

only reason for a restart provision is to allow increased productive time notwithstanding the general regulatory requirements when consecutive off-duty hours substantially exceed daily minimums. In other words, restarts are exceptions to the general rule. The agency considered a general 24-hour restart in 1992, but withdrew the proposal when it determined that there was insufficient data available to support the action on safety grounds. Comments to the NPRM raised the issue again, both in objecting to the treatment of the statutory exceptions and in offering an alternative to the agency's 1992 proposal.

#### Industry Comments

The for-hire industry offered no alternative weekly or other greater-than-daily recovery period, except in the context of its two-week averaging alternative to cumulative restrictions discussed elsewhere in this document. Its 70-hours-in-7-days cumulative period would operate as the present regulations do, *i.e.*, look back over the past seven days to determine if duty time is available to a driver. The DLTCA petition did, however, request a cost/benefit analysis on an extended rest period within the range of 24 to 34 hours, which could then serve as a restart. The specific recommendation of the petitioners was for a 34-hour restart provision that would effectively end a consecutive seven-day period within which accumulation of duty time is taking place. Once the driver had been off duty for 34 consecutive hours, which would include a mandatory 10-hour daily recovery period, the petition argued that the driver should be considered fully recovered so that another seven-day period could start to run. The 34-hour period was conceived by combining one 10-hour off-duty period with one full 24-hour day, which could return the driver to the same cycle he was operating when the 34-hour period started. This could add an extra 14-hour shift every 7 days. It would also enable short weeks to be restarted. For example, a flex-board driver could be called in to work two consecutive days of 14-hour shifts at the beginning of a seven-day period and then be idle the following day. Once his off-duty time amounted to 34 consecutive hours, a seven-day period would begin all over again.

Landstar stated that its review of the available research and its experience lead it to believe the NPRM was flawed. Landstar cited Cabon, Mollard, and Coblentz, *Sleep Deprivations and Irregular Work Schedules*, Proceedings of the Human Factors Society 35th

Annual Meeting—1991, Paris, France and McCartt, Rohrbaugh, Hammer, and Fuller, *Factors Associated with Falling Asleep at the Wheel Among Long Distance Truck Drivers*, Accident Analysis and Prevention. Landstar used these studies to argue that “the research shows that a period of sleep, no matter how long, cannot ‘reset’ or restore the human body. Sleep, which has been ‘lost’, cannot be ‘made up.’ If an operator misses sleep, that missed sleep cannot be restored by a two day off-duty break. Studies also indicate that rest on the road is not the same quality of rest one experiences when at home.”

Landstar also stated that “at the same time, ‘missed’ sleep is important. The effect of lost sleep is cumulative. The impact of lost sleep is compounded as an operator misses more and more sleep. Yet, when it is time for the operator to rest,” Landstar cited Coleman, Richard, *Wide Awake at 3:00 a.m. by Choice or by Chance*, as showing “the length of his sleep is affected most by (1) his body time (*i.e.*, where he is in his circadian rhythm) and (2) the cumulative amount of his sleep deprivation.” Landstar argues that “when it is time for the operator to rest, once he sleeps for the length of time required by his body (as affected by his body time and amount of sleep deprivation), he is restored and ready to resume alert performance of his activities. In most every instance, the amount of rest required by an operator will be substantially less than the required 32 to 56 hour period set forth in this proposed rule.”

Landstar stated that Cabon, Mollard, and Coblentz further “show that rest is affected not by the specific hours (*i.e.*, midnight to 6 a.m.) that one rests, but instead by an operator sleeping according to his own established regular schedule of working and resting, whatever that regular schedule may be for the individual operator. Studies show that it is irregular sleeping schedules that lead to troubles with biological rhythms. Sleeping according to the operators’ established schedule provides rest, but sleeping during abnormal hours affects the quality of sleep and can cause sleep deprivation.” In the context of earlier starting times, Landstar also found scientific support for the notion that regular hours of sleep, no matter when they occur, are preferable.

The NPTC alternative for private carriers contained no greater-than-daily recovery period, preferring to operate under the present rule’s restrictions on cumulative operations. They did note, however, that “the flexibility to provide non-consecutive days off is critical to

many private fleets and is adequate for drivers to achieve needed rest.”

The OOIDA proposal specifically rejected any mandatory recovery period beyond the daily 10 hours of rest.

#### Safety Advocacy Groups

The AHAS believed a minimum weekly off-duty time block of 32 hours is too short to counter fatigue and sleep debt. They contended that drivers would regularly violate the “weekend” recovery period because of the difficulty of enforcement. They also concluded that even two consecutive nights off is inadequate to compensate for the accumulated fatigue caused by longer shifts. Finally, the AHAS recommended extending the minimum recovery period by 24 hours to 56 hours, including three periods from 11 p.m. to 7 a.m.

#### FMCSA Response

The science supports the notion that drivers should be provided recovery periods after a sustained period of daily work to avoid the build-up of cumulative fatigue and/or sleep deprivation. This notion was the basis for the proposed rule that every driver must have a “weekend” off every seven days, *i.e.*, a period of time including two consecutive midnight to 6 a.m. periods. The agency was attempting to ensure that drivers had a weekly opportunity to obtain restorative sleep and avoid a significant build up of a sleep deficit. Industry comments criticized what they considered the lack of scientific evidence to support the need for an extended period of rest. Depending upon the driver’s schedule, a separate midnight-to-6 a.m. recovery period may be unnecessary, or it may be necessary after a period less than 7 days duration if the driver has been assigned night work.

The industry’s position is that the required “weekend” reflects the agency’s intent to significantly curtail nighttime driving. That is incorrect. The agency clearly stated in the NPRM that it was not acceding to the Expert Panel’s recommendation on limiting nighttime driving. However, the NPRM with an off-duty period including two midnight–6 a.m. periods (effectively 11 p.m. to 7 a.m.) would have caused some displacement of drivers from nighttime duties.

The proposed rules contained a requirement for a daily recovery period providing the driver a regular opportunity to obtain restorative sleep and hence avoid acute sleep deprivation in large measure. In many cases, drivers can sleep every night; others obtain mostly nighttime sleep; and some rarely sleep at night. We know the science