

UPPER PENINSULA HEAVY TRUCK/BUS INVOLVED CRASHES

These crashes involve a heavy truck/bus - defined as having a Gross Vehicle Weight Rating (GVWR) over 10,000 lbs., 8+ occupants, or a hazmat placard.

Heavy truck/bus crashes differ from other vehicle crashes in a number of ways, many reflecting the size and use of these vehicles. **When compared to the overall Upper Peninsula crash picture, heavy truck/bus crashes in the Upper Peninsula involve:**

- More turning and backing as the truck/bus driver action prior to crash.
- More noncollision events such as jackknife, cargo loss/shift, and overturn as the most harmful event.
- Fewer collisions with ditches, trees, and animals.
- Fewer single-vehicle crashes but more sideswipes.
- Fewer drivers indicated to be speeding, failing to yield, and reckless driving, but more drivers indicated to be making backing, lane use, and turning errors.
- Fewer crashes outside of the shoulder/curb.
- More crashes between the period of time between the hours of 7:00 AM and 3:59 PM.
- More crashes Monday through Thursday and fewer crashes on all other days of the week.

UPPER PENINSULA HEAVY TRUCK/BUS INVOLVED CRASHES (CONTINUED)

DRIVER ACTION PRIOR TO CRASH	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Going Straight Ahead	184	59.4	2	66.7	21	47.7
Turning Left	17	5.5	0	0.0	4	9.1
Turning Right	17	5.5	0	0.0	2	4.5
Stopped on Roadway	15	4.8	0	0.0	5	11.4
Involved in Prior Crash at Same Location	0	0.0	0	0.0	0	0.0
Changing Lanes	10	3.2	0	0.0	1	2.3
Backing	21	6.8	0	0.0	1	2.3
Slowing/Stopping on Roadway	8	2.6	0	0.0	5	11.4
Slowing/Stopping Other Area	0	0.0	0	0.0	0	0.0
Starting Up on Roadway	3	1.0	0	0.0	0	0.0
Starting Up in Other Area	0	0.0	0	0.0	0	0.0
Entering Parking	1	0.3	0	0.0	0	0.0
Leaving Parking	0	0.0	0	0.0	0	0.0
Entering Roadway	4	1.3	0	0.0	1	2.3
Leaving Roadway	2	0.6	0	0.0	0	0.0
Making U-Turn	2	0.6	0	0.0	0	0.0
Overtaking or Passing	1	0.3	0	0.0	0	0.0
Avoiding Object	0	0.0	0	0.0	0	0.0
Avoiding Animal	2	0.6	0	0.0	0	0.0
Avoiding Pedestrian	1	0.3	0	0.0	0	0.0
Avoiding Vehicle (front/back)	4	1.3	0	0.0	1	2.3
Avoiding Vehicle (angle)	1	0.3	0	0.0	0	0.0
Driverless Moving	2	0.6	0	0.0	0	0.0
Parked	7	2.3	0	0.0	3	6.8
Crossing at Intersection	0	0.0	0	0.0	0	0.0
Crossing Not at Intersection	0	0.0	0	0.0	0	0.0
Getting On/Off Vehicle	0	0.0	0	0.0	0	0.0
In Roadway With Traffic	0	0.0	0	0.0	0	0.0
In Roadway Against Traffic	0	0.0	0	0.0	0	0.0
Standing/Lying in Roadway	0	0.0	0	0.0	0	0.0
Pushing/Working on Vehicle	0	0.0	0	0.0	0	0.0
Other Work in Roadway	0	0.0	0	0.0	0	0.0
Playing in Roadway	0	0.0	0	0.0	0	0.0
In Roadway Other Reason	0	0.0	0	0.0	0	0.0
Not in Roadway	0	0.0	0	0.0	0	0.0
Negotiating a Curve	8	2.6	1	33.3	0	0.0
Other	0	0.0	0	0.0	0	0.0
Unknown	0	0.0	0	0.0	0	0.0
Uncoded & Errors	0	0.0	0	0.0	0	0.0
TOTAL	310	100.0	3	100.0	44	100.0

UPPER PENINSULA HEAVY TRUCK/BUS INVOLVED CRASHES (CONTINUED)

MOST HARMFUL EVENT IN A NONCOLLISION	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Loss of Control	7	2.3	0	0.0	1	2.3
Cross Centerline	1	0.3	0	0.0	0	0.0
Cross Median	0	0.0	0	0.0	0	0.0
Ran Off Roadway Left	2	0.6	0	0.0	0	0.0
Ran Off Roadway Right	6	1.9	0	0.0	0	0.0
Re-Enter Roadway	1	0.3	0	0.0	0	0.0
Overturn	6	1.9	0	0.0	2	4.5
Separation of Units	5	1.6	0	0.0	1	2.3
Fire/Explosion	1	0.3	0	0.0	0	0.0
Immersion	0	0.0	0	0.0	0	0.0
Jackknife	4	1.3	0	0.0	0	0.0
Downhill Runaway	0	0.0	0	0.0	0	0.0
Cargo Loss/Shift	2	0.6	0	0.0	1	2.3
Individual Fell from Vehicle	0	0.0	0	0.0	0	0.0
Equipment Failure (blown tire, brake failure, etc.)	1	0.3	0	0.0	1	2.3
Other Noncollision	4	1.3	0	0.0	1	2.3
SUBTOTAL	40	12.9	0	0.0	7	15.9

MOST HARMFUL EVENT IN A COLLISION WITH A NONFIXED OBJECT	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Pedestrian	1	0.3	0	0.0	1	2.3
Bicyclist	0	0.0	0	0.0	0	0.0
Motor Vehicle in Transport (in motion or on roadway)	171	55.2	3	100.0	32	72.7
Parked Motor Vehicle	16	5.2	0	0.0	2	4.5
Work Zone/Maintenance Equipment	0	0.0	0	0.0	0	0.0
Cargo Falling/Shifting/Anything Set in Motion by a Motor Vehicle	1	0.3	0	0.0	0	0.0
Railroad Train	0	0.0	0	0.0	0	0.0
Animal	43	13.9	0	0.0	0	0.0
Other Nonfixed Object	2	0.6	0	0.0	0	0.0
SUBTOTAL	234	75.5	3	100.0	35	79.5

The majority of heavy trucks/buses are involved in crashes with a motor vehicle in transport for all crashes (55.2%), fatal crashes (100.0%), and injury crashes (72.7%) for most harmful event in a collision with a nonfixed object in the crash.

UPPER PENINSULA HEAVY TRUCK/BUS INVOLVED CRASHES (CONTINUED)

MOST HARMFUL EVENT IN A COLLISION WITH A FIXED OBJECT	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Bridge Pier/Abutment/Support	0	0.0	0	0.0	0	0.0
Bridge Rail	2	0.6	0	0.0	0	0.0
Bridge Overhead Structure	1	0.3	0	0.0	0	0.0
Guardrail Face	4	1.3	0	0.0	0	0.0
Guardrail End	1	0.3	0	0.0	0	0.0
Cable Barrier	0	0.0	0	0.0	0	0.0
Concrete Barrier	0	0.0	0	0.0	0	0.0
Traffic Sign/Post	3	1.0	0	0.0	0	0.0
Traffic Signal Equipment	0	0.0	0	0.0	0	0.0
Utility Pole/Light Support	8	2.6	0	0.0	0	0.0
Other Post/Pole/Support	6	1.9	0	0.0	0	0.0
Culvert	0	0.0	0	0.0	0	0.0
Curb	0	0.0	0	0.0	0	0.0
Ditch	3	1.0	0	0.0	1	2.3
Embankment	0	0.0	0	0.0	0	0.0
Fence	0	0.0	0	0.0	0	0.0
Mailbox	0	0.0	0	0.0	0	0.0
Tree	4	1.3	0	0.0	1	2.3
Railroad Crossing Signal	0	0.0	0	0.0	0	0.0
Building	0	0.0	0	0.0	0	0.0
Traffic Island	0	0.0	0	0.0	0	0.0
Fire Hydrant	1	0.3	0	0.0	0	0.0
Impact Attenuator (crash cushion)	1	0.3	0	0.0	0	0.0
Other Fixed Object	2	0.6	0	0.0	0	0.0
SUBTOTAL	36	11.6	0	0.0	2	4.5

	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Uncoded & Errors	0	0.0	0	0.0	0	0.0
No Event Coded as Most Harmful	0	0.0	0	0.0	0	0.0
MOST HARMFUL EVENT TOTAL	310	100.0	3	100.0	44	100.0

UPPER PENINSULA HEAVY TRUCK/BUS INVOLVED CRASHES (CONTINUED)

CRASH TYPE	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Single Motor Vehicle	107	34.5	0	0.0	8	18.2
Head-On	7	2.3	1	33.3	3	6.8
Head-On - Left Turn	7	2.3	0	0.0	3	6.8
Angle	37	11.9	1	33.3	11	25.0
Rear-End	39	12.6	0	0.0	8	18.2
Rear-End - Left Turn	3	1.0	0	0.0	1	2.3
Rear-End - Right Turn	3	1.0	0	0.0	1	2.3
Sideswipe - Same Direction	45	14.5	0	0.0	1	2.3
Sideswipe - Opposite Directions	16	5.2	1	33.3	3	6.8
Backing	20	6.5	0	0.0	0	0.0
Other	22	7.1	0	0.0	5	11.4
Unknown	4	1.3	0	0.0	0	0.0
Uncoded & Errors	0	0.0	0	0.0	0	0.0
TOTAL	310	100.0	3	100.0	44	100.0

The highest percentage of heavy trucks/buses are involved in single vehicle crashes for all crashes (34.5%) and angle crashes for injury crashes (25.0%).

HAZARDOUS ACTION	ALL CRASHES		FATAL CRASHES		INJURY CRASHES		HAZARDOUS CITATION ISSUED	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
None	176	56.8	3	100.0	32	72.7	1	3.3
Speed Too Fast	23	7.4	0	0.0	0	0.0	8	26.7
Speed Too Slow	0	0.0	0	0.0	0	0.0	0	0.0
Failed to Yield	20	6.5	0	0.0	5	11.4	4	13.3
Disregard Traffic Control	2	0.6	0	0.0	1	2.3	1	3.3
Drove Wrong Way	0	0.0	0	0.0	0	0.0	0	0.0
Drove Left of Center	1	0.3	0	0.0	0	0.0	0	0.0
Improper Passing	0	0.0	0	0.0	0	0.0	0	0.0
Improper Lane Use	11	3.5	0	0.0	0	0.0	2	6.7
Improper Turn	7	2.3	0	0.0	0	0.0	0	0.0
Improper/No Signal	0	0.0	0	0.0	0	0.0	0	0.0
Improper Backing	13	4.2	0	0.0	0	0.0	2	6.7
Unable to Stop in Assured Clear Distance	20	6.5	0	0.0	3	6.8	8	26.7
Reckless Driving	0	0.0	0	0.0	0	0.0	0	0.0
Careless/Negligent Driving	5	1.6	0	0.0	0	0.0	1	3.3
Other	18	5.8	0	0.0	2	4.5	2	6.7
Unknown	14	4.5	0	0.0	1	2.3	1	3.3
TOTAL	310	100.0	3	100.0	44	100.0	30	100.0

After no hazardous action, the most common hazardous action coded for drivers of heavy trucks/buses in all crashes is speed too fast (7.4%) and for drivers of heavy trucks/buses in injury crashes the second most common hazardous action is failed to yield (11.4%).

UPPER PENINSULA HEAVY TRUCK/BUS INVOLVED CRASHES (CONTINUED)

RELATIONSHIP TO ROADWAY (LOCATION OF FIRST IMPACT)	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
On the Road	263	84.8	3	100.0	38	86.4
In the Median	1	0.3	0	0.0	0	0.0
On the Shoulder	22	7.1	0	0.0	4	9.1
Outside of the Shoulder/Curb-Line	13	4.2	0	0.0	2	4.5
In the Gore (area between ramp and freeway convergence)	0	0.0	0	0.0	0	0.0
On-Street Parking	5	1.6	0	0.0	0	0.0
Off the Roadway	0	0.0	0	0.0	0	0.0
On the Sidewalk	1	0.3	0	0.0	0	0.0
In the Bicycle Lane	0	0.0	0	0.0	0	0.0
Other/Unknown	5	1.6	0	0.0	0	0.0
TOTAL	310	100.0	3	100.0	44	100.0

TIME OF DAY	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
12:00 AM - 2:59 AM	5	1.6	0	0.0	0	0.0
3:00 AM - 5:59 AM	17	5.5	0	0.0	2	4.5
6:00 AM - 8:59 AM	48	15.5	0	0.0	8	18.2
9:00 AM - 11:59 AM	70	22.6	0	0.0	8	18.2
12:00 PM - 2:59 PM	75	24.2	3	100.0	10	22.7
3:00 PM - 5:59 PM	52	16.8	0	0.0	12	27.3
6:00 PM - 8:59 PM	25	8.1	0	0.0	3	6.8
9:00 PM - 11:59 PM	18	5.8	0	0.0	1	2.3
Unknown	0	0.0	0	0.0	0	0.0
TOTAL	310	100.0	3	100.0	44	100.0

Heavy truck/bus frequencies in crashes peak in the late evening, then drop off steadily until 3 AM. The most common time for heavy trucks/buses to be involved in crashes is between 12:00 PM and 2:59 PM for all crashes (24.2%) and for fatal crashes (100.0%). The most common time for heavy trucks/buses to be involved in injury crashes is between 3:00 PM and 5:59 PM (27.3%).

ROADWAY TYPE	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Interstate Routes	20	6.5	0	0.0	2	4.5
US and Michigan Routes	209	67.4	3	100.0	32	72.7
County Roads and City Streets	79	25.5	0	0.0	10	22.7
Uncoded & Errors	2	0.6	0	0.0	0	0.0
TOTAL	310	100.0	3	100.0	44	100.0

The highest percentage of heavy trucks/buses are involved in crashes on US and Michigan routes for all crashes (67.4%), fatal crashes (100.0%), and injury crashes (72.7%).

UPPER PENINSULA HEAVY TRUCK/BUS INVOLVED CRASHES (CONTINUED)

DAY OF WEEK	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Monday	60	19.4	0	0.0	5	11.4
Tuesday	63	20.3	0	0.0	8	18.2
Wednesday	46	14.8	0	0.0	10	22.7
Thursday	52	16.8	2	66.7	7	15.9
Friday	62	20.0	1	33.3	10	22.7
Saturday	16	5.2	0	0.0	3	6.8
Sunday	11	3.5	0	0.0	1	2.3
TOTAL	310	100.0	3	100.0	44	100.0

The highest percentage of heavy trucks/buses are involved in crashes on Tuesday for all crashes (20.3%), Thursday for fatal crashes (66.7%) and both Wednesday and Friday for injury crashes (22.7% each).

DRIVER GENDER	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
Male	290	93.5	3	100.0	41	93.2
Female	15	4.8	0	0.0	2	4.5
Uncoded & Errors	5	1.6	0	0.0	1	2.3
TOTAL	310	100.0	3	100.0	44	100.0

The majority of heavy truck/bus drivers are male in all crashes (93.5%), fatal crashes (100.0%), and injury crashes (93.2%).

NUMBER OF OCCUPANTS	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
1 occupant	267	86.1	3	100.0	36	81.8
2 occupants	23	7.4	0	0.0	4	9.1
3 occupants	5	1.6	0	0.0	2	4.5
4 occupants	2	0.6	0	0.0	0	0.0
5 occupants	1	0.3	0	0.0	0	0.0
6+ occupants	7	2.3	0	0.0	1	2.3
0 occupants	5	1.6	0	0.0	1	2.3
Unknown	0	0.0	0	0.0	0	0.0
TOTAL	310	100.0	3	100.0	44	100.0

UPPER PENINSULA HEAVY TRUCK/BUS INVOLVED CRASHES (CONTINUED)

VEHICLE TYPES INVOLVED IN CRASH WITH HEAVY TRUCK/BUS	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Vehicles	% of Total	Number of Vehicles	% of Total	Number of Vehicles	% of Total
Passenger Car, SUV, Van	126	66.7	2	50.0	28	63.6
Motor Home	0	0.0	0	0.0	0	0.0
Pickup Truck	51	27.0	2	50.0	11	25.0
Small Truck Under 10,000 lbs. GVWR	3	1.6	0	0.0	0	0.0
Motorcycle	2	1.1	0	0.0	2	4.5
Moped/Goped	0	0.0	0	0.0	0	0.0
Go-Cart/Golf Cart	0	0.0	0	0.0	0	0.0
Snowmobile	2	1.1	0	0.0	2	4.5
Off-Road Vehicle (ORV)/All-Terrain Vehicle (ATV)	0	0.0	0	0.0	0	0.0
Other (non-registered farm equipment, construction equipment, snow plows, etc.)	0	0.0	0	0.0	0	0.0
Truck/Bus (over 10,000 lbs. GVWR/8+ occupants/hazmat placard)	0	0.0	0	0.0	0	0.0
Uncoded & Errors	5	2.6	0	0.0	1	2.3
SUBTOTAL	189	100.0	4	100.0	44	100.0

HEAVY TRUCK/BUS GROSS VEHICLE WEIGHT RATING	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total
10,000 lbs. or Less	1	0.3	0	0.0	0	0.0
10,001-26,000 lbs.	125	40.3	2	66.7	15	34.1
Greater Than 26,000 lbs.	184	59.4	1	33.3	29	65.9
Uncoded & Errors	0	0.0	0	0.0	0	0.0
SUBTOTAL	310	100.0	3	100.0	44	100.0

	ALL CRASHES		FATAL CRASHES		INJURY CRASHES	
	Number of Vehicles	% of Total	Number of Vehicles	% of Total	Number of Vehicles	% of Total
Total Number of Vehicles in Heavy Truck/Bus Crashes	499	---	7	---	88	---

UPPER PENINSULA HEAVY TRUCK/BUS INVOLVED CRASHES (CONTINUED)

DRIVER HAZARDOUS ACTION WHERE HAZARDOUS CITATION ISSUED	HEAVY TRUCK/BUS INVOLVED CRASH						NON-HEAVY TRUCK/BUS INVOLVED CRASH			
	Single Vehicle Crash		Multi-Vehicle Crash				Single Vehicle Crash		Multi-Vehicle Crash	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Non-Heavy Truck Vehicles	% of Total	Number of Vehicles	% of Total	Number of Vehicles	% of Total
None	0	0.0	1	5.3	0	0.0	8	2.0	8	1.3
Speed Too Fast	6	54.5	2	10.5	2	8.7	161	40.1	48	7.9
Speed Too Slow	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2
Failed to Yield	0	0.0	4	21.1	7	30.4	5	1.2	203	33.4
Disregard Traffic Control	0	0.0	1	5.3	3	13.0	3	0.7	56	9.2
Drove Wrong Way	0	0.0	0	0.0	0	0.0	0	0.0	3	0.5
Drove Left of Center	0	0.0	0	0.0	0	0.0	4	1.0	4	0.7
Improper Passing	0	0.0	0	0.0	1	4.3	3	0.7	8	1.3
Improper Lane Use	0	0.0	2	10.5	0	0.0	1	0.2	17	2.8
Improper Turn	0	0.0	0	0.0	2	8.7	0	0.0	15	2.5
Improper/No Signal	0	0.0	0	0.0	0	0.0	0	0.0	3	0.5
Improper Backing	0	0.0	2	10.5	0	0.0	1	0.2	14	2.3
Unable to Stop in Assured Clear Distance	1	9.1	7	36.8	3	13.0	8	2.0	121	19.9
Reckless Driving	0	0.0	0	0.0	0	0.0	21	5.2	7	1.2
Careless/Negligent Driving	1	9.1	0	0.0	3	13.0	131	32.7	71	11.7
Other	2	18.2	0	0.0	2	8.7	46	11.5	27	4.4
Unknown	1	9.1	0	0.0	0	0.0	9	2.2	2	0.3
CITED VEHICLES SUBTOTAL	11	100.0	19	100.0	23	100.0	401	100.0	608	100.0

	HEAVY TRUCK/BUS INVOLVED CRASH						NON-HEAVY TRUCK/BUS INVOLVED CRASH			
	Single Vehicle Crash		Multi-Vehicle Crash				Single Vehicle Crash		Multi-Vehicle Crash	
	Number of Heavy Trucks	% of Total	Number of Heavy Trucks	% of Total	Number of Non-Heavy Truck Vehicles	% of Total	Number of Vehicles	% of Total	Number of Vehicles	% of Total
Cited Vehicles	11	10.1	19	9.5	23	12.5	401	8.0	608	11.3
Vehicles with No Citation Issued	98	89.9	182	90.5	161	87.5	4,588	92.0	4,764	88.6
Vehicles with Unknown Citation	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1
TOTAL VEHICLES INVOLVED	109	100.0	201	100.0	184	100.0	4,989	100.0	5,375	100.0