



National Transportation Safety Board

Investigative Update of Battery Fire Japan Airlines B-787 - Jan 7, 2013

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Chairman

February 7, 2013





Auxiliary Power Unit (APU)
battery location

Main battery
location



Previous Findings

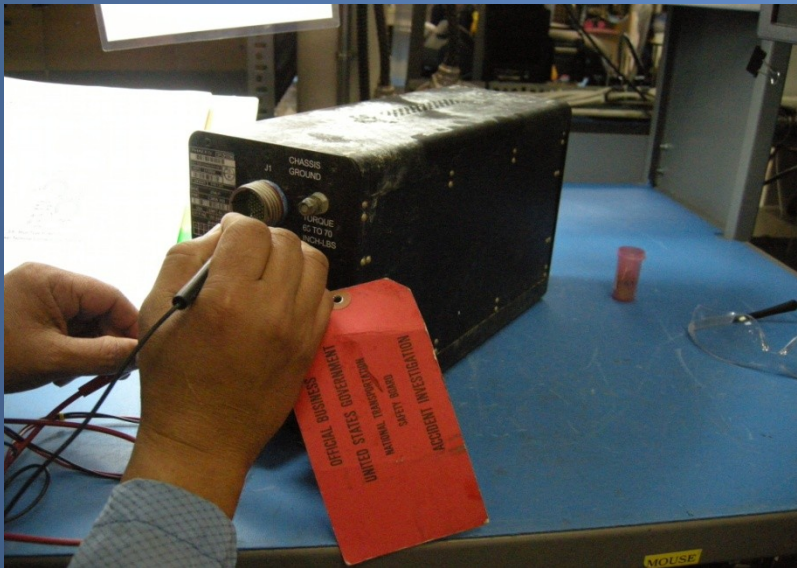
- Fire
- Thermal runaway
- Short circuiting

Progress

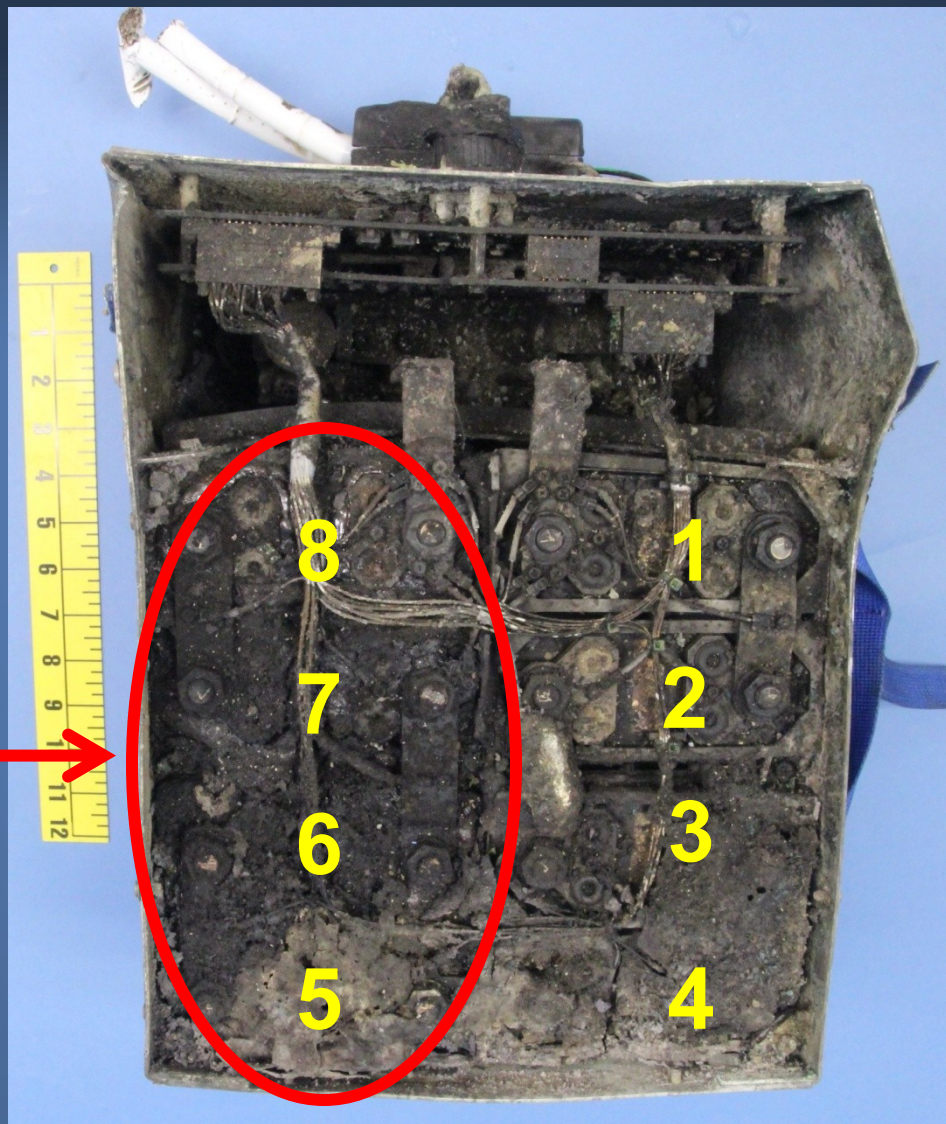
- Determine the origin of the battery fire
- Determine the cause of the fire
- Review certification documentation and testing

Investigative Work

Testing and Examinations



Thermal Damage

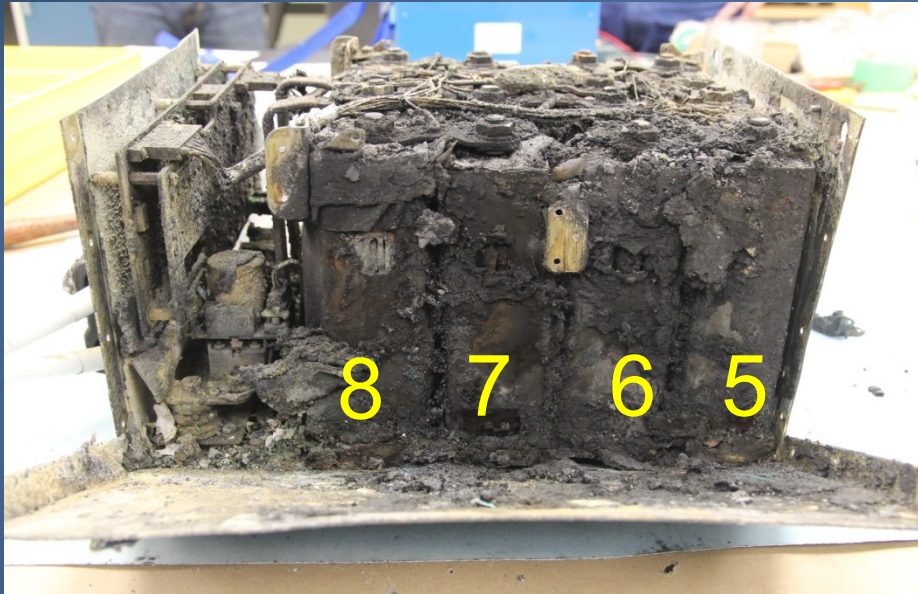


Area of most thermal damage



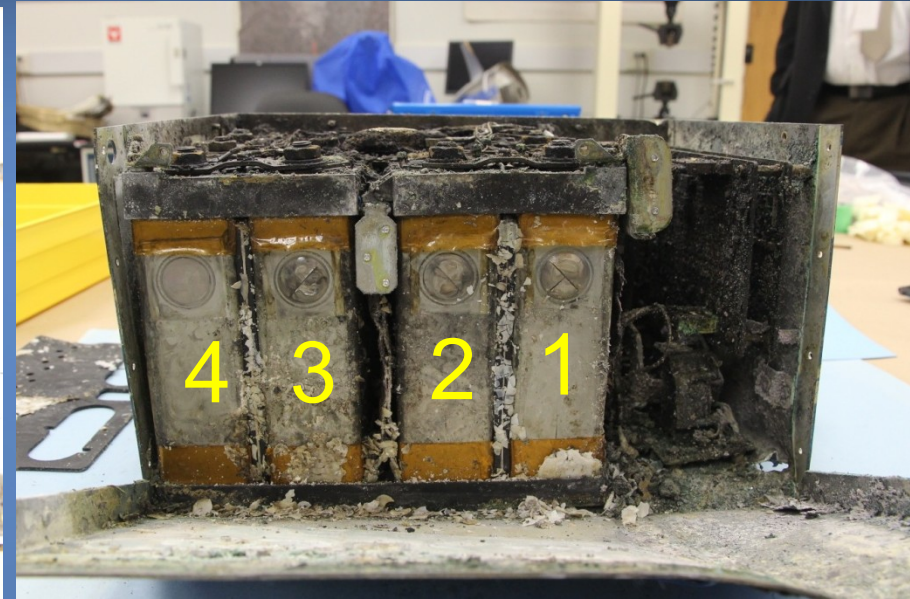
Inside the Battery

Cells on the left side



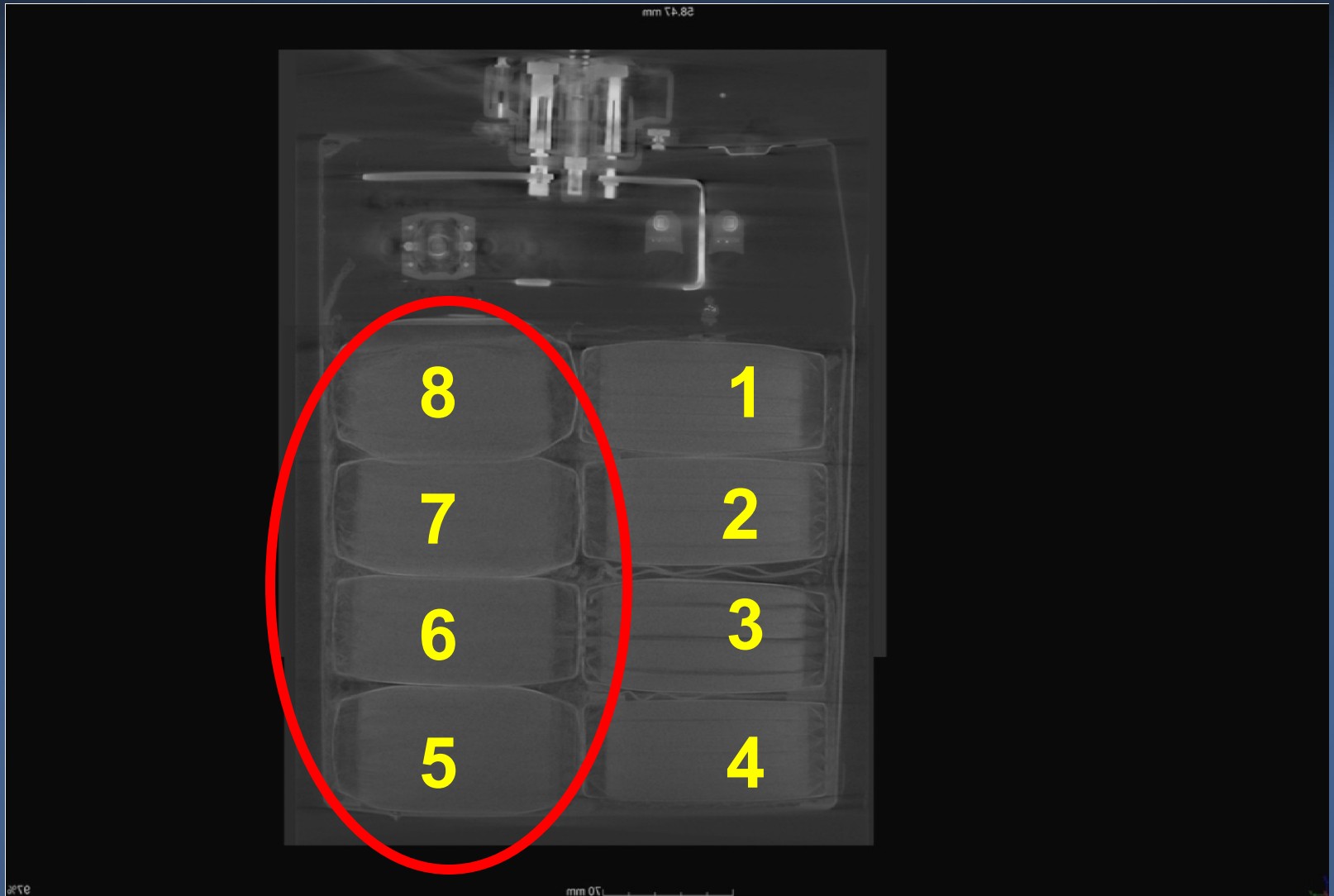
Substantial thermal damage

Cells on the right side

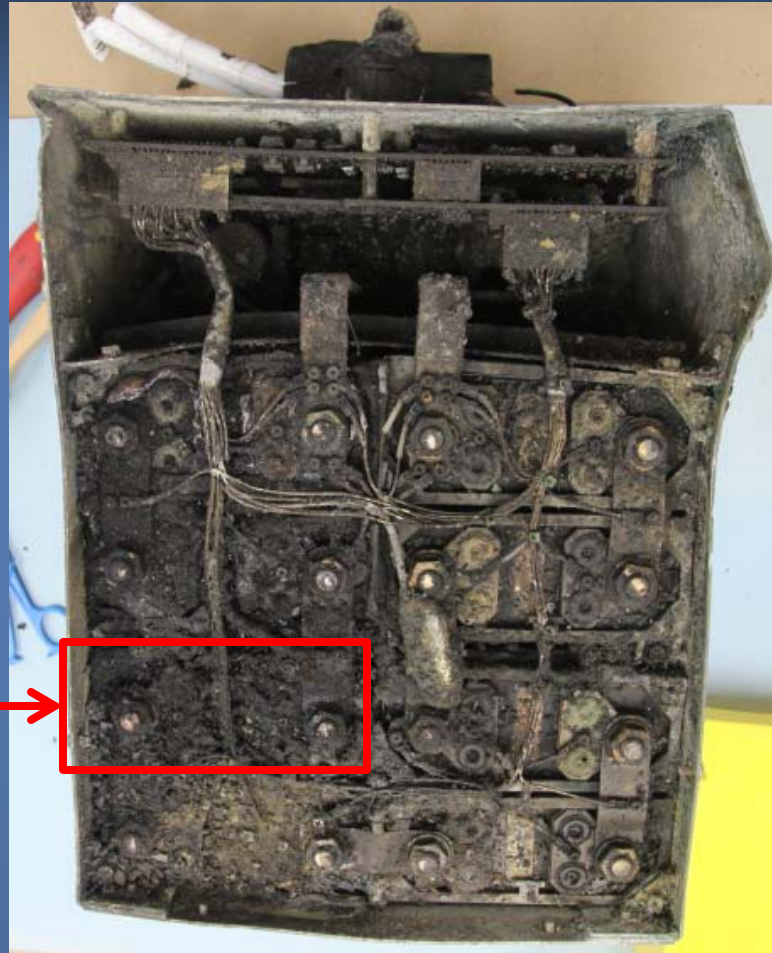


Moderate thermal damage

Mechanical Damage



Focus on Cell #6



Cell #6

Event battery from
JAL airplane

Damaged electrode in Cell #6



Hot Spot

Yellow card is a laboratory marking used for identification purposes.

Ruled Out

- Mechanical impact damage

Damage from
firefighting
efforts



Ruled Out

- External short circuit of cell or battery



Viewed From Outside
(Post-clean)



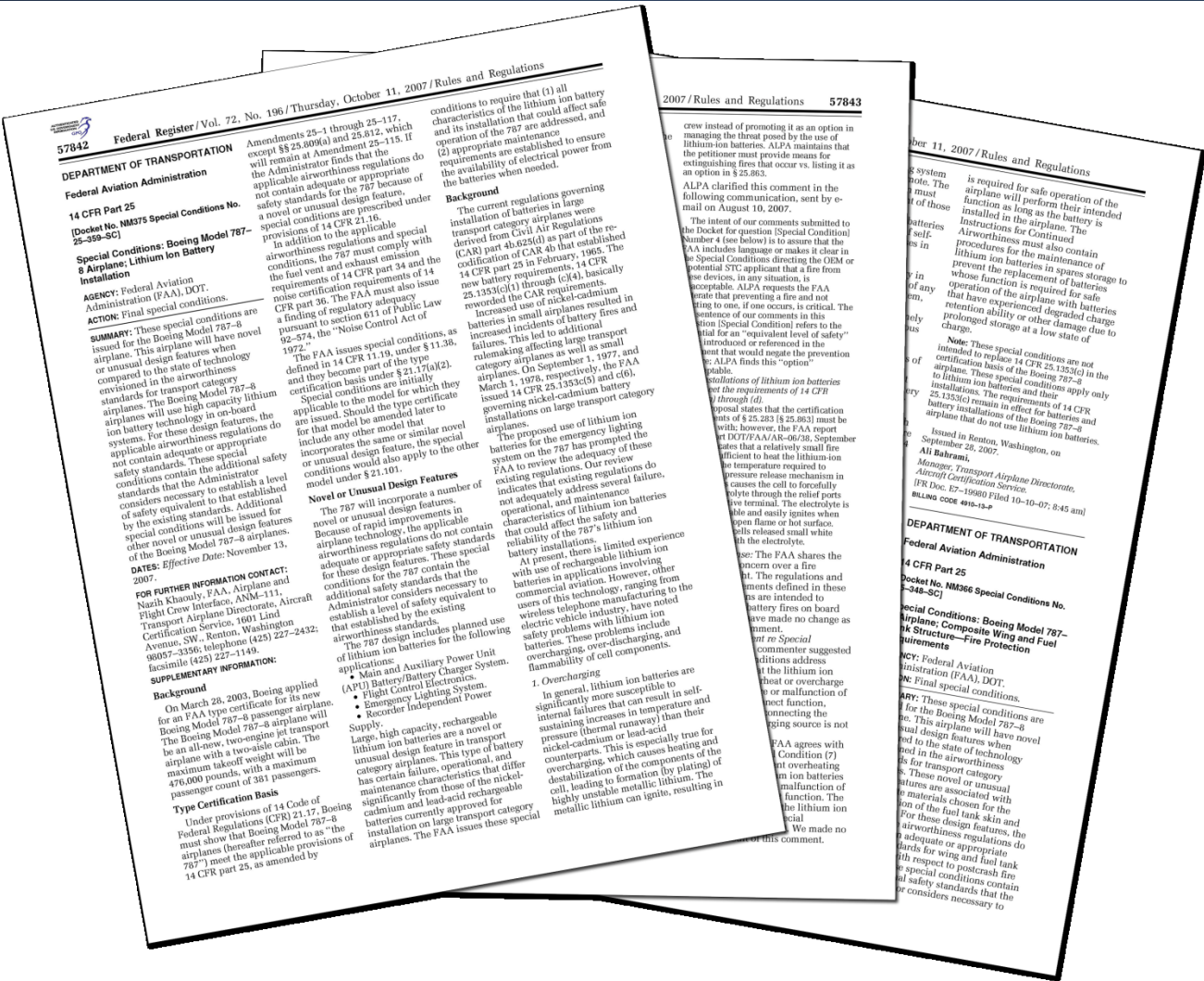
Still Being Evaluated

- Cell charging
- Potential manufacturing issues
- Battery design considerations

Certification of the 787 Battery



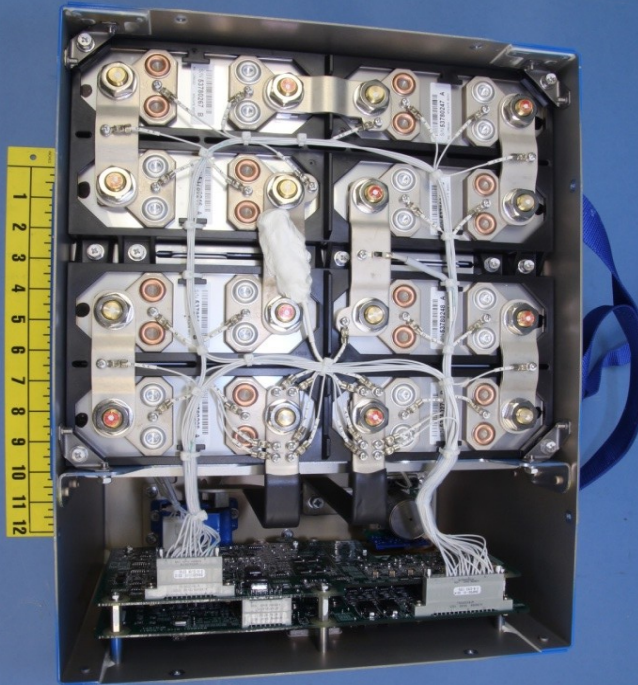
Certification of the 787 Battery



A Special Conditions:
Boeing Model 787-8
Airplane; Lithium Ion Battery
Installation October 11, 2007



Certification of the 787 Battery



Exemplar Battery



JAL Event Battery

Next Steps

- Examine validation methods for certification of battery
- Conduct tests on field replacement batteries
- Open our public docket and provide an interim factual report within 30 days



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