INSURANCE INSTITUTE
FOR HIGHWAY SAFETY

May 21, 2001

The Honorable Julie Cirillo
Acting Deputy Director
Federal Motor Carrier Safety Administration
U.S. Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

Request for Comments on Proposal for Pilot Program
Younger Commercial Driver Pilot Training Program
Docket No. FMCSA-2000-8410

Dear Ms. Cirillo:

The Insurance Institute for Highway Safety strongly opposes the petition of the Truckload Carriers Association (TCA) for a pilot program to allow drivers younger than 21 to operate large trucks weighing more than 26,000 pounds across state lines (66 FR 10935). To address the shortage of qualified commercial drivers, TCA wishes to "demonstrate that it is possible to safely expand the driver pool by lowering the driver's minimum age limit" (TCA, 2000, p.1). TCA says there are "no crash data for commercial drivers under age 21," which is incorrect (TCA, 2000, p.14). There is much research, and it unequivocally shows that young truck drivers have markedly higher crash risks than older truck drivers. These data come from studies of young truck drivers legally permitted to operate large trucks intrastate in the United States or in other countries. Details of the research are described below and in Table 1.

Age is a Strong Risk Factor for Truck Crash Involvement
Studies of young truck drivers confirm their crash risk resembles the high risk of young and inexperienced drivers of passenger vehicles. Passenger vehicle drivers younger than 30 have elevated crash rates, which are even higher among drivers younger than 21 (Insurance Institute for Highway Safety, 2000a).

Fatal crashes: Increases in fatal crash involvements per unit of travel have been reported as 4.3-fold for U.S. large truck drivers younger than 19 and 6.2-fold for ages 19-20 (Campbell, 1991). Among Australian drivers younger than 25, those who drove tractor-trailers had a 2.6-fold increase in fatal crash risk and those who drove single-unit trucks had a 4.2-fold increase (Christie and Fabre, 1999).

Crashes causing injuries: Excessive involvements in crashes resulting in injuries also have been reported. Two separate studies in Michigan found about a 6-fold increased risk among drivers younger than 21 (Blower et al., 1990; Blower, 1996). An Australian study reported 2.7- and 3.8-fold increased risks among truck drivers younger than 25 (Christie and Fabre, 1999).

Property-damage-only crashes and overall crashes: Young truck drivers are overrepresented in property-damage-only crashes as well as all crashes combined. Crash rates for property-damage-only crashes have been reported as 4-4.9 times higher for drivers younger than 21 (Blower et al., 1990; Blower, 1996). The overall crash rate was about 6.5 times higher among drivers ages 18-21 (Blower, 1996; calculated using unpublished data from Blower, 2001). In addition, studies comparing trucks in crashes with those not in crashes have found younger drivers to be disproportionately involved (Frith, 1994; Stein and Jones, 1988).

Crash characteristics: Other studies have compared the crash characteristics of young truck drivers with those of older truck drivers. What distinguished Michigan and North Carolina crashes of truck drivers ages 18-21 from those of older truck drivers was that higher proportions involved loss of vehicle control, backing into another vehicle, and striking another vehicle from behind (Blower, 1996). In Canada, single-vehicle collisions, improper driving, and noncollision events such as rollovers or jackknifes have been identified as occurring in higher percentages of crashes involving truck drivers ages 18-20 (Christie and Mayhew, 1999). An analysis of fatal U.S. crashes also reported higher proportions of improper driving among truck drivers ages 18-20. Fatal rear-end and rollover crashes were more common among young single-unit truck drivers, and fatal side-impact crashes were more common among young tractor-trailer drivers (Christie and Mayhew, 1999).

The findings described above are unsurprising given the well-documented risks of other young drivers. Passenger vehicle drivers ages 18-20 have higher death rates per 100,000 people than all but drivers ages 75 or older (Insurance Institute for Highway Safety, 2000b). Crashes among young truck drivers resemble descriptions of crashes involving teenage passenger vehicle drivers (Ulmer et al., 1997).

Young Military Drivers Also Are at High Risk of Crashing

TCA and others in the trucking industry have argued that the U.S. military relies on 18-20 year-olds to operate military trucks and weapons systems, saying this shows that younger drivers can responsibly carry out their duties (Barnes, 1999; TCA, 2001). Yet research shows that young drivers in the military also have a high

crash risk. Army data indicate that active-duty personnel younger than 21 have a 4.9-fold increased risk of being hospitalized for motor vehicle injuries relative to army personnel older than 40 (Bell et al., 2000).

One military publication stated: "During Operations Desert Shield and Desert Storm, young truck drivers often traveled up and down main supply routes at hazardous speeds. This accounted for several unnecessary deaths" (Center for Army Lessons Learned, 1994).

Driver Training Cannot Eliminate the High Risk of Young Truck Drivers

Under TCA's proposal, persons younger than 21 could not operate large trucks across state lines solo until they are at least 19 years old and have undergone a driver training program involving classroom education and a period of supervision by an experienced driver, including team driving.

TCA's petition says that crash data for commercial drivers under 21 is not relevant because "training has never before been a precondition for commercial licensing" (TCA, 2000, p.14). Contrary to TCA's assumption that training can produce safe young drivers, extensive research has shown the limited efficacy of driver training programs in reducing crash risk. For example, one experiment attempted to improve the braking and obstacle avoidance skills of passenger vehicle drivers ages 18-24 and found this led to drivers overestimating their skills rather than actual improvements in skills (Gregersen, 1996). Vernick et al. (1999) systematically reviewed the scientific literature concerning the effect of high school driver education on crashes and traffic violations and concluded:

> At the individual level, there is no convincing evidence that high school age students who complete a driver education course have fewer motor vehicle-related crashes or violations than those who do not.... If anything, it appears that the greater likelihood of licensure for those receiving driver education increased their risk for a violation or crash (p.44).

Mayhew and Simpson (1996) reviewed international research on driver education and reached similar conclusions:

> The review of scientific evaluations performed to date provides little support for the claim that driver instruction is an effective safety countermeasure. The overwhelming preponderance of evidence fails to show that formally trained students have a lower frequency of crashes than those who do not receive such training. Even worse, a few studies have shown a safety disbenefit of driver education/training (p.x).

Enclosed are relevant excerpts or full copies of the studies by Blower et al. (1990), Blower (1996), Campbell (1991), Christie and Fabre (1999), Christie and Mayhew (1999), Frith (1994), and Stein and Jones (1988). Also enclosed are copies of papers by Bell et al. (2000), Gregersen (1996), Mayhew and Simpson (1996), and Vernick et al. (1999).

Graduated Driver Licensing Programs:
Crash Risk of Young Truck Drivers Still Would Be Unacceptably High

Some in the trucking industry view the pilot program as a form of graduated driver licensing for commercial drivers (Kahaner, 1999). Graduated licensing programs are effective in reducing the crash rates of teenage passenger vehicle drivers by allowing them to gain experience under lower risk travel conditions. The proposed pilot program, however, is not analogous to the graduated licensing programs states are adopting for new teenage drivers, who are a high-risk group that already is part of the driving population. Instead, the pilot program is tantamount to introducing a new high-risk group into the truck driver population.

Reductions in crash rates among teenagers subject to graduated licensing in the United States thus far have ranged from 9 to 32 percent (Ohio Public Safety, 2001; Shope et al., 2001; Ulmer et al., 2000; University of North Carolina Highway Safety Research Center, 2000; see Table 2). Graduated licensing programs for passenger vehicle drivers include a learner's stage of supervised driving, equivalent to TCA's supervisory phase for young truck drivers. However, much of graduated licensing's benefit comes from restrictions on high-risk solo late-night driving, when young drivers first are licensed. Even assuming reductions of the magnitude achieved by graduated licensing programs for passenger vehicle drivers, such reductions would not be enough to counterbalance the exceedingly high risk posed by young commercial drivers. Therefore, the proposed pilot program does not meet the statutory requirement (Section 4007, TEA-21) to "achieve a level of safety that is equivalent to, or greater than, the level of safety that would be achieved through compliance with the safety regulations" (66 FR 10936). In other words, pilot programs are prohibited by law from worsening traffic safety.

Pilot Program Data Will Not Be Scientifically Sound

The Institute is also concerned about the validity of any data generated from the pilot program. To produce scientifically sound data, a pilot program must have a comparison group with similar travel patterns. Without such a comparison group, data derived from the pilot effort would be uninterpretable. There also would need to be an adequate sample size to detect increases in risk; thorough and objective methods of data collection to ensure accurate counting of

travel, crashes, and traffic violations; and a valid plan for statistical analysis of the data. The immediate withdrawal from the program of drivers involved in at-fault crashes or other serious traffic violations necessitates specialized statistical techniques (survival analyses). The appropriate scientific model for a pilot program would be a randomized controlled clinical trial. TCA's petition provides no evidence that any of the criteria essential for a valid evaluation would be met.

In summary, research consistently has found young truck drivers to have very high crash risks relative to older truck drivers, including strikingly elevated risks for involvement in fatal crashes and crashes resulting in serious injuries. The pilot program can neither bring these risks down to an acceptable level nor generate scientifically sound data. The extensive body of research on young truck drivers and driver training programs indicates that a pilot program permitting drivers younger than 21 to operate large trucks in interstate commerce will harm the safety of not only these young drivers but also people sharing the road with them. Human costs could be great: 3- to 6-fold increases in rates of crashes resulting in serious injuries or deaths have been observed when large trucks were operated by young drivers.

Sincerely,

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cc: Docket Clerk, Docket No. FMCSA-2000-8410

Enclosures

Table 1
Summary of Studies of Truck Driver Age and Crash Incidence

Author, year	Outcome	Study population	Number of drivers	Study design	Ages of young drivers	Magnitude of risk	Comments
Blower, Lyles, Campbell, and Stamatiadis, 1990	All crashes, injury crashes	Drivers of large trucks in Michigan	130,500 Michigan trucks involved in crashes, 1982-88 Survey of owners of 1,055 Michigan tractors, 1987	Incidence study	19-20, 21-24	Property-damage-only crashes: 4.9-fold increased risk among ages 19-20 and 2.4-fold increased risk among ages 21-24 per vehicle-mile of travel (VMT) Crashes with injuries: 5.8-fold increased risk among ages 19-20 and 2.4-fold increased risk among ages 21-24 per VMT	Incidence per VMT was compared with truck drivers of all ages; all VMT occurred within Michigan
Blower, 1996 and additional VMT data from Blower (personal communication, 2001)	All crashes, injury crashes	Drivers of large trucks in Michigan	11,958 Michigan crashes, 1993-94 Survey of 4,689 Michigan drivers with commercial driver's licenses (CDL) (739 ages 18-20), 1995	Incidence study	18-19, 20-21	Property-damage-only crashes: 4-fold increased risk among ages 18-19 and 2.5-fold increased risk among ages 20-21 per 1,000 CDL holders Crashes with injuries: 6-fold increased risk among ages 18-19 and 2-fold increased risk among ages 20-21 per 1,000 CDL holders All crashes: 6.5-fold increased risk among ages 18-21 per VMT, based on average VMT for trips made within 50 miles of home base	Incidence per 1,000 CDL holders was compared with CDL holders of all ages Incidence per VMT among 18-21-year-old drivers was compared with 30-49-year-old drivers Older drivers' crashes in other states may not appear in Michigan records, which would lead to some overestimation of crash risk among 18-21-year-old drivers per 1,000 drivers Local trips (within 50 miles of home base) were surrogate for intrastate travel in estimates of crash risk per VMT
Campbell, 1991	Fatal crashes	Drivers of large trucks in United States	24,119 drivers of large trucks involved in fatal crashes, 1980-84 5,000 owners of large trucks (probability sample), 1985	Incidence study	Younger than 21, 21-26	4.3- to 6.2-fold increased fatal crash risk among truck drivers younger than 21 per VMT 1.5- to 2.2-fold increased risk if drivers were ages 21-26 per VMT	Incidence per VMT was compared with truck drivers of all ages Younger drivers were overinvolved in daytime and nighttime crashes on all types of roads

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Table 1 — continued

Author, year	Outcome	Study population	Number of drivers	Study design	Ages of young drivers	Magnitude of risk	Comments
Christie and Fabre, 1999	Fatal crashes, crashes with serious injuries	Drivers of large trucks in Australia	414 Australian drivers of large trucks in fatal crashes and 2,048 in crashes involving serious injuries, 1995 Survey of motor vehicle use, 1995	Incidence study	18-24	Fatal crashes: 4.2-fold increased risk among single-unit truck drivers and 2.6-fold increased risk among tractor-trailer drivers younger than 25 per unit of travel Crashes with serious injuries: 3.8-fold increased risk among single-unit truck drivers and 2.7-fold increased risk among tractor-trailer drivers younger than 25 per unit of travel	Incidence per unit of travel (vehicle-kilometer) was compared with truck drivers ages 25-54
Frith, 1994	All crashes	Drivers of large trucks in New Zealand	199 drivers in crashes, 1988-90 199 drivers not involved in crashes, 1992-93	Case-control study	Younger than 20, 20-24	>2-fold increased crash risk among truck drivers 20-24 or younger (comparison: ages >25)	Matched by location, day of week, and time of day
Stein and Jones, 1988	All crashes	Tractor-trailer drivers on interstate highways in Washington state	300 drivers in crashes, 576 drivers not involved in crashes, 1984-86	Case-control study	30 or younger	1.5-fold increased risk if truck drivers were 30 or younger (comparison: ages >30)	Adjusted for other risk factors for truck crash involvement; matched by location, day of week, and time of day

Table 2
U.S. Graduated Licensing System Evaluations: Young Passenger Vehicle Drivers

Author, year	Location	Data source	GDL components	Findings	Comments
Ulmer, Preusser, Williams, Ferguson, and Farmer, 2000	Florida	Police-reported crashes from Florida and Alabama (excluding property-damage-only crashes), 1995-97	Learner: hold 12 mo., 50 hr. practice (10 hr. at night) Night restriction once licensed: 11 p.m. to 6 a.m. (age 16), 1 a.m. to 5 a.m. (age 17)	9% reduction in fatal/injury crashes involving Florida teenagers, ages 15-17, per 10,000 population; reduction was not seen among Alabama teenagers, who were not subject to a graduated licensing system	None
University of North Carolina Highway Safety Research Center, 2000	North Carolina	All crash data from the North Carolina Crash Data File, 1997 and 1999	Learner: hold 12 mo. Night restriction once licensed: 9 p.m. to 5 a.m. (6 mo.)	29% reduction in all crashes involving a 16-year-old driver per 10,000 population; 32% reduction in rates of crashes in which a 16-year-old driver was killed or seriously injured	None
Ohio Public Safety, 2001	Ohio	Ohio's crash data and the Bureau of Motor Vehicle's driving records file, 1988-99	Learner: hold 6 mo., 50 hr. practice (10 hr. at night) Night restriction once licensed: 1 a.m. to 5 a.m. (until age 17)	23% reduction in all crashes involving a 16- or 17-year-old driver per 10,000 drivers	Results are preliminary, and additional data are needed for a complete evaluation of the graduated licensing system; fatal crashes also declined, but small numbers made findings less than definitive
Shope, Molnar, Elliott and Waller, 2001	Michigan	Police-reported crash data, 1996, 1998-99	Learner: hold 6 mo., 50 hr. practice (10 hr. at night) Night restriction once licensed: 12 a.m. to 5 a.m. (6 mo. or until age 17)	27% reduction in all crashes per 1,000 16-year-old drivers	The percentage was adjusted for declines in crash rates among drivers ages 25 and older during the same time period; fatal crash rates did not decline significantly for 16-year-old drivers, but small numbers made findings less than definitive

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