

Introduction

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This Transportation Research Board (TRB) Circular was written by the members and friends of the TRB Truck and Bus Safety Committee (ANB70). The committee was founded in 2003. Organizations that were precursors to the committee included a Truck and Bus Safety Subcommittee of the Safety Management Committee (formerly A3B15, now ANB70) and a Truck and Bus Safety Task Force (A3B57), which championed the transition from subcommittee to full committee status.

Like other TRB committees, the Truck and Bus Safety Committee consists of professionals committed to advancing their disciplines and improving the North American transportation system. The committee's goal is to "focus on motor carrier safety in all its aspects; to include research and evaluation in human, roadway, vehicle, operational, and organizational arenas as they relate to motor carrier safety."

The broad purpose of this document is to explore and articulate essential information and perspectives on truck and bus safety research and, in so doing, establish a knowledge base and charter for the new committee. Some of the areas explored may become principal topics of future ANB70 subcommittees or other initiatives. The committee believes that the publication of this circular will energize its members, attract new participants, and serve the greater truck and bus safety community. That community includes the U.S. Department of Transportation (DOT) and other federal agencies, state DOTs and other agencies, academic researchers, truck and bus industry trade associations, and of course truck and bus companies, managers, and drivers.

Truck and bus safety research is multidisciplinary and encompasses a number of perspectives and disciplines. It shares with the broader topic of traffic safety a concern with human, vehicular, and environmental (i.e., roadway) factors in motor vehicle crashes. Unlike motor transportation in general, however, commercial motor transportation safety is significantly influenced by industry operational requirements, types of operations to meet those requirements, carrier safety management policies and activities, legal and regulatory mandates and restrictions, and multi-faceted enforcement activities.

Reflecting the multidisciplinary nature of truck and bus safety and the range of ANB70 committee and member interests, this circular addresses eight major topics, as follows:

1. Problem assessment and data,
2. Laws and regulations,
3. Enforcement and compliance,
4. Driver health and wellness,
5. Driver human factors,
6. Carrier safety management,
7. Vehicle design and technology, and
8. Roadway design and operations.

Each of the above chapters is organized in a topical fashion with five to 10 prominent topics addressed within each chapter. These do not represent all of the topics that might be addressed under each chapter heading, but rather the ones chapter authors selected as most

Motor Carrier Safety Laws and Regulations

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Laws and regulations governing motor carrier transportation have historically been concentrated in three main areas: regulation of the business of highway transportation for hire, regulation to protect the highway infrastructure, and regulation of safety (1). Although this chapter will focus on safety, the other two areas have been important and significant influences.

This chapter begins with a discussion of the development of laws influencing motor carrier, vehicle, and driver safety, starting with the discussions that led to the development of the Motor Carrier Act (MCA) of 1935, and ending with the Motor Carrier Safety Improvement Act (MCSIA) of 1999. It next reviews the responsibilities of the various U.S. government agencies that have regulatory and safety oversight responsibility over various aspects of motor carrier safety. Next, it briefly discusses the process of regulatory development. Finally, it looks briefly into the future to suggest potential opportunities for research.

THE EARLY YEARS: 1930s–1950s

The development of the motor carrier industry began shortly after World War I. The motor carrier industry was initially regulated by many of the states, but these regulations were not uniform and universal in their application. The U.S. Congress had discussed the issues related to the infant motor carrier industry from 1909 through 1932 (2, 3).

The Interstate Commerce Commission (ICC), which had been in existence since 1887, recommended federal regulation of motor carriers as early as 1928. ICC's interest in safe transportation of hazmat by highway grew from the agency's original focus on hazmat transportation by rail, with regulations being promulgated in 1930 and revised in 1936 (4). The lack of uniform regulations, or none at all in some states, provoked allegations of disturbing abuses and caused concerns in both the economic and safety arenas. The Federal Coordinator of Transportation, a post created in 1933 by the Emergency Railroad Transportation Act of 1933 to promote transportation development for the nation, studied the highway transportation situation. In 1934, the Federal Coordinator recommended regulation of motor carrier activities by the federal government. The report concluded that motor carriers should be regulated in a way similar to the railroad industry, which had been regulated by ICC for the previous 50 years. The report recommended regulating the economic, as well as the safety, aspects of the motor carrier industry (3).

Following this report, Congress again discussed the regulation of motor carriers and passed the MCA of 1935 (49 Stat. 546, ch. 498). The MCA was enacted as Part II of the Interstate Commerce Act. It placed responsibility on ICC to regulate for-hire motor carriers of passengers and of freight in the areas of economic health and safety of operations. This law established economic and safety regulations on a national basis (5).

ICC promulgated its commercial regulations through formal (hearings) rule making and its safety regulations through informal (notice and comment) rule making. The body of safety regulations grew rapidly. Most of the early regulations addressed qualifications and safety of drivers. These were followed by an extensive body of regulations on vehicle safety.

THE TRANSITIONAL YEARS: 1960s–1990

The early years of this period saw several momentous changes in the legislative view and regulatory oversight of highway and motor carrier safety¹ with the establishment of the U.S. DOT as a cabinet-level agency to bring together a broad range of transportation safety responsibilities, and the independent National Transportation Safety Board (NTSB). Additional legislation led to organizational changes in the DOT and to the establishment of different agencies with complementary responsibilities for highway, vehicle, and driver safety.

The year 1966 was a watershed year for highway safety. It saw the passage of the Highway Safety Act and the National Traffic and Motor Vehicle Safety Act. Also that year, the Department of Transportation Act of 1966 provided for the creation of a cabinet-level department (80 Stat. 931). The act transferred to the new department many transportation activities conducted by other agencies, including the Department of Commerce's Bureau of Public Roads, which became FHWA.

The 1966 act also created NTSB. NTSB is an independent agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in the other modes of transportation—railroad, highway, marine, and pipeline—and issuing safety recommendations aimed at preventing future accidents. NTSB commenced operations on April 1, 1967. NTSB relied on the U.S. DOT for funding and administrative support until 1975. The Independent Safety Board Act severed all organizational ties to U.S. DOT (6).

In December 1967, the regulatory responsibility for CMV safety was delegated to the Bureau of Motor Carrier Safety (later Office of Motor Carrier Safety) within FHWA.

NHTSA, an operating administration of the U.S. DOT, was established by the Highway Safety Act of 1970 (84 Stat. 1739). It succeeded the National Highway Safety Bureau, at that time part of the FHWA. Its safety programs have their genesis in the authority granted by the National Traffic and Motor Vehicle Safety Act of 1966 (80 Stat. 718) and the Highway Safety Act of 1966 (80 Stat. 731) (7).

The Hazardous Materials Transportation Act of 1974 (HMTA) (88 Stat. 2156) granted the Secretary of Transportation regulatory and enforcement authority to provide adequate protection against the risks to life and property inherent in the transportation of hazmat in commerce. The HMTA was designed to replace a patchwork of state and federal laws and regulations concerning hazmat transportation with a framework of uniform, national regulations. The Hazardous Materials Transportation Uniform Safety Act of 1990 (104 Stat. 3244) amended the HMTA.

The MCA of 1980 (94 Stat. 793) established minimum levels of financial responsibility for motor carriers of property, and the Bus Regulatory Reform Act of 1982 (96 Stat. 1102) established minimum levels of financial responsibility of motor carriers of passengers. The Surface Transportation Assistance Act (STAA) of 1982 (96 Stat. 2097), among its other provisions, authorized the Secretary of Transportation “to make grants to states for the development or implementation of programs for the enforcement of federal rules, regulations, standards, and orders applicable to CMV safety and compatible state rules, regulations, standards, and orders.” This was the foundation for the Motor Carrier Safety Assistance Program (MCSAP).

The MCA of 1984, the first fundamental revision of the motor carrier safety statutes since 1935, directed the U.S. DOT to establish minimum vehicle and operational standards and to

increase fines and strengthen administrative enforcement mechanisms and required states to conduct vehicle inspections at least annually (98 Stat. 2834) (5).

The CMVSA of 1986 (100 Stat. 3207-170) established the CDL Program and the CDLIS to serve as a clearinghouse and repository of commercial driver licensing and conviction data. The goal of the CMVSA was to improve highway safety by ensuring that each driver of large trucks and buses had only one license and that drivers passed knowledge and skills tests in order to obtain that license. The CMVSA also requires states to ensure that drivers convicted of certain serious traffic violations are prohibited from operating CMVs. The Secretary of Transportation was directed to monitor the states' compliance with the standards established under the CMVSA.

Section 15 of the Sanitary Food Transportation Act of 1990 (P.L. 101-500, 104 Stat. 1213, 1218) among other things, prohibited motor carriers of passengers and hazmat from operating if they received unsatisfactory safety ratings from the FHWA-OMC.

ACCELERATING CHANGE: THE 1990s AND BEYOND

The 1990s saw greatly increased legislative activity notable for its scope and specificity. Among other things, this decade brought the sunset of ICC and the elevation of motor carrier safety to the status of an operating administration of U.S. DOT.

The Omnibus Transportation Employee Testing Act of 1991 (105 Stat. 952) requires all motor carriers to perform preemployment, reasonable cause, random, periodic, and post-accident drug testing of all employees in safety-sensitive positions. It also expands upon the prohibition of alcohol abuse by adding requirements for random, reasonable cause, and post-accident testing. It should be noted that prohibitions against alcohol and drug use by CMV drivers have been a part of the safety regulations since 1937 (8).

Section 345 of the National Highway System Designation Act of 1995 (109 Stat. 568, at 613) created a statutory exemption from all of the hours-of-service (HOS) provisions for individuals transporting crops and farm supplies within a 100-air-mile radius during planting and harvesting seasons, and a more limited exemption (allowing a more rapid 24-h restart of the 60- or 70-h HOS calculation) for drivers of utility service vehicles, CMVs transporting groundwater well drilling rigs, and construction materials and equipment. FHWA, however, was authorized to conduct rule making on the advisability of each of these exemptions (except that concerning water well drilling rigs) and to monitor the effects of the exemptions, reporting any adverse safety impacts to Congress. FHWA adopted all of the required exemptions in April 1996 [49 CFR 395.1(k), (l), (m), and (n)].

The ICC Termination Act of 1995 (109 Stat. 803) abolished ICC and transferred certain ICC functions and proceedings either to the Surface Transportation Board or the Secretary of Transportation. Responsibility for the collection and dissemination of motor carrier financial information was transferred to the Secretary of Transportation, who delegated that responsibility to the Bureau of Transportation Statistics.

The Transportation Equity Act for the 21st Century (TEA-21), enacted in 1998 (112 Stat. 107), provided the authority to strengthen motor carrier safety enforcement, and to develop new approaches to improving motor carrier safety compliance assurance. It augmented the basic motor carrier grant program by expanding the toolbox of enforcement techniques, closing loopholes that permit unsafe practices, and allowing development of innovative approaches to regulations. Under the provisions of TEA-21, the National Motor Carrier Safety Program was

restructured to promote performance-based activities and flexibility for state grantees by allowing them to invest in areas providing the greatest potential for crash reduction based on their own circumstances. The act was also intended to strengthen federal and state enforcement tools, and provide innovative approaches to improving motor carrier compliance. Finally, the act enhances the information systems that support all national motor carrier safety activities and provide the analytical foundation for future safety improvements (9).

Among its other provisions, TEA-21 provided new legislative authority for motor carrier safety regulations in several key matters:

1. Imposed mandatory shutdown on all unfit carriers, strengthening the authority of the secretary to order unsafe motor carriers to cease operations.
2. Required the secretary to develop an implementation plan to identify the procedures that would be followed, if Congress subsequently provided authority, to enforce safety regulations when violated by shippers and others.
3. Removed barriers to effective application of penalties and established a \$10,000 maximum penalty for all nonrecordkeeping violations of the safety regulations.
4. Amended the definition of CMV to reflect the actual gross vehicle weight rather than just the GVWR. It also amended the definition of CMV in 49 U.S.C. 31132(1) to cover vehicles “designed or used to transport more than 8 passengers (including the driver) for compensation.” On August 12, 2003, FMCSA issued a final rule amending the FMCSRs to require that motor carriers operating CMVs, designed or used to transport between nine and 15 passengers (including the driver) in interstate commerce, must comply with the applicable safety regulations when they are directly compensated for such services and when the vehicle is operated beyond a 75-air-mile radius (86.3 statute-miles or 138.9 km) from the driver’s normal work-reporting location. [The 75-air-mile radius has since been overruled by Section 4136 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).]
5. Revised the authority of the secretary to issue waivers and exemptions from safety regulations and CDL requirements and establishes procedures for exemption pilot programs. Safety prerequisites for exemptions and pilot programs were established.

Establishment of Federal Motor Carrier Safety Administration

On October 9, 1999, in response to congressional appropriations action, the Secretary of Transportation rescinded the authority previously delegated to the FHWA to perform motor carrier functions and operations, and to carry out the duties and powers related to motor carrier safety vested in the secretary by chapters 5 and 315 of Title 49, United States Code. In order to ensure the continuation of motor carrier safety oversight functions, this authority was redelegated to the director, Office of Motor Carrier Safety, a new position created within the Office of the Secretary.

On December 9, 1999, the MCSIA of 1999 (113 Stat. 1748) established a new operating administration, FMCSA, to improve the motor carrier safety program. FMCSA’s first official day of operations was January 1, 2000.

The MCSIA required the new agency to address numerous items through rule making. In order to provide proper safety oversight of the regulated motor carrier community, the agency must know the characteristics of individual motor carriers. Section 217 of MCSIA directed U.S.

DOT to require periodic updating (once every 2 years) of the motor carrier identification report (Form MCS-150) filed by each motor carrier conducting operations in interstate or foreign commerce (14).

Section 208 of MCSIA revised the definition of an imminent hazard to cover “any condition of vehicle, employee, or CMV operations which substantially increases the likelihood of serious injury or death if not discontinued immediately.” The previous definition was “any condition of vehicle, employee, or CMV operations which is likely to result in serious injury or death if not discontinued immediately.” Because this test was virtually impossible to meet, Congress amended the standard to make it more usable (11).

Enactment of SAFETEA-LU

Authorization

SAFETEA-LU (119 Stat. 1144) was enacted on August 10, 2005. FMCSA’s administrative expenses and grant programs [MCSAP, Border Enforcement, CDL, Performance and Registration Information Systems Management (PRISM), Commercial Vehicle Information Systems and Networks (CVISN), etc.] were reauthorized, and the agency was authorized to make grants to states for improvements in the collection and handling of safety data.

Medical Provisions

FMCSA was authorized to establish a National Registry of Medical Examiners. The agency will eventually reject driver physicals performed by examiners not listed on the registry and will review some of the physicals of listed examiners to ensure that standards are maintained. Drivers with insulin-controlled diabetes must be allowed to operate CMVs in interstate commerce and may not be held to a higher standard than other drivers.

New Programs

Companies providing preemployment screening services to the motor carrier industry must be given electronic access (with certain safeguards) to the MCMIS to check on accidents, inspection reports and serious driver-related safety violations. FMCSA must undertake rule making to insure that intermodal equipment is safe and systematically maintained. The regulations apply to railroads, steamship lines and others that tender intermodal chassis or trailers to motor carriers. The agency was authorized to require private motor carriers, like for-hire carriers, to file proof of financial responsibility.

Enforcement

If FMCSA finds that an officer of a for-hire motor carrier has engaged in a pattern of non-compliance with the safety regulations, the agency can suspend or revoke any part of the carrier’s registration. Civil penalties for out-of-service violations and false records were at least doubled and new penalties for denial of access to records were created. FMCSA employees were authorized to order CMV drivers to stop and submit to inspection of the vehicle, driver, cargo

and records. When FMCSA orders an interstate motor carrier out of service, the carrier's intrastate operations must also cease.

Commercial Driver's License

U.S. DOT was required to develop and publish a comprehensive national plan to modernize the CDLIS and then to implement the plan. Substantial grant funds were authorized to enable states to comply with the plan. A parallel grant program to improve state CDL operations was also authorized. Finally, DOT must convene a task force to study current impediments and foreseeable challenges to the effectiveness of the CDL program.

Hours of Service Exemptions

Drivers of trucks operated by utilities were completely exempted from the federal HOS regulations, and states were preempted from adopting similar regulations. Operators of trucks used in movie or television production were allowed to comply with the pre-2003 HOS regulations, which enabled them to extend their working day by the amount of off-duty time they take during the day. The previous HOS exemption for drivers of vehicles transporting "agricultural commodities or farm supplies" was expanded by defining those terms to include livestock, animal feed, and nonprocessed food. A new HOS exemption covered drivers west of Interstate 81 in New York transporting grapes during the harvest season, as defined by the state, within a 150-mi radius of the point where they are picked; the exemption expires with SAFETEA-LU. Another new exemption applied to drivers of CMVs who transport propane winter heating oil or respond to pipeline emergencies; both categories of driver are exempt from many federal regulations if compliance would prevent them from responding to an "emergency condition requiring immediate response."

FMCSA Regulatory and Program Responsibilities

This section briefly describes the FMCSA's major regulatory and program responsibilities. They are discussed in more detail in the section on enforcement and compliance.

Federal Motor Carrier Safety Regulations and Hazardous Materials Regulations

FMCSA develops, maintains, and enforces federal regulations that promote carrier safety. The FMCSRs establish safe operating requirements for commercial vehicle drivers, carriers, vehicles, and vehicle equipment. FMCSA also enforces for highway transportation the HMRs issued by the Pipeline and Hazardous Materials Safety Administration (PHMSA), which are designed to ensure the safe and secure transportation of hazmat. These rules address the classification of hazmat, proper packaging, employee training, hazard communication, and operational requirements. FMCSA's border and international safety activity supports the development of compatible motor carrier safety requirements and procedures throughout North America. FMCSA works closely with the governments of Canada and Mexico to ensure that these countries' motor carriers, drivers, and vehicles operating in the United States meet the same safety standards as U.S. carriers.

Motor Carrier Safety Assistance Program

This is a federal grant program that was developed in response to congressional direction in the 1982 Surface Transportation Assistance Act. It provides states with financial assistance to hire staff and implement strategies to enforce state laws and regulations compatible with the FMCSRs and HMRs. MCSAP funds are used to conduct roadside inspections and review motor carriers' compliance with the state versions of the FMCSRs and HMRs. MCSAP funds promote detection and correction of CMV safety defects, commercial vehicle driver deficiencies, and unsafe motor carrier practices before they become contributing factors to crashes and hazmat incidents.

Commercial Driver's License Program

FMCSA develops, monitors, and ensures compliance with the CDL standards for drivers, motor carriers, and states.

Motor Carrier Safety Identification and Information Systems

FMCSA provides safety data, including state and national crash statistics, current analysis results, and detailed motor carrier safety performance data to industry and the public. The data allow federal and state enforcement officials to target inspections and investigations on higher risk carriers, vehicles, and drivers.

New Entrant Safety Assurance Process

Between 40,000 and 50,000 new entrant motor carriers begin operating CMVs each year. FMCSA ensures that these motor carriers are knowledgeable about applicable FMCSRs and HMRs. There is an 18-month monitoring period for new applicants, which requires the carrier to pass a safety audit and maintain safe operations to receive permanent U.S. DOT registration. New entrant motor carriers that fail to maintain adequate basic safety management controls may have their temporary U.S. DOT registration revoked.

Performance and Registration Information Systems Management

This is a federal–state partnership that makes safe performance a requirement for obtaining and keeping commercial vehicle registration. PRISM links federal motor carrier safety records with the state's vehicle registration system. The U.S. DOT number of the carrier responsible for safety is identified at the vehicle level allowing the state to determine a carrier's safety fitness before issuing license plates. Safety performance is continuously monitored, and carriers prohibited by FMCSA from operating in interstate commerce may have their ability to register vehicles denied. PRISM plays a key role in FMCSA's effort to remove high-risk carriers from our highways.

Research and Technology

Legislation also provides direction for FMCSA to undertake research and technology programs to promote not only motor carrier safety but also operational efficiency, productivity, and

security. The Motor Carrier Research and Technology Program, described in Section 4111 of SAFETEA-LU (as well as in prior legislation) authorized research and technology to improve “the safety and efficiency of commercial motor vehicles [49 U.S.C. 31108(a)(3)(C)]” and R&D “to advance innovative solutions to problems involving CMV and motor carrier safety, security, and efficiency” [49 U.S.C. 31108(b)(1)]. Section 4126, describing the CVISN, stated that the purpose of the program is to “(1) improve the safety and productivity of commercial vehicles and drivers; and (2) reduce costs associated with commercial vehicle operations and federal and state commercial vehicle regulatory requirements.”

Waivers, Exemptions, and Pilot Programs

Although full compliance with the FMCSRs is a foundation of safe performance, there is a need for opportunities to test alternative approaches to achieving equivalent or better safety outcomes. Section 206(f) of the MCA of 1984 authorized U.S. DOT to waive any regulation issued under that section if the “waiver is not contrary to the public interest and is consistent with the safe operation of commercial motor vehicles” (98 Stat. at 2835). As interpreted by the federal courts, however, the agency had to prove before a waiver was granted that safety would not be adversely affected. That standard was impossible to meet. In Section 4007 of TEA-21 (112 Stat. 107, at 401), Congress therefore revised the standard to make it more practical. FMCSA can now provide relief in the form of a waiver (for up to 90 days) or an exemption (up to 2 years) from a regulation issued under the MCA of 1984 or the CMVSA of 1986. The agency must determine that the waiver or exemption is in the public interest and would likely achieve a level of safety that is equivalent to, or greater than, the level that would be achieved by complying with the regulation. TEA-21 also permits FHWA to conduct pilot programs to evaluate alternatives to regulations relating to motor carrier, CMV, and driver safety.

THE REGULATORY PROCESS

The informal rule-making process used by most federal agencies is described in the Administrative Procedure Act (5 U.S.C. 553). This statute, which has been extensively interpreted by the courts, governs the types of rule makings, the processes for publishing notices and accepting comments to rule-making dockets, and the types of external party communications in which an agency may engage at various points in the regulatory process.

MCSRs are promulgated under the notice-and-comment process, which is technically “informal rule making.” (“Formal” rule making, used by ICC for economic regulations and still employed by some federal agencies, involves the development of standards on a case-by-case basis through hearings.)

When it develops a proposal for a new regulation, an agency must provide a comprehensive set of assessments of its potential benefits and costs. An executive order issued during the administration of President Carter, and later the MCA of 1984, required these assessments for proposed motor carrier safety regulations. The various executive orders currently in effect includes those described in the following sections.

Executive Order 12866 (Regulatory Planning and Review) and U.S. DOT Regulatory Policies and Procedures

Because of the strong congressional and public interest, some rule-making actions are considered significant for the purposes of Executive Order 12866 and U.S. DOT regulatory policies and procedures. A “significant” or “economically significant” action is defined as any action that may

1. Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector or the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities;
2. Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
3. Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
4. Raise novel legal or policy issues arising out of legal mandates, the president’s priorities, or the principles set for the in the executive order.

If a regulatory action meets the first criterion, it is considered “economically significant.” If it meets the other criteria, but not the first, it is considered “significant for noneconomic reasons.” The executive order requires the issuing agency to provide to the Office of Information and Regulatory Affairs (OIRA) of the Office of Management and Budget (OMB) “an assessment of the potential costs and benefits of the regulatory action” (12).

Regulatory Flexibility Act

To meet the requirements of the Regulatory Flexibility Act (5 U.S.C. 601-612), an agency is required to evaluate the effects of a rule-making action on small entities and make a preliminary determination whether a regulation arising from the proceeding would have a significant economic impact on a substantial number of small entities.

Executive Order 13132: Federalism

An agency must analyze a proposed rule-making action in accordance with the principles and criteria in Executive Order 13132: Federalism. The analysis is required to determine if a rule-making action is anticipated to have a substantial direct effect on states, whether it could limit the policy-making discretion of the states, and whether it might preempt any state law or regulation.

Executive Order 12988: Civil Justice Reform

Executive Order 12988: Civil Justice Reform directs agencies to formulate its rule makings in order to minimize litigation, eliminate ambiguity, and reduce their burden on regulated entities.

National Technology Transfer and Advancement Act

The National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, Section 12(d) (15 U.S.C. 272), directs agencies to use voluntary consensus standards in regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standard bodies, such as SAE. NTTAA directs agencies to provide Congress explanations when they decide not to use available and applicable voluntary consensus standards.

Executive Order 13045: Protection of Children

An agency must analyze proposals under Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks. The key issue is whether a proposed rule could present an environmental risk to health or safety that would disproportionately affect children.

Executive Order 12630: Taking of Private Property

This analysis is required to assess whether a proposed rule could constitute a taking of private property or otherwise have taking implications under Executive Order 12630: Governmental Actions and Interference with Constitutionally Protected Property Rights.

EFFECT ON OTHER REGULATIONS

Agencies must evaluate new regulatory proposals to determine their potential effect on other regulations.

Executive Order 12372: Intergovernmental Review

Executive Order 12372 directs agencies to perform an assessment to determine whether intergovernmental consultation on federal programs and activities would be required for a rule-making proposal.

Paperwork Reduction Act

OMB regulations implementing the act (5 CFR 1320: Controlling Paperwork Burdens on the Public), agencies must estimate the burden that new regulations would impose on regulated entities required to generate, maintain, retain, disclose, or provide information to or for the agency.

National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) (42 USC 4321–4347), other statutes, regulations (including those issued by the Council of Environmental Quality, 40 CFR 1500–

1508), Executive Orders, DOT Order 5610.1(c), and U.S. DOT agency orders (including those of FMCSA and FHWA) require that the agencies consider the environmental impacts of agency decisions. NEPA requires that an environmental impact statement (EIS) be prepared for “major federal actions significantly affecting the quality of the human environment.” If an action may or may not have a significant impact, the agency must prepare an environmental assessment (EA). Agencies must obtain public comment on a draft EIS before issuing a final EIS. Although there is no statutory requirement to obtain public comment on a draft EA, it is U.S. DOT’s policy to do so (13).

Energy Effects

Executive Order 13211 requires an analysis to determine whether a rule-making proposal would likely have a significant adverse effect on the supply, distribution, or use of energy. The administrator of the OIRA in OMB may designate certain rule makings as significant energy actions.

Unfunded Mandates

Agencies are required to determine whether a proposal or rule would impose a federal mandate resulting in the expenditure by state, local, and tribal governments, in the aggregate, or by the private sector, of \$120.7 million or more in any 1 year (2 U.S.C. 1531 et seq.).

OTHER AGENCIES WITH TRUCK AND BUS SAFETY RESPONSIBILITIES

In addition to FMCSA, other agencies in the U.S. DOT exercise oversight responsibilities that contribute to truck and bus safety. FHWA is responsible for the Federal-Aid Highway System, upon which trucks and buses rely. NHTSA is responsible for setting and enforcing vehicle performance standards. PHMSA (until March 2005 part of the Research and Special Programs Administration) develops and promulgates regulations for safe transportation of hazmat, which are enforced by FMCSA.

Truck and bus drivers and their employers are also subject to regulations concerning workplace safety and wages, administered by agencies within the U. S. Department of Labor.

Vehicles and the Highway Infrastructure: FHWA

FHWA carries out the federal highway programs in partnership with the state and local agencies to meet the nation’s transportation needs. One of FHWA’s responsibilities regarding truck and bus safety is to foster nationwide uniformity of standards for signs, signals, designs, and safety features on major highway systems. The physical interrelationships between vehicles and highways are key elements to promote and ensure safety (14).

The relationship between the configuration, weights, and dimensions of CMVs and the highway environment has been a dynamic one. Early 20th-century roads were no match for the vehicle loads imposed by the burgeoning trucking industry. Furthermore, laws and regulations concerning vehicle weights and dimension varied widely from state to state. By 1941, the maximum gross load on one axle ranged from 12,000 lb (5,448 kg) to 24,640 lb (11,190 kg). In

May 1942, the Public Roads Administration (predecessor to the Bureau of Public Roads, later FHWA) and AASHTO implemented a provisional uniform code of weights, heights, and lengths of motor vehicles. It allowed axle loads of 18,000 lb (8,172 kg), gross loads on four wheels of 30,000 lb (13,620 kg), and up to 40,000 lb (18,160 kg) on trucks of three or more axles (15).

Over the years, federal regulations on CMV weights and dimensions changed several times in response to demands for more consistent and heavier weights on the Interstate system, in part driven by rising fuel prices and the need to consider the effects of axle placements and the number of vehicle axles on infrastructure wear. The STAA of 1982 codified the federal regulation of vehicle length. It prohibited the states from establishing maximum trailer lengths of less than 48 ft for trailers used in a single-trailer combination or of less than 28 ft for trailers used in a double-trailer configuration, applicable to the national network (NN) (the Interstate system and other Federal-Aid Primary Highways). Overall vehicle length limits were prohibited on the NN (49 USC 31111), except for “specialized equipment” vehicles such as those used by automobile and boat transporters, which retained overall length limitations.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) froze the weights of longer combination vehicles with two or more trailers operating above 80,000 lb (36,320 kg) on the Interstate system at the lawful weight limits in effect as of June 1, 1991 [23 USC 127(d)]. It also froze the maximum cargo-carrying length of combinations with two or more cargo-carrying units operating on the NN on the same date (49 U.S.C. 31112). The weight freeze, like other federal weight standards, is enforced through the withholding of certain Federal-Aid Highway funds. The length freeze is enforced through injunctive action in federal court (49 USC 31115) (16).

New Vehicle Standards: NHTSA

NHTSA sets and enforces safety performance standards for motor vehicles and motor vehicle equipment and, through grants to state and local governments, enables them to conduct effective local highway safety programs. NHTSA is responsible for reducing deaths, injuries, and economic losses resulting from motor vehicle crashes. This is accomplished in part by setting and enforcing safety performance standards for motor vehicles and motor vehicle equipment.

NHTSA investigates safety defects in motor vehicles; sets and enforces fuel economy standards; helps states and local communities reduce the threat of drunk drivers; promotes the use of safety belts, child safety seats, and air bags; investigates odometer fraud; establishes and enforces vehicle antitheft regulations; and provides consumer information on motor vehicle safety topics. NHTSA also conducts research on driver behavior and traffic safety to develop efficient and effective means of bringing about safety improvements (8).

Change in Delegation of Authority Between FMCSA and NHTSA

Section 101(f) of MCSIA provides that the Title 49 authority to promulgate safety standards for CMVs and equipment subsequent to initial manufacture be vested in the Secretary of Transportation and that this authority may be delegated. The Secretary delegated to the administrator of NHTSA the authority to promulgate safety standards for CMVs and equipment subsequent to initial manufacture when the standards are based upon and similar to a federal motor vehicle safety standard (FMVSS) promulgated under 49 USC 301. The NHTSA administrator may promulgate a standard simultaneously with the FMVSS on which it is based.

The authority to promulgate safety standards for CMVs and equipment subsequent to initial manufacture is delegated to the FMCSA administrator when the standards are not based on and similar to an FMVSS promulgated under 49 USC, Chapter 301 [49 CFR 1.50(n) and 1.73(g)] (21). In essence, the authority to require retrofitting of equipment on vehicles already in service is now delegated primarily to NHTSA. Prior to this change, FMCSA (or FHWA) had broader retrofit authority.

Occupational Safety: Occupational Safety and Health Administration

The Occupational Safety and Health Act (OSH Act) charges the Occupational Safety and Health Administration (OSHA) with the responsibility of ensuring, as extensively as possible, healthy working conditions for every working man and woman in the nation [Section 4(b)(1)] (18).

OSHA, however, is prohibited by Section 4(b)(1) of the OSH Act [29 USC 653(b)(1)] from enforcing its regulations if a working condition is regulated by another federal agency. For example, when CMVs and their drivers are operating on public highways, the DOT has jurisdiction. When workers are loading and unloading trucks, however, OSHA regulations govern the safety and health of those workers and the responsibilities of employers to ensure the workers' safety and health.

Section 405 of the STAA of 1982 (49 USC 31105) provides protection from reprisal by employers for truckers and certain other employees in the trucking industry involved in activity related to interstate CMV safety and health. OSHA's implementing regulations are codified at 29 CFR, Part 1978.

Wages: Employment Standards Administration of the U.S. Department of Labor

The authority of DOT does not extend to the computation of wages. The U.S. Department of Labor has this responsibility. So long as workers are paid at least the minimum hourly wage, the wages themselves may be computed on whatever basis the employer chooses. Some CMV drivers are paid on an hourly basis, while others are paid by the mile or by a percentage of the value of the cargo transported on a given run.

The Fair Labor Standards Act (FLSA) (29 USC 201–219) governs wages, including minimum wage rates and overtime pay. FLSA generally requires overtime pay for more than 40 h of work per week.

Section 13(b)(1) [29 USC 213(b)(1)] provides that the overtime requirements of Section 7 (29 USC 207) do not apply with respect to any employee for whom the Secretary of Transportation has power to establish qualifications and maximum HOS pursuant to the provisions of Section 204 of the MCA of 1935. The overtime provisions therefore do not cover drivers of CMVs operating in interstate commerce. Nonetheless, the minimum wage requirements of Section 6 (29 USC 206) apply to these drivers. The overtime exemption has been interpreted as applying to any driver, driver's helper, loader, or mechanic employed by a carrier and whose duties affect the safety of operation of motor vehicles in the transportation on public highways of passengers or property in interstate or foreign commerce. It also applies regardless of whether the employer is a private, common, or contract carrier of property or passengers (19).

RESEARCH NEEDS

Several statutory and administrative requirements govern reviews of existing regulations to determine whether they should be revised or revoked. Since 1979, the Regulatory Policies and Review Procedures of the U.S. DOT have required these reviews. Additional requirements are contained in Executive Order 12866: Regulatory Planning and Review and section 610 of the Regulatory Flexibility Act. The Section 610 reviews must be conducted on rules that have been published within the last 10 years and have a “significant economic impact on a substantial number of small business entities.” Most U.S. DOT agencies have divided their regulations into 10 different groups and plan to analyze one group each year (20).

The knowledge bases of the physical sciences, medicine, engineering, and public policy are continually growing and changing. The safety regulations and programs that are built upon those foundations must also evolve.

The process of estimating the benefits and costs of regulations depends heavily upon the availability of current and comprehensive data on the characteristics of the regulated populations. In a large and dynamic environment like the motor carrier industry, obtaining this data is a considerable challenge.

Finally, a comprehensive and useful set of regulatory analyses hinges upon the development of well-reasoned estimates of the proposed regulation’s benefits and costs to both the entities directly affected as well as to society as a whole. There is a continued need to develop and test new analytical tools.

ACKNOWLEDGMENTS

Many thanks to Charles Medalen of the FMCSA Office of Chief Counsel and David R. Miller and Larry W. Minor of the FMCSA Office of Policy and Program Development, who provided assistance in the legal research and comments on drafts of this chapter.

NOTE

1. *Sweatshops on Wheels: Winners and Losers in Trucking Deregulation* (Michael H. Belzer, Oxford University Press, 2000) provides an extensive discussion of the historical economic and safety regulation of the trucking industry.

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20. 69 FR 73494, at 73495, December 13, 2004. (Semiannual Regulatory Agenda).

APPENDIX A

A Chronology of Important Motor Carrier Safety Statutes

Refer to 49 USC, Chapters 5, 51, 59, 311, 313, and 315 (Source: S. Abbasi, FHWA, and C. Medalen, FMCSA)

1. Motor Carrier Act of 1935, 49 Stat. 546, ch. 498 (1935).
2. Department of Transportation Act, Pub. L. 89-670, 80 Stat. 931 (1966) (creation of U.S. DOT and transfer of certain motor carrier functions from the ICC to the department)).
3. The Hazardous Materials Transportation Act, Pub. L. 93-633, 88 Stat. 2156 (1975)
4. First Recodification, Pub. L. 95-473, 92 Stat. 1337 (1978).
5. Motor Carrier Act of 1980, Pub. L. 96-296, 30, 94 Stat. 793 (1980) (minimum levels of financial responsibility for motor carriers of property).
6. Bus Regulatory Reform Act of 1982, Pub. L. 97-261, 18, 96 Stat. 1102 (1982) (minimum levels of financial responsibility of motor carriers of passengers).
7. Surface Transportation Assistance Act of 1982, Pub. L. 97-424, 96 Stat. 2097 (1983)
8. Second Recodification, Pub. L. 97-449, 96 Stat. 2413 (1983).
9. Motor Carrier Safety Act of 1984, Pub. L. 98-554, Title II, 98 Stat. 2834 (1984).
10. Commercial Motor Vehicle Safety Act of 1986, Pub. L. 99-570, Title XII, 100 Stat. 3207-170 (1986).
11. Truck and Bus Safety and Regulatory Reform Act of 1988, Pub. L. 100-690, Title IX, Subtitle B, 102 Stat. 4527 (1988).
12. Motor Carrier Safety Act of 1990, Pub. L. 101-500, 104 Stat. 1218 (1990).
13. Hazardous Materials Transportation Uniform Safety Act of 1990, Pub. L. 101-615, 104 Stat. 3244 (1990).
14. Omnibus Transportation Employee Testing Act of 1991 (Title V), Sec. 5, Pub. L. 102-143, 105 Stat. 952 (1991).

15. Intermodal Surface Transportation Efficiency Act of 1991; Motor Carrier Act of 1991, Title IV of Pub. L. 102-240, 105 Stat. 2140 (1991).
16. Intermodal Safe Container Transportation Act of 1992, Pub. L. 102-548, 106 Stat. 3646 (1992), as amended by Intermodal Safe Container Transportation Amendments Act of 1996, Pub. L. 104-291, Title II, 110 Stat. 3453 (1996).
17. Codification of Certain U.S. Transportation Laws as Title 49, U.S.C., Subtitle VI of Pub. L. 103-272, 108 Stat. 745 (1994).
18. Hazardous Materials Transportation Authorization Act of 1994, Pub. L. 103-311, 108 Stat. 1673 (1994).
19. National Highway System Designation Act of 1995, Pub. L. 104-59, 109 Stat. 568 (1995) especially Secs. 312, 326, 342, 344-346.
20. ICC Termination Act of 1995, Pub. L. 104-88, 109 Stat. 803 (1995).
21. Codification of Transportation Laws, Pub. L. 104-287, 110 Stat. 3388 (1996).
22. Transportation Equity Act for the 21st Century, Pub. L. 105-178, 112 Stat. 107 (1998).
23. Motor Carrier Safety Improvement Act of 1999, Pub. L. 106-159, 113 Stat. 1748 (Dec. 9, 1999).
24. Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, Pub. L. 109-59, 119 Stat. 1144 (August 10, 2005).

Useful Resources

- <http://dms.dot.gov>. U.S. DOT electronic Docket Management System (DMS). DMS is an electronic, image-based database in which all DOT docketed information is stored for easy research, and retrieval. A docket is an official public record. DOT publishes and stores online information about proposed and final regulations, copies of public comments on proposed rules, and related information in the DMS.
- www.fhwa.dot.gov/legregs/legislat.html. Legislation and regulations page of FHWA. Highway-related statutes, regulations, and legislation.
- www.fmcsa.dot.gov. Home page of FMCSA. Click on “Rules and Regulations.” Links to regulations, regulatory guidance, federal register rule makings and notices from 1998 forward.
- www.gpoaccess.gov/nara/index.html. Office of the Federal Register, National Archives and Records Administration. The U.S. Government Printing Office and the Office of the Federal Register, National Archives and Records Administration work closely to disseminate the official text of federal laws; presidential documents; administrative regulations and notices; and descriptions of federal organizations, programs and activities.
- www.nhtsa.dot.gov. Home page for NHTSA. Click on the tab “Laws/Regulations.”
- www.reginfo.gov/public/. RegInfo.gov is a U.S. government website produced by OMB and the General Services Administration.
- http://thomas.loc.gov/home/abt_thom.html. U.S. legislative information online, including legislation, public laws, the Congressional Record, committee information, and historical documents.