

Risk Benefit Cost Analysis for Freighter Fire Suppression - Mitigation Model Update

International Aircraft Systems Fire
Protection Working Group Meeting

Long Beach, California, USA

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Federal Aviation
Administration

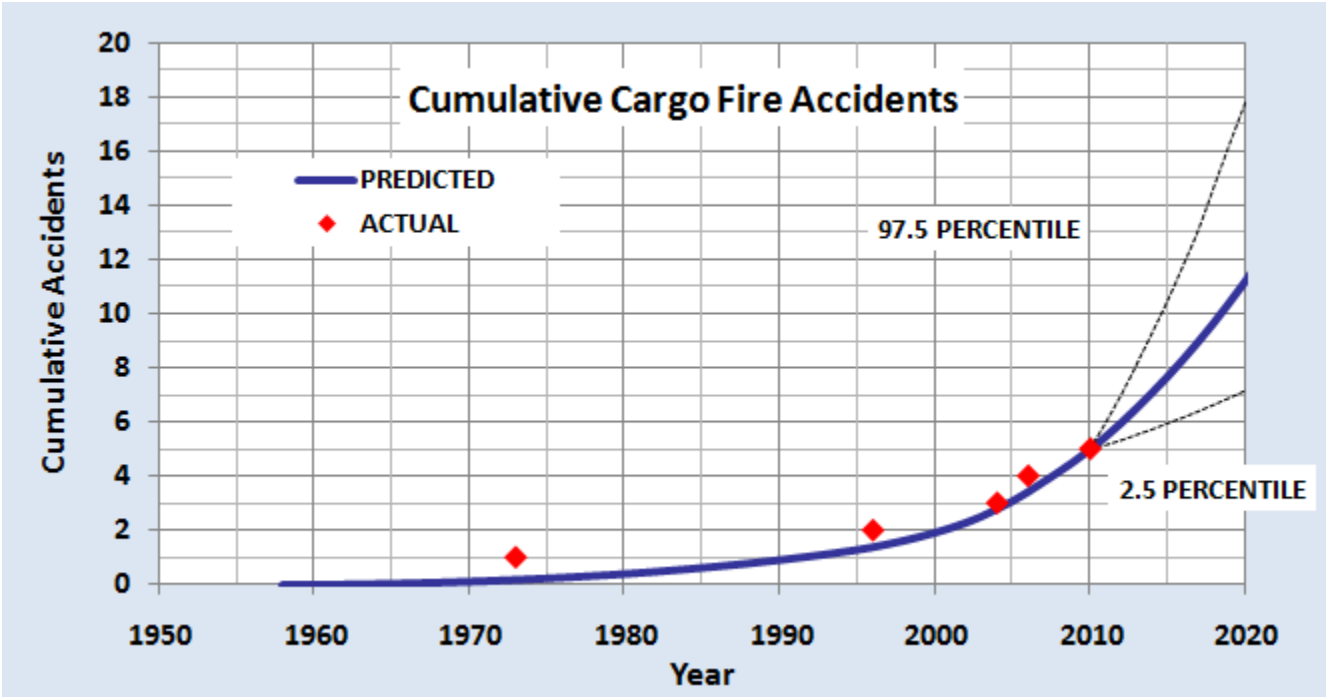


Background

- **5 cargo fire accidents on U.S. registered freighter airplanes to date**
- **2 with possible lithium battery involvement**
- **Future risks assumed proportional to cargo Ton-Miles**
- **FAA 2010 Risk Model predicted:**
 - 6 further accidents over next 10 years
 - Corresponding annual cost of accidents \$40 Million

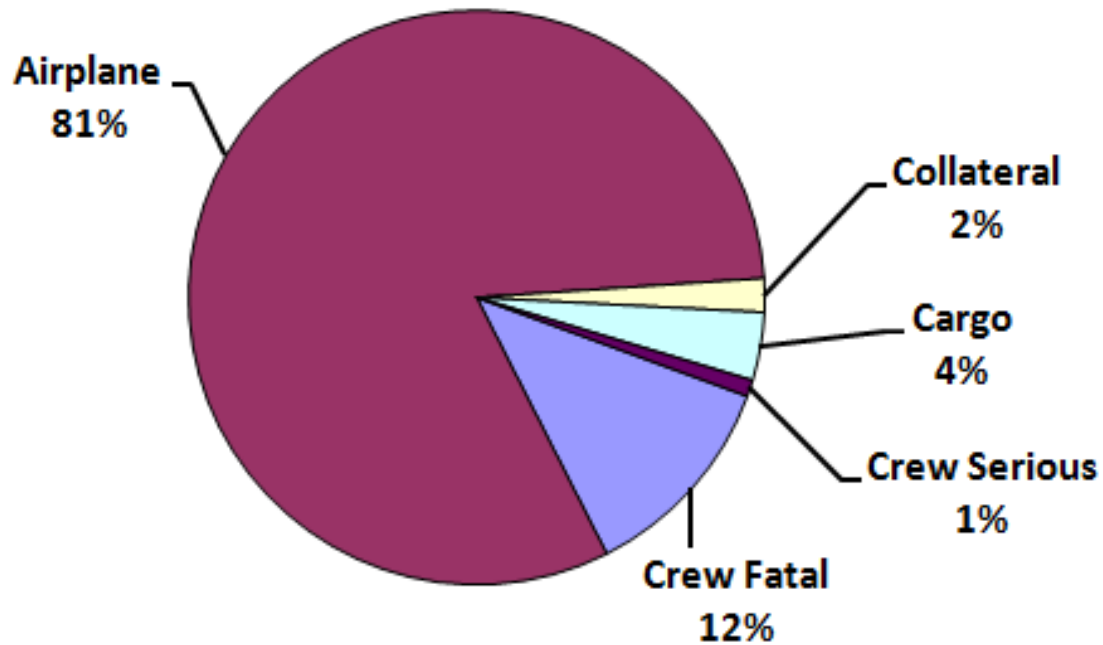


Future Cargo Fire Accident Prediction Without Mitigation



Accident Cost Breakdown

Average for all Airplane Types and Ages



Current Model

- **FAA Risk/Benefit/Cost Model published March 2012**
 - 7 selectable mitigation means – individual or combined
 - Mitigation can be applied to any of the 17 aircraft types in the U.S. Fleet
 - User variable mitigation effectiveness, costs, and introduction/completion dates
 - Model output gives future accident prediction, residual accident cost, benefit, mitigation cost and benefit/cost ratio
 - Links to model and report

[http://www.fire.tc.faa.gov/zip/FreighterRiskModel40\(Excel%202007\).zip](http://www.fire.tc.faa.gov/zip/FreighterRiskModel40(Excel%202007).zip)

<http://www.fire.tc.faa.gov/pdf/AR12-3.pdf>



Latest Model Development

- **2011 Data Update:**
 - U.S. Freighter airplane fleet
 - Ton-Miles etc
 - Mitigation Costs
- **Additional Capability to:**
 - Vary distribution of battery cargo between airplane types
 - Select proportion of each airplane type to be mitigated
 - Select proportion of battery cargo carried by mitigated airplanes
- **Publication Expected by Year end**

