



# International Investigations

*Global Collaboration with Domestic Impact*

## Flight Recorders and Electronic Devices

### James Cash

# Yearly Workload

- 30% of recorder lab's work is reading out of flight and voice recorders for foreign governments
- In 2010, recorder lab received over 40 recorders from 14 different countries
- Another 30 to 40 cases required support



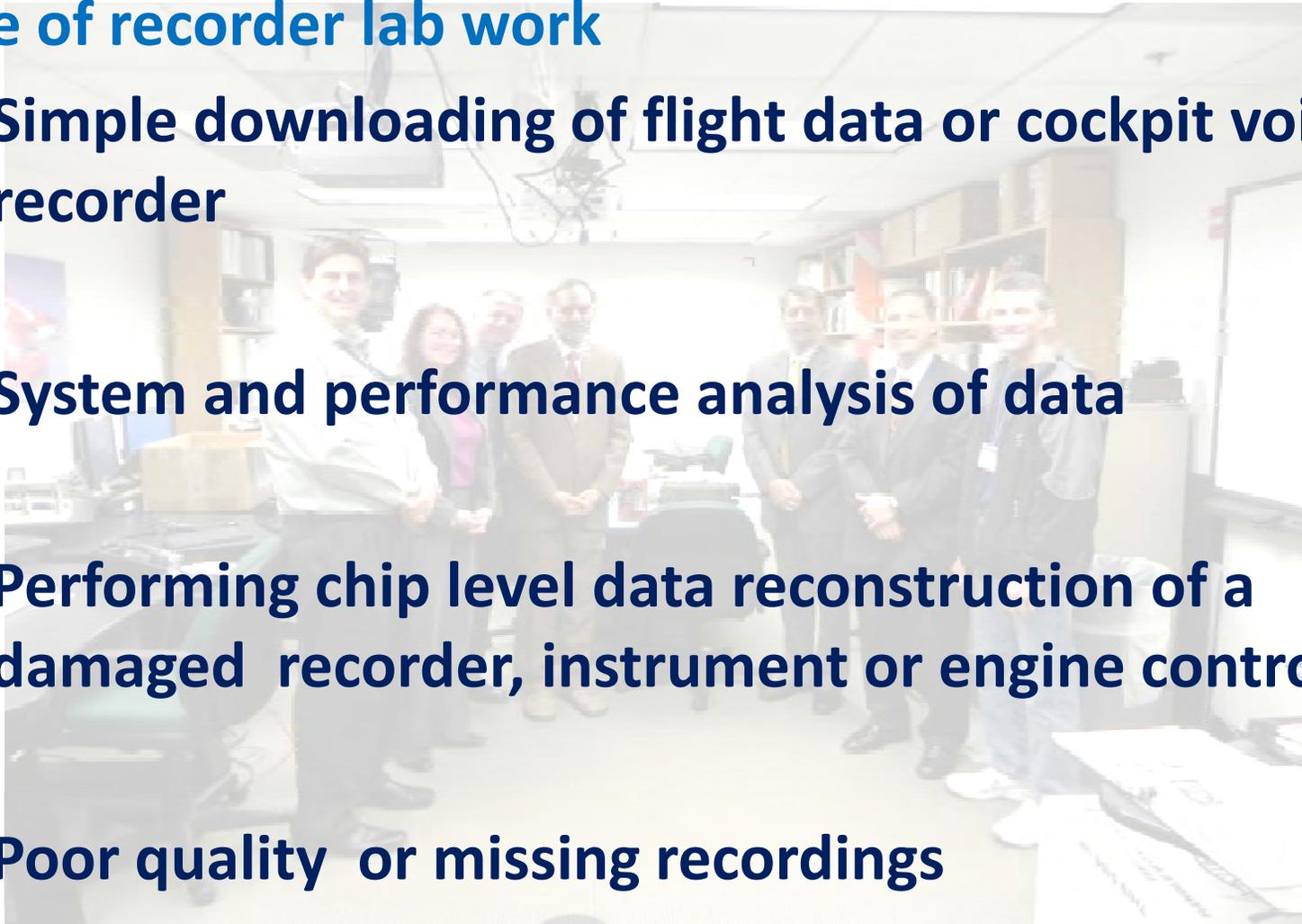
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# NTSB Products

## Range of recorder lab work

- Simple downloading of flight data or cockpit voice recorder
- System and performance analysis of data
- Performing chip level data reconstruction of a damaged recorder, instrument or engine controller.
- Poor quality or missing recordings



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# Animations



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# New Electronic Technology and Equipment

## Recorder lab is adding new equipment

- Technology is changing and growing rapidly
- Hardware tools
  - New recorder readout equipment
  - Board and chip level evaluation
  - Data recovery
- Software tools
  - Reverse engineering of data encoding
  - Reconstruction of accident flight data



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# Annex 13 Involvement

- **NTSB will send a recorder specialist to assist in the download and readout of flight recorders**
- **The lab frequently will interface between foreign data requests and U.S. manufacturers**



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