Session: Data Collection, Meeting Future Safety Needs

Update on NHTSA's Sampling Based Data System

SAE Government Industry Meeting
January 24-26, 2018

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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

NHTSA's Data Collection Modernization

Began in 2013:

- New sample designs
  - NASS General Estimates System (GES) and Crashworthiness Data System (CDS) separated for modernized system
- Crash Report Sampling System (CRSS) replaced GES
  - 75 sites selected (60 implemented for 2017-2018)
- Crash Investigation Sampling System (CISS) replaced CDS
  - 73 Sites selected (28 implemented in 2017-2018)
- Built a Crash Data Acquisition Network (CDAN) for all data collection programs
- Revised manuals, protocols and procedures for field data collection

Updated equipment in CISS/SCI/CIREN

- Better scene data
  - Total Station scene documentation
  - Capability to produce 3-D scenes
- EDR kits for all Technicians
  - Increase in vehicles with EDR support
  - Better / more data
  - Releasing sanitized file to the public

Pilot data collection

- Throughout 2016 IT software and hardware system improvements were being implemented
- Encountered persistent issues with some field data collection tools
- PSU's 20-24 finished training in November 2016
- "Complete" cases finalized though CDAN system
  - Emphasis on sample design/selection / accuracy
  - New equipment reliability /precision
- 125 cases will be released to web to demonstrate the data collected
  - No 2016 statistical file produced
- Remodeled our training center in Oklahoma City for the ability to use new technologies in training classes

Additional items in our field investigation-based Modernized System:

- Releasing more data to the public
  - EDR Data
  - Injury data with updated AAAM codes
  - Raw files for scene measurements (ability for user to create 3D scene)
- Roadway items added/modified for CISS data collection
  - Pre-FHE Sequence
  - Environment (Line Types)
  - Rumble Strips
- Continued to collect seven core Precrash elements we've always collected
  - Distractions, Pre-event movement, Attempted avoidance maneuver, Critical event, Pre-impact stability, Pre-impact location, Crash type

Pre-Crash Data -1 to -.5 sec (Event Record 1)

Times (sec)	Cruise Control Active	Cruise Control Resume Switch Active	Cruise Control Set Switch Active	Engine Torque (lb-ft [N-m])	Reduced Engine Power Mode Indicator
-1.0	No	No	No	81 [110]	Off
-0.5	No	No	No	4 [5]	Off

Pre-Crash Data -2.5 to -.5 sec (Event Record 1)

Times (sec)	Accelerator Pedal Position (percent)	Brake Switch Circuit State	Engine Speed	Throttle Position (%)	Vehicle Speed (MPH [km/h])
-2.5	19	Off	1728	30	70 [113]
-2.0	23	Off	1856	35	70 [113]
-1.5	22	Off	1856	35	70 [113]
-1.0	0	Off	1792	22	70 [113]
-0.5	0	On	1472	9	66 [106]

Modernization to Meet Needs

- 2017 – We partnered our SCI program with FHWA to collect guardrail impact data
  - Emphasis on guardrail end impacts
  - Specific measurements
  - Demonstrates flexibility of new system
  - Roughly 40??? cases initiated thus far

Modernization to Meet Needs

- 2018 – FHWA requested additional data for impacts to objects struck off-road
  - Emphasis on guardrail impacts
  - Specific measurements for first object struck off-road
- Upgraded tablet computers to rugged laptops

NHTSA's Data Collection Modernization

- Current Status:
  - Hired and trained Crash Technicians for all 28 sites
  - Trained all Special Crash Investigation (SCI) Investigators and CIREN Investigators
  - Revamped CISS / SCI and CIREN data collection methodologies (electronic collection and measuring protocols)
  - Designed system so more robust data can be provided to users
  - Plan on adding four more CISS sites in 2018 for a total of 32 CISS sites

Modernization to Meet Needs

- January 2018
  - All 28 Data Collection sites operational
- July 2018
  - Have 32 CISS PSU collecting data
- Fall of 2018
  - Have ~ 2,100 CISS cases from 2017 available on web including
    - Complete EDR file (not just a .pdf)
    - Scene and vehicle crush files
    - Scene and vehicle images
    - Expanded injury data

- 2016 pilot data collection
  - Listed 92,445 crashes
  - Selected 1,206 cases
- 2017 data collection*
  - Listed 240,936 crashes
  - Selected 2,063 crashes

Increased significantly!

*As of 1/10/18, still listing/selecting 2017 cases

Highlights

- 2017 data collection*
  - Vehicles inspected 2,761
  - 86% acquisition rate
- 2017 EDR data collection*
  - EDRs imaged: 1,315
  - 78% acquisition rate

*As of 1/10/18, still listing/selecting 2017 cases

Help Us Help You

- Typically we attempt inspections on approximately 3,000 – 4,000 vehicles for CISS / SCI and CIREN yearly
- Many of these inspections require permission from OEM dealerships, insurance companies, etc.
- We can provide more vehicle data if permission was obtained in a timely manner or ahead of time
  - Significant hours are expended tracking down appropriate person for permission

Help Us Help You

- We welcome any ideas on how to efficiently obtain permission for vehicle inspections!

- Contact information:
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Thank You!

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