

## The Dangers of Drowsy Driving – by Willie Gibbs

### A. Introduction

Most operations are aware of the dangers of drinking and driving and have implemented drug and alcohol testing policies to prevent such, but most operators do not realize that drowsy driving can be just as fatal. Like alcohol, sleepiness slows reaction time, decreases awareness, impairs judgment and increases the risk of having an accident. National Highway Traffic Safety Administration facts show that driver sleepiness is the principal cause in an estimated 100,000 motor vehicle crashes each year in the U.S. These collisions have killed more than 1,500 people annually and injured upwards of 40,000 people. Unfortunately, authorities believe that collisions related to sleepiness are vastly under reported because of its difficult nature to detect. It is for this reason why we must have a basic understanding of this ever-growing epidemic so that transportation of our most precious cargo remains in the forefront of a legacy that we have worked so hard to maintain, and must do so for many years to come.

### B. Objectives

By the end of this presentation, transportation professionals will be able to: **(Who & When)**

- Understand what causes sleep deprivation and driver fatigue. **(What)**
- List common signs and symptoms of fatigue. **(What)**
- Identify the impact of driver fatigue within the pupil transportation industry. **(What)**
- Hold an open discussion and list countermeasures to combat driver fatigue within their own operations. **(How)**
- Have a basic understanding of Federal Hours of Service regulations. **(What)**
- Correctly answer a minimum of ten (10) out of twelve (12) questions pertaining to drowsy driving. **(Can I prove it?)**

### C. Content

1. School bus tragedies related to driver fatigue
  - a. 2015 Santa Clara, California
  - b. 2011 New York City, New York
  - c. 2012 Chesterfield, New Jersey
2. What is Driver Fatigue?
  - a. Definition
    1. The state of exhaustion or tiredness associated with activity, exertion, working too many hours in a row, staying up too many hours in a row, or a lack of sleep.

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### 3. Crash Statistics

- a. 100,000 police-reported motor vehicle crashes are caused by the drowsiness or fatigue of the operator.
- b. 1,550 deaths and 71,000 injuries are the direct result of a driver falling asleep at the wheel of a motor vehicle.
- c. These crashes represent at least \$12,500,000,000 in diminished productivity and property loss.
- d. 1,000,000 crashes are caused by driver inattention each year; and sleep deprivation and fatigue make such attention lapses more likely to occur.
- e. In 1999, a scientifically conducted national survey of Americans found that 23 percent of respondents reported that they personally know someone who crashed in the past year due to falling asleep at the wheel.
- f. In 2001, a scientifically conducted national survey of Americans found that in the past year-- 53 percent of all adults reported driving while drowsy;
- g. 19 percent reported that they had actually dozed off while driving; and one percent reported that they had crashed because they dozed off.

### 4. Who are affected the most?

- a. Studies confirm that while anyone can be at risk for drowsy driving, there are several population groups that are significantly at higher risk--
- b. Young people under the age of 26, who tend to stay up late, sleep too little, and drive at night, represent about 55 percent of all fall asleep crashes;
- c. There are over 20,000,000 shift workers in America and studies suggest that 20 percent to 30 percent of individuals with nontraditional work schedules have had a fatigue-related driving mishap in the last year;
- d. Commercial drivers are susceptible to fatigue-related crashes due to their driving schedules and the amount of miles they drive during the year;
- e. Commercial drivers have a high prevalence of a sleep and breathing disorder called sleep apnea; and
- f. 40,000,000 Americans suffer from sleep disorders; left untreated, disorders such as sleep apnea can increase crash risk 3 to 7 times.
- g. In 1995, a study found that some roads, such as high-speed, long, boring, rural highways, are more dangerous than others for sleep-deprived motorists. The New York State Police estimated that 40 percent of all fatal crashes along the New York Thruway were the result of a driver falling asleep at the wheel.

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### 5. Contributing Factors

#### a. Disrupted Circadian rhythms

1. 24-25 hour cycles
2. Most important factor is daylight and darkness
3. Cycle has “ups” and “downs” which affect mood, body temperature, motivation, energy levels, and alertness.
4. Regardless of sleep, most will feel effects on low point of cycle.
5. Early afternoon (1 pm – 3 pm) and night hours (12 am – 4am)
6. In most cases, performance is affected even if you are not fatigued.

#### b. Sleep disorders

1. Insomnia (Onset, Maintenance, Termination, Drug-Dependency)
  - i. Causes of Insomnia
2. Obstructive Sleep Apnea
3. Central Apnea
4. Mixed Apnea
5. Restless Legs Syndrome
6. Narcolepsy
7. Fatigue related Micro sleeps
  - i. **Class Activity - Epworth Sleepiness Scale – “How much sleep do you get?”**

### 6. Signs and symptoms of sleep disorders

1. Excessive daytime sleepiness
2. Awaken feeling tired
3. Become sleepy or fall asleep at inappropriate times
4. Take too long to fall asleep at night

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5. Muscle soreness and stiffness
  6. Excessive snoring or gasping
  7. Excessive movement or kicking while asleep
7. Sleep Debt (Deprivation)
- a. Definition - Sleep debt is the difference between the amounts of sleep someone should be getting compared to the amount of sleep they actually get.
    - i. Example – Project due at work on Friday. 2 hours sleep per day used to work on project. Saturday and Sunday gained 4 hours (2 per day). Deficit for week is 6 hours.
  - b. Most drivers need 6-8 hours per day
8. Other contributing factors
- a. Inadequate rest
  - b. Stress and worry
  - c. Excessive physical activity
  - d. Boredom
  - e. Excessive mental or cognitive work
  - f. Physical fitness
  - g. Environmental factors
  - h. Sustained work hours
  - i. Alcohol use
9. Comparing Drowsiness to Blood Alcohol Concentration
- a. Awake for 17 hours = 0.05% BAC
  - b. Awake for 24 hours = 0.10% BAC

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10. Effective Fatigue Countermeasures

11. Hours of Service Overview

- a. 15 hour On-duty limit
- b. 10 hour driving limit
- c. Definition of On-duty time
- d. Definition of Off-duty time

### **D. Conclusion**

- Review main points of contents
- Reveal results of classroom survey
- Close with a statement / story

### **E. Evaluation**

- Handout – Sleep Quiz / Questionnaire