

**MOTOR FLEET
SAFETY
and
SECURITY
MANAGEMENT**

DANIEL E. DELLA-GIUSTINA



CRC PRESS

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DEDICATION

*This book is dedicated to the beloved
Della-Giustina grandchildren:*

*Dana, Daniel, Daniella, Denise, James,
Katey, Marissa, Robyn, and Steven.*

PREFACE

Transportation has become an important part of society and daily living. In the past people walked or rode animals to get where they wanted to go, but now we are driving cars, riding buses, and utilizing other means of mass transportation. New methods of transportation are beneficial because travel is faster. However, with these new methods come concerns for safety. There is a continuous rise in transportation incidents, and millions of lives are taken each year as a result of automobile accidents. Motor fleet use is advantageous because it is a quick method of delivering goods, which in turn strengthens the economy.

Loss of life is not the only loss associated with these incidents. The cost of injuries, lost wages, hiring and training expenses, insurance premiums, and property damage must be considered as well. Because the risk of loss is so great, effective transportation training programs must be in place.

The goal of this book is to provide the reader with an understanding of a comprehensive motor fleet safety and instructional program. Topics covered in this book include the following: the elements of a fleet safety program; accident prevention; considerations for a small fleet; driver selection, training, instruction, and supervision; vehicle inspection; how to organize accident data; job safety analysis (JSA); safety meetings for commercial drivers; fleet transportation publicity; school bus safety; shipping and storage of hazardous materials; and security in transportation. Chapter 15 contains a model of a motor fleet transportation program designed to assist you during

implementation of your own program. Each of these topics plays an important role in motor fleet safety.

To develop an understanding of the significance of mass transportation and motor fleets in today's society, the next time you are driving on a main highway, think about how many trucks are traveling on the road with you. I think you will agree that the amount of goods being transported every day is astronomical.

To transport goods and persons safely, everyone involved in the transportation system should be adequately trained, supervised, and monitored. Proper data and incident reports must be maintained to identify trends and problem areas. I hope this book provides you with the groundwork necessary to manage your motor fleet transportation system.

ACKNOWLEDGMENTS

I would like to express my gratitude to the graduate students enrolled during the past three years in my Motor Fleet Transportation course, part of the Safety and Environmental Management Program at West Virginia University (WVU) in Morgantown. I am particularly thankful for the contributions of Kellie N. Smith, Karyn Toth, Christie Annie, Steve Root, Lorrie Kobasko, Carrie Warren, Mike Kuhn, Michele Rafus, Gary Garrett, Andy Todd, Troy Carpenter, Vince Pellis, Michael Downs, Matt Rippey, Donielle Harsh, Anthony Molinari, Rocky Mazza, and graduates (alumni) Scott Kerr and Ron Swantek, who are currently employed by one of the largest transportation enterprises in the U.S. Scott was instrumental in the development of Chapter 14, which focuses on hazardous materials.

I would like to also thank the many other people who contributed to this first edition, including the transportation practitioners and professional truck drivers who provided a wealth of information to support the contents of this text. I also want to acknowledge the reviewers of this book, several of whom are anonymous. Another key contributor, Robert Cutone, P.E., was extremely helpful with his information on the fire and explosive materials carried by the trucking industry on the U.S. highway system.

In addition, I would like to thank Professor H. Ilkin Bilgesu, Ph.D., a tireless and patient fellow faculty member at WVU, who aided in the preparation of the text with his excellent computer skills.

Furthermore, I am forever indebted to Dr. Robert Nolan, former director of the Highway Traffic Safety Center at Michigan State University in East Lansing. Dr. Nolan was my doctoral committee chair, and a loyal friend and mentor during my graduate studies.

ABOUT THE AUTHOR

Background

Daniel E. Della-Giustina holds a B.A. and an M.A. in education administration and psychology from the American International College at Springfield, Massachusetts. He earned an Ed.S. in health and highway traffic safety and a Ph.D. in higher education and educational research from Michigan State University. He has held two postdoctorate positions: one in environmental and emergency planning at Lancaster University in England; the other in wind engineering and environmental research at the University of Colorado. He is a certified hazard control manager.

Professional Experience

Professor Della-Giustina teaches in the Industrial and Management Systems Engineering Department, part of the Safety and Environmental Management Program, in the College Engineering and Mineral Resources at West Virginia University. He has chaired and taught in the graduate program for 25 years. Concurrently, he has served as adjunct professor in the Petroleum and Natural Gas Engineering Department.

Career Highlights

During Dr. Della-Giustina's tenure as chairman of the Safety and Environmental Management Department at West Virginia University,

he built the program into the finest of its kind in the world. His nine textbooks in safety, health, and environmental disciplines are standard teaching references in U.S. and international educational institutions. In the corporate sector, his writings are used widely as the foundation upon which companywide safety programs are built.

Dr. Della-Giustina developed safety management concepts that have wide applications. He altered workers to the presence of hazardous substances through the use of material safety data sheets, worker training, product labeling, and other measures. He developed an instrument to investigate, analyze, and report accidents, including guidelines for processing workers' compensation claims. In concert with the Federal Emergency Management Agency (FEMA), he designed a tool for responding to emergency situations and the procedures for creating disaster recovery plans. He also created mechanisms to prevent fires and minimize losses involving hazardous materials.

While conducting a comprehensive national research project that included a critical evaluation of large and small school districts in all 50 states, Dr. Della-Giustina identified safety practices and needs in the transportation of handicapped students. His findings resulted in recommendations that were implemented by the U.S. Department of Transportation. Today, as a result of Dr. Della-Giustina's visionary work, all states have expanded their transportation programs for handicapped students and adopted uniform safety standards.

In the early 1990s, Dr. Della-Giustina recognized the signs that violence in the workplace was going to increase. He began working then to define the problem and seek methods of coping with what was to become a burgeoning national dilemma. Presently, his leadership is helping businesses understand potential warning signs of violence and determine ways to protect employees.

His accomplishments and contributions are legion. Dr. Della-Giustina was named a 2001 Hall of Fame award recipient at the National Safety Council's international convention in Atlanta, where he was recognized as an acclaimed leader and pioneer for his innovative contributions and service to the safety, health, and environment industries.

Family

Dr. Della-Giustina's family shares his commitment to safety. His wife Janet holds a Master's degree in safety and environmental management and is a safety specialist in the Safety and Health Extension Service. His son Daniel is a certified safety professional and is vice president and regional loss control manager for the Willis Corporation. His other sons David and John both graduated from the U.S. Military Academy at West Point and hold the rank of army lieutenant colonel. David is director of emergency management at the Madigan Army Medical Center at Fort Lewis, Washington. John is a counter-intelligence officer at Fort Bliss, Texas. His stepson Jacob Hyer is a student at Wheaton College in Illinois.

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1

INTRODUCTION



Technological advancements in the past have led to many changes to the world in which we live. Many of these changes have improved our society and quality of life. Some, however, have had detrimental effects on both humans and the environment. Transportation is no exception. It was not so long ago that people traveled by walking or by animal-powered means. Automobiles came along and made travel significantly faster. Giant tractor-trailers have the ability to move huge amounts of goods in a fraction of the time it once took. The transportation industry, specifically motor fleets, operates more efficiently than ever before and will continue to improve the means and safety of goods distribution.

These advancements are not without risks. Losses from transportation incidents are significant and include death, injury, wage losses,

hiring and training expenses, higher insurance premiums, property damage, and business losses, just to name a few. By far, the greatest cause of accidental death in the U.S. involves motor vehicle incidents. About 50,000 people die and more than 2 million receive disabling injuries each year. The overall death rate is about 22 per 100,000 motor vehicle incidents. Although little attention is focused on the death rate from motor vehicle incidents while on the job, some studies suggest that between 25 and 35% of all job-related deaths involve motor vehicles.

These statistics alone are proof of the incredible need to integrate safety into the management of the motor fleet industry. It not only makes good business sense to have a program in place to manage a motor fleet operation, but it is also a duty to provide safe transportation to the customer and the public as well.

Motor fleets, through their safety directors, are able to focus on both direct and indirect costs associated with their vehicular operations. Losses from motor fleet operations must be recognized as preventable incidents. A motor fleet safety program can do for fleet operations what similar safety and loss control programs do for an organization — that is, employ a competent, well-trained workforce; recognize hazards along with past losses; and take the appropriate action to prevent potential losses from occurring.

The Motor Fleet Industry

The use of motor fleets and bus transportation has increased rapidly during the last four decades. As a matter of fact, trucks transport most of the tonnage moved from one section of the country to another. The trucking industry has enabled all aspects of agriculture to expand their spheres of contact. Recent safety records of buses and trucks have been markedly better than those of previous years based on a number of reasons, such as the certified driver license (CDL) and effective training and educational safety programs for drivers.

Since World War II both the commercial vehicle death rate and the accident rate per 100,000 vehicle miles have dropped greatly,

with driver training being a key reason. How has this great safety record been improved?

To answer this question, we need to look at the Interstate Commerce Commission (ICC) and the Federal Motor Carrier Safety Administration (FMCSA), which have ensured the adoption of uniform safe practices and policies by the motor fleet and bus transit industries. Enterprises today train all new drivers and develop accident reports, with follow-up corrective measures and vehicle inspections as part of a daily program. Safety equipment and devices such as mechanical and electrical signals, side- and rear-marked lights and reflectors, along with hydraulic and air brakes, have been implemented. Well-organized programs in safe driving practices are required, and the hours of driving are defined and limited. Various enterprises hold meetings with drivers to discuss common problems and provide training. Competition among drivers and fleets has often resulted in an efficient motivational program to keep individual records clean. Incentives for best driving record sometimes take the form of promotions, bonuses, and other prizes. The fewer accidents and claims a motor fleet has, the lower its insurance premiums are.

The motor fleet industry has pioneered the development and implementation of traffic safety education programs. These programs have resulted in fleet and bus driver education, driver supervision, efficient terminal safety management, and ultimately improved highway safety.

Transportation of Hazardous Materials

The transportation of hazardous materials and dangerous goods is widespread, with shipments of over 600,000 lb per week of these materials worldwide. Organizations involved with the transportation industry each day include the United Nations, the International Maritime Organization, the International Civil Aviation Organization, the International Air Transportation Association, the International Atomic Energy Agency, and the U.S. Department of Transportation. These organizations regulate the transportation of dangerous goods and hazardous materials. Accountability for properly identifying,

understanding, and confirming the classification are among the shipper's responsibilities.

Under Title 49 Code of Federal Regulations (CFR) Parts 100 to 185 (49 CFR 100–185) are rules and regulations concerning the transport of hazardous materials. In Chapter 14, we will discuss training, compliance, labeling, marking, packaging, classifications documentation, and the importance of certifying a shipment for transportation of hazardous materials via the U.S. highway system.

Rules and regulations established by the U.S. Department of Transportation (DOT) regarding the transportation of these materials are administered by the DOT Research and Special Programs Administration. All motor carrier safety programs must comply with the DOT regulations. The DOT sets and enforces these motor carrier transportation rules because it focuses on transportation activities and highway safety. (For more information, see Chapter 14, “Shipping and Storage of Hazardous Materials.”)

Transportation Security

In a changing world, work issues and transportation security concerns surround the growing number of vehicle shipments. These issues can affect the types and nature of risks present in the workplace, highways, and trucking terminals. All types of goods, especially motor vehicles transported to such points as the Newport News Marine Terminal, San Francisco, and other locations, will be loaded onto car carriers and later shipped throughout the U.S. In 2003, the Newport News Marine Terminal was expected to transport roughly 43,000 cars to various places between New York and Florida. These thousands of cars, each potentially carrying a bomb, are increasingly observed by national security specialists as a key focus in the battle against terrorism.

In efforts to prevent dirty bombs from coming to the U.S. by ship, national security agency leaders and port officials must focus primarily on inspecting motor vehicles before they are loaded onto car carriers. A bomb can potentially be hidden inside a trunk and activated either inside or outside the shipping terminal.

The Federal Transportation Security Administration acknowledges that, while its focus at the outset has indeed been on packages and containers, it now sees noncontainerized cargo as a security concern. Stopping bombs from entering the U.S. is also a new concern for Distribution Auto Services, which runs many car importing centers. During the past several years, some workers have attempted to steal cars while driving them off the ships, intending to crash them through terminal fences. However, preventing bombs is the main goal of this group since September 11, 2001. Its terminals will soon contain scanners mounted at heights of 15 feet to detect radioactive explosives; 15 feet above the ground surface is considered the optimal height for scanner effectiveness.

All motor fleet systems will be affected, and quality transportation security systems must be installed in the fight against terrorism. To guarantee these systems, we must understand and be familiar with all elements in the transportation security networks. We must analyze and respond to incoming threats.

To ensure viable transportation security programs, we must be prepared, knowledgeable, and familiar with security tools. Employing a wide variety of network devices and services is one of the key defense tactics in the security “toolkit.” In addition, establishing a security policy is important to addressing the risk. In the industrial arena, plants are likely to base security service judgments directly on vulnerability factors. For example, plants whose products are very small or valuable (such as jewelry, watches, and calculators) have a high risk factor for theft. In contrast, a home furnace/air-conditioning manufacturing plant might not be as concerned about theft because their products are so large. (See Chapters 15 and 16, which focus on security information.)

Key Elements of This Text

This particular book deals with the development of motor fleet transportation safety and identifies problems that are inherent among security personnel. Some problems that will be discussed are accident prevention, driver selection, driver training instruction, special considerations for a small fleet, school transportation, shipping and

storage of hazardous materials, motor fleet accident data, and motor vehicle inspections. Other key elements of the text will suggest methods that readers can use to combat these common problems. Although many things can be done to reduce these transportation management and security problems, the primary goal of this text is to increase readers' understanding of transportation safety and to suggest useful sources of information that will lay the foundation for their own motor fleet programs.

Management personnel will consider the human aspect of loss and suffering, and they will understand motor fleet safety and security in terms of dollars and cents. Investigation into the basis of losses may reveal sources that can be translated into monetary value. This will be discussed in more detail in the next chapter.

2

ELEMENTS OF A FLEET SAFETY PROGRAM



The Purpose of a Safety Program

A fleet safety program is designed to systematically reduce the number of on- and off-the-job work-related injuries. It should address management standards and policies; the recording of incidents and injuries; program results; employee selection, hiring, and training; and reward programs.

Main Elements of a Fleet Safety Program

A fleet safety program consists of 11 main elements:¹

1. Management leadership
2. A written safety policy
3. Safety responsibility assignments
4. Accident reports
5. Driver selection
6. Vehicle safety
7. Employee safety
8. Off-the-job safety
9. Safety supervision
10. Interest sustaining activities
11. Integration of safety with the job

We will look at each element in further detail.

Management Leadership

The success of any safety program depends on the support of top management. Communication, coordination, and cooperation among the organizations responsible for the roadway, human, and vehicle safety elements are a must. Management must establish short- and long-term highway safety goals to identify and address safety problems. Collecting, analyzing, and sharing highway safety data are key to ensuring that the best possible decisions are made.

When implementing a fleet safety program, management must take certain steps to ensure clarity and purpose.² The first step is to organize company accident reports to identify problems. This should include direct costs as well as workers' compensation, insurance, and medical costs. Once this information is organized, it should be used to develop a clear and precise company safety policy. After the policy is developed, the safety program is then set up and administered by a designated safety professional. The safety program should

be that employee's sole responsibility. It is also important that all levels of management understand their roles in the safety program. It is every supervisor's responsibility to work with the safety professional to prevent vehicle accidents and employee injuries.

Each safety manager must budget funds for all safety equipment necessary to every department of their organization. Funds should also be available for the training of supervisors and hourly employees, and for holding safety meetings on a regular basis. It is also important to have resources available for accident investigations, inspections, and audits. The most important budget consideration is ensuring that the accurate cost of all incidents is charged to the correct department or division.

A Written Safety Policy

A company's outlook on safety should be communicated to employees, supervisors, and upper management through a written safety policy. This policy is useful in enforcing safety throughout the company. Formats of written policies will vary, but they should be clear and to the point. Sometimes a company's safety policy will include a motto or slogan. This motto is usually printed on various objects and displayed throughout the organization; every employee should be familiar with it.

Safety Responsibility Assignments

As mentioned earlier, upper management is ultimately responsible for the safety performance of its motor fleet. It is the responsibility of upper management to designate safety authority to managers and supervisors, who communicate the responsibility down the chain to the drivers. This authority should be delegated to a full- or part-time safety director.

The designated safety director is responsible for directing accident prevention activities throughout line management. Some of his or her duties include organizing and administering an effective safety program; identifying existing hazards and developing plans to eliminate them; keeping records of fleet safety performance; and keeping management informed of program success. The ideal fleet safety

director is knowledgeable of the industry, committed to safety, and a good administrator. In a large fleet, this should be a full-time position. If a company has a small motor fleet, this position could be a part-time responsibility.

Managers and supervisors must be held accountable for the safety performance of their departments. To enforce accountability, safety performance should be a performance goal or objective that is a factor in salary raises or job promotions of all managers and supervisors.

Accident Reports

An accident prevention program should have a logical approach to gathering and applying accident information. This information is vital in managing claims. The following information is necessary to maintain complete accident investigation records:¹

- Date of the accident
- Driver's name
- Driver's work location
- Vehicle number
- Accident type
- Accident location
- Objects, persons, or vehicles involved
- Estimated cost information
- Reportable or nonreportable
- Reports furnished

Driver Selection

When companies select drivers for their motor fleets, it is important that they perform thorough background checks of applicants' driving records.³ This gives them an idea of the risks or potential for loss if they hire these drivers. Selecting good drivers is the key to a

program's success. Often, new drivers are experienced, but they may have developed poor and potentially unsafe driving habits.

Vehicle Safety

Every company vehicle should be kept in safe condition and equipped with the proper registration, paperwork, and emergency equipment.³ There should be customary pretrip and posttrip inspections, with clear procedures for reporting unsafe conditions. Procedures should also be established for all conceivable emergencies.

Employee Safety

A fleet safety program must have clear policies and procedures to prevent accidents and ensure employee safety. All employees should have their own roles specified in the safety program. Systematic accident reporting should be in place to prevent reoccurrence. All employees should be trained to follow safe working procedures and practices.

The organization must be designed to prevent accidents from occurring on its property. Buildings should have adequate lighting, climate control, and a good ventilation system. Housekeeping practices must be superior. Not only will this help reduce injuries and illnesses, but it will also create an organizational culture that tells employees that management cares about their safety.

Off-the-Job Safety

It is management's responsibility to stress the importance of working safely off the job. Short safety talks can address the issue of safety precautions while working at home, for example, when mowing the lawn or using a ladder. Special rewards or incentives could be offered for safe behaviors off the job.

Safety Supervision

Employees' immediate supervisors or managers are the most important people in a safety program. They are the primary people who

can motivate employees and set good examples for them to follow. Good safety managers must have support from top management to be successful.⁴

It is also the responsibility of supervisors or managers to identify and correct at-risk behaviors and practices. Safety standards must be met, and unsafe acts or conditions must be identified and corrected.⁵ Management's failure to deal with these problems can eventually result in company losses.⁶

Interest Sustaining Activities

A successful safety program keeps employees' attention. Rewards and recognition are the keys to doing this. There are several types of award and recognition activities. Safety talks or meetings, posters, and bulletins provide information and continuously remind employees of the importance of working safely. Recognizing accident-free performance can give employees a goal for which to aim. Banquets, special events, and meetings involving management show an interest in group and individual safety efforts.

Integration of Safety with the Job

Safety should be integrated into every job — not just management jobs.⁴ It should be stressed that the most effective way to do a job is the safe way. This ought to be implied during the training process and carried out through an employee's entire career with the organization.

Duties of Fleet Safety Directors

Investigation

Fleet safety directors are directly involved in all accident investigations. On a continual basis, they are responsible for examining company accident reports, existing work practices, facilities, and equipment to identify problem areas.¹ It is important for fleet safety directors to analyze past accident information to determine frequently occurring incidents and key problem areas. They should also visit all assigned facilities on a regular basis. Not only does this

show interest and concern, it is also beneficial in observing work procedures, practices, and supervisor involvement.⁶

Planning

Planning involves the interpretation of accident data to develop a plan of action. This plan of action is designed to improve fleet safety performance. It may call for a change in current work practices and procedures, as well as training and supervision. It is important that this plan of action is flexible and open for management comments and suggestions.¹ Revisions should be permitted and even expected.

Implementing the Program

Once the plan of action has been finalized, the fleet safety director must sell it to management to get its commitment to change.¹ These changes should be presented in a professional manner. Costs and benefits of the change should be identified. The fleet safety director should emphasize the impact the changes will have on direct and indirect accident costs, insurance costs, and employee production.²

Safety Training

Fleet safety directors are responsible for reviewing job training, required qualifications, and work procedures. The responsibility for conducting the training belongs to the safety supervisor or manager.¹ Fleet safety directors approve and support the training process. In some cases, they may be involved in the actual training.

Program Follow-Up

Continual follow-up should include the following:⁵

- Monthly reports or memos of absenteeism
- Compliance issues
- Safety inspection results
- Incident report data

Elements of a Fleet Accident Prevention Program

Why Gather Accident Information?

Gathering accident information is essential in identifying and eliminating root causes of accidents. It is also pertinent to a company for the following reasons: to obtain the best defense in court, to place the responsibility where it belongs, and to promote good labor relations.¹

The Accident Reporting Form

This form is the basic tool in an accident investigation. The accident reporting form identifies vital information necessary to analyze the accident.³ There are several types of accident reporting forms. The best type is one that provides accurate information and is easy to complete. Any form can be modified to fit the needs of any organization. Once the report is complete, the person reading it should be able to visualize exactly what has happened.¹

Application of Accident Information

Accident information can be used to prevent future accidents of a similar nature. Accident reports should be prepared for management on a monthly basis.⁷ Company incident rates, frequent accident locations, accident cost per mile, and hours of continual driving per accident should be included in this report.¹

Accident data may also be useful in the selection of drivers. It is important to conduct background driving record checks on all potential employees. Accident data can also be useful in the training process.² It can uncover areas in which employees may need refresher training. It may also help identify areas in which drivers were never trained.

Safety talks or meetings are also good ways of using accident data. In this manner, accident prevention efforts can be targeted toward current and frequently occurring problem areas. In addition to all of these reasons, accident data is extremely important in rewarding and recognizing safe performance.

Study Questions

1. What is the purpose of a fleet safety program?
2. What are the 11 main elements of a fleet safety program?
3. List five pieces of necessary information in accident reporting.
4. (True or False) It is not necessary to do background checks of employees' driving records.
5. (True or False) The fleet safety director may be directly involved in training.

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ACCIDENT PREVENTION



According to the Bureau of Labor Statistics (BLS), U.S. Department of Labor, 5.7 million injuries and illnesses were reported in private industry workplaces during 2000. This resulted in a rate of 6.1 cases per 100 equivalent full-time employees overall; goods-producing industries had a rate of 8.6 and service-producing industries a rate of 5.1 cases per 100 workers.¹ Of the total reported nonfatal occupational injuries and illnesses, 5.3 cases per 100 employees consisted of injuries. Occupational injuries and illnesses affect entire organizations through increased costs, declines in production, and low morale, and can threaten the future viability of companies. Therefore, it is essential that organizations respond by implementing safety programs focused on accident prevention.

Reasons for Accident Prevention

Moral Obligation

Employers have a moral obligation to prevent accidents. Employees are the lifelines of any organization. Their safety and health play crucial roles in an organization's ability to create products and services for its customers. When employees' safety and health are in jeopardy or are compromised through a lack of proper accident prevention, the organization itself becomes vulnerable.

Competition among motor fleet organizations can be fierce. An effectively managed accident prevention program can give an organization a competitive edge and help it to maintain or even increase its market share. As will be discussed later, reducing accidents can substantially affect the bottom line or profit margin. The cost savings from lower insurance premiums and workers' compensation rates, along with increased productivity, can be reinvested into the organization.

An organization's safety culture can also help to attract better qualified employees. Competition for the best qualified candidates has extended past salary requirements and into benefits and organizational culture. Job seekers in today's market have begun to focus more attention on nonmonetary attributes of potential jobs. For instance, benefits packages have become valuable compensation tools to attract and retain employees. An organization's safety culture can accomplish the same result. A strong focus and commitment to safety demonstrates that a company values its employees.

Legal Obligation

Employers, according to the Occupational Safety and Health Act of 1970, Section 5(a)(1), "shall furnish to each of [their] employees employment and a place of employment which are free from recognized hazards that cause, or are likely to cause, death or serious physical harm."² More commonly referred to as the General Duty Clause, this statement provides a legally enforceable standard for protecting workers. If found in violation of the General Duty Clause, employers may be cited and receive substantial monetary penalties.

Financial Obligation

Financial obligations are another reason organizations need to implement effective accident prevention programs. An organization has a financial responsibility to its stockholders to do whatever is within its means to make the business profitable. An effective safety program — one that focuses on proactive accident prevention — can save the company money. The profit is recognized as savings from various expenditures, such as lower insurance premiums, lower workers' compensation rates, a decrease in equipment repairs, and other indirect costs.

Another financial obligation is to protect the organization from litigation resulting from accident injuries and fatalities. Liability insurance is a necessity in almost every form of business and is especially important for those companies with motor fleets. Accident victims and their families, as well as injured employees and their families, can file lawsuits. Therefore, accidents involving any injuries or fatalities threaten the viability of the organization.

Main Areas of Fleet Accidents

Vehicle Accidents

Motor vehicles have become the primary mode of transportation for people and products in the U.S. Each year millions of drivers take to the roadways for business and leisure. In 1999, the National Highway Traffic Safety Administration (NHTSA) reported that drivers traveled 2,691,335 vehicle miles.³ It is not surprising, therefore, that according to the NHTSA Fatality Analysis Reporting System (FARS) there were an estimated 6,394,000 police-reported traffic crashes in 2000.⁴

Motor vehicle collisions are the number one cause of preventable deaths and injuries — which is not unexpected given the millions of miles traveled each year. In 2000, although the overall fatality rate was down to an historic low of 1.5 per 100 million miles traveled, 41,821 people were killed and 3,189,000 were injured in motor vehicle accidents.⁴ Despite popular perceptions, the majority of accidents occur in industries that rely on a mobile sales force or local servicing or deliveries rather than long-haul trucking. However,

motor fleet organizations can expect 20% of their drivers to be involved in an annual vehicle accident. One in three will involve a fatality.

Vehicle accidents involving large trucks are of serious concern for motor fleet safety managers. In 2000, NHTSA data reported that 457,000 large trucks (trucks with a gross vehicle weight rating greater than 26,000 pounds) were involved in traffic accidents.⁴ Moreover, accidents involving large trucks accounted for 11% of all traffic fatalities, or 4,719 deaths. Medium trucks (those with a gross vehicle weight rating of 10,001 to 26,000 pounds) accounted for 562 deaths in 2000, according to NHTSA data. Large and medium truck accidents resulted in over 140,000 injuries. During 2001 a total of 5,082 people were killed and 131,000 were injured in crashes involving large trucks.

A 2002 research study prepared for the AAA Foundation for Traffic Safety found that automobile drivers contribute more to crashes involving large trucks than do commercial vehicle drivers. Some 75% of all driver errors were caused by automobile drivers, compared to 25% for truck drivers.⁴

Employee Injury Accidents

In 2000, over 5.7 million employee injuries and illnesses were reported, with 2.8 million requiring time away from work beyond the day of the incident, restricted duties at work, or both, according to the BLS.⁵ Also, injuries and illnesses requiring only restricted work remained steady from previous years at approximately 1 million. Figure 3.1, based on data from the BLS, shows that of the ten occupations accounting for approximately one third of all injuries and illnesses requiring time away from work from 1993 to 1999, truck drivers have reported the highest numbers since 1993.

The BLS data revealed that injuries and illnesses resulting in time away from work or restricted activity were caused by various reasons. Specifically, over 40% of all cases reported between 1993 and 1999 involved sprains, strains, or tears, most often of the back.⁵ According to the BLS, overexertion while maneuvering objects and contact with objects and equipment were contributing factors leading to disabling

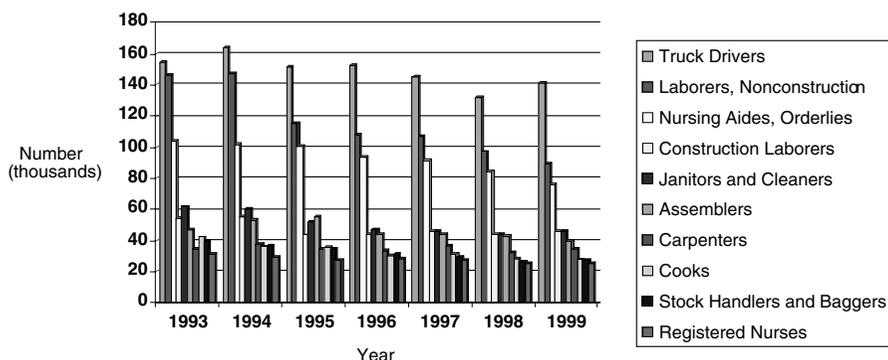


Figure 3.1 Occupational injuries and illnesses with time away from work. (From the Bureau of Labor Statistics, 1999.)

events or exposure in 16 to 40% of cases reported overall. Other common reported causes for lost work time included bruises and contusions, cuts and lacerations, and fractures.

Off-the-Job Accidents

Most organizations do not consider the impact of off-the-job accidents because there are no reporting requirements associated with them. However, this type of accident has a substantial effect on the safety of employees and is a source of significant costs. John C. Myre states that 60% of accidents that keep employees off the job occur away from work.⁶ The National Safety Council reported that in 1995 over 88,000 people died from off-the-job injuries, with almost one half as a result of motor vehicle accidents. It is estimated that the lifetime odds of being killed in an accident off the job is about 1 in 50.⁶

The chances of a person being temporarily or permanently disabled from an off-the-job accident are far greater than being killed from one. It is estimated that each year over 15 million people suffer some form of temporary or permanent disabling injuries while away from the job. In some instances, workers injured off the job report to work later and sustain additional injuries from performing work duties. Such cases can have a dramatic effect on

workers' compensation rates and other costs associated with occupational injuries and illnesses.

Expense of Injuries and Illnesses

Injuries and illnesses resulting from accidents are extremely costly, and many employers are unaware of what their human and financial costs actually are. Accidents are more expensive than employers realize. Both direct and indirect components must be considered in the total costs for injuries and illnesses, which is difficult to do, given that countless hidden costs are involved. In 1993 the economic cost for injuries alone from accidents was estimated at more than \$110 billion.⁴ According to the *Journal of Environmental Health*, work injury costs in 1994 rose to \$121 billion in medical care, lost productivity, and wages.⁷

The Pyramid

The total costs of accidents are often depicted as a pyramid, as shown in Figure 3.2. The pyramid depicts the direct costs to reveal obvious costs, as well as workers' compensation claims, medical costs, and indemnity payments. Indirect costs, however, are less obvious if realized at all. Such costs include schedule delays, added administrative time, lower morale, increased absenteeism, and poorer customer relations. Studies have shown that the ratio of indirect to direct costs varies widely from as high as 20:1 to as

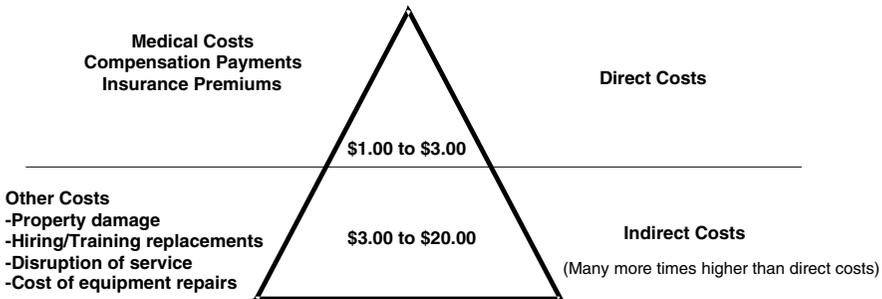


Figure 3.2 Indirect and direct costs of accidents.

low as 1:1.⁸ It is apparent from the data that indirect costs constitute the bulk of the total cost.

Cost of Off-the-Job Injuries

Off-the-job accident costs often exceed on-the-job accident costs in many organizations. In addition, some workers' compensation claims may actually begin as minor off-the-job injuries. According to Myre, each year American companies pay over \$400 per employee to cover expenses such as health care costs resulting from these types of injuries.⁶ Based on this cost estimate, an employer with 2,000 employees and a 10% profit margin needs \$8 million in revenue just to pay for off-the-job accidents. Other costs associated with off-the-job accidents include absenteeism, lower production, and replacement worker costs. Historically, the focus has been on finding the least expensive medical benefit plans rather than ensuring preventive safety measures.

Absenteeism

Every year, absenteeism of American workers costs companies thousands of dollars. The total costs can range anywhere from 12 to 18% of a company's payroll, based on studies by national employee benefits consultants.⁹ According to *HR Magazine*, absenteeism has increased 14.1% since 1992 and costs employers as much as \$668 per employee.¹⁰

Another aspect of absenteeism that safety managers must consider is lost workdays, whether they result from on- or off-the-job injuries and illnesses. Since 1993, truck drivers, more than any other worker, have experienced the highest number of injuries and illnesses requiring time away from work.¹¹ As mentioned earlier, of the top ten occupations accounting for nearly one third of all injuries and illnesses requiring time away from work, truck drivers were number one. Moreover, the median number of lost workdays for all cases in 1999 was 6 days, with one fourth of these cases resulting in 21 or more days away from work.⁵

Lower Production

Another cost associated with off-the-job accidents is lower production through the loss of skilled labor. Although not easy to attribute directly to off-the-job injuries and illnesses, loss in production is a by-product of lost labor. Unplanned absences can delay or stop production for extended periods of time until replacement workers can be hired. Naturally, the exact loss in production depends on the specific job functions that the injured or ill employee performs.

Replacement Employees

Most employers do not realize that hiring replacements for employees who are injured or ill for extended time periods can be very costly. Many costs are associated with hiring replacement or temporary employees. Findings indicate that such indirect costs can be as high as 7% of payroll costs.¹²

Personnel or administrative costs constitute a large portion of the costs related to replacement employees. These expenses include advertisement of the position or contact costs for a temporary placement agency, as well as the costs of personnel resources used for screening, interviewing, and other human resources functions necessary in the hiring process.

Some employers also offer limited benefits to replacement or temporary employees. Legally required benefits typically account for 9 to 12% of total payroll, with workers' compensation alone accounting for 1.5 to 2.5%.¹³ With indirect costs such as overtime pay for other employees filling in, hiring temporary employees, or using outside contractors costing up to 7% of payroll, accident prevention can save organizations money.

Costs of Vehicle Accidents

As the leading cause of employee fatalities and a contributor to serious injuries, motor fleet vehicle accidents are costly. According to *National Highway Traffic Safety Facts 2000*, motor vehicle crashes cost more than \$150.5 billion. The average cost of a fleet accident, including direct and indirect costs, is \$14,000, as shown

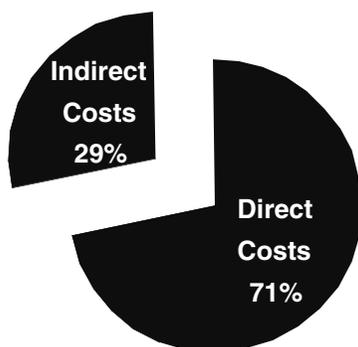


Figure 3.3 Percentage of indirect and direct costs.

in Figure 3.3. Consequently, economic reports estimate that organizations must produce \$530 billion in profit to offset the costs of motor vehicle accidents and injuries.

Given that motor vehicle accidents cause numerous injuries and fatalities, it is essential that companies examine the various costs associated with them. The *1999 Annual Statistical Bulletin* by the National Council on Compensation Insurance Inc. (NCCI) reported that the national average workers' compensation cost per workplace fatality was \$167,847.¹³ Other studies have shown that the total costs of such fatalities, including lost lifetime earnings and productivity as well as other direct and indirect costs, was \$2.8 million per worker killed on the job.

Injuries and illnesses as a result of motor vehicle accidents are also very costly. The NCCI reported that the average costs involving permanent total disability for workers' compensation was \$173,660, while the average costs for permanent partial disability was \$21,093.¹³

Conclusion

In 2000, the National Center for Statistics and Analysis reported that an average of 115 people died each day, 1 every 13 minutes, in motor vehicle accidents.⁴ The total deaths rose above 41,000, while the total injuries and illnesses requiring time away from work for truck drivers

was reported at over 141,000. It is clear that American businesses are risking their competitive advantages, market share, and future abilities to remain viable by ignoring the impact of accidents resulting in deaths, injuries, and illnesses of their employees.

Reports indicate that an effective safety and health program focused on accident prevention not only reduces accidents but also reduces costs. Today's safety managers must go beyond the status quo and into accident prevention mode. This includes focusing attention and training on off-the-job injuries and illnesses and reinventing a safety culture that is second nature to all employees. Only when this level of safety consciousness is achieved will organizations be able to reap the benefits associated with it.

Study Questions

The following statements require True or False responses:

1. Organizations have no moral obligations to prevent accidents.
2. Vehicle accidents are the leading cause of fatalities in the U.S.
3. Off-the-job accidents are a source of high expense for any organization.
4. Some 5.7 million injuries and illnesses were reported in 2000.
5. Since 1993, truck drivers have experienced more lost work-days than any other American employee.
6. The average cost of a vehicle accident is approximately \$20,000.
7. The main types of fleet accidents are vehicle accidents, employee injury accidents, and off-the-job accidents.
8. Production is affected by absenteeism.
9. In 2000, over 41,000 people died in motor vehicle accidents.
10. Accident prevention is a way to reduce costs.

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4

SPECIAL CONSIDERATIONS OF A SMALL FLEET



In a small fleet organization, the manager or owner may be responsible for planning and carrying out the fleet safety program. Even if the fleet consists of only a couple of cars, the responsibility remains to train employees in safe driving practices and techniques. Yet, the manager or owner may not know what goes into a fleet safety program. It is essential that the person in charge receive this information and implement it to the best of his or her ability because lives depend on it.

In a small fleet organization, a vehicle operator is just as responsible for controlling and preventing accidents as the manager of a large fleet. Vehicle accidents can be especially detrimental to a small fleet because they can be costly. In an effort to prevent accidents, small fleet managers must implement each part of a successful motor fleet safety program.

Fleet Safety Program Elements

The four elements of a fleet safety program are as follows:¹

1. Setting management standards and policies
2. Recording accidents, injuries, and fleet safety program results
3. Selecting, training, and supervising employees
4. Encouraging and rewarding improved performance through awards, recognition, and the like

Motor fleets have an obligation to the public, their employees, and the community. New technologies and techniques encouraging drivers to perform safely must be applied in both small and large fleets. This will create a positive public image for a company, as well as better equip drivers to handle any adverse situation.

Main Interests for Fleet Owners or Managers

Fleet owners or managers must commit to the safety of their fleets. This means conveying the safety message repeatedly and showing employees that they are committed to fleet safety. Setting up policies and procedures is just the start; this must be accompanied by the constant monitoring and tracking of performance. This essential step will tell how current safety practices compare with past ones, allowing managers to rate fleet safety performance. Monitoring is also important when rating drivers. If clear and accurate records are kept, managers can let drivers know

exactly what they need to improve, and employees can be rewarded for doing an exceptional job.

Employees must know that anything less than total commitment to fleet safety is not acceptable. This will foster a positive safety mindset of which everyone in the company will be aware.

Considerations in Employee Selection

Employees can be expected to continue doing what they have done in the past. This is why employee selection is vital to the future success of a company. A company should hire individuals who have proven that they can be valuable assets. This allows the company to enjoy a greater profit margin and therefore have a better position in the marketplace.

According to the *Motor Fleet Safety Manual*, a good driver must:²

1. Avoid accidents.
2. Follow traffic regulations.
3. Perform pre- and posttrip inspections.
4. Avoid abrupt starts and stops.
5. Avoid schedule delays.
6. Avoid irritating the public.
7. Perform the nondriving parts of the job.
8. Find satisfaction in the job.
9. Get along with others.
10. Adapt to meet existing conditions.

Knowing what to look for is half of the battle. If you select employees who will increase your company's profits, that could mean the difference between expanding or just surviving, especially for a small fleet.

Screening

The screening of employees starts before the interview. Employers may want to screen candidates before selecting people to call in for actual interviews. Screening can consist of a written test to identify tendencies that are either beneficial or negative in someone desiring a career operating motor vehicles. Another factor to consider is age. Studies have proven that drivers over 25 and up to 65 are as efficient as younger drivers but are safer workers, are less prone to job-hop, and have lower rates of tardiness and absenteeism. Employers should also set minimum height and weight limitations based on the physical constraints of the driving compartment of the vehicle to be operated. There also appears to be a correlation between standardized, written, and behind-the-wheel test scores and satisfactory driving performance, as well as a direct correlation between satisfactory performance and the lifestyle of a potential employee.

Background Information Check

Each potential employee must complete an application for employment furnished by the motor carrier. According to 49 CFR 391.21, the application must contain the following information:³

1. The name and address of the employing motor carrier
2. The applicant's name, address, date of birth, and social security number
3. Addresses where the applicant has resided during the preceding three years
4. The date the application is submitted
5. All the information involving unexpired commercial driver's licenses issued to the applicant
6. The nature and extent of the applicant's experience in the operation of motor vehicles

7. A list of all motor vehicle accidents in which the applicant was involved during the three years preceding the date the application is submitted
8. A list of all violations of motor vehicle laws or ordinances (other than parking) of which the applicant was convicted during the three years preceding the date the application is submitted
9. A statement setting forth in detail the facts and circumstances of any denial, revocation, or suspension of any license, permit, or privilege to operate a motor vehicle or a statement that such activity has not occurred
10. A list of the names and addresses of the applicant's employers during the three years preceding the date the application is submitted
11. (For drivers applying to operate a commercial motor vehicle): Names and addresses of the applicant's employers during the ten years preceding the date the application is submitted
12. The applicant's signature and the date when signed

Physical Examination

A complete physical and psychological examination should be administered by a physician to ensure that applicants are in good physical and mental health. Hiring healthy employees translates to huge medical savings for the enterprise.

Testing

Companies should administer tests to determine behind-the-wheel attitudes and abilities. These may include, but are not limited to, traffic and driving knowledge tests, driving skill tests, and attitude tests. These tests may suggest how well potential employees would perform the actual job.

The Driver Selection Process

Small motor fleet companies should incorporate complete applications, screening, background checks, physical examinations, and testing into the driver selection process. There is less room for error in a small fleet than in larger ones. Every effort should be made to obtain good drivers who hold safety as a number one priority. The steps just outlined should help small fleet managers select highly qualified individuals to operate their motor vehicles.

Philosophy of a Small Fleet Manager

Small fleet managers wear many hats. They should adopt the attitude that some training is better than none. Driver training, even in small fleets, can result in huge cost savings for the company. Fleet managers must train drivers on company procedures, inspections, defensive driving, and the use of seat belts. Each of these is vital to a smooth operation. If drivers do not know company procedures, how will they know how to react properly in emergency situations? Training drivers not only helps prevent incidents but also limits the extent of incidents that do take place.

Managers of small fleets may want to consider using outside agencies to train employees who drive motor vehicles. Safety managers may have skills unique to the operation, but may not have those skills needed to train employees in the proper use of motor vehicles. In such cases, contracting with an outside agency may be beneficial to a company. An outside agency may have the skills, materials, and knowledge to train all employees without affecting the process of the business. This approach is often favorable to management and can strengthen the knowledge of motor vehicle drivers.

Initial Training Briefs for New Employees

Certain aspects of driving motor vehicles make it imperative that a company train employees driving these vehicles, especially when

employees are new. Safety managers should never assume that new employees know the information that will keep them safe while operating a motor vehicle. It is the managers' job to train these employees to keep them, and others, safe. In this section, we will look at some topics for training new employees.

Operating the Vehicle

New and transferred employees should always be trained in the safe and proper operation of the vehicles they are expected to drive. Each vehicle is unique, and each time employees change vehicles, they must be trained in the safe and proper operation of the new vehicle.

Inspecting the Vehicle Before Each Trip

Employees should be trained on how to complete a pretrip inspection. This is required by law for safety purposes. Tires, wheels, rims, lugs/nuts, steering, suspension system, exhaust system, and emergency equipment should all be inspected.⁴ This inspection ensures that the vehicle is in proper working condition before it is driven off the lot.

Reporting Vehicle Defects

Training on the proper procedure used to report vehicle defects is vital to the success of a fleet safety and maintenance program. A vehicle that has defects needs to be taken out of service temporarily until maintenance personnel can fix the problem and restore the vehicle to proper working condition. By reporting vehicle defects in a timely manner, employees help ensure that vehicles are repaired and back on the road without major delays.

Filling Out Accident Reports

Proper training on the correct use and proper way to fill out accident reports is also critical. Employees should not be expected to know how to fill out these forms without training. Information included on the form should be as clear, concise,

and correct as possible. Detail is very important, and all items should be completed. The accident report may be made available in court if injured parties file a lawsuit; therefore, the information must be correct and complete.

Using Seat Belts

The use of seat belts has been proven to decrease significantly the number and severity of injuries sustained in vehicle accidents. This simple fact should be enough reason to mandate seat belt use for employees whose main job is operating motor vehicles. In addition, most states have laws requiring drivers and passengers to wear seat belts. By promoting seat belt use, a company presents a positive image to the public while protecting the lives of its employees.

Driving Defensively

Defensive driving means the driver must have both the desire and the ability to control accident-producing situations. Defensive drivers accept responsibility for avoiding accidents and have a positive attitude that they can prevent them. Along with a good attitude, the defensive driver must demonstrate alertness, foresight, knowledge, judgment, and skill. All of these qualities can be developed in a training program and improved on through experience.

A direct correlation has been found between completion of a defensive driving course and reduced accident frequency. Developing and implementing a defensive driving course not only leads to reduced accidents but also looks good to the public and helps drivers understand the importance and usefulness of the material.

Components of a Driver Safety Program

The components of a driver safety program should encompass what drivers need to do their jobs well. Instructors should use the following categories to rank focal points of the program:²

1. *Vital* subject matter is absolutely essential to success on the job.
2. *Important* subject matter provides a basis for understanding the job.
3. *Helpful* material relates to the job and gives a broader base of understanding on which to build performance.
4. *Incidental* material is nice to know but not necessary for job performance.

Initial Training

Initial training time should be adequate to bring the knowledge and skills of the new driver up to the level needed to perform the job safely and properly. Money, time, and effort paid out in training costs will be offset by fewer accidents, lower maintenance costs, less absenteeism, a lower turnover rate, reduced supervisory burden, and improved public relations.

In-Service Training

Refresher training should be given annually or as needed. This should consist of classroom instruction, where either initial training material is reviewed or updated material is presented.⁵

Remedial Training

Remedial training is designed for drivers who have had a certain number of accidents. Each remedial course should focus on the types of accidents the repeaters have had and should then incorporate discussion into the curriculum. A decrease in the number of accident repeaters has been a benefit of remedial training.

Ongoing Training

Education that exposes drivers to safety information and ideas should be incorporated on an ongoing basis. Some examples are safety posters, dash cards, bulletin boards, safety booklets,

and driver letters. These items serve as constant reminders to act safely every day.

Ways in Which Vehicle Conditions Can Be Controlled

Safety and maintenance departments share the same goal: zero defects. The departments must work together to repair damaged vehicles prior to their release. It is vital to the success of the company that the safety and maintenance departments create conditions that allow repairs that make vehicles safe. This means working together for the best interest of the company.

Periodic Vehicle Inspections

These are annual inspections of a vehicle conducted by a qualified inspector. The inspection form should include the inspector's name, motor carrier, date of inspection, the vehicle inspected, the components inspected, and their conditions. These records must be kept in the vehicle.

Pretrip Inspection

Before drivers leave the lot, they should conduct a pretrip inspection. The DOT requires that the components be checked and logged each time a vehicle leaves the lot. Some equipment included in a pretrip inspection are tires, wheels, rims, lugs/nuts, steering, suspension system, exhaust system, and emergency equipment. This inspection may take only 10 minutes, but it will give the driver peace of mind knowing that the vehicle is in good working order.

Posttrip Inspection

At the end of the workday, each driver is required to do a posttrip inspection. This step ensures the safety of the next driver. Both the pre- and posttrip inspections are similar, but the posttrip inspection must contain a statement that there were no deficiencies or an explanation of any deficiency found. The driver must also sign the report. If any deficiencies were detected, the

mechanic and driver must sign off to indicate that they are satisfied with the repairs.

Vehicle inspections are tools used to eliminate unsafe vehicles from the road. An unsafe vehicle should never be permitted to leave the lot. This is the ultimate job of the safety manager: to ensure safe working conditions for employees. At times when productivity and the bottom line might encourage the operation of unsafe vehicles to save money, it is the job of the safety manager to step in and *not* permit this to occur. It takes the entire workforce committed to safety to do things in a way that will not be detrimental to employees or production.

Management's Role in a Successful Safety Program

Management should never be satisfied with knowing just enough to get by. Managers need to take advantage of available resources to further educate themselves as well as employees. The Internet is a great source of information, especially Web sites for government agencies such as the Federal Motor Carrier Administration (FMCA), Federal Highway Administration (FHWA), and Occupational Safety and Health Administration (OSHA), as well as the American Trucking Association (ATA). The information found on these Web sites is current and touches on almost any topic relating to motor fleet safety. In addition, many journals and books dedicated to fleet safety are available. These may feature studies on motor vehicles and can provide valuable insight into potential problems.

Management should take the time to participate actively in the National Safety Council (NSC), local safety councils, and various trade associations. These groups provide information on all aspects of safety and will help managers and owners with questions relating to safety. These groups also provide current information that is industry or production specific and may give further insight into any problems.

Small fleet managers should always set their goals high. In fact, small fleet managers should set their performance to match the performance of a large vehicle fleet with a full-time safety

staff. The main objective is to keep the public and employees free from vehicle incidents. Perfection is always the goal.

Study Questions

1. List the four main fleet safety program elements.
2. (True or False) Research shows that drivers over age 25 and up to 65 are as efficient as younger drivers and are safer employees.
3. Name four items that should be covered in initial training briefs for new employees.
4. Which categories should instructors consider when they are ranking topics on which to focus in a driver safety program?
5. What three inspections are required to be performed on a motor fleet vehicle?

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DRIVER SELECTION



Predicting Safe Driver Qualities

Predicting safe driving ability is not an exact science; there is no magic formula for identifying the perfect driver. You should include this difficult and important process in your motor fleet safety program. Specific programs need to be developed and initiated so that future employees can be screened; that way, your company will hire only the best, most qualified drivers, as well as the *safest* drivers available. Look at the job you are hiring for and decide which qualities you desire in an employee; then rate the importance of each of these qualities for the performance

of the job's tasks. For example, here is a list of job qualities that you could rate:¹

- Education
- Experience
- Technical training
- Physical or visual demand
- Mental demand
- Responsibility for vehicle
- Responsibility for safety of cargo or passengers
- Responsibility for safety of pedestrians and other motorists
- Contacts with customers
- Responsibility for company funds
- Driving and working conditions
- Awareness of personal hazards
- Supervision received

Self-Discipline in Driver Selection

Self-discipline plays an important role in driver selection. Many individuals are hired for their technical ability, and they must discipline themselves to keep their mind on driving. Since this is the case, it is important to look for self-discipline in your drivers while screening them. Job factors such as responsibility for the vehicle, responsibility for the safety of cargo or passengers, responsibility for the safety of pedestrians and other motorists, responsibility for company funds, and awareness of personal hazards should have high ratings. These traits can be identified by reviewing past work history and performing reference checks.^{1,2,3}

Abilities of a Good Driver

When interviewing potential drivers, look for certain abilities associated with a good driver. Examples include the following:

- Drives well
- Performs the nondriving parts of the job well
- Finds satisfaction in the job
- Gets along with others
- Adapts to meet existing conditions

Driving Skills

When determining how well drivers are schooled in their trade, it is important to see how well they can drive. You should look for certain factors while evaluating the skills necessary for the task at hand.

First, determine the driver's ability to avoid accidents. This may be the most important characteristic of the driver. No matter how well qualified a driver is in other areas of work, an accident repeater will always be a bad investment for the company.

Then, look at the driver's ability to follow traffic regulations. This is also important because repeat regulation violators are just accidents waiting to happen. If you have such individuals driving for your company, it can be a public relations liability.

A good driver is also one who cares for the vehicle. This is done through upkeep and maintenance. A fleet of clean vehicles can be a public relations boost to the company. An individual who cares for his or her vehicle and drives the same vehicle daily could show better gas mileage and in the long run save the company money.

The ability to meet scheduled deadlines is another major part of being a good driver. The schedules your company incorporates should be set so that a driver can stay in compliance with reasonable effort. When a driver gets behind, it throws off the whole schedule and can lead to accidents when drivers try to make up time.^{1,2}

Performing the Nondriving Parts of the Job

Another factor is the driver's performance of the nondriving parts of the job. This could include many different things, such as making deliveries, keeping logs, servicing vehicles, caring for merchandise inside the vehicle, and even making sales. If drivers are not trained well in the nondriving parts of their jobs and are not comfortable with these duties, they can become a liability to the company.¹

Job Satisfaction

It is important for individuals to be happy with their positions. If they are not, they can become a hardship to the company. They could perform their jobs poorly, which can cause the company losses. Employees must be looked at as investments; if they are not happy with their jobs they may quit, and then the company loses its investment. This is why it is important to keep qualified individuals satisfied with their positions. If employees are over- or underqualified, they may not find satisfaction in their jobs.¹

Getting Along with Others

It is vital to employ workers who work well with others. This is why you should take into account applicants' personalities during the screening process. Then you can determine if they are a good fit with your other employees. Always keep in mind that you cannot hire just the quality parts of the candidate but that you must hire the whole person.¹

Adapting to Meet Existing Conditions

Adaptability is critical because environments constantly change. Therefore, you need to screen to see if potential employees can adapt to different situations.

Personnel Facts

For purposes of this chapter, the personnel facts you need to consider are broken down into these categories:

- Age
- Sex
- Physical traits
- Intelligence
- Education

When considering these traits and screening for them, it will be important for you to know the fair hiring guidelines for your state or province. Study these guidelines well so that you do not ask questions during the interview process that could get you or your company into trouble.

Age

As mentioned in the previous chapter, studies prove that drivers over 25 and up to 65 years of age are as efficient as young drivers, are safer workers, are less prone to job-hop, and have low rates of tardiness and absenteeism.²

Sex

No basis exists for discriminating against women in motor vehicle driving jobs, given the comparative accident rates between the two sexes.²

Physical Traits

You should specify minimum height and weight limitations based on the physical constraints of the driving compartment of the vehicle to be operated.²

Intelligence

There appears to be no correlation, unfortunately, between intelligence test results and satisfactory driving performance — except at the low and high ends of the scale.²

Education

In the present labor market, a high school education (or equivalent) is sufficient, especially for line-haul work.²

Driver Selection Procedures

There are many procedures you can use when hiring drivers. This section discusses 11 steps you may want to incorporate when looking for qualified drivers. The steps are as follows:

- Recruiting
- Preliminary application
- Application form
- Credit checking agencies
- Check for operator's or chauffeur's license

- National driver register
- Employment interview
- Physical examination
- Reference check
- Acceptance interview
- Driving skills

Recruiting

Recruiting can play a huge role when you are looking for new drivers because you do not always get the desired applicants when you just post the job. Since you want to hire the best qualified and safest drivers, you may need help finding other applicants. Suggestions are through referrals, industry contacts, and driving and vocational schools.¹

Preliminary Application

The preliminary application is simply a form for obtaining basic information from the applicant. In general, this is short and requests a condensed biography from the applicant.

Application Form

The application form should be developed around your company and its needs. When creating your own application, it is important to take into consideration all fair hiring guidelines to which your company is subject. Alternatively, you could obtain a form from a personnel agency; anyone in the motor fleet industry could obtain and use this type of general form. Some sources for application forms are the American Trucking Association or agencies such as J. J. Keller & Associates.^{1,2}

Credit Checking Agencies

Because not everyone is honest, it is important to verify the information provided on applications, and it is a good idea to use a credit checking agency. With credit checks, you can see where applicants have lived in the past and sometimes what kind of lifestyle they may have led.²

Operator's or Chauffeur's License

This is a simple item you can ask at any stage of the application or the interview, or both. Also, it is important to ask what endorsements applicants may have on their licenses.^{1,2}

National Driver Register

The National Driver Register (NDR) is a central repository of information on individuals whose privilege to drive has been revoked, suspended, canceled, or denied or who have been convicted of serious traffic-related offenses. The records maintained at the NDR consist of identification information including name, date of birth, gender, driver license number, and reporting state. All of the substantive information, the reason for the suspension or conviction, and associated dates resides in the reporting state.

State driver licensing officials query the NDR to determine if an individual's license or privilege has been withdrawn by any other state. Other authorized users have access to the NDR for transportation safety purposes. All 50 states and the District of Columbia participate in the NDR. The system is also referred to as the Problem Driver Pointer System (PDPS).

By checking with the NDR, you will be able to verify information provided by candidates on their applications. Also, the great amounts of information catalogued on the Web make it almost impossible for drivers to obtain licenses in different states. This check will serve as another verification of the facts that the applicants have already provided to you.²

Employment Interview

This is the most important step in the employee selection process, so as the interviewer you must be just as prepared as the applicant. Review the application carefully beforehand and use the interview time to expand on the information from the application and to verify it as well. This is also a good time to see what kind of person the applicant is. You should get an idea of how well the individual will be able to work with your current employees. At this point, the hiring process is long from over, so it will be important not to mislead the applicant into thinking that he or she has the job.¹

Physical Examination

If the applicant has made it this far, a physician should determine whether the applicant is fit for the job. You should have a good relationship with the physician, who must be familiar with the kind of work that the applicant will be doing if hired. This is when the initial screening for alcohol and drugs should be held. It is critical that the doctor sign off after the examination. This way, the physician is liable rather than the company if he or she missed something in the examination process.^{1,2,3}

Reference Check

The world we live in is not perfect, which means we must check that applicants have not lied to us. We do this to see if applicants really worked for employers they listed on their applications and if their job duties were as they reported. The best way to do this is via the telephone. Take care of this step quickly because everyone's time is valuable. Have questions prepared so that when you talk to the applicant's former supervisor the phone call can go quickly. Another way to get this information is to send a form letter to the listed companies. You may not receive responses from all the companies; some will fail to return them and others will be hesitant to sign their name to the letter (which could be interpreted to mean that what they had to say was not good). Another method is to make a personal visit to the

applicant's former company. This may be the hardest way to do it because of the cost involved with the process.^{1,2}

Acceptance Interview

This is the time that you will bring the applicant in and see if he or she is still interested in and enthusiastic about the job. This is a critical time because it will be your last chance to change your mind about the applicant. At this time, you will need to discuss salary, benefits, and hours with the applicant. After that, you can present the formal job offer and finalize the acceptance letter.¹

Driving Skills

At this point, the driver will go through initial or refresher training. This can be done off-site through another company or by your company's training staff. Another option is to use one of the many trucking rodeos held around the country.² Rodeos held on driving ranges help support and develop drivers' skills.

Elements of Preselection Screening Related to Driving

For the purpose of this chapter, we will concentrate on four main elements of preselection screening:

- Driving experience
- Past driving record
- Previous driver instruction
- Physical fitness

Driving Experience

When looking at this area, consider the type of vehicle, length of time, type of operator's license, and type of driving. With all

these factors in mind, you should find it easy to decide what is most important for the open position.²

Past Driving Record

Always check on the applicant's previous traffic violations and accident history. You will want to get the applicant's professional and personal information in this case.²

An accident repeater is a person who, in the same or in different situations, seems to continue having the same type of accident. A person with few or no accidents may indicate self-discipline.

Previous Driver Instruction

Ask about previous driver instruction so that you will know what type of investment you will have to make in training the new employee. All classroom and behind-the-wheel instruction should be noted. Find out how much instruction was given, who provided the instruction, and what type of vehicle was involved in the instruction.²

Physical Fitness

At this point in the process, set minimum standards of physical fitness for the job. Then decide if a physical examination is necessary and determine the frequency rate for any periodic exams.²

Tests to Determine Behind-the-Wheel Attitudes and Abilities

It is a good idea to incorporate more than one test to find out about a person. Three different tests you can administer are as follows:

- Traffic and driving knowledge tests
- Driving skill tests
- Attitude tests

These tests should give you a good idea of the driver's total abilities. The written, driving, and psychological tests will let you know more about the driver's total skill set.^{2,3} Psychological testing analyzes the sum of a person's actions, traits, attitudes, and thoughts.

Study Questions

1. (True or False) A driver who has repeated traffic violations will likely end up with repeated traffic accidents.
2. What or who should always be consulted before you design any questions for your application or conduct an interview?
 - a. Interviewing handbook
 - b. Fair hiring guidelines
 - c. The person applying
 - d. Your mother
3. (True or False) The interview is the most important step in the screening process.
4. How can the company profit from a driver's care of the vehicle?
 - a. Improved gas mileage
 - b. Improved company public relations
 - c. Lower upkeep costs on the vehicle
 - d. All of the above

5. Which is a personnel fact that should be considered when hiring?
 - a. Marital status
 - b. Sex
 - c. Race
 - d. Age

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DRIVER TRAINING AND INSTRUCTION



Benefits of Driver Training

Driver training gives a company and its employees many useful benefits. One of the benefits gained involves the insurance program. The fewer claims made by a company, the lower the insurance premium.¹ With a lower insurance premium, the company can use the extra money to buy new equipment. Another benefit relates to the actual equipment. The better care provided to equipment, the lower the maintenance costs, which in turn extends the life of the equipment. The better maintenance given to a vehicle, the less downtime for that particular vehicle, which saves a company from possibly having to rent a vehicle like it already owns.¹ Training drivers can improve the

efficiency of the company because when employees know what is expected of them and the company shows that it cares, employees are more likely to do their work as efficiently as possible.

Driver training is a process that cannot be the same for everyone because some drivers may need more, and some less, training. Training can be separated into four steps.² The first step is called the *initial training*. This stage deals with the knowledge and skill required of a driver to perform the job correctly. The next step is the *refresher training*. This stage consists of a few days of classroom instruction used to update drivers on news, rules, and new equipment. Refresher training is held once a year or as needed, depending on the introduction of important rules and regulations that drivers must know about in order to perform their jobs safely. The third step is called *remedial training*. Remedial training is mainly used for drivers who have had accidents while driving. This stage is designed to inform drivers of what they are doing wrong and to identify any lack of knowledge they may have so they can avoid accidents. The last stage, considered the most important, is *ongoing training*, which is necessary to keep drivers on track and keep them from falling into any unsafe habits. Ongoing training includes classroom training, safety posters, bulletins, driver handbooks, and letters to the drivers to inform them of their performance.

Benefits of Using a Training Room

Training rooms should have blackboards, projectors, and any other aides that an instructor will find useful for students. The room can have many uses: meetings and conferences can be held there, and it can serve as a display area for important material that companies want to make available to drivers (for instance, they can read up on the latest news in the trucking industry).

Systematic Visual Habits in Driving

While driving, a person must always pay attention to what he or she is doing as well as be aware of the surroundings. According to the

Florida Commercial Driver Handbook,³ drivers should follow the defensive driving technique called the Smith System:

1. Aim high in steering.
2. Take in the whole picture.
3. Always keep eyes moving.
4. Leave yourself an out.
5. Make sure other drivers can see you.

Defensive driving involves doing all you can to prevent crashes. Defensive driving can be shortened to three steps: Look for possible danger, decide what can be done to prevent an accident, and act quickly.

The IPDE process can also be used while operating a vehicle. The IPDE process is described in the *Emergency Vehicle Operator's Student Guide*. This process lists four steps that will help drivers avoid accidents:

1. Identify any hazards that may cause an accident.
2. Predict where an incident may occur.
3. Decide what action to take in order to avoid the hazard.
4. Execute your decision on what corrective action you will take.

Be sure to incorporate these ideas into your driver training program.

Procedures to Follow in Case of an Accident

When an accident occurs, a driver must follow certain procedures to protect others. The first step is to secure the scene. Securing the scene means stopping the vehicle immediately and not moving any other vehicles involved unless there is a chance of fire. A driver must then turn on the four-way flashers, put the vehicle in the lowest gear, and set the parking brake before

leaving the cab. Once out of the cab, the driver needs to remain calm and find out if anyone is injured. It is important to set out warning devices to warn other drivers that an accident has occurred. Some examples of warning devices are triangles, flares, fuses, reflectors, and other acceptable luminescent equipment.

The next step is to notify the proper authorities. This involves calling the police, the driver's company, and, if necessary, medical assistance. If carrying hazardous materials, the driver must notify CHEMTREC (Chemical Transportation Emergency Center) to arrange for cleanup of any possible leakage.³

The third step is to document the accident. A driver should carry courtesy information cards in order to collect information from eyewitnesses. The driver should ask an eyewitness to fill out his or her name, address, and telephone number so the person can be contacted at a later time. If possible, the witness should also write a description of what he or she saw.

A driver is also supposed to fill out a preliminary accident report while at the scene once everything is secured. This report is used to gather all information about everyone involved in the accident and any eyewitnesses. A driver must record the time, place, and road and weather conditions and provide a short description of what happened, which can be discussed later in case of lawsuits and other actions. If a camera is available, a driver should take photographs of the scene to give the insurance company an idea of what took place when it reviews data at a later time. A driver must not sign anything or make any statements unless it is to the police, his or her company, or the insurance company.

Again, be sure to include this information in your driver training program.

Methods of Teaching Driver Training

When teaching driver training, an instructor must cover all the rules and regulations for driving. The first step is to lecture about the rules to follow while on the road. Even if a driver follows the rules all the

time while driving, it does not mean that he or she will never be involved in an accident; there are many other drivers on the road who do not always follow the rules and could cause an accident. The instructor should use videotapes that show defensive driving techniques and explain what to do in situations that occur on the road and what to do in the case of an accident. The instructor should supply drivers with important reading materials (or tell the class where to locate reading material). Once the drivers have reviewed all the information from the instructor, they must be evaluated in two areas: a written examination and an actual behind-the-wheel road test. The road test should be given only after a driver has passed the written exam and the instructor has given a full demonstration of what is expected on the road test.

Additional Topics to Cover in Training

In this section, we discuss several topics that a good driver training program must incorporate.

Factors That Affect Stopping

When preparing to stop, the driver should keep in mind three elements that factor into the distance it will take to stop the vehicle. The first is perception distance, which is the distance a vehicle travels from the time a driver sees the hazard and until a driver's brain recognizes it. The perception time for an average driver is $\frac{3}{4}$ of a second. In that $\frac{3}{4}$ of a second, a vehicle can travel 60 feet at 55 mph. The second element is reaction distance, which is the time it takes the driver's brain to move his or her foot to the brake. Once again, this is $\frac{3}{4}$ of a second, which means that a vehicle traveling at 55 mph will add another 60 feet to the amount of distance it takes to stop a vehicle. The third element is braking distance, which is how far it takes the vehicle to stop once the brakes are applied. At 55 mph a heavily loaded vehicle will take about 170 feet to stop. The total stopping distance is about 290 feet. A vehicle's stopping ability can be affected by many factors, including tire condition, braking power, traction, load of the vehicle, the speed of the vehicle, road surface, and weather conditions.

Traction is the friction between the tires and road surface. Sufficient traction allows a vehicle to speed up, slow down, and make any maneuvers safely. The friction keeps the tire from sliding on the road surface. Traction depends on the condition of the tires and whether the road surface is dry or slippery. The more slippery the road surface, the longer it will take to stop the vehicle, even if the tires are in good shape. A heavy load affects the stopping ability of a vehicle because the heavier the load, the more that load pushes the truck forward. This is based on centrifugal force, which keeps an object pushing while in motion. The speed of a vehicle also affects braking ability; the faster a vehicle is moving, the longer the braking distance.

Methods of Judging Good Brakes

When identifying weak brakes, inspectors use a performance-based brake test (PBBT). PBBTs can assess the braking capability of a vehicle through a quantitative controlled measure of both individual braking and overall vehicle performance. PBBTs are beneficial to law enforcement and the freight community because they provide a standard measure of a vehicle's braking performance. Brakes are measured in terms of forces and weights, as described here:

1. A minimum force at a given air pressure for pneumatically braked vehicles developed by the National Highway Traffic Safety Administration's Vehicle Research Test Center.
2. A minimum ratio of brake force balance across an axle of 0.65 or better for any vehicle or brake type.
3. A minimum brake force as a function of wheel load. On the steering axle a ratio of 0.25 is recommended, and on a nonsteering axle a ratio of 0.35 ratio is recommended. These ratios are calculated using the brake force and wheel load (bf/wl).

The following criteria determines what places a vehicle out of service (OOS):

1. A vehicle will be placed out of service if 20% or more of its brakes are defective according to the PBBT criteria.
2. The vehicle will also be placed OOS if it cannot stop within a given distance.
3. A vehicle must have the capability of being stable by staying in its designated lane.

Safety Considerations When Starting a Truck

Every type of equipment must be inspected for use. The inspection is designed to ensure safety and to prolong the life of the equipment. When conducting an inspection on a vehicle, the driver must first make sure that the wheels are chocked and the parking brakes are set. The next step is to inspect under the hood of the vehicle. Here a driver checks the levels of the oil, coolant, windshield washer fluid, transmission fluid, power steering fluid, and hydraulic fluid. While performing the inspection, the driver must also note the conditions of the hoses and belts and look for any cracks in electrical equipment. The driver must look underneath the vehicle to check for any leak spots on the pavement. Once the driver has finished the inspection, he or she must start the engine and listen for any unusual noises before attempting to move the vehicle.

Important Safety Rules in Preventive Maintenance

A company that practices preventive maintenance on its vehicles is a company that wishes to keep its vehicles in safe working order. Another objective of doing preventive maintenance on a vehicle is to reduce accidents that are caused by vehicle defects. When performing preventive maintenance, the driver and mechanic must check several items. For instance, a driver must ensure that the vehicle is in safe working condition. The vehicle must not be abused unnecessarily in any way. The driver must always do a pretrip and a posttrip inspection of the vehicle and note any problems that have been detected. If any severe deficiencies are noticed at any time, the driver should not move the vehicle.

Preventive maintenance also involves checking the brake system, including the brake shoes and the air lines to the brakes. Tires should be checked for inadequate inflation, too much wear, and any deterioration that could cause an accident. The steering system must be checked because too much play can cause a driver to be unable to turn the vehicle appropriately. Another important section of the vehicle that must be checked is the trailer coupling connection, which consists of the fifth wheel and adjustable axles. The fifth wheel is where the trailer is connected to the cab, and it must be secure to prevent the trailer from becoming detached. The adjustable axles are important because if they are not locked securely, the trailer can slide right off them and cause a major accident.

For safety purposes, all of a vehicle's lights must be operational so that other drivers can see it. The vehicle must have reflectors in case of heavy fog or partial failure of the lighting system.

Preventive maintenance is used for both vehicle life and the safety of all people on the road.

Fleet Skill Tests

The purpose of having a driver perform a skill test is to evaluate how that driver handles a vehicle. The skill test consists of performing a set of exercises during a road test. The test can also be done at the training site so that the instructor can observe a driver performing maneuvers without the chance of serious property damage.

The exercises usually feature six areas in which a driver must perform successfully. The following areas are discussed in the *Maryland Commercial Driver's License Manual*:

1. The first area is known as the backward serpentine. A driver is required to back through a set of three cones without touching any of them.

2. The second area is alley docking. Alley docking requires a vehicle to be backed down an alley to a certain point where cones are placed, and the driver must get as close to them as possible.
3. The third area is forward stop. In this exercise the driver must drive a vehicle between two sets of cones and get as close to the end of them as possible without crossing an imaginary line between the two sets of cones.
4. The fourth area is straight-line backing. The driver must back through two sets of cones without running over any of the cones.
5. The fifth area, which is broken into two parts, is parallel parking. The first type of parallel parking is the driver side. This type of parking is along the empty space on the left side of the vehicle. The space is long enough for the truck to fit and has cones placed at the end signifying an object behind the space where the truck is trying to park. The second type of parallel parking is the conventional type, in which the space is on the right side. The setup is the same as the driver side, and the object of both is to avoid hitting the cones behind the space where the driver is attempting to park.
6. The sixth exercise is the right turn. The object of this exercise is to ensure that a driver can make a turn properly without cutting it too short and running up on a curb or an object that may be located near an intersection.

When employees drive defensively and skillfully, they have both the desire and the ability to control accident-producing situations.

Study Questions

1. What are the benefits of driver training?
2. Name the four steps of driver training.

3. What makes up the IPDE process?
4. What three elements factor into stopping a vehicle?
5. What does PBBT stand for? Give the definition of PBBT.
6. What three criteria will render a vehicle out of service (OOS)?
7. What is the purpose of performing preventive maintenance on a vehicle?
8. What is a fifth wheel?
9. Name the six exercises a driver should perform on a road test.
10. (True or False) Preventive maintenance on all trucks should be an ongoing program.

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7

DRIVER SUPERVISION



Responsibilities of Driver Supervisors

The driver's primary responsibility is to head off accidents before they occur. The driver supervisor must be capable of identifying potential incidents that may be costly to the employees and the company. To reduce potential incidents, the supervisor must be able to answer these three questions:

1. What are the most frequent errors?
2. How can these errors be identified?
3. How can errors be prevented?

In an article from *Fleet Owner*, fleet manager Ron Uriah states, “Our safety message is strong. It starts with the employment interview and we look for people with strong work ethics and good attitudes. We only hire experienced drivers and their first 90 days is a probationary period.”¹ Often in smaller companies the fleet manager or owner is primarily responsible for assigning delivery and pickup routes. In larger companies, several persons may share the supervisory responsibilities. Both the supervisor’s and management’s support is key to an effective motor fleet safety program.

According to the *Motor Fleet Safety Manual*, several other measures can be taken to supervise drivers.² For example, safety road patrols, insurance companies, or contact services can make on-the-spot observations of driving performance and report them back to company headquarters. Sometimes the public can provide valuable feedback as well. Using clearly posted signs or decals on vehicles can also aid in performance evaluation. Programs such as How’s My Driving? guarantee “at least 10% reduction of accidents in the first year or services are free.”²

The use of incentives for drivers may also help reduce incidents in the motor fleet. Awards for “no incidents” or “miles driven incident free” are rewarding programs that sometimes motivate drivers to maintain safe driving behaviors in the short as well as the long term. Having meaningful rewards for desired performance may help ensure a risk-free environment.

Prevent Accidents Before They Occur

The loss of human life is the most serious implication of an accident from a motor vehicle in a company’s motor fleet. Injury and property loss are also motivating factors for ensuring an effective safety program. According to the *Motor Fleet Safety Manual*, the supervisor must be able to identify substandard performance that leads to accidents by doing the following:²

- Personally observing the driver’s performance
- Checking training reports, road patrol reports, arrest records, and employee comments

- Immediately reviewing complaints from other drivers and pedestrians
- Being alert to changes in the driver's personality

Motivating Drivers to Get Desired Results

Many companies rely heavily on two common criteria for employment:

- Maximum number of permissible moving violations
- Number of accidents in previous two years

The best method of screening is to disclose these criteria up front and indicate that you will obtain a motor vehicle report (MVR). This report gives an accurate and updated history of the driver. However, one pitfall that companies encounter (according to an article in *Professional Safety*) is that they fail to check the report again after hiring.³ The article recommends making an MVR check part of your written program policy and checking driving records periodically, at least annually. You may also require employees to report all driving incidents when they occur.

Another practice that should be utilized is to categorize drivers based on their level of risk. It is an unavoidable fact that each fleet is made up of a diverse group of drivers, with varying risk levels. To determine your greatest risk, you must develop a risk profile for each driver. On average, 20% of the drivers are responsible for 80% of the accidents. By honing in on these high-risk drivers, a company can improve accident records and maximize the fleet safety return on investment.

Symptoms of Accidents the Supervisor Should Know

It may appear wasteful to focus on drivers who have no track record of problems; however, statistics prove otherwise. An accident is most likely to occur during the first 18 months of a driver's tenure with

a company. It also has been reported that new hires are responsible for 30 to 40% of fleet accidents.³ Reasons why there is such a high incident rate for new employees include the following:

- New hires are busy learning about the company's products.
- New hires are trying to provide all services and policies required by the company.
- New hires are driving vehicles that differ from their personal vehicles.
- New hires have a tendency to overschedule and rush.

Driving Abuses That Lead to Undue Wear on Vehicles

A commercial vehicle with a gross vehicle weight ratio (GVWR) of 10,001 lb or more must be inspected, maintained, and repaired periodically. A more thorough explanation can be found within the Federal Motor Carrier Safety Administration's Regulatory Guidance Part 396 — Inspection, Repair, and Maintenance.

The Federal Motor Carrier Safety Administration was established within the Department of Transportation on January 1, 2000, pursuant to the Motor Carrier Safety Improvement Act of 1999 (Public Law No. 106-159, 113 Stat. 1748 [December 9, 1999]). It was formerly a part of the Federal Highway Administration. The Federal Motor Carrier Safety Administration's primary mission is to prevent commercial motor vehicle-related fatalities and injuries.⁴ Administration activities contribute to ensuring safety in motor carrier operations by enforcing safety regulations, targeting high-risk carriers and commercial motor vehicle drivers, improving safety information systems and commercial motor vehicle technologies, strengthening commercial motor vehicle equipment and operating standards, and increasing safety awareness.

To accomplish these activities, the administration works with federal, state, and local enforcement agencies; the motor carrier industry; and labor safety interest groups, among others.

Another source of information can be obtained through the Commercial Vehicle Safety Alliance. To achieve a rating of “satisfactory” in the vehicle category, carriers must have no critical or acute violations, and their out-of-service rate must be less than 34%.

Driver Inspection

Daily inspections are a necessity when a company implements a fleet safety program. Responsibility is placed on the driver, mechanics, and fleet manager. The specific parts to be inspected are parking brakes, steering mechanisms, lights, tires, horns, windshield wipers, mirrors, coupling devices, wheels and rims, and emergency equipment. The constant abuse from everyday driving as well as seasonal weather changes may increase the necessity of additional inspections.

Part 396 section (b) of the Code of Federal Regulations states that “The report shall identify the motor vehicle and list any defect or deficiency discovered by or reported to the driver which would affect safety of operation of the motor vehicle or result in its mechanical breakdown. If no defect or deficiency is discovered by or reported to the driver, the report shall so indicate. In all instances, the driver shall sign the vehicle inspection report. On two-driver operations, only one driver needs to sign the report, provided both drivers agree with the report of the defects or deficiencies. If the driver operates more than one vehicle during the day, a report shall be prepared for each vehicle operated.”⁴

Policy Development

A supervisor’s attitude toward safe driving will greatly affect the attitude and driving performance of those responsible to him or her.⁵ This should be carried over into a clearly worded policy that spells out the company’s objectives and describes:

- How the company intends to comply with all safety laws and ordinances
- Safety of employees, the public, and equipment operations
- Commitment to safety, which takes precedence over expediency

Holding supervisors as well as drivers accountable for safe performance is another means of ensuring fleet safety. To hold someone accountable, a company must know whether he or she is performing well, so it must measure that person's performance. Without measurement, accountability becomes an empty and meaningless concept.⁶ To ensure that accountability is maintained, a company must keep open the lines of communication between management and drivers, and barriers should not be placed between employees and management.

Safety Measurement for Fleet Managers

According to *Techniques of Safety Management*, “[M]easurement is more crucial at the supervisory level, and the measure (which is the motivator here) must do many more things than at the employee level.”⁶ This principle can be applied directly to the fleet supervisor. The book lists a few criteria for good measurement of the fleet performance:

- It should give swift and constant feedback.
- It should get the supervisor's attention.
- It should measure the presence of safety activity, not only its absence (as indicated by accidents).
- It should be sensitive enough to indicate when effort has slowed.
- It should provide measures of good or poor performance.
- It should be meaningful.

Once a system of measurement has been established, it is much easier to communicate the effectiveness of a program to employees and, just as important, to upper management. Providing meaningful data on injury rates, accident frequencies, and property damage is critical when funding decisions must be made.

Study Questions

1. What are two common criteria that companies use when selecting drivers for employment?
2. What are four reasons new hires have a higher incident rate than tenure drivers?
3. What are five criteria that a fleet manager must look at when developing a process to measure the program's success?
4. When you are selecting a driver during the preemployment interview, what are some areas that indicate past driving performance?
5. (True or False) Daily vehicle inspections are not necessary when a company implements a fleet safety program.

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8

MOTOR FLEET INSPECTION PROGRAM



Employer Responsibilities

The Occupational Safety and Health Act of 1970 states that every business must keep its employees as safe as possible from physical hazards. Keeping a work environment free of hazards is a nearly insurmountable task. Doing so requires careful use of the management tools of organizing, planning, leading, evaluating, and controlling. Every task, workstation, tool, operation, and machine must be carefully examined for safety issues. Working toward this end takes input from every employee in the organization. Everyone has an

equal responsibility to remain alert and up to date in hazard detection. Equally important is a total commitment to support the motor fleet safety program, and everyone in the organization must aid in this effort as well. Only a program that has the total commitment of all employees will be successful.

A successful employee motor fleet safety program is one that is flexible enough to change when conditions warrant that change. An efficient monitoring program provides the basic information management needs to ensure the program's effectiveness.¹

Accident Prevention

A motor fleet employee safety program starts with accident prevention. Each employee and every member of management should keep the following in mind:¹

- Every employee in the organization must assume personal responsibility for safety.
- Accidents can happen anywhere at any time.
- Accidents are caused by unsafe practices and unsafe conditions.
- Careful study by everyone is an effective way to prevent accidents.
- If unsafe practices and unsafe conditions are not eliminated, then they will continue to contribute to an unsuccessful program.

Developing an effective safety program involves four steps:¹

1. Inspecting for hazards
2. Training all employees
3. Enforcing rules and following up
4. Maintaining interest and commitment to safety throughout the company

Initial Safety Inspection

Once management understands the importance of training everyone to identify hazards, the next step is to train employees in the best methods for spotting physical hazards.

One effective method is for every workstation area of the fleet to create detailed safety inspection checklists. Checklists are a good way to get people thinking about safety. Constant safety awareness is a crucial element of a successful program.

Techniques Used in Initial Safety Inspections

When you are conducting the initial inspection, it is important to follow these steps to keep the process free from snags and resistance:¹

- Anticipate mechanical and physical hazards.
- Let the inspection follow the job process.
- Do not distract employees while inspecting.
- Teach safe procedures when necessary.
- To accurately detect hazards, remember to use your senses.

If these points are respected, then the safety program will have a solid foundation on which to build.

Periodic Safety Inspections

After a systemwide initial inspection, periodic safety inspection follows. Periodic inspections keep the safety program up to date and consistent with the company's safety philosophy.

Training

Employee training is a critical area of the motor fleet safety program. It is extremely important to establish a comprehensive safety training program. The training program should focus on key safety issues that

need attention. Constant measurements of safety performance should be taken, and training sessions should be conducted for the areas that need additional training.

Driver Training

Offer a variety of classroom, behind-the-wheel, self-study, and custom-tailored training programs to help reduce the chance that your drivers will become involved in accidents. You can do this through a combination of materials:

- Video and live presentations by experienced instructors
- Facilitation packages that include videos, workbooks, and other classroom materials
- Behind-the-wheel training that supplements classroom training sessions
- Videos developed by the National Safety Council and other distributors of motor fleet programs

Follow-up and Enforcement

Another important aspect of an effective program is maintaining the program's success. One way to do this is through follow-ups and the enforcement of safety policies.

Follow-up involves identifying any obstruction to the removal of hazards. If a hazard is not carefully eliminated, it is bound to appear again to cause problems. Areas of concern must be addressed using a follow-up protocol.

Enforcement is another crucial area of the motor fleet employee safety program. Everyone in the organization must take the program seriously. One minor instance of insubordination can be the catalyst to destroy all the hard work it took to get the program moving toward its goals. Enforcement of policy statements must be visible to everyone to send the message that safety is as important as production.

Maintaining Interest in the Safety Program

To maintain interest in the safety program, the company must gain the total involvement of everyone in the organization. Responsibility for safety should be given to everyone, and all employees need to contribute. If someone does not have a part in the safety program, that individual will lose interest, and awareness of hazards will drop to an unacceptable level. Interest will fall to a level where incidents are imminent.

Fleet Enterprise Job Hazards

In this section we discuss hazards that are typical to motor fleet safety. All of these hazard checks should be included in your inspection checklist as well as your training program. They should be reinforced to the point where every employee can immediately recognize and eliminate hazards without delay. Areas in which to look for common hazards are as follows:¹

- Eyesight
- Welding equipment
- Health
- Power hand tools
- Lifting: auto, bus, truck
- Explosive vapors
- Burns: chemical, water, steam
- Vehicle movement
- Heavy parts: removal, replacement
- Shop, station, garage
- Mounting: tires and rims
- Terminals
- Machine tools

- Truck and bus operations
- Slippery and uneven floors

These are areas where the greatest typical hazards exist and are good places to start to build a successful safety program.

Metalworking Tools

Power transmission tools, such as pulleys, sheaves, belts, gears, and clutches, are all hazards because they are under pressure. If the pressure is released, the object becomes a potential airborne, whipping, or hammering hazard.

Only workers who are properly trained should be in the point-of-operation zone. Unauthorized workers who are in a point-of-operation zone are a hazard to themselves and those who work in those areas.

Cleaning Fluids

Cleaning fluids should be clearly labeled, capped, and stored in a cool, well-ventilated place away from sparks and flames. Typical cleaning fluids are kerosene and various safety solvents.

Stimulating Interest in the Safety Program

Here are some ways to stimulate interest in the employee safety program. Creativity is encouraged to keep workers focused on safety:¹

- Management interest and example
- Safety meetings and rallies
- Safety awards
- Safety contests
- Posters
- First aid training
- Safety suggestion systems

Using Posters

Display of posters must be planned carefully in order for the posters to be effective. There is limited space to exhibit them, and the posters you select must be eye-catching and informative. Pictures are effective if they clearly explain the message that is being sent. Posters should focus on one particular safety issue and be displayed in a relevant work area. Topics for posters include slips and falls, personal protective equipment, and various potential hazards. If properly executed, the display of posters is an effective way to keep safety awareness at a high level.

General Safety Rules

General safety rules are the final part of the motor fleet employee safety training program. These are general topics that should be familiar to every employee and manager. Remember:

- Safety is everyone's responsibility.
- Everyone should know where the first-aid materials are located, and they should be kept in stock.
- All employees should be trained in the company's fire plan.
- Electrical equipment must be labeled, and lockout/tagout procedures should be enforced.
- Work attire should include steel-toe boots and fire-retardant clothing.
- Personal protective equipment (PPE) should be in good condition and readily available.
- The work environment should be clean and free of debris.
- Overloading should never be practiced. Overloading is placing more cargo on a truck than it is legally permitted to carry or designed and powered to carry.

If these general areas are covered, then attention can be focused on making the safety program a success. However, keep in mind that a complete motor fleet employee safety program starts with commitment and effort from everyone in the organization.

Vehicle Inspection

Inspection, Repair, and Maintenance

Every motor carrier should inspect, repair, and maintain all motor vehicles subject to its control.^{1,2}

Parts and accessories should be in safe and proper operating condition at all times. This includes frame and frame assemblies, suspension systems, axles and attaching parts, wheels and rims, and steering systems.¹

At least every 90 days, push-out windows, emergency doors, and emergency door marking lights in buses should be inspected.^{1,3}

For all vehicles, for 30 consecutive days or more, except for a private motor carrier for passengers (nonbusiness), the motor carrier should maintain the following records:¹

- An identification of the vehicle, including company number if so marked, make, serial number, year, and tire size. If the motor vehicle is not owned by the motor carrier, the record should identify the name of the person furnishing the vehicle.
- A means to indicate the nature and due date of the various inspection and maintenance operations to be performed.
- A record of inspection, repairs, and maintenance indicating their date and nature.
- A record of tests conducted on push-out windows, emergency doors, and emergency door marking lights on buses.

Record Retention

The records should be retained where the vehicle is either housed or maintained for a period of 1 year. Records must be retained for 6 months after the motor vehicle leaves the motor carrier's control.¹

Record Keeping Requirements

Qualified inspectors will prepare a report that:

- Identifies the individual performing the inspection
- Identifies the motor carrier operating the vehicle
- Identifies the date and vehicle inspected
- Identifies vehicle components inspected and describes results of the inspection
- Identifies components that meet minimum standards
- Certifies accuracy and completeness of inspection

The company shall:

- Maintain the original or a copy of the inspection where the vehicle is housed or maintained
- Keep the inspection report for 14 months
- Make available the original or a copy of the inspection report on demand of an authorized federal, state, or local official¹

Lubrication

Every motor carrier should ensure that each motor vehicle subject to its control is properly lubricated and free of oil and grease leaks.¹

Inspection of Motor Vehicles in Operations

Only authorized personnel can perform inspections. Every special agent of the Federal Highway Administration (FHWA) is authorized to perform inspections of motor carrier vehicles in operation.³

The driver equipment compliance check should be used to record results of motor vehicle inspections conducted by authorized FHWA personnel. Motor vehicles declared out-of-service should not be used until fixed. Authorized personnel will declare and mark “out-of-service” on any motor vehicle that by reason of its mechanical condition or loading would likely cause an accident or a breakdown. An out-of-service vehicle sticker should be used to mark such vehicles. No motor vehicle carrier will require or permit any person to operate, nor will any person operate any motor vehicle declared and marked out-of-service, until all required repairs have been satisfactorily completed. The term “operate” as used in this section should include towing the vehicle; however, vehicles marked out-of-service may be towed away by means of a crane or hoist. A vehicle combination consisting of an emergency towing vehicle and an out-of-service vehicle should not be operated unless such a combination meets the performance requirements of the driver equipment compliance check.

Employees are not permitted to remove the out-of-service sticker from their motor vehicles. Only authorized mechanics may remove the sticker after all repairs required by it are completed.

Motor Vehicle Inspection Results

When an inspection has been completed, the following steps should be carried out:

- The driver of any motor vehicle receiving an inspection report should deliver it to the motor carrier operating the vehicle upon his or her arrival at the next terminal or facility. If the driver is not scheduled to arrive at a terminal or facility of the motor carrier operating the vehicle within 24 hours, the driver should immediately fax, e-mail, or mail the report to the motor carrier terminal.

- Motor carriers will examine the report. Violations or defects noted need to be corrected. Red tags, methods of giving priority to a truck in need of repairs, may be indicated.
- Within 15 days following the date of the inspection, the motor carriers will certify that all violations noted have been corrected by completing the “Signature of Carrier Official, Title, and Date Signed” portions of the form, and return the completed roadside inspection form to the issuing agency at the address indicated on the form. They must also retain a copy for their records.

Benefits Gained by Standardizing Fleet Vehicles

Standardizing fleet vehicles is important to ensuring a well-operated program. Fleet programs are usually safer if all vehicles are similar or even the same. Proficiency is gained when an individual — for example, a mechanic — works on the same kind of vehicle every day. Parts can be purchased in bulk, and the extra parts can be shelved for later use. Using the same types of vehicles has other benefits; drivers will be familiar with all of the vehicles and will be able to drive any vehicle at any given time. A driver will feel comfortable switching to another vehicle if his or her vehicle is in the shop.

Built-in Vehicle Components Directly Related to Safety

Commercial motor vehicles must be equipped with specific standard equipment. Optional equipment or accessories are permitted only if these items do not adversely affect the operational safety of the vehicle. Essential items include the following:

- Lights
- Lamp mounting
- Stop lamps
- Brakes

- Brake tubing and hose
- Brake warning device
- Windshield
- Fuel system
- Coupling device
- Cargo security

Lights

Part 393 of the Code of Federal Regulations (CFR) specifies the required position, color, type of lamps, and reflectors for commercial motor fleet vehicles.² All lamps and reflectors for commercial motor vehicles manufactured after March 7, 1989, must meet the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 108 (49 CFR 571.108) in effect on the date of manufacture. Certain trailers manufactured after December 1, 1993, must have retroreflective sheeting or additional reflex reflectors to make them more visible to other motorists under conditions of reduced visibility. Lamps must light on inspection and when required during regular operation of the vehicle. Permanently secured lamps are required at all times except when temporary lamps are in use. Some examples are a drive-away or tow-away operation or the mounting on projection loads (temporary lamps must be securely attached). When service brakes are applied, all stop lamps on commercial vehicles must be activated.

Brakes

All commercial vehicle systems must be equipped with the following brake systems:

- 49 CFR 393.41 requires a service brake system that specifies braking and holding performance.
- 49 CFR 393.41 requires a parking brake system that meets the requirements of parking brake activation and a method of holding the brakes in the applied position.

- 49 CFR 393.52 requires an emergency brake system that consists of either (1) emergency features of the service brake system or (2) a system separate from the service brake system.
- Speed governors are required. These devices control the maximum rate of speed that a vehicle may be driven by regulating the performance of the engine.

Brakes acting on all wheels must be equipped on all commercial motor vehicles, with the following exceptions:²

- Any truck manufactured before July 25, 1980, with three or more axles is not required to have steering axle brakes.
- During drive-away or tow-away operations, vehicles being towed are not required to have brakes on all wheels.
- Any full trailer, semitrailer, or pole trailer weighing 3,000 lb or less that does not surpass 40% of the towing weight of the vehicle is not required to have brakes on all wheels.

When towing a trailer equipped with brakes, the vehicle must maintain the operation of the brakes on the towing vehicle in the event that the trailer breaks away from the towing vehicle.

Tubing and hoses are critical to the safety of your motor vehicle. The tubing and hoses must be properly installed to provide safe performance. Remember that when tubing is near the exhaust systems the high temperature can harm the hoses. Be sure to consider the proximity to the exhaust system when installing tubing and hoses.

Motor vehicles are installed with warning signals that activate when the brakes fail. The signal covers hydraulic brake systems, air brake systems, and vacuum brake systems.

Windshield Condition

The windshield on a motor vehicle must be free of cracks and discoloration.

Fuel Systems

Any part of the fuel system should not extend beyond the widest part of the vehicle.

Equipment Required by State and Interstate Commerce Commission Regulations

Emergency equipment is required for the safety of drivers. Trucks must carry emergency equipment that is regulated by state and federal laws. Fire extinguishers (a 5-lb dry chemical unit; petroleum trucks carry a 15-lb type), flags, reflectors, port torches, portable electric red flasher warning devices, fuses, spare bulbs, and emergency reflective triangles are some of the required emergency equipment. Hazardous material trucks must be equipped with a large type of fire extinguisher. Truck drivers with a higher risk (e.g., chemical hazards) in general carry protective clothing, gas masks, cleanup materials, and a breathing apparatus. Hard hats, rubber gloves, rubber boots, and face masks are recommended. If your fleet is running in cold temperatures or in a remote area, it is also recommended that your drivers have first-aid kits, blankets, survival suits, and emergency food and water.

Contributions a Driver Can Make to An Effective Maintenance Program

It is important that every carrier prepare a posttrip inspection report at the end of each day. Every driver must write a report for each vehicle driven. This report must address the following items:

- Service brakes (including trailer brake connections)
- Parking (hand) brake
- Steering mechanism
- Lighting devices and reflectors
- Tires

- Horn
- Windshield wipers
- Rearview mirrors
- Coupling devices
- Wheels and rims
- Emergency equipment

The report must list any condition that the driver either found or had reported to him or her that would affect safety of operation or cause a breakdown. If no defect or deficiency was identified, the report should state that. The driver must sign the report in all cases. Before the driver can dispatch the vehicle, he or she must ensure that if the report shows defects or deficiencies, repairs have been made. Some deficiencies may not need immediate attention; however, the report must state that in writing. The carriers must keep the original poststrip inspection report and the certificate of repairs for at least three months after the date of preparation.

The driver must be satisfied that the motor vehicle is in safe operating condition before starting out on the road. If the last vehicle report notes any deficiencies, the driver must review and sign to acknowledge that necessary repairs have been completed.

Advantages Gained by Assigning a Vehicle to an Individual

There are many advantages to assigning a particular vehicle to an employee. When you lease a vehicle to an individual, that person is responsible for that vehicle, which puts pressure on him or her to keep the vehicle clean and in good condition. Knowing that you have to be in the same vehicle every day motivates you to keep it well maintained and reduces abuse of the vehicle. It is convenient from a record keeping point of view to keep track of the vehicles and accidents or other incidents that occur. For this reason, assigning vehicles to employees will decrease your operating costs.

Characteristics of Fleet Management Programs

“Spur-of-the-moment” changes that occur on the job can often lead to employee disruption. High turnover rates resulting from drivers becoming unhappy with procedure changes as well as lack of experience with the current program will indirectly increase operating costs due to mishandling of equipment. Gradual changes to employee policies have been shown to reduce these complications.

Study Questions

1. (True or False) Mechanics who work on the same vehicles tend to develop expert knowledge and can save the fleet money and valuable time.
2. List four vehicle components that are directly related to safety.
3. Petroleum trucks have to carry fire extinguishers that weigh how many pounds?
4. What is the definition of overloading?
5. (True or False) When assigning a vehicle to an individual, you will lower operating costs and also lower vehicle abuse to the vehicles.
6. What is the definition of a speed governor?
7. List three required pieces of equipment regulated under the State and Interstate Commerce Commission Regulations for motor fleet vehicles.
8. What are the general safety rules discussed in this chapter that contribute to a safety training program?
9. List the four major steps of establishing a consistent motor fleet employee safety program.
10. What are five typical hazards that every employee should be able to instantly spot and eliminate?
11. During initial safety inspections, what are some key points to remember?

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9

ORGANIZING MOTOR FLEET ACCIDENT DATA



Accident Investigation

Why should the organization of fleet and motor vehicle accident data be an essential and necessary part of your motor transportation safety program? The reason is simple: accident prevention. Each year thousands of drivers are killed or injured in motor fleet crashes that could have been prevented in one way or another. These accidents affect not only the drivers but each of us as well. Whether you are driving a company car on a business trip, driving a truck that is part of a fleet, or sending a child to school on a school bus, you are involved in motor fleet safety.

Responsibilities of the Fleet Safety Director

Most accidents have more than cause. In accident prevention, we try to determine all of the factors that lead to accidents and then attempt to control or eliminate these factors by planning ahead.¹ This planning for accident prevention is one of the many responsibilities of the fleet safety director, who will find it beneficial to incorporate accident data into this planning process.

The fleet safety director has two main responsibilities with regard to motor fleet safety. The first is identifying causes of accidents. If we know what factors cause an accident, then we are halfway home; eliminating those factors is the next step. In that way, we greatly reduce the chances of the same type of accident occurring again. The second major responsibility of the fleet safety director is to recommend ways to remove the factors that cause accidents and to guard against accidents by protecting the employees.

Where to Learn about Causes of Accidents

Published Motor Vehicle Accident Statistics

Motor vehicle accident statistics have been collected and published by various organizations and are made available to motor fleet safety directors. One of the better sources available on the market is *Injury Facts* (formerly titled *Accident Facts*).² The National Safety Council publishes this book, and it contains a tremendous amount of useful statistics and information. It even breaks down the incidents by type of vehicle, work zones, states, and so forth.

Special Studies Released by Insurance Companies

Studies that are released by insurance companies can be very helpful and informative. Insurance companies spend an astonishing amount of time and money on investigating hazards and accidents. They do this to help eliminate accidents and thus save themselves money. The fleet safety director can also use these studies to help reduce accidents and help his or her company save money and possibly lives.

National Safety Council

National Safety Council statisticians have created a comprehensive system for tracking and compiling injury and illness data, including annual publication of the aforementioned *Injury Facts*, an authoritative compendium of safety and health statistics. Council researchers also produce the *Journal of Safety Research*, an international, interdisciplinary scientific quarterly that contains research articles written by experts in all fields.² The council's Environmental Health Center, based in Washington, D.C., is a leading provider of credible and timely information and community-based programs on environmental and public health issues.

Other Sources

Other sources where a fleet safety director can find facts about causes of accidents are the Federal Highway Administration, U.S. Bureau Labor of Statistics, summaries and reports of the Interstate Commerce Commission, and the National Institute for Occupational Safety & Health (NIOSH).

Federal Motor Carrier Safety Regulations

According to 49 CFR 390.15, as noted in the *Federal Motor Carrier Safety Regulations Handbook*, motor carriers should keep all records of information pertaining to all accidents. These records must be maintained for a period of one year after an accident occurs and must be made readily available to any authorized representative or any special agent of the Federal Highway Administration.³

Information Needed

The following is taken directly from the *Federal Motor Carrier Safety Regulations Handbook*.³

Title 49 — Transportation Part 390.15 — Investigations and special studies

(b) Motor carriers shall maintain for a period of one year after an accident occurs, an accident register containing at least the following information:

(b)(1) A list of accidents containing for each accident:

(b)(1)(i) Date of accident,

(b)(1)(ii) City or town in which or most near where the accident occurred and the State in which the accident occurred,

(b)(1)(iii) Driver name,

(b)(1)(iv) Number of injuries,

(b)(1)(v) Number of fatalities, and

(b)(1)(vi) Whether hazardous materials, other than fuel spilled from the fuel tanks of motor vehicles involved in the accident, were released.

(b)(2) Copies of all accident reports required by State or other governmental entities or insurers.

Accident Record Systems

All good accident record systems are organized into three distinct tasks: gathering the data, analyzing the data, and applying the data to develop countermeasures.

The first task, gathering the data, involves developing a carefully planned system for gathering all important data. This step is necessary for several reasons:

- To eliminate causes of accidents
- To avoid court action
- To improve labor relations
- To place responsibility where it rightfully belongs

The next task, analyzing the data, requires breaking down every accident into its component parts and tallying the information so that it can be viewed objectively.

The third step consists of applying the data to develop counter-measures. After we determine what causes were responsible, we must try to eliminate or reduce these factors in order to prevent the accident from happening again.

Accident Investigators

Every company needs to have an accident investigator who can arrive at the scene of an accident quickly while keeping in mind the company's best interests. The accident investigator needs to be a take charge person who can remain calm and collective. He or she might even have to direct traffic until other authorities arrive at the scene of the accident. It is important that the accident investigator be properly trained in the specifics of conducting a detailed investigation, which is the investigator's main responsibility. Other responsibilities are to prevent further damage at the scene, protect company property, protect the injured until medical aid arrives, and prevent excess costs.

An accident investigator's job is completed after he or she has determined exactly how the accident took place, identifies the factors that led to the accident, gathered all information and physical evidence, and completed all accident analysis records.

Information Gathered in Accident Analysis Records

To provide a complete breakdown of an accident and to pursue a step-by-step accident investigation, the investigator needs to gather the following information:

- Time of the accident
- Location of the accident
- Description of what was involved in the accident
- Classification of accident

- Drivers' information
- Types of vehicles
- List of injured victims
- Witness information
- Movement of vehicles, pedestrians, or passengers
- Conditions
- Contributing factors
- Accident diagram
- Drivers' accounts of accident
- Drivers' suggestions
- Photographs

Classification of Motor Vehicle Traffic Accidents by ANSI

The purpose of ANSI-16, *Manual on Classification of Motor Vehicle Traffic Accidents*, from the American National Standards Institute (ANSI), is to provide a common language for those collecting and using traffic crash data.⁴ The following is taken directly from the manual:

2.6 Road Vehicle Accident Types

2.6.1 Overturning accident: An overturning accident is a road vehicle accident in which the first harmful event is the overturning of a road vehicle.

2.6.2 Collision accident: A collision accident is a road vehicle accident other than an overturning accident in which the first harmful event is a collision of a road vehicle in transport with another road vehicle, other property or pedestrians.

2.6.3 Non-collision accident: A non-collision accident is any road vehicle accident other than a collision accident.

Inclusions:

- Overturning accident
- Jackknife accident (See 2.6.4.)
- Accidental poisoning from carbon monoxide generated by a road vehicle in transport
- Breakage of any part of a road vehicle in transport, resulting in injury or in further property damage

2.6.4 Jackknife accident: A jackknife accident is a non-collision accident in which the first harmful event results from unintended contact between any two units of a multiunit road vehicle such as a truck combination.

2.6.5 Collision involving pedestrian: A collision involving pedestrian is a collision accident in which the first harmful event is the collision of a pedestrian and a road vehicle in transport.

2.6.6 Collision involving motor vehicle in transport: A collision involving motor vehicle in transport is an accident that is both a motor vehicle accident and a collision accident in which the first harmful event is the collision of two or more motor vehicles in transport.

2.6.7 Collision involving other road vehicle in transport: A collision involving other road vehicle in transport is an accident that is both an other road vehicle accident and a collision accident in which the first harmful event is the collision of two or more other road vehicles in transport.

2.6.8 Collision involving parked motor vehicle: A collision involving parked motor vehicle is a collision accident in which the first harmful event is the striking of a motor vehicle not in transport by a road vehicle in transport.

2.6.9 Collision involving railway vehicle: A collision involving railway vehicle is a collision accident in which the first harmful event is the collision of a road vehicle in transport and a railway vehicle.

2.6.10 Collision involving pedal cycle: A collision involving pedal cycle is an accident that is both a motor vehicle accident and a collision accident in which the first harmful event is the collision of a pedal cycle in transport and a motor vehicle in transport.

2.6.11 Collision involving animal: A collision involving animal is a collision accident in which the first harmful event is the collision of an animal, other than an animal powering an other road vehicle, and a road vehicle in transport.

2.6.12 Collision involving fixed object: A collision involving fixed object is a collision accident in which the first harmful event is the striking of a fixed object by a road vehicle in transport. Fixed objects include such objects as guardrail, bridge railing or abutments, construction barricades, impact attenuators, trees, embedded rocks, utility poles, ditches, steep earth or rock slopes, culverts, fences and buildings.

2.6.13 Collision involving other object: A collision involving other object is any collision accident other than a (1) collision involving pedestrian, (2) collision involving motor vehicle in transport, (3) collision involving other road vehicle in transport, (4) collision involving parked motor vehicle, (5) collision involving railway vehicle, (6) collision involving pedal cycle, (7) collision involving animal, or (8) collision involving fixed object.

Study Questions

1. What is the main reason for gathering accident data?
2. What step is crucial in determining the factors leading to an accident?

3. All good accident record systems are organized into three distinct tasks. What are these three tasks?
4. A carefully planned system for gathering all important data is necessary for four reasons. List those reasons.
5. What information should be gathered in the accident analysis records?

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3. *Federal Motor Carriers Safety Regulations Handbook*, J.J. Keller & Associates, Neenah, WI, 2001.
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Definition

A JSA is a method that can be used to identify, analyze, and record.³

1. The steps involved in performing a specific job
2. The existing or potential safety and health hazards associated with each step
3. The recommended action(s) or procedure(s) that will eliminate or reduce these hazards and the risk of a workplace injury or illness

A JSA is a program that examines significant activities associated with a particular job. When the job is examined, the objective is to use experienced worker input to identify actual or potential health or safety hazards. Once these conditions are identified, the company can develop and document recommendations to serve as an operational tool alerting workers to health and safety hazards. The JSA is a program that can be easily adapted to suit any sector. Some sectors are:⁴

- Industry
- Health care
- Public service
- Child care
- Transportation

Conducting a Job Safety Analysis

Basic Steps in a Job Safety Analysis

In a typical JSA, the left-hand column shows the basic steps of the job, listed in the order in which they occur. The middle column describes hazards or potential accidents associated with each job step. The right-hand column lists the safe procedures that should be followed to safeguard against identified hazards and to prevent potential accidents.⁵

A JSA consists of four steps:

1. Select the job to be analyzed.
2. Identify the hazards and potential accidents.
3. Break the job down into successive steps or activities.
4. Develop ways to eliminate the hazards and prevent potential accidents.

Selecting the Job

Jobs with the worst accident history have priority and should be analyzed first. In selecting jobs to be analyzed and the order of analysis, supervisors should be guided by the following factors:¹

1. *Frequency of accidents.* A job that has repeatedly caused accidents is a candidate for JSA. The greater the number of accidents associated with the job, the greater its JSA priority.
2. *Rate of disabling injuries.* Every job that has disabling injuries should be given a JSA.
3. *Severity potential.* Some jobs may not have a history of accidents but may have the potential for a severe injury.
4. *New jobs.* A JSA of every new job should be made as soon as possible. Analysis should not be delayed until accidents or near misses occur.
5. *Near misses.* Jobs where near misses or close calls have occurred also should be given priority.

Extremely broad jobs (remediating a hazardous waste site) or extremely narrow jobs (setting a switch) are not suitable for the JSA process. Examples of jobs suitable for JSAs are drum sampling or operating a specific piece of equipment. A job may include a variety of specific tasks that should be included as part of the JSA.⁶

Breaking Down the Job

To do a job breakdown, select the “right” employee to observe. Choose an experienced, capable, and cooperative worker who is willing to share ideas. Explain the purpose and the benefits of the JSA to the employee.

Observe the employee perform the job and write down the basic steps. You may want to videotape the employee performing the job so that the tape can be used for review in the future. To determine the basic steps, ask, “What step starts the job?” then, “What is the next basic step?” and so on. Completely describe each step. Any deviation from the regular procedure should be recorded, because it may be this irregular activity that leads to an accident.

Number the job steps consecutively in the first column of the JSA. Each step should tell *what* is done, not *how* it is done. The wording for each step should begin with an action word such as *insert*, *open*, or *weld*. The action is completed by naming the item to which the action applies; for example, *insert board* or *weld joint*. Be sure to include every step of the job from beginning to end.¹

Identifying Potential Hazards

The next step in developing the JSA is the identification of all hazards involved with each step. Close observation and knowledge of the particular job is required if the JSA is to be effective in defining job hazards. To ensure that all hazards associated with a task (job step) are identified, observers should examine hazards produced by both the work environment and the specific activity being performed. Ask yourself the following questions about each step:⁶

- Is there a danger of striking against, being struck by, or otherwise making harmful contact with an object?
- Can the employee be caught in, by, or between objects?
- Is there potential for a slip or trip? Can the employee fall from one level to another or even on the same level?
- Can pushing, pulling, lifting, bending, or twisting cause strain?

- Is the environment hazardous to safety or health? Are there concentrations of toxic gas, vapor, mist, fumes, or dust? Are there potential exposures to heat, cold, noise, or ionizing radiation? Are there explosive or electrical hazards?

All of these questions can be incorporated into an inspection form that can be filled out at regular intervals. Even if the question may not apply at first, it may become relevant if there is a change from the standard operating procedures. Using a checklist is a good way to be sure nothing is overlooked. Employers should develop a checklist for each operation.¹

The following hazards should be considered when completing a JSA:²

- Impact with a falling or flying object
- Penetration of sharp objects
- Caught in or between a stationary or moving object
- The danger of being struck by motor vehicles
- Fall from an elevated work platform, ladders, or stairs
- Excessive lifting, twisting, pushing, pulling, reaching, or bending
- Exposure to vibrating power tools, excessive noise, cold or heat, or harmful levels of gases, vapors, liquids, fumes, or dusts
- Repetitive motion
- Electrical hazards
- Light (optical)
- Radiation
- Heat (e.g., welding)
- Water (potential for drowning or fungal infections caused by wetness)
- Violence

Developing Solutions

The last step in a JSA is to develop a recommended safe job procedure to prevent accidents. Here are some solutions that should be considered:

1. Find a new way to do the job.
2. Change the physical conditions that create the hazards.
3. Change the work procedure.
4. Reduce the frequency of the job or task.

If a new way to do the job cannot be found, then try to change the physical conditions (tools, materials, equipment, layout, or location) of the job to eliminate the hazards.

When changing the work procedure is the best solution, find out what the employee can do during the job to eliminate hazards or prevent accidents. Employees may be able to suggest ways to improve the safety on their worksite.

A repair or service job may have to be repeated because a condition needs correction again and again. To reduce the need for such a repetitive job, find out what can be done to eliminate the cause of the condition that makes excessive repairs necessary.

Reducing frequency of a job contributes to safety only in that it limits the exposure. Every effort should still be made to eliminate hazards and to prevent accidents by changing physical conditions or revising job procedures, or both.

List recommended safe operating procedures on the form, and also list required or recommended personal protective equipment (PPE) for each step of the job. Be specific; say exactly what needs to be done to correct the hazard. If the hazard is a serious one, it should be corrected immediately. The JSA should then be changed to reflect the new condition.¹

Monitoring and Reviewing JSAs

In reality, making a workplace safer requires the commitment and cooperation of each employee. The development and implementation of the JSA requires integrated effort and shared responsibilities. Successful application of the process to ensure safe performance of assigned work will occur when line supervisors, health and safety personnel, and individual employees share responsibility, as defined in this section.

Line Supervisors

Line supervisors are responsible for:

- Ensuring that JSAs are identified and developed for appropriate jobs in accordance with this standard
- Coordinating the development and maintenance of JSAs with the appropriate health and safety personnel
- Incorporating existing hazard assessment information into the JSA process as appropriate
- Coordinating training on jobs covered by JSAs for all employees who perform such jobs and ensuring that documentation of all related training is maintained
- Coordinating review and revision of existing JSAs to ensure appropriateness, reflect procedural changes, and incorporate lessons learned from work experience, including accident investigations or critiques

Employees

Employees are responsible for:⁶

- Assisting with development and validation of JSAs
- Following instructions provided by the JSA and associated training

- Notifying line management of new conditions that could affect the performance of a job, thus impacting the JSA

The completed JSA is reviewed by the supervisor, in consultation with assigned employee(s), before the planned work activity begins. The employee(s) assigned to the task are trained in the new safe system of work. This confirms an understanding of the scope of the work, levels of employee experience and capability, and planned arrangements for the control of hazards. It also allows further employee identification and analysis of hazard potential and the opportunity to initiate additional control measures.

Management needs to directly observe the safe system continuously to monitor its adequacy and application. At the completion of the job, managers should review and update the JSA for future reference.⁷

Benefits of a JSA

Establishing proper job procedures is one of the benefits of conducting a JSA — carefully studying and recording each step of a job, identifying existing or potential job hazards (both safety and health), and determining the best way to reduce or eliminate these hazards.¹ The JSA process is perhaps one of the most effective ways of enabling an individual employee to participate and work as part of a team. In fact, employees are able to make important contributions and, through continuous work practice improvement, establish best practice initiatives.⁷ The benefits of performing a JSA are many, including:¹

- The opportunity to provide individual training in safe and efficient work procedures
- The development of employee safety contacts
- Preparation for planned safety observations
- The opportunity to trust new employees on the job
- Prejob instruction for irregular jobs
- Review of job procedures after accidents occur

- Examination of jobs for possible improvements in job methods
- Identification of safeguards that need to be in place
- Opportunity for supervisors to learn about the jobs they supervise
- Design of ergonomically correct work tasks
- The chance for employees to participate in workplace safety
- Reduced absenteeism
- Lowered workers' compensation costs
- Increased productivity
- Positive attitudes about safety

Study Questions

The following are short-answer questions:

1. What is the definition of a job safety analysis?
2. What are the four basic steps in a JSA?
3. What four factors should guide supervisors while selecting jobs to be analyzed?
4. List five hazards that should be considered when completing a JSA.
5. List five benefits of a JSA.

The following require a True or False response:

1. A JSA can be easily adapted to suit any sector, such as child care and transportation.
2. An inexperienced employee should be selected to perform a job breakdown.
3. One responsibility an employee has is to ensure that JSAs are identified and developed for appropriate jobs.

4. One responsibility a line supervisor has is to follow instructions provided by a JSA and associated training.
5. Reduced absenteeism and lowered compensation costs are two benefits of performing a JSA.

References

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SAFETY MEETINGS FOR MOTOR CARRIER DRIVERS



Incident Reduction

Safety meetings for motor carrier drivers are designed to help reduce the number of incidents that occur in the workplace, although it may appear that safety meetings do not seem to be very effective.¹ The reason for this is many employees have negative feelings about safety meetings and do not attend. As a safety manager in the motor

carrier industry, your goal is to help all operators do a better job.² This includes the following:

- Stimulate and maintain interest in accident prevention.
- Develop attitudes sympathetic to the motor carrier safety program.
- Educate and train drivers and supervisory personnel in every factor that enters into safe commercial vehicle operation.

By finding ways to include these ideas, you can improve the effectiveness of your safety meetings. Then you can concentrate on the objectives that you are trying to accomplish with the group.

Developing objectives is an important aspect of conducting meetings. When you set objectives, either individual or group, they become a measuring stick of the effectiveness of what you are trying to accomplish. Each group meeting should have some basic goals that participants are attempting to reach. This list is universal regardless of subject:

- To improve the efficiency of all operations
- To establish a common bond of interest
- To instill in each driver a closer feeling of identity with the group

By seeking to incorporate these objectives, a safety manager strives to enhance employee morale: This may lead to an improved safety and work culture. The purpose is to leave employees with a sense of unity that results in improved performance and a potentially better life experience in the workplace.

Types of Meetings

Once these objectives have been developed and incorporated into your meeting materials, determine the type of meeting you will administer. Decide which strong points are needed to get the

message across to your drivers. Safety meetings can be categorized as one of the following:³

1. *Inspirational meeting*: Usually emphasis is placed on courtesy, goodwill, and loyalty to the group, or humanitarianism. The objective of these meetings is to exert a favorable safety influence by encouraging your employees to develop a greater civic and moral responsibility.
2. *Celebration of accomplishments in accident prevention*: Celebrations of accomplishments in accident prevention meetings are usually held at the same time bonuses and awards are presented. The theme closely parallels that of inspirational meetings.
3. *Group instruction and training*: Group instruction and training meetings are held to train drivers in company policies and the factors that enter into the safe and efficient handling of business. Drivers are instructed in the key elements of safe, courteous, and efficient driving.

Along with determining the type of meeting that is necessary to help you get the desired employee response, you must consider other factors when planning a safety meeting. First, scheduling is important because if you schedule your meeting on a weekend or late at night you are definitely going to have poor attendance. In addition, employees do not want to travel great distances to attend a meeting, so hold meetings at, or close to, the work site. When you are considerate to your employees, they will be more willing to yield to your request.

Subjects of Meetings

The key to an effective meeting is presenting a subject that is exciting or so important that employees feel that it is in their best interest to pay attention. If a subject is really bland or dry, it may lead employees to skip the meeting, which is a contributing factor to program ineffectiveness. Some subjects that may be considered are:

- Thorough explanation of the public relations elements of the enterprise

- Traffic rules and regulations: explanation of the purpose and intent of regulations, discussion of standard signs and signals and their significance
- Instruction in driving practices, courtesy, and safety in general
- Mechanics of the vehicle: demonstration of care and maintenance by mechanics or specialists
- Explanation of physical problems: reaction time, stopping distance, skidding, passing distance, force of impact, etc.
- Accidents: past accidents, common situations, unusual accidents, seasonal hazards, what to do in case of accidents, report forms, frequency and severity of major types of accidents
- First aid and general health: importance, value of regular physicals, fatigue, illness, company policy concerning these areas
- Loading and unloading: how to lift, proper storage of cargo, handling of passengers
- Necessity for the proper use of special equipment such as flares, flags, chains, fog lights, spot lights, tarpaulins, air brake equipment, lighting equipment and connections, etc.
- Interstate Commerce Commission: state, city, or special regulations
- Open forum: questions to be asked and answered

These procedures and many more may find their way into your meeting. If there is a procedure you feel uncomfortable presenting because of your lack of knowledge on the subject, then do not hesitate to ask someone more knowledgeable to present the subject matter thoroughly and completely. Hiring a professional speaker is one option. Types of speakers include:

- *Specialists and instructors*: Instill confidence and convince listeners of the benefits of safety.

- *Company officials:* Display management's interest and support with inspirational addresses, future company plans, and a focus on the employees' welfare.
- *Insurance carrier representative:* Provides expert advice on the subject of accidents. Insurance companies will offer this service.

These types of presenters may increase your chances of holding your audience's attention, which is a good idea for many reasons. Your employees are listening, and it increases your chances for retention. The audience will remember what this meeting was about and the importance of safety. Other factors that play an important role in making your safety meetings a success are:

- Quiet environment
- Ample number of chairs
- Orderly arrangement of room
- Comfortable room temperature
- Adequate lighting
- Provisions for hat and coat placement
- Drinking water for speakers and others

Although these types of details seem insignificant, they help make the audience feel comfortable and important, along with putting the speaker at ease as well. When the speaker and the audience feel relaxed, the chances for a successful meeting increase significantly. Another idea is to praise those meeting participants who deserve it. You should praise people twice as much as you criticize them. Never let any good deed or action go unheralded in the group or organization. Also, you should try to give everyone a voice in the process. Nothing shows a group you care more for them than listening to what they are trying to emphasize. So listen and consider what your workers have to offer during these important and informative meetings.

Summary

Any organization, whether in manufacturing or transportation, should have safety meetings. When you start holding safety meetings, your employees will show their appreciation for your concerns. Although it is not possible for an organization to be entirely incident free, the only way you can make your employees more aware is through education and training. Learning how to conduct effective safety meetings is important to you as the fleet safety director.

Study Questions

1. Name the three types of meetings and give a brief description of each, including the purpose.
2. Name the three different types of speakers.
3. In a short paragraph, explain why the small things are important in the meeting room, such as the number of chairs, temperature of the room, and so forth.
4. Name two of the three reasons why objectives are important when conducting a safety meeting.
5. List two factors that play an important role in making safety meetings successful.

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MOTOR FLEET TRANSPORTATION PUBLICITY



Improving Traffic Safety

An individual can influence traffic safety in many ways. Almost every person in the U.S. is either a driver or a passenger in a vehicle daily. This means that almost every person in the U.S. affects traffic safety each day. The choice to improve traffic safety lies with everyone on the road.

Recognizing You Are a Professional and a Private Citizen

Traffic safety involves both professional motor carrier drivers and private motorists. As a professional driver and fleet safety representative, you need to understand the importance of safety on the road. Being a safety-minded driver, you should always act in a way that reflects this understanding. Taking the initiative to act in a safe manner on the highways is the responsibility of each person on the road, especially drivers who have been trained on the importance of safety on the highways.

As a professional motor carrier driver or anyone who recognizes the importance of safety on the roadways, it is your responsibility to enforce safety policies, procedures, and regulations. Unsafe drivers endanger not only themselves but other drivers on the road as well.

Fleet Expectations

Any driver or fleet manager is required to know the specific process that is unique to his or her field. For example, someone dealing with the transportation of hazardous substances is expected to abide by the national standards. Management is responsible for providing additional training to employees working with hazardous materials (HAZMAT). Employees should be warned of hazards that are unique to their jobs. An example is the transportation of biochemicals, flammable substances, or materials that may act adversely in air or water. Knowing what the potential hazards are and how you can handle them gives you a chance to survive if something goes wrong. (See Chapter 14 for more information on this topic.)

Being a Good Driver

When on the road, act in a way that you would want someone else to act. Driving in this manner will gain the respect and trust of fellow employees as well as the public you serve. A good driver does the following:¹

- Avoids accidents
- Performs pre- and posttrip inspections

- Avoids abrupt starts and stops
- Avoids schedule delays
- Does not irritate the public
- Performs the nondriving parts of the job
- Finds satisfaction in the job
- Gets along with others
- Follows traffic regulations and road markings
- Adapts to meet existing conditions

If you can find employees that fit this profile they will become a valuable commodity. A good driver should be treated with respect and should not be taken for granted. Management should make an effort to keep and reward good drivers. This will ensure the success of the motor fleet organization.

All motor vehicle drivers should know that traffic safety efforts will affect their safety as well. Drivers should be up to date on any potential changes that will affect safety on the highways. After they have received this information, drivers should actively support the safety measures.

Key Elements in Driver Training

Training gives a driver the knowledge and the skills to do his or her job properly, as well as an appreciation for the job's importance and the knowledge to do it safely. The only way to ensure top driving skills is to train each new employee. Management should not assume that previous training is sufficient. Your organization will realize many positive benefits by training drivers well.

Effective training means that your group will be more efficient and accidents will be eliminated, or at least reduced. Employee morale and teamwork will improve, and your employees' job satisfaction will increase. Less supervision of job performance will be

required, while the workforce will be more flexible and familiar with the legal requirements. Management will be ultimately held responsible for drivers' job performances.²

Motor Fleet Training

The aforementioned benefits of training should provide enough reasons to justify training drivers. Reminding drivers how vital safety is in their profession and keeping them up to date with safety standards and regulations is one way to ensure that drivers possess the knowledge they need when operating vehicles on the highways.

Safe Attitudes

Attitudes are the beliefs that people possess. These beliefs are hard to change but stay with individuals for most of their lives. Through training, we are trying to alter these beliefs to reflect a safety conscious mindset. This is not easy, but through training you can foster an attitude that stresses safety in the minds of the employees.

Influencing a Driver's Attitude

There are many ways to influence a person's attitude. Continual reinforcement of safety policies and procedures through various modes of communication is vital. An organization should show the importance of safety by providing additional resources employees can use to learn and participate.

Company Bulletins

Publishing a safe driver bulletin and distributing it to all employees operating or working on motor vehicles is an excellent way to promote safety. The publication can highlight all safety awards and progress made toward various safety goals. The bulletin can also provide case studies depicting other motor vehicle accidents and questions for discussions during safety meetings.

Letters of Recognition

Sending letters of recognition to drivers who satisfy safety requirements will help influence drivers' attitudes. These letters should be personalized, and you may even want to address the driver's family. Showing employees you care enough to send letters of recognition for safety may cause employees to realize how important safety is to the company and that they should value it as well.

Posters

Posters depicting various safety slogans or messages that are placed prominently on the wall in areas where employee gather will enhance the quality of your total safety focus. Posters show your employees what aspects you are most concerned with or areas that have the most problems. Posters should highlight actual company employees if possible for the best possible effect.

Booklets

Safety topics may be best remembered if booklets covering the main points of the topic are distributed. This will help participants retain the key points of the discussion. The booklet will also serve as resource material for any employee needing a question answered.

Safety Meetings

Safety meetings or talks are a major element in a motor fleet safety program. These meetings are designed to target one specific incident that happened or an area that needs attention. Using the 5 P's — prepare, pinpoint, personalize, picture, and prescribe — will allow you to conduct a more effective talk. These talks will also give management insight into the opinions and attitudes of the employees. *Prepare*: think about the subject, organize and outline your talks, and practice. *Pinpoint*: don't try to cover too much ground. Zero in on one main idea. *Personalize*: establish a common ground, bring it close to home, and make it personal and meaningful to your audience. *Picture*: Create clear mental pictures for your listeners in order

to help them see what you mean. The use of visual aids is a good way to focus on safety. *Prescribe*: tell participants what to do in order to help them enhance the quality of the safety meetings.²

According to Frank Bird Jr., coauthor of *Practical Loss Control Leadership*,² effective safety meetings promote participation. Meeting leaders should encourage participation in various ways, such as asking people for their observations, opinions, or reactions; giving specific assignments; asking for volunteers; and reinforcing the positive contributions that people make during the meetings.

Recognition for Safe Driving

Every successful safety program includes activities aimed at arousing employee interest in safety. There are three main types of interest sustaining activities:

- Informative activities, which provide information as well as remind and inspire
- Competitive activities, which include various contests and awards based on group and individual safety performance
- Activities such as award presentation ceremonies, safety banquets, and special events in which management expresses appreciation for group and individual safety efforts

Recognition for safe driving is a great tool to show employees that managers appreciate safe driving techniques. When you have good drivers, they need to feel appreciated for their actions not only by the company, but also by the community. The following are some effective ways of relaying this message to your drivers.

Lapel Pins

You can personalize lapel pins when giving them as awards or as recognition of achievement. They can also be distributed easily to numerous people commemorating an achievement. They are also relatively inexpensive to purchase and to buy in quantity.

Monetary Awards

This is the most effective way to attract active participation in any safety recognition program. This approach creates a competitive environment in which employees can vie for cash rewards. People tend to be serious about opportunities to win money, and the competition should create a safety conscious mindset.

Merchandise

Giving merchandise, such as apparel, hats, bags, and golf equipment, is also an option for rewarding safe driving. This approach seems to have a positive effect on the competition among employees, and this creates an environment in which safety is emphasized.

Appreciation

Sometimes the greatest motivator is a simple pat on the back. As a fleet safety director, you should thank people for a job well done. A company is more successful when it employs good and productive people. Reminding these employees you appreciate their efforts will go a long way.

Elements in an Incentive Program (Coaching)

An incentive program involves the following steps:

1. *Set a standard of performance:* Tell the employees involved in the incentive program the rules of the game. This is where you explain what poor behavior you are targeting and why it is important to limit or stop this behavior. The standard of performance established should be reachable. To win the game, the employee must be conscious of the goal every day.
2. *Show them how:* Explain to the participants ways in which they may be able to reach the desired outcome. Show the participants the effectiveness of different ways to tackle the major anticipated problems.

3. *Keep score:* Tally scores daily and keep detailed records of points earned. As fleet safety director, you are responsible for the accuracy of recording the results to ensure the rules of the game are being followed.

Media to Promote Safety Awards

Fleet safety directors can use a variety of sources to promote safety awards. The media should be contacted well in advance of the awards ceremony, and you should prepare a news release. The news release should explain the contents of the awards presentation and any other interesting facts and figures.

Company Publications

Publications sent or released by your organization to get the word out on the awards can be used to inform all members of the organization about awards ceremonies. Usually these publications are paid for by the company.

Newspapers/Television

Local newspapers and television stations are a great way to notify people of a safety awards ceremony. Editors should be notified well in advance of the activity so there is a chance for free publicity. The news release should be completed and ready to read to whomever is taking the information for the newspaper or television station.

Radio

Radio airtime is another way to promote safety awards. The fleet safety director should work with radio personnel to develop a message that tells the public what the event is and where it will be held.

To ensure your safety awards program is well covered by the media, make sure you notify the editor or station manager ahead of time. This will allow that person to plan ahead for coverage of the awards ceremony. You should always plan your award ceremonies well in advance to prevent any miscommunications on the day of the ceremony.

Advertising a Safety Awards Ceremony

Many companies stress safety in their advertising. Remember that publicity is free but advertising must be purchased. You can buy newspaper displays to announce awards ceremonies, but you should know how much space you need (or can afford) and then work with it. You may also be able to use the statements of various individuals in advertisements for a safety awards ceremony. Here are some examples:

- *National Safety Council:* A statement published by the National Safety Council is credible and can be used in an advertisement.³
- *Police department:* The authorities can emphasize the need for safety and the scope of the award.
- *Guest speaker:* An expert in a specific area unique to your organization is a good choice.
- *Insurance carriers:* Insurance companies often have individuals who specialize in motor carrier safety.

The key is to try to reach as many people as possible using the budget allotted to you. The budget should correspond to the key points of the event, so with careful planning and organizing you will have a successful awards banquet.

Study Questions

1. (True or False) The costs of training drivers will be more than offset by the benefits.
2. Which is an effective way of influencing a person's attitude?
 - a. Safe driver magazine
 - b. Booklet
 - c. Poster
 - d. All of the above

3. Name the 5 P's of an effective safety presentation.
4. (True or False) Safe attitudes are the beliefs that people possess.
5. (True or False) Monetary awards are the most effective way to get active participation in any safety recognition program.

References

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13

SCHOOL BUS SAFETY



Transporting Our Most Precious Cargo

In 2002, over 22 million elementary and secondary students in the U.S. were bused to school daily. National figures show that approximately 68% of students ride to school each day. While the fatality/injury record and accident experiences for school vehicles are the lowest in the mass transportation category, the need still exists for further accident reduction.

Pupil transportation has become an integral part of our transportation system. The inception of Standard 17 (June 5, 1972) as one of the key areas of the National Highway Traffic Safety Administration was designed to improve state programs for safe transportation of students.^{1,2} The purpose of the standard was to reduce, to the greatest extent possible, the danger of death or injury to students while being transported to and from school. Standard 17 recommended that states expand the standard in the future to cover all youth transportation not under the jurisdiction of the Department of Transportation's Bureau of Motor Carrier Safety.²

According to some safety experts, the low accident fatality rate of school vehicles is not due to careful planning alone, but also to the willingness of other vehicles to yield the right-of-way. Safety problems vary from school district to school district, but the safety record has been excellent during the past 20 years.

Again, the implementation of Standard 17 recognized the national need for improving pupil transportation in both the public and private sectors. Specific objectives were approved to ensure that school bus operators attained the level of safety in the transportation of students. To make sure that all parts of the standard were being met, all school districts implemented program evaluation. The pupil transportation safety program was to be evaluated at least annually by the state agency with primary administrative responsibility for pupil transportation. Also, the National Highway Traffic Safety Administration had to be furnished with a summary of each evaluation.¹

This chapter will cover a number of issues relative to pupil transportation. School buses will be a safe and efficient means of transportation with the continuing support of parents (legal guardians), school administrators, teachers, city and state officials, law enforcement agencies, and the students themselves. All of them must have a complete understanding of the school bus transportation system with a spirit of cooperation in order to conduct a successful program.

Inspections and Maintenance of School Buses

If a school bus is found to be unsafe, the bus operator should discontinue its use. Such school bus vehicles, by permission of the

inspecting officer, may be driven to the nearest county school bus maintenance center for repair.³ The bus may be inspected at any time by a state police officer or qualified state inspector employed by the state's board of education. This is a practice carried out by all state departments of transportation. If the inspecting officer declares the vehicle unsafe for movement on the highway under its own power, the vehicle should be properly towed to the service center or other designated place for repair.

The board of education requires that all vehicles used to transport pupils to and from school or school-related events be inspected a minimum of two times each year. Each state has its own policies and procedures regarding school bus inspections.³ These inspections should be made by qualified persons employed by the board. Such inspections will not replace the daily inspections of school buses by school bus operators, or the regularly scheduled preventive maintenance inspections by county school bus maintenance personnel, or the annual inspection of all motor vehicles required by the commissioner of motor vehicles in your respective states. These inspections should be scheduled under the supervision of the state director of school transportation at times and places that best protect the safety and welfare of transporting students. At the time of inspection, bus operators should present to the inspector a valid commercial driver's license (CDL), and in some states, a first-aid certificate, and a certification card issued by the state and department of education. These policies differ from state to state.

To be approved, a vehicle must meet all applicable federal and state laws, standards, and requirements. Any vehicle not meeting these requirements should be provided with an appropriate rejection sticker and may not be used for transporting students until it has been properly repaired, reinspected, and approved by the supervisor of safety.

Inspection of New Vehicles

In most states, it is the responsibility of the county school transportation director, or person designated by the county superintendent of schools, to inspect each new vehicle immediately following delivery from the manufacturer. Such inspections ensure that all applicable

federal and state requirements, and any specific item set forth in the purchase contract, have been met. If there are any exceptions, they must be approved by the division director of school transportation. The inspection must be completed and a valid Department of Motor Vehicles (DMV) inspection sticker affixed by a qualified school bus inspector before placing the vehicle in service.³

Daily and Pretrip Inspections

Inspections should be performed prior to morning and afternoon trips, or before any other assigned trips (such as extracurricular activities) as determined by the local county board of education. This daily inspection is done by the school bus operator. The inspection consists of examining the following:

- Steering
- All fluid levels
- Proper tire inflation
- Wheels (looking for loose bolts and hubcaps)
- Lighting systems
- Brakes, including the parking brake
- Emergency exits, including roof safety hatches
- First-aid kits, fire extinguisher, communication systems, traffic warning devices
- Backup alarm
- Stop arm and crossing arm
- Exhaust system

After each run, the school bus operator should walk down the aisle to the rear of the bus, make sure that all students have exited, and check for objects left on the bus and vandalism.

Housekeeping Practices and Appearance

Students should help keep the bus clean. All buses should be maintained in a safe and clean condition prior to service. It is the responsibility of the school district to provide the necessary facilities, equipment, and supplies. Cleaning should be done weekly or when necessary and should include mopping the floors, cleaning the interior upholstery, and exterior cleaning. Some school districts have their own vehicle washing equipment.

Maintenance of School Buses

The continuing shift toward more sophisticated equipment such as surveillance cameras requires a greater effort on the part of the maintenance shop supervisors.

The school district's board of education is responsible for establishing a school bus maintenance program that will assure, in so far as possible, the safe operating condition of all vehicles used in the transportation of students to and from school and school-related events. Programs may be implemented by a school system operated maintenance center, or under contract with a private contractor. It is to everyone's advantage that buses be designed to require minimal maintenance, including replacement and adjustment of parts and equipment.

One method for extending the life of a school bus is to replace its engine when cost-effective. School system operated maintenance centers should be staffed with mechanics and service personnel skilled in preventive maintenance and vehicle repair. The staff of school system operated maintenance centers should include sufficient administrative, mechanic, and service personnel to maintain and service all the vehicles in the system. Technology is being reshaped to improve safety on and around school vehicles.

The service center needs to keep the maintenance and service records of each vehicle in the fleet. A physical inventory of parts should be completed annually. This is vital in the maintenance of

vehicles because it will provide the information needed to ensure that each disabled vehicle will be back in operation as soon as possible.

Responsibility of Personnel

Student Passengers

The school bus operator is in charge of the bus, pupils, and other passengers. School administrative and instructional personnel will cooperate with the bus operator to maintain proper discipline on the bus. The operator is to transport only those pupils enrolled in school, an employee of the county board of education, or a person approved by the board. Instruction of the pupils being transported should be held at least two times a year. This instruction involves safe riding practices as well as evacuation drills. The first of these drills is to be completed by October, and the second drill in early spring. Students should not transport any animals on the bus or be permitted to carry loaded weapons or explosives of any kind on the school bus.

Principals and teachers shall aid in instructing pupils in rules and regulations. Emphasis should also be given to pupil discipline on extracurricular trips. Passengers may not occupy any position that will interfere with the operator's vision to the front or sides, in the mirrors, or any other unsafe position.

Loading and Unloading

A school bus operator must devote 100% of his or her time to operating the school bus and, therefore, should not be distracted by the conduct of the passengers. Students should be instructed to behave properly when entering, leaving, and riding on the bus. Everyone has a part to play in assisting the driver to maintain order — the classroom teacher, parents, bus patrols, and last, but not least, the students themselves. All school bus stops should be located safely out of the traffic stream and in areas where roads are accessible at all times. High priority should be given to the safety of pupil passengers. The minimum sight distance should be related to the approach

speed of traffic. The approach speed is the posted speed limit, advisory speed, or a value judged to most accurately represent the prevailing speed at any given location. Passengers waiting for the bus should have an area large enough to allow the group assembled to be safely away from the traffic lane.

Often a good site to establish the bus stop may not be available. In such a case, it may be wise to solicit the cooperation of the parents, transportation director, bus operator, a member of the law enforcement agency, and the division of highways district traffic engineer in selecting the best site available. Reasonable efforts should be made to minimize the distance to be walked by students along narrow, heavily traveled roads without berms. If conditions develop at the bus stop site or on the bus route that compromise the safety of pupils, the bus operator should promptly bring those conditions to the attention of the transportation director. The best practical method for improvement should be implemented immediately.

Emergency Evacuation

A good approach is to have a school bus patrol, along with older students, to assist the bus operator in conducting an emergency evacuation of the bus. In the event of an emergency, such as an accident, fire, or the driver's inability to function, the students' lives may be endangered if they remain on the bus. In implementing an emergency school bus evacuation drill, include the following:³

- Policies and procedures to follow when the school bus driver is in charge.
- Procedures when the driver is unable to function.
- Instructions in the use of a cellular phone or a nearby telephone to call 911.
- Procedures in case of fire or suspected fire.
- The evacuation process: Students evacuate from either the front or rear doors depending on the situation. The escape hatches or emergency window exits might be used if exits are blocked.

- Procedures once the bus is evacuated: Students evacuated should stand at least 75 to 100 feet from the bus and off the roadway to allow emergency agencies to respond.
- Instructions covering provisions during evacuation for those students who are physically disabled. It is suggested that older, more mature, and physically stronger students be assigned the responsibility to aid in these students' safe evacuation.

It is important that a school bus emergency evacuation plan be developed, implemented, and known to all student riders on the bus. A plan, however, is relatively ineffective unless simulated drills are conducted regularly. These same procedures should also be known to students being transported for extracurricular activities.

Emergency Equipment

In case of an emergency, which may require the bus to stop in a roadway for any length of time, the operator should display warning devices such as approved bidirectional reflective triangles. The bus flashing hazard (four-way) lights should also be used as an additional warning to motorists. Tire chains should be carried on the bus at all times during that part of the year when snow or ice could be encountered. Bus operators must be trained in the installation and use of chains. A fire extinguisher and first-aid kit should be kept in good maintenance and be easily accessible by the operators.

Reporting Accidents

All daily, weekly, monthly, and other required reports should be complete, accurate, and promptly filed. Transportation directors should forward all reports to the state transportation director no later than ten working days following the last day of the school month. (States have their own requirements.) An operator needs to report any road hazards to the director of transportation as soon as possible after observing or encountering them. Follow-up reports should be made to ascertain whether the hazards were corrected.

If the school bus bumps, touches, or scrapes another vehicle or object and causes damage, this is considered an accident, and it must be reported. If the school bus makes contact with a person, this is considered an accident and it must be reported. A verbal report should be made immediately, and a written report must be made within 24 hours to the transportation director, of any and all accidents in which the bus or passengers have been involved.

All major accidents involving bodily injury, fatality, extensive property damage, and or structural damage to the bus should be reported by the director of transportation to the state director of school transportation immediately, by phone, with a written report to follow within one week. All other accidents should be reported on a monthly basis to the state director of school transportation. (Most states have their own regulations.)

Regulations for Transported Pupils

Outside the bus, pupils will:

- Walk on the left side of road, facing traffic.
- Be at the designated bus stop at the scheduled time for bus arrival. Parents should instruct students to wait for the bus on the proper side of the roadway, except where it would compromise their safety.
- Never stand or play on the roadway while waiting.
- Line up in an orderly fashion, safely away from the traffic lane until the bus has completely stopped.
- Board the bus in a safe, orderly manner without pushing and shoving.
- Follow the bus operator's instructions carefully by proceeding safely and alertly when getting off the bus and crossing the roadway.
- Go home promptly after alighting from the bus at the end of the school day.

Once on the bus, pupils will:

- Go immediately to their assigned seats as directed by the bus operator and courteously share seats with others on the bus. (Not all school districts preassign seats.)
- Be held responsible for vandalism that occurs to the seats in which they ride. (Many school districts install cameras on their buses.)
- Change seats only with the bus operator's permission, and only when the bus is not in motion.
- Get on or off the bus only when it is completely stopped.
- Cooperate with the bus operator to keep the bus clean. Eating and drinking on the bus are prohibited, except when medically necessary.
- Observe good conduct, with quiet conversation, to enable the bus operator to give attention to safe driving.
- Avoid unnecessary conversation with the bus operator.
- Keep head and limbs inside bus windows at all times.
- Report any open exit, or released latch, to the bus operator immediately.
- Provide enrollment information to the bus operator as requested.
- Comply with instructions of the aide (when an aide has been assigned).

Transportation of Disabled Students

Responsibility of a Public Agency

The public agency will ensure that appropriate safety measures are followed in the transportation of students with disabilities. The time in transit for students with disabilities should not be greater than 30 minutes beyond the time in transit of nondisabled students similarly located. Time in transit beyond this parameter should be specified

in the individualized educational plan. When transportation of a student with a disability necessitates transfer while en route, appropriate supervision at the point of transfer remains the responsibility of the public agency or school district.⁴

The agency will also determine the type of vehicle used to transport students with disabilities on the basis of the disabling conditions of those students. Specially adapted seats and support or protective devices will be provided for all students who require such devices to ensure their safe transportation. The public agency will terminate transportation service if parents fail to assume the responsibility of meeting the bus at the designated bus stop. Parents should be afforded due process procedures.

Responsibility of a School Bus Operator

The operator of the bus transporting students with disabilities will ensure that students aboard the bus are supervised at all times. The aide or bus operator will assist such students on and off the bus at the designated bus stop. The bus operator should verify that the protective safety devices are utilized. The bus operator and aide will receive training regarding the needs of students with disabilities. Minimal training includes the successful completion of a recognized first-aid training program.⁴ For bus operators, minimal training involves the successful completion of a recognized first-aid training and cardiopulmonary resuscitation (CPR) program. This could be conducted by the American Red Cross or the American Heart Association, or be a part of the National Safety Council's accredited programs.

Parents' Responsibilities

Parents should provide the school district or public agency with written documentation regarding any special care the student may need while on the bus. Parents are responsible for having the student at the designated bus stop at the regularly scheduled time, and for providing the necessary supervision until the bus arrives. Parents are responsible for meeting the bus upon its return to the designated bus stop at the scheduled time. If a student is unable to attend school,

the parents should make a reasonable and timely effort to notify the bus operator prior to the beginning of the morning bus schedule. In some states the students are transported from their home to the school, sometimes referred as “door-to-door” pickup.⁴

Employment Qualifications

No person should be employed by any board of education to operate a motor vehicle transporting school pupils who has not been certified by the state police or the state department of education. School bus operator certification in most states is obtained by meeting the specified age, experience, license, residency, and training criteria.

The candidate must have had at least three years of driving experience as a licensed operator of a motor vehicle. The required training and written and driving tests may be taken while the applicant is in possession of a valid commercial driver’s instruction permit. However, a valid commercial driver’s license is required for any person who wants to operate a school bus to and from school or school-related events. Nonresident applicants must provide a certified driving record from the state of residence and a 10-year history of driving record.

The written and driving tests should be administered by members of the department of education to all new public school bus operators prior to certification. A written test provided by the state department of education and administered by the local school transportation department will be required every other year thereafter. Any additional driving tests must conform to applicable federal regulations. Any candidate for employment as a school bus operator must receive adequate training to understand fully and carry out all the duties and responsibilities of a school bus operator.

Minimum school bus operator instruction should include:²

- Thirty hours of instruction from the school bus operator’s instructional program
- Sufficient “behind-the-wheel” time

- First-aid training, CPR
- Special training for the transporting of children with disabilities

A record of training for each bus operator should be maintained by the county or local transportation director.

Extracurricular Trips

The transportation director should receive a copy of an approved schedule far enough in advance to arrange safe and adequate transportation. Schedules for approved trips must not interfere with the regular transportation schedule. Only bus operators employed by the board of education should operate buses on such trips. Pupils transported on a school bus on such trips will be supervised by at least one professional employee, in addition to the school bus operator. A list of all persons on the bus should be given to the bus operator. Each additional bus should be supervised by a professional employee or person approved by the school board.

School districts providing curricular and extracurricular transportation should file, at the end of each month, a separate financial and statistical report for these trips. The reports should be filed on forms provided by the state director of school transportation. (States have their own forms for these procedures.)

Study Questions

1. List five pretrip inspection checks carried out by the bus operator.
2. (True or False) Students (pedestrians) should walk on the right side of the roadway with traffic.
3. (True or False) Completed maintenance and service records of all school buses in the fleet should be maintained at the service center.

4. (True or False) Administrators and teachers should aid in instructing students in rules and regulations governing students being transported on school buses.
5. (True or False) Students may transport their cats or dogs on the bus with their parents' consent.

References

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14

SHIPPING AND STORAGE OF HAZARDOUS MATERIALS



Background

If your company transports hazardous materials, you must know the rules and regulations surrounding their shipment. The world has changed since the terrorist attacks of September 11, 2001, and the requirements for transporting hazardous materials have as well. There is a greater focus on hazardous materials transportation, and penalties for noncompliance can be severe. In this chapter, we will examine hazardous materials transportation. It is impossible to cover everything in a single chapter, but we will cover many of the highlights and provide resources for additional information.

Rules and Regulations

The rules for shipping hazardous material in the U.S. are promulgated by the U.S. Department of Transportation (DOT) and contained in Title 49 of the Code of Federal Regulations (CFR). There are seven volumes to Title 49. Volume 2, Parts 100–185, contains the current rules and regulations concerning hazardous materials transportation.¹

The DOT has a special group that administers the hazardous materials regulations: the Research and Special Programs Administration (RSPA). RSPA develops and interprets standards, provides training assistance, monitors incidents and incident reporting, fines and penalizes offenders of the regulations, and performs inspections of carriers and shippers. In the U.S., its authority reaches to all aspects of transportation, including air, ground, and water.

Registration

As a shipper or carrier of hazardous materials, you may be required to register as a hazardous materials shipper with the DOT. You are required to register if you offer for transportation or transport:

1. A highway route-controlled quantity of a class 7 (radioactive) material. Refer to 49 CFR 173.403 to determine if you have a highway-controlled quantity of hazardous materials.
2. More than 25 kg (55 lb) of a Division 1.1, 1.2, or 1.3 (explosive) material in a motor vehicle, railcar, or freight container. (See 49 CFR 173.50.)
3. More than 1 L (1.06 qt) per package of a material extremely toxic by inhalation. (See 49 CFR 171.8 for a definition.)
4. A shipment of a quantity of hazardous material in a bulk packaging having n capacity equal to or greater than 13,248 L (3,500 gal) for liquids or gases or more than 13.24 m³ (468 ft³) for solids.
5. A shipment in other than a bulk packaging of 2,268 kg (5,000 lb) gross weight or more than one class of hazardous materials for which placarding is required for that class.

6. A quantity of hazardous material that requires placarding. (See 49 CFR 172.500.)

You must register using DOT Form F 5800.2. You have to submit a complete and accurate registration statement before June 30 of each year.

Immediate Notification and Spill Reporting Requirements

All carriers are required by the DOT to submit a written report on all hazardous material incidents. The written report must be received by the DOT within 30 days from the date of the hazardous material spill. The form to be completed is DOT Form F 5800.1. Copies can be obtained from the DOT.

The DOT requires immediate notification if the hazardous material spill results in any of the following:

- A fatality
- An injury requiring hospitalization
- Estimated carrier costs or other property damages that exceed \$50,000
- An evacuation of the general public for an hour or more
- The closure (or slowdown of traffic on) major roadway(s) or transportation facility(s) for an hour or more
- The alteration of an operational flight pattern or routine of an aircraft
- Fire, breakage, spillage, or suspected contamination that involves radioactive material or etiologic agent
- A release of a marine pollutant exceeding 119 gal or 882 lb
- A situation of such a nature that in the judgment of the carrier it should be reported

Hazard Classes

This section will give you an overview of the DOT's classification of hazardous materials. The ten classifications are as follows:

- Class 1: Explosives
- Class 2: Gases
- Class 3: Flammable Liquids
- Class 4: Solids
- Class 5: Oxidizers and Organic Peroxides
- Class 6: Toxic and Infectious Substances
- Class 7: Radioactive Materials
- Class 8: Corrosives
- Class 9: Miscellaneous
- ORM-D: Other Regulated Materials

Hazardous materials can have more than one hazard associated with one material. For example, a material like oxygen can be both a nonflammable and an oxidizer. The following will give you a brief overview of each hazard class.

Class 1: Explosives

An explosive is any substance or device that is designed to function by explosion, such as the extremely rapid release of gas and heat. Class 1 explosives are assigned a division and a compatibility group. The class, division, and compatibility group must be displayed on the hazard label. All explosives, except ammunition, must display an EX number on the package or shipping paper. The EX number is a product code that has been assigned by the associate administrator for hazardous materials. This verifies that the explosive has been

appropriately classified in the correct division and compatibility group.

Definitions, classifications, and packaging requirements for explosives can be found starting at 49 CFR 173.50.¹

Class 2: Gases

Class 2, gases, exist when a container is under a certain amount of pressure. This does not include helium balloons, carbonated pressure, or balls used for sports or tires when inflated not greater than their rated inflation pressure. A gas means a material that has a vapor pressure greater than 300 kPa (43.5 psi) at 50°C (122°F) or is completely gaseous at 20°C (68°F) at a standard pressure of 101.3 kPa (14.7 psi). Definitions for Class 2 materials can be found in 49 CFR 173.115.

Class 3: Flammable Liquids

Class 3, flammable liquids, represents the most frequent hazardous material shipped in the industry. The flash point and boiling point are the scientific criteria used in determining whether or not a liquid is a hazardous material. The flash point is the minimum temperature at which a liquid gives off vapor within a test vessel that is ignitable near the surface of the liquid.

A flammable liquid with a flash point at or above 38°C (100°F) that does not meet the definition of any other hazard class may be reclassified as a combustible liquid. This exception applies only to transportation by highway. The term “combustible liquid” is commonly used within the transportation industry and indicates that the material has been reclassified as a combustible liquid.

Flammable liquids that have been reclassified as combustible liquids are not subject to the hazardous material regulations. No hazardous materials shipping paper would need to be completed.

Definitions for Class 3 materials can be found in 49 CFR 173.120.¹

Class 4: Solids

Class 4 materials are solids and present various hazards. Class 4 materials are divided into three divisions:

- Division 4.1: Flammable Solids
- Division 4.2: Spontaneously Combustible
- Division 4.3: Dangerous When Wet

Definitions for Class 4 materials can be found starting at 49 CFR 173.124.¹

Class 5: Oxidizers and Organic Peroxides

Class 5 materials are divided into two divisions. Division 5.1 materials are called oxidizers. An oxidizer is a material that may, generally by yielding oxygen, cause or enhance the combustion of other materials.

Division 5.2 materials are called organic peroxides. Organic peroxide means any organic compound containing oxygen (O) in the bivalent -O-O- structure and that may be considered a derivative of hydrogen peroxide, where one or more of the hydrogen atoms have been replaced by organic radicals or other conditions apply.

Definitions for Class 5.1 and 5.2 materials can be found in 49 CFR 173.127, 173.128, and 173.129.¹

Class 6: Toxic and Infectious Substances

Class 6 materials are divided into two divisions: Division 6.1 (toxic or poisonous) and Division 6.2 (infectious substances). A toxic material, other than a gas, is a material that is known to be so toxic to humans that it presents a hazard to health during transportation. Material toxicity may fall into three categories: oral, dermal, and inhalational. Division 6.2 are materials known to contain, or are suspected of being, a pathogen.

Class 7: Radioactive Materials

Radioactive material is any material having a specific activity greater than 70 Bq per g (0.002 microcurie per g). Refer to 49 CFR, Part 173, Subpart I, for further information regarding Class 7 materials.¹

Radioactive materials are divided into three categories: White I, Yellow II, and Yellow III. The requirements for radioactive materials can be found starting with 49 CFR 173.401.¹

Class 8: Corrosives

A corrosive material is a liquid or solid that causes full-thickness destruction of human skin at the site of contact within a specified period of time. Refer to 49 CFR 173.136 and 173.137 for further information.¹

Class 9: Miscellaneous

These materials do not meet the definition of any of the other hazardous classes. Miscellaneous hazardous material (Class 9) are materials that present a hazard during transportation but that do not meet the definition of any other hazard class. This class includes:²

- Any material that has an anesthetic, noxious, or other similar property that could cause extreme annoyance or discomfort to the operator of a vehicle
- Any material that meets the definition for an elevated temperature material, a hazardous substance, a hazardous waste, or a marine pollutant

The terms “hazardous substance” and “hazardous waste” are used to identify those materials that are also regulated by the Environmental Protection Agency (EPA).

A hazardous material that is also a hazardous substance is identified by the letters RQ (Reportable Quantity). These materials are considered hazardous material during transportation only because

they are regulated by the EPA due to the harm they could cause to the environment if released.

ORM-D: Other Regulated Materials

An ORM-D material (although regulated as a hazardous material) presents a limited hazard during transportation due to its form, design, quantity, and packaging. The regulations concerning the transportation of ORM-D materials via highway (ground) versus aircraft (air) are very different. Transportation of ORM-D materials by highway do not require shipping papers. The majority of ORM-D materials are consumer commodity products but can include ammunition (cartridges, small arms, and cartridge power device). It is a shipper's responsibility to classify its product as an ORM-D material. Please refer to the ORM-D classification section for further details.

Hazmat Employees and Employers

All employees involved in the hazardous materials (in this section referred to *hazmat*) transportation process must be trained. It is the employer's responsibility to make sure all employees are trained. The DOT outlines the following definitions for a hazmat employee and employer:

A hazmat employee is a person who is employed by a hazmat employer and directly affects hazmat transportation safety. This includes an owner/operator of a motor vehicle that transports hazmat. It also includes a person (even a self-employed person) who:

- Loads, unloads, or handles hazmat
- Tests, reconditions, repairs, modifies, marks, or otherwise represents packaging as qualified for use in the transportation of hazmat
- Prepares hazmat for transportation
- Is responsible for safety of transporting hazmat
- Operates a vehicle used to transport hazmat

A hazmat employer is a person or company that uses one or more of its employees in connection with:

- Transporting hazmat in commerce
- Causing hazmat to be transported or shipped in commerce
- Representing, marking, certifying, selling, offering, reconditioning, testing, repairing, or modifying packaging as qualified for use in the transportation of hazmat

(A hazmat employer also includes any department, agency, or instrumentality of the U.S., a state, a political subdivision of a state, or a Native American tribe engaged in offering or transporting hazmat in commerce.)

Hazmat Training

Hazmat employee training should cover the methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area. These methods include monitoring conducted by the employer, continuous monitoring systems, visual appearance, or odor of hazardous chemicals being released. The training should also address the physical and health hazards of any chemicals in the work area.

The training should address the measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment (PPE) to be used.

The employee should also know the details of the hazard communication program developed by the employer, including an explanation of the labeling system and the material safety data sheet, and where employees can obtain and use the appropriate information. Initial training must be conducted for all employees. New employees must be trained prior to their initial assignments. The training of a hazmat employee must include:

- **General awareness and familiarization training:** Each employee should be provided training in respect to the hazmat requirements. This training must enable the employee to recognize and identify hazardous materials.
- **Function-specific training:** Each employee must be provided training applicable to the functions the employee performs.
- **Safety training:** Each employee must receive safety training that includes emergency response information, measures to protect the employee from the hazards associated with the material, and methods and procedures for avoiding accidents such as safe handling of packages.

A new hazmat employee (or an employee who changes job functions) may perform those functions prior to the completion of the training provided the employee performs those functions under the direct supervision of a properly trained and knowledgeable hazmat employee. In addition, the training must be completed within 90 days of employment or a change in job function.

A hazmat employee should receive the training at least once every 3 years.

Employees must receive additional training whenever:

- New hazardous substances are introduced into the workplace.
- Exposures to hazardous chemical change.
- Employees are subject to increased exposure due to changes in work practices, processes, or equipment.
- Additional information about the hazardous substance in the workplace becomes available.

Shipping Papers

A shipping paper is required by the DOT when a company is transporting a hazardous material. The shipping paper is used to describe the material as well as provide appropriate emergency response information in the event of an incident to those individuals involved

in handling and transporting the package. The shipping paper must be accurate and complete.

The DOT requires that the shipping paper include the basic description in a specified sequence. The DOT basic description consists of the following:

- The DOT proper shipping name
- Hazard class or division number
- Identification number
- Packing group
- Weight

The basic description cannot include unnecessary information, such as product codes or inaccurate and incomplete information.

Emergency Response

The *Emergency Response Guidebook* (ERG 2000) was developed jointly by the DOT, Transport Canada, and the Secretariat of Communications and Transportation (SCT) of Mexico for use by firefighters, police, and other emergency services personnel who may be the first to arrive at the scene of a transportation incident involving a hazardous material.² It is primarily a guide to aid first responders in (1) quickly identifying the specific or generic classification of the material(s) involved in the incident, and (2) protecting themselves and the general public during this initial response phase of the incident. The DOT will allow exceptions for certain materials, such as those shipped under the limited quantity exceptions. The ERG is updated every 3 to 4 years to accommodate new products and technology. The next version is scheduled for 2004.

Contacting First Responders

Emergency contact telephone number must be provided. The number can be toll-free or a local number. Local numbers must include

the area code in which they are located. The number must be available 24 hours and be capable of providing emergency response information at any time during transportation. The emergency contact number is used for emergency response information. It is used when there is an incident involving the hazardous material. Please refer to the ERG 2000 for further details.

Placarding

When shipping hazardous materials, the vehicle may be required to be placarded. Placards must be placed on each end and side of a transport vehicle, railcar, bulk packaging, and so forth. Certain materials require that regardless of quantity shipped the vehicle must be placarded. Other materials require that if there are over 1,001 lb then the vehicle must be placarded. This is determined by using the two placarding tables in 49 CFR 172.504(e).³

Security

In the wake of the terrorist attacks of September 11, 2001, and subsequent threats related to biological and other hazardous materials, the DOT has mandated that all carriers and shippers implement a security awareness program. A security plan is also required in certain instances. (See 49 CFR 172.800.) The security plan must address the following:¹

- Personnel security
- Unauthorized access
- En route security

Hazard Communication

The purpose of a hazard communication program is to comply with the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 29 CFR 1910.1200 and to warn employees about hazardous chemicals and substances in the workplace.³

A written program is required to achieve compliance with the requirements of the standard. The specific methods described in this written program are for illustrative purposes, and other effective methods may be substituted to satisfy local needs or practices.

Hazmat employers should provide employees with information and training on hazardous chemicals in their work area at the time of their initial assignments. All employees also need to receive additional training when a new hazard is introduced into the work area.²

The employees should be informed of any operations in their work areas where hazardous chemicals are present, and they should know the location and availability of the written hazard communication program. This includes the list(s) of hazardous chemicals and material safety data sheets required by this section.

Chemical Inventory

A hazmat business should determine what hazardous materials it uses and maintain a current list of the kinds and amounts.⁴ The location of these materials should also be noted to aid in an emergency situation. Material safety data sheets (MSDSs) should be obtained and kept on hand for reference as well as for employee training.

Labeling and Storage

All hazardous substances must be stored and labeled properly. All containers, no matter how minute the quantity, should be compatible with the material they contain and properly labeled to prevent accidental misuse. The National Fire Protection Agency (NFPA) Codes and 29 CFR 1910 dictate the proper storage, grounding, and dispensing of hazardous materials. Dangerous chemical reactions can result if certain substances are mixed together.³

Other chemicals, such as paints, thinners, solvents, and fuels, have specific storage requirements, which should be carefully followed. Temperature, ventilation, vibration, and close proximity to other substances can have adverse effects on certain hazardous materials.

Transferring of chemicals should be carefully done according to manufacturers' procedures, with containers grounded to prevent fire or explosion from static electric charges. The NFPA has a label known as the "704" diamond, which informs users at a glance of the properties of a substance.

Personal Protective Equipment (PPE)

All necessary site-specific PPE mandated for use within a hazmat company must be used to prevent hazardous materials from harming personnel, property, and the environment. Records of issuance must be maintained, and the company should train its employees in the use and maintenance of the PPE.

A program to train new employees and periodically update training of current employees should be in place. Any medical screening and records, such as a pulmonary function test for respirator wearers, should be maintained, and deficiencies must be noted for correction.

The manager should make sure that each employee is using his or her PPE properly and is not disabling or bypassing engineering safeguards. Any outside contractors who handle hazardous materials should be required to submit written safety procedures and periodically monitored to ensure compliance.

Spill Plan

Any spillage of hazardous materials should be cleaned up immediately. Any damage to containers of hazardous substances should be reported, and the containers must be repaired, replaced, or otherwise contained immediately.

A viable spill plan to protect hazmat personnel, property, and the environment should be developed. Equipment for use in spill incidents should be kept on hand and properly maintained. Employees should be trained to use this equipment, and some of them should be present during each shift.⁴

Periodic spill containment drills can be helpful in quickly correcting a potentially dangerous and costly situation. Coordination and local emergency service notification procedures should be instituted and maintained. The procedures should also include contacting the state and federal environmental protection officials. Local, state, and federal officials may want to know the type, amount, and location of any hazardous substance that your organization stores on site in order to be more effective in their response should they ever be called upon.

Study Questions

1. What is the group within the DOT that administers the hazardous material regulations?
2. Name the requirements for hazmat registration with the DOT.
3. What form is used to submit a hazardous materials incident report? What is the time limit?
4. Under what circumstances is immediate notification of the DOT required when a hazmat incident occurs?
5. Name the ten hazard classes of hazardous materials.
6. What are the three types of training required for all hazardous materials employees?
7. What are the requirements for initial hazmat training and recurrent training?
8. What is the basic description required on hazardous materials shipping papers?
9. Name the book that contains emergency response information for use by first responders to hazardous material incidents.
10. What is the purpose of the hazard communication standard?

References

1. Code of Federal Regulations, Title 49, Parts 40, 100–185, 325, 355–399, U.S. Department of Labor.
2. *Emergency Response Guidebook*, U.S. Department of Transportation, Research and Special Programs Administration, Office of Hazardous Materials Training (DHM-50), Washington, D.C., 2000.
3. Code of Federal Regulations, Title 29, Part 1910, U.S. Department of Labor.
4. Della-Giustina, D.E., *Fire Safety Management Handbook*, 2nd ed., American Society of Safety Engineers, Des Plaines, IL, 2003.

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SECURITY IN THE TRANSPORTATION INDUSTRY (TRANSIT AND MOTOR CARRIER)



Federal Transit Systems

In the wake of the terrorist attacks of September 11, 2001, the U.S. Department of Transportation (DOT), through many of its agencies, launched an aggressive program to enhance the security of the

nation's public transportation programs. This chapter will explore the Motor Carrier and Federal Transit Administration (FTA) systems. A total of 13 agencies are currently in operation. Two former DOT agencies transferred over to the new Department of Homeland Security (DHS). President George W. Bush signed legislation creating the new department, whose goal is to address terrorist threats against Americans at home. Also, the U.S. Coast Guard and the Transportation Security Administration moved from the DOT to the DHS on March 1, 2003.

Transit systems are inherently "open" environments and designed to move people through an urban area with easy access to passengers. In the past year, many gains in protection and preparedness have required different alternatives as well as management inter-agency coordination and financial investment.

Planning

Since the early 1990s, the nation's 100 largest rail and bus companies when combined moved approximately 85 percent of all passengers who utilize public transportation. Defending against terrorism is not new to this discipline. An effective response to an act of terrorism requires instantaneous and sound decision making in a volatile, high-pressure environment. Today, some of the largest systems have emergency response plans, but need to reexamine their plans to meet potential threats. The plans can serve as blueprints for action in case of an attack. Key steps to take include notifying authorities of the incident, evacuating passengers, protecting personnel and equipment, activating a unified command and communications system among transit police and emergency fire and medical units, and restoring the system to normal operation.

As a result of the tragic events of September 11, safety personnel have emphasized how important it is to implement regular emergency response drills. Every transit agency should conduct regular emergency drills, and not just fire drills, to keep skills sharp, update response plans, and build personal relationships with counterparts in the police, fire, and emergency medical response organizations.

It is important that all members of the transit workforce understand security issues and be prepared to respond should an emergency occur. Participants will gain a better understanding of the roles played by the various agencies, and begin the process of developing plans and relationships necessary to respond effectively in an emergency situation. Since the 9/11 attacks in New York, Washington, D.C., and Pennsylvania, the FTA has supported U.S. industries programs for security and preparedness through training, research, and various regulations and has worked closely with the public transportation industry. In response to new threats of terrorist activity, FTA has implemented a national transit security program that includes the following elements:

- *Security assessments:* FTA has deployed teams, composed of experts in anti- and counterterrorism, transit operations, and security and emergency planning, to assess security at 36 transit agencies. FTA plans to extend the programs to additional agencies after the first 36 assessments are complete.
- *Emergency response planning:* A plan is in place to provide technical assistance to the 60 largest transit agencies for creation of security and emergency plans together with emergency response drills .
- *Emergency response drills:* Grants have been offered for organizing and conducting emergency preparedness drills. Approximately \$3.4 million has been awarded to more than 80 transit agencies through these grants.
- *Security training:* “Connecting community” forums have been designed to bring together small- and medium-sized transit agency personnel and local public safety agencies, including law enforcement, fire, and emergency medical services, and specialized units for hazardous materials and explosives disposal. These forums will provide participants with many opportunities.
- *Research and development:* FTA has increased the funding of its safety- and security-related technology research to enhance a systems approach to the problem of release detection and management, including modeling and simulation to identify

the most effective application of sensor-based technology, communication systems, training tools, and exercise and response planning.

Today there are over 7,500 local public transportation systems in the U.S. One primary concern of the federal government is to encourage security and preparedness programs that will protect all of them. This might seem like an impossible task when we compare the various systems across the U.S. Each system has a unique method of carrying out security measures that best suits its needs. Daily in the U.S., publicly funded transportation systems provide about 32 million passenger trips. They provide transportation to students, commuters, the aged, tourists, disabled individuals, and others who rely on trains, buses, vans, ferryboats, and other accessible vehicles and facilities to reach their final destination.

The public transportation industry has to cope with many threats, all of which have the potential for disrupting local communities, causing casualties, and damaging and destroying public and private property. At the national level, the industry will most likely be affected by several major disasters each year, such as earthquakes, floods, tornadoes, hazardous materials spills, major accidents, fires, violent crime, and potential terrorist acts.

Implications for Terrorism

Threat assessments issued by the FBI have consistently placed public transportation at the top of the critical infrastructure protection agenda, along with airports, nuclear power plants, dams, and major utility exchanges on the national power grid.

Terrorist acts are not accidents or disasters, but they are intentional actions designed to inflict casualties. In order for transportation systems to address these threats, they must be able to:

- Recognize and prevent potential incidents and emergencies.
- Enhance response capabilities.

Training and Exercising

When evaluating the transportation system's needs for training and simulated drills, key elements to remember are:

- All training should reflect security and emergency plans and procedures.
- Simulated drills are conducted to assess the quality of both training and plans. These will provide valuable feedback in the planning process. The reason companies need training for security and emergency preparedness is to provide transportation system personnel with the specific knowledge needed to perform the critical functions required in system plans and procedures. Training in this regard may be highly technical, geared specifically to the responsibilities of an individual employee to support the system during an emergency. Throughout the country, transportation systems of all sizes provide a wide range of training for their employees, contractors, and local public safety agencies.
- Emergency preparedness is a continuous process consisting of three integral functions: program planning, employee training, and conducting simulated drills. Each function is dependent on the other two and should not be viewed in isolation.

Motor Carrier Systems

Driver Safety

Motor carrier operators often work alone, at night, and in surroundings they are not familiar with, and they are responsible for valuable cargoes. Recent events have focused a great deal of attention on the vulnerability of the nation's infrastructure to major events, including terrorism. Emergency management in public transportation is constantly evolving, incorporating lessons learned from major events, as well as facing new threats. Public transportation systems at the forefront of security and emergency management offer the vision needed to guide industry efforts for enhanced capabilities.

Once the driver is in transit, he or she should make sure all tractor and trailer doors are locked and the windows are rolled up. When stopped in traffic, the driver must leave enough space in front of the vehicle in order to pull away if he or she encounters trouble. The reason for this procedure is that when driving on expressway ramps and urban areas, drivers are in particular danger and must be alert.

Scheduled Truck Stops

The trucking industry needs to address the issue of overturned tractor-trailers and other highway incidents. Motor carrier and transit operators need to spend a great deal of time on highway safety, focusing on the driver and the general public.

Instruct your drivers to follow these safety steps:

- In planning your regular routes, vary your routine so hijackers cannot predict where you will stop. Schedule your stops in advance and avoid unplanned stops.
- Lock all doors when you park, and leave your vehicle secured by placing all valuables out of sight of strangers and onlookers.
- Avoid dark and empty parking lots. Park in a well-lit lot when possible.
- Develop a personal security plan. Follow this plan at all times.
- When reentering your vehicle, check to make sure no strangers are inside. Once inside, lock your doors. Standard procedure for transit operations is based on the terminals where passengers are waiting to go aboard.
- Report any unusual conditions to your dispatcher.
- Because thieves may be monitoring your radio conversations, never discuss anything about the cargo you are transporting. Usually, transit operators have a list of all passengers in advance.

Cheshire Petroleum & Gas Corporation (Model Plan)

The model motor fleet safety plan presented in this chapter is based on the estimated number of businesses and residents that are located within four states: West Virginia, Pennsylvania, Ohio, and Maryland. The total coverage is in excess of an 800-mile radius, supporting the fact that a large motor fleet department is necessary to cover such a large area. There are approximately 500 trucks to carry out the tasks of meter reading, maintenance, and delivery of their services. The primary mission of Cheshire Petroleum & Gas (a fictitious company) is to develop and implement the policies, procedures, and plans so that a motor carrier safety program under the direction of a competent fleet safety director when implemented will provide the best program. To be effective, the program should cover a variety of tasks, including an adequate training program, procedures for loading and unloading freight, highway safety procedures (focusing extensively on the driver and the general public), proper investigation techniques, and others to be discussed later in this chapter. With upper management directing its attention to these areas, the operation will be much safer and more productive.

Motor Carrier Policy

A motor carrier policy includes the following:

- Date that the policy was adopted.
- Objectives of the policy depicting vehicles purchased to provide the best possible support to the corporations operations, environmental impact, and other governmental objectives and guidelines.
- A policy statement to show that the motor vehicles are used only when required to conduct company business. Fleet vehicles should be managed in accordance with the lifecycle approach to material management, including the principles of economy and minimizing any negative environmental impact.

Role and Responsibility of Fleet Safety Director

The safety director has many responsibilities to cope with and is required to spend much time and resources when a potential conflict arises between DOT regulations and safety and health standards enforced by the Occupational Safety and Health Administration (OSHA). Other duties that are required include investigations; planning, organizing, and selling the program to the entire enterprise; and a follow-up reporting system.

Crash Investigation Program

Investigations

Investigations must be conducted for all incidents, and should include determining where the corporation should concentrate its safety and health efforts. The fleet safety director should examine past data and records, including police and insurance reports. Upon analyzing the data, the director or investigative officer should be able to identify the types of high-frequency incidents that can be addressed during safety training. In addition, the director or investigator should check work procedures, job responsibilities, and the various OSHA forms for information.

Supervisor's Protocol When Investigating Accidents

There are protocols for the supervisor to adhere to when conducting a motor vehicle investigation. This is a policy of Cheshire Petroleum & Gas and does have precedence over other ongoing activities. All investigations should be completed by a trained, experienced individual utilizing standard investigation protocols. Furthermore, all crashes of fleet vehicles require that an on-site investigation be conducted and that the vehicle involved be removed from service until preventive maintenance has been performed to ensure that mechanical damage has not occurred (which could cause another crash).

Objectives of Crash Investigations

The goals of crash investigations are:

- Secure the accident scene.
- Preserve vital information.

- Provide organizational support for injured employee(s).
- Gather useful preventive accident information for analysis.

Postaccident Interviews

The role of the crash investigator is of primary importance for Cheshire Petroleum & Gas employees and for the company itself, because the investigator should be the first representative of the organization on-site. He or she should meet with law enforcement, emergency medical services, media, injured employees, and any other injured parties. The investigator must be constantly vigilant concerning the ways to control loss for the organization and shield against potential liability. The first and foremost duty is to search for all facts and be able to reconstruct the crash completely. This type of data is critical.

The crash investigator will use a prepared kit that will include the following items:

1. Accident investigation reports
2. Camera
3. Measuring tape or other suitable measuring device and chalk
4. Flashlight
5. Clipboard and pen
6. Cellular telephone

Procedures

The motor fleet carrier should follow these procedures:

1. When management is notified of a motor vehicle accident, the employee taking the call should contact the highest ranking supervisor to initiate the investigation.
2. The investigator should obtain the investigation kit and go to the scene.

3. After gaining an initial overview of the accident, the investigator should begin to photograph the scene from several vantage points.
4. The investigator should contact the local law enforcement agency.
5. The investigator should meet with any other involved parties and emergency medical services to offer assistance.
6. The investigator should interview any witnesses to the crash. The interviews should be made at or near the accident scene. The investigator should obtain witness contact information.
7. The investigator should accompany the employee to the medical facility if necessary.
8. The investigator should complete all the necessary reports. The driver will be placed in nondriving status and have driving privileges revoked until the crash investigation findings are complete.

Postaccident Interview with Driver

The investigator will conduct a postaccident interview with the driver, a primary reason being to resolve any discrepancies existing in the accident report. The driver will provide any needed explanations regarding the crash.

Telephone Checklist for Motor Vehicle Accident

When investigators call their companies' home offices to report information, they must be prepared to answer the following questions.

1. What is your name?
2. Where did the accident occur?
3. Have the police been contacted?
4. Has anyone been injured? If so, who?

5. Are hazardous materials involved?
6. What happened? (Brief summary, including names of witnesses)

The person taking the information should record the time the call was received and the date, and then sign his or her name at the bottom of the checklist.

Program Development

Planning

Planning consists of forming a plan of action. This task may require Cheshire Petroleum & Gas to change certain procedures, or even to provide additional training. It is important to realize that plans must be flexible, and to believe in the phrase “continual improvement.”

A responsibility of the fleet safety director of Cheshire Petroleum & Gas is to promote the entire safety program throughout the entire organization. The only way in which the program will be a success is if the director can integrate the system throughout every level of the company. The director may consult the company’s insurance carrier to provide additional information, to help with developing a cost-benefit analysis. This information can be used to obtain upper management’s support on future safety expenditures. The safety director should be able to present all of the information in a factual and businesslike manner.

Training

Training is a crucial part of the motor fleet safety program. The fleet safety director should oversee development and implementation of the job training, job specifications, and work procedures. This will ensure that all legal and mandated regulations are covered. The entire program must be in place and outlined, and training procedures must be clear and concise.

Follow-up Procedures

The follow-up programs and procedures should consist of five different aspects:

- Monthly report of absenteeism due to accidents
- Regularly scheduled inspections, conducted by a committee of Cheshire Petroleum & Gas personnel
- Return of incomplete accident reports to obtain complete information
- The recording of findings in the driver's file when remedial action is indicated
- Continual analysis of accident and injury records

By following the above procedures, the fleet safety director will help Cheshire Petroleum & Gas achieve better safety programs in the future.

Reporting

Reporting safety results is also a duty of the motor fleet safety director. This occurs at a regular time, whether it be every month or every other month. At this time, the director will report all achievements, as well as problems, to both management and employees. The safety director must be fair and accurate. All reports should also emphasize any problem as another learning experience.

Selecting, Training, and Supervising Personnel

Driver selection is a critical component of the motor fleet safety program. The company wants to make sure that it obtains qualified and safety conscious drivers. A good driver must be able to avoid accidents, follow traffic regulations, perform pre- and posttrip inspections, avoid abrupt starts and stops, avoid schedule delays, avoid irritating the public, perform the nondriving parts of the job, get along with others, and adapt to meet existing conditions.

Previous experience as either a professional driver or a private motorist is the best indicator of the candidate's ability to drive safely. Therefore, the human resources manager should consult with an applicant's previous employers and state license records to see the applicant's driving record. The driver must have a current state driver's license.

The degree of an applicant's driving skills can be determined by placing the applicant behind the wheel of a vehicle and observing his or her driving ability over a prescribed course. The course can be of two types. One is called a driving range test. This determines the driver's awareness of the physical dimensions and limitations of the vehicle. The second type consists of taking the driver through a traffic situation where he or she would be exposed to certain driving conditions.

All drivers will receive training, from their initial hiring date to the time they leave. Training is important for reducing accidents, reducing maintenance costs, reducing absenteeism and labor turnover, lessening the burden of the supervisor, and improving public relations. All drivers will receive training through videos and lectures, as well as behind-the-wheel training. The training will cover safety procedures, how to conduct inspections, how to respond during an accident, and how to maintain records, among other topics.

Drug and Alcohol Testing Program

Alcohol Testing

A program for alcohol testing should focus on these factors:

- The testing should be conducted mainly for employees in safety-sensitive positions (drivers, maintenance employees, etc.).
- All drivers and prospective drivers must have a commercial driver's license (CDL) before they can be tested, in accordance with the Federal Highway Administration.

- Drivers will not take part in any safety-sensitive tasks under the following circumstances:
 - While having a breath alcohol level of 0.02% and higher
 - While using alcohol
 - Within 4 hours of using alcohol
- Drivers may not refuse to submit to an alcohol test.
- Drivers are not permitted to consume alcohol within 8 hours after an accident or until tested.
- Drug and alcohol tests are required for all of the following situations:
 - Preemployment: Conducted before performing safety-sensitive functions for the first time.
 - Postaccident: Conducted after accidents on drivers whose performance may have contributed to the accident.
 - Reasonable suspicion: Conducted when the fleet safety director observes behavior that resembles alcohol misuse.
 - Random: Conducted on a random and unannounced basis. This test can occur before, during, and after performance of safety-sensitive tasks.
 - Return to duty and follow-up: Conducted on a driver who previously violated prohibited alcohol conduct standards. The procedure for this test will include 6 tests in a 12-month period after the driver has returned to work.
- The alcohol tests that will be conducted by the company will utilize evidential breath testing (EBT) devices, which are approved for use by the National Highway Traffic Safety Administration.

- According to company policy, if an EBT test shows a breath alcohol level above 0.02%, then a confirmation test must be conducted on an EBT a second time. The second test prints out the results, date, time, the sequential test number, and the name and serial number of the device, and determines what actions must be taken, according to the results of the second test.
- According to company policy, a breath alcohol level above 0.02% requires the driver to be prohibited from driving any company trucks for a period of 24 hours. In addition, if a driver's appearance and behavior suggest possible alcohol misuse but the EBT test cannot be conducted, it is the responsibility of the fleet safety manager to ban the driver from driving for 24 hours.
- If the fleet safety director decides to allow the driver to return to work, the fleet safety director must ensure that the driver:
 - Has been evaluated by a substance abuse professional
 - Has complied with any recommended treatment put forth by the substance abuse professional
 - Has taken a return-to-work EBT test showing a breath alcohol level below 0.02%
 - Understands that he or she is subject to unannounced follow-up tests
- Violations of the company-based testing rules will not affect the driver's CDL record.
- It is the fleet safety director's obligation to provide drivers with information about alcohol misuse, the company's policies, the testing requirements, and how and where drivers can get help for alcohol abuse.
- Fleet safety directors should be trained to recognize alcohol abuse; training is a key element.

Drug Testing

Drug testing is required for the same events as alcohol testing; however, a split test is required. A split test is a test in which the sample, provided by the driver in question, is divided into two equal samples:

- The primary sample will be tested by a lab that has been previously approved by the Department of Health and Human Services (DHHS).
- If the analysis of the primary sample confirms the presence of illegal, controlled substances, the driver has 72 hours to request the split sample be sent to another previously approved DHHS lab.

These samples are analyzed only for the identification of the following types of drugs:

- Marijuana
- Cocaine
- Amphetamines
- Opiates (including heroin)
- Phencyclidine (PCP)

A confirmation test will be conducted by an approved lab using gas chromatography/mass spectrometry (GC/MS) if the initial screening test is positive.

The positive test will then be reviewed by an NHTSA medical review officer, who will then contact the driver in question to determine if there is a legitimate medical purpose that explains why the employee is taking the drug. If there is no legitimate purpose, then the medical review officer will contact the fleet safety director for further action.

A positive test result will carry the same effect on the driver's work status as an alcohol violation.

Health and Fitness Qualifications for Drivers

The Cheshire Petroleum & Gas Company requires the following physical qualifications for drivers based on NHTSA standards:

- A person should not be a company commercial truck driver unless he or she is physically qualified to do so or has the original or photographic copy of a medical examiner's certificate that states he or she is physically qualified to do so.
- A person is considered physically qualified to be a company commercial truck driver if that person:
 - Has no loss of a foot, a leg, a hand, or an arm
 - Has no impairment of a hand or finger that interferes with wheel grasping and operation, or impairment of an arm or leg that interferes with the person's ability to perform normal tasks associated with operating the truck, or any other significant limb defect or limitation that interferes with the person's ability to perform normal tasks of truck operation
 - Has no established medical history or clinical diagnosis of diabetes mellitus, which requires insulin for control
 - Has no current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, or any other cardiovascular disease accompanied by congestive cardiac failure
 - Has no established medical history or clinical diagnosis of a respiratory dysfunction, which would interfere with the driver's ability to operate safely
 - Has no clinical diagnosis of high blood pressure
 - Has no established medical history or clinical diagnosis of arthritic, orthopedic, muscular, neuromuscular, or vascular disease
 - Has no established medical history or clinical diagnosis of epilepsy

- Has no mental, nervous, or functional disorder or psychiatric disorder
- Has at least 20/40 vision
- First perceives a whispered voice no less than 5 feet without the use of a hearing aid
- Does not use Schedule I drugs such as:
 - Amphetamines
 - Narcotics
 - Any habit-forming drugs, unless prescribed by a medical practitioner
- Has no clinical diagnosis of alcoholism

Drivers Should Be Tested for Compliance

Driver supervision will be carried out by the fleet safety director. These tasks include:

- Personally observing the driver's performance
- Checking driver trainer reports, road patrol reports, arrest records, and comments from other drivers and employees
- Reviewing complaints from other drivers or pedestrians as a possible barometer of driving performance
- Being alert to personality and performance changes before they reach the incident stage by making frequent personal contacts with the drivers.

The fleet safety director should watch for the following typical symptoms of accidents in the making: errors in performance of work, changes in everyday behavior and manners, changes in simple habits or routines, and near accidents. Picking up on these warning signs will enable the supervisor to make changes before an accident occurs.

Pretrip/Posttrip Inspections

The maintenance and safety departments must work together to devise an inspection plan. The driver needs to be aware that he or she must conduct these inspections and know how to conduct them and what to look for, as well as keep an accurate record of his or her findings and a daily statement. A mechanic can use the driver's records to find out what is wrong with the vehicle, and the driver can check to see what has been done to the vehicle.

Pretrip Inspection

The driver must be sure that the vehicle is safe for travel. Fifteen minutes should provide ample time to check the DOT-required components likely to cause safety problems.

Posttrip Inspection

To ensure the safety of the next driver of the vehicle, each driver should conduct a posttrip inspection. This inspection will cover many of the same items as the pretrip inspection; however, it may be more extensive. When deficiencies are detected, the mechanic and the next driver of the vehicle should sign off to indicate that they are satisfied with the repairs. These records must be kept in the vehicle with all inspection records.

The Behavior Observation Program

Objective

The goal of a behavior observation program is to create a safe work environment for employees. This program should be designed to enhance every employee's ability to recognize hazardous situations that are routinely encountered in the workforce.

Guidelines

Each employee will be asked to complete observation forms on a daily basis. The observations completed by the employees should include:

- Action of the employee
- Date of the observation
- A possible solution

The form should not include any names or identifying information.

All observations completed by management should include:

- Action of the employee
- Date of the observation
- A possible solution

The form should not state any names or identifying information.

In the case of hazardous actions, management will intervene immediately to prevent accidents.

The observations should relate to positive safety performance as well as poor safety performance.

Information

All information should be equally shared every month, with all parties involved to analyze and determine the cause of the incidents. The information should be compared to the number of service trips that day, the type of work be completed at that time, weather conditions, and road conditions, and take into account whether the work was different from routine duties.

Discipline

The information obtained from the behavior observation program will not be applied or referenced in any pending or future discipline case. The form, when used correctly, can help in the elimination of poor driving practices that tend to cause accidents. All driving practices that are in need of improvement should be discussed with the driver as soon as possible after the observation is made. Because the

primary purpose of conducting these observations is to improve driving practices before they result in an accident, discussions with drivers must be positive and include the benefits to be gained by improving driving practices. To enforce a high standard of professional driving performance, the company should observe all drivers at least twice a year, and at other times when it is appropriate. For probationary drivers, the behavior observation form should be completed a number of times during the probationary period. The manager in charge of the driver can determine the number of times it should be completed.

Detecting Hazards

Interpretation

The visual search pattern is part of the Smith System, a program developed to assist drivers in identifying road scenarios. When a driver is using the visual search pattern technique, the eyes will absorb a tremendous amount and variety of information. Some of the information is absolutely essential to the driver, but most of the information will be unfamiliar. A driver must be able to interpret the information he or she sees in order to decide what to do.

Hazard Identification

The driver recognizes potential hazards in sufficient time by a combination of common sense, practice, experience, and judgment, and by using the visual search pattern constantly.

Information Processing

The process of thinking about the hazard information and planning ahead is known as anticipation. The driver endeavors to expect, foresee, or regard as probable what is likely to happen next.

For example, when approaching a set of green traffic signals, the driver should expect them to change to amber. This is called a “stale green light.” The driver should then be prepared to stop or continue as appropriate.

Unsafe Acts

One unsafe act is the failure to secure or warn:

- Failing to place warning signs, signals, tags, and so forth
- Starting or stopping vehicles or equipment without giving adequate warning
- Releasing or moving loads without giving adequate warning
- Failing to lock, block, or secure vehicles, switches, valves, or other equipment

Improper Use of Equipment

The improper use of equipment involves:

- Using material or equipment in a manner for which it is not intended
- Overloading

Emergency Stops

Drivers should be trained to make emergency stops:

1. Press the footbrake firmly in order to stop quickly, but not so hard that the wheels lock and cause the vehicle to slide (skid).
2. Tighten your grip on the steering wheel and keep hold until the truck has stopped.
3. Just before the truck stops, press the clutch down and hold it down.
4. When the vehicle has stopped, apply the hand brake, move the gear lever into neutral, and assess the situation.

A good driver should know what is happening behind him or her at all times by checking the mirrors every few seconds while driving.

Reversing (Up to Terminals or Loading Docks)

Truck Speed

Drivers should follow these directions when driving in reverse:

- Be prepared to vary the pressure on the gas pedal gently and smoothly.
- Use very little gas — about 1000 to 1500 RPMs should be enough if you are on level ground.
- Use a little more if you are heading uphill or on a rough surface where up to 2000 RPMs will be needed.
- Move the clutch up very slightly if you wish to increase speed.
- Move the clutch down a little if you wish to reduce speed.
- Use the foot brake to control your downhill speed very precisely.

Steering

When reversing and turning the wheel, a driver has to allow for the time required for the steering to take effect. Because of this, the driver should begin to turn or straighten up the steering wheel slightly before it seems necessary. To enable the driver to see the effect of steering early, he or she should turn the steering wheel quickly and positively. By doing this, the driver will be able to identify movements of the steering wheel that will have the greatest effect.

Observations

Drivers should make the following observations:

- Check for other traffic before driving in reverse.
- Check for pedestrians and children who might be playing at the rear of the vehicle.

- Check all around before and during reversing.
- Try to make eye contact with other road users.

Drivers should always be ready to give way to other road users.

Procedures for New Hires

The Cheshire Petroleum & Gas Company will implement the following procedures for new employees:

1. *Prescreening drivers:* Review the driving records of new hires to determine their competency to operate a vehicle.
2. *Driver orientation:* Drivers will be given the company's policy for vehicle usage.
3. *Vehicle familiarization:* The new employee will take a company-guided driver's test in the vehicle type he or she will be expected to operate. This allows the employee to become familiar with the vehicle and allows the company to determine the employee's competency.

Procedures for Current Employees

The company will implement the following procedures for current employees:

1. *Continued evaluation:* Drivers must be evaluated yearly to make sure they are remaining competent. This evaluation should also be done any time an employee has an incident in which he or she is at fault.
2. *New vehicle familiarity:* Employees will be evaluated any time they are expected to operate a vehicle with which they are unfamiliar.

Suspension and Revocation of Driving Privileges

Physical Condition

If an employee is found to be physically unable to perform the driving task safely, then the driver will have his or her privileges taken away until a qualified medical official releases that individual to work. An examination will be performed any time a physical change has visibly taken place in an employee.

An employee must be able to meet the minimum standard for holding a driver's license in the state that has issued him or her a license. If the employee fails these requirements, then the company will look into revocation of that individual's driving privileges.

Unsafe Driving

An employee may have his or her driving privileges revoked if there is a noticeable history of unsafe driving. An example of this is if the employee were to have more than one incident that was his or her fault in a year. Also included are traffic violations and failure to meet physical standards.

The company is also responsible for upholding a suspension of an operator's license by the state that issued the license. If the state revokes the driver's license, then that individual will be automatically suspended from operating a vehicle for the company.

Accidents

The company will follow these procedures when an accident occurs:

1. *Review of driving privileges:* The employee's driving privileges will be reviewed by his or her supervisor any time the employee is involved in an accident. The employee may or may not have his or her position temporarily revoked during the investigation (at the discretion of the supervisor).

2. *Assessment of circumstances:* The circumstances surrounding an accident will be assessed to include, but not limited to, the employee's condition; the seriousness of unsafe driving practices, if any, that resulted in the accident; and a determination by the supervisor as to whether the public's or the employee's safety would be jeopardized by allowing the employee to continue driving.
3. *Temporary suspension:* If an immediate determination cannot be made based on a review of the previous steps, the employee's driving privileges may be temporarily revoked pending the completion of the accident investigation. At the end of the investigation, a decision can be made to permanently revoke or reinstate the driver's privileges. This investigation has no minimum timetable but must be completed within 14 days. The maximum time of suspension without permanent revocation is 60 days.

This model of a motor fleet safety program can be used as a basis for your company's program. Company-specific information should be added as applicable.

Study Questions

1. (True or False) The U.S. Coast Guard was one of two departments located in the DOT that transferred to the Homeland Security Department in 2003.
2. (True or False) Daily in the U.S., publicly funded transportation systems provide approximately 32 million passenger trips.
3. (True or False) All training should reflect security and emergency plans and procedures.
4. (True or False) One objective of crash investigations is to provide and preserve vital information.
5. According to company policy, a breath alcohol level above 0.02% requires the driver to be prohibited from driving any company trucks for a period of how many hours?

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MOTOR FLEET SAFETY AND SECURITY MANAGEMENT



Security Operations

As a result of the events of September 11, 2001, in New York City and Washington, D.C., security services have expanded operations in all aspects of motor fleet safety and security.¹ For many years, the trucking industry has worked to improve the security of trucking operations. In the aftermath of the terrorist activities, the transportation industry is expanding its security to include prevention of the use of its own vehicles and cargo (containers of explosive or combustible materials) as weapons in a terrorist attack. In June 2001, a

gasoline tanker crashed, turning into a dangerous high-temperature inferno that destroyed a bridge on Interstate 80 in northern New Jersey. In another example, in a 1997 incident, an overpass was melted on the New York State Thruway.¹

A Boeing 757 jet holds nearly 11,500 gal of fuel, while a gasoline tank trailer can carry some 9,000 gal.² Railroads carry more than 6 million gallons per year, and trucks more than 10 million. On an average day, more than 17,000 containers enter U.S. ports, and only 2 of 100 containers are actually searched or checked by proper personnel. According to the U.S. Customs Service, more than 11.2 million trucks entered the U.S. in 2001.³ More than 7.5 million vehicles and approximately 10.5 million holders of commercial driver's licenses (CDLs) are widely dispersed across the country. Almost 2.5 million of those drivers have an endorsement that allows them to transport hazard materials.⁴

Defending against terrorist attacks is not new to the industry. This change in attitudes and personal values recently has created many new problems for motor fleet safety directors. Agencies have learned what works, and, just as important, what does not work in their operating systems. Companies must implement continuous improvement, and review their security procedures to determine who has access to facilities and storage areas, as well as the adequacy of protection. Carriers should know their business partners, vendors, service providers, and shippers. Security messages and training should be provided regularly to all employees. Training should be comprehensive, covering overall company security, specific procedures, and the employee's personal role in security.

In motor fleet security functions, three main areas are of utmost importance. The first is truck and cargo hijacking, which falls into the classification of theft. Vehicle hijacking is one of the most feared crimes in the U.S., and members of the public who perceive themselves to be targets have high levels of insecurity. One reason for this is the apparent randomness, unexpectedness, unpredictability, and levels of violence associated with the actual crime of vehicle hijacking. The term "hijacking" specifically refers to the illegal seizure and control of a vehicle (car or truck), whereas "vehicle hijacking" means not only to seize control but in fact to rob the owner and driver of

the vehicle. Traditionally, hijacking has been associated with the activities of terrorists, who often seize control of the vehicle and then use the cargo stored on the vehicle, which is often highly combustible, as a weapon.

The second main area consists of bomb threats, which cause other problems through espionage and sabotage. Bomb threats are usually received on the telephone and are generally made by individuals who want to create an atmosphere of anxiety, panic, or destruction. All bomb threats should be assumed to pose a legitimate threat to the enterprise and should be considered serious for three reasons:

- The threat of danger can cause individuals to panic; this condition can increase the risk of injury and property damage.
- The evacuation or closure of trucking facilities negatively affects employers and employees, and places a financial and operational strain on the organization.
- The fearful atmosphere and stress associated with these events can affect productivity and confidence.

The third area involves the actions trucking companies are considering for use to respond to the highest level of terrorism threat. Organizations should accumulate and organize a base of knowledge regarding the exposures of the trucking industry to terrorist acts. Also, they should learn the type of behavior and events that can precede such an act and teach their employees to be alert and observant. When High (Condition Orange) and Severe (Condition Red) terrorism threats are declared, trucking companies must consider their own actions in parallel with those implemented by governmental agencies. These build on the procedures under the Elevated (Condition Yellow) threat that has been the baseline during 2003.

Emergency Action Plan

Emergencies in the motor fleet safety program could mean chaos — and chaos is hazardous. An emergency action plan describes the actions employees should take to ensure their safety if a fire or other

emergency situation occur. People are the most important part of an emergency action plan. The implementation of an emergency plan and proper employee training (so that employees understand their roles and responsibilities within the plan) will result in fewer and less severe employee injuries and less structural damage to facilities during such emergencies. This could be a trucking terminal or a bus garage. A poorly prepared plan can lead to a disorganized evacuation or emergency response, resulting in confusion, injury, and property damage.

The best emergency action plans include employees in the planning process, specify what employees should do during an emergency, and ensure that employees receive proper training for emergencies. When including employees in planning, encourage them to offer suggestions about potential hazards, worst-case scenarios, and proper emergency responses. After developing the plan, review it with your employees to make sure everyone knows what to do before, during, and after the emergency. Keep a copy of your emergency action plan in a convenient location where employees can get to it, or provide a copy to all employees.

Evacuation policies, procedures, and escape route assignments inform employees who is authorized to order an evacuation, under what conditions an evacuation would be necessary, how to evacuate, and what routes to take. Evacuation procedures often describe actions employees should take before and while evacuating, such as shutting windows, turning off equipment, and closing doors behind them. Exit diagrams are typically used to identify the escape routes to be followed by employees from each specific facility location.

Evacuation Review

All personnel should evacuate as quickly and calmly as they can and:

- Be familiar with the floor plan and layout in the department or terminal where they work.
- Know the primary and secondary exits (routes) from each location.
- Know where all personnel meet after evacuating the facility.

- Practice emergency evacuation drills and procedures with other departments.

Once the evacuation alarm has been sounded, the following procedures should be followed:

- All personnel should report to the designated assembly location.
- At times the assembly location might change relative to the emergency.
- Instructions from team leaders on check-in procedures must be carried out.
- Special information must be reported at this location to all personnel.
- All personnel should remain at the assembly location until released.

Hijacking/Cargo Theft

During the 1990s, hijacking of vehicles became a crime of prominence. It is a crime that in recent years has not only increased dramatically but has also been associated with higher levels of violence in its perpetration.³ Furthermore, there have been widespread media coverage and interest in it. "The growth in these types of crime [cargo theft and hijacking] has significantly contributed to increased levels of fear of crime [and] ... inhibits freedom of movement and economic activity and is highly costly in terms of loss of property and psycho-social damage caused by trauma and fear."⁵

Training preparedness is an ongoing concern when a company deals with vehicles and explosives, and therefore the company must address these issues on a periodic basis. In some countries, terrorists frequently use vehicles carrying explosives to destroy a target. However, terrorists have realized that tankers full of explosive fuel are convenient alternate weapons or surrogate bombs. These tanker trucks can be used against specific targets, even turning hazardous industrial facilities into chemical weapons. On June 23, 1996, in

Saudi Arabia, the explosion of a fuel truck outside a U.S. Air Force installation killed 19 U.S. military personnel and wounded 515 people, including 240 Americans. In Europe, terrorists are suspected of hijacking fully loaded tanker trucks and crashing them into targets and/or detonating them with explosives when parked near a target.² On April 11, 2002, a loaded gas tanker truck collided with the wall of a synagogue in Tunis. The truck exploded, killing 15 people, several of them German. An Islamic terrorist group claimed responsibility. In May 2002, a fully loaded tanker truck pulled into Israel's largest fuel depot and suddenly caught fire due to an explosive charge connected to a cellular phone. The fire was extinguished, but had the truck exploded, significant destruction and death would have resulted. This shift in terrorist behavior has enhanced awareness by security specialists and has resulted in an increased risk potential for the trucking industry.

While in transit trucks can be an easy target for violence, and companies must train drivers to be aware of their personal security and, more important, prepared for the unexpected. Trucks are most vulnerable when they are stopped. Few trucks in the U.S. are equipped with truck security systems. Technology presently exists for ignition kill capabilities and for Global Positioning System (GPS) tracking by fleet operators. These methods and developing technologies can play important roles over time in truck security. The trucking industry needs to develop standards to support the transition to these approaches as they become routine and available. Spot, routine, and high-risk truck inspections are infrequent. At truck stops, unattended vehicles are frequently left with their engines running, and these areas are usually unguarded. These stops require the presence of security personnel and increased law enforcement surveillance at and around these areas. There are only a minimal number of secure parking areas available along America's roadways, so drivers often use vacant unsecured areas as rest stops.

Since September 11, 2001, the role of truck driver has become more important. Now more than ever, America depends on truck drivers to move freight safely and securely, especially if transporting hazardous materials.⁶ While high-valued commodities have always been hijacking targets, shipments capable of mass destruction or environmental damage must now be protected with the utmost care.

Here are some safety tips and steps drivers should follow while traveling on the road alone with cargo, explosive, or hazardous materials. You may want to pass these along to your drivers:²

- Be alert when leaving. Criminal surveillance often begins at, or within a mile of, origin.
- Do not discuss cargo, destination, or other trip specifics on open radio channels or near unfamiliar persons.
- If you believe you are being followed, call 911 and your dispatcher immediately.
- Avoid being boxed in by other traveling or parked vehicles. Where it is possible, leave room in front of and in back of your vehicle.
- Look for vehicles following you, especially if there are three or more people in a vehicle.
- If you believe you are being hijacked, try to keep your truck moving while keeping an eye out for enforcement officers.

To stop the vehicle with load of cargo:

- Leave the truck in a secure parking lot or truck stop if possible; if that is not possible, be certain someone can watch the vehicle in your absence.
- If team driving is involved, always leave one person behind with the truck to secure the vehicle from any suspicious activities and an attempted hijack.
- Never leave the vehicle running with the keys in the ignition; shut off the engine every time you stop and lock the doors for security purposes and safety.
- If at all possible, do not stop in “hot spots” (unsafe or high-crime areas).
- Always lock the cargo door(s) with padlocks.
- Use seals to prevent and identify tampering.

At a minimum, motor fleet carriers need to explore and utilize low-technology security options such as the following:

- Instruct drivers to use seals, padlocks, kingpin locks, gladhand locks, ignition locks, and similar items.
- Develop and implement security policies and standard procedures (internal and external security).
- Develop security-related training and ensure that all employees are instructed in the policies and procedures of the company.
- Assess hazardous materials security risk.
- Prioritize the shipper/carrier hazardous materials operations for security.

Bombs and Bomb Threats

Contingency plans should specify who will be responsible for handling the crises and delegating authority in the event that a bomb threat is received. Bombs can be constructed to look like almost anything and can be placed or delivered in any number of ways. The probability of finding a bomb that looks like the stereotypical bomb is almost nonexistent. The only common denominator that exists among bombs is that they are designed or intended to explode. Most bombs are homemade and are limited in their design only by the imagination of, and resources available to, the bomber. When searching for a bomb, suspect anything that looks unusual.

Bomb threats are delivered in a variety of ways. The majority of threats are called in to the target. Sometimes these calls are through a third party. Occasionally a threat is communicated in writing or recording. Two logical explanations for making a bomb threat are:

- The caller has definite knowledge or believes that an explosive has been or will be placed and he or she wants to maximize personal injury or property damage. The caller may be the person who placed the device or someone who has become aware of such information.

- The caller wants to create an atmosphere of anxiety and panic that will, in turn, result in a disruption of the normal activities at the facility where the device is purportedly placed.

Whatever the reason for the bomb threat, there will certainly be a reaction to it. Through proper planning, the wide variety of potentially uncontrollable reactions can be greatly reduced. The individual in charge of responding to a bomb threat must be someone who will be available 24 hours a day. In addition, all personnel who will be involved in the bomb threat response must be trained in how to handle these situations.

Procedures for Bomb Threats

Terrorism is a covert and criminal act that creates problems for management and emergency service personnel. Many of these acts of terrorism deal with bomb incidents, bomb threats, and the taking of hostages. In order to be prepared, companies should make contact with and hold meetings with the local law enforcement agencies, the Federal Bureau of Investigation (FBI), and bomb-disposal units. This will give a company the opportunity to gain assistance from more experienced personnel. Experience has shown that 95% of all bomb threats are hoaxes. This leads to the problem that a bomb threat may be ignored although it is authentic. When considering measures to increase security for buildings or vehicles, you must contact the local police department for instruction. There is no single security plan that is adaptable to all situations. The following recommendations are offered because they may contribute to reducing the vulnerability to bomb attacks. All plans should be in writing and revised when necessary.

Bombs being delivered by truck carriers or left in the carrier's cargo are a grave reality. Parking should be restricted, if possible, to 300 feet from the building or from any building in a complex. If restricted parking is not feasible, properly identified employee vehicles should be parked close to your facility and visitor vehicles parked at a distance.

Controls should be established for positively identifying personnel who have authorized access to critical areas and for denying access

to unauthorized personnel. These controls should extend to the inspection of all packages and materials being taken into critical areas.

Security and maintenance personnel should be alert for people who act in a suspicious manner, as well as objects, items, or parcels that look out of place or suspicious. Surveillance should be established to include potential hiding places (cockpit area, rest rooms, and any vacancy in freight boxes or trailers) for unwanted individuals.

Responding to Bomb Threats

If at all possible, more than one person should be assigned to listen in on a bomb-threat call. To do this, a company needs to implement a covert signaling system, perhaps by using a coded buzzer signal to a second reception point. A calm response to the bomb threat caller could result in obtaining additional information. The bomb threat caller is the best source of information about the bomb. When a bomb threat is called in:

- Keep the caller on the line as long as possible. Ask him or her to repeat the message. Record every word spoken by the person.
- If the caller does not indicate the location of the bomb or the time of possible detonation, ask him or her for this information.
- Pay particular attention to background noises, such as motors running, music playing, and any other noise that may give a clue as to the location of the caller.
- Listen closely to the voice (male/female), voice quality (calm, excited), accents, and speech impediments. Immediately after the caller hangs up, report the threat to the person designated by management to receive such information.
- Report the information immediately to the police department; fire department; Alcohol, Tobacco, and Firearms (ATF); FBI; and other appropriate agencies. The sequence of notification should be established in the bomb incident plan.
- Remain available; law enforcement personnel will want to interview you.

When a written threat is received, save all materials, including any envelope or container. Once the message is recognized as a bomb threat, further unnecessary handling should be avoided. Every possible effort must be made to retain evidence such as fingerprints, handwriting or typewriting, paper, and postal marks. These will prove essential in tracing the threat and identifying the writer.

Terrorism Threats

As mentioned earlier, when High (Condition Orange) and Severe (Condition Red) terrorism threats are declared, trucking companies must consider their own actions in parallel with those implemented by government agencies. These build on the procedures under the Elevated (Condition Yellow) threat that has been the baseline for 2003.

Organizations dealing with motor carriers should monitor American Trucking Association (ATA) and state trucking association communications and Web sites closely, as well as provide information to the industry as soon as it becomes available.⁷ Because events may unfold quickly and at unpredictable times, the following are some considerations in the event that High or Severe threat conditions are declared.

High Alert (Threat Condition Orange)

Follow these steps during a Condition Orange:

- Ask the management crisis team to verify team members' 24/7 contact information and place them on "ready alert" through the period of High alert.
- Reduce the internal tolerance for security anomalies, such as overdue or missing vehicles, perimeter of physical plant intrusions, unverified visitors, evidence of tampering, and the like. Report suspicious activities, especially those fitting any profiles presented in threat alert advisories, immediately to law enforcement and/or the nearest FBI field office.
- Conduct emergency/contingency procedures reviews with drivers, dispatchers, and line management personnel. Brief personnel on the threats that triggered the alert and how these threats may present themselves in the field.

- Test the emergency communications systems.
- Identify state and/or local emergency planning agencies, industry resources, and the like through which event response and recovery information can be obtained.
- Ensure that company personnel monitor news and other information sources for events or changes in conditions and respond as appropriate.

Severe Alert (Threat Condition Red)

The current interpretation of the way Condition Red may be applied is that it will be imposed based on actual information of pending attacks or in the event of actual attack. The extreme restrictions implied under the code will likely be imposed only on specific locations, facilities, or types of operations. Actual events may determine otherwise.

If your company is not located in the areas covered by the alert or services clients located in the area covered by the alert, maintain the alert status as under Condition Orange, but monitor your information sources constantly, briefing your management and personnel on the most current information.

If your company is in the alert area or servicing areas covered by the alert, consider the following:

- Call the crisis management team to duty.
- As appropriate to the event or the threats that triggered the severe alert, alter operations according to the company plans and any specific instructions and mandates issued by governmental agencies with the authority to do so.
- Consider the advisability of “locking down” the facility to only those essential to ongoing operations and business transactions.
- If there is evidence that the company, trucks, carriers, or operations are under a direct threat or exposure to attack, make efforts to move those at risk away from the immediate threat and notify law enforcement agencies immediately.

- If the company transports critical cargo or can provide technical or logistical assistance that may be needed to respond to an event, identify yourself to local emergency response coordinators.

Security Watchwords for Corporations

Here are some security watchwords for companies:

- *Awareness:* Accumulate and organize a base of knowledge regarding the exposures of the trucking industry to terrorist acts and the types of behaviors and events that can indicate an event and teach the workforce to be alert and observant.
- *Recognition:* Train employees and managers to make the logical connections between observed indicators and a specific company's operations that may signal an imminent act or increase a company's exposure to consequences.
- *Communication:* Build a network of time-sensitive systems through which information is routed to and among the internal and external decision makers who need critical information in order to prevent or respond to terrorist actions.
- *Action:* Proactively deploy the correct measure of activity relating to the nature of the threat, the overall Homeland Security Advisory System (HSAS) threat condition level, and the trucking operation's potential exposure.

Security Watchwords for Drivers

For drivers, security watchwords include these terms defined as follows:⁷

- *Awareness:* Learn how terrorists act and the types of behaviors and events that can precede an attack. Know the company's security procedures and emergency response plans as they apply to you. Look for behaviors or events that might be a tip-off to a terrorist operation in progress.

- *Recognition:* When you see behavior changes or events that match the profiles you have been taught, make the mental connections between what you see and what it may mean to you if indeed it is a terrorist activity.
- *Communication:* Know whom to call no matter where you are. Use 911 in emergencies, and your company dispatcher and local FBI or law enforcement numbers if not an emergency.
- *Action:* Do not keep information to yourself, but send it to the people and agencies who have the expertise and training to react to information or to emergencies. If you are affected by an attack, take immediate action to protect yourself, your cargo, and your equipment.

Highway Watch Program for Truck Drivers

The general abilities and aptitudes required of a truck driver vary with the individual task. Every truck operator has the potential of damaging or demolishing his or her truck in an accident. Highway Watch — operated by each state's State Trucking Association (STA) — is a safety initiative that takes advantage of the skills, experience, and road smarts of America's professional truck drivers and joins the trucking industry, law enforcement agencies, and other safety professionals as allies working together to make the nation's highways much safer.⁸

The Highway Watch program will train professional truck drivers on what to look for on the highway. Training focuses on how emergencies should be reported, the appropriate telephone numbers to call, safe and responsible wireless phone use, and how the program will develop in order to coordinate with other safety and security initiatives. Highway Watch professional truck drivers will receive extensive training on how to report accidents, stranded motorists, criminal and terrorist activity, medical emergencies, treacherous weather conditions, congestion, road rage, drunk driving, and potential hazards such as abandoned vehicles and road debris. Drivers will be trained to use advanced technology when they see an incident on the highway. They learn how to report to 911 in life-threatening

emergencies and to use a special number for all other incidents. (The call will be transferred to the appropriate governmental agency.)

Each STA operates the Highway Watch program within its respective state, working with state law enforcement and governmental agencies to maintain and enhance the program. The STA is responsible for recruiting drivers, scheduling training sessions, and administering the program on a daily basis. As Highway Watch programs continue to expand state by state, they will also focus on establishing credibility and building relationships with national organizations whose state affiliates and leaders are central to the success of state programs.

The Transportation Security Administration (TSA) and the U.S. Department of Transportation moved to secure the transport of dangerous goods (chemicals, hazardous materials, and explosives) by issuing an interim final rule requiring background checks on commercial drivers certified to transport hazardous items. This is a landmark rule because it establishes vital safeguards to protect national transportation networks from possible acts of terrorism. The rules will further ensure the continued safe transportation of a range of products, from chlorine to gasoline, crucial to the economic viability of the U.S.

Under TSA's rule, the roughly 3.5 million commercial drivers with hazardous material endorsements now will be required to undergo a routine background and records check that includes a review of criminal, immigration, and FBI records.⁹ Any applicant with a conviction (military or civilian) for certain violent felonies over the past seven years, or who has been found mentally or physically incompetent, will not be permitted to obtain or renew the hazardous material endorsement. The checks will also verify that the driver is a U.S. citizen and a lawful permanent resident as required by the U.S.A. Patriot Act.

The U.S.A. Patriot Act authorized the Secretary of Transportation to develop standards to require commercial drivers with hazardous materials endorsements to undergo a criminal history background check. The Secretary delegated authority to TSA, the Federal Motor Carrier Safety Administration, and the Research and Special

Programs Administration, which have worked closely with other federal agencies and industry associations to develop complementary rules addressing the transportation of hazardous materials by motor carrier fleets.

Study Questions

Statements 1-10 require a True or False response:

1. Vehicle hijacking is one of the most feared crimes in the U.S.
2. The Highway Watch program will train professional truck drivers on what to look for on the highway.
3. In the section “Security Watchwords for Drivers,” the main point is to teach drivers how terrorists act and the type of behavior events that can precede an attack.
4. When responding to bomb threats, only one person should be assigned to listen in on the calls.
5. The majority of bomb threats are called into the target by e-mail.
6. During the 1990s, hijacking of vehicles became the crime of prominence.
7. During evacuations, all personnel should be familiar with only the primary route.
8. All personnel should report to the designated assembly location when the alarm is sounded.
9. The best emergency action plans include employees in the planning process.
10. The evacuation or closure of trucking facilities negatively affects employers and employees and places a strain on the company.
11. Case Problem: If you were a company fleet safety director, how would you react to an Occupational Safety and Health Administration (OSHA) inspection of your truck terminal? What conditions in your company do you think would influence your reaction?

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MOTOR FLEET SAFETY AND SECURITY MANAGEMENT

DANIEL E. DELLA-GIUSTINA

Motor Fleet Safety and Security Management provides a thorough understanding of how to develop and manage a comprehensive motor fleet safety and instructional program. It lays the groundwork necessary for effective management of transportation systems and addresses the steps necessary for successful driver selection, training, instruction, and supervision.

This book also covers topics such as elements of a fleet safety program, accident prevention, considerations for a small fleet, vehicle inspection, organization of accident data, job safety analysis (JSA), fleet transportation publicity, school bus safety, hazardous material shipping and storage, and transportation security. It also offers a model of a motor fleet transportation program to help readers integrate the author's concepts into new safety and training programs.

FEATURES

- Provides a thorough understanding of how to develop and manage a comprehensive motor fleet safety and instructional program
- Analyzes accident prevention and investigation issues and provides planning and training guidelines
- Includes a detailed discussion of the transportation of hazardous materials and the security of HAZMAT shipments
- Offers a model program that enables the integration of the book's concepts into the development of safety and training programs
- Explores effective safety meetings for commercial drivers

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