Federal Railroad Administration
Office of Safety Assurance and Compliance

NTSB/SAE Vehicle Recorder Topical Technical (TOPTEC) Symposium

Panel: Perspectives on Rail Event Recorder Maintenance Programs & Practices

FRA's RSAC Progress on 21st Century Event Recorders

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Federal Railroad Administration

Office of Safety Assurance and Compliance

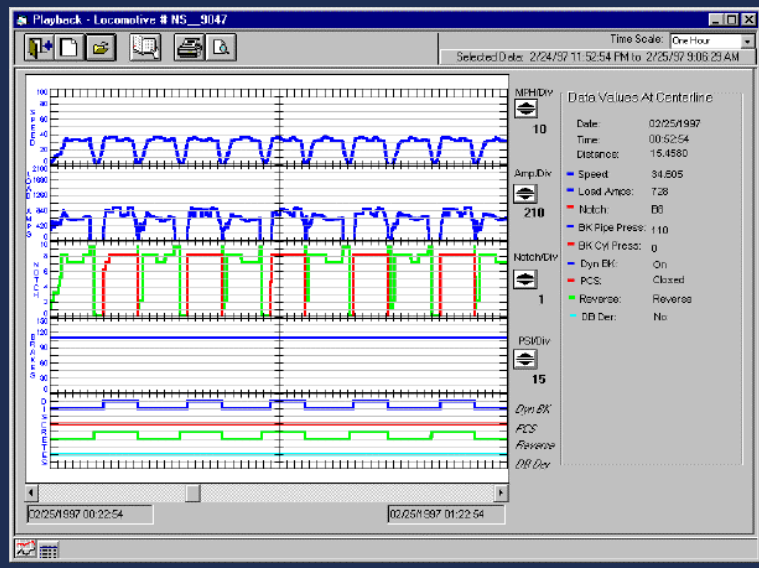
21st Century Event Recorders

Existing Event Recorder Regulation

- Final Rule
  - Federal Register Vol. 58, No. 129, July 8, 1993
- Compliance Date
  - May 5, 1995
- Final Rule- Response to Petitions for Reconsideration
  - Federal Register Vol. 60, No. 102, May 26, 1995

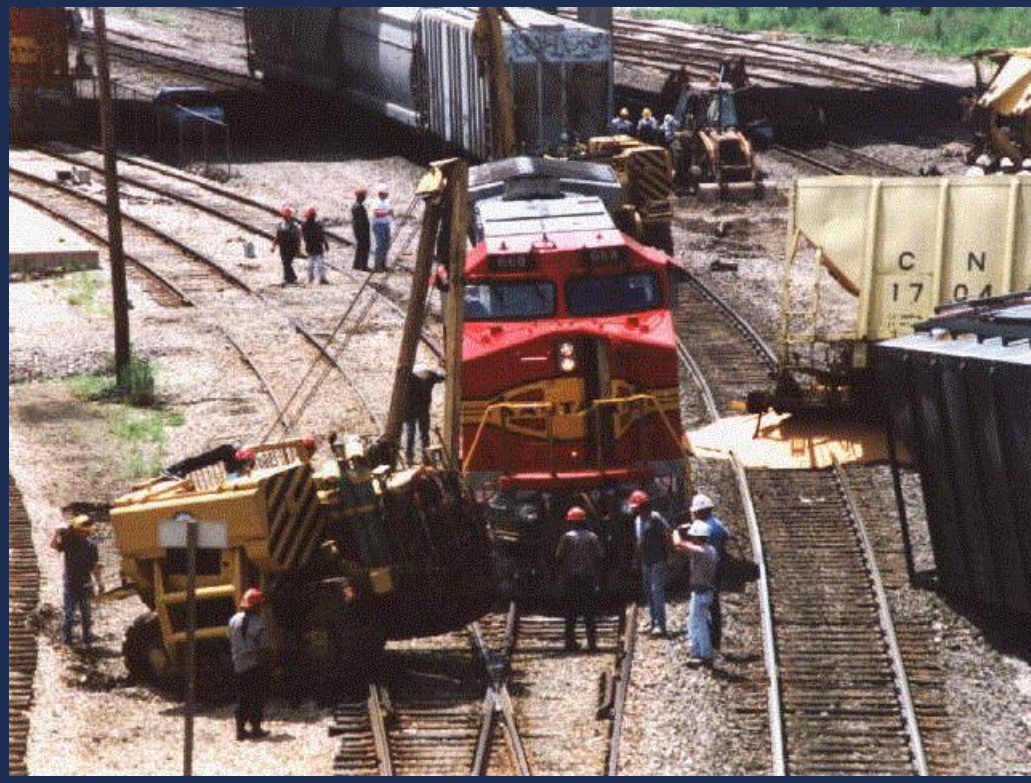
Event Recorder Data

- Monitor And Record data over the most recent 48 hours of operation
  - Train Speed
  - Direction of Motion
  - Time
  - Distance
  - Throttle Position
  - Brake Application and Operation
    - Including automatic (train) brake, independent brake, and, if so equipped dynamic brake applications and operations
  - Cab Signal Aspect(s) (where so equipped)



NTSB Recommendations to FRA

- The Board has a number of recommendations to both FRA and the Railroad Industry that apply to event recorders



OEM Supplied Event Recorders

The event recorder system provided by a builder, on their latest model road locomotive, is specified by the railroad customer

Railroad Safety Advisory Committee (RSAC)

- RSAC was tasked to develop a standard for the next generation of event recorders
- Potential Memory Module Testing Criteria
  - High Temperature Fire
  - Low Temperature
  - Impact Shock
  - Static Crush
  - Fluid Immersion
  - Hydro Static Pressure

High Temperature Fire

High Temperature Fire Test

Low Temperature Fire

Impact Shock

Data Acquisition

- **Modern Railroad equipment records data from many sources useful for accident investigation, such as:**
  - Locomotives
    - New Locomotives record engine performance and operating parameters
  - Radio
    - Dispatch center-to-train radio communication recordings
  - Right-of-way equipment
    - Signal controllers
    - Highway-rail grade crossings controllers
    - Dragging equipment detectors
    - Hot box detectors

Summary

- Crashworthy event recorders monitor critical locomotive operating parameters
- Compliance date was May 5, 1995
- Next generation event recorder specification is being developed by RSAC working group
- FRA is pursing closure of the Event Recorder RSAC <u>As Soon As Possible</u>…even by year-end 2003

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