

National Highway Traffic Safety Administration



Upgrades in Technologies for NHTSA's Crash Investigations



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Introduction

- What field investigation programs are being modernized
- Modernization efforts
- Crash data collection technologies in 2016
- Future availability of the data

What is Being Updated for Investigations

- All the field investigation-based programs:
 - **Crash Investigation Sampling System (CISS)**
 - Nationally representative sample of crashes
 - **Special Crash Investigations (SCI)**
 - Targeted crashes for Agency priorities
 - **Crash Injury Research and Engineering Network (CIREN)**
 - Multidisciplinary analysis of medical and engineering evidence to determine injury causation
- Currently all three use the same IT infrastructure, so all are being modernized

Times Change

- The data needs of the transportation community have increased and changed over the last three decades



Dodge Charger – 1970 and 2015

Safer drivers. Safer cars. Safer roads.

NASS-CDS to CISS

- As indicated in earlier presentations, CISS is replacing NASS-CDS as the nationally representative sample of crashes
- NHTSA and its users want the most complete, accurate data possible
- NHTSA explored many options for modernizing our field crash data collection systems
- The new systems blend technology, cost and efficiencies



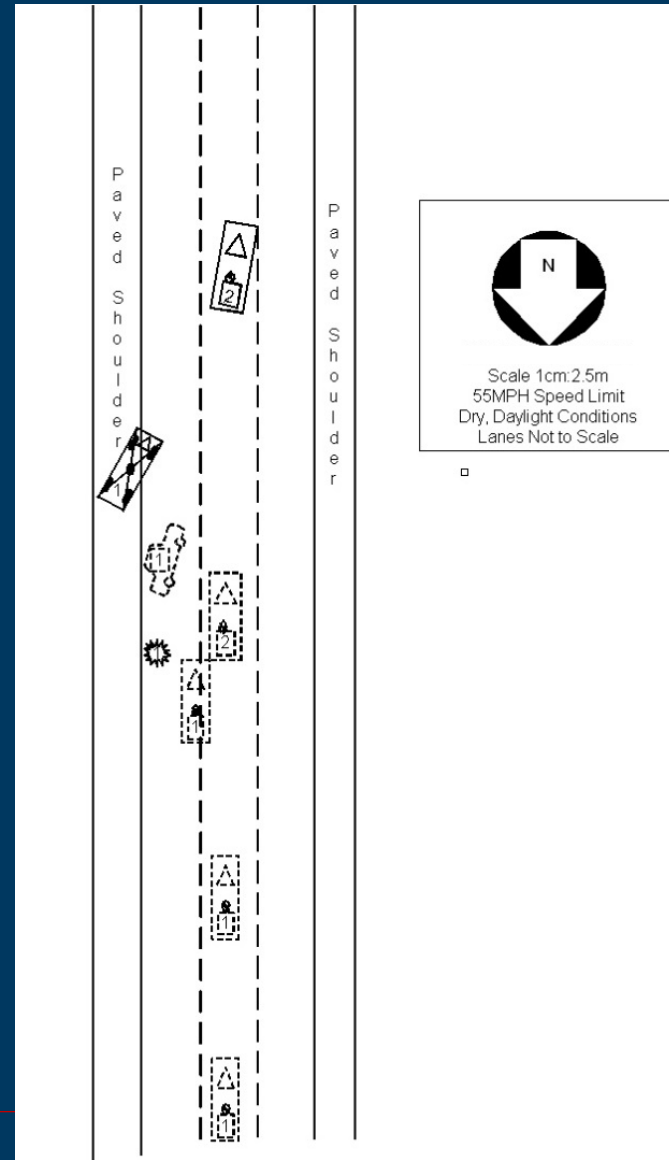
NASS-CDS Scene Data

- Current NASS-CDS
 - Measuring wheel
 - Run into traffic to obtain measurements
 - Labor intensive



NASS-CDS Scene Data

- Current NASS-CDS Scene Diagram
 - Image format cannot be scaled on web
 - Lanes/markings sometimes are an estimate due to traffic / safety
 - Requires user to obtain same software program as us to fully utilize our diagrams



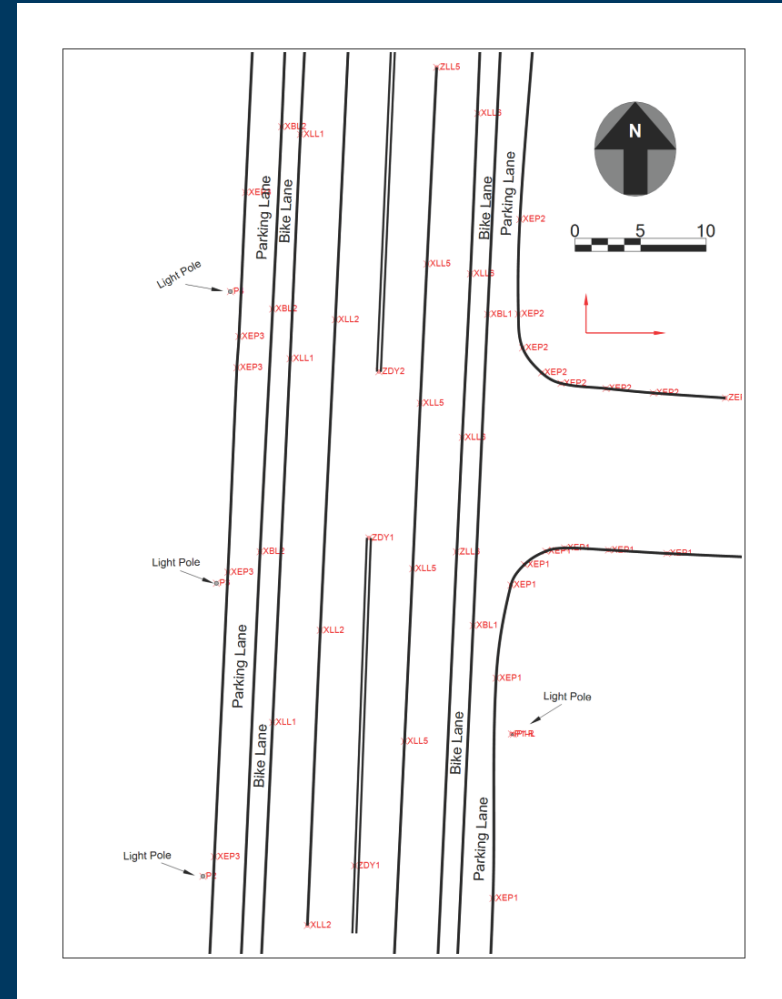
Improved CISS Scene Data

- CISS/SCI/CIREN
 - Electronic Distance Measuring Instrument
 - Off-road operations
 - SAFE!
 - More accurate
 - Provides scaled scene data
 - Capable of importing into any CAD program for 3-D renderings



Improved CISS Scene Data

- CISS/SCI/CIREN
 - Scaled diagrams
 - Accurate measurements



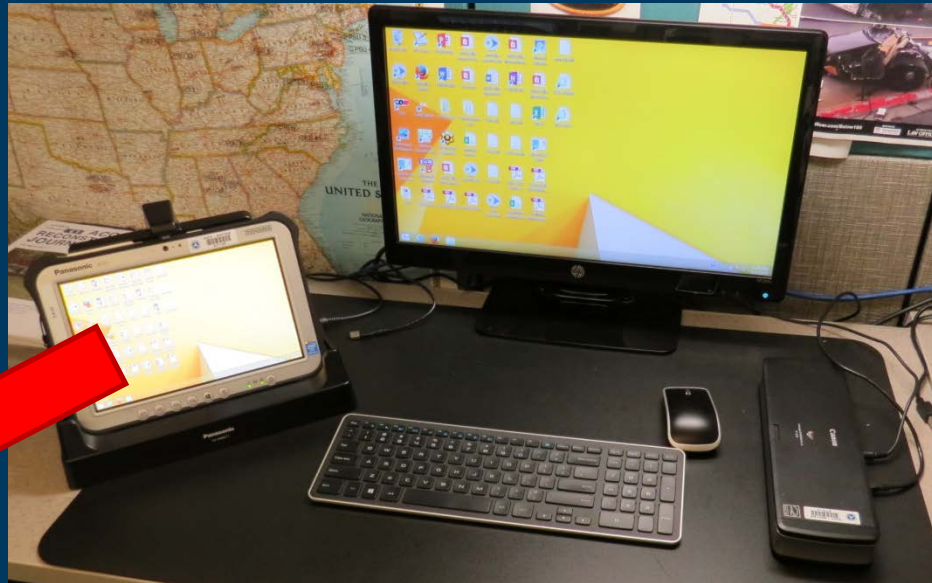
Current NASS-CDS Field Data Collection

- NASS-CDS
 - Paper data collection
 - Transcribe data to computer
 - Tracking of paper data with Personally Identifiable Information



CISS Electronic Data Collection

- Tablet computer for field data collection
- Data entry using drop down menus



NHTSA CRASH INVESTIGATION SAMPLING SYSTEM

Recommended Tire >>>
Page 2 >>>

Exterior Vehicle Form Version 5 R: 32

Case Information:

Case String: PSU: Vehicle Number:

Vehicle Identification:

VIN: Unknown

Vehicle Identification:

Model Year: Unknown

Vehicle Make:

Vehicle Model:

Vehicle Special Use:

No Special Use Used as Other Bus Fire Truck
 Military Police Incident Response
 Taxi Ambulance Unknown
 Used as School Bus Non-Transport Emergency Services Vehicle

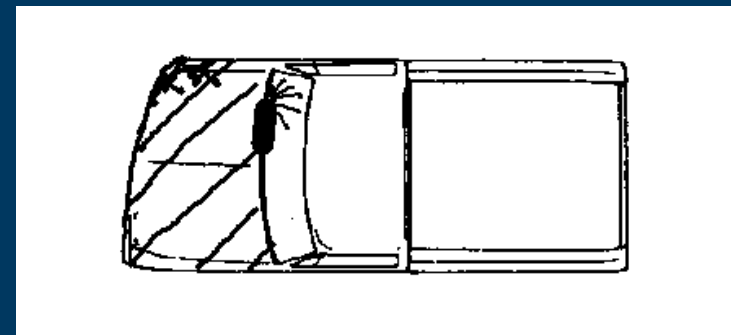
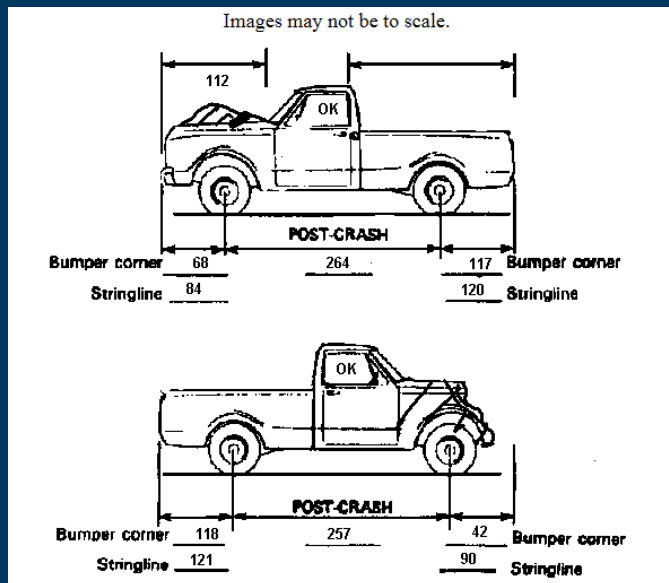
Transport Status:

In-Transport
 Not In-Transport
 Working Vehicle

- Eliminate transcription errors
- Secure data on tablet computer
- Ease of data entry

Current NASS-CDS Vehicle Data

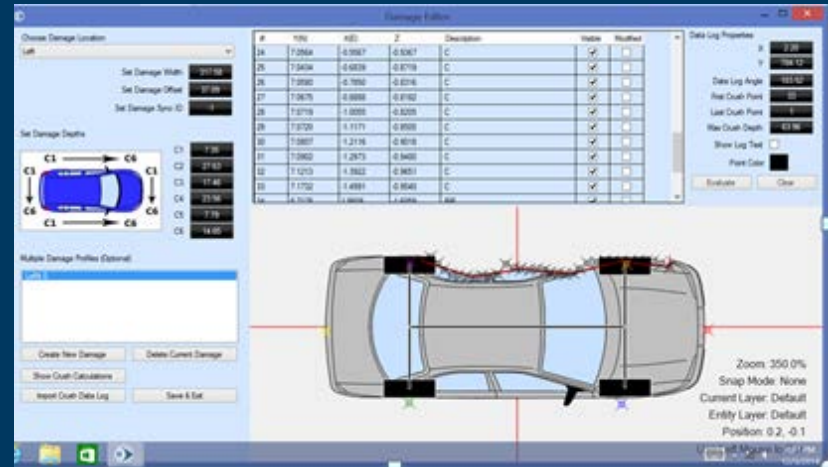
- Tape measures alongside crashed vehicle
- Six crush points measured
- Post crash dimensions measured by hand



Improved CISS Vehicle Data

- Future

- Electronic measurements of crush on vehicle
- More efficient
- Improved crush data
- Many more crush points measured
- Scaled damage on vehicles
- Ability of user to import data into any CAD program for 3-D renderings



Improved CISS Vehicle Data



Many more crush points measured

Software-generated
3D version of same vehicle



Other Items Modernized

- Event Data Recorder (EDR) equipment for all field Crash Technicians
- Field inspection protocols updated to reflect electronic documentation
- Release EDR files, scene and vehicle electronic measurements in various formats
- Better worldwide usage of crash data



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