THE FATIGUED DRIVER: SLEEP APNEA, HOURS OF SERVICE AND THE DOT MEDICAL EXAM

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PLAINTIFFS' THEORIES OF DIRECT TORT LIABILITY AGAINST THE MOTOR CARRIER/TRUCKING COMPANY

What Plaintiff's Counsel Says on Fatigue:

- Consider fatigue as a factor in every crash, until it is ruled out.
- Always retain a qualified expert to examine the motor carrier's system of monitoring its drivers' hours of service.
- The world's leading sleep experts agree that fatigue is the largest identifiable and preventable cause of accidents in the transportation operation.
- Because of poor investigation in the area of fatigue, and because of the lack of documentation regarding involvement of fatigue in crashes, we still have no solid statistics regarding how many or what percentage of truck crashes are caused or contributed to by driver fatigue.
- The fact of the matter is that driver fatigue is a significant cause of losses in the trucking industry and should be investigated as a possible factor in catastrophic truck crashes.

Vicarious Liability of Motor Carrier:

Theory

- Motor Carrier is liable for its driver's general negligence, negligence per se, and recklessness under agency and respondeat superior principles.
- Driver was acting as an agent, servant or employee of the motor carrier, and was acting in the ordinary course of driver's employment.
- Motor carrier's liability extends to owner-operators who are leased - The Federal Motor Carrier Safety Regulations require motor carriers/trucking companies that are leasing equipment and vehicles to have exclusive possession, control and use of the equipment and driver. Courts have used this exclusivity factor to hold motor carrier/trucking company's liable for the driver's actions. The theory is that it is the motor carrier/trucking company that has put the leased equipment and driver into the stream of commerce.

What the Pleadings Will Assert

- At all times, driver was acting as an agent, servant, or employee of Motor Carrier, and was acting in the ordinary court of employment for the Motor Carrier. As such, under the principles of agency and respondeat superior, Motor Carrier is vicariously liable for its driver's negligence, recklessness, and violations of common law and regulatory and statutory requirements.
- At all relevant times, driver operated the Motor Carrier's tractor-trailer with the knowledge, consent and permission of the Motor Carrier.
- At all relevant times, Motor Carrier controlled or had the right to control the operation and use of its tractor trailer and the actions of its driver.
• At all relevant times, the tractor-trailer operated by driver had displayed on it the logo, name and DOT number of Motor Carrier, with knowledge and consent of Motor Carrier.

Causes of Action for Direct Liability of Motor Carrier:

1. Negligent hiring

**Theory:** The motor carrier had information or knowledge (direct or indirect) at the time of hiring the driver that the driver was incompetent.

**What the pleadings will assert:**

- *The Motor Carrier failed in its duty to make sure the driver had no established medical history or diagnosis of respiratory dysfunction that is likely to interfere with the driver's ability to control/drive a motor vehicle safely.*

2. Negligent entrustment

**Theory:** The motor carrier should not have entrusted the driver with a truck due to the driver's inexperience and/or inability to safely operate a commercial motor vehicle.

**What the pleadings will assert:**

- *Motor Carrier is liable for injuries that resulted from the fact that Motor Carrier entrusted driver with an eighteen wheel tractor trailer with instructions for driver to drive for many hours when Motor Carrier had adequate information that driver suffered from sleep disorder, but failed to send driver for testing or further evaluation.*

3. Negligent retention

**Theory:** The motor carrier should not have allowed the driver to remain in its employ as a driver because they learned things during the course of the driver's employment identifying that the driver was incompetent/unsafe.

**What the pleadings will assert:**

- *The records available to the Motor Carrier showed chronic and repeated hours of service violations, and the Motor Carrier's failure to effectively counsel the driver and impose appropriate discipline (including termination) evidences a conscious disregard by the Motor Carrier of a dangerous condition.*

4. Negligent supervision
Theory: The motor carrier failed to discipline a driver for incompetent actions or failed to intervene when the driver showed signs of incompetence.

What the pleadings will assert:

- The Motor Carrier failed to exercise reasonable care in meeting its duties in failing to train, instruct, supervise and monitor its driver to make sure the driver was not too fatigued or ill, or not likely to become too fatigued or ill, to safely operate a commercial motor vehicle.
- The Motor Carrier failed to exercise reasonable care in meeting its duties by permitting its driver to operate a commercial motor vehicle when the driver was too fatigued or ill, or likely to become too fatigued or ill, to safely operate a commercial motor vehicle.
- The Motor Carrier has a duty to monitor driver logs and to establish proper controls of driving time to ensure compliance with hours of service regulations.
- The Motor Carrier has a duty to review its driver's hours of service logs on a regular basis and to react to hours of service violations, including implementing appropriate discipline so that such dangerous activity did not continue.
- The Motor Carrier's failure to educate and train its drivers on driver fatigue shows the Motor Carrier's conscious disregard for public safety.

5. Negligence per se

Theory: A Motor Carrier is liable for injuries resulting because its driver violated the Federal Motor Carrier Safety Regulations or driver and vehicle related state.

What the pleadings will assert:

- Motor Carrier was negligent per se in violating particular federal regulations, including, but not limited to,
  - 49 C.F.R. §391.11, which states that a motor carrier shall not require or permit a person to drive a commercial motor vehicle unless that person is qualified to drive a commercial motor vehicle; and
  - 49 C.F.R. §392.3, which states that a motor carrier shall not require or permit a driver to operate a commercial motor vehicle while a driver's ability or alertness is so impaired, or so likely to become impaired, through fatigue, illness, or any other cause, as to make it unsafe for him to begin or continue to operate the commercial motor vehicle.

Recklessness: If Plaintiff can show that the motor carrier/trucking company's actions were reckless, this provides grounds for seeking punitive damages.
Driver Fatigue and the DOT Medical Examination

Chuck Mangelsdorf, Esq.
Nashville office
ILL OR FATIGUED OPERATOR

SECTION 392.3

- No driver shall operate a commercial motor vehicle, and a motor carrier shall not require or permit a driver to operate a commercial motor vehicle, while the driver’s ability or alertness is so impaired, or so likely to become impaired, through fatigue, illness, or any other cause, as to make it unsafe for him/her to begin or continue to operate the commercial motor vehicle.
PHYSICAL QUALIFICATIONS FOR DRIVERS

SECTION 391.41

(a) a person shall not drive a commercial motor vehicle unless he/she is physically qualified to do so and, except as provided in section 391.67, has on his/her person the original, or a photographic copy, of a medical examiner’s certificate that he/she is physically qualified to drive a commercial motor vehicle.

(b) a person is physically qualified to drive a commercial motor vehicle if that person-

- (5) has no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with his/her ability to control and drive a commercial motor vehicle safely
Medical Advisory Criteria

SECTION 39.41(B)(5)

- To function adequately the cells of the body require a continuous supply of oxygen and removal of carbon dioxide. Proper functioning of the respiratory system insures this adequate gaseous exchange. Any interruption in respiration for more than a few minutes will result in irreversible brain damage and ultimately death.
Medical Advisory Criteria

Since a driver must be alert at all times, any change in his or her mental state is in direct conflict with highway safety. Even the slightest impairment in respiratory function under emergency conditions (when greater oxygen supply is necessary for performance) may be detrimental to safe driving.
Medical Advisory Criteria

There are many conditions that interfere with oxygen exchange and may result in incapacitation, including:

- emphysema,
- chronic asthma,
- carcinoma,
- tuberculosis,
- chronic bronchitis and
- sleep apnea.
Fatigue & Sleep Apnea

Fatigue due to sleep apnea and long work periods adversely affects attention and driving abilities.
Fatigue & Sleep Apnea

Activities that require sustained attention, adverse effects can manifest as unanticipated and uncontrolled lapses in attention or as brief periods of involuntary sleep.

Scientific literature and testing has established that fatigue and sleep deprivation increase sleepiness (the need to sleep) and impair neurocognitive performance. This impairment is most evident in persons performing tasks that require sustained attention while relatively immobile in a sitting position.
Fatigue & Sleep Apnea

- Driving a motor vehicle is often cited as a task subject to the performance-impairing effects of fatigue and sleep deprivation.

- Scientific studies have shown that the effects of going without sleep for 17-24 hours is as impairing to performance as ethanol intoxication.
Diagnosis of Sleep Apnea

- Sleep apnea is a medical condition characterized by repetitive airway obstruction during sleep.
- This condition develops gradually over months and years, leading to poor sleep and excessive sleepiness.
- Excessive sleepiness leads to progressive loss in the ability to sustain attention and perform tasks such as driving.
- Because these effects develop slowly, they are often not recognized by the patient.
Diagnosis of Sleep Apnea

- The adverse effects of sleep apnea on attention and performance are biologically based and cannot be reversed by attempts to increase motivation to stay awake, remain alert, and perform well.
- Commonly tried counter-measures such as opening a window and playing loud music are ineffective.
- The symptoms of sleep apnea are often not recognized by the patient but by others. Prompting by family members or co-workers to seek medical attention is a frequent feature in the medical histories of patients with sleep apnea.
BREATHING-RELATED SLEEP DISORDER

"SLEEP DISRUPTION, LEADING TO EXCESSIVE SLEEPINESS OR INSOMNIA, THAT IS JUDGED TO BE DUE TO A SLEEP-RELATED BREATHING CONDITION (E.G. OBSTRUCTIVE OR CENTRAL SLEEP APNEA SYNDROME)"
BREATHING-RELATED SLEEP DISORDER

According to the DSM-IV-TR:

- "Excessive sleepiness" is the most common presenting complaint of individuals with breathing-related sleep disorder.

- Sleepiness results from frequent arousals during nocturnal sleep as the individual attempts to breathe normally. The sleepiness is most evident in relaxing situations, such as when the individual is reading or watching television.

- When sleepiness is extreme the person may fall asleep while actively conversing, eating, walking or driving."
Daytime Sleepiness

Excessive daytime sleepiness may be manifested several ways:

- (1) feelings of drowsiness;
- (2) a tendency towards short sleep latency, or falling asleep very quickly;
- (3) repeated short periods of sleep, or micro sleep, that last from several seconds to several minutes;
- (4) falling asleep for an extended period of time, i.e. napping.
Daytime Sleepiness

- Micro-sleeps are most likely to occur at certain times of the day, such as pre-dawn hours and mid-afternoon hours when the body is “programmed” to sleep.
- Micro-sleeps increase with cumulative sleep debt.
- In other words, the more sleep deprived the person is the greater the chance a micro sleep episode will occur.
1. While driver drowsiness/fatigue is cited on police accident reports as a causal factor in a relatively small percentage of truck accidents, it is believed to play a larger role than cited due to underreporting and to subtle effects on driver performance. Case studies suggest that it plays a significant role in accidents that result in fatalities and injuries.

2. Although there is some disagreement about the definition of driver fatigue, most investigators agree that a reasonable operations definition includes time-correlated deterioration in driving performance, physiological state of arousal, and subjective feelings of sleepiness or tiredness.
3. The consequences of driver fatigue are believed to include:

- Increased lapses of attention
- Increased information processing and decision making time
- Increased reaction time to critical events
- More variable and less effective control responses
- Decreased motivation to sustain performance
- Decreased psychophysiological arousal (e.g., brain waves, heart action)
- Increased subjective feelings of drowsiness or fatigue
- Decreased vigilance (e.g., watchfulness)
- Decreased alertness (e.g., readiness)
4. The primary causes of driver fatigue are long periods of driving, circadian low points and sleep debt.

Fatigue effects have also been associated with:

- Rotating schedules
- Two-person or team "sleeper" operations
- Monotonous driving environments
- Driving in darkness
- Adverse weather conditions
- Alcohol and drugs
- Physical work, in addition to driving
- Noise, vibration and heat
5. Much recent research on driver fatigue has been performed in driving simulators. While this permits a degree of experimental control not possible in over-the-road studies, many variables that affect driver fatigue may operate differently in the real world than in simulators (if they are represented in simulators at all).

Therefore, significant findings about driver fatigue from simulator studies require real-world validation.
DRIVER FATIGUE: THE SCIENCE

6. Many countermeasures aimed at minimizing fatigue-related accidents have been proposed, although few have been the subject of operational testing. Countermeasures fall into the following categories:

- Alarm systems, based on changes in driver performance, or level of psychophysiological arousal, or both;
- Alertness maintainers, in the form of driving hour regulations, obligatory rest stops, napping, training about factors that cause driver fatigue, and certain devices installed in the driving environment.
# Medical Examination Report
## FOR COMMERCIAL DRIVER FITNESS DETERMINATION

### 1. DRIVER'S INFORMATION
Driver completes this section

<table>
<thead>
<tr>
<th>Driver's Name (Last, First, Middle)</th>
<th>Social Security No.</th>
<th>Birthdate M/D/Y</th>
<th>Age</th>
<th>Sex</th>
<th>New Certification</th>
<th>Recertification</th>
<th>Follow-up</th>
<th>Date of Exam</th>
</tr>
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<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Address</th>
<th>City, State, Zip Code</th>
<th>Work Tel: ( )</th>
<th>Driver License No.</th>
<th>License Class</th>
<th>State of Issue</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

### 2. HEALTH HISTORY
Driver completes this section, but medical examiner is encouraged to discuss with driver.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Any illness or injury in the last 5 years?</td>
<td>Head/Brain injuries, disorders or illnesses</td>
<td>Seizures, epilepsy</td>
<td>medication</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye disorders or impaired vision (except corrective lenses)</td>
<td>Heart disease or heart attack; other cardiovascular condition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Heart surgery (valve replacement/bypass, angioplasty, pacemaker)</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>High blood pressure</td>
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<td></td>
<td></td>
<td></td>
<td>Muscular disease</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Shortness of breath</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lung disease, emphysema, asthma, chronic bronchitis</td>
<td>Kidney disease, dialysis</td>
<td>Liver disease</td>
<td>Digestive problems</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Diabetes or elevated blood sugar controlled by:</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Diet</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Nervous or psychiatric disorders, e.g., severe depression</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Loss of, or altered consciousness</td>
</tr>
</tbody>
</table>

For any YES answer, indicate onset date, diagnosis, treating physician's name and address, and any current limitation. List all medications (including over-the-counter medications) used regularly or recently.

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I certify that the above information is complete and true. I understand that inaccurate, false or missing information may invalidate the examination and my Medical Examiner's Certificate.

Driver's Signature __________________________ Date __________

### Medical Examiner's Comments on Health History
(The medical examiner must review and discuss with the driver any "yes" answers and potential hazards of medications, including over-the-counter medications, while driving. This discussion must be documented below.)

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- Fainting, dizziness
- Sleep disorders, pauses in breathing while asleep, daytime sleepiness, loud snoring
- Stroke or paralysis
- Missing or impaired hand, arm, foot, leg, finger, toe
- Spinal injury or disease
- Chronic low back pain
- Regular, frequent alcohol use
- Nitroglycerin or habit forming drug use
3. VISION

Standard: At least 20/40 acuity (Snellen) in each eye with or without correction. At least 70 degrees peripheral in horizontal meridian measured in each eye. The use of corrective lenses should be noted on the Medical Examiner’s Certificate.

INSTRUCTIONS: When other than the Snellen chart is used, give test results in Snellen-comparable values. In recording distance vision, use 20 feet as normal. Report visual acuity as a ratio with 20 as numerator and the smallest type read at 20 feet as denominator. If the applicant wears corrective lenses, these should be worn while visual acuity is being tested. If the driver habitually wears contact lenses, or intends to do so while driving, sufficient evidence of good tolerance and adaptation to their use must be obvious. Monocular drivers are not qualified.

Numerical readings must be provided.

<table>
<thead>
<tr>
<th>ACUITY</th>
<th>UNCORRECTED</th>
<th>CORRECTED</th>
<th>HORIZONTAL FIELD OF VISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Eye</td>
<td>20/100</td>
<td>20/100</td>
<td>Right Eye</td>
</tr>
<tr>
<td>Left Eye</td>
<td>20/100</td>
<td>20/100</td>
<td>Left Eye</td>
</tr>
<tr>
<td>Both Eyes</td>
<td>20/100</td>
<td>20/100</td>
<td></td>
</tr>
</tbody>
</table>

Complete next line only if vision testing is done by an ophthalmologist or optometrist.

4. HEARING

Standard: a) Must first perceive forced whispered voice ≥ 5 ft., with or without hearing aid, or b) average hearing loss in better ear ≤ 40 dB

INSTRUCTIONS: To convert audiometric test results from ISO to ANSI, -14 dB from ISO for 500 Hz, -10 dB for 1,000 Hz, -8.5 dB for 2,000 Hz. To average, add the readings for 3 frequencies tested and divide by 3.

Numerical readings must be recorded.

<table>
<thead>
<tr>
<th>500 Hz Right Ear</th>
<th>1000 Hz Right Ear</th>
<th>2000 Hz Right Ear</th>
<th>500 Hz Left Ear</th>
<th>1000 Hz Left Ear</th>
<th>2000 Hz Left Ear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average: 500 Hz</td>
<td>Average: 1000 Hz</td>
<td>Average: 2000 Hz</td>
<td>Average:</td>
<td>Average:</td>
<td>Average:</td>
</tr>
</tbody>
</table>

5. BLOOD PRESSURE/PULSE RATE

Numerical readings must be recorded. Medical Examiner should take at least two readings to confirm BP.

<table>
<thead>
<tr>
<th>Blood Pressure</th>
<th>Systolic</th>
<th>Diastolic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver qualified if ≤140/90.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse Rate: Regular □ Irregular □</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record Pulse Rate: □</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reading</th>
<th>Category</th>
<th>Expiration Date</th>
<th>Recertification</th>
</tr>
</thead>
<tbody>
<tr>
<td>140-159/90-99</td>
<td>Stage 1</td>
<td>1 year</td>
<td>1 year if ≤140/90. One-time certificate for 3 months if 141-159/91-99.</td>
</tr>
<tr>
<td>160-179/100-109</td>
<td>Stage 2</td>
<td>One-time certificate for 3 months.</td>
<td>1 year from date of exam if ≤140/90</td>
</tr>
<tr>
<td>≥180/110</td>
<td>Stage 3</td>
<td>6 months from date of exam if &lt;140/90</td>
<td>6 months if &lt;140/90</td>
</tr>
</tbody>
</table>

6. LABORATORY AND OTHER TEST FINDINGS

Numerical readings must be recorded.

<table>
<thead>
<tr>
<th>URINE SPECIMEN</th>
<th>SP. GR.</th>
<th>PROTEIN</th>
<th>BLOOD SUGAR</th>
</tr>
</thead>
</table>

Urinalysis is required. Protein, blood or sugar in the urine may be an indication for further testing to rule out any underlying medical problem. Other Testing (Describe and record)
The presence of a certain condition may not necessarily disqualify a driver, particularly if the condition is controlled adequately, is not likely to worsen or is readily amenable to treatment. Even if a condition does not disqualify a driver, the medical examiner may consider deferring the driver temporarily. Also, the driver should be advised to take the necessary steps to correct the condition as soon as possible particularly if the condition, if neglected, could result in more serious illness that might affect driving.

Check YES if there are any abnormalities. Check NO if the body system is normal. Discuss any YES answers in detail in the space below, and indicate whether it would affect the driver’s ability to operate a commercial motor vehicle safely. Enter applicable item number before each comment. If organic disease is present, note that it has been compensated for. See Instructions to the Medical Examiner for guidance.

**COMMENTS:**

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Note certification status here. See Instructions to the Medical Examiner for guidance.

- ☐ Meets standards in 49 CFR 391.41; qualifies for 2 year certificate
- ☐ Does not meet standards
- ☐ Meets standards, but periodic monitoring required due to _______. Driver qualified only for: ☐ 3 months ☐ 6 months ☐ 1 year ☐ Other
- ☐ Temporarily disqualified due to (condition or medication): _______

- ☐ Return to medical examiner’s office for follow up on _______

- ☐ Wearing corrective lens
- ☐ Wearing hearing aid
- ☐ Accompanied by a _______ waiver/ exemption. Driver must present exemption at time of certification.
- ☐ Skill Performance Evaluation (SPE) Certificate
- ☐ Driving within exempt intracity zone (See 49 CFR 391.62)
- ☐ Qualified by operation of 49 CFR 391.64

Medical Examiner’s signature ____________________________
Medical Examiner’s name ____________________________
Address ____________________________
Telephone Number ____________________________

If meets standards, complete a Medical Examiner’s Certificate as stated in 49 CFR 391.43(h). (Driver must carry certificate when operating a commercial vehicle.)
THE DRIVER'S ROLE
Responsibilities, work schedules, physical and emotional demands, and lifestyles among commercial drivers vary by the type of driving that they do. Some of the main types of drivers include the following: turn around or short relay (drivers return to their home base each evening); long relay (drivers drive 9-11 hours and then have at least a 10-hour off-duty period), straight through haul (cross country drivers); and team drivers (drivers share the driving by alternating their 5-hour driving periods and 5-hour rest periods.)

The following factors may be involved in a driver's performance capabilities: abrupt schedule changes and rotating work schedules, which may result in irregular sleep patterns and a driver beginning a trip in a fatigued condition; long hours; extended time away from family and friends, which may result in lack of social support; tight pickup and delivery schedules, with irregularity in work, rest, and eating patterns, adverse road, weather and traffic conditions, which may cause delays and lead to hurriedly loading or unloading cargo in order to compensate for the lost time; and environmental conditions such as excessive vibration, noise, and extremes in temperature. Transporting passengers or hazardous materials may add to the demands on the commercial driver.

There may be duties in addition to the driving task for which a driver is responsible and needs to be fit. Some of these responsibilities are: coupling and uncoupling trailer(s) from the tractor, loading and unloading trailer(s) (sometimes a driver may lift a heavy load or unload as much as 50,000 lbs. of freight after sitting for a long period of time without any stretching period); inspecting the operating condition of tractor and/or trailer(s) before, during and after delivery of cargo; lifting, installing, and removing heavy tire chains; and, lifting heavy tarpaulins to cover open top trailers. The above tasks demand agility, the ability to bend and stoop, the ability to maintain a crouching position to inspect the underside of the vehicle, frequent entering and exiting of the cab, and the ability to climb ladders on the tractor and/or trailer(s).

In addition, a driver must have the perceptual skills to monitor a sometimes complex driving situation, the judgment skills to make quick decisions, when necessary, and the manipulative skills to control an oversized steering wheel, shift gears using a manual transmission, and maneuver a vehicle in crowded areas.

§391.41 PHYSICAL QUALIFICATIONS FOR DRIVERS
(a) A person shall not drive a commercial motor vehicle unless he is physically qualified to do so and, except as provided in §391.67, has on his person the original, or a photographic copy, of a medical examiner's certificate that he is physically qualified to drive a commercial motor vehicle.
(b) A person is physically qualified to drive a motor vehicle if that person:
(1) Has no loss of a foot, a leg, a hand, or an arm, or has been granted a Skill Performance Evaluation (SPE) Certificate (formerly Limb Waiver Program) pursuant to §391.49.
(2) Has no impairment of: (i) A hand or finger which interferes with prehension or power grasping; or (ii) An arm, foot, or leg which interferes with the ability to perform normal tasks associated with operating a commercial motor vehicle; or any other significant limb defect or limitation which interferes with the ability to perform normal tasks associated with operating a commercial motor vehicle; or has been granted a SPE Certificate pursuant to §391.49.
(3) Has no established medical history or clinical diagnosis of diabetes mellitus currently requiring insulin for control;
(4) Has no current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, thrombosis, or any other cardiovascular disease of a variety known to be accompanied by syncope, dyspnea, collapse, or congestive cardiac failure.
(5) Has no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with his ability to control and drive a commercial motor vehicle safely.
(6) Has no current clinical diagnosis of high blood pressure likely to interfere with his ability to operate a commercial motor vehicle safely.
(7) Has no established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which interferes with his ability to control and operate a commercial motor vehicle safely.
(8) Has no established medical history or clinical diagnosis of epilepsy or any other condition which is likely to cause loss of consciousness or any loss of ability to control a commercial motor vehicle;
(9) Has no mental, nervous, organic, or functional disease or psychiatric disorder likely to interfere with his ability to drive a commercial motor vehicle safely;
(10) Has distant visual acuity of at least 20/40 (Snellen) in each eye without corrective lenses or visual acuity separately corrected to 20/40 (Snellen) or better with corrective lenses, distant binocular acuity of at least 20/40 (Snellen) in both eyes with or without corrective lenses, field of vision of at least 70 degrees in the horizontal meridian in each eye, and the ability to recognize the colors of traffic signals and devices showing standard red, green and amber;
(11) First perceives a forced whispered voice in the better ear not less than 5 feet with or without the use of a hearing aid, or, if tested by use of an audiometric device, does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1,000 Hz and 2,000 Hz with or without a hearing device when the audiometric device is calibrated to the American National Standard (formerly ASA Standard) Z24.5-1951;
(12)(i) Does not use any drug or substance identified in 21 CFR 1308.11 Schedule I, an amphetamine, a narcotic, or other habit-forming drug.
(ii) Does not use any non-Schedule I drug or substance that is identified in the other Schedules in 21 part 1308 except when the use is prescribed by a licensed medical practitioner, as defined in § 382.107, who is familiar with the driver's medical history and has advised the driver that the substance will not adversely affect the driver's ability to safely operate a commercial motor vehicle.
(13) Has no current clinical diagnosis of alcoholism.
INSTRUCTIONS TO THE MEDICAL EXAMINER

General Information
The purpose of this examination is to determine a driver's physical qualification to operate a commercial motor vehicle (CMV) in interstate commerce according to the requirements in 49 CFR 391.41-49. Therefore, the medical examiner must be knowledgeable of these requirements and guidelines developed by the FMCSA to assist the medical examiner in making the qualification determination. The medical examiner should be familiar with the driver's responsibilities and work environment and is referred to the section on the form, The Driver's Role.

In addition to reviewing the Health History section with the driver and conducting the physical examination, the medical examiner should discuss common prescriptions and over-the-counter medications relative to the side effects and hazards of these medications while driving. Educate the driver to read warning labels on all medications. History of certain conditions may be cause for rejection, particularly if required by regulation, or may indicate the need for additional laboratory tests or more stringent examinations perhaps by a medical specialist. These decisions are usually made by the medical examiner in light of the driver's job responsibilities, work schedule and potential for the conditions to render the driver unsafe.

Medical conditions should be recorded even if they are not cause for denial, and they should be discussed with the driver to encourage appropriate remedial care. This advice is especially needed when a condition, if neglected, could develop into a serious illness that could affect driving.

If the medical examiner determines that the driver is fit to drive and is also able to perform non-driving responsibilities as may be required, the medical examiner signs the medical certificate which the driver must carry with his/her license. The certificate must be dated. Under current regulations, the certificate is valid for two years, unless the driver has a medical condition that does not prohibit driving but does require more frequent monitoring. In such situations, the medical certificate should be issued for a shorter length of time. The physical examination should be done carefully and at least as complete as is indicated by the attached form. Contact the FMCSA at (202) 366-4001 for further information (a vision exemption, qualifying drivers under 49 CFR 391.64, etc.).

Interpretation of Medical Standards
Since the issuance of the regulations for physical qualifications of commercial drivers, the Federal Motor Carrier Safety Administration (FMCSA) has published recommendations called Advisory Criteria to help medical examiners in determining whether a driver meets the physical qualifications for commercial driving. These recommendations have been condensed to provide information to medical examiners that (1) is directly relevant to the physical examination and (2) is not already included in the medical examination form. The specific regulation is printed in italics and its reference by section is highlighted.

Federal Motor Carrier Safety Regulations - Advisory Criteria

Diabetes
§391.41(b)(3)
A person is physically qualified to drive a commercial motor vehicle if that person:
Has no established medical history or clinical diagnosis of diabetes mellitus currently requiring insulin for control.

Diabetes mellitus is a disease which, on occasion, can result in a loss of consciousness or disorientation in time and space. Individuals who require insulin for control have conditions which can get out of control by the use of too much or too little insulin, or food intake not consistent with the insulin dosage. Incapacitation may occur from symptoms of hyperglycemic or hypoglycemic reactions (drowsiness, semiconsciousness, diabetic coma or insulin shock).

The administration of insulin is, within itself, a complicated process requiring insulin, syringe, needle, alcohol sponge and a sterile technique. Factors related to long-haul commercial motor vehicle operations, such as fatigue, lack of sleep, poor diet, emotional conditions, stress, and concomitant illness, compound the dangers, the FMCSA has consistently held that a diabetic who uses insulin for control does not meet the minimum physical requirements of the FMCSRs.

Hypoglycemic drugs, taken orally, are sometimes prescribed for diabetic individuals to help stimulate natural body production of insulin. If the condition can be controlled by the use of oral medication and diet, then an individual may be qualified under the present rule. CMV drivers who do not meet the Federal diabetes standard may call (703) 448-3094 for an application for a diabetes exemption.


Cardiovascular Condition
§391.41(b)(4)
A person is physically qualified to drive a commercial motor vehicle if that person:
Has no current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, thrombosis or any other cardiovascular disease of a variety known to be accompanied by syncope, dyspnea, collapse or congestive cardiac failure.

The term *has no current clinical diagnosis of* is specifically designed to encompass: "a clinical diagnosis of (1) a current cardiovascular condition, or (2) a cardiovascular condition which has not fully stabilized regardless of the time limit." The term *known to be
accompanied by" is designed to include a clinical diagnosis of a cardiovascular disease (1) which is accompanied by symptoms of syncope, dyspnea, collapse or congestive cardiac failure; and/or (2) which is likely to cause syncope, dyspnea, collapse or congestive cardiac failure.

It is the intent of the FMCSRs to render unqualified, a driver who has a current cardiovascular disease which is accompanied by and/or likely to cause symptoms of syncope, dyspnea, collapse, or congestive cardiac failure. However, the subjective decision of whether the nature and severity of an individual's condition will likely cause symptoms of cardiovascular insufficiency is on an individual basis and qualification rests with the medical examiner and the motor carrier. In those cases where there is an occurrence of cardiovascular insufficiency (myocardial infarction, thrombosis, etc.), it is suggested before a driver is certified that he or she have a normal resting and stress electrocardiogram (ECG), no residual complications and no physical limitations, and is taking no medication likely to interfere with safe driving.

Coronary artery bypass surgery and pacemaker implantation are remedial procedures and thus, not unqualifying. Implantable cardioverter defibrillators are disqualifying due to risk of syncope. Coumadin is a medical treatment which can improve the health and safety of the driver and should not, by its use, medically disqualify the commercial driver. The emphasis should be on the underlying medical condition(s) which require treatment and the general health of the driver. The FMCSA should be contacted at (202) 366-4001 for additional recommendations regarding the physical qualification of drivers on coumadin. (See Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Respiratory Dysfunction §391.41(b)(5)

A person is physically qualified to drive a commercial motor vehicle if that person:

Has no established medical history or clinical diagnosis of a respiratory disease likely to interfere with the ability to control and drive a commercial motor vehicle safely.

Since a driver must be alert at all times, any change in his or her mental state is in direct conflict with highway safety. Even the slightest impairment in respiratory function under emergency conditions (when greater oxygen supply is necessary for performance) may be detrimental to safe driving.

There are many conditions that interfere with oxygen exchange and may result in incapacitation, including emphysema, chronic asthma, carcinoma, tuberculosis, chronic bronchitis and sleep apnea. If the medical examiner detects a respiratory dysfunction, that in any way is likely to interfere with the driver's ability to safely control and drive a commercial motor vehicle, the driver must be referred to a specialist for further evaluation and therapy. Anticoagulation therapy for deep vein thrombosis and/or pulmonary thromboembolism is not unqualifying once optimum dose is achieved, provided lower extremity venous examinations remain normal and the treating physician gives a favorable recommendation.

(See Conference on Pulmonary/Respiratory Disorders and Commercial Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Hypertension §391.41(b)(6)

A person is physically qualified to drive a commercial motor vehicle if that person:

Has no current clinical diagnosis of high blood pressure likely to interfere with ability to operate a commercial motor vehicle safely.

Hypertension alone is unlikely to cause sudden collapse; however, the likelihood increases when target organ damage, particularly cerebral vascular disease, is present. This regulatory criteria is based on FMCSA's Cardiovascular Advisory Guidelines for the Examination of CMV Drivers, which used the Sixth Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure (1997).

Stage 1 hypertension corresponds to a systolic BP of 140-159 mmHg and/or a diastolic BP of 90-99 mmHg. The driver with a BP in this range is at low risk for hypertension-related acute incapacitation and may be medically certified to drive for a one-year period. Certification examinations should be done annually thereafter and should be at or less than 140/90. If less than 160/100, certification may be extended one time for 3 months.

A blood pressure of 160-179 systolic and/or 100-109 diastolic is considered Stage 2 hypertension, and the driver is not necessarily unqualified during evaluation and institution of treatment. The driver is given a one time certification of three months to reduce his or her blood pressure to less than or equal to 140/90. A blood pressure in this range is an absolute indication for anti-hypertensive drug therapy. Provided treatment is well tolerated and the driver demonstrates a BP value of 140 or less, he or she may be certified for one year from date of the initial exam. The driver is certified annually thereafter.

A blood pressure at or greater than 180 (systolic) and 110 (diastolic) is considered Stage 3, high risk for acute BP-related event. The driver may not be qualified, even temporarily, until reduced to 140/90 or less and treatment is well tolerated. The driver may be certified for 6 months and biannually (every 6 months) thereafter if at recheck BP is 140/90 or less.

Annual recertification is recommended if the medical examiner does not know the severity of hypertension prior to treatment.

An elevated blood pressure finding should be confirmed by at least two subsequent measurements on different days. Treatment includes nonpharmacologic and pharmacologic modalities as well as counseling to reduce other risk factors. Most antihypertensive medications also have side effects, the importance of which must be judged on an individual basis. Individual's must be alerted to the hazards of these medications while driving. Side effects of somnolence or syncope are particularly undesirable in commercial drivers.

Secondary hypertension is based on the above stages. Evaluation is warranted if patient is persistently hypertensive on maximal or near-maximal doses of 2 or more pharmacologic agents. Some causes of secondary hypertension may be amenable to surgical intervention or specific pharmacologic disease.

(See Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Rheumatic, Arthritic, Orthopedic, Muscular, Neuromuscular or Vascular Disease §391.41(b)(7)

A person is physically qualified to drive a commercial motor vehicle if that person:

Has no established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular or vascular disease which interferes with the ability to control and operate a commercial motor vehicle safely.

Certain diseases are known to have acute episodes of transient muscle weakness, poor muscular coordination (ataxia), abnormal sensations (paresthesia), decreased muscular tone (hypotonia), visual disturbances and pain which may be suddenly incapacitating. With each recurring episode, these symptoms may become more pronounced and remain for longer periods of time. Other diseases have more insidious onsets and display symptoms of muscle wasting (atrophy), swelling and paresthesia which may not suddenly incapacitate a person but may restrict his/her movements and eventually interfere with the ability to safely operate a motor vehicle. In many instances these diseases are degenerative in nature or may result in deterioration of the involved area.

Once an individual has been diagnosed as having a rheumatic, arthritic, orthopedic, muscular, neuromuscular or vascular disease, then he/she has an established history of that disease. The physician, when examining an individual, should consider the following: (1) the nature and severity of the individual's condition (such as sensory loss or loss of strength); (2) the degree of limitation present (such as range of motion); (3) the likelihood of progressive limitation (not always present initially but may manifest itself over time); and (4) the likelihood of sudden incapacitation. If severe functional impairment exists, the driver does not qualify. In cases where more frequent monitoring is required, a certificate for a shorter period of time may be issued. (See Conference on Neurological Disorders and Commercial Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)
Epilepsy
§391.41(b)(6)
A person is physically qualified to drive a commercial motor vehicle if that person:

Has no established medical history or clinical diagnosis of epilepsy or any other condition which is likely to cause loss of consciousness or any loss of ability to control a motor vehicle.

Epilepsy is a chronic functional disease characterized by seizures or episodes that occur without warning, resulting in loss of voluntary control which may lead to loss of consciousness and/or seizures. Therefore, the following drivers cannot be qualified: (1) a driver who has a medical history of epilepsy; (2) a driver who has a current clinical diagnosis of epilepsy; or (3) a driver who is taking antiseizure medication.

If an individual has had a sudden episode of a non-epileptic seizure or loss of consciousness of unknown cause which did not require antiseizure medication, the decision as to whether that person’s condition will likely cause loss of consciousness or loss of ability to control a motor vehicle is made on an individual basis by the medical examiner in consultation with the treating physician. Before certification is considered, it is suggested that a 6 month waiting period elapse from the time of the episode. Following the waiting period, it is suggested that the individual have a complete neurological examination. If the results of the examination are negative and antiseizure medication is not required, then the driver may be qualified.

In those individual cases where a driver has a seizure or an episode of loss of consciousness that resulted from a known medical condition (e.g., drug reaction, high temperature, acute infectious disease, dehydration or acute metabolic disturbance), certification should be deferred until the driver has fully recovered from that condition and has no existing residual complications, and not taking antiseizure medication.

Drivers with a history of epilepsy/seizures off antiseizure medication and seizure-free for 10 years may be qualified to drive a CMV in interstate commerce. Interstate drivers with a history of a single unprovoked seizure may be qualified to drive a CMV in interstate commerce if seizure-free and off antiseizure medication for a 5-year period or more. (See Conference on Neurological Disorders and Commercial Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Mental Disorders
§391.41(b)(9)
A person is physically qualified to drive a commercial motor vehicle if that person:

Has no mental, nervous, organic or functional disease or psychiatric disorder likely to interfere with ability to drive a motor vehicle safely.

Emotional or adjustment problems contribute directly to an individual's level of memory, reasoning, attention, and judgment. These problems often underlie physical disorders. A variety of functional disorders can cause drowsiness, dizziness, confusion, weakness or paralysis that may lead to incoordination, inattention, loss of control and susceptibility to accidents while driving. Physical fatigue, headache, impaired coordination, recurring physical ailments and chronic "nagging" pain may be present to such a degree that certification for commercial driving is inadvisable. Somatic and psychosomatic complaints should be thoroughly examined when determining an individual's overall fitness to drive. Disorders of a periodically incapacitating nature, even in the early stages of development, may warrant disqualification.

Many bus and truck drivers have documented that "nervous trouble" related to neurotic, personal, or emotional or adjustment problems is responsible for a significant fraction of their preventable accidents. The degree to which an individual is able to appreciate, evaluate and adequately respond to environmental strain and emotional stress is critical when assessing an individual's mental alertness and flexibility to cope with the many demands of commercial motor vehicle driving.

When examining the driver, it should be kept in mind that individuals who live under chronic emotional upsets may have deeply ingrained maladaptive or erratic behavior patterns. Excessively antagonistic, instinctive, impulsive, openly aggressive, paranoid or severely depressed behavior greatly interfere with the driver's ability to drive safely. Those individuals who are highly susceptible to frequent states of emotional instability (schizophrenia, affective psychoses, paranoia, anxiety or depressive neuroses) may warrant disqualification. Careful consideration should be given to the side effects and interactions of medications in the overall qualification determination. See Psychiatric Conference Report for specific recommendations on the use of medications and potential hazards for driving.

(See Conference on Psychiatric Disorders and Commercial Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Vision
§391.41(b)(10)
A person is physically qualified to drive a commercial motor vehicle if that person:

Has distant visual acuity of at least 20/40 (Snellen) in each eye with or without corrective lenses or visual acuity separately corrected to 20/40 (Snellen) or better with corrective lenses, distant binocular acuity of at least 20/40 (Snellen) in both eyes with or without corrective lenses, field of vision of at least 70 degrees in the horizontal meridian in each eye, and the ability to recognize the colors of traffic signals and devices showing standard red, green, and amber.

The term "ability to recognize the colors of" is interpreted to mean if a person can recognize and distinguish among traffic control signals and devices showing standard red, green and amber, he or she meets the minimum standard, even though he or she may have some type of color perception deficiency. If certain color perception tests are administered, (such as Ishihara, Farnsworth-Munsell 100-Hue and doubtful findings are discovered, a controlled test using signal red, green and amber may be employed to determine the driver’s ability to recognize these colors.

Contact lenses are permissible if there is sufficient evidence to indicate that the driver has good tolerance and is well adapted to their use. Use of a contact lens in one eye for distance visual acuity and another lens in the other eye is not acceptable, nor telescopic lenses acceptable for the driving of commercial motor vehicles.

If an individual meets the criteria by the use of glasses or contact lenses, the following statement shall appear on the Medical Examiner’s Certificate: “Qualified only if wearing corrective lenses.”

CMV drivers who do not meet the Federal vision standard may call (703) 445-3084 for an application for a visual exemption. (See Visual Disorders and Commercial Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Hearing
§391.41(b)(11)
A person is physically qualified to drive a commercial motor vehicle if that person:

First perceives a forced whispered voice in the better ear at not less than 5 feet with or without the use of a hearing aid, or, if tested by use of an audiometric device, does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz with or without a hearing aid when the audiometric device is calibrated to American National Standard (formerly ADA Standard) Z22.5-1951.

Since the prescribed standard under the FMCSRs is the American Standards Association (ANSI), it may be necessary to convert the audiometric results from the ISO standard to the ANSI standard. Instructions are included on the Medical Examination report form.

If an individual meets the criteria by using a hearing aid, the driver must wear that hearing aid and have it in operation at all times while driving. Also, the driver must be in possession of a spare power source for the hearing aid.

For the whispered voice test, the individual should be stationed at least 5 feet from the examiner with the ear being tested turned toward the examiner. The other ear is covered. Using the breath which remains after a normal expiration, the examiner whispers words or random numbers such as 66, 18,
to medically evaluate a driver to ensure that the driver has no medical condition which interferes with the safe performance of driving tasks on a public road. If a driver uses an amphetamine, a narcotic or any other habit-forming drug, it may be cause for the driver to be found medically unqualified. If a driver uses a Schedule I drug or substance, it will be cause for the driver to be found medically unqualified. Motor carriers are encouraged to obtain a practitioner's written statement about the effects on transportation safety of the use of a particular drug.

A test for controlled substances is not required as part of this biennial certification process. The FMCSA or the driver's employer should be contacted directly for information on controlled substances and alcohol testing under Part 382 of the FMCSRs.

The term "uses" is designed to encompass instances of prohibited drug use determined by a physician through established medical means. This may or may not involve body fluid testing. If body fluid testing takes place, positive test results should be confirmed by a second test of greater specificity. The term "habit-forming" is intended to include any drug or medication generally recognized as capable of becoming habitual, and which may impair the user's ability to operate a commercial motor vehicle safely.

The driver is medically unqualified for the duration of the prohibited drug(s) use and until a second examination shows the driver is free from the prohibited drug(s) use. Recertification may involve a substance abuse evaluation, the successful completion of a drug rehabilitation program, and a negative drug test result. Additionally, given that the certification period is normally two years, the examiner has the option to certify for a period of less than 2 years if this examiner determines more frequent monitoring is required.

(See Conference on Neurological Disorders and Commercial Drivers and Conference on Psychiatric Disorders and Commercial Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Drug Use §391.41(b)(12)
A person is physically qualified to drive a commercial motor vehicle if that person does not use any drug or substance identified in 21 CFR 1308.11, an amphetamine, a narcotic, or other habit-forming drug. A driver may use a non-Schedule I drug or substance that is identified in the other Schedules in 21 part 1303 if the substance or drug is prescribed by a licensed medical practitioner who: (A) is familiar with the driver's medical history, and assigned duties; and (B) has advised the driver that the prescribed substance or drug will not adversely affect the driver's ability to safely operate a commercial motor vehicle.

This exception does not apply to methadone. The intent of the medical certification process is to medically evaluate a driver to ensure that the driver has no medical condition which interferes with the safe performance of driving tasks on a public road. If a driver uses an amphetamine, a narcotic or any other habit-forming drug, it may be cause for the driver to be found medically unqualified. If a driver uses a Schedule I drug or substance, it will be cause for the driver to be found medically unqualified. Motor carriers are encouraged to obtain a practitioner's written statement about the effects on transportation safety of the use of a particular drug.

A test for controlled substances is not required as part of this biennial certification process. The FMCSA or the driver's employer should be contacted directly for information on controlled substances and alcohol testing under Part 382 of the FMCSRs.

The term "uses" is designed to encompass instances of prohibited drug use determined by a physician through established medical means. This may or may not involve body fluid testing. If body fluid testing takes place, positive test results should be confirmed by a second test of greater specificity. The term "habit-forming" is intended to include any drug or medication generally recognized as capable of becoming habitual, and which may impair the user's ability to operate a commercial motor vehicle safely.

The driver is medically unqualified for the duration of the prohibited drug(s) use and until a second examination shows the driver is free from the prohibited drug(s) use. Recertification may involve a substance abuse evaluation, the successful completion of a drug rehabilitation program, and a negative drug test result. Additionally, given that the certification period is normally two years, the examiner has the option to certify for a period of less than 2 years if this examiner determines more frequent monitoring is required.

(See Conference on Neurological Disorders and Commercial Drivers and Conference on Psychiatric Disorders and Commercial Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Alcoholism §391.41(b)(13)
A person is physically qualified to drive a commercial motor vehicle if that person: Has no current clinical diagnosis of alcoholism.

The term "current clinical diagnosis of" is specifically designed to encompass a current alcoholic illness or those instances where the individual's physical condition has not fully stabilized, regardless of the time element. If an individual shows signs of having an alcohol-use problem, he or she should be referred to a specialist. After counseling and/or treatment, he or she may be considered for certification.
Obstructive Sleep Apnea (OSA)

- **OSA Tests, Types, & Diagnosis**
  a. Questionnaires & Sleep Study
     Berlin
     Stop & Stop Bang
     Epworth Sleepiness Scale
     Polysomnography
  b. OSA Types
     i. Mild (AHI of 5-15)
     ii. Moderate (AHI of 15-30)
     iii. Severe (AHI = more than 30)
  c. Diagnosis
     i. Medicare
        1. AHI or RDI greater than or equal to 15 events per hour or greater than or equal to 5 events per hour and less than 14 events per hour with documented symptoms of excessive daytime sleepiness; impaired cognition; mood disorders, insomnia; or documented hypertension; ischemic heart; or history of stroke
        2. AASM
           a. The patient reports daytime sleepiness, unrefreshing sleep, fatigue, insomnia, and/or unintentional sleep episodes during wakefulness. The patient awakens with breath holding, gasping or choking. The patient's bed partner reports loud snoring, breathing interruptions, or both, during the patient's sleep.
           b. Polysomnography (PSG) shows more than five scorable respiratory events (e.g. apneas, hypopneas, RERAs) per hour of sleep and/or
evidence of respiratory effort during all or a portion of each respiratory event

c. PSG shows more than 15 scorable respiratory events (e.g. apneas, hypopneas, RERAs) per hour of sleep and/or evidence of respiratory effort during all or a portion of each respiratory event

d. Another current sleep disorder, medical or neurological disorder, medication use, or substance use does not better account for the patient’s condition.

• Symptoms
  
a. Characteristics
     i. Loud snoring
     ii. Morning headaches
     iii. Gagging or choking while sleeping
     iv. Loss of sex drive/impotence
     v. Excessive daytime sleepiness
     vi. Irritability and/or feelings of depression
     vii. Concentration and memory problems
     viii. Frequent nighttime urination

b. Risk Groups
   i. BMI=30 or above
   ii. Large neck size-17 inches for men, 16 inches for women
   iii. Middle Age men, post-menopausal women
   iv. Ethnicity
   v. People with abnormalities of the bony and soft tissue structures of the head and neck (e.g. recessed chin, small jaw, or large overbite)
   vi. Family history of OSA
   vii. Smokers
   viii. People with endocrine disorders such as Acromegaly and Hypothyroidism

• Effects
   i. Increased heart rate
   ii. Chronic elevation of daytime blood pressure
   iii. Impaired glucose tolerance and insulin resistance
   iv. Mood changes

• Science
  
  OSA
Testing
Sleep study
Home Sleep Study

- **Treatment-Severe OSA**
  a. CPAP, APAP, BIPAP,
  b. Oral appliances
  c. Surgery
  d. Other
    i. Weight loss (behavioral change-mild OSA)
    ii. Position Therapy
      1. Raise head while sleeping
      2. Avoid sleeping on one's back

- **Is this condition compatible with over the road driving?**
  a. DOT's position
  b. Usage Problem
    i. fit
  c. Adherence is key
    i. Unofficial standard (Medicare) 4 hrs/night 70% etc
    ii. Print out of monitoring

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**Show & Tell**

CPAP Machine
Sample Data Print Out

**Acronyms-decoding critical references**

CPAP=Continuous positive airway pressure
APAP=Auto-titrating positive airway pressure
BIPAP=Bilevel positive airway pressure
NCPAP=Nasal continuous positive airway pressure
AHI=Apnea-Hypopnea Index
RDI=Respiratory Disturbance Index
SDB=Sleep Disordered Breathing
EDS=Excessive daytime sleepiness
PSG=Polysomnography
**Internet reference sources**
Sleep specialists come from a variety of medical backgrounds. In addition to their primary specialty, they may also be board certified through the American Board of Sleep Medicine.

A few of the specialties follows:

- **Primary Care Physicians** (Family Practice/General Practice/Internists)
- **Pulmonologist** (specializing in the respiratory tract)
- **Otolaryngologist** (specializing in ear, nose and throat issues – ENT)
- **Cardiologist** (specializing in heart-related conditions)
- **Neurologist** (specializing in disorders of the nervous system).
- **Psychiatrist** (specializing in mental health)
- **Alternative Medicine** (Acupuncture)
- **Sleep Medicine** (specializing in sleep disturbances and disorders)
BERLIN QUESTIONNAIRE

Height (m) _______ Weight (kg) _______ Age _______ Male / Female
Please choose the correct response to each question.

**CATEGORY 1**
1. Do you snore?
   _ a. Yes
   _ b. No
   _ c. Don’t know

   If you snore:
2. Your snoring is:
   _ a. Slightly louder than breathing
   _ b. As loud as talking
   _ c. Louder than talking
   _ d. Very loud – can be heard in adjacent rooms

3. How often do you snore
   _ a. Nearly every day
   _ b. 3-4 times a week
   _ c. 1-2 times a week
   _ d. 1-2 times a month
   _ e. Never or nearly never

4. Has your snoring ever bothered other people?
   _ a. Yes
   _ b. No
   _ c. Don’t Know

5. Has anyone noticed that you quit breathing during your sleep?
   _ a. Nearly every day
   _ b. 3-4 times a week
   _ c. 1-2 times a week
   _ d. 1-2 times a month
   _ e. Never or nearly never

**CATEGORY 2**
6. How often do you feel tired or fatigued after your sleep?
   _ a. Nearly every day
   _ b. 3-4 times a week
   _ c. 1-2 times a week
   _ d. 1-2 times a month
   _ e. Never or nearly never

7. During your waking time, do you feel tired, fatigued or not up to par?
   _ a. Nearly every day
   _ b. 3-4 times a week
   _ c. 1-2 times a week
   _ d. 1-2 times a month
   _ e. Never or nearly never

8. Have you ever nodded off or fallen asleep while driving a vehicle?
   _ a. Yes
   _ b. No

   If yes:
9. How often does this occur?
   _ a. Nearly every day
   _ b. 3-4 times a week
   _ c. 1-2 times a week
   _ d. 1-2 times a month
   _ e. Never or nearly never

**CATEGORY 3**
10. Do you have high blood pressure?
    _ Yes
    _ No
    _ Don’t know
Berlin Questionnaire (for sleep apnea)
Scoring Berlin questionnaire
Adapted from: Table 2 from Netzer, et al., 1999. (Netzer NC, Strohs RA, Netzer CM, Clark K, Strohl KP.
Using the Berlin Questionnaire to identify patients at risk for the sleep apnea syndrome.

The questionnaire consists of 3 categories related to the risk of having sleep apnea.

Patients can be classified into High Risk or Low Risk based on their responses to the individual items and their overall scores in the symptom categories.

Categories and scoring:
Category 1: items 1, 2, 3, 4, 5.
Item 1: if 'Yes', assign 1 point
Item 2: if 'c' or 'd' is the response, assign 1 point
Item 3: if 'a' or 'b' is the response, assign 1 point
Item 4: if 'a' is the response, assign 1 point
Item 5: if 'a' or 'b' is the response, assign 2 points

Add points. Category 1 is positive if the total score is 2 or more points
Category 2: items 6, 7, 8 (item 9 should be noted separately).
Item 6: if 'a' or 'b' is the response, assign 1 point
Item 7: if 'a' or 'b' is the response, assign 1 point
Item 8: if 'a' is the response, assign 1 point

Add points. Category 2 is positive if the total score is 2 or more points
Category 3 is positive if the answer to item 10 is 'Yes' OR if the BMI of the patient is greater than 30kg/m².
(BMI must be calculated. BMI is defined as weight (kg) divided by height (m) squared, i.e., kg/m²).

High Risk: if there are 2 or more Categories where the score is positive
Low Risk: if there is only 1 or no Categories where the score is positive

Additional question: item 9 should be noted separately.
STOP BANG Questionnaire

Height _____ inches/cm Weight _____ lb/kg
Age _____
Male/Female
BMI _____
Collar size of shirt: S, M, L, XL, or _____ inches/cm
Neck circumference* _____ cm

1. Snoring
Do you snore loudly (louder than talking or loud enough to be heard through closed doors)?
Yes    No

2. Tired
Do you often feel tired, fatigued, or sleepy during daytime?
Yes    No

3. Observed
Has anyone observed you stop breathing during your sleep?
Yes    No

4. Blood pressure
Do you have or are you being treated for high blood pressure?
Yes    No

5. BMI
BMI more than 35 kg/m²?
Yes    No

6. Age
Age over 50 yr old?
Yes    No

7. Neck circumference
Neck circumference greater than 40 cm?
Yes    No

8. Gender
Gender male?
Yes    No

* Neck circumference is measured by staff

High risk of OSA: answering yes to three or more items
Low risk of OSA: answering yes to less than three items

Adapted from:
STOP Questionnaire
A Tool to Screen Patients for Obstructive Sleep Apnea
Frances Chung, F.R.C.P.C.*, Balaji Yegneswaran, M.B.B.S.,† Pu Liao, M.D.,‡ Sharon A. Chung, Ph.D.,§
Anaesthesia 2008, 63:812–21 Copyright © 2008, the American Society of Anaesthesiologists, Inc. Lippincott Williams & Wilkins, Inc.
The Epworth Sleepiness Scale

The Epworth Sleepiness Scale is widely used in the field of sleep medicine as a subjective measure of a patient's sleepiness. The test is a list of eight situations in which you rate your tendency to become sleepy on a scale of 0, no chance of dozing, to 3, high chance of dozing. When you finish the test, add up the values of your responses. Your total score is based on a scale of 0 to 24. The scale estimates whether you are experiencing excessive sleepiness that possibly requires medical attention.

How Sleepy Are You?
How likely are you to doze off or fall asleep in the following situations? You should rate your chances of dozing off, not just feeling tired. Even if you have not done some of these things recently try to determine how they would have affected you. For each situation, decide whether or not you would have:

- No chance of dozing = 0
- Slight chance of dozing = 1
- Moderate chance of dozing = 2
- High chance of dozing = 3

Write down the number corresponding to your choice in the right hand column. Total your score below.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Chance of Dozing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sitting and reading</td>
<td></td>
</tr>
<tr>
<td>Watching TV</td>
<td></td>
</tr>
<tr>
<td>Sitting inactive in a public place (e.g., a theater or a meeting)</td>
<td></td>
</tr>
<tr>
<td>As a passenger in a car for an hour without a break</td>
<td></td>
</tr>
<tr>
<td>Lying down to rest in the afternoon when circumstances permit</td>
<td></td>
</tr>
<tr>
<td>Sitting and talking to someone</td>
<td></td>
</tr>
<tr>
<td>Sitting quietly after a lunch without alcohol</td>
<td></td>
</tr>
<tr>
<td>In a car, while stopped for a few minutes in traffic</td>
<td></td>
</tr>
</tbody>
</table>

Total Score = ____________________________

Analyze Your Score

Interpretation:
0-7: It is unlikely that you are abnormally sleepy.
8-9: You have an average amount of daytime sleepiness.
10-15: You may be excessively sleepy depending on the situation. You may want to consider seeking medical attention.
16-24: You are excessively sleepy and should consider seeking medical attention.

Part 391
QUALIFICATIONS OF DRIVERS AND LONGER COMBINATION VEHICLE (LCV) DRIVER INSTRUCTORS

§ 391.41: Physical qualifications for drivers.

(a)(1)(i) A person subject to this part must not operate a commercial motor vehicle unless he or she is medically certified as physically qualified to do so, and, except as provided in paragraph (a)(2) of this section, when on-duty has on his or her person the original, or a copy, of a current medical examiner's certificate that he or she is physically qualified to drive a commercial motor vehicle. NOTE: Effective December 29, 1991, the FMCSA Administrator determined that the new Licencia Federal de Conductor issued by the United Mexican States is recognized as proof of medical fitness to drive a CMV. The United States and Canada entered into a Reciprocity Agreement, effective March 30, 1999, recognizing that a Canadian commercial driver's license is proof of medical fitness to drive a CMV. Therefore, Canadian and Mexican CMV drivers are not required to have in their possession a medical examiner's certificate if the driver has been issued, and possesses, a valid commercial driver license issued by the United Mexican States, or a Canadian Province or Territory and whose license and medical status, including any waiver or exemption, can be electronically verified. Drivers from any of the countries who have received a medical authorization that deviates from the mutually accepted compatible medical standards of the resident country are not qualified to drive a CMV in the other countries. For example, Canadian drivers who do not meet the medical fitness provisions of the Canadian National Safety Code for Motor Carriers, but are issued a waiver by one of the Canadian Provinces or Territories, are not qualified to drive a CMV in the United States. In addition, U.S. drivers who received a medical variance from FMCSA are not qualified to drive a CMV in Canada.

(ii) A person who qualifies for the medical examiner's certificate by virtue of having obtained a medical variance from FMCSA, in the form of an exemption letter or a skill performance evaluation certificate, must have on his or her person a copy of the variance documentation when on-duty.

(2) CDL exception. (i) Beginning January 30, 2014, a driver required to have a commercial driver's license under part 383 of this chapter, and who submitted a current medical
examiner's certificate to the State in accordance with § 383.71(h) of this chapter
documenting that he or she meets the physical qualification requirements of this part, no
longer needs to carry on his or her person the medical examiner's certificate specified at §
391.43(h), or a copy for more than 15 days after the date it was issued as valid proof of
medical certification.

(ii) A CDL holder required by § 383.71(h) to obtain a medical examiner's certificate, who
obtained such by virtue of having obtained a medical variance from FMCSA, must
continue to have in his or her possession the original or copy of that medical variance
documentation at all times when on-duty.

(3) A person is physically qualified to drive a commercial motor vehicle if:

(i) That person meets the physical qualification standards in paragraph (b) of this section
and has complied with the medical examination requirements in § 391.43; or

(ii) That person obtained from FMCSA a medical variance from the physical qualification
standards in paragraph (b) of this section and has complied with the medical examination
requirement in § 391.43.

(b) A person is physically qualified to drive a commercial motor vehicle if that person—

(1) Has no loss of a foot, a leg, a hand, or an arm, or has been granted a skill performance
evaluation certificate pursuant to § 391.49;

(2) Has no impairment of:

(i) A hand or finger which interferes withprehension or power grasping; or

(ii) An arm, foot, or leg which interferes with the ability to perform normal tasks associated
with operating a commercial motor vehicle; or any other significant limb defect or limitation
which interferes with the ability to perform normal tasks associated with operating a
commercial motor vehicle; or has been granted a skill performance evaluation certificate
pursuant to § 391.49.

(3) Has no established medical history or clinical diagnosis of diabetes melitus currently
requiring insulin for control;

(4) Has no current clinical diagnosis of myocardial infarction, angina pectoris, coronary
insufficiency, thrombosis, or any other cardiovascular disease of a variety known to be
accompanied by syncope, dyspnea, collapse, or congestive cardiac failure.

(5) Has no established medical history or clinical diagnosis of a respiratory dysfunction
likely to interfere with his/her ability to control and drive a commercial motor vehicle safely;

(6) Has no current clinical diagnosis of high blood pressure likely to interfere with his/her
ability to operate a commercial motor vehicle safely;

(7) Has no established medical history or clinical diagnosis of rheumatic, arthritic,

orthopedic, muscular, neuromuscular, or vascular disease which interferes with his/her
ability to control and operate a commercial motor vehicle safely;

(8) Has no established medical history or clinical diagnosis of epilepsy or any other
condition which is likely to cause loss of consciousness or any loss of ability to control a
commercial motor vehicle;

(9) Has no mental, nervous, organic, or functional disease or psychiatric disorder likely to
interfere with his/her ability to drive a commercial motor vehicle safely;

(10) Has distant visual acuity of at least 20/40 (Snellen) in each eye without corrective
lenses or visual acuity separately corrected to 20/40 (Snellen) or better with corrective
lenses, distant binocular acuity of at least 20/40 (Snellen) in both eyes with or without
corrective lenses, field of vision of at least 70° in the horizontal Meridian in each eye, and
the ability to recognize the colors of traffic signals and devices showing standard red,
green, and amber;

(11) First perceives a forced whispered voice in the better ear at not less than 5 feet with
or without the use of a hearing aid or, if tested by use of an audiometric device, does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz with or without a hearing aid when the audiometric device is calibrated to American National Standard (formerly ASA Standard) Z24.5—1951.

(12)(i) Does not use any drug or substance identified in 21 CFR 1308.11 Schedule I, an amphetamine, a narcotic, or other habit-forming drug.

(ii) Does not use any non-Schedule I drug or substance that is identified in the other Schedules in 21 part 1308 except when the use is prescribed by a licensed medical practitioner, as defined in §382.107, who is familiar with the driver's medical history and has advised the driver that the substance will not adversely affect the driver's ability to safely operate a commercial motor vehicle.

(13) Has no current clinical diagnosis of alcoholism.


Disclaimer:

Although we make every effort to assure that the information we provide is complete and accurate, it is not intended to take the place of published agency regulations. Regulations issued by the U.S. Department of Transportation and its Operating Administrations are published in the Federal Register and compiled in the U.S. Code of Federal Regulations (CFR). Copies of appropriate volumes of the CFR in book format may be purchased from the Superintendent of Documents, U.S. Government Printing Office, or examined at many libraries.

The CFR may also be viewed online at http://ECFR.gpoaccess.gov.

U.S. DEPARTMENT OF TRANSPORTATION
Federal Motor Carrier Safety Administration
1200 NEW JERSEY AVENUE, SE
WASHINGTON, DC 20590
855-368-4200

Source URL: http://www.fmcsa.dot.gov/regulations/title49/section/391.41
On June 26, 2009, a multivehicle accident occurred on Interstate 44 (I-44) near Miami, Oklahoma, shortly after a minor accident in the same vicinity occurred. The minor accident took place about 1:13 p.m., when a 2001 Ford Focus traveling eastbound at milepost 321.7 on I-44 drifted into a truck-tractor semitrailer parked on the right shoulder. After the Focus sideswiped the semitrailer, the car’s driver overcorrected to the left, lost control, and struck the concrete center median barrier. The Focus came to rest in the roadway, blocking the left eastbound lane. As the trailing traffic began to slow and stop, it formed a queue. Several motorists exited their vehicles and began to push the disabled Focus to the right shoulder. The queue of stopped vehicles and approaching but slowing vehicles extended back from the accident site approximately 1,500 feet to about milepost 321.5.

Meanwhile, about 1:19 p.m., a 76-year-old truck driver operating a 2008 Volvo truck-tractor in combination with an empty 2009 Great Dane refrigerated semitrailer was traveling eastbound in the outside (right) lane of I-44 at approximately 69 mph. (The posted speed limit was 75 mph.) The truck driver did not react to the queue of slowing and stopped vehicles and collided with the rear of a 2003 Land Rover sport utility vehicle (SUV). As both vehicles move forward, the Land Rover struck a 2003 Hyundai Sonata and then departed the right lane and shoulder, coming to rest off the roadway. The Volvo continued forward, struck and overrode the Hyundai Sonata, struck and overrode a 2004 Kia Spectra, and then struck the rear of a 2000 Ford Windstar minivan. The Volvo overrode a portion of the Windstar while pushing it into the rear of a livestock trailer being towed by a 2004 Ford F350 pickup truck. The Ford pickup truck was pushed forward and struck a 2008 Chevrolet Tahoe SUV. The Volvo combination unit came to rest approximately 270 feet past the point where it initially struck the Land Rover. As a result of the Volvo combination unit’s striking the slowed and stopped vehicle...
queue on I-44, 10 passenger vehicle occupants died, 5 received minor-to-serious injuries, and the
driver of the Volvo combination unit was seriously injured.¹

The National Transportation Safety Board determined that the probable cause of this
accident was the Volvo truck driver’s fatigue, caused by the combined effects of acute sleep loss,
circadian disruption associated with his shift work schedule, and mild sleep apnea, which
resulted in the driver’s failure to react to slowing and stopped traffic ahead by applying the
brakes or performing any evasive maneuver to avoid colliding with the traffic queue. Contributing
to the severity of the accident were the Volvo truck-tractor combination unit’s high
impact speed and its structural incompatibility with the passenger vehicles.

Among the issues discussed in the National Transportation Safety Board (NTSB)
accident report are the need for updated and comprehensive fatigue education materials and
fatigue management programs, and the lack of Federal requirements for video event recorders on
heavy commercial vehicles.

**Fatigue Education and Information**

The NTSB has long been concerned about how fatigue affects all transportation
operators, including commercial truck and bus drivers. In 1990, the NTSB completed a study of
182 heavy truck accidents that were fatal to the truck driver.² The NTSB’s primary purpose in
investigating fatal-to-the-truck-driver accidents was to assess the role of alcohol and other drugs
in these accidents. The study found, however, that the most frequently cited probable cause in
such accidents was fatigue. In a subsequent safety study that focused on fatigue’s role in heavy
truck accidents,³ the NTSB recommended that the Federal Highway Administration (FHWA), in
cooperation with the American Trucking Associations, Inc. (ATA), the Professional Truck Driver
Institute, the Commercial Vehicle Safety Alliance (CVSA), and the National Private Truck
Council, take the following action:

> Develop and disseminate, in consultation with the U.S. Department of Transportation
Human Factors Coordinating Committee, a training and education module to inform
truck drivers of the hazards of driving while fatigued. It should include information about
the need for an adequate amount of quality sleep, strategies for avoiding sleep loss such
as strategic napping, consideration of the behavioral and physiological consequences of
sleepiness, and an awareness that sleep can occur suddenly and without warning to all
drivers regardless of their age or experience. (H-95-5)

The FHWA Office of Motor Carriers distributed pamphlets; worked with the
Owner-Operator Independent Drivers Association, the CVSA, and the National Private Truck

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¹ For additional information, see *Truck-Tractor Semitrailer Rear-End Collision Into Passenger Vehicles on
Interstate 44, Near Miami, Oklahoma, June 26, 2009, Highway Accident Report NTSB/HAR-13/02* (Washington,
DC: National Transportation Safety Board, 2010), which is available on the NTSB website at

² *Fatigue, Alcohol, Other Drugs, and Medical Factors in Fatal-To-The-Driver Heavy Truck Crashes

³ *Factors That Affect Fatigue in Heavy Truck Accidents, Volume I: Analysis, Safety Study NTSB/SS-95/01*
Council on this issue; and sponsored the U.S. Department of Transportation (DOT) 1995 Truck and Bus Summit. It also funded the ATA to adapt the sleep education and training module developed by the National Aeronautics and Space Administration to the motor carrier industry and to identify, evaluate, and select recommended management practices for determining which drivers are at higher risk of accidents and safety violations and for developing means of appropriately modifying driver behavior. The development and distribution of brochures, manuals, and videotapes, such as “The Alert Driver: A Trucker’s Guide to Sleep, Fatigue, and Rest in Our 24-Hour Society,” “Aware at the Wheel,” “Fatigue and the Truck Driver,” and “Dealing with Truck Driver Fatigue,” publicized the importance of the issue of fatigue. The FHWA stated that it would continue its educational activities and that the strategic plan for its Office of Motor Carriers would include educational and informational approaches. Safety Recommendation H-95-5 was classified “Closed—Acceptable Action” on July 7, 1998, due to the agency’s work with various organizations to educate drivers about the dangers of drowsy driving.

When NTSB investigators reviewed the training material that the motor carrier in this case, Associated Wholesale Grocers, Inc. (AWG), provided its drivers on fatigue, they found only the VHS videotape “The Alert Driver: A Trucker’s Guide to Sleep, Fatigue, and Rest in Our 24-Hour Society,” which was released in 1996 by the ATA, in partnership with the FHWA Office of Motor Carriers. Although the video provides valuable guidelines for truck drivers regarding the importance of sleep, the cognitive effects of sleepiness, and the best strategies to reduce fatigue related to shift work, some of the information provided is outdated, and the video does not include vital fatigue-related facts and guidance. For example, the video references obsolete hours-of-service (HOS) regulations; the Federal Motor Carrier Safety Administration (FMCSA) significantly revised these regulations in April 2003, limiting driving to 11 hours within a 14-hour, nonextendable period after coming on duty following 10 consecutive hours off duty (known as the 11-hour rule).4 The video also does not mention the risk factors for obstructive sleep apnea (OSA), which is a significant omission, given the prevalence of these factors among commercial drivers.5 Further, the driver fatigue video does not mention the importance of maintaining one’s health and diet to reduce fatigue.6 Research has revealed how a health and wellness regimen can reduce the risk factors that may lead to fatigue and drowsiness.7 A booklet that accompanies the video includes some information on health maintenance and OSA risk

4 Although the rules concerning weekly limits for on-duty time remained unchanged, drivers were allowed to restart the weekly limit calculation after they took 34 consecutive hours off duty (known as the 34-hour restart provision). The rule also extended the requisite off-duty time from 8 to 10 hours, providing drivers more time for restorative rest.


7 (a) R. Stoops and others. (b) H. Hakkänen and H. Summal. (c) Fatigue Survey of BC Truck Drivers.
factors; however, because the video is the primary mode of information dissemination, the relegation of this information to a supplementary booklet makes it less likely that it will be seen and heeded by truck drivers.

In addition, the 1996 video provides questionable strategies for truck drivers to follow in combating sleepiness, such as chewing gum, eating sunflower seeds, turning on the radio, and rolling down the window. However, on its website, the FMCSA has discouraged the use of such “alertness tricks,” stating that they are not “real cures for drowsiness and may give you a false sense of security.”

The NTSB concludes that the provision of new and updated information on sleep, fatigue, and alertness by the FMCSA, based on contemporary scientific research, is essential to ensuring that commercial drivers have the necessary guidance to enable them to be alert and well rested when operating their vehicles. Updating the information being provided to truck drivers on fatigue and fatigue countermeasures, HOS, and OSA may help to reduce accidents caused by fatigue; therefore, the NTSB recommends that the FMCSA create educational materials that provide current information on fatigue and fatigue countermeasures and make the materials available in different formats, including updating and redistributing its truck-driver-focused driver fatigue video. Further, the FMCSA should make the video available electronically for quicker dissemination, and it should implement a plan to regularly update the educational materials and the video with the latest scientific information and to regularly redistribute them.

Fatigue Management Programs

Although employee education concerning fatigue is extremely valuable, the provision of information alone is insufficient to constitute an adequate fatigue management program, which should involve all aspects of a carrier’s operation. A fatigue management program is a system designed to take a comprehensive, tailored approach to the issue of fatigue within an industry or a workplace and to address the problem of fatigue in an operational environment. Commonly, a fatigue management program would incorporate individual program-focused efforts to help manage fatigue (for example, policies and practices addressing scheduling, attendance; employee education, medical screening, and treatment; personal responsibility during nonwork periods; task/workload issues; rest environments; and commuting and/or napping) as well as an overall organizational strategy for implementing, supervising, and evaluating the plan. Many motor carriers have developed and put into action their own fatigue management programs, although the extent and nature of the plans vary widely.

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8 A witness stated that the Volvo cab’s driver-side window was rolled down at the accident scene, despite the temperature being above 100 °F. This was confirmed in postaccident scene photos. However, it is not known whether the window was opened before or immediately following the accident.


10 Fatigue management systems can also be referred to as fatigue management plans, fatigue risk management programs, fatigue management schemes, fatigue countermeasures programs, and alertness management programs. For the purposes of this letter, the term “fatigue management program” will be used when referring generically to such systems.

11 Scheduling policies and practices could include written policies and/or the use of fatigue-modeling software tools to assist in roster development.
AWG operates around the clock and its drivers work on shift schedules, yet the NTSB found no evidence that the carrier had taken any companywide action to minimize the occurrence of fatigued driving. Apart from including the outdated “Alert Driver” video in its training library, AWG did not have any program in place to prepare and educate its dispatchers, managers, and drivers to deal with the fatigue-related consequences of its shift work operations. The NTSB concludes that AWG did not have a meaningful fatigue management program in place at the time of the accident.

The FMCSA is currently collaborating with Transport Canada and others on the development of the North American Fatigue Management Program (NAFMP), which will provide companywide guidelines for the management of fatigue in a motor carrier operating environment. The NAFMP guidelines are envisioned to promote the following elements: (1) corporate change processes, including the involvement and support of management, (2) modifications to scheduling policies and practices, (3) companywide fatigue management training, (4) sleep disorder screening and treatment for drivers, and (5) fatigue-monitoring technologies and alertness strategies. The NAFMP fatigue management guidelines are anticipated to be available within the next 2 years; they will be applicable to all motor carrier operations, industrywide, regardless of size.

Because of the complex nature of the factors that contribute to fatigue, not only has the NTSB issued safety recommendations regarding fatigue in all modes, but it has also supported industry initiatives led by the DOT to develop practical fatigue management tools for the transportation industry. For example, in the late 1990s, the DOT’s Human Factors Coordinating Committee, a group consisting of representatives from the Federal Aviation Administration (FAA) and other transportation modal administrations, sponsored an Operator Fatigue Management (OFM) Program. The program resulted in several products, including a practical guide addressing fatigue management and countermeasure usage and work schedule representation and analysis software to aid managers and schedulers in evaluating and designing work schedules and procedures for validating the output of fatigue-modeling tools. In response to Safety Recommendation A-06-11, which the NTSB issued to the FAA in its report on the Kirksville, Missouri, aircraft accident, on April 28, 2006, the FAA issued Safety Alert for Operators 06004, which informed aviation operators of the fatigue-related information in the

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13 This program was established as part of the “ONEDOT” program to coordinate resources among DOT agencies. One of the goals of the effort was to reduce the number of accidents and injuries related to operator fatigue.


15 NTSB/AAR-06/01.
DOT OFM program. According to DOT and industry personnel, the Federal Railroad Administration has tested and applied some of the OFM program tools in the railroad industry.16

In addition, the Rail Safety Improvement Act of 200817 states that the Secretary of Transportation, by regulation, shall require each railroad carrier that is a Class I railroad,18 a railroad carrier that has inadequate safety performance (as determined by the Secretary), or a railroad carrier that provides intercity rail passenger or commuter rail passenger transportation to develop and update, at least once every 2 years, a fatigue management plan designed to reduce the fatigue experienced by safety-related railroad employees, as well as the likelihood of accidents, incidents, injuries, and fatalities caused by fatigue. Further, the Airline Safety and FAA Extension Act of 201019 will require all Part 121 air carriers to submit to the FAA a fatigue risk management plan for its pilots so that the FAA can review and accept it. The plan must include annual fatigue management training for pilots, a work/rest policy to help manage pilot fatigue, and a methodology to assess the effectiveness of the program. Air carriers will also be required to update and resubmit their plans to the FAA every 2 years.

The FMCSA has not yet applied such guidance or requirements concerning fatigue management programs in the motor carrier industry. However, until the FMCSA issues guidance to operators on the best practices to apply in developing a fatigue management program, other resources are available to help motor carriers create comprehensive companywide policies and processes for reducing fatigue-related accidents. For instance, organizations such as the National Institute for Occupational Safety and Health and the National Highway Traffic Safety Administration (NHTSA) provide updated information and pamphlets related to shift work that could be used as a starting point for developing a fatigue management program.20 In addition, the DOT makes available general fatigue management resources and tools through the efforts of its Human Factors Coordinating Committee.21

17 For additional information, see <http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h2095enr.txt.pdf> (accessed August 12, 2010).
18 A Class I railroad is one that has annual carrier operating revenues that meet the threshold amount for Class I carriers as determined by the Surface Transportation Board under 49 Code of Federal Regulations 1201.1-1.
19 For additional information, see <http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h5900enr.txt.pdf> (accessed August 19, 2010).
20 For additional information, see <http://www.cdc.gov/niosh/topics/workschedules/> and <http://www.nhtsa.gov/people/injury/drowsy_driving1/human/drowsy_driving/resource/resource.html> (both accessed August 24, 2010).
The goal of a fatigue management program is to mitigate human fatigue, thereby reducing the probability of human-error-caused incidents and accidents. Pilot studies conducted for the NAFMP have shown positive results with respect to driver sleep lengths and reduction in critical driving events. Other modes of transportation—in particular, aviation and rail—have moved toward mandating fatigue management programs for their modal carriers. The NTSB concludes that the use of fatigue management programs by motor carriers has the potential to reduce accidents caused by fatigued commercial drivers.

To be most effective, a fatigue management program should be comprehensive and authoritative. Within the next 2 years, the NAFMP is expected to provide fatigue management program guidelines specifically designed for use in the motor carrier environment. Implementation of these guidelines by every motor carrier would be a major step toward addressing the problem of fatigue among commercial drivers on the nation’s highways. But if the NAFMP guidelines remain voluntary—and are used by some carriers but ignored by others—this important safety tool might have only a limited effect in reducing fatigue-related highway accidents. Consequently, the NTSB recommends that the FMCSA require all motor carriers to adopt a fatigue management program based on the NAFMP guidelines for the management of fatigue in a motor carrier operating environment.

The NTSB referenced the NAFMP in its report on an early morning collision between a truck-tractor semitrailer and a motorcoach near Osseo, Wisconsin. Although the NTSB has supported the NAFMP effort to create fatigue management guidelines, in the Osseo report, it also expressed concern that motor carriers have been evaluating their own fatigue management programs without expert oversight. The NTSB considered that the FMCSA, as the Federal agency responsible for motor carrier safety, must also be involved in the evaluation of the fatigue management programs used by carriers to determine whether they successfully mitigate fatigue. The NTSB concluded that for fatigue management programs to be successful, FMCSA oversight is needed; therefore, the NTSB made the following recommendation to the FMCSA:

Develop and use a methodology that will continually assess the effectiveness of the fatigue management plans implemented by motor carriers, including their ability to improve sleep and alertness, mitigate performance errors, and prevent incidents and accidents. (H-08-14)

Based on the FMCSA’s continuing work with the NAFMP, Safety Recommendation H-08-14 is currently classified “Open—Acceptable Response.” The NTSB considers that the circumstances of the Miami accident again demonstrate the serious nature of fatigue-related accidents and the need for effective fatigue management programs and oversight of such programs; therefore, the Board reiterates Safety Recommendation H-08-14, and it remains classified “Open—Acceptable Response.”


Also in the Osseo accident report, the NTSB concluded that had the truck-tractor semitrailer been equipped with technologies to detect fatigue, the systems might have prevented or mitigated the severity of the fatigue-related crash. Consequently, the NTSB issued another recommendation regarding fatigue to the FMCSA, as follows:

Develop and implement a plan to deploy technologies in commercial vehicles to reduce the occurrence of fatigue-related accidents. (H-08-13)

On May 11, 2009, the FMCSA responded to this recommendation and indicated that the development of an advanced Drowsy Driver Warning System was underway and would move into principal research and prototype development in 2009. The FMCSA projected that this phase would last 2 years, after which a commercialization decision would be made. The FMCSA has acknowledged that driver drowsiness poses a major threat to highway safety, given the 24-hour operations, high annual mileages, challenging environmental conditions, and demanding work schedules faced by commercial drivers today.\(^{24}\) However, in its response to the NTSB, the FMCSA specifically stated that it was unaware of any available technology that could be used by commercial drivers for both day and night driving. The NTSB responded that although the FMCSA was correct that no products were currently available commercially that could be used effectively both day and night, the agency’s recently published review\(^{25}\) of activities underway to develop unobtrusive, in-vehicle, real-time, drowsy driver detection and alertness systems discussed at least five separate systems capable of functioning under a variety of conditions.\(^{26}\) Therefore, the NTSB classified Safety Recommendation H-08-13 “Open—Unacceptable Response” on October 2, 2009. The NTSB considers that the circumstances of the Miami accident again demonstrate the serious consequences of fatigue-related accidents and the need for in-vehicle technologies to reduce the incidence of such accidents; consequently, the NTSB reiterates Safety Recommendation H-08-13, and the recommendation remains classified “Open—Unacceptable Response.”

**Video Event Recorders**

The data gathered by the NTSB during this investigation strongly indicated that a loss of driver alertness due to fatigue was the most likely cause of this accident. However, given the limited information available, this could not be confirmed with absolute certainty. Thus, driver distraction could not be ruled out.

A 2009 NHTSA report, *An Examination of Driver Distraction as Recorded in NHTSA Databases*, stated that, in 2008, about 5,870 people lost their lives and an estimated 515,000 people were injured in police-reported crashes in which at least one form of driver distraction appeared on the accident report. NHTSA further asserted that, “While these numbers are


\(^{26}\) These five systems are all illumination conditions (from full sunlight to complete darkness), eyeglasses, contact lenses, most sunglasses, and variable subject distances.
significant, they may not state the true size of the problem, since the identification of distraction and its role in the crash by law enforcement can be very difficult.\textsuperscript{27} It has been estimated that 80 percent of all crashes and 65 percent of near-crashes involve some type of driver inattention.\textsuperscript{28} Distraction is one form of inattention; and, according to NHTSA Fatality Analysis Reporting System data, driver distraction was reported to have been involved in 16 percent of all fatal crashes in 2008. According to NHTSA’s General Estimates System information, an estimated 21 percent of injury crashes involve distracted driving.\textsuperscript{29}

One possible solution to the problem of driver distraction may be the video event recorder (VER), a device designed to capture video and other parameters related to operator and vehicle performance. A VER may record forward-looking video, interior video, interior audio, lateral acceleration, and longitudinal acceleration. VER systems may be configured to save the video and other data after a triggering event is detected. VER manufacturers offer systems for use in private, public, and commercial vehicles.

For commercial vehicle use, the systems are marketed as tools to reduce operating and insurance costs while increasing safety, by allowing companies to monitor and modify driver behavior. With respect to operating and insurance costs, companies using these systems have reported reduced fuel consumption, fewer collisions, and insurance claims savings.\textsuperscript{30} Concerning safety, the companies report reductions in collisions, vehicle damage, and injury/worker’s compensation claims.

In January 2008, the NTSB investigated an accident near Mexican Hat, Utah, in which the involved motorcoach was equipped with a VER.\textsuperscript{31} The information from the VER allowed investigators to document vehicle motion, use of headlights, driver actions, and passenger statements and reactions. Because of the information recorded by the VER on the Mexican Hat motorcoach, investigators were able to determine that the driver was driving too fast (23 mph above the posted speed limit of 65 mph) and was not distracted or using a cellular telephone. The VER provided verified information unavailable by other means and helped prove that the accident was caused by the driver’s diminished alertness.

The FMCSA has evaluated VERs in a driving behavior management system study.\textsuperscript{32} VERs were installed in the fleets of two commercial carriers. During the study’s evaluation


\textsuperscript{28} See <http://www.trb.org/Main/Blurbs/100Car_Naturalistic_Driving_Sudy_155990.pdf> (accessed September 21, 2010).

\textsuperscript{29} An Examination of Driver Distraction as Recorded in NHTSA Databases, DOT HS 811 216.


phase, data collected from the VERs were sent to the system provider for review, and safety-related events were forwarded to the carrier management so an “intervention” could be conducted. An intervention consisted of the manager and driver watching the video, discussing the cause, and determining followup steps (training, discipline, reward, etc.) to prevent future issues. The results from the two carriers indicated a reduction in safety-related events per 10,000 miles of over 38 percent at one carrier and over 52 percent at the other. In addition, severe safety-related incidents decreased by more than 59 percent and 44 percent, respectively. Based on the study results, the NTSB concludes that VERs have the potential to increase safe behavior among commercial drivers through structured safety performance monitoring, which may lead to decreases in accidents and injuries.

On March 19, 2009, the FMCSA issued a notice of final disposition and granted a 2-year exemption to Greyhound Lines, Inc., to enable the company to mount VERs on its buses lower in the windshield than is currently permitted by Federal regulations. According to the FMCSA, Greyhound requested the exemption so that the company could use the VERs to increase safety through (1) identification and remediation of risky driving behaviors, such as distracted driving and drowsiness; (2) enhanced monitoring of passenger behavior; and (3) enhanced collision review and analysis. One of the reasons that the FMCSA granted the exemption to Greyhound was that it “believes that the potential safety gains from the use of video event recorders to improve driver behavior will improve the overall level of safety to the motoring public.”

As demonstrated by the Mexican Hat accident investigation, VERs can provide information not typically available through other investigative means, potentially allowing a more accurate determination of probable cause. In the case of the Miami accident, a forward-looking video could have provided investigators more information on the actions of the vehicles ahead of the accident truck and their visibility, and an interior video could have allowed investigators to entirely rule out medical incapacitation or distraction and identify periods of reduced vigilance. The NTSB concludes that had the accident truck been equipped with a VER, a more definitive assessment of the driver’s precrash condition and behavior would have been possible.

The NTSB has long advocated the use of recording devices as a means of quantifying operator and vehicle behaviors in other modes of transportation. NTSB investigations have benefitted from the presence of data, video, and audio recorders in most modes of transportation, and it is evident from FMCSA-funded research that VER data are being used on a routine basis by transportation safety managers to reduce risky behaviors by their drivers through structured safety-performance-monitoring programs.

Another benefit of using VERs for monitoring operator behavior and providing accident information has been demonstrated in the field operational tests for forward collision warning systems and the research tests of integrated vehicle-based safety systems. Such safety systems rely heavily on driver perception and reaction times to provide the best warning and alerting intervals for accident prevention. Additional information on driver behaviors provided by an

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14 For example, see NTSB Safety Recommendations R-81-65, R-81-67, R-84-38, R-87-21, R-90-17, M-95-5, M-95-6, H-07-41, A-07-7, A-09-90, R-10-1 and -2, A-10-27, and A-10-29.
increased volume of VER data could be used to help improve these systems. Anecdotal evidence of savings in fuel and insurance costs also suggests that commercial motor vehicle carriers could benefit financially by installing and using VERs throughout their fleets. Drivers, too, could benefit by using the systems to provide evidence of their safe driving behavior.

The Miami accident investigation shows not only the value of having scientific, unbiased data available when investigating and reconstructing highway transportation accidents but also the value of having video-based event data to correlate with analog and digital event data recorder data to establish a driver’s condition and state of attention. Heavy commercial vehicle industry members could also realize safety, cost, and other benefits by installing VERs in all their vehicles. Therefore, the NTSB recommends that the FMCSA require all heavy commercial vehicles to be equipped with VERs that capture data in connection with the driver and the outside environment and roadway in the event of a crash or sudden deceleration event. The device should create recordings that are easily accessible for review when conducting efficiency testing and systemwide performance-monitoring programs. Further, the NTSB recommends that the FMCSA require motor carriers to review and use VER information in conjunction with other performance data to verify that driver actions are in accordance with company and regulatory rules and procedures essential to safety.

As a result of the investigation, the National Transportation Safety Board makes the following new recommendations to the Federal Motor Carrier Safety Administration:

Create educational materials that provide current information on fatigue and fatigue countermeasures and make the materials available in different formats, including updating and redistributing your truck-driver-focused driver fatigue video; make the video available electronically for quicker dissemination; and implement a plan to regularly update the educational materials and the video with the latest scientific information and to regularly redistribute them. (H-10-8)

Require all motor carriers to adopt a fatigue management program based on the North American Fatigue Management Program guidelines for the management of fatigue in a motor carrier operating environment. (H-10-9)

Require all heavy commercial vehicles to be equipped with video event recorders that capture data in connection with the driver and the outside environment and roadway in the event of a crash or sudden deceleration event. The device should create recordings that are easily accessible for review when conducting efficiency testing and systemwide performance-monitoring programs. (H-10-10)

Require motor carriers to review and use video event recorder information in conjunction with other performance data to verify that driver actions are in accordance with company and regulatory rules and procedures essential to safety. (H-10-11)

Further, the National Transportation Safety Board reiterates its Safety Recommendations H-08-13 and -4 to the Federal Motor Carrier Safety Administration:
to file Motor Carrier Quarterly and Annual Reports (Form NP-1) that provide financial and operating data (see 49 U.S.C. 14123; and implementing FMCSA regulations at 49 CFR part 369). The agency uses this information to assess the health of the industry and identify industry changes that may affect national transportation policy. The data also show company financial stability and traffic patterns. Motor carriers of passengers required to comply with the regulations are classified on the basis of their annual gross carrier operating revenues. Under the Financial & Operating Statistics (FAOS) program the FMCSA collects balance sheet and income statement data along with information on tonnage, mileage, employees, transportation equipment, and other related data.

The data and information collected is made publicly available as prescribed in 49 CFR part 369. The regulations were formerly administered by the Interstate Commerce Commission (ICC), the Interstate Commerce Act, 49 U.S.C. 11145, 49 U.S.C. 11343(d)(1) and the Bus Regulatory Act of 1982 and later transferred to the U.S. Department of Transportation on January 1, 1996, by the ICC Termination Act of 1995 (ICC Termination Act of 1995 (ICCTA) (Pub. L. 104-88 109 Stat. 803 (Dec. 29, 1995)), now codified at 49 U.S.C. 14123. The Secretary of Transportation (Secretary) transferred the authority to administer the FAOS program to the former Bureau of Transportation Statistics on September 30, 1996 (63 FR 52192). Pursuant to this authority, the BTS, now part of the Research and Innovative Technology Administration (RITA), became the responsible DOT modal administration for implementing the FAOS program and requirements at 49 CFR part 1420. On September 29, 2004, the Secretary transferred the responsibility for the FAOS program from BTS, to FMCSA (69 FR 51009). On August 10, 2006 (71 FR 45740), the Secretary published a final rule that transferred and redesignated the motor carrier financial and statistical reporting regulations of BTS that were formerly located at chapter XI of title 49 CFR to FMCSA in 49 chapter III of title 49 CFR part 369.

FMCSA plans to initiate a regulatory proceeding in the near future that will result in the elimination of two quarterly reporting requirements that are currently reported to OMB under the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501–3520). These forms include: (1) Form QFR Quarterly for property carriers, authorized by OMB under information collection 2126–0033; and (2) the Class I passenger carrier financial quarterly survey (MP–1 Quarterly), authorized by OMB under information collection 2126–0031. The FMCSA does not have the statutory authority to eliminate the annual reporting requirements for property or passenger. FMCSA will be publishing a direct final rule that will include additional information, including the reduced paperwork burden, resulting from this future action.

Title: Annual and Quarterly Report of Class I Motor Carriers of Passengers (OMB 2139–0003).

OMB Control Number: 2126–0031.

Type of Request: Extension of a currently approved information collection request.

Respondents: Class I Motor Carriers of Passengers.

Estimated Number of Respondents: 2.

Estimated Time per Response: 18 minutes per response.

Expiration Date: September 30, 2012.

Frequency of Response: Annually and Quarterly.

Estimated Annual Burden: 3 hours [10 responses × 18 minutes per response/60 minutes].

Public Comments Invited: You are asked to comment on any aspect of this information collection, including: (1) Whether the proposed collection is necessary for the agency to perform its mission; (2) the accuracy of the estimated burden; (3) ways for FMCSA to enhance the quality, usefulness, and clarity of the collected information; and (4) ways that the burden could be minimized without reducing the quality of the collected information. The agency will summarize or include your comments in the request for OMB’s clearance of this information collection.

Issued on: April 12, 2012.

Kelly Leone,
Associate Administrator for Office of Research and Information Technology.

[FR Doc. 2012–0651 Filed 4–19–12; 8:45 am]

BILLING CODE 4810–EX–P

DEPARTMENT OF TRANSPORTATION

Federal Motor Carrier Safety
Administration (FMCSA–2012–012)

Proposed Recommendations on Obstructive Sleep Apnea

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

ACTION: Notice; request for public comments.

SUMMARY: FMCSA announces proposed recommendations from the Motor Carrier Safety Advisory Committee (MCSAC) and the Medical Review Board (MRB) on Obstructive Sleep Apnea (OSA) and the medical certification of commercial motor vehicle (CMV) drivers. The MCSAC and the MRB are FMCSA advisory committees and operate in accordance with the Federal Advisory Committee Act (FACA). At the Agency’s request, the committees deliberated and provided their recommendations to FMCSA on February 6, 2012. The Agency proposes to adopt the recommendations as regulatory guidance after reviewing and evaluating comments received from the public.

DATES: Comments must be received on or before May 21, 2012.

ADDRESSES: You may submit comments bearing the Federal Docket Management System (FDMS) Docket No. FMCSA 2012–0102 using any of the following methods:

• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the on-line instructions for submitting comments.

• Mail: Docket Management Facility; U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC 20590–0001.

• Hand Delivery: West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays.

• Fax: 1–202–493–2251.

Instructions: Each submission must include the Agency name and the docket numbers for this notice. Note that all comments received will be posted without change to http://www.regulations.gov, including any personal information provided. Please see the Privacy Act heading below for further information.

Docket: For access to the docket to read background documents or
comments, go to http://www.regulations.gov at any time or Room W12-140 on the ground level of the West Building, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The FDMS is available 24 hours each day, 365 days each year. If you want acknowledgment that we have received your comments, please include a self-addressed, stamped envelope or postcard or print the acknowledgment page that appears after submitting comments on-line.

Privacy Act: Anyone may search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or of the person signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT’s Privacy Act Statement for the FDMS published in the Federal Register on January 17, 2008 (73 FR 3316), or you may visit http://edocket.access.gpo.gov/2008/pdf/ E0-783.pdf.

FOR FURTHER INFORMATION CONTACT:
Angela Ward, Nurse Consultant Medical Programs, (202) 366-4081. fmcsamedical@dot.gov, FMCSA, Department of Transportation, 1200 New Jersey Avenue SE., Room W64-224, Washington, DC 20590-0001. Office hours are from 8:30 a.m. to 5 p.m., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION:

Background
49 CFR 391.41(b)(5) provides that a person is qualified physically to drive a CMV if that person has no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with the ability to control and drive a CMV safely.

The Instructions to The Medical Examiner on the Medical Examination Report, (49 CFR 391.45), identifies OSA as one of several respiratory dysfunctions that may be detrimental to safe driving as this condition may interfere with driver alertness and may cause gradual or sudden incapacitation.

FMCSA directed its two advisory committees, the MCSAC and the MRB, meet jointly and publically to deliberate on the topic of OSA and whether CMV drivers with OSA should be medically certified.

FMCSA tasked the MCSAC and the MRB with jointly providing information, concepts, and ideas the Agency should consider in developing regulatory guidance for motor carriers, CMV drivers, and medical examiners on OSA and whether drivers with this condition should be medically certified to operate CMVs in interstate commerce. FMCSA instructed the MCSAC and MRB to provide information about how to address drivers with OSA in the short-term until the Agency can consider strategies for a long-term regulatory action.

As part of the committees’ process for developing recommendations to be considered for regulatory guidance on OSA, the November 2007 Evidence Report was updated in November 2011 and presented at the December 2011 joint meeting of the MCSAC and the MRB.

After the December 2011 joint MCSAC-MRB meeting, a MCSAC-MRB subcommittee was formed in accordance with FACA requirements. The subcommittee’s task was to bring recommendations back to the full joint committee for deliberation. The subcommittee met publicly on January 4–5, 2012, to discuss this task and prepared recommendations for the full MCSAC’s and MRB’s consideration and deliberation at the February 2012 joint MCSAC-MRB meeting. In February 2012 the joint committee deliberated and finalized its recommendations on OSA and medical certification of CMV drivers.

Basis for Proposed Guidance on OSA
The existing advisory criteria for the Respiratory Dysfunction requirement [391.41(b)(5)] states that “There are many conditions that interfere with oxygen exchange and may result in incapacitation, including [among others] sleep apnea. If the medical examiner detects a respiratory dysfunction, that in any way is likely to interfere with the driver’s ability to safely control and drive a commercial motor vehicle, the driver must be referred to a specialist for further evaluation and therapy.”

Currently, FMCSA relies on medical examiners to apply professional judgment in applying FMCSA’s advisory criteria on OSA to determine whether a driver has a respiratory dysfunction such as OSA that may affect his or her ability to operate a CMV safely. The motor carrier community and medical examiners have requested that FMCSA improve the existing advisory criteria and provide more uniform regulatory guidance on OSA to the motor carrier industry and medical examiners.

The Proposed Recommendations

Introduction
The MCSAC and MRB developed and discussed several key questions in considering Task 11–05 to provide information, concepts, and ideas FMCSA should consider in developing regulatory guidance for motor carriers, CMV drivers, and medical examiners on OSA and whether drivers with this condition should be medically certified to operate CMVs in interstate commerce. These questions are listed below:

• Are individuals with OSA at an increased risk for a motor vehicle crash when compared to comparable individuals who do not have OSA?

• What disease-related factors are associated with an increased motor vehicle crash risk among individuals with OSA?

• Are individuals with OSA unaware of the presence of the factors that appear to be associated with an increased motor vehicle crash risk?

• Are there screening/diagnostic tests available that will enable examiners to identify those individuals with OSA who are at an increased risk for a motor vehicle crash?

• Which treatments have been shown to effectively reduce crash risk among individuals with OSA?

• What is the length of time required following initiation of an effective treatment for individuals with OSA to reach a degree of improvement that would permit safe driving?

• How soon following cessation of treatment will individuals with OSA demonstrate receded driver safety (i.e., as a consequence of non-compliance)?

Discussion of the above questions formed the basis of the joint MCSAC-MRB recommendations for consideration by FMCSA when developing regulatory guidance regarding OSA. The joint MCSAC-MRB recommendations are summarized below.

1. General Recommendations Regarding OSA

A. OSA diagnosis precludes unconditional certification.

B. A driver with an OSA diagnosis may be certified if the following conditions are met:

1. The driver has untreated OSA with an apnea-hypopnea index (AH1) of less than or equal to 20 (i.e., mild-to-moderate OSA), and

2. The driver does not admit to experiencing excess sleepiness during the major wake period, or

3. The driver’s OSA is being effectively treated.

C. Notes on AH1 threshold:

1. The AH1 threshold is used to prioritize drivers with OSA who need immediate treatment.

2. The AH1 threshold is set at 20 because crash risk in the moderate-to-
severe OSA range is statistically higher than for drivers with mild OSA.
3. Although an AHI of 15 is likely a safer threshold, there is no data to support this and such a threshold may be less practical in terms of enrolling patients for treatment.
4. Drivers with mild OSA (AHI levels as low as 5) may benefit from OSA treatment, and should be encouraged to explore treatment options.
5. Drivers with an AHI between 5 and 20 should be encouraged to seek treatment if they have a history involving a fatigue-related crash or a DOD-defined single vehicle crash, if they report sleepiness while operating a motor vehicle.
A driver with an OSA diagnosis may be recertified annually, based on demonstrating compliance with treatment.
1. Minimally acceptable compliance with Positive Airway Pressure (PAP) treatment consists of at least 4 hours per day of use on 70 percent of days.
2. Drivers should be made aware that more hours of PAP use is preferable and that optimal treatment efficacy occurs with 7 or more hours of daily use during sleep.
II. Immediate Disqualification or Certification Denial
A. Drivers should be disqualified immediately or denied certification if any of the following conditions are met:
1. The driver admits to experiencing excessive sleepiness during the major wake period while driving; or
2. The driver experienced a crash associated with falling asleep; or
3. The driver has been found non-compliant with treatment per Recommendation I.D.
III. Conditional Certification
A. Drivers may be granted conditional certification if any of the following conditions are met:
1. The driver has an AHI of greater than 20 until compliant with PAP; or
2. The driver has undergone surgery and is pending post-op findings per Recommendations VI-VIII; or
3. The driver has a Body Mass Index (BMI) of greater than or equal to 35 kg/m² pending a sleep study.
B. Notes on BMI threshold:

1. The MRB is in agreement that a BMI threshold of 33 is supported by studies.
2. MCSAC member Robert Petracosta (Con-Way Freight) asserted that a BMI threshold should be objectively related to crash risk.
3. Conditional certification should include the following elements:
   1. A driver with a BMI of greater than or equal to 35 kg/m² may be certified for 60 days pending sleep study and treatment (if the driver is diagnosed with OSA).
   2. Within 60 days, if a driver being treated with OSA is compliant with treatment (per Recommendations I.D. and V-IX), the driver may receive an additional 90-day conditional certification.
   3. After 90 days, if the driver is still compliant with treatment, the driver may be certified for no more than 1 year.
Future certification should be dependent on continued compliance.
D. OSA Screening (i.e., identifying individuals with undiagnosed OSA)
1. In addition to a BMI of 35 or above, the following information may help a clinician diagnose OSA:
   a. Symptoms of OSA may include loud snoring, witnessed apneas, or sleepiness during the major wake period;
   b. Risk factors of OSA may include the following factors. However, a single risk factor alone may not infer risk, and a combination of multiple factors should be examined.
      i. Factors associated with high risk:
         - Small or recessed jaw
         - Small airway (Mallampati Scale score of Class 3 or 4)
         - Neck size (2) 17 inches (male), 15.5 inches (female)
         - Hypertension (treated or untreated)
         - Type 2 diabetes (treated or untreated)
         - Hypothyroidism (treated or untreated)
      ii. Other factors:
         - BMI greater than or equal to 28 kg/m²
         - Age 42 and above
         - Family history
         - Male or post-menopausal female
         - Experienced a single-vehicle crash
IV. Method of Diagnosis and Severity
A. Methods of diagnosis include in-laboratory polysomnography, at-home polysomnography, or an FDA-approved limited channel ambulatory testing device which ensures chain of custody.
1. In-laboratory polysomnography, which is more comprehensive, should be considered when the clinician suspects another sleep disorder in addition to sleep apnea.
2. New OSA screening technologies will likely emerge.
B. The driver should be tested while on usual chronic medications.
C. The MCSAC and MRB did not consider AHI levels from unattended (i.e., in-home) studies, only in-laboratory sleep studies that detect the arousal component of hypopneas, as well as saturation.
1. An in-home sleep study may underestimate AHI when compared to an in-laboratory sleep study because the in-home study likely does not consider total sleep time.
2. The medical examiner should use clinical judgment when interpreting the results of an unattended sleep study.
   a. If the clinician believes the level of apnea is greater than the level reported by the in-home study, the clinician should consider recommending an in-laboratory sleep study.
V. Treatment: Positive Airway Pressure (PAP)
A. All individuals with OSA should be referred to a clinician with relevant expertise.
B. PAP is the preferred OSA therapy.
C. Adequate PAP pressure should be established through one of the following methods:
1. Titration study with polysomnography
   D. Auto-titration system
A driver who has been disqualified may be conditionally certified (per Recommendation III) if the following conditions are met:
1. The driver is successfully treated for one week; and
2. The driver can demonstrate at least minimal compliance (i.e., 4 hours per use on 70 percent of nights); and
3. The driver does not report excessive sleepiness during the major wake period.
VI. Treatment: Bariatric Surgery
A. After bariatric surgery, a driver may be certified if the following conditions are met:
1. Six months have passed since the surgery (for weight loss); and
2. The driver has been compliant with PAP for six months; and
3. The driver has been cleared by the treating physician; and
4. The driver does not report excessive sleepiness during the major wake period.
   B. After six months have passed since surgery, if the apnea appears to have resolved, a repeat sleep study should be considered to test for the presence of ongoing sleep apnea.
C. Annual recertification:
   1. If clinically indicated, repeat the sleep study.
VII. Treatment: Oropharyngeal Surgery, Facial Bone Surgery

A. After oropharyngeal or facial bone surgery, a driver may be certified if the following conditions are met:
1. One month has passed since surgery; and
2. The driver has been cleared by the treating physician; and
3. The driver does not report excessive sleepiness during the major wake period.
B. After one month has passed since surgery, if the apnea appears to have resolved a repeat sleep study should be considered to test for the presence of ongoing sleep apnea.
C. Annual recertification:
1. If clinically indicated, repeat the sleep study.

VIII. Treatment: Tracheostomy

A. After a tracheostomy, a driver may be certified if the following conditions are met:
1. One month has passed since surgery; and
2. The driver has been cleared by the treating physician; and
3. The driver does not report excessive sleepiness during the major wake period.
B. After one month has passed since surgery, if the apnea appears to have resolved a repeat sleep study should be considered to test for the presence of ongoing sleep apnea.
C. Annual recertification:
1. If clinically indicated, repeat the sleep study.

IX. Treatment Alternatives

A. There is limited data regarding compliance and long-term efficacy of dental appliances and these technologies are not approved alternatives at this time.2
B. Surgical treatment is acceptable (See Recommendations VI–VIII).

Request for Comments

FMCSA requests comments on the above joint recommendations provided to the Agency by its Motor Carrier Safety Advisory Committee and Medical Review Board on Obstructive Sleep Apnea. Commenters are requested to provide supporting data wherever appropriate.

The Agency will consider all comments received before the close of business May 21, 2012. Comments will be available for examination in the docket at the location listed under the ADDRESSES section of this notice. The Agency will file comments received after the comment closing date in the public docket, and will consider them to the extent practicable. In addition to late comments, FMCSA will also continue to file, in the public docket, relevant information that becomes available after the comment closing date. Interested persons should monitor the public docket for new material.

Issued on: April 16, 2012.
Larry W. Minor,
Associate Administrator of Policy.

DEPARTMENT OF TRANSPORTATION
Federal Motor Carrier Safety Administration


Qualification of Drivers; Exemption Applications; Vision

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

ACTION: Notice of renewal of exemptions; request for comments.

SUMMARY: FMCSA announces its decision to renew the exemptions from the vision requirement in the Federal Motor Carrier Safety Regulations for 29 individuals. FMCSA has statutory authority to exempt individuals from the vision requirement if the exemptions granted will not compromise safety. The Agency has concluded that granting these exemption renewals will provide a level of safety that is equivalent to or greater than the level of safety maintained without the exemptions for these commercial motor vehicle (CMV) drivers.

DATES: This decision is effective May 12, 2012. Comments must be received on or before May 21, 2012.


• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the on-line instructions for submitting comments.
• Hand Delivery or Courier: West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
• Fax: 1–202–493–2251.

Instructions: Each submission must include the Agency name and the docket number for this notice. Note that DOT posts all comments received without change to http:// www.regulations.gov, including any personal information included in a comment. Please see the Privacy Act heading below.

Docket: For access to the docket to read background documents or comments, go to http:// www.regulations.gov at any time or Room W12–146 on the ground level of the West Building, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Federal Docket Management System (FDMS) is available 24 hours each day, 365 days each year. If you want acknowledgement that we received your comments, please include a self-addressed, stamped envelope or postcard or print the acknowledgement page that appears after submitting comments on-line.

Privacy Act: Anyone may search the electronic form of all comments received into any of our docket files by the name of the individual submitting the comment (or of the person signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's Privacy Act Statement for the FDMS published in the Federal Register on January 17, 2008 (73 FR 3316), or you may visit http://docket deadliest.gov/2008/pdf/ 69–795.pdf.

FOR FURTHER INFORMATION CONTACT:
Elaine M. Papp, Chief, Medical Programs Division, 202–366–4001, fmcsamedica1@dot.gov, FMCSA, Department of Transportation, 1200 New Jersey Avenue SE., Room W64– 224, Washington, DC 20590–0001. Office hours are from 8:30 a.m. to 5 p.m. Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION:
1. DRIVER'S INFORMATION

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2. HEALTH HISTORY

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</tr>
<tr>
<td></td>
<td>Muscular disease</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yes/No</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Lung disease, emphysema, asthma, chronic bronchitis</td>
</tr>
<tr>
<td></td>
<td>Kidney disease, dialysis</td>
</tr>
<tr>
<td></td>
<td>Liver disease</td>
</tr>
<tr>
<td></td>
<td>Digestive problems</td>
</tr>
<tr>
<td></td>
<td>Diabetes or elevated blood sugar controlled by:</td>
</tr>
<tr>
<td></td>
<td>- diet</td>
</tr>
<tr>
<td></td>
<td>- pills</td>
</tr>
<tr>
<td></td>
<td>- insulin</td>
</tr>
<tr>
<td></td>
<td>Nervous or psychiatric disorders, e.g., severe depression</td>
</tr>
<tr>
<td></td>
<td>- medication</td>
</tr>
<tr>
<td></td>
<td>Loss of, or altered consciousness</td>
</tr>
</tbody>
</table>

For any YES answer, indicate onset date, diagnosis, treating physician's name and address, and any current limitation. List all medications (including over-the-counter medications) used regularly or recently.

I certify that the above information is complete and true. I understand that inaccurate, false or missing information may invalidate the examination and my Medical Examiner's Certificate.

Driver's Signature: ___________________________  Date: ________________

Medical Examiner's Comments on Health History (The medical examiner must review and discuss with the driver any "yes" answers and potential hazards of medications, including over-the-counter medications, while driving. This discussion must be documented below.)

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
3. VISION

Standard: At least 20/40 acuity (Snellen) in each eye with or without correction. At least 70 degrees peripheral in horizontal meridian measured in each eye. The use of corrective lenses should be noted on the Medical Examiner's Certificate.

INSTRUCTIONS: When other than the Snellen chart is used, give test results in Snellen-comparable values. In recording distance vision, use 20 feet as normal. Report visual acuity as a ratio with 20 as numerator and the smallest type read at 20 feet as denominator. If the applicant wears corrective lenses, these should be worn while visual acuity is being tested. If the driver habitually wears contact lenses, or intends to do so while driving, sufficient evidence of good tolerance and adaptation to their use must be obvious. Monocular drivers are not qualified.

Numerical readings must be provided.

<table>
<thead>
<tr>
<th>ACUITY</th>
<th>UNCORRECTED</th>
<th>CORRECTED</th>
<th>HORIZONTAL FIELD OF VISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Eye</td>
<td>20/20</td>
<td>Right Eye</td>
<td>0</td>
</tr>
<tr>
<td>Left Eye</td>
<td>20/20</td>
<td>Left Eye</td>
<td>0</td>
</tr>
<tr>
<td>Both Eyes</td>
<td>20/20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete next line only if vision testing is done by an ophthalmologist or optometrist.

Date of Examination
Name of Ophthalmologist or Optometrist (print)
Tel. No.
License No./State of Issue
Signature

4. HEARING

Standard: a) Must first perceive forced whispered voice > 5 ft., with or without hearing aid, or b) average hearing loss in better ear ≤ 40 dB

INSTRUCTIONS: To convert audiotmetric test results from ISO to ANSI, -14 dB from ISO for 500Hz, -10dB for 1,000 Hz, -8.5 dB for 2000 Hz. To average, add the readings for 3 frequencies tested and divide by 3.

Numerical readings must be recorded.

a) Record distance from individual at which forced whispered voice can first be heard.

<table>
<thead>
<tr>
<th>Feet</th>
<th>Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Ear</td>
<td>Left Ear</td>
</tr>
</tbody>
</table>

b) If audiometer is used, record hearing loss in decibels. (acc. to ANSI Z24.5-1961)

<table>
<thead>
<tr>
<th>Right Ear</th>
<th>Left Ear</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 Hz</td>
<td>500 Hz</td>
</tr>
<tr>
<td>1000 Hz</td>
<td>1000 Hz</td>
</tr>
<tr>
<td>2000 Hz</td>
<td>2000 Hz</td>
</tr>
<tr>
<td>Average:</td>
<td>Average:</td>
</tr>
</tbody>
</table>

5. BLOOD PRESSURE/PULSE RATE

Numerical readings must be recorded. Medical Examiner should take at least two readings to confirm BP.

<table>
<thead>
<tr>
<th>Blood Pressure</th>
<th>Systolic</th>
<th>Diastolic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver qualified if ≤140/90.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse Rate: □ Regular □ Irregular</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record Pulse Rate:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. LABORATORY AND OTHER TEST FINDINGS

Numerical readings must be recorded.

<table>
<thead>
<tr>
<th>URINE SPECIMEN</th>
<th>SP. GR.</th>
<th>PROTEIN</th>
<th>BLOOD</th>
<th>SUGAR</th>
</tr>
</thead>
</table>

Urinalysis is required. Protein, blood or sugar in the urine may be an indication for further testing to rule out any underlying medical problem.

Other Testing (Describe and record)
The presence of a certain condition may not necessarily disqualify a driver, particularly if the condition is controlled adequately, is not likely to worsen or is readily amenable to treatment. Even if a condition does not disqualify a driver, the medical examiner may consider deferring the driver temporarily. Also, the driver should be advised to take the necessary steps to correct the condition as soon as possible particularly if the condition, if neglected, could result in more serious illness that might affect driving.

Check YES if there are any abnormalities. Check NO if the body system is normal. Discuss any YES answers in detail in the space below, and indicate whether it would affect the driver's ability to operate a commercial motor vehicle safely. Enter applicable item number before each comment. If organic disease is present, note that it has been compensated for. See Instructions to the Medical Examiner for guidance.

<table>
<thead>
<tr>
<th>BODY SYSTEM</th>
<th>CHECK FOR:</th>
<th>YES* NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Appearance</td>
<td>Marked overweight, tremor, signs of alcoholism, problem drinking, or drug abuse.</td>
<td></td>
</tr>
<tr>
<td>2. Eyes</td>
<td>Pupillary equality, reaction to light, accommodation, ocular motility, ocular muscle imbalance, extracocular movement, nystagmus, exophthalmos. Ask about retinopathy, cataracts, aphakia, glaucoma, macular degeneration and refer to a specialist if appropriate.</td>
<td></td>
</tr>
<tr>
<td>3. Ears</td>
<td>Scarring of tympanic membrane, occlusion of external canal, perforated eardrums.</td>
<td></td>
</tr>
<tr>
<td>4. Mouth and Throat</td>
<td>Irremediable deformities likely to interfere with breathing or swallowing.</td>
<td></td>
</tr>
<tr>
<td>5. Heart</td>
<td>Murmurs, extra sounds, enlarged heart, pacemaker, implantable defibrillator.</td>
<td></td>
</tr>
<tr>
<td>6. Lungs and chest,</td>
<td>Abnormal chest wall expansion, abnormal respiratory rate, abnormal breath sounds including wheezes or alveolar rales, impaired respiratory function, cyanosis. Abnormal findings on physical exam may require further testing such as pulmonary tests and/or x-ray of chest.</td>
<td></td>
</tr>
<tr>
<td>not including breast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>examination</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS:**

Note certification status here. See Instructions to the Medical Examiner for guidance.

- [ ] Meets standards in 49 CFR 391.41; qualifies for 2 year certificate
- [ ] Does not meet standards
- [ ] Meets standards, but periodic monitoring required due to

  Driver qualified only for: [ ] 3 months  [ ] 6 months  [ ] 1 year  [ ] Other

  Temporarily disqualified due to (condition or medication):

  Return to medical examiner's office for follow up on

  If meets standards, complete a Medical Examiner's Certificate as stated in 49 CFR 391.43(h). (Driver must carry certificate when operating a commercial vehicle.)
The driver's role
Responisibilities, work schedules, physical and emotional demands, and lifestyles among commercial drivers vary by the type of driving that they do. Some of the main types of drivers include the following: turn around or short relay (drivers return to their home base each evening); long relay (drivers drive 9-11 hours and then have at least a 10-hour off-duty period); straight through haul (cross country drivers); and team drivers (drivers share the driving by alternating their 5-hour driving periods and 5-hour rest periods.)

The following factors may be involved in a driver's performance of duties: abrupt schedule changes and rotating work schedules, which may result in irregular sleep patterns and a driver beginning a trip in a fatigued condition; long hours; extended time away from family and friends, which may result in lack of social support; tight pickup and delivery schedules, with irregularity in work, rest, and eating patterns, adverse road, weather and traffic conditions, which may cause delays and lead to hurriedly loading or unloading cargo in order to compensate for the lost time, and environmental conditions such as excessive vibration, noise, and extremes in temperature. Transporting passengers or hazardous materials may add to the demands on the commercial driver.

There may be duties in addition to the driving task for which a driver is responsible and needs to fit. Some of these responsibilities are: coupling and uncoupling trailer(s) from the tractor, loading and unloading trailer(s) (sometimes a driver may lift a heavy load or unload as much as 50,000 lbs. of freight after sitting for a long period of time without any stretching period); inspecting the operating condition of trailer(s) before, during and after delivery of cargo; lifting, installing, and removing heavy tire chains; and, lifting heavy tarpaulins to cover open top trailers. The above tasks demand agility, the ability to bend and stoop, the ability to maintain a crouching position to inspect the underside of the vehicle, frequent entering and exiting of the cab, and the ability to climb ladders on the tractor and/or trailer(s).

In addition, a driver must have the perceptual skills to monitor a sometimes complex driving situation, the judgment skills to make quick decisions, when necessary, and the manipulative skills to control an oversize steering wheel, shift gears using a manual transmission, and maneuver a vehicle in crowded areas.

§391.41 Physical qualifications for drivers
(a) A person shall not drive a commercial motor vehicle unless he is physically qualified to do so and, except as provided in §391.67, has on his person the original, or a photographic copy, of a medical examiner's certificate that he is physically qualified to drive a commercial motor vehicle.

(b) A person is physically qualified to drive a motor vehicle if that person:
(1) Has no loss of a foot, a leg, a hand, or an arm, or has been granted a Skill Performance Evaluation (SPE) Certificate (formerly Limb Waiver Program) pursuant to §391.49.
(2) Has no impairment of: (i) A hand or finger which interferes with prehension or power grasping; (ii) An arm, foot, or leg which interferes with the ability to perform normal tasks associated with operating a commercial motor vehicle; or any other significant limb defect or limitation which interferes with the ability to perform normal tasks associated with operating a commercial motor vehicle; or has been granted a SPE Certificate pursuant to §391.49.
(3) Has no established medical history or clinical diagnosis of diabetes mellitus currently requiring insulin for control;
(4) Has no current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, thrombosis, or any other cardiovascular disease of a variety known to be accompanied by syncope, dyspnea, collapse, or congestive cardiac failure.
(5) Has no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with his ability to control and drive a commercial motor vehicle safely.
(6) Has no current clinical diagnosis of high blood pressure likely to interfere with his ability to operate a commercial motor vehicle safely.
(7) Has no established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which interferes with his ability to control and operate a commercial motor vehicle safely.
(8) Has no established medical history or clinical diagnosis of epilepsy or any other condition which is likely to cause loss of consciousness or any loss of ability to control a commercial motor vehicle;
(9) Has no mental, nervous, organic, or functional disease or psychiatric disorder likely to interfere with his ability to drive a commercial motor vehicle safely;
(10) Has distant visual acuity of at least 20/40 (Snellen) in each eye without corrective lenses or visual acuity separately corrected to 20/40 (Snellen) or better with corrective lenses, distant binocular acuity of at least 20/40 (Snellen) in both eyes with or without corrective lenses, field of vision of at least 70 degrees in the horizontal meridian in each eye, and the ability to recognize the colors of traffic signals and devices showing standard red, green and amber;
(11) First perceives a forced whispered voice in the better ear not less than 5 feet with or without the use of a hearing aid, or, if tested by use of an audiometric device, does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1,000 Hz and 2,000 Hz with or without a hearing device when the audiometric device is calibrated to the American National Standard (formerly ASA standard) Z24.5-1951;
(12)(i) Does not use any drug or substance identified in 21 CFR 1308.11 Schedule I, an amphetamine, a narcotic, or other habit-forming drug.
(ii) Does not use any non-Schedule I drug or substance that is identified in the other Schedules in 21 part 1308 except when the use is prescribed by a licensed medical practitioner, as defined in §382.107, who is familiar with the driver's medical history and has advised the driver that the substance will not adversely affect the driver's ability to safely operate a commercial motor vehicle.
(13) Has no current clinical diagnosis of alcoholism.
The documentation proceeds to further explain the various steps involved in the process. The sequence is as follows:

1. **Preparation Phase**: This includes gathering all necessary materials and ensuring the correct tools are available. The team must also verify that all equipment is in working order.

2. **Installation Phase**: During this phase, the equipment is installed according to the manufacturer's instructions. This requires precise measurements and alignment to ensure optimal performance.

3. **Testing Phase**: After installation, the system undergoes rigorous testing to ensure it meets the required standards. This includes both functional and safety checks.

4. **Commissioning Phase**: The final phase involves commissioning the equipment, which involves running the system through several operational scenarios to verify its readiness for use.

The team must be vigilant throughout these phases to identify and rectify any issues promptly. This approach helps in minimizing downtime and ensures a seamless transition to operational status.
23, etc. The examiner should not use only sibilants (sounding materials). The opposite ear should be tested in the same manner. If the individual fails the whispered voice test, the audiometric test should be administered.

If an individual meets the criteria by the use of a hearing aid, the following statement must appear on the Medical Examiner's Certificate: “Qualified only when wearing a hearing aid.” (See Hearing Disorders and Commercial Motor Vehicle Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Drug Use
§391.41(b)(12)
A person is physically qualified to drive a commercial motor vehicle if that person does not use any drug or substance identified in 21 CFR 1308.11, an amphetamine, a narcotic, or other habit-forming drug. A driver may use a non-Schedule I drug or substance that is identified in the other Schedules in 21 part 1308 if the substance or drug is prescribed by a licensed medical practitioner who: (A) is familiar with the driver's medical history, and assigned duties; and (B) has advised the driver that the prescribed substance or drug will not adversely affect the driver's ability to safely operate a commercial motor vehicle.

This exception does not apply to methadone. The intent of the medical certification process is to medically evaluate a driver to ensure that the driver has no medical condition which interferes with the safe performance of driving tasks on a public road. If a driver uses an amphetamine, a narcotic or any other habit-forming drug, it may be cause for the driver to be found medically unqualified. If a driver uses a Schedule I drug or substance, it will be cause for the driver to be found medically unqualified. Motor carriers are encouraged to obtain a practitioner's written statement about the effects on transportation safety of the use of a particular drug.

A test for controlled substances is not required as part of this biennial certification process. The FMCSA or the driver's employer should be contacted directly for information on controlled substances and alcohol testing under Part 382 of the FMCSRs.

The term "uses" is designed to encompass instances of prohibited drug use determined by a physician through established medical means. This may or may not involve body fluid testing. If body fluid testing takes place, positive test results should be confirmed by a second test of greater specificity. The term "habit-forming" is intended to include any drug or medication generally recognized as capable of becoming habitual, and which may impair the user's ability to operate a commercial motor vehicle safely.

The driver is medically unqualified for the duration of the prohibited drug(s) use and until a second examination shows the driver is free from the prohibited drug(s) use. Recertification may involve a substance abuse evaluation, the successful completion of a drug rehabilitation program, and a negative drug test result. Additionally, given that the certification period is normally two years, the examiner has the option to certify for a period of less than 2 years if this examiner determines more frequent monitoring is required. (See Conference on Neurological Disorders and Commercial Drivers and Conference on Psychiatric Disorders and Commercial Drivers at: http://www.fmcsa.dot.gov/rulesregs/medreports.htm)

Alcoholism
§391.41(b)(13)
A person is physically qualified to drive a commercial motor vehicle if that person has no current clinical diagnosis of alcoholism.

The term "current clinical diagnosis of" is specifically designed to encompass a current alcoholic illness or those instances where the individual's physical condition has not fully stabilized, regardless of the time element. If an individual shows signs of having an alcohol-use problem, he or she should be referred to a specialist. After counseling and/or treatment, he or she may be considered for certification.
1) Symptoms

a) Characteristics
   i) Loud snoring
   ii) Morning headaches
   iii) Gasping or choking while sleeping
   iv) Loss of sex drive/impotence
   v) Excessive daytime sleepiness
   vi) Irritability and/or feelings of depression
   vii) Concentration and memory problems
   viii) Frequent nighttime urination

b) Risk Groups
   i) BMI=30 or above
   ii) Large neck size-17 inches for men, 16 inches for women
   iii) Middle Age men, post-menopausal women
   iv) Ethnicity
   v) People with abnormalities of the bony and soft tissue structures of the head and neck (e.g. recessed chin, small jaw, or large overbite)
   vi) Family history of OSA
   vii) Smokers
   viii) People with endocrine disorders such as Acromegaly and Hypothyroidism

c) Effects
   i) Increased heart rate
   ii) Chronic elevation of daytime blood pressure
   iii) Impaired glucose tolerance and insulin resistance
   iv) Mood changes

2) OSA Tests, Diagnosis, Types

a) Questionnaires & Sleep Study
   (a) Berlin
   (b) Stop & Stop Bang
   (c) Epworth Sleepiness Scale
   (d) Polysomnography

b) OSA Testing
   (a) Sleep study
   (b) Home Sleep Study

c) Diagnosis
   i) Medicare
(a) AHI or RDI greater than or equal to 15 events per hour or greater than or equal to 5 events per hour and less than 14 events per hour with documented symptoms of excessive daytime sleepiness; impaired cognition; mood disorders, insomnia; or documented hypertension; ischemic heart; or history of stroke.

ii) AASM

(a) The patient reports daytime sleepiness, unrefreshing sleep, fatigue, insomnia, and/or unintentional sleep episodes during wakefulness. The patient awakens with breath holding, gasping or choking. The patient’s bed partner reports loud snoring, breathing interruptions, or both, during the patient’s sleep.

(b) Polysomnography (PSG) shows more than five scorable respiratory events (e.g. apneas, hypopneas, RERAs) per hour of sleep and/or evidence of respiratory effort during all or a portion of each respiratory event.

(c) PSG shows more than 15 scorable respiratory events (e.g. apneas, hypopneas, RERAs) per hour of sleep and/or evidence of respiratory effort during all or a portion of each respiratory event.

(d) Another current sleep disorder, medical or neurological disorder, medication use, or substance use does not better account for the patient’s condition.

d) OSA Types

i) Mild (AHI of 5-15)

ii) Moderate (AHI of 15-30)

iii) Severe (AHI=more than 30)

3) Treatment-Severe OSA

a) CPAP, APAP, BIPAP,

b) Oral appliances

c) Surgery

d) Other

i) Weight loss (behavioral change-mild OSA)

ii) Position Therapy

(1) Raise head while sleeping

(2) Avoid sleeping on one’s back

4) Is this condition compatible with over the road driving?

a) DOT’s position

i) FMCSA regulations do not specifically address sleep apnea, they do prescribe that a person with a medical history or clinical diagnosis of any condition likely to interfere with their ability to drive safely cannot be medically qualified to operate a commercial motor vehicle (CMV) in interstate commerce. (see also FMCSR 391.41 (b) (5))

ii) A motor carrier may not require or permit a driver to operate a CMV if the driver has a condition, including sleep apnea, that would affect his or her ability to...
safely operate the vehicle. It is critical that persons with sleep apnea fully use the treatment provided by their doctor. They should not drive if they are not being treated. Being effectively treated, and complying with that treatment, offers the best hope of a commercial driver with sleep apnea to secure the ability to do his or her job safely and be fully alert.

iii) FMCSA currently relies on Medical Examiners to apply professional judgment in applying FMCSA’s advisory criteria on OSA to determine whether a driver has a respiratory dysfunction such as OSA that might affect his or her ability to operate a CMV safely.

b) Adherence is key
   i) Unofficial standard (Medicare)
      (1) Use ≥ 4 hours on 70% of nights (5 of 7, which translates into 21 of 30 days) during 30 consecutive days within the prior 90-day period.
   ii) Usage Problem-Non adherence estimated at 46%-83%
      (1) Fit
         (a) leaks
         (b) Uncomfortable sleep positioning due
      (2) Monitoring
         (a) Refill rates on CPAP accessories (e.g. mask, chin straps, hoses, filters, machines)
         (b) Device data downloads

Acronyms-decoding critical references

CPAP=Continuous positive airway pressure
APAP=Auto-titrating positive airway pressure
BIPAP=Bi-level positive airway pressure
NCPAP=Nasal continuous positive airway pressure
AHI=Apnea-Hypopnea Index
RDI=Respiratory Disturbance Index
SDB=Sleep Disordered Breathing
EDS=Excessive daytime sleepiness
PSG=Polysomnography
RERA=Respiratory-related arousals
AASM=American Academy of Sleep Medicine

Internet sources

http://www.fmcsa.dot.gov/driver-safety/sleep-apnea/driving-when-you-have-sleep-apnea

http://www.regulations.gov/#/documentDetail;D=FMCSA-2012-0102-000
Medical Examiner's Handbook:


Industry Sites

American Sleep Foundation

http://sleepfoundation.org/

American Academy of Sleep Medicine

http://www.aasmnet.org/

Mayo Clinic

http://www.mayoclinic.org/diseases-conditions/sleep-apnea/multimedia/obstructive-sleep-apnea/vid-20084717

North American Fatigue Management Program

http://www.naimp.com/en/

Reference Material

- Berlin Questionnaire
- Stop/Stop Bang Questionnaire
- The Epworth Sleepiness Scale
- FMCSR Part 391
- National Transportation Safety Board Safety Recommendation H-10-8-11
- April 20, 2012 Federal Register-Proposed Recommendations on Obstructive Sleep Apnea
- Medical Examination Report For Commercial Driver Fitness Determination (Sample)