

# **Truck and Bus Safety Problem Assessment and Data**

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Problem assessment is the process by which traffic safety problems are discovered and studied.

The foundation is data: Crash and exposure data.

- Review current status of crash & exposure data available.
- Current needs.
- Future opportunities.

## Public resources: Crash & other safety data

- Fatality Analysis Reporting System (FARS)
  - Updated in 2010 to add significant new pre-crash fields.
- General Estimates System (GES)
  - Nationally-representative sample file.
- Motor Carrier Management Information System (MCMIS) Crash file
  - State-reported; limited fields; improving completeness.
- Large Truck Crash Causation Study (LTCCS)
  - Invaluable but over 10 years old now!
- State Data crash files.
- Trucks Involved in Fatal Accidents (TIFA) dropped in 2010.
- Buses Involved in Fatal Accidents (BIFA) dropped in 2010.
- MCMIS Inspection file.
  - Results of all types of reported truck & bus inspections.

## Public resources: Exposure, population data

- MCMIS Carrier (Census) file.
  - Census of all Federally-regulated carriers; many states require intrastate carriers to register.
- Commercial Driver License Information System (CDLIS).
  - Pointers to State-held driver records files.
- Federal Highway Administration *Highway Statistics* data.
  - High-level, 2 truck types, 1 bus type, 5 road types.
  - Methodology for estimating vehicles & VMT revised in 2007
- Vehicle Inventory and Use Survey (VIUS).
  - Sample survey of registered owners; self-reported annual usage.
  - Discontinued after 2002!
- Truck classification traffic count data; weigh-in-motion data.
  - Roadway, point-specific data classifying trucks by weight and configuration.

- “Naturalistic” driving data:
  - Instrumented vehicles in routine service, or field operational tests of specific technologies.
  - Driver and vehicle environment in video; vehicle state data.
  - GPS for road, etc.
  - Continuous or triggered incident data.
  - Issues:
    - Mapping “conflicts” or “incidents” to crashes.
    - An embarrassment of riches: How to sort through terabytes of data.
- Fleet data
  - Fleet specific, depends on cooperation and level of detail.
  - Issues include representativeness.

## Data needs, or “making bricks without straw”

- FHWA Truck Size & Weight
  - MAP-21 requires studies of truck size & weight but no currently available crash data captures truck weight.
- Crashworthiness:
  - MAP-21 requires an analysis of the need for crashworthiness standards for class 7&8 trucks, but there is no truck or bus data system comparable to the Crashworthiness Data System for light vehicles.
- Crash avoidance:
  - New technologies to be evaluated, including ESC, FCW, CMB, LDW/LDP.
  - Driver monitoring and assessment.

- Crash data to support crashworthiness & crash avoidance research:
  - Data about pre-crash conditions: speed, braking, steering. Electronic data recorders for trucks & buses? Incorporated in CDS for light vehicles, but many issues.
  - Truck and bus size, weights, and configurations. Dropping TIFA and BIFA reduces level of detail available.
    - There is a great need for a new LTCCS.
- Exposure data
  - Dropping VIUS was a step in exactly the wrong direction.
  - But...data from vehicle tracking (GPS), linked to vehicle-state data could produce unprecedented detail

As information technology becomes cheaper and more ubiquitous, significant advances in knowledge are possible.

- Data from increasingly wired trucks and buses—for both exposure and crash data.
- Wired infrastructure for intelligent transportation systems.
- Automated crash data collection to improve accuracy and completeness.
- Easy linkage to administrative files, including hospital and EMS records, driver history, roadway inventory files, inspection, and census data.
- Legitimate privacy and liability concerns must be addressed.



*Thank you!*

Questions or complaints?

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