FATAL ACCIDENT INVOLVEMENT RATES BY DRIVER AGE FOR LARGE TRUCKS

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16. Abstract

UMTRI survey data on large trucks involved in fatal accidents and on the travel of large trucks provide estimates of fatal accident involvement rates by driver age. The analysis is focused on the implications of lowering the minimum age for drivers of commercial trucks operating interstate from 21 to 19 years. Fatal accident involvement rates for drivers of large trucks were found to increase with decreasing driver age. The younger drivers were over-involved until about age 27. Drivers under the age of 21 were over-involved by a factor of 6 in comparison to the overall rate for all drivers.

Several other factors known to have significant influences on the probability of involvement in a fatal accident were examined to determine their association with the over-involvement of younger drivers. These factors were truck type, road type, time of day (day/night), area (rural/urban), trailer body style, and operation (interstate/interstate). The general pattern of over-involvement for younger drivers pervaded virtually every combination of factors examined. Adjusted rates were calculated by driver age group to compensate for differences in the travel of younger drivers, but this adjustment did not alter the degree of over-involvement of younger drivers either. Thus, it was concluded that the basic trend with driver age shown in the aggregate data is primarily associated with age and is not associated with the other factors examined. The results of this analysis substantiate an elevated risk for younger drivers of large trucks.

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BY DRIVER AGE FOR LARGE TRUCKS

Introduction

Currently the minimum age for drivers of commercial vehicles engaged in interstate commerce is 21 years. The Federal Highway Administration is reviewing this minimum age requirement. Previous studies have examined accident rates of passenger vehicles in relation to the age of the driver. Williams [Reference 1] focused on the involvement rates of teenage drivers in fatal accidents using the data from the 1977 National Personal Transportation Study conducted by the Bureau of the Census and from the NHTSA Fatal Accident Reporting System (FARS) files for 1976-1978. Male drivers under 19 had fatal accident involvement rates (involvements per hundred million miles) about 4-6 times the overall rate. Rates for male drivers aged 19-20 were 2-3 times the overall rate. Younger male drivers continued to be over-involved until about age 25. Driving at night was also examined. Nighttime rates for young males are about 4 times the daytime rates, and young males did somewhat more of their driving at night as compared to older males. Young females were also over-involved in fatal accidents, and the pattern of over-involvement was very similar to that for males. However, the fatal accident involvement rates for young females were about half those of young males. All of these rates were developed for drivers of passenger vehicles only (cars, light trucks, and vans).

The probability of fatality in an accident involving a large truck is about twice as high as in accidents not involving large trucks [2]. This is a direct consequence of the weight of large trucks in general, and the disparity in weight between large trucks and the passenger cars that are most commonly the other vehicle involved in the accident. If the risk of fatal accident involvement for young males when they are driving commercial trucks is as high as when they are driving passenger vehicles, then the information cited indicates that, if the minimum driving age were lowered to 19, these new drivers of commercial trucks would be expected to have fatal accident involvement rates 2-3 times the overall rate for commercial truck drivers.

Information is not available in the literature on the relationship of the age of commercial vehicle drivers to their accident experience. One might expect younger drivers to do better when they are employed to drive, particularly since their elevated rates in passenger vehicles are associated to some extent with nighttime driving and alcohol consumption. A question for FHWA, then, is the extent to which the risk of accident involvement for younger drivers of large trucks is improved in comparison to their risk as drivers of passenger vehicles. UMTRI survey data on fatal accidents involving large trucks and on large truck travel allow calculation of fatal accident involvement rates by driver age. This report describes the data, methods, and results of this analysis.

Summary

Fatal accident involvement rates for drivers of large trucks of all types are shown in Figure 1. It should be noted here that nearly 98 percent of the drivers of large trucks involved in fatal accidents from 1980-1984 were male. Although the females were not actually excluded from the tabulations, the results essentially describe the experience of male drivers. Except for the first and last group, ages have been combined into two-year groups to provide sufficient sample sizes. The overall trend shown in this figure, and in particular the over-involvement of younger drivers, is very similar to the findings of Williams cited above. Drivers under the age of 19 are over-involved by a factor of 4 and drivers aged 19-20 are over-involved by a factor of 6. Drivers of large trucks continue to be over-involved through age 26. The only difference that one notices in comparing the trend in Figure 1 with the findings for drivers of passenger vehicles is that Figure 1 shows the under-19 group to be somewhat lower than the 19-20 age group rather than continuing the upward trend expected. Even when combined into a three-year group, the sample sizes for drivers of large trucks under age 19 are very small. This group account for less than 0.2 percent of the travel and less than 0.8 percent of the fatal accidents. Drivers aged 19-20 accounted for only 0.4 percent of the travel and 2.4 percent of the fatal accidents. With these small sample sizes, such differences are not likely to be statistically significant. (Algorithms for variance calculations have not been developed yet for the travel data.) The results shown in Figure 1 are provided in tabular form in Table 1.
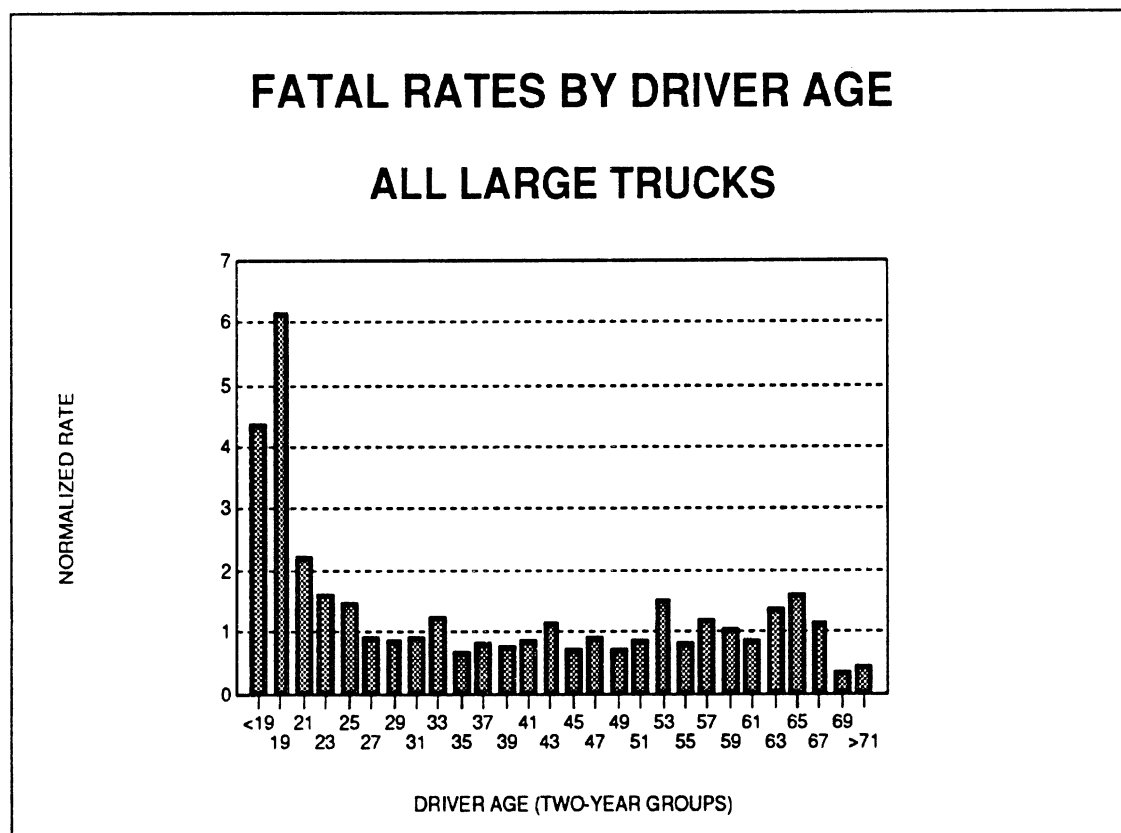
FATAL RATES BY DRIVER AGE

ALL LARGE TRUCKS

Figure 1

Most of the effort in this analysis was directed at investigating the extent to which other factors, such as the type of vehicle, type of road, time of day, and type of carrier, might be associated with the over-involvement of younger drivers of large trucks observed in Figure 1. Previous work [3] has shown substantial differences in the probability of involvement in a fatal accident for large trucks associated with these factors (also shown in figure 3). For example, on rural limited access roads the probability of fatal accident involvement is three times higher at night than in the day. For rural daytime travel, the probability of fatal accident involvement is five times higher on non-limited-access roads as compared to limited-access. Eight travel categories were formed from all possible combinations of three two-level travel factors. They are road type (limited-access versus non-limited-access), area type (rural versus urban), and time of day recoded into "day" (6:00 AM – 9:00 PM) and "night" (9:00 PM – 6:00 AM). An examination of the distribution of travel for younger drivers across the eight travel categories revealed that they travelled somewhat more on non-limited-access roads during the day, but somewhat less on limited-access roads at night. Adjusted rates were calculated to remove these differences from the comparison of younger drivers to all drivers. In order to distribute the data over eight travel categories and maintain sample sizes, ages were combined into 5 groups: under 25, 25-34, 35-44, 45-54, and over 54. However, the adjusted rate was essentially the same as the actual rate for the under-25 age group, 2.17 as compared to 2.15. Consequently, the distribution of travel does not have a strong influence on the over-involvement of the younger drivers in the aggregate. A comparison of the fatal accident involvement rates for drivers under 25 in each of the eight travel categories with the rates for drivers of all ages (Table 3) shows that the younger drivers are over-involved in every category. Some implications of these results are presented in the Discussion.

Method

Calculation of fatal accident involvement rates by driver age requires data on the age of drivers of large trucks involved in fatal accidents for the numerator, and the mileage travelled by large trucks broken down by the age of the driver for the denominator. If these rates are to be cross-classified by other factors such as vehicle type, road type, day/night, rural/urban, interstate/intrastate, and trailer body style, then both the accident and the travel data must be cross-classified by these factors as well. Existing federal data files do not include all of the factors of interest here. The NHTSA FARS file provides an accurate census of fatal accidents involving large trucks, but lacks information on the carrier and the type of trailer. The OMC accident files contain information that is filed on the MCS 50-T form by most interstate carriers on all of the factors except the type of road. Since the minimum age for interstate carriers is 21, most of the drivers under 21 are presumably employed by intrastate carriers that are not required to report to OMC. For the denominator (travel) neither the Federal Highway Statistics or the Bureau of the Census Truck Inventory and Use Survey have information on the age of the drivers.

Over the past several years, UMTRI has conducted national surveys of fatal accidents involving large trucks and of the travel of large trucks. These survey files provide the necessary data for this analysis of fatal accident involvement rates by driver age. The fatal accident survey produces a file

called Trucks Involved in Fatal Accidents (TIFA) each year. The travel survey was called the National Truck Trip Information Survey. Each is described briefly in the following paragraphs.

In 1981 a survey of all large trucks involved in fatal accidents in the United States was initiated, with 1980 being the first year covered. This survey combines information from the NHTSA Fatal Accident Reporting System (FARS) with accident data from the MCS 50-T report submitted to the Office of Motor Carriers by interstate carriers, the original police accident reports, and comprehensive telephone surveys conducted by UMTRI staff to produce the data file called Trucks Involved in Fatal Accidents. Essentially, the file has the data elements of both FARS and the MCS 50-T form with complete national coverage of both interstate and intrastate carriers. Pickup trucks are excluded from the survey, as are all passenger vehicles (vans, utility vehicles, buses, and ambulances) and fire trucks. Otherwise, all trucks with a gross vehicle weight *rating* greater than 10,000 pounds are included. Trucks involved in fatal accidents in Alaska and Hawaii are also excluded. The TIFA files are currently complete for five years, 1980-1984. More than 25,000 large trucks were involved in fatal accidents over that period. A more complete description of the TIFA files is provided by Reference 4, along with one-way tabulations of every variable in the five-year file.

In 1985 the National Truck Trip Information Survey (NTTIS) was initiated. For this survey, the owners of nearly 5,000 large trucks were contacted four times over a twelve-month period to obtain detailed information on the use of the truck. The information collected includes the configuration, cargo, actual weight, and the route the truck followed. The NTTIS began with a probability-based sample of trucks registered in the United States as of July 1, 1983. The sample was drawn from registration records maintained by R.L. Polk.

For each survey-day, the owner was asked to describe every trip made by the selected truck. Trips were split by time of day into day and night, and each trip was mapped on special atlases prepared by UMTRI. These maps showed the boundaries of every urban area having a population over 5,000 based on FHWA definitions obtained from each state. Roads were classified as limited access, other major or primary highways (largely U.S. and state routes), and other roads (mostly county roads and city streets). By mapping out the travel, each mile is characterized by the actual loading and configuration of the vehicle including the driver age. Each mile is also categorized by road type, rural/urban area, and day/night. Travel estimates are computed from the trip-level files by summing across trips and across the categories defined by the levels of each of the desired factors (vehicle type, carrier type, road type, etc.). A complete description of the NTTIS data is provided in Reference 5. The combination of the accident data in TIFA with miles traveled from NTTIS provides estimates of fatal accident involvement *rates*.

Findings

Having prepared Table 1 (and Figure 1) showing the overall relationship of driver age to fatal accident involvement rates for large trucks of all types, the objective was to examine the extent to which other factors

were associated with driver age in general, and the younger drivers in particular. Factors that were associated with the over-involvement of younger drivers might contribute, or be partially responsible, for the apparent over-involvement of the younger drivers. The additional factors examined were truck type (single unit versus combination), road type (limited-access versus non-limited), time of day (day as 6:00 AM to 9:00 PM and night as 9:00 PM to 6:00 AM), trailer body style (van versus non-van trailers in tractor-semitrailer combinations), and interstate versus intrastate operations. These factors were examined separately and in combination by partitioning the data according to the levels of the factor, or combination of factors, and then calculating fatal accident involvement rates in each age group. Comparison among the age groups can be made within each level, and combination of levels, of the factors defining the subgroup. The overall rate for the subgroup is indicative of the risk associated with the subgroup itself.

As the data were subdivided further and further, it was necessary to increase the size of the age groups in order to maintain sample sizes. Thus, for most of the analyses, only 5 driver age groups were used: under 25, 25-34, 35-44, 45-54, and over 54. This grouping may seem problematic since the focus is on drivers under 21. However, drivers under 21 provided only 0.6 percent of the travel and 3.2 percent of the involvements. Twenty-five was selected as the cutoff because this is near the point where the younger drivers' rate approaches the average rate over all ages. Within the under-25 age group, 90 percent of the travel was by drivers aged 21-24, and only 10 percent of the travel was by drivers under 21. These statistics underscore the pervasiveness of the current minimum driving age of 21, and the necessity of grouping the younger drivers when addressing the influence of other factors.

Normalized rates are presented throughout this report to facilitate comparisons. The normalized rates are calculated by dividing the raw rates (fatal accident involvements per million vehicle miles) for every subset by the overall raw rate. The normalized overall rate is 1.0, and normalized rates for particular subsets can easily be compared to this figure. Subsets with normalized rates less than 1.0 are under-involved in comparison to the overall rate, and subsets with normalized rates greater than 1.0 are over-involved. The normalized rate is also equal to the proportion of involvements for the subset divided by the proportion of travel for the subset. For example, if a subset has 10 percent of the involvements and 5 percent of the travel, the normalized rate is 10/5, or 2.0. The actual number of involvements and estimated travel for each category are shown in each of the tables in this report.

The first factor examined was the type of truck. Fatal accident involvement rates are shown by driver age separately for single-unit trucks and combinations in Table 2. Single-unit trucks are those without trailers. Tractors without trailers (bobtails) are included in this group. Combination trucks are those with trailers, and this group includes both tractors and straight trucks pulling one or more trailers. Eleven driver age groups are used in this table. Drivers under 21 are over-involved by about a factor of 6 when driving either single-unit or combination trucks. About 60 percent of the travel by drivers under 21 was in a single-unit truck, and only 40 percent was in combination trucks. Overall, combination trucks accounted for almost 70 percent of the large-truck travel.

The over-involvement of an age group relative to a subgroup can be obtained by dividing by the normalized rate for the subgroup. From Table 2, single-unit truck drivers under 21 years of age have a rate of 5.34 (relative to the rate for all large trucks shown as 1.00 at the bottom Table 2). Single-unit trucks as a group have a normalized rate of 0.80, so that the rate for drivers under 21 of single-unit trucks relative to that for all single-unit trucks is 5.34/0.80, or 6.68. The rate for under 21 drivers of combination trucks relative to the rate for all drivers of combination trucks is 6.13/1.09, or 5.62.

Table 3 presents rates by driver age for eight travel categories corresponding to the combinations of three factors, each having two levels. The three are limited access roads versus non-limited access (all other roads), day versus night, and rural versus urban. In Table 4, the eight travel categories are now tabulated separately for single-unit trucks and combinations.

Normalized fatal accident involvement rates for the eight travel categories are shown in Figure 2 for all drivers of combination trucks. Combinations are predominantly tractors pulling a single semitrailer, but also include straight trucks pulling a trailer and tractors pulling two trailers. This analysis is restricted to combination trucks only, since Table 2 showed some differences between single-unit and combination trucks. The rates for combinations were taken from Table 4, but normalized to 1.0 for this figure. The initials of the labels indicate the combination of the levels of the three factors: Limited/Other, Day/Night, and Rural/Urban. Thus, the first travel category, LDR, is Limited-access roads during the Day in Rural areas, and the last, ONU, is Other (non-limited-access roads) at Night in Urban areas. This figure illustrates the substantial differences across the eight travel categories in the probability of involvement in fatal accidents for combination trucks.

Figure 3 shows the normalized rates for drivers under 25 of combination trucks for each of the eight travel categories. Not only are the younger drivers over-involved in every category in comparison to all drivers (as shown in Figure 2), but the degree of over-involvement is about the same for every category.
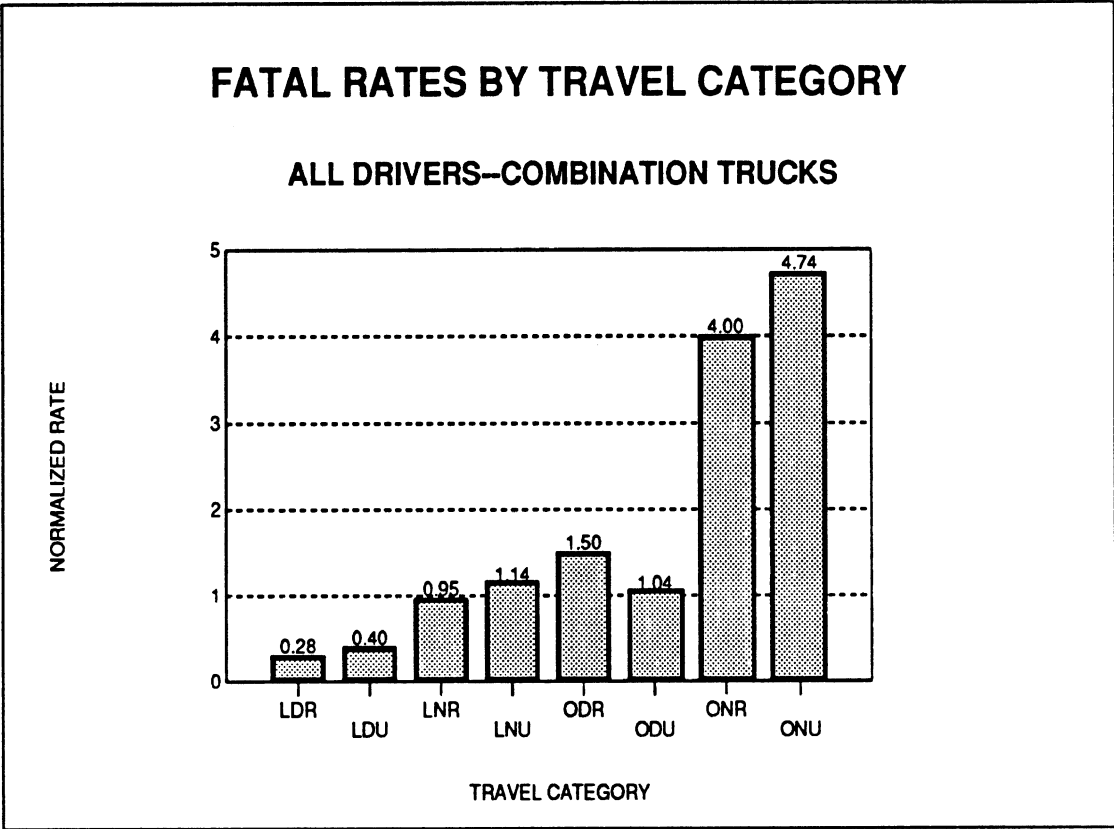
FATAL RATES BY TRAVEL CATEGORY

ALL DRIVERS--COMBINATION TRUCKS

Figure 2

FATAL RATES BY TRAVEL CATEGORY
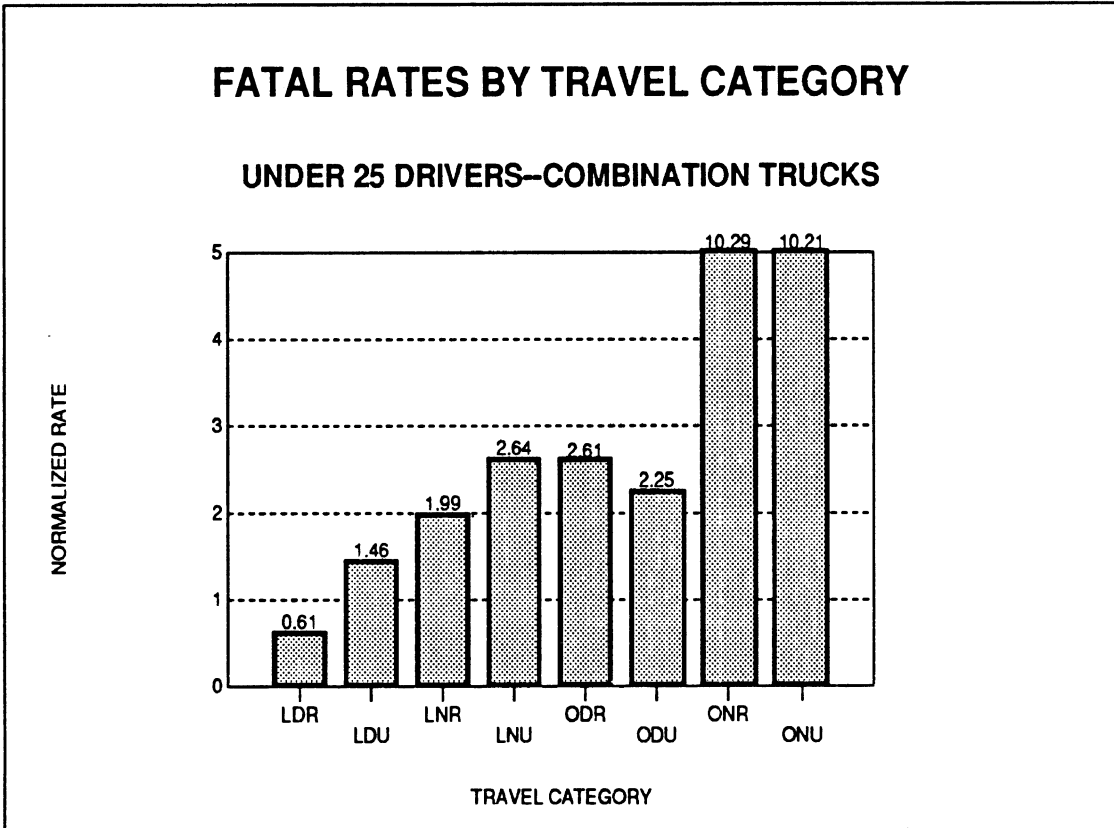
UNDER 25 DRIVERS--COMBINATION TRUCKS

Figure 3

Table 5 covers only tractors pulling a single semitrailer. The eight travel categories have been reduced to four by omitting the rural/urban split. These four travel categories are shown separately for tractors pulling van semitrailers and for those pulling semitrailers of any other body style. Overall, tractors pulling a non-van semitrailer are somewhat (16%) over-involved in comparison to van semitrailers. However, the over-involvement of drivers under 25 is similar for both trailer types and across the four travel categories. When the rate for drivers under 25 of tractor/van-semitrailer combinations is aggregated across the four travel categories and normalized by the overall rate for this combination, the rate for the under-25 drivers is 1.97. The same calculation applied to the non-van group results in a rate of 2.27 for the under-25 group. Although the travel category and trailer body style influence the overall fatal accident involvement, they do not appear to influence the over-involvement of the younger drivers.

Table 6 also uses only four travel categories. These, in turn, are shown for four subsets: single-unit trucks in interstate operation, single-units in intrastate operation, combination trucks in interstate operation, and combinations in intrastate operation. The inter- versus intrastate distinction is made at the level of the carrier, or owner. If any of the carrier's trucks operate interstate, then all of the travel of the trucks operated by that carrier is designated as interstate. Conversely, all of the trucks operated by an intrastate carrier operate within a single state. Sample sizes for many of the cells are too small to be reliable. In general, cell sizes less than 100 are expected to have higher variances.

Overall, the results in Table 6 are somewhat mixed. Single-unit trucks, which accumulate about 30 percent of the travel, are split about equally between interstate and intrastate operations. Both types of operation are under-involved with regard to all large trucks, and the single-unit interstate operation has the lowest overall rate of the four groups. The under-25 age group is consistently over-involved in every travel category except one when compared to the overall rate for the travel category. The single exception is single-unit trucks in interstate operation on limited-access roads at night. The rate for drivers under 25 in this category is 1.73. When compared to the overall rate for the category (all ages) of 1.89, the normalized rate for the under-25 group is 0.92. This is probably an anomaly of the very small sample sizes in this category.

Combination trucks in interstate operation are the largest of the four major divisions in Table 6, and account for almost 60 percent of all large truck travel. Combinations in intrastate operation account for about 12 percent of the large truck travel, a group comparable in travel to each of the single-unit groups. Looking at the individual travel categories, the drivers under 25 are over-involved in comparison to the overall rate in every combination truck travel category. The overall rates are similar for combination trucks in interstate operation compared to combinations in intrastate operation.

The results for the under-25 group can be summarized for the four major divisions in Table 6 by aggregating the rates for this age group across the four travel categories in each truck type/operation, and normalizing with respect to the truck type/operation overall rate. When summarized in this

way, the over-involvement of the under-25 group by truck type/operation is as follows:

Single-unit/interstate	2.06
Single-unit/intrastate	2.45
Combination/interstate	2.33
Combination/intrastate	1.75

Overall, these results do not vary appreciably from the 2.15 rate for the aggregate, but the variations do not suggest a simple interpretation. Among the single-unit trucks, the rate is higher for the intrastate operations, whereas the opposite is true for the combinations. The overall rates exhibited the same pattern for these four groups. Since the majority of the drivers under 21 drove single-unit trucks (Table 2), presumably in intrastate operations, one might have expected this category to be the most over-involved. However, it is unlikely that the under-21 subset is large enough in comparison to the 21-24 group to appreciably influence the rate for the under-25 group even among single-unit intrastate operations. This finding is contradicted by the combination trucks in intrastate operations where the under-25 group is least over-involved. A final observation from Table 6 illustrates the employment of younger drivers in the trucking industry. Among single-unit trucks, both in interstate and intrastate operation, and among combination trucks in intrastate operation, the under-25 age group accumulates about 10% of the travel. However, among the largest segment of the trucking industry, the combination trucks in interstate operation, less than 4 percent of the travel is by drivers under 25. Thus, this segment appears to employ the more experienced drivers.

In summary, even when the cell sizes are small, the younger drivers are over-involved no matter how much the data are subdivided. The overall trend pervades every type of vehicle and operation examined (except one). The remaining material in this section presents an analysis that adjusts each driver age group for differences in other factors from one age group to another, thus providing a more controlled comparison across age groups.

Driver age is only one of many factors that influences the probability of involvement in a fatal accident. As mentioned before, the probability is substantially lower on limited-access roads and higher at night. If the younger drivers travel proportionately more on non-limited-access roads, for example, then their aggregate rate would be higher as a consequence. This analysis is concerned with the degree to which other factors may be responsible for the elevated rate shown for the younger drivers in Figure 1.

The group of factors addressed are those that form the eight travel categories. Figures 4 and 5 show the distribution of travel across the eight categories for all combination trucks and those with drivers under 25, respectively. Comparison of these two figures shows that the younger drivers travel proportionately more in the Other-Day-Rural category and less on limited-access roads at night. These differences may influence the aggregate rate for the younger drivers in comparison to drivers of other ages. The adjusted rates calculation described in Reference 3 provides a way to eliminate such differences from the comparison across age categories. The individual "cell" rates for each age group and each travel category are used to

calculate an aggregate rate for each age group by applying the aggregate travel distribution. The resulting "adjusted" rate is the rate that would be expected if the travel of each age group were distributed across the eight travel categories identically to the aggregate. Thus, the influences of travel differences are eliminated from the comparison across age groups. The adjusted rates are compared with the original rates in Figure 6. The adjusted rates are essentially the same as the original rates. Consequently, the differences in travel of the younger drivers have not appreciably influenced the aggregate rate. Single-unit trucks were then regrouped with the combinations and adjusted rates were calculated by age group for all large trucks. The result was essentially unchanged. The adjusted rate for drivers under-25 was 2.17 as compared to the unadjusted rate of 2.15.

Figure 4

DISTRIBUTION OF TRAVEL

UNDER 25 DRIVERS--COMBINATION TRUCKS

Figure 5

ADJUSTED RATES BY AGE CATEGORY

COMBINATION TRUCKS
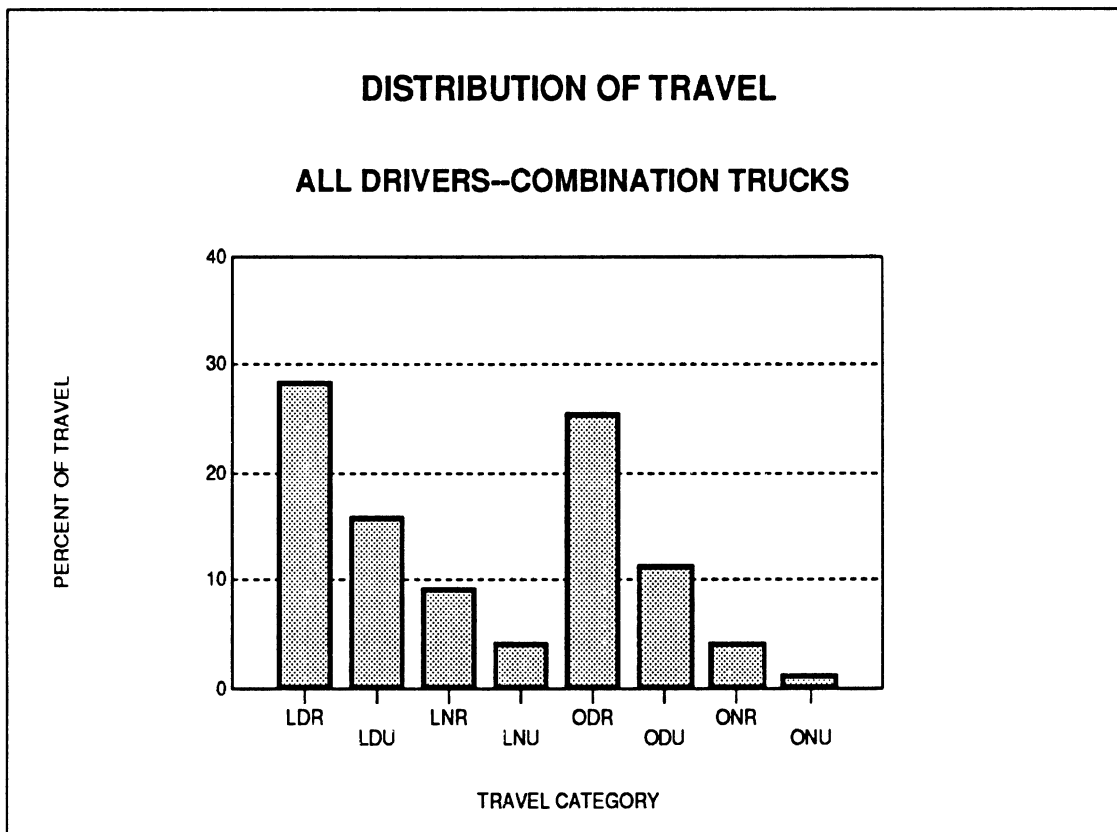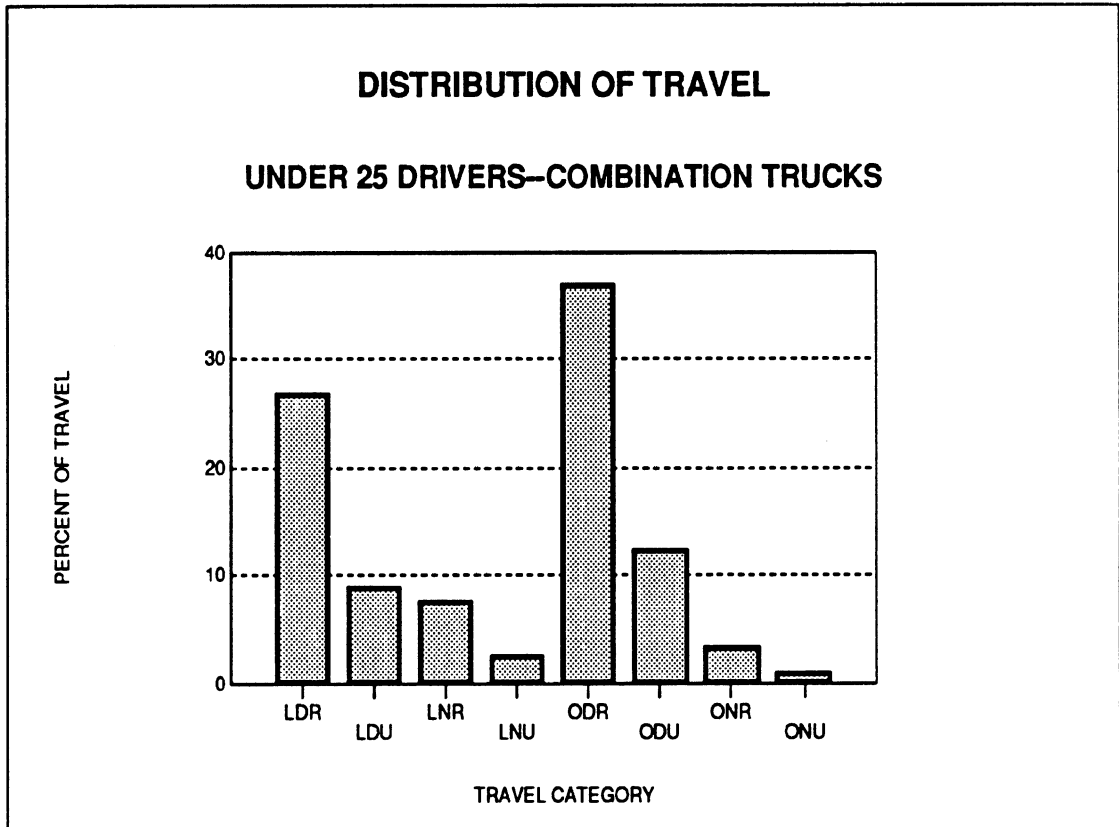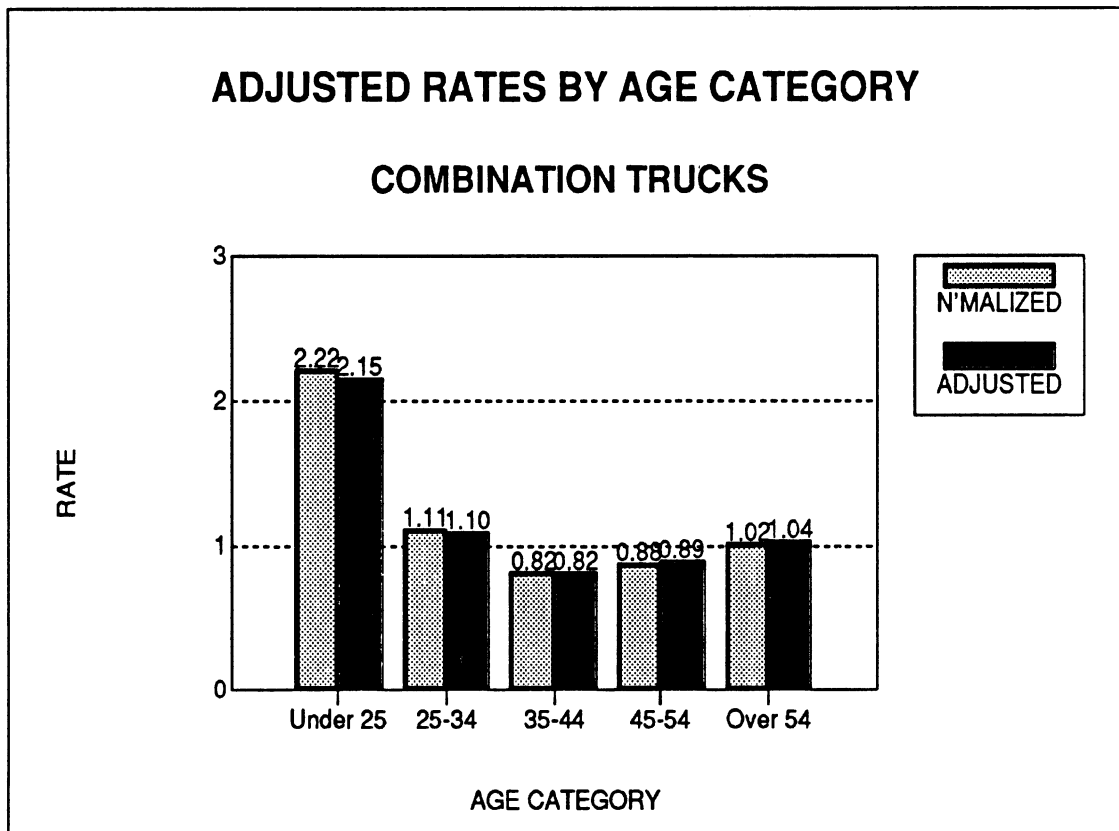
Figure 6

Discussion

The most significant finding in these data is the pervasive nature of the over-involvement of young drivers. Williams [1] described the effectiveness of curfews in limiting nighttime driving among teens in passenger vehicles. Nighttime is associated with a higher risk of fatal accident involvement for drivers of all ages and for all types of vehicles. Limiting nighttime driving may be an appropriate countermeasure for teenage drivers of passenger vehicles, since driving after dark may be less essential and it carries the greatest risk. Although curfews are effective in that they reduce the exposure in the high risk periods, they do not in any way modify the general over-involvement of this group when they do drive. If one is considering lowering the minimum driving age for commercial vehicles, then the significant finding of this analysis is that the younger drivers are over-involved in virtually all of the conditions examined in this study. They are over-involved in the day just as much as at night, on all types of roads, and in both rural and urban areas. Furthermore, younger drivers are over-involved as drivers of commercial vehicles to about the same degree as when they are drivers of passenger vehicles. The fact that they are employed to drive commercial vehicles apparently does not alter the essential pattern of over-involvement that is shown when they drive passenger vehicles.

Adjustment of the rates by age category for road type, day/night, and rural/urban area did not appreciably alter the pattern of over-involvement. Since this trend was not found to be a consequence of travel factors known to have rather large effects individually, and since the trend was exhibited in every subset examined, we conclude that it is appropriate to regard the rates by age group in the aggregate data as primarily associated with age and not the other factors examined here. The advantage of aggregating the data for all large trucks is that sufficient sample sizes are then available to isolate the subsets of interest.

The fatal accident involvement rates calculated from the UMTRI survey data for large truck drivers aged 19-20 are about double the rates presented by Williams for male drivers of the same age. This result is consistent with the statistics reported by Eicher [2] indicating that the probability of fatality in accidents involving a large truck is about double that of accidents not involving a large truck. The results of this analysis, then, indicate a risk of fatal accident involvement for young drivers of large trucks that is consistent with their pattern of over-involvement as drivers of passenger vehicles.

In closing, it should be pointed out that although these findings substantiate a high risk for young drivers of large trucks, they do not identify the fundamental causes of this risk. It would seem that the driving situation for young drivers of trucks would be much different than for young drivers of passenger vehicles. The nighttime driving with peers and associated alcohol consumption that characterizes teenage passenger car use would not likely be a part of their truck driving. However, truck driving is a more demanding task. Training and experience may be more important. Unfortunately, years of experience is not coded in the accident files used for this analysis. Although this analysis does not shed any light on the fundamental causes of the over-involvement of younger drivers, it does illuminate the likely

consequences if the minimum age for commercial drivers is lowered without solving this fundamental problem.

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TABLES

TABLE 1
Fatal Accident Over/Under Involvement Ratios
by 28 Truck Driver Age Categories for All Truck Types
NTTIS and 1980–84 TIFA Files

Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involvements	Column Percent	Norm. Rate[a]
Under 19	33	92	0.18%	187	0.78%	4.39
19–20	68	202	0.39	574	2.39	6.16
21–22	296	1012	1.94	1049	4.37	2.25
23–24	466	1911	3.66	1420	5.91	1.61
25–26	682	2427	4.65	1632	6.79	1.46
27–28	949	4013	7.69	1716	7.14	0.93
29–30	863	3851	7.38	1585	6.60	0.89
31–32	903	3732	7.15	1541	6.42	0.90
33–34	630	2543	4.87	1466	6.10	1.25
35–36	930	4480	8.59	1438	5.99	0.70
37–38	703	3405	6.52	1283	5.34	0.82
39–40	877	3485	6.68	1280	5.33	0.80
41–42	600	2893	5.54	1160	4.83	0.87
43–44	441	2010	3.85	1059	4.41	1.14
45–46	760	3011	5.77	992	4.13	0.72
47–48	472	2130	4.08	888	3.70	0.91
49–50	486	2501	4.79	844	3.51	0.73
51–52	414	2015	3.86	810	3.37	0.87
53–54	263	1127	2.16	805	3.35	1.55
55–56	409	1739	3.33	649	2.70	0.81
57–58	243	913	1.75	496	2.07	1.18
59–60	218	857	1.64	415	1.73	1.05
61–62	178	712	1.37	278	1.16	0.85
63–64	76	277	0.53	179	0.75	1.40
65–66	29	121	0.23	90	0.37	1.61
67–68	37	142	0.27	74	0.31	1.13
69–70	29	277	0.53	48	0.20	0.38
Over 70	45	300	0.58	60	0.25	0.43
Total	12100	52191	100.00%	24018	100.00%	1.00

[a]Rate = (% of Involvements)/(% of Travel)

NOTE: There were 598 government-owned trucks in fatal accidents which are not included in this table (542 straight trucks, 55 tractors, and one unknown truck type). Of the remaining truck involvements driver age is missing in 662 cases. Mileage data are missing for 312 of the 13097 trips in the NTTIS file, and driver age is unknown for an additional 685 trips (involving 3.677 billion estimated national miles).

TABLE 2
Fatal Accident Over/Under Involvement Ratios
by 11 Driver Age Groups for Single-Unit and Combination Vehicles
NTTIS and 1980–84 TIFA Files

Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involvements	Column Percent	Norm. Rate[a]
SINGLE-UNIT VEHICLES						
Under 21	62	175	0.34%	426	1.80%	5.34
21–24	411	1399	2.69	944	3.99	1.48
25–29	840	2863	5.51	1066	4.51	0.82
30–34	805	2985	5.74	856	3.62	0.63
35–39	620	2272	4.37	683	2.89	0.66
40–44	456	1826	3.51	524	2.21	0.63
45–49	344	1399	2.69	473	2.00	0.74
50–54	346	1489	2.86	408	1.72	0.60
55–59	254	955	1.84	293	1.24	0.67
60–64	143	479	0.92	174	0.74	0.80
Over 64	84	630	1.21	133	0.56	0.46
SUBTOTAL	4365	16472	31.68	5980	25.28	0.80
COMBINATION VEHICLES						
Under 21	38	114	0.22%	317	1.34%	6.13
21–24	346	1485	2.86	1482	6.26	2.19
25–29	1048	4724	9.09	3023	12.78	1.41
30–34	1318	5955	11.45	2871	12.13	1.06
35–39	1287	6511	12.52	2633	11.13	0.89
40–44	1181	5641	10.85	2293	9.69	0.89
45–49	977	4334	8.34	1800	7.61	0.91
50–54	708	3475	6.68	1606	6.79	1.02
55–59	460	2039	3.92	1061	4.48	1.14
60–64	267	1027	1.98	460	1.94	0.98
Over 64	56	211	0.41	133	0.56	1.38
SUBTOTAL	7686	35516	68.32	17679	74.72	1.09
GRAND TOTAL	12051	51987	100.00%	23659	100.00%	1.00

[a]Rate = (% of Involvements)/(% of Travel)

NOTE: There were 598 government-owned trucks in fatal accidents which are not included in this table (542 straight trucks, 55 tractors, and one unknown truck type). Of the remaining truck involvements driver age is missing in 662 cases. Mileage data are missing for 312 of the 13097 trips in the NTTIS file, and driver age is unknown for an additional 685 trips (involving 3.677 billion estimated national miles). Vehicle type is missing or other for an additional 359 TIFA involvements and for an additional 49 NTTIS trips (involving .204 billion miles).

TABLE 3
Fatal Accident Over/Under Involvement Ratios
by 6 Driver Age Groups Within 8 Travel Categories
NTTIS and 1980–84 TIFA Files

Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involvements	Column Percent	Norm. Rate[a]
FREEWAY/DAY/RURAL						
Under 25	173	577	1.17%	176	0.74%	0.63
25–34	972	3161	6.43	507	2.14	0.33
35–44	949	3834	7.79	442	1.87	0.24
45–54	608	2427	4.93	311	1.31	0.27
55–64	281	831	1.69	163	0.69	0.41
Over 64	23	60	0.12	12	0.05	0.41
SUBTOTAL	3006	10891	22.14	1611	6.80	0.31
FREEWAY/DAY/URBAN						
Under 25	293	352	0.72%	176	0.74%	1.04
25–34	1697	2352	4.78	429	1.81	0.38
35–44	1620	2431	4.94	375	1.58	0.32
45–54	1101	1455	2.96	289	1.22	0.41
55–64	500	701	1.43	146	0.62	0.43
Over 64	35	58	0.12	10	0.04	0.36
SUBTOTAL	5246	7350	14.94	1425	6.01	0.40
FREEWAY/NIGHT/RURAL						
Under 25	39	163	0.33%	149	0.63%	1.89
25–34	257	798	1.62	550	2.32	1.43
35–44	308	1199	2.44	465	1.96	0.80
45–54	208	764	1.55	297	1.25	0.81
55–64	94	358	0.73	157	0.66	0.91
Over 64	5	14	0.03	12	0.05	1.75
SUBTOTAL	911	3295	6.70	1630	6.88	1.03
FREEWAY/NIGHT/URBAN						
Under 25	52	51	0.10%	78	0.33%	3.17
25–34	335	350	0.71	293	1.24	1.74
35–44	423	577	1.17	282	1.19	1.02
45–54	286	372	0.76	210	0.89	1.17
55–64	133	159	0.32	86	0.36	1.12
Over 64	6	8	0.02	3	0.01	0.83
SUBTOTAL	1235	1515	3.08	952	4.02	1.30

TABLE 3 Continued

Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involvements	Column Percent	Norm. Rate[a]
OTHER ROAD/DAY/RURAL						
Under 25	453	1138	2.31%	1494	6.30%	2.72
25–34	1826	5030	10.23	3297	13.91	1.36
35–44	1630	4212	8.56	2368	9.99	1.17
45–54	1007	2991	6.08	1675	7.07	1.16
55–64	530	1338	2.72	801	3.38	1.24
Over 64	91	402	0.82	152	0.64	0.78
SUBTOTAL	5537	15111	30.72	9787	41.30	1.34
OTHER ROAD/DAY/URBAN						
Under 25	559	713	1.45%	617	2.60%	1.80
25–34	2741	3181	6.47	1281	5.41	0.84
35–44	2379	2467	5.01	921	3.89	0.77
45–54	1627	1717	3.49	630	2.66	0.76
55–64	732	688	1.40	281	1.19	0.85
Over 64	78	145	0.29	47	0.20	0.67
SUBTOTAL	8116	8911	18.11	3777	15.94	0.88
OTHER ROAD/NIGHT/RURAL						
Under 25	39	62	0.13%	360	1.52%	11.99
25–34	242	496	1.01	1096	4.62	4.58
35–44	248	559	1.14	963	4.06	3.58
45–54	147	345	0.70	627	2.65	3.77
55–64	68	120	0.24	260	1.10	4.51
Over 64	7	9	0.02	24	0.10	5.45
SUBTOTAL	751	1592	3.24	3330	14.05	4.34
OTHER ROAD/NIGHT/URBAN						
Under 25	52	26	0.05%	121	0.51%	9.69
25–34	323	158	0.32	393	1.66	5.18
35–44	393	193	0.39	326	1.38	3.50
45–54	253	102	0.21	244	1.03	4.97
55–64	119	46	0.09	96	0.41	4.30
Over 64	4	2	0.00	7	0.03	8.16
SUBTOTAL	1144	527	1.07	1187	5.01	4.68
GRAND TOTAL	11676	49192	100.00%	23699	100.00%	1.00

[a]Rate = (% of Involvements)/(% of Travel)

NOTE: There were 598 government-owned trucks in fatal accidents which are not included in this table (542 straight trucks, 55 tractors, and one unknown truck type). Of the remaining truck involvements driver age is missing in 662 cases. Mileage data by travel category are missing for 814 of the 13097 trips in the NTTIS file, and driver age is unknown for an additional 607 trips (involving 2.744 billion estimated national miles). Travel category is missing for an additional 319 TIFA involvements.

TABLE 4
Fatal Accident Over/Under Involvement Ratios
by 5 Driver Age Groups Within 8 Travel Categories
for Single-Unit Trucks and for Combination Trucks
NTTIS and 1980–84 TIFA Files

Truck Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involvements	Column Percent	Norm. Rate[a]
SINGLE-UNIT TRUCKS						
FREEWAY/DAY/RURAL						
Under 25	58	135	0.28%	44	0.19%	0.68
25–34	181	268	0.55	51	0.22	0.40
35–44	128	350	0.71	33	0.14	0.20
45–54	68	166	0.34	31	0.13	0.39
Over 54	49	102	0.21	16	0.07	0.33
SUBTOTAL	484	1022	2.09	175	0.75	0.36
FREEWAY/DAY/URBAN						
Under 25	145	207	0.42%	69	0.30%	0.70
25–34	464	654	1.34	101	0.43	0.32
35–44	311	534	1.09	62	0.27	0.24
45–54	185	321	0.66	44	0.19	0.29
Over 54	108	181	0.37	32	0.14	0.37
SUBTOTAL	1213	1897	3.87	308	1.32	0.34
FREEWAY/NIGHT/RURAL						
Under 25	3	33	0.07%	25	0.11%	1.58
25–34	12	12	0.02	21	0.09	3.79
35–44	11	22	0.04	16	0.07	1.54
45–54	9	28	0.06	13	0.06	0.98
Over 54	8	11	0.02	9	0.04	1.79
SUBTOTAL	43	105	0.21	84	0.36	1.68
FREEWAY/NIGHT/URBAN						
Under 25	6	5	0.01%	22	0.09%	8.85
25–34	28	13	0.03	32	0.14	5.15
35–44	23	15	0.03	27	0.12	3.71
45–54	23	21	0.04	15	0.06	1.47
Over 54	16	6	0.01	5	0.02	1.86
SUBTOTAL	96	61	0.12	101	0.43	3.50

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TABLE 4 Continued for Single-Unit Trucks

Truck Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involvements	Column Percent	Norm. Rate[a]
OTHER ROAD/DAY/RURAL						
Under 25	213	553	1.13%	692	2.96%	2.63
25–34	748	2230	4.55	906	3.88	0.85
35–44	529	1476	3.01	588	2.52	0.84
45–54	304	1068	2.18	432	1.85	0.85
Over 54	260	928	1.89	339	1.45	0.77
SUBTOTAL	2054	6256	12.77	2957	12.67	0.99
OTHER ROAD/DAY/URBAN						
Under 25	306	517	1.05%	377	1.61%	1.53
25–34	1082	1874	3.83	536	2.30	0.60
35–44	682	1238	2.53	334	1.43	0.57
45–54	458	853	1.74	239	1.02	0.59
Over 54	274	513	1.05	141	0.60	0.58
SUBTOTAL	2802	4995	10.19	1627	6.97	0.68
OTHER ROAD/NIGHT/RURAL						
Under 25	8	9	0.02%	79	0.34%	17.88
25–34	41	56	0.11	144	0.62	5.38
35–44	16	18	0.04	78	0.33	9.22
45–54	19	39	0.08	61	0.26	3.25
Over 54	18	22	0.04	29	0.12	2.78
SUBTOTAL	102	144	0.29	391	1.67	5.68
OTHER ROAD/NIGHT/URBAN						
Under 25	13	10	0.02%	36	0.15%	7.74
25–34	59	47	0.10	102	0.44	4.59
35–44	42	39	0.08	51	0.22	2.72
45–54	37	25	0.05	32	0.14	2.67
Over 54	31	14	0.03	17	0.07	2.58
SUBTOTAL	182	135	0.27	238	1.02	3.71
SINGLE-UNIT SUBTOTAL	4114	14614	29.83%	5881	25.19%	0.84

TABLE 4 Continued for Combination Trucks

Truck Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involvements	Column Percent	Norm. Rate[a]
COMBINATION TRUCKS						
FREEWAY/DAY/RURAL						
Under 25	111	421	0.86%	131	0.56%	0.65
25–34	786	2887	5.89	448	1.92	0.33
35–44	819	3481	7.10	407	1.74	0.25
45–54	537	2245	4.58	276	1.18	0.26
Over 54	255	789	1.61	157	0.67	0.42
SUBTOTAL	2508	9824	20.05	1419	6.08	0.30
FREEWAY/DAY/URBAN						
Under 25	143	140	0.29%	104	0.45%	1.56
25–34	1230	1697	3.46	326	1.40	0.40
35–44	1307	1896	3.87	306	1.31	0.34
45–54	913	1132	2.31	240	1.03	0.45
Over 54	427	579	1.18	121	0.52	0.44
SUBTOTAL	4020	5443	11.11	1097	4.70	0.42
FREEWAY/NIGHT/RURAL						
Under 25	33	120	0.25%	121	0.52%	2.11
25–34	245	786	1.60	525	2.25	1.40
35–44	296	1176	2.40	446	1.91	0.80
45–54	194	726	1.48	281	1.20	0.81
Over 54	91	361	0.74	159	0.68	0.92
SUBTOTAL	859	3169	6.47	1532	6.56	1.01
FREEWAY/NIGHT/URBAN						
Under 25	43	41	0.08%	55	0.24%	2.80
25–34	307	337	0.69	256	1.10	1.59
35–44	399	561	1.15	252	1.08	0.94
45–54	258	346	0.71	194	0.83	1.18
Over 54	123	161	0.33	83	0.36	1.08
SUBTOTAL	1130	1446	2.95	840	3.60	1.22

TABLE 4 Continued for Combination Trucks

Truck Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involvements	Column Percent	Norm. Rate[a]
OTHER ROAD/DAY/RURAL						
Under 25	238	581	1.18%	771	3.30%	2.79
25–34	1070	2783	5.68	2337	10.01	1.76
35–44	1097	2725	5.56	1742	7.46	1.34
45–54	690	1879	3.84	1221	5.23	1.36
Over 54	361	812	1.66	599	2.57	1.55
SUBTOTAL	3456	8779	17.92	6670	28.57	1.59
OTHER ROAD/DAY/URBAN						
Under 25	251	196	0.40%	224	0.96%	2.40
25–34	1654	1302	2.66	717	3.07	1.16
35–44	1696	1229	2.51	567	2.43	0.97
45–54	1165	861	1.76	382	1.64	0.93
Over 54	536	320	0.65	182	0.78	1.19
SUBTOTAL	5302	3909	7.98	2072	8.88	1.11
OTHER ROAD/NIGHT/RURAL						
Under 25	30	53	0.11%	277	1.19%	11.06
25–34	199	436	0.89	937	4.01	4.51
35–44	229	534	1.09	875	3.75	3.44
45–54	121	296	0.60	561	2.40	3.98
Over 54	57	107	0.22	248	1.06	4.87
SUBTOTAL	636	1426	2.91	2898	12.41	4.27
OTHER ROAD/NIGHT/URBAN						
Under 25	38	16	0.03%	83	0.36%	11.08
25–34	262	110	0.22	283	1.21	5.41
35–44	349	153	0.31	272	1.17	3.73
45–54	213	75	0.15	211	0.90	5.87
Over 54	92	34	0.07	86	0.37	5.26
SUBTOTAL	954	389	0.79	935	4.01	5.05
COMBINATION SUBTOTAL	7516	34383	70.17%	17463	74.81%	1.07
GRAND TOTAL	11630	48998	100.00%	23344	100.00%	1.00

[a]Rate = (% of Involvements)/(% of Travel)

NOTE: There were 598 government-owned trucks in fatal accidents which are not included in this table (542 straight trucks, 55 tractors, and one unknown truck type). Of the remaining truck involvements driver age is missing in 662 cases. Mileage data by travel category are missing for 814 of the 13,097 trips in the NTTIS file, and driver age is unknown for an additional 607 trips (involving 2,744 million estimated national miles). Travel category is missing for an additonal 319 TIFA involvements. Also vehicle type is missing or "other" for an additional 355 TIFA involvements and an additional 46 NTTIS trips (involving 194 million estimated national miles).

TABLE 5
Fatal Accident Over/Under Involvement Ratios
by 5 Driver Age Groups Within 4 Travel Categories
for 2 Tractor/Semi-Trailer Body Styles
NTTIS and 1980–84 TIFA Files

Truck Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involve ments	Column Percent	Norm. Rate[a]
VAN TRAILERS						
FREEWAY/6AM-9PM						
Under 25	68	314	1.00%	117	0.73%	0.73
25–34	605	2202	6.99	390	2.44	0.35
35–44	713	3196	10.14	377	2.35	0.23
45–54	450	1861	5.91	285	1.78	0.30
Over 54	199	644	2.04	138	0.86	0.42
SUBTOTAL	2035	8218	26.07	1307	8.16	0.31
FREEWAY/9PM-6AM						
Under 25	27	105	0.33%	84	0.52%	1.57
25–34	171	661	2.10	427	2.67	1.27
35–44	257	1278	4.05	412	2.57	0.63
45–54	149	564	1.79	264	1.65	0.92
Over 54	70	340	1.08	131	0.82	0.76
SUBTOTAL	674	2948	9.35	1318	8.23	0.88
OTHER ROAD/6AM-9PM						
Under 25	90	206	0.65%	247	1.54%	2.36
25–34	757	1213	3.85	1021	6.38	1.66
35–44	914	1534	4.87	818	5.11	1.05
45–54	601	1018	3.23	537	3.35	1.04
Over 54	266	384	1.22	258	1.61	1.32
SUBTOTAL	2628	4356	13.82	2881	17.99	1.30
OTHER ROAD/9PM-6AM						
Under 25	22	39	0.13%	120	0.75%	5.99
25–34	158	249	0.79	494	3.08	3.90
35–44	208	344	1.09	496	3.10	2.84
45–54	135	188	0.60	359	2.24	3.77
Over 54	57	78	0.25	151	0.94	3.82
SUBTOTAL	580	898	2.85	1620	10.12	3.55
VAN SUBTOTAL	3423	16420	52.09%	7126	44.50%	0.85

TABLE 5 Continued for Non-Van Trailers

Truck Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involve ments	Column Percent	Norm. Rate[a]
NON-VAN TRAILERS						
FREEWAY/6AM-9PM						
Under 25	74	223	0.71%	103	0.64%	0.91
25–34	594	2122	6.73	333	2.08	0.31
35–44	524	1835	5.82	281	1.75	0.30
45–54	389	1189	3.77	192	1.20	0.32
Over 54	186	544	1.73	102	0.64	0.37
SUBTOTAL	1767	5915	18.76	1011	6.31	0.34
FREEWAY/9PM-6AM						
Under 25	15	50	0.16%	78	0.49%	3.06
25–34	129	401	1.27	305	1.90	1.50
35–44	101	309	0.98	245	1.53	1.56
45–54	79	308	0.98	172	1.07	1.10
Over 54	38	123	0.39	71	0.44	1.13
SUBTOTAL	362	1191	3.78	871	5.44	1.44
OTHER ROAD/6AM-9PM						
Under 25	175	464	1.47%	641	4.00%	2.72
25–34	1010	2544	8.07	1783	11.13	1.38
35–44	818	2074	6.58	1299	8.11	1.23
45–54	591	1481	4.70	932	5.82	1.24
Over 54	278	701	2.22	446	2.78	1.25
SUBTOTAL	2872	7264	23.05	5101	31.85	1.38
OTHER ROAD/9PM-6AM						
Under 25	18	29	0.09%	202	1.26%	13.87
25–34	137	279	0.89	639	3.99	4.50
35–44	119	237	0.75	555	3.47	4.60
45–54	59	126	0.40	352	2.20	5.49
Over 54	36	59	0.19	158	0.99	5.28
SUBTOTAL	369	730	2.32	1906	11.90	5.14
NON-VAN SUBTOTAL	3229	15101	47.91%	8889	55.50%	1.16
GRAND TOTAL	6652	31521	100.00%	16015	100.00%	1.00

[a]Rate = (% of Involvements)/(% of Travel)

NOTE: Of the 7,297 reported trips by tractor/semi-trailers (single trailer only) travel category is unknown for 353 trips and age is unknown for an additional 292 trips. Trailer body style is known for all 6652 trips. Among the 16,410 fatal involvements of non-governemnt-owned tractor/semi-trailers travel category is unknown for 208 cases, and driver age is unknown for an additional 179 cases. Of the 749 cases in which trailer body style is unknown 741 are included in the "non-van" category.

TABLE 6
Fatal Accident Over/Under Involvement Ratios
by 5 Driver Age Groups Within 4 Travel Categories
for Single-Unit and Combination Trucks by Area of Operation
NTTIS and 1980–84 TIFA Files

Truck and Area Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involve ments	Column Percent	Norm. Rate[a]
SINGLE-UNIT TRUCKS IN INTERSTATE OPERATION						
FREEWAY/6AM-9PM						
Under 25	70	195	0.40%	55	0.25%	0.63
25–34	259	511	1.04	59	0.27	0.26
35–44	216	649	1.32	53	0.24	0.18
45–54	121	282	0.58	36	0.16	0.28
Over 54	71	155	0.32	21	0.09	0.30
SUBTOTAL	737	1791	3.66	224	1.01	0.28
FREEWAY/9PM-6AM						
Under 25	3	29	0.06%	23	0.10%	1.73
25–34	15	10	0.02	33	0.15	7.09
35–44	18	30	0.06	25	0.11	1.83
45–54	19	38	0.08	16	0.07	0.93
Over 54	15	16	0.03	9	0.04	1.26
SUBTOTAL	70	124	0.25	106	0.48	1.89
OTHER ROAD/6AM-9PM						
Under 25	182	498	1.02%	376	1.70%	1.67
25–34	654	1685	3.44	586	2.64	0.77
35–44	485	1279	2.61	369	1.67	0.64
45–54	296	789	1.61	266	1.20	0.75
Over 54	213	738	1.51	150	0.68	0.45
SUBTOTAL	1830	4989	10.18	1747	7.88	0.77
OTHER ROAD/9PM-6AM						
Under 25	4	6	0.01%	55	0.25%	19.55
25–34	34	41	0.08	132	0.60	7.17
35–44	32	34	0.07	66	0.30	4.32
45–54	31	36	0.07	48	0.22	2.92
Over 54	23	28	0.06	19	0.09	1.48
SUBTOTAL	124	145	0.30	320	1.44	4.87
SINGLE/INTER SUBTOTAL	1946	7049	14.39%	2397	10.82%	0.75

TABLE 6 Continued for Single-Unit Trucks

Truck and Area Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involvements	Column Percent	Norm. Rate[a]
SINGLE-UNIT TRUCKS IN INTRASTATE OPERATION						
FREEWAY/6AM-9PM						
Under 25	88	148	0.30%	52	0.23%	0.78
25–34	254	412	0.84	83	0.37	0.45
35–44	112	235	0.48	39	0.18	0.37
45–54	75	205	0.42	30	0.14	0.32
Over 54	48	128	0.26	19	0.09	0.33
SUBTOTAL	577	1128	2.30	223	1.01	0.44
FREEWAY/9PM-6AM						
Under 25	3	9	0.02%	20	0.09%	4.84
25–34	16	14	0.03	19	0.09	2.92
35–44	6	7	0.01	14	0.06	4.50
45–54	5	11	0.02	8	0.04	1.58
Over 54	3	0	0.00	5	0.02	22.20
SUBTOTAL	33	42	0.09	66	0.30	3.47
OTHER ROAD/6AM-9PM						
Under 25	240	572	1.17%	624	2.82%	2.41
25–34	835	2420	4.94	766	3.46	0.70
35–44	478	1435	2.93	502	2.27	0.77
45–54	310	1132	2.31	358	1.62	0.70
Over 54	223	703	1.43	303	1.37	0.95
SUBTOTAL	2086	6262	12.78	2553	11.52	0.90
OTHER ROAD/9PM-6AM						
Under 25	12	13	0.03%	49	0.22%	8.46
25–34	43	62	0.13	95	0.43	3.38
35–44	19	23	0.05	54	0.24	5.13
45–54	13	28	0.06	40	0.18	3.14
Over 54	12	7	0.02	21	0.09	6.23
SUBTOTAL	99	134	0.27	259	1.17	4.28
SINGLE/INTRA SUBTOTAL	2168	7565	15.44%	3101	13.99%	0.91

TABLE 6 Continued for Combination Trucks

Truck and Area Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involve ments	Column Percent	Norm. Rate[a]
COMBINATION TRUCKS IN INTERSTATE OPERATION						
FREEWAY/6AM-9PM						
Under 25	108	407	0.83%	186	0.84%	1.01
25–34	991	3943	8.05	662	2.99	0.37
35–44	1099	4854	9.91	633	2.86	0.29
45–54	773	2974	6.07	455	2.05	0.34
Over 54	348	1123	2.29	237	1.07	0.47
SUBTOTAL	3319	13300	27.14	2173	9.81	0.36
FREEWAY/9PM-6AM						
Under 25	41	144	0.29%	149	0.67%	2.28
25–34	282	1031	2.10	714	3.22	1.53
35–44	363	1590	3.25	638	2.88	0.89
45–54	253	996	2.03	439	1.98	0.97
Over 54	107	498	1.02	222	1.00	0.99
SUBTOTAL	1046	4259	8.69	2162	9.76	1.12
OTHER ROAD/6AM-9PM						
Under 25	183	467	0.95%	620	2.80%	2.93
25–34	1362	2967	6.05	2279	10.28	1.70
35–44	1466	3126	6.38	1750	7.90	1.24
45–54	1061	2168	4.42	1210	5.46	1.23
Over 54	464	821	1.68	592	2.67	1.59
SUBTOTAL	4536	9549	19.49	6451	29.11	1.49
OTHER ROAD/9PM-6AM						
Under 25	37	56	0.11%	268	1.21%	10.67
25–34	258	472	0.96	1016	4.59	4.76
35–44	327	597	1.22	969	4.37	3.59
45–54	205	345	0.70	669	3.02	4.29
Over 54	83	125	0.25	295	1.33	5.23
SUBTOTAL	910	1594	3.25	3217	14.52	4.46
COMBI/INTER SUBTOTAL	5660	28703	58.58%	14003	63.19%	1.08

TABLE 6 Continued for Combination Trucks

Truck and Area Type/ Travel Category/ Driver Age Group	Number of Trips	Est.U.S. 10^6 VMT	Column Percent	Fatal Involve ments	Column Percent	Norm. Rate[a]
COMBINATION TRUCKS IN INTRASTATE OPERATION						
FREEWAY/6AM-9PM						
Under 25	52	154	0.31%	28	0.13%	0.40
25–34	325	641	1.31	78	0.35	0.27
35–44	289	523	1.07	59	0.27	0.25
45–54	189	403	0.82	41	0.19	0.22
Over 54	107	245	0.50	33	0.15	0.30
SUBTOTAL	962	1966	4.01	239	1.08	0.27
FREEWAY/9PM-6AM						
Under 25	6	17	0.04%	15	0.07%	1.93
25–34	51	92	0.19	40	0.18	0.96
35–44	66	147	0.30	34	0.15	0.51
45–54	24	76	0.15	23	0.10	0.67
Over 54	21	24	0.05	12	0.05	1.10
SUBTOTAL	168	355	0.73	124	0.56	0.77
OTHER ROAD/6AM-9PM						
Under 25	146	309	0.63%	296	1.34%	2.12
25–34	577	1118	2.28	640	2.89	1.27
35–44	481	828	1.69	437	1.97	1.17
45–54	275	572	1.17	319	1.44	1.23
Over 54	147	311	0.64	155	0.70	1.10
SUBTOTAL	1626	3139	6.41	1847	8.34	1.30
OTHER ROAD/9PM-6AM						
Under 25	7	13	0.03%	65	0.29%	11.28
25–34	59	74	0.15	151	0.68	4.51
35–44	72	90	0.18	126	0.57	3.08
45–54	26	26	0.05	76	0.34	6.47
Over 54	21	17	0.03	30	0.14	4.00
SUBTOTAL	185	220	0.45	448	2.02	4.51
COMBI/INTRA SUBTOTAL	1856	5680	11.59%	2658	12.00%	1.03
GRAND TOTAL	11630	48998	100.00%	22159	100.00%	1.00

[a]Rate = (% of Involvements)/(% of Travel)

NOTE: Area of operation is known for all 13,014 trips reported by single-unit and combination trucks. However, travel category is unknown for 782 trips and age is unknown for an additional 602 trips. Area of operation is unknown for 1278 of the 24,014 fatal involvements of non-governemnt-owned single-unit and combination trucks. Also travel category is unknown for 299 cases, and driver age is unknown for an additional 278 cases.