

MSU Study on Log Truck Accidents on Interstates in MS 2014 to 2018

By: Dr. John B. Auel, Assistant Extension Professor, Department of Forestry, College of Forest Resources, Mississippi State University; July 17, 2020

Introduction

Forestry contributes an estimated \$12.8 billion annually to the Mississippi economy¹. It is the second most valuable agricultural commodity. The average annual harvest of forest products from 2014 through 2018 is in excess of 31.5 million tons², with log trucks (includes trucks with log trailers, pole trailers, and chip vans) being the primary mover from the woods to the mills. Moving that volume of material requires over 1.2 million loaded trips per year, at an average of 25 tons per trip. Each loaded trip also requires an empty return, doubling that number to 2.4 million trips each year. If the average distance to the mill from the woods is 40 miles (80 miles round trip), each year log trucks travel 96 million miles transporting wood harvested in Mississippi.

Mississippi Log Truck Accidents from 2014 through 2018

According to the Mississippi Department of Transportation (MDOT), between January 1st, 2014 and December 31st, 2018 there were 1,376 accidents involving log trucks investigated by MDOT, for an average of 275 per year. MDOT provided GPS coordinates and accident descriptions to MSUES. The descriptions did not include detailed information but was the original form filled out by the officer on-scene. Information is lacking in most cases. Also, it is not possible to determine fault in many of the cases. Some are clearer than others though and some inferences can be made. Regardless of the lack of details, this information provides a decent window into issues with trucking in the state.

The actual volume estimates from MS Severance Tax data for the same time period, shows approximately 158.5 million tons of wood was harvested from forestlands in the state. At 25 tons per load for the average log truck, that is 6.3

¹ Forestry in Mississippi. 2018. Mississippi Forestry Commission. <https://www.mfc.ms.gov/sites/default/files/Forestry%20in%20MS%202018.pdf> accessed 8/2/2019

² Mississippi Harvest of Forest Products. 2014 – 2018. MSUES.

million loaded truck trips, or 12.6 million loaded and empty trips from January 2014 through December 2018. Put another way, there was only one log truck accident, investigated by MDOT, for every 9,211 log truck trips in the state.

Interstate Accident Locations

Log truck accidents are uncommon on interstates, but the main reason for this is that they seldom run on the interstates when compared to other vehicles.

Accident locations were uploaded to ArcGIS as a layer. This layer was placed on county and major highway layers to identify locations. The coordinates were not always accurate, so accident descriptions for each appearing to occur on an interstate highway were examined for specific road information. Only accidents that occurred on an interstate highway or ramp were included. Many accidents that appeared to be on the interstate highways occurred on surface streets adjacent to the interstates. These were omitted. For example, an accident that occurred on an off ramp where a truck rear-ended another vehicle at the end of the ramp was counted as part of interstate use accidents. An accident that occurred as a truck was turning onto a surface street after stopping safely at the end of the off-ramp was not counted since the accident was not integral to interstate use.

There was enough information contained in each accident description to categorize the potential cause and to make some assumptions regarding underlying causes. For example, broken drive shafts were listed under equipment as a primary factor. An underlying factor may well be maintenance. If nothing else, this will give the PLM program a chance to emphasize aspects of log trucking that need improvement.

Results

There was a total of 49 accidents occurring on interstates between January 2014 and December 2018. This represents 3.6% of all log truck accidents. The following table shows the number of accidents for each interstate highway in Mississippi.

Table 1 Number of accidents on interstates in MS 2014 – 2018

Interstate	No. Accidents	Percent
I-22	2	4%
I-55	18	37%
I-20	16	33%
I-59	12	24%
I-10	1	2%
TOTAL	49	100%

An average of 275 accidents a year is too many, no matter how many total trips log trucks make. When categorizing the accidents, it becomes apparent additional training and emphasis is warranted. The following table shows how the author categorized log truck accidents for the time period.

Table 2 Categorized Log Truck Accidents

ACCIDENT	NUMBER	PERCENT
Rear-Ended	11	22%
Equipment	10	20%
Cross into other Lanes	8	16%
Ran off Road	3	6%
Overtuned	3	6%
Merging	2	4%
Deer	1	2%
Unknown	11	22%
TOTAL	49	100%

The most common accident type was a rear-end collision caused by the log truck. Most cases on the interstates were for slowing traffic ahead. The log truck driver could not stop in time, leading one to conclude they were either moving too fast for conditions or following too closely. The next category was equipment. A common item seemed to be broken drive shafts. Others were tires and one trailer that snapped in half. This speaks to increased maintenance needs of the log truck force. The rest seem to point to driver inattention. Whether that was drowsiness

or distracted driving, is not known but certainly that would be worth emphasizing as well. The unknown category was used for accidents without a clear description of events or for accidents caused by other vehicles. Accident locations and description are listed in the appendix.

Discussion

Log truck accident occurrence is a small fraction of total trips from 2014 through 2018; 1,376 accidents in 12.6 million trips or about 0.01%. This number seems exceedingly small, however, there is no data with which to compare accident frequency and cause. It is not known if this rate is higher or lower than over-the-road (OTR) trucks or whether OTR trucks have the same accident categories in the same percentages.

Regardless, increased training is necessary to reduce accidents. The current average of 275 per year equates roughly to one log truck accident for each work-day. Better training, fewer incidents, and safer equipment is critical. Interstates are the safest, fastest routes for log trucks and allowing them access while loaded at state weight limits will require improved performance across the board.

Appendix: All Interstate Log Truck Accidents from January 2014 through December 2018

No	Interstate	MDOT ID	Description
1	I-22	808010	Off ramp truck rear-ended car
2	I-22	1052419	Truck hit by passenger car
3	I-55	1134183	Overturn on on-ramp to Interstate
4	I-55	1093771	Off Ramp truck rear-ended car
5	I-55	1096534	Truck hit U-Haul trailer when merging onto interstate
6	I-55	1155437	Passenger vehicle backed into truck on Interstate
7	I-55	836208	Truck hit a deer
8	I-55	1138274	Truck collided with mile marker sign near off-ramp
9	I-55	1040877	Semi collided with rear of log truck
10	I-55	902335	Log truck tie rod snapped, and truck went off highway

11	I-55	944802	Truck merged into vehicle from on-ramp
12	I-55	777743	Truck rolled on off-ramp
13	I-55	1131632	Passenger car collided with rear of log truck
14	I-55	1128847	Log truck drive shaft broke causing damage to 5 other vehicles
15	I-55	834534	Passenger car hit a deer lost control and hit a log truck
16	I-55	1083121	Passenger car hydroplaned when entering highway from on-ramp hitting barrier and log truck
17	I-55	1129171	Log truck veered into passing lane and struck passenger car
18	I-55	891393	Log truck rear-ended another truck slowing down for construction zone
19	I-55	1005822	Log truck veered into another car
20	I-55	833095	Log truck drive shaft broke causing 3 other vehicles to hit it and flatten their tires.
21	I-20	925608	Log truck rear-ended a car slowing down
22	I-20	952387	Passenger car veered into log truck
23	I-20	1164510	Passenger car rear-ended log truck
24	I-20	1000033	Log truck rear-ended passenger while slowing for traffic
25	I-20	1153693	Log truck and car veered into each other
26	I-20	914041	Log truck rear-ended passenger car slowing down for traffic
27	I-20	810820	Log truck trailer tire blew out damaging adjacent vehicle
28	I-20	1085961	Log truck rear-ended passenger while slowing for traffic
29	I-20	1037698	Log truck and car veered into each other
30	I-20	836766	Log truck drive shaft broke passenger car hit drive shaft in road
31	I-20	1149653	Log truck trailer struck passenger car that was stopped on shoulder
32	I-20	890369	Log truck ran off road crossed back and overturned in median

33	I-20	1167831	Two semi-s veered into each other. One fled scene
34	I-20	847700	Log truck trailer wheel broke off and collided with light pole. Light pole fell into traffic on interstate
35	I-20	1119685	Multiple vehicle accident caused by traffic slow down.
36	I-20	939658	Passenger car tire blew forcing vehicle into log truck
37	I-59	1142703	Two trucks collided when one's front tire blew
38	I-59	1022590	Passenger vehicle crossed median into oncoming log truck
39	I-59	792304	Log truck overturned entering interstate
40	I-59	869004	Multiple vehicle accident caused by traffic slow down.
41	I-59	989844	Log truck overturned entering on-ramp from surface street. Equipment failure
42	I-59	1145652	Log truck and another vehicle veered into each other
43	I-59	899684	Log truck ran off road into median. Fell asleep
44	I-59	1034125	Log truck and passenger vehicle veered into each other
45	I-59	1019710	Log pole trailer snapped in half on off-ramp.
46	I-59	781337	Log truck rear-ended passenger while slowing for traffic
47	I-59	1000137	One truck rear-ended another
48	I-59	1146545	Log truck front tire blew, lost control, hit passenger car
49	I-10	1170492	Log truck hit by towed vehicle when tow chain broke