

# Truck and Bus Safety Problem Assessment and Data

TRB Committee on Truck & Bus Safety  
(A3B15)

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# Data domains

- **Crash data**
  - **Fatal**
  - **Non-fatal**
- **“Exposure” data**
  - **Travel**
  - **Carriers**
  - **Registrations**
  - **Drivers**
- **Innovative new approaches to data and collection**
  - **Large Truck Crash Causation Study**
  - **Instrumented vehicles**

# Overview

- Most crash files are general purpose
  - What, when, where; not why
  - More gaps in non-fatal crash data
- Exposure data
  - Administrative files, not well-matched to crash data
  - Some gaps in coverage (e.g., intrastate, etc.)
- New initiatives
  - In-depth crash data (LTCCS)
  - Instrumented vehicles collect exposure & incidents

# Data on Fatal Crashes

- FARS
  - General purpose
  - Census file
  - Descriptive
  - Standard set of data elements
  - General description of trucks and buses
  - Limited on carrier
- TIFA, BIFA
  - Supplement to FARS
  - Adds vehicle description
  - Motor carrier operator
  - Driver hours of service
  - Accident type
  - Improved identification of vehicles

# Data on Non-fatal Crashes

- GES
  - Nationally-representative sample
  - Coded from PARs
  - Common truck configs., less on buses
  - Large sampling errors on small subsets
  - Well-matched to FARS
- MCMIS
  - Census file
  - Linkable to MCMIS Carrier file
  - Limited data elements
  - Reported by states
  - Incomplete: both over- and underreporting

# “Exposure,” Population Data

- FHWA *Highway Statistics*
  - Annual, from states
  - 2 truck types; 5 road types
  - Relatively high level
  - Since 1945: long-term trends
- VIUS
  - Every 5 years
  - Sample of truck owners (100,000)
  - 80% response rate
  - Truck only (config., cargo, cargo body, weight, mileage, etc.)
  - Annual averages only

# Population Data

- MCMIS Carrier file
  - 705,258 carriers & shippers!
  - Primarily interstate
  - Trucks, drivers, commodities, carrier type
  - Improving currency
  - Intrastate gap
- Truck drivers
  - 10.4 M in CDLIS
  - 2.5-3.5M active drivers (FMCSA)
  - 1.5M truck, 200K bus (BLS survey)
  - Totals uncertain
  - Distribution (carrier type, etc.) unknown

# New approaches, new data

- Large Truck Crash Causation Study
  - FMCSA/NHTSA program
  - Nationally representative sample (on NASS CDS)
  - 1000 cases, 1000 variables
  - Fatal and serious (K, A, & B)
  - Unprecedented, comprehensive detail
  - Focus on pre-crash events and conditions
  - Relative risk with internal controls
  - Scheduled for release in late 2004
  - Issues: no buses, no exposure, ...

# Instrumented vehicle studies

- Emerging technology
  - Driver, vehicle environment
  - GPS for road, etc.
  - Continuous or incident-triggered
  - Normal driving and critical incidents
  - VTTI short/long haul; UMTRI RSA study



## Issues:

- Mapping conflicts to crashes
- Sample sizes

# Foundation, Gaps, and Promise

- Crash data:
  - Fatal vs. non-fatal; truck type; operator type
  - Buses generally neglected
  - What, when, where; not why.
- Exposure/population data
  - Aggregate, annual primarily
  - Little detail on vehicle types, drivers, etc.
  - Interstate over intrastate

# Foundation, Gaps, and Promise

- Linking crash and administrative files
- In-depth conventional data
  - Promise of great detail
  - New file, therefore unproven
- Instrumented vehicles
  - Both incidents and normal driving
  - “An embarrassment of riches”
  - Sample sizes