

argued the proposal even seems to contradict the recommendation of the agency's Expert Panel. The ATA stated that science indicates that a combination of a long period with shorter period is better than the proposed split of five and five. The ATA was also critical of the agency's failure to gauge the economic impacts of such a rule change.

Truckload carriers stated that the nature of the long-haul, irregular-route business makes the elimination of split sleeper berth time a major concern because it removes the needed flexibility from the driver.

Similar positions were taken by the LTL sector, noting that drivers must have the ability to manage their work/rest times more freely, including sleeper berth time. Examples were given of drivers managing sleeper berth time to get to the shipper location early and avoid traffic.

Citing research finding that drivers sleeping in sleeper berths while the vehicle was in motion obtained less restorative sleep than those sleeping while the vehicle was at rest, some commenters said they could not understand the agency limiting the exception to team drivers. Although not mentioned in the proposed rule, some found it necessary to ask whether the exception for team drivers would apply to sleeper berth time acquired while the vehicle was in motion. Others found that even the team driver exception was confusing. Still others looked for data supporting a minimum period of five hours.

Many small carriers and owner-operators stated that drivers using sleeper berths need less than the ten consecutive hours proposed in the NPRM. They do not have to travel any distances to get to their sleeping quarters; they just have to climb into the back. Many also strenuously opposed the treatment of sleeper berth time in the proposal, seeing it as discouraging the use of sleeper berths. In their view, the berths are a valuable resource, readily available to the driver to get necessary rest, and their use should be encouraged. OOIDA recommended the agency retain the present sleeper berth exception to the consecutive-hours requirement.

The International Brotherhood of Teamsters (IBT) took issue with the findings of the studies on effectiveness of sleep in a berth. They argued that the determinative factor was not the quality of the accommodations, but rather environmental conditions, like noise levels.

Safety Advocacy Groups

Safety advocates applauded FMCSA for prohibiting split sleeper berth periods for solo drivers and recommended extending the prohibition to team drivers as well. The NSC, however, cautioned the FMCSA to await further scientific data before proceeding one way or another. The AHAS stated that some research studies indicate the restorative benefits of napping are not entirely clear, but conceded that more napping is better than less napping.

Law Enforcement

The CVSA stated the regulations should provide sleeper berth flexibility for both short-term naps and longer sleep periods.

FMCSA Response

Because of the comments and the new studies released after the NPRM's publication, the FMCSA has decided to retain the sleeper berth exception. The agency, however, will modify the off-duty period to align with the new off-duty period adopted in this final rule.

In the *Impact of Sleeper Berth Usage on Driver Fatigue* study, the team driving operation highlighted the benefits of reducing drowsiness. Unlike extremely tired single drivers who may have felt compelled to continue to drive even when it was dangerous to do so, the individual drivers in a team operation generally had no similar compulsion to operate the vehicle when they were extremely tired. From the data collected in this study, it was apparent that the team driving operation translates into fewer bouts of drowsiness, fewer critical incidents, and, in general, safer trucking operations. Critical incidents are those incidents that resulted in a crash because the driver did not perform evasive maneuvers or that would have resulted in a crash, if the driver had not taken evasive maneuvers.

In addition, team drivers appeared to drive much less aggressively, make fewer errors, and rely effectively on their relief drivers to avoid instances of extreme drowsiness while driving. In effect, it appeared as though team drivers undergo a natural "screening" process. This was indicated by a number of the truck drivers during the focus groups conducted earlier in this project. Drivers indicated that team drivers must be both considerate of their resting partner and trustworthy with regard to their driving ability. Thus, the level of "acceptance" necessary to be a successful team driver seems to serve as an effective screening criterion.

On the other hand, single drivers in the study had many more critical

incidents at all levels of severity as compared to team drivers. Single drivers were involved in four times the number of "very/extremely drowsy" observer ratings as were team drivers, and were more likely to push themselves to drive on occasions when they were very tired.

Based on the agency's *Commercial Motor Vehicle Driver Fatigue and Alertness Study* (1996), there were relatively few instances (about 2.5 percent) of "extreme drowsiness," with most of these instances being experienced by single drivers, again with a high rate of the occurrence of this level of fatigue on the second or third shift after the first day of a multi-day drive. Thus, it appears that the combination of long driving times and multiple days provides the greatest concern, with several results pointing to the presence of cumulative fatigue. This means that the length of shifts in the later stages of a trip must also be carefully considered.

Having mentioned this concern, it is important to point out that critical incidents and/or driver errors did not increase directly with the hours beyond the regulatory limits. In fact, there was a substantial decrease in the rate of critical incidents during some of the more extreme violations. However, one should exercise great caution when interpreting these results. For the following reasons, they do not necessarily mean that the HOS should be expanded:

- (1) It may be possible that the drivers were making a point to drive more carefully and cautiously *because* they were operating outside of the regulatory limits and did not want to get stopped by law enforcement officials; and
- (2) They may have risked driving outside of the regulations only because they felt alert and knew that they could continue to drive safely.

There were a number of findings in this study indicating that the quality and depth of sleep was worse on the road, particularly for team drivers. Drivers in teams have significantly more sleep disturbances than do single drivers. In addition, for team drivers who sleep while the vehicle is in motion, factors such as vibration and noise adversely affected their sleep, although lighting and temperature aspects of the environment did not appear to be much of a factor.

However, it was found that many of the sleep disturbances that occurred for single drivers could not be attributed solely to an environmental factor.

The NPRM estimated that 90 percent of all long-haul drivers use sleeper berths. Although the proposed rule would not have prohibited the use of