TECHNICAL INFORMATION PAPER SERIES: FATIGUE

UNDERSTAND AND MANAGE DRIVER FATIGUE WITH THESE TIPS FROM THE HARTFORD.

Driver fatigue is a significant factor in the cause of motor vehicle crashes. This paper addresses:

- The regulations pertaining to permissible hours of service
- Some of the factors that are responsible for fatigue in drivers, and
- The controls that management can implement to counteract these negative conditions.

The hours-of-service (HOS) regulations are considered a good management practice for all drivers.

A major concern for commercial drivers. Driver fatigue is a major safety issue for drivers of commercial motor vehicles (CMV). Regulations governing the hours that interstate drivers may work (on-duty hours) and drive were developed by the Interstate Commerce Commission in 1935. The regulations basically remained unchanged until new regulations were implemented in 2005 and modifications in 2012 and 2014.

WHO MUST COMPLY?

Most drivers must follow the HOS regulations if they drive a commercial motor vehicle, or CMV.

In general, a CMV is a vehicle used as part of a business, is involved in interstate commerce and fits any of these descriptions:

- Weighs 10,001 pounds or more
- Has a gross vehicle weight rating or gross combination weight rating of 10,001 pounds or more
- Is designed or used to transport 16 or more passengers (including the driver) not for compensation
- Is designed or used to transport nine or more passengers (including the driver) for compensation
- Is transporting hazardous materials in a quantity requiring placards

Intrastate operations must refer to local state DOT for any hours-of-service requirements.

continued

THE HARTFORD

HOURS-OF-SERVICE REGULATIONS

The hours-of-service (HOS) regulations are addressed in the Federal Motor Carrier Safety Regulations 49 CFR, Part 395. Here is the summary of the HOS regulations provided by FMCSA:

HOURS-OF-SERVICE RULES SUMMARY	
PROPERTY-CARRYING DRIVERS	**PASSENGER-CARRYING DRIVERS**
11-Hour Driving Limit May drive a maximum of 11 hours after 10 consecutive hours off duty.	**10-Hour Driving Limit** May drive a maximum of 10 hours after 8 consecutive hours off duty
14-Hour Limit May not drive beyond the 14th consecutive hour after coming on duty, following 10 consecutive hours off duty. Off-duty time does not extend the 14-hour period.	**15-Hour Limit** May not drive after having been on duty for 15 hours, following 8 consecutive hours off duty. Off-duty time is not included in the 15-hour period.
Rest Breaks May drive only if 8 hours or less have passed since end of driver's last off-duty or sleeper berth period of at least 30 minutes. Does not apply to drivers using either of the short-haul exceptions in 395.1(e). [49 CFR 397.5 mandatory "in attendance" time may be included in break if no other duties performed]	
60/70-Hour Limit May not drive after 60/70 hours on duty in 7/8 consecutive days. A driver may restart a 7/8 consecutive day period after taking 34 or more consecutive hours off duty.	**60/70-Hour Limit** May not drive after 60/70 hours on duty in 7/8 consecutive days.
Sleeper Berth Provision Drivers using the sleeper berth provision must take at least 8 consecutive hours in the sleeper berth, plus a separate 2 consecutive hours either in the sleeper berth, off duty, or any combination of the two.	**Sleeper Berth Provision** Drivers using a sleeper berth must take at least 8 hours in the sleeper berth, and may split the sleeper berth time into two periods provided neither is less than 2 hours.

Special provisions. Consult the Federal Motor Carrier Safety Regulations, Hours of Service, Part 395 for special provisions that apply to retail store deliveries; property-carrying commercial vehicles operating in the state of Alaska or Hawaii; oil field operations; agricultural operations; ground water drilling operations; construction materials and equipment dedicated vehicles; utility service vehicles; commercial motor vehicle transportation to or from motion picture production site; attendance on commercial motor vehicles containing division 1.1, 1.2 or 1.3 explosives; railroad signal employees; short-haul operations; emergency conditions; driver-salesperson; non CDL property-carrying commercial motor vehicles; "covered farm vehicles" and other operations.

Employers must:

- Maintain and retain accurate time records for a period of 6 months showing the time the duty period began, ended, and total hours on duty each day in place of RODS.

THE CORRELATION BETWEEN DRIVER FATIGUE AND HOURS OF SERVICE

Many CMV drivers drive at night, and often have irregular and unpredictable work schedules. These conditions can lead to inadequate or poor-quality sleep periods. For these drivers, the high mileage of CMV operations presents a greater exposure to accidents in general and fatigue-related accidents in particular. Driver fatigue has been, and continues to be, a major concern for those in CMV transportation. Over the years, many studies have been conducted to determine if a correlation exists between fatigue and hours of service. Driver drowsiness or fatigue has become the dominant human factors research issue relating to CMV transportation.

SLEEP DISORDERS

The risk of having a sleep-related accident varies, due to several factors. Fatigue-related crashes occur at times of typical maximal sleep (e.g., late night/early morning or midafternoon). People who have undiagnosed sleep disorders (e.g., sleep apnea syndrome – SAS, chronic insomnia, or narcolepsy; i.e., brief attacks of deep sleep) and those who are knowingly sleep-deprived, have a higher likelihood of experiencing this type of crash.

Sleep apnea is a common sleep disorder characterized by brief interruptions of breathing during sleep. The most common symptoms of sleep apnea are loud snoring and excessive daytime sleepiness (e.g., falling asleep easily and sometimes inappropriately). More than 18 million Americans suffer from sleep apnea, and the majority of patients go undiagnosed because of the lack of awareness by public healthcare professionals. Risk factors include:

- A family history of sleep apnea – increases the risk two to four times
- Being overweight, as in having a large neck; however, not all with sleep apnea are obese
- Gender: more likely to occur in men than women
- Smoking and alcohol use

Studies suggest that people who have these problems can perform as poorly as legally intoxicated drivers.

According to the *National Highway Traffic Safety Administration (NHTSA),* the following three groups of drivers are at highest risk, based on evidence from crash reports and self-reports of sleep behavior and driving performance.

1. Young people (ages 16-29), especially males
2. Shift workers whose sleep is disrupted by working at night or working long or irregular hours. People with untreated sleep apnea syndrome (SAS)
3. Narcoleptics

DRIVER AND CRASH STATISTICS

Statistics from the NHTSA identify:

Drowsy driving causes more than 83,000 motor vehicle crashes and over 1,000 fatalities a year. Death rates based on mileage are 2.3 times higher at night than during the day. Thirty-seven percent of drivers surveyed admitted to falling asleep at the wheel at some point in their driving career:

- 8% admitting doing so in the past six months
- 60% admitting falling asleep while driving on an interstate-type highway with posted speed limits of 55 mph or higher

CRASH CHARACTERISTICS

A typical crash related to sleepiness has the following characteristics:

- The problem occurs during late night/early morning or midafternoon
- The crash is likely to be serious
- A single vehicle leaves the roadway
- The crash occurs on a high-speed road
- The driver does not attempt to avoid a crash
- The driver is alone in the vehicle

WARNING SIGNS AND SYMPTOMS OF FATIGUE

- Eyes closing or going out of focus
- Continuous yawning
- Fixed stare; difficulty maintaining normal eye movements
- Head drooping
- Finding the vehicle wandering or drifting between lanes or onto the shoulder
- Experiencing "highway hypnosis" (can't remember what you just drove past)
- Abnormal speed, tailgating, or failure to obey traffic signs
- Irritability, restlessness and impatience

COUNTERMEASURES

The NHTSA panel that published the Drowsy Driving and Automobile Crashes report concluded that the following behaviors may help reduce the risk of drowsy driving:

- Planning to get sufficient sleep
- Not drinking even small amounts of alcohol when sleepy
- Limiting driving between midnight and 6 a.m. As soon as a driver becomes sleepy, the key behavioral step is to stop driving; for example, letting a passenger drive or stopping to sleep before continuing a trip
- Taking a break for a short nap (about 15 to 20 minutes)
- Consuming caffeine in low doses can significantly improve alertness

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