

100,000 workers vs. .05/100,000), and construction (.85/100,000 vs. .33/100,000). Offroad fatality rates were significantly higher than roadway rates within mining (.60/100,000 vs. .18/100,000) and agriculture, forestry and fishing (.80/100,000 vs. .27/100,000). When comparing roadway to offroad incidents, different vehicle types were identified as predominant injury sources. Cars contributed nearly 36% of roadway deaths, while machinery (20.4%) and industrial/offroad equipment (20.6%) was the primary cause of offroad deaths. Semi-trucks contributed 14% to the offroad fatalities while these vehicles represented over 27% of roadway deaths. The ratio of offroad to roadway fatalities was 3.64 for pickup trucks.

These descriptive epidemiologic results warrant further investigation and provide insight for future research efforts in the area of pedestrian-related occupational fatalities. Additional consideration should be given to the dissimilar worker exposures (roadway vs. offroad) when developing prevention and control strategies within specific industries.

### ***H1.2 The Association of Age and Occupational Motor Vehicle-Related Fatalities***—Dellinger AM, Pratt SG

Motor vehicle-related (MVR) injuries are the leading cause of occupational death; approximately 1200 workers are killed each year on-the-job. Crash risk factors vary by age. The distribution of motor vehicle fatality rates by driver age follows a “U”-shaped curve. After adjusting for the amount that they drive, the youngest and oldest drivers have higher death rates than all other age groups. Young drivers have crashes in which risk taking behavior and inexperience play a role. Older drivers’ crashes are more likely to involve failure to yield (i.e., left turns, merging). We explored whether the pattern of occupational MVR deaths was similar to the overall pattern.

Data from the Census of Fatal Occupational Injuries for the years 1992-1997 were used to explore the distribution of MVR occupational fatalities by age. Fatality rates per 100,000 full-time equivalent (FTE) workers are reported. Fatality rates increased monotonically as age increased, from 0.8 per 100,000 FTE for persons 15-17 years of age to 5.9 per 100,000 FTE for persons 75 and older. Rates followed a steady and moderately increasing pattern up to age 64, after age 65 rates increased sharply.

The proportion of deaths was compared to the proportion of FTE workforce by age group. Younger workers were under-represented (dying less frequently than expected) and older workers over-represented (dying more frequently than expected). For example, workers age 18-24 years comprised 11.4% of the FTE workforce and 9.3% of the deaths. Workers age 65-74 years comprised 1.8% of the FTE workforce and 5.4% of the deaths, three times the expected proportion. Only workers age 45-54 years had deaths in proportion to their representation in the workforce (20.5% of FTE workforce,

21.3% of deaths). The distribution of occupational MVR deaths differ from nonoccupational MVR deaths.

### ***H1.3 Occupational Highway Fatalities Involving Semi-Trucks, United States, 1992-1997***—Pratt SG, Strotmeyer SJ

Despite recent declines in highway deaths, fatalities involving large trucks (>10,000 lbs. GVW) increased from 4,462 in 1992 to 5,374 in 1998 (+20.4%), according to the Fatality Analysis Reporting System (FARS). The Census of Fatal Occupational Injuries (CFOI) showed that occupational highway deaths involving semi-trucks increased from 375 in 1992 to 551 in 1997 (+46.9%).

CFOI identified 2,914 semi-truck fatalities: operators (2,073); other workers in vehicles that collided with semi-trucks (706); and pedestrian workers struck by semi-trucks (135). Of the operator fatalities, 37.4% were non-collisions, 31.6% collisions, and 24.2% vehicle-vs.-stationary-object events. The truck most often struck: no other object (34.8%); another semi-truck (16.3%); another vehicle (14.9%); or a guardrail or other barrier (8.9%). The transportation industry (TCPU) had the highest frequency and rate of operator fatalities (1525, 2.93/100,000). Fatalities were lowest at 9 p.m. (31), increasing steadily and peaking at 5 a.m. (105).

The 706 other workers killed in semi-truck incidents were driving or riding in cars (32.9%), pickup trucks (25.8%), vans (12.0%), tractors (3.1%), or another vehicle (24.4%); 1.8% were not classified as vehicle occupants. Highest frequencies by industry were in services (127) and TCPU (102); rates were highest in mining (.42) and agriculture/forestry/fishing (.29). Unlike operator fatalities, these events were most frequent between 9 a.m. and 4 p.m.

Of the 135 pedestrian worker fatalities involving semi-trucks, 54.1% occurred in the roadway, the remaining 45.9% on the roadside. Over half worked in construction (37.0%, .11/100,000) or TCPU (24.4%, .06/100,000). Almost two-thirds of pedestrian fatalities occurred between 7 a.m. and 3 p.m.

Prevention strategies for operator fatalities include mandatory seat belt use, adherence to speed limits and hours-of-service regulations, and regular vehicle maintenance and inspection. Others who drive for work, or work on foot near semi-trucks, should receive training addressing truckers’ blind spots, maneuvering capabilities, and braking distances.

### ***H1.4 Traffic Crashes and Productivity Losses: What the Research Shows***—Herbel SB

The Network of Employers for Traffic Safety (NETS) is a public/private partnership founded in 1989 to address the human and economic impact of traffic crashes on the nation’s workforce, families and communities.



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## ABSTRACTS

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