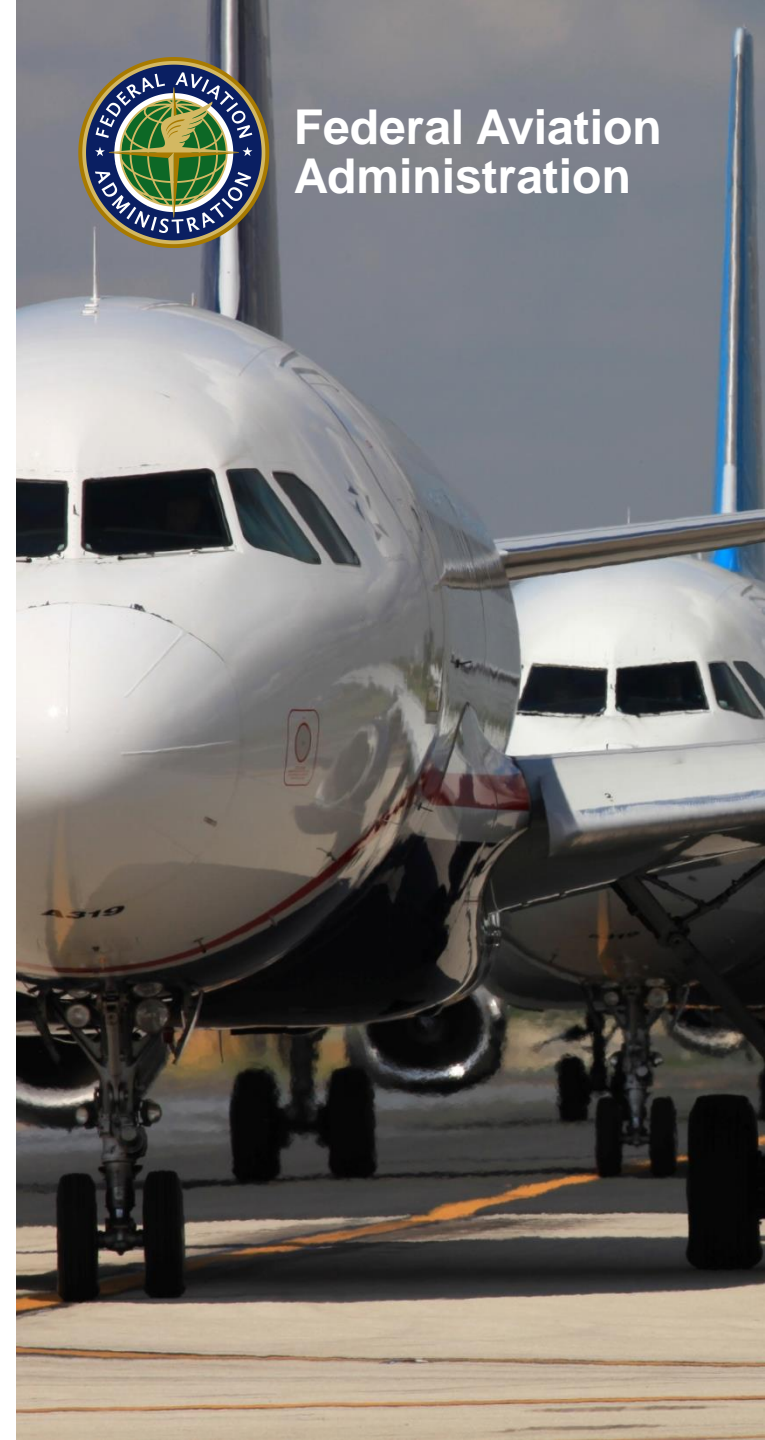
Presented to: International Aircraft Systems Fire Protection Working Group, Bremen, Germany

By: Dave Blake, FAA Fire Safety

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Federal Aviation
Administration



Structure

CAST Member Meetings (High Level)
Establishes Tasks and Outcomes



**JIMDAT- Joint Implementation Measurement Data
Analysis Team (Working Level)**
**Conducts activities to accomplish identified tasks and
outcomes.**

SE 126 Active Participants:

- **Co-Chairs: FAA Office of Hazardous Materials/UPS**
- **FAA (Transport Airplane Directorate, Office of Hazardous Materials, Aircraft Certification Service, Tech Center Fire Safety)**
- **Boeing**
- **Airbus**
- **UPS**
- **FedEx**
- **Kalitta Air**
- **ALPA**
- **IPA**
- **NACA**
- **Mitre Corp.**



Safety Enhancement 126

Cargo – Mitigations for Hazardous Material Fires

**Safety
Enhancement
Action**

To reduce the occurrence of accidents and incidents from fires involving high-consequence hazardous materials, develop systems to contain or suppress such fires as a final line of defense for personnel, equipment and cargo. The system should be usable for both ground (e.g., cargo loading/unloading, and ramp movement) and flight operations.



Output 1 (Current Effort)

Description:

- Results of an analysis defining and characterizing any gaps between:
- the causes and contributing factors of recent cargo fires that involved hazardous materials, and
 - existing technologies to contain or extinguish such fires.

Actions:

1. Task a working group to accomplish the following:
 - a. Review recent cargo accidents and incidents resulting from suspected hazardous material fires, including:
 - i. the UPS DC-8 accident at Philadelphia,
 - ii. the Asiana 747-400F accident over the Pacific Ocean, and
 - iii. the UPS 747-400F accident in Dubai.
 - b. Identify the causes and contributing factors of the cargo fires.
 - c. Identify and assess current and near-future technologies capable of suppressing or extinguishing hazardous materials fires for readiness, effectiveness, and feasibility of implementation. This should include technologies currently addressed in CAST SE 127.
 - d. Perform a gap analysis to determine R&D requirements for additional system requirements by correlating causes and contributing factors against available mitigations.
 - e. Prioritize, based on risk, the implementation of available mitigations and development of new mitigations.
 - f. Document the results in a report
2. Based on the report from action 1:
 - a. Develop follow-on plans in SE 126 for implementing the most effective and feasible recommendations (output 2), and
 - b. Develop research and development plans for addressing any gaps discovered (output 3).

Output 2

Description:

An implementation plan based on the results of output 1, to encourage deployment and incorporation of currently feasible technology mitigations that reduce the risk of cargo fires involving hazardous materials.

Actions:

1. A subset of the WG members from Output 1 will develop an implementation plan for currently available technology mitigations for hazardous material fires. The plan will include:
 - a. A risk assessment methodology to be used by operators to assess their specific operational risk
 - b. A review of current and potential future regulations governing the design for and transportation of HazMat
 - c. An agreement from manufacturers and operators to implement the identified technologies, as feasible
 - d. A plan to assess and revise FAA guidance material and policy as necessary to support implementation
 - e. ASIAs metrics to assess progress and performance of implementations
2. Affected organizations commit to carry out the implementation plan.

Output 3

Description:

Research plans for technology development to close any gaps identified in output 1.

Actions:

1. Develop research plans to close identified gaps. Plans to include:
 - a. Performing organizations
 - b. R&D expected outcomes
 - c. Funding sources
 - d. Performance monitoring
 - e. Regulatory impacts
 - f. Technology readiness levels and transition to industry / manufacturers.
2. Affected organizations commit to carry out the research and report back periodically to CAST

Safety Enhancement 127

Cargo- Fire Containment

This SE reduces cargo fires through new or revised standards for the construction of standardized and improved cargo containers that include fire-suppression or fire-containment systems.

Output 3

- Manufacturers will develop standardized fire suppression and/or containment systems in accordance with the standards developed in a new Technical Standard Order (TSO) for cargo containers/ULDs and/or fire containment bags/blankets.