The Unforgiving Road: Trucker Fatalities

Winding roads, severe weather, and fatigue take their toll on truckdrivers. Between 1992 and 1998, over 3,500 truckdrivers were killed on highways alone. In fact, in 1998, these workers were 6.5 times more likely to be killed in job-related incidents than the average worker.

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Approximately 75 percent of all goods sold in the United States are transported at some point by trucks.[1] With over 3 million truckdrivers plying the highways and streets, delivering goods and services through congested traffic and inclement weather, accidents abound. Between 1992 and 1998, over 3,500 truckdrivers were killed on highways alone according to data collected in the Bureau of Labor Statistics' Census of Fatal Occupational Injuries (CFOI).[2]

Traffic incidents aren't the only hazards lurking on a truckdriver's path. Robberies, injuries while loading and unloading a truck, and being struck by another vehicle while out of their truck also account for a substantial number of occupational deaths each year. In 1998, truckdrivers were 6.5 times more likely to be killed in job-related mishaps than the average worker.[3] (See table 1.)

TABLE 1. **Number, rate, and index of relative risk of fatal injuries by selected occupation, 1998**

Occupation	Fatalities	Rate[1]	Index of relative risk[2]
Total (all workers)	6,026	4.5	1.0
Timber cutters	109	141.6	31.5
Fishers	71	137.3	30.5
Structural metal workers	52	82.5	18.3
Aircraft pilots	91	80.5	17.9
Extractive occupations	60	48.0	10.9
Construction laborers	335	40.7	9.0
Taxicab drivers	82	30.0	6.7
Truckdrivers	879	29.2	6.5
Farm occupations	592	28.6	6.4
Roofers	50	20.7	4.6

[1] Rate equals (fatal work injuries / employment) X 100,000 workers.

[2] Index of relative risk equals fatality rate for a given group / fatality rate for all workers.

NOTE: Employment estimates are based on the 1998 Current Population Survey. Data may not sum to total because of rounding and the omission of miscellaneous categories.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries

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TABLE 2. **Distribution of truckdriver fatalities by event, 1992-98**

Event	Fatalities when State of injury is State of employment		Fatalities when State of injury is not State of employment	
	Number	Percent	Number	Percent
Contact with objects	332	9.7	65	5.1
Falls	99	2.9	20	1.6
Exposure to harmful substances or environment	105	3.1	32	2.5
Transportation accidents	2,714	79.0	1,078	85.1
Fires and explosions	32	.9	12	.9
Assaults and violent acts	133	3.9	55	4.3

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries

Working conditions

Throughout the 1990s, truckdrivers traveled over 150 billion miles each year,[4] the equivalent of going to the sun and back 80 times. The trucking industry employs over 2 percent of the labor force and encompasses a diverse group of drivers who do an assortment of physically demanding work.[5] The most rudimentary division of the industry is to classify these workers into interstate and intrastate drivers.

Interstate, or long-distance, drivers account for approximately 73 percent of the ton-miles driven each year.[6] These workers face many hazards on the road. They must often travel through congested areas, mountainous terrain, and difficult weather conditions. They usually remain on the road for days and sometimes weeks, enduring boredom, fatigue, and loneliness.[7] The rigs these workers drive can weigh as much as 80,000 pounds (about 30 times the weight of a standard automobile) and stretch from 70 to 100 feet. Because of the large size of these vehicles, visibility and maneuverability may be impaired, and drivers must be concerned with the possibility of their load shifting, causing their truck to overturn.

Although interstate drivers are not covered by the Fair Labor Standards Act[8] like most workers, there are Federal regulations governing their work schedule. These regulations, issued by the U.S. Department of Transportation (DOT), govern the number of hours a driver can remain on duty. They permit an interstate truckdriver to drive up to 60 hours in a 7-day period or 70 hours in an 8-day period, and require a driver to rest 8 hours for every 10 hours of driving time. Furthermore, DOT regulations allow drivers to work up to 5 additional hours loading or unloading their trucks before or after driving a 10-hour shift.

The Federal Government also regulates the licensing of trucks weighing over 26,000 pounds and drivers transporting hazardous material. Requirements specify that drivers have a commercial driver's license from the State in which they live. In addition to Federal regulations, some States place additional requirements on drivers of large trucks.[9]

Because truckers are mostly paid by the number of miles driven, and are sometimes given bonuses for on-time deliveries or penalized for late deliveries, they are encouraged to reach their destinations quickly and, therefore, usually drive the maximum number of hours legally allowed.[10] In order to maximize the hours driven, interstate workers may drive 10 hours, rest 8, and immediately begin their next 10-hour shift. This schedule leads to irregular sleeping patterns because drivers begin their shift each day 6 hours earlier than they did on the previous day.[11]

Long-distance drivers usually are not required to unload their trucks upon reaching their destinations, however, most short-distance drivers do unload their own trucks. Thus, short turn-around drivers have a greater chance of being fatally injured by events such as falls and contacts with objects than do long-distance drivers.[12] Table 2 shows that 9.7 percent of truckers who were injured in the State in which they were employed—primarily short-distance drivers—died because of contact with objects or equipment. In contrast, 5.1 percent of truckers fatally injured in a State other than the one in which they were employed—primarily long-distance drivers—died in the same way.

These differences in the distributions of fatalities by event may, in part, be due to the differences between the work of interstate and intrastate drivers. However, the distribution may also be skewed because the data do not reflect the fact that some trucking firms incorporate in a State other than the one in which their workers reside.

Region and season

Other perils truckers face have to do with road conditions. Because of snow, sleet, and ice, winter driving can be especially challenging. However, traffic fatalities during the winter months in the Northeastern and Midwestern regions are the lowest of all the seasons. (See table 3.)

Because of the high volume of traffic during holidays and the summer months, driving during this time can be particularly hazardous. And, accordingly, fatalities during the summer months are somewhat greater than during other parts of the year.

The terrain of each State can also have a large effect on the number of fatalities that occur within it. Some very mountainous areas can be deadly, as can stretches of long, monotonous highways.[13] Additionally, States with larger numbers of truckdrivers traveling through them also have a higher number of fatalities. Other differences between States, such as the regulations placed on drivers of large trucks, can also influence the number of fatalities

TABLE 3. **Truckdriver highway fatalities by season, 1998**

Region and season	Fatalities	Percent
Western	359	100
Winter		25
Spring		25
Summer		32
Fall		18
Southern	159	100
Winter		25
Spring		25
Summer		27
Fall		22
Midwestern	134	100
Winter		19
Spring		30
Summer		26
Fall		24
Northeastern	70	100
Winter		14
Spring		20
Summer		36
Fall		30

NOTE: Data may not sum to total because of rounding.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries

TABLE 4. **Truckdriver highway fatalities by State, 1998**

State	Fatalities	Percent
All States	722	100
Texas	93	13
California	75	10
Florida	59	8
North Carolina	51	7
Pennsylvania	47	7
Illinois	34	5
Ohio	31	4
Alabama	27	4
Mississippi	27	4
Virginia	26	4
Indiana	26	4
All other States	226	31

NOTE: Data may not sum to total because of rounding.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries

that occur within the State. (See table 4.)

Assuming that drivers who travel greater distances are more likely to be involved in a traffic incident, a better measure of the frequency of deaths

TABLE 5. **Truckdriver traffic accident fatality rates in ton-miles by region, 1993**

Region	Fatalities	Percent	Number of ton-miles[1] driven (billions)	Rate
All regions	488	100.0	869,616	5.61
Western	232	47.5	299,363	7.96
Midwestern	110	22.5	291,384	3.77
Southern	104	21.3	193,231	5.38
Northeastern	42	8.6	85,638	4.90

[1] Ton-miles are equal to the number of miles traveled times the number of tons of merchandise transported.

NOTE: The rate of fatalities is equal to the number of fatalities divided by the number of ton-miles (in billions) multiplied by 10,000. Fatalities and ton-miles are for the following industries only: Agriculture, mining, manufacturing, transportation, and wholesale trade. Data may not sum to total because of rounding.
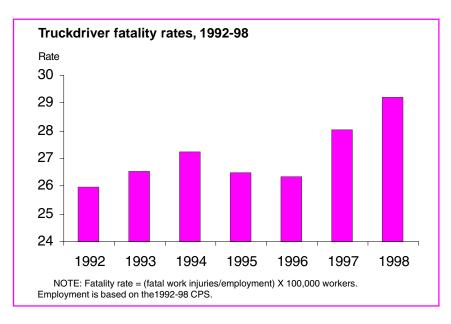
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries

would be the fatality rate with respect to the number of ton-miles driven within a State. In 1993, the Western States accounted for 47.5 percent of all truckdriving fatalities resulting from traffic accidents. When considering number of ton-miles driven in that region, they were also twice as likely to have an occupational fatality resulting from a traffic accident than were the Midwestern States. (See table 5.)

Experience

According to the National Safety Council, "Drivers of large trucks should undergo improved training because experience and better driving skills help compensate for large vehicle size."[14] Notably, the number of trucker fatalities is inversely related to the time spent working with the current employer. Over 20 percent of fatal truckdriving injuries during 1992-98 occurred to individuals who worked with their employer 1 year or less at the time of the accident. It is likely, however, that a large percentage of truckers have been employed for less than 1 year, partially due to the large number of job openings in the occupation each year.[15] From 1996 to 2006, trucking is expected to be one of the occupations with the largest job growth.[16] Additionally, because of hazardous working conditions and decreased wages due to increased competition from other transportation segments, job turnover rates have been high.

Trends

The total number of fatalities for all occupations greatly fluctuated during the 1992-98 period, dropping to its lowest point in 1998 with 6,026 fatalities. Fatality rates for these years, however, have steadily decreased from a high of 5.3 in 1994 to 4.5 in 1998. In contrast, among truckdrivers, both the number of fatalities and the fatality rates have followed an increasing trend. (See chart and table 6.)

Non-fatal injuries

Not only are trucker fatalities a major concern, non-fatal injuries result in thousands of days missed from work to recuperate each year.[17] These injuries are serious enough to require truckdrivers take 4 more days-away-from-work to recuperate than the median for all workers (5 days). Like fatal injuries, there are more non-fatal injuries to truckers than to workers in any other occupation. The most common event causing these non-fatal injuries is overexertion, mostly in lifting. (See table 7.) Still, like fatal injuries, a large number of non-fatal injuries in which truckers were involved resulted from a traffic, highway, or other type of transportation-related incident accounting for almost 20,000 lost worktime injuries in 1997.[18] Other major causes of non-fatal injuries are attributed to contact with objects or equipment, falls, and repetitive motion. In 25 percent of the

Truckdriver fatality rates, 1992-98

Rate

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30

29

28

27

26

25

24
      1992   1993   1994   1995   1996   1997   1998
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NOTE: Fatality rate = (fatal work injuries/employment) X 100,000 workers. Employment is based on the1992-98 CPS.

cases in 1997, the source of the incident was a vehicle. (See table 8.)

Conclusion

Truckdrivers have more work-related fatalities than any other occupation, accounting for 14 percent of all job-related fatalities in 1998. Truckdrivers also have the largest number of non-fatal injuries. In 1997, a trucker had a 1 in 21 chance of incurring a nonfatal injury compared to only a 1 in 70 chance for all occupations. With the high number of occupational injuries and fatalities resulting from traffic incidents, public sentiment for regulating trucking is high. New safety regulations may go into effect. Being considered is a change in the number of hours drivers are allowed to work.[19] In addition, various attempts are being made to make the road safer: With advanced technology, some vehicles are now being equipped with devices such as collision avoidance systems; organizations are providing literature on effectively "sharing the road" with large trucks; some employers are sending their drivers to driving schools;[20] and some States are identifying and working to improve areas where repetitive traffic incidents occur. Whether these attempts will make the roads safer remains to be seen. ■

TABLE 6. **Fatalities among truckdrivers by event, 1992-98**

Event	Fatalities						1998	
	1992	1993	1994	1995	1996	1997	Fatalities	Percent
All events	699	739	766	758	796	862	879	100
Contact with objects	66	64	69	52	67	72	76	8.6
Falls	17	21	18	16	35	25	22	2.5
Exposure to harmful substances	27	17	28	22	25	22	21	2.4
Transportation incidents (highway)	532	590	618	629	626	702	722	82.0
Collision between vehicles (highway) ..	149	192	171	182	183	180	218	24.8
Moving in opposite direction	44	66	62	60	60	66	73	8.3
Moving in intersection	18	23	22	15	23	17	22	2.5
Moving in same direction	26	41	47	52	52	39	54	6.1
Vehicle struck object on side of roadway (highway)	67	75	125	125	119	152	165	18.7
Vehicle struck object in roadway (highway)	13	15	13	11	15	12	11	1.3
Noncollision incident	145	168	189	167	175	203	191	21.7
Jack-knifed or overturned	101	125	146	127	139	161	159	18.1
Ran off highway	41	28	34	27	24	26	18	2.0
Worker struck by vehicle	52	62	60	31	57	57	63	7.2
Collision between railway and other vehicle	26	27	17	23	22	36	23	2.6
Assaults and violent acts	38	32	27	29	36	32	30	3.4

NOTE: Data may not sum to total because of rounding and the omission of miscellaneous categories.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries

TABLE 7. **Truckdriver nonfatal injuries involving days away from work by event or exposure, private industry, 1992-97**

Event or exposure	1992	1993	1994	1995	1996	1997
Total	145,934	154,663	163,808	151,338	152,803	145,536
Contact with object, equipment	30,454	30,877	29,744	30,396	28,070	24,527
Struck by object	14,400	15,473	14,918	15,635	13,545	12,220
Struck against object	9,169	8,547	8,037	7,616	7,945	6,514
Caught in object, equipment, material	4,351	4,098	3,752	4,0412	4,084	3,404
Fall to lower level	13,290	13,069	12,821	13,791	14,460	12,827
Fall on same level	14,408	15,531	19,224	15,565	15,964	14,991
Slips, trips	6,329	6,880	6,829	5,979	5,076	5,820
Overexertion	40,034	44,541	46,760	43,605	43,618	44,565
Overexertion in lifting	21,884	25,020	26,882	26,232	23,895	24,546
Repetitive motion	1,281	1,420	1,287	1,059	1,171	1,614
Exposed to harmful substance	2,612	2,705	2,778	1,706	2,316	2,306
Transportation accidents	17,396	18,236	22,074	18,475	17,736	19,736
Fires, explosions	226	174	116	153	251	68
Assault, violent act	1,334	1,072	810	968	1,145	1,120
by person	847	671	484	456	267	844
by other	487	401	325	512	878	276
Other	18,573	20,159	21,367	19,642	22,996	17,965

NOTE: Days away from work include injuries which result in days away from work with or without restricted work activity. Data may not sum to total because of rounding and the omission of miscellaneous categories.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries

TABLE 8. **Truckdriver nonfatal work injuries involving days away from work by source of injury or illness, 1992-97**

Event or exposure	1992	1993	1994	1995	1996	1997
Total injury or illness cases	145,934	154,663	163,808	151,338	152,803	145,536
Chemicals, chemical products	1,229	1,427	1,252	606	1,374	1,389
Containers	24,846	26,881	31,519	28,426	26,704	29,570
Furniture, fixtures	3,704	4,904	3,604	3,525	3,639	2,954
Machinery	5,335	5,240	5,025	4,687	5,102	3,561
Parts and materials	13,939	14,386	13,337	13,410	13,621	12,622
Worker motion or position	16,364	20,202	21,620	19,453	20,330	20,268
Floor, ground surfaces	27,737	28,260	32,247	28,511	29,903	27,174
Handtools	1,530	1,545	1,459	1,840	2,271	1,617
Vehicles	34,887	35,330	38,982	37,392	34,906	35,741
Health care patient	49	166	130	86	127	51
All other	16,314	16,322	14,633	13,402	14,826	10,589

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries

[1] *1993 Commodity Flow Survey* (U.S. Department of Transportation, Bureau of Transportation Statistics, 1995).

[2] The CFOI program, which has collected occupational fatality data since 1992, uses diverse data sources to identify, verify, and profile fatal work injuries. Information about each workplace fatality (industry and other worker characteristics, equipment involved, and circumstances of the event) is obtained by cross-referencing source documents such as death certificates, workers' compensation records, and reports to Federal and State agencies. This method assures that counts are as complete and accurate as possible.

[3] Fatality rates are used to compare the risk of incurring a fatal work injury among worker groups with varying employment or exposure levels. There is more than one method to calculate a fatality rate. An employment-based rate measures the risk for those employed during a given period of time, regardless of exposure hours.

Fatal work injury rates included in this article were calculated using 1998 annual average employment estimates that were collected in the Current Population Survey (CPS). Rate = (N/W) X 100,000 workers where:

N = number of civilian worker fatalities, age 15 and older, and

W = annual average number of employed civilians, age 15 and older.

The CPS employment data used to calculate rates are estimates based upon a sample of persons employed rather than a complete count. Therefore, the CPS estimates and fatality rates have sampling errors; that is, they may differ from figures that would have been obtained if it had been possible to take a complete census of employed persons. See "Explanatory Notes and Estimates of Error" in the January 1998 *Employment and Earnings* for an explanation of CPS sampling and estimation methodology and standard error computations. The relative standard errors of the CPS employment estimates can be used to approximate confidence ranges for the fatality rates. See Guy A. Toscano, "Dangerous Jobs," *Compensation and Working Conditions*, Summer 1997, pp. 57-60, for more information on dangerous occupations, fatality rates, and relative risks.

[4] *Traffic Safety Facts 1997: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System* (National Highway Traffic Safety Administration, November 1998), table 10, p. 28.

[5] See *Employment and Earnings*, volume 46, no.1, January 1999 for an explanation of the scope and data collection methods of the CPS.

[6] For a better understanding of ton-miles, see "Truck Movements in America: Shipments From, To, Within, and Through States," U.S. Department of Transportation, Bureau of Transportation Statistics, 97-TS/1, May 1997.

[7] *Occupational Outlook Handbook*, 1998-99 edition, Bulletin 2500 (Bureau of Labor Statistics, January 1998), pp. 473-476.

[8] The Fair Labor Standards Act sets minimum wage, maximum hours, overtime pay, equal pay, and child labor standards.

[9] Large trucks refer to: Single-unit trucks with gross vehicle weights greater than 26,000 pounds, tractor-trailer combinations, trucks with cargo trailers, or truck-tractors pulling no trailer.

[10] Bernard Gavzer, "Is The Long Haul Too Long?" *Parade Magazine*, May 16, 1999, pp. 12-13.

[11] Louis Uchitelle, "Economic View," *The New York Times*, August 29, 1999, p. 4.

[12] The event "contacts with objects and equipment" includes being struck by falling objects such as items falling from a truck.

[13] Theresa Hanson, "Fatal Work Injuries in the Mountain States," *Compensation and Working Conditions*, March 1994, pp.1-4.

[14] "Wide Trucks Are Out of Bounds," *Traffic Safety*, National Safety Council, May/June 1992, pp.4-5.

[15] Cynthia Engel, "Competition Drives the Trucking Industry," *Monthly Labor Review*, April 1998, pp. 34-41.

[16] George T. Silvestri, "Occupational employment projections to 2006," *Monthly Labor Review*, November 1997, pp. 58-83.

[17] The Survey of Occupational Injuries and Illnesses (SOII) collects information from a random sample of about 164,000 establishments representing most of private industry. Worker characteristics are collected only for workers sustaining injuries and illnesses that require days away from work to recuperate.

Because the scope and methodology of CFOI and SOII are slightly different, comparison of the fatal and nonfatal data is problematic.

Additional information on either CFOI or SOII is available on the Internet at **http://stats.bls.gov/oshhome.htm** or via e-mail at cfoistaff@bls.gov.

[18] "Lost-worktime injuries: Characteristics and resulting time away from work, 1997," USDL 99-102 (Bureau of Labor Statistics, April 22, 1999).

[19] Bernard Gavzer, "Is The Long Haul Too Long?" pp. 12-13.

[20] Lisa Miller, "People On The Move Are Going Back To Driving School," *The Wall Street Journal*, May 20, 1997, p. 1.