Fatigue

INCIDENT

Air Force Reserve Command's top three safety emphasis items for 2020 are off-duty private motor vehicle accidents (with an emphasis on driving under the influence and fatigued driving), ladder safety and the proper use of personal protective equipment.

The Safety Office is focusing its attention on the role driving under the influence and fatigue play in private motor vehicle mishaps.

"Each year, the Air Force experiences an average of 14 private motor vehicle fatalities involving cars and trucks, and 10 private motor vehicle fatalities involving motorcycles," said Rich Burns, AFRC's Occupational Safety Program manager. "In many of these cases, the mishaps are attributed to the use of alcohol while driving and driving while fatigued. Our goal is to reduce the number of private motor vehicle mishaps to zero. This can only be accomplished if everyone takes note of what the causal factors are and focuses on preventing them."

Over the last six years, the Air Force has had 163 private motor vehicle off-duty fatalities, including eight involving Air Force Reservists. **Nearly One-Third of the Fatalities Involved Alcohol and Another One-Third Involved Fatigue**. Based on the Consumer Price Index, the Department of Defense estimates that each fatality costs the service $9.6 million.

NEED TO KNOW

Workers suffering from fatigue—physical and mental—are not only less productive and more prone to illness but also more distracted and thus more likely to be involved in a safety incident.

Fatigue can be broadly defined as a feeling of weariness, tiredness or lack of energy. Fatigue is a common complaint but, medically speaking, it's recognized more as a symptom or cause of other conditions than as a condition itself. The best way to

understand fatigue is along a continuum. On one end of the spectrum is the fatigue that most of us occasionally experience in the course of our lives when we get physically or mentally overburdened. This kind of fatigue isn't serious and can usually be resolved simply and quickly, such as by getting extra rest. On the other end is a less common but more serious form of fatigue that's symptomatic of a more chronic and disabling condition, such as major depressive disorder or chronic fatigue syndrome. This form of fatigue is an acute and/or ongoing state of tiredness that leads to mental or physical exhaustion and prevents people from functioning as usual.

Fatigue clearly impairs work ability. Studies have shown that workers with fatigue are significantly more likely to miss work and experience long-term work absences than workers without fatigue

You're an accident waiting to happen if you are not alert at work. This applies to most high-risk jobs, trucking and transport jobs, repetitive jobs, such as sorting logs in a lumber mill, and a host of other jobs – regardless of the inherent risk level.

What's the Danger?

The risk of making mistakes at work increases dramatically if workers sleep for less than seven to eight hours or are awake for more than 17 consecutive hours.

- Fatigue reduces your ability to make decisions and to do complex planning.
- Communication skills and your ability to respond to and remember directions and recall details also suffer.
- Fatigue slows your reaction time, and your ability to respond to changes in surroundings or information provided.
- It also shortens your attention span, especially during boring or mundane tasks.
- Fatigue lowers your productivity and performance and your ability to handle stress.
- It makes it hard to stay awake, increases forgetfulness and increases errors in judgment.

Experiencing one or more of these factors can make you dangerous to work with, because it increases the chances for incidents and injuries.

Electricity, toxic chemicals, bone-crushing machines, fall hazards and fire are just some of the dangers the 20th century workplace health and safety programs were designed to root out.

The safety program of the new millennium must deal not just with these old enemies but new threats that are still not fully recognized or understood—**Ergonomics, Workplace Violence, Mental Stress and What May Be the Newest of the Newfangled Hazards**—Fatigue.

BUSINESS / REGULATIONS

Fatigue increases the risk of injuries or other accidents. As an employer, ensure your workers are not experiencing signs or effects of fatigue on the job. You can help make your workers and your business safer by including information on fatigue and sleep in your safety guidelines and orientations. You can also develop a fatigue management plan.

Fatigue is a state of feeling very tired, exhausted, weary, or sleepy. Fatigue results from a lack of sleep and can be heightened from prolonged mental activity or long periods of stress or anxiety. Boring or repetitive tasks can also intensify feelings of fatigue.

Fatigue can be acute or chronic.

Acute fatigue results from a sudden onset of short-term sleep loss, such as getting less sleep than normal before a work shift. Adequate sleep is necessary to reverse the effects of acute fatigue. Chronic fatigue is a long-term state that results from an extended loss of necessary sleep. A sleep debt can build over weeks or months from a reduction or disruption of a normal sleep routine.

Signs and symptoms of fatigue recommendation

Train supervisors and workers to recognize the immediate signs and symptoms of fatigue, which include the following:

- Tiredness or sleepiness
- Memory lapses
- Difficulty concentrating
- Slower reaction times

Effects of fatigue

Studies indicate that the risk of making mistakes at work increases significantly if workers sleep for less than the average (7.5–8.5 hours) or are awake for more than 17 consecutive hours.

The effects of fatigue can reduce a worker's:

- Ability to make decisions
- Ability to do complex planning
- Communication skills
- Productivity and performance
- Attention
- Ability to handle stress
- Reaction time
- Ability to recall details
- Ability to respond to changes in surroundings or information provided

Fatigue can also result in:

- Inability to stay awake
- Increased forgetfulness
- Increased errors in judgment

Over the long term, fatigue can result in health effects, such as loss of appetite and digestive problems, and other chronic health conditions, including depression. **These effects can result in:**

- Increased sick time, absenteeism, and rate of turnover
- Increased medical costs
- One study has shown that fatigue can have similar effects to drinking alcohol:

- 17 hours awake is equivalent to a blood alcohol content of 0.05 (the legal limit in British Columbia)
    - 21 hours awake is equivalent to a blood alcohol content of 0.08
    - 24–25 hours awake is equivalent to a blood alcohol content of 0.10

Causes of fatigue

Fatigue is caused primarily by long hours of being awake. Other causes include extended shifts, shift rotations (days and nights), and irregular or disrupted sleep. **Workplace factors, such as the following, can also increase feelings of fatigue:**

- High temperatures
- High noise levels
- Dim lighting or poor visibility
- Work tasks that are long, repetitive, paced, difficult, boring, or monotonous

Alcohol and caffeine

A lack of quality sleep can contribute to fatigue.

Substances such as caffeine and alcohol can affect sleep quality and quantity, particularly if taken in the hours before bedtime. Alcohol may shorten the time to fall asleep, but it will disrupt sleep patterns.

Medications

Prescription medications and over-the-counter medications can also affect sleep and may cause a sense of sleepiness and loss of alertness during work.

Sleep disorders

Sleep apnea, narcolepsy, insomnia, and other disorders affect alertness. If workers are experiencing any symptoms related to sleep disorders, they should seek a doctor’s advice.

How to help your workers stay safe prevention

Create shift schedules that give workers enough time

If the job requires long hours or overtime, consider that your workers will need enough time for other daily activities, such as commuting, preparing and eating meals, socializing, and relaxing.

Provide a work environment that has good lighting, comfortable temperatures, and reasonable noise levels.

Ensure that jobs provide some variety, with work tasks that change throughout the shift. Be flexible when assigning tasks – assign workers who may be fatigued to tasks that aren't safety sensitive.

If your workplace has long shifts or frequent overtime, consider providing amenities, such as the following:

- Prepared meals
- On-site accommodations
- Facilities where workers can nap either during the shift or before driving home

Tips for getting a better sleep

People need at least 7.5 to 8.5 hours of sleep a day.

Studies have found that most night-shift workers get less sleep per week than those who work day shifts.

The quality of sleep during the day is not the same as during the night.

Here are some guidelines you can pass on to your workers for improving quality of sleep:

- Go to bed and get up at the same time every day.
- Turn out the light immediately when going to bed.
- Don't read or watch television in bed.
- Make your room as dark and quiet as possible.

In addition to the general duty to not drive a fatigue-regulated heavy vehicle on a road while fatigued, drivers must comply with certain maximum work and minimum rest limits.

Parties in the supply chain have to take all reasonable steps to prevent the drivers from exceeding these limits. This is similar to occupational health and safety laws and means that drivers must be allowed to stop if they are at risk of exceeding the limits and make alternative arrangements.

STATISTICS

Fatigue is defined as being in a state of physical or mental exhaustion, which compromises both workplace safety and a worker's ability to perform efficiently. Here are 7 statistics relating to fatigue in the workplace

1. There are three causes of fatigue: sleep loss, disruption of a person's body clock, and prolonged mental or physical activity.
2. Fatigue can reduce a worker's alertness, leading to errors and an increased possibility of injury under these two conditions: either when operating equipment or vehicles, or when performing important tasks requiring considerable concentration.
3. Seven long-term health effects of fatigue include increased risk for heart disease, high blood pressure, gastrointestinal disorders, diabetes, anxiety, depression, and reduced fertility. (Safe Work Australia)
4. A University of Pittsburgh School of Medicine study found that fatigued workers had nearly twice the risk for injury compared to non-fatigued workers.
5. Five symptoms indicating that a worker is experiencing fatigue include excessive yawning or falling asleep at work; impaired decision-making ability; short-term memory impairment and reduced concentration; slowed reflexes and reduced hand-eye coordination; and a noticeable decrease in one's ability to communicate clearly.
6. One major cause of fatigue is a work schedule that limits the amount of rest time a worker has before starting the

next shift, because of issues such as overtime on the previous shift.

7. Three things supervisors can do to reduce fatigue among their workers are: allowing workers to vary their work tasks to avoid monotony; allowing workers to take short power-nap breaks, especially on the night shift; and encouraging workers to manage their fatigue risk factors. Risk factors include cutting sleep time short to complete tasks or to read, use a computer or watch TV, and consuming excessive nicotine, alcohol or caffeine, especially in the hours close to bedtime.

Bottom Line Analysis

- It is estimated that workers with fatigue cost U.S. employers $136.4 billion a year in health-related lost productivity time $100 million more than workers without fatigue.
- Individually, fatigue reduces productivity to the time of 1,961 per worker each year.

RECOMMENDATION

There are six fatigue management recommendations that need to be mplemented.

Scheduling and rostering – scheduling of individual trips and rostering of drivers are to be in accordance with limits prescribed in legislation

1. Fitness for duty – drivers are in a fit state to safely perform required duties and meet the specified medical requirements
2. Fatigue knowledge and awareness – personnel involved in the management, operation, administration, participation and verification of the BFM option can demonstrate competency in fatigue knowledge relevant to their position on the causes, effects and management of fatigue and the operator’s fatigue management system
3. Responsibilities – the authorisations, responsibilities and duties of all positions involved in the management,

operation, administration, participation and verification of their operations under the BFM option are current, clearly defined, documented and carried out accordingly

4. Internal review – an internal review system is implemented to identify non-compliances and verify that the activities comply with the BFM standards and the operator's fatigue management system
5. Records and documentation – the operator will implement, authorise, maintain and review documented policies and procedures that ensure the management, performance and verification of the BFM option in accordance with the standards.

PREVENTION

Fatigue – A Safety Hazard

Fatigue is more than simply sleepiness. It's the body's response to sleep loss and/or prolonged physical or mental exertion, e.g., as a result of working nights or rotating shifts. Over time, this can result in physical and mental damage.

But it's the immediate effects of fatigue that make it such a significant safety risk. Fatigue does things to workers' minds and bodies that make them more likely to get hurt on the job, such as:

- Slowing their reaction time;
- Reducing their level of vigilance;
- Impairing their judgment and ability to make decisions;
- Making them more distractible; and
- Causing them to lose awareness in critical situations.

Managing Fatigue In The Workplace

Progressive companies have been quick to grasp the danger and develop systems to manage fatigue.

The Fatigue Risk Management System

Such systems are similar to OHS systems and can be incorporated into an organization's existing OHS system. The guide lists the key elements of a Fatigue Risk Management System, Including:

A fatigue management policy spelling out how the company plans to address fatigue in the workplace and lists the roles and responsibilities of all stakeholders.

Fatigue risk management which involves collecting and analyzing relevant data to assess fatigue hazards and implementing controls to minimize identified risks. The ACOEM identifies 5 types of controls:

1. Balancing workload and staffing;
2. Shift scheduling;
3. Worker fatigue training and sleep disorder management;
4. Workplace environment design; and
5. Fatigue monitoring and alertness for duty.

Fatigue reporting system that workers can use to report when they feel unfit to work safely as a result of fatigue or report workplace incidents caused by fatigue.

Fatigue incident investigation which should basically parallel standard incident investigation but also focus on the role played by fatigue, why the worker was fatigued and why any fatigue-control mechanisms in place failed.

Fatigue management training and education of both management and workers on the fatigue risk management system, including:

- Hazards of working while fatigued and the benefits of being well rested;
- Impact of chronic fatigue on personal relationships, mental/physical well-being and general happiness;
- Recognition that while fatigue can’t be eliminated, it can be managed;
- The key role quantity and quality of sleep play in managing fatigue;
- Basics of sleep physiology and circadian rhythms;
- Sleep hygiene, i.e., how to get adequate sleep;
- The potential results of sleep disorders and how to manage them;
- Importance of diet, exercise, stress management and

management of other health conditions;
- How to recognize fatigue in themselves or co-workers; and
- Alertness strategies to use at work, e.g., caffeine, rest or exercise breaks.

Sleep disorder management programs that screen workers for sleep disorders and help them get appropriate treatment.

System auditing on a regular basis to ensure that it's effective, identify weaknesses and implement corrections or improvements.

What Can Employers Do?

Employers can reduce the risk of worker fatigue in the workplace by:

- Examine staffing issues such as workload, work hours, understaffing and worker absences, scheduled and unscheduled, which can contribute to worker fatigue.
- Arrange schedules to allow frequent opportunities for rest breaks and nighttime sleep.
- Make adjustments to the work environment such as lighting, temperature and physical surroundings to increase alertness.
- Provide worker education and training addressing the hazards of worker fatigue, the symptoms of worker fatigue, the impact of fatigue on health and relationships, adequate quality and quantity of sleep and the importance of diet, exercise and stress management strategies to minimize the adverse effects of fatigue.
- Consider implementing a Fatigue Risk Management Plan under which, like other risk factors, fatigue can be managed.

Look Out for the Symptoms of Fatigue

Train your managers and supervisors to recognize the signs of fatigued workers, including:

- excessive yawning;
- irritability;
- bloodshot eyes;
- poor performance;

- lack of focus

If you have identified any fatigued workers in your workplace, discuss the issue of fatigue with them as soon as practicable. You may also choose to discuss the issue with other workers who could be at risk of fatigue.

Direct a worker to take leave

Following discussion with a fatigued worker, you may:

- direct a worker to take paid personal or annual leave if they have any paid leave entitlements;
- allow a worker to take unpaid leave if they wish to do so; or
- choose to grant a worker paid leave if they have exhausted all of their leave entitlements.

Better Recommendations

It’s also recommended that you include a clause in your workers’ employment contracts that states that you reserve the right to send a worker home from work if you believe that the worker is not fit to perform their duties.

Driving while fatigued could be dangerous, so if you decide to send a fatigued worker home, arrange a safe method of travel for them, e.g. a taxi or colleague, and check that they have arrived home safely.

What can workers do?

One of the most important ways to protect against fatigue is to get enough rest. For most people that means seven to eight hours of sleep per night.

Tips for getting a good night’s sleep:

1. Go to bed and get up at the same time every day, even on weekends.
2. Don’t eat too close to bedtime, as doing so can cause

heartburn and just generally make it hard to fall asleep. Do eat a balanced diet of fruits, veggies, healthy fats, proteins and whole grains.
3. Turn off your cell phone or tablet at least one hour before you go to sleep and don’t watch TV in bed.
4. Exercise regularly, but not too close to bed time. Exercising an hour or so before bed can make it hard to fall asleep.
5. Avoid caffeine, tobacco and alcohol before bed as well. Stay away from foods and drinks that contain caffeine for at least five hours before bedtime.
6. Keep your room dark and cool. Most of us sleep better in a cooler room.
7. If you can’t sleep, get up and go into another room and read or perform some other quiet activity that doesn’t involve staring at a screen until you feel sleepy.

At work, remember these fatigue-triggering factors and try to avoid them:

1. Dim lighting.
2. High temperatures, high noise, and high comfort, such as sitting for long periods in a very comfortable chair.
3. Repetitive, long, boring and monotonous tasks.

Tips for staying alert:

1. If you can, take breaks or break up tasks and keep the lights bright.
2. On longer breaks or lunch time go for a run, bicycle ride or brisk walk in every kind of weather.
3. Perform the most boring tasks at the start of your shift if permitted.
4. Eat light, healthy snacks throughout your shift instead of heavy, fatty snacks.
5. If you’re driving, be sure to take breaks at least every few hours and change drivers if you can.