



New Jersey Bus Crash Causation Study

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Trucks and Buses in Fatal Crashes

Nation, 2005-2006

- Large Trucks – 9,683
- Buses – 579
- Motor coaches – 70

Motor coaches represent 0.7 percent of all large truck and bus fatal crashes.



Crashes in Study – 39 in New Jersey

▶ Crashes by Severity

- 14 fatal crashes
- 25 injury crashes

▶ Crashes by Configuration

- 24 with other vehicles (20 passenger vehicles, 2 motorcycles, 1 bus, 1 light rail)
- 9 with pedestrians or bicyclists
- 6 single vehicle (2 bus fires)



Bus Type – 40 Buses

Buses

26 Motor coaches (5 transit types)

5 – Transit

3 – School

3 – Large Vans

3 – Small Buses



Bus Operation

Operators

16 - Charter

10 - Intercity regular route

4 - Private/business

4 - Transit

2 - School

4 - Other



BCCS Crash Coding

- ▶ Critical event (CE) – event after which crash is unavoidable
- ▶ Critical reason for critical event (CR) – immediate reason for the critical event; not necessarily the cause of the crash
- ▶ Crash associated factors – all factors selected from the current understanding of factors related to crash occurrence, and present at the time of the crash



Critical Events coded to Bus

- 5 – Pedestrian/Bicycle in lane (4 pedestrians)
- 4 – Lane change/run off road
- 3 – Other vehicle stopped in lane
- 3 – Traveling too fast
- 4 – Other events



Critical reasons coded to Bus

15 – Driver

- 6 – Inadequate surveillance
- 4 – Inattention
- 2 – Following too close
- 3 – Other reasons

3 – Vehicle

- 2 – Bus fire
- 1 - Brakes failed

1 – Environment

- Ice on Road



Critical Events not coded to Bus

16 - Other Vehicles

- 5 – Vehicle entering intersection, roadway
- 3 – Traveling too fast
- 3 – Lane change
- 2 – Bus stopped in lane
- 3 – Other events

4 - Pedestrians

- 4 – Pedestrian entered intersection, roadway

Critical Reasons coded to Others

16 - Driver

- 5 – Traveling too fast or too slow
- 4 – Non-performance (asleep, impaired)
- 3 – Inattention/distraction
- 4 – Other driver reasons

4 - Pedestrians

- 4 – entering intersection, roadway

Associated Factors Coded to Bus Drivers

Associated Factor	Count	Associated Factor	Count	Associated Factor	Count
Line of sight obstructed ext.	22	Inattention – distracted	5	Aggressive driving	1
In a hurry	16	Problem masked by traffic flow	4	Distracted by conversation	1
Inadequate evasive action	15	Distracted	4	Uncomfortable with passenger	1
Unfamiliar with road	11	Line of sight obscured	4	Made a false assumption	1
Inadequate surveillance	10	Misjudged gap or velocity	4	Illness	1
Made illegal maneuver	9	Following too close	3	Traveling too slow	1
Prescription drug use	8	Driver hearing problems	2	Fatigue	1
Driver vision problems	6	Traveling too fast	2	Line of sight obstructed in bus	1

Vehicle OOS Violations

- ▶ 19 buses coded with CR: 5 had OOS violations
- ▶ 21 not coded with CR: 2 had OOS violations

<u>Violation</u>	<u>Coded w/CR</u>	<u>NOT coded w/CR</u>	<u>Total</u>
Brakes	5	1	6
Repair & Maintenance	2	1	3
Lighting Devices	2	1	3
Others	3	3	6
Others: steering, suspension, frame, axle, windshield, emergency exit			

Driver OOS Violations*

19 buses with CR: 5 had driver OOS violations; 3 had expired/no medical certificate (not an OOS)

<u>Total Quantity</u>	<u>Driver OOS Violations</u>
1	No CDL
1	10-hour rule
1	No passenger endorsement on CDL
2	Reckless operation
1	Too fast for conditions

*NO **driver** OOS violations for 21 buses not coded with the CR



Bus Driver Age

<u>Age</u>	<u>Number</u>
Under 40	8
40 – 49	6
50 – 59	16
60 – 69	8
Over 69	1
TOTAL	39

Driver Violation & Suspension History

- ▶ 18 of 19 drivers with CR had violations history
- ▶ 16 of 21 drivers without CR have history of violations

<u>Driver Violation</u>	<u>Buses coded w/CR</u>	<u>Buses not coded w/CR</u>	<u>Total</u>
Without active license	2	4	6
Prior license suspended	3	5	8
Improper lane change, turn or passing	5	4	9
Failure to obey traffic sign/light	6	6	12
Speeding (>10 miles+)	8	7	15

The banner features a dark blue background on the left with a faint image of a bus and stars, and a red and white striped American flag on the right.

Bus Crash Causation Study

Summary of Results

1. In half the crashes the Bus was coded with the Critical Reason for the crash – almost all the reasons were Driver errors
2. These results were very similar to those of the Large Truck Crash Causation Study (LTCCS)
3. Major difference with LTCCS was the large number of pedestrians involved in bus crashes



Possible Areas of Attention

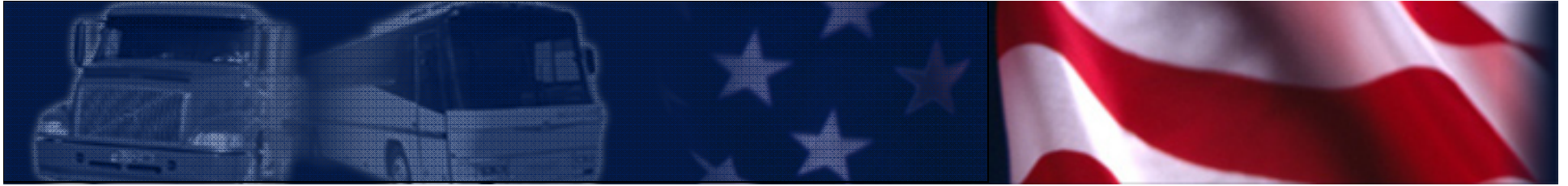
1. Focus more on the Driver during Inspections
2. Make sure the CDL system works (violations show up from State to State)
3. Traffic enforcement, punishment
4. Develop a driver rating system similar to carrier system
5. Human Factors research: FMCSA research, other modes, outside DOT



Industry Safety Records

Motor Carrier Safety Performance Profile: 2000-2007

- ▶ 11 Segments of motor carriers compared: tank, LTL, TL, bulk, farm, household, building materials, intermodal, refrigerated, large machine, bus
- ▶ Passenger Carriers, for hire:
 - Best Driver Safety Evaluation scores
 - Best Vehicle Safety Evaluation scores
 - Lowest total crash rate per power unit, and second lowest fatal crash rate per power unit



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