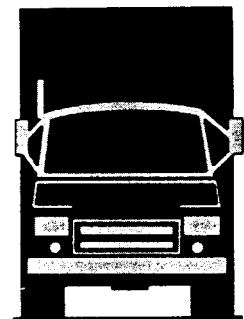
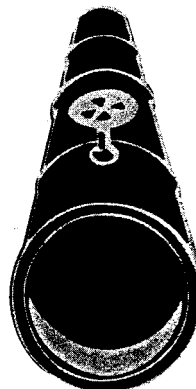
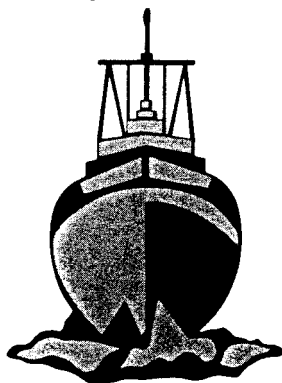
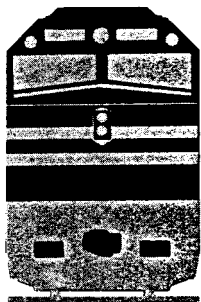


NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

HIGHWAY SPECIAL INVESTIGATION REPORT

Selective Motorcoach Issues



7108A

Abstract: This report contains the findings of a special investigation conducted as a result of two fatal motorcoach accidents. In the first accident, on October 14, 1995, two passengers sustained fatal injuries, 13 sustained serious injuries, and 26 received minor injuries when a 1989 Eagle motorcoach operated by Hammond Yellow Coach Line, Inc., overturned upon entering an Interstate 70 exit ramp in Indianapolis, Indiana. In the second accident, on July 29, 1997, one passenger sustained fatal injuries, the driver and 3 passengers sustained serious injuries, and 28 passengers sustained minor injuries when a 1985 Transportation Manufacturing Corporation (TMC) motorcoach operated by Rite-Way Transportation, Inc., drifted off the side of Interstate 95 near Stony Creek, Virginia, and down an embankment into the Nottoway River, where it came to rest on its left side, partially submerged in water.

From its investigation, the Safety Board identified safety issues in the following areas: busdriver fatigue, Office of Motor Carriers safety rating methodology, emergency egress, and passenger safety briefings.

The National Transportation Safety Board is an independent Federal agency dedicated to promoting aviation, railroad, highway, marine, pipeline, and hazardous materials safety. Established in 1967, the agency is mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable cause of accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The Safety Board makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

Recent publications are available in their entirety on the Web at <http://www.nts.gov/>. Other information about available publications may be obtained by contacting:

National Transportation Safety Board
Public Inquiries section, RE-51
490 L'Enfant Plaza East, S.W.
Washington, D.C. 20594
(202) 314-6551

Safety Board publications may be purchased, by individual copy or by subscription, from:

National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161
(703) 605-6000

HIGHWAY SPECIAL INVESTIGATION REPORT

Selective Motorcoach Issues

NTSB/SIR-99/01

**PB99-917001
Notation 7108A
Adopted: February 11, 1999**



**National Transportation Safety Board
490 L'Enfant Plaza, S.W.
Washington, D.C. 20594**

Table of Contents

Introduction	1
The Accidents	3
Indianapolis, Indiana	3
Stony Creek, Virginia	5
Injuries.....	9
Busdriver Fatigue	10
Hammond Busdriver	10
Rite-Way Busdriver	11
Office of Motor Carriers Safety Rating Methodology	16
Mechanical Condition of the Accident Vehicles	16
Motor Carrier Oversight of Hammond	17
Motor Carrier Oversight of Rite-Way	18
Regulatory Background	19
Preventing Operation of Unsafe Carriers	22
Emergency Egress	27
Passenger Briefings	34
Conclusions	36
Recommendations	37
Appendix A - Pathways to Freedom Tour Schedule	39
Appendix B - Title 49, Code of Federal Regulations, Part 385—Safety Fitness Procedures	41
Appendix C - Available Consumer Guidance for Chartering a Motorcoach	51
Acronyms	58

Introduction

In an average year, more than 360 million bus passengers travel 28 billion passenger miles in North America.¹ The motorcoach industry estimates that more than 30,000 commercial buses are presently in use for charters, tours, regular route service, and special operations in North America. According to industry estimates, 4,000 motorcoach companies are operating in the United States.² Bus accident statistics are limited; however, the National Highway Traffic Safety Administration's (NHTSA's) Fatality Analysis Reporting System (FARS) data for 1993 to 1997 indicates that 141 motorcoaches were involved in accidents that, in total, resulted in the deaths of 21 occupants and injuries to 442 occupants.

The National Transportation Safety Board investigated two accidents in 1995 and 1997 that are typical of the motorcoach accidents that it has investigated over the years. On October 14, 1995, a 1989 Eagle motorcoach operated by Hammond Yellow Coach Line, Inc., (Hammond) and occupied by a driver and 40 members of a high school booster club overturned when it entered an Interstate (I)-70 exit ramp in Indianapolis, Indiana. Two passengers sustained fatal injuries, 13 sustained serious injuries, and 26 received minor injuries.

On July 29, 1997, a 1985 Transportation Manufacturing Corporation (TMC) motorcoach operated by Rite-Way Transportation, Inc., (Rite-Way) and occupied by a driver and 34 members of a tour group drifted off the side of I-95 near Stony Creek, Virginia, and down an embankment into the Nottoway River, where it came to rest on its left side. One passenger sustained fatal injuries, the driver and 3 passengers sustained serious injuries, and 28 passengers sustained minor injuries.

These accidents involved factors that the Safety Board has repeatedly identified as being issues in accidents and having the potential for catastrophic consequences, namely driver fatigue and poorly maintained or out-of-adjustment brakes. In both cases, the carriers involved had satisfactory safety ratings. The Safety Board therefore examined the Federal Highway Administration's (FHWA's) safety fitness criteria for motorcoaches. The Safety Board is convinced that had a more restrictive compliance review process been in place for motorcoaches, these and other accidents may not have occurred.

This special investigation report includes detailed descriptions of these two motorcoach accidents and discussions of the following safety issues:

¹ National Safety Council. 1998. *Accident Facts*,TM 1998 Edition. p 122.

² Source: American Bus Association.

- busdriver fatigue,
- Office of Motor Carriers (OMC) safety rating methodology,
- emergency egress, and
- passenger safety briefings.

As a result of its investigation, the Safety Board makes recommendations to the U.S. Department of Transportation, NHTSA, the American Bus Association, and the United Motorcoach Association.

The Accidents

Indianapolis, Indiana

Bus Owner.

The owner of the Indianapolis accident bus, the Northwest Indiana Regional Planning Commission (NIRPC), had purchased the vehicle with Federal Transit Administration (FTA) funds and leased the bus to Hammond for the purpose of providing transportation to commuters. When it determined that Hammond was using the bus for charters, the NIRPC ordered the motorcoach operator to surrender the tax-free municipal license plates. The bus still had the municipal plates at the time of the accident.

Operator Background.

Hammond, the motorcoach operator involved in the 1995 Indianapolis accident, was headquartered in Hammond, Indiana. At the time of the accident, the company operated 16 buses and employed 35 drivers. Hammond provided commuter service from northwest Indiana to the greater Chicago, Illinois, area and for-hire charter service to special events.

Preaccident Events.

The Hammond bus, carrying the North Central High School football booster fan club, departed Indianapolis on Friday, October 13, 1995, between 5 and 5:30 p.m. The busdriver later told Safety Board investigators that the speedometer light was out, the speedometer was inoperative, and the air conditioner was not working. He said that the passengers opened the emergency exit windows for ventilation because the bus was extremely hot. The bus traveled about 110 miles to Jeffersonville, Indiana, arriving at 7:15 p.m.

The busdriver stated that during the football game, he stayed on the bus and attempted to nap, but could not fall asleep. After the football game, the bus departed Jeffersonville, about 10:45 p.m., for the return trip to Indianapolis.

About 12:33 a.m., the bus was traveling east on I-70, approaching the Keystone exit near milepost 85. Tire marks indicate that the bus entered the 150-foot radius right-curve exit with its right tires on the right shoulder. The bus failed to negotiate the curve, overturned onto its left side, and slid about 50 feet before coming to rest. (See figures 1 and 2.)

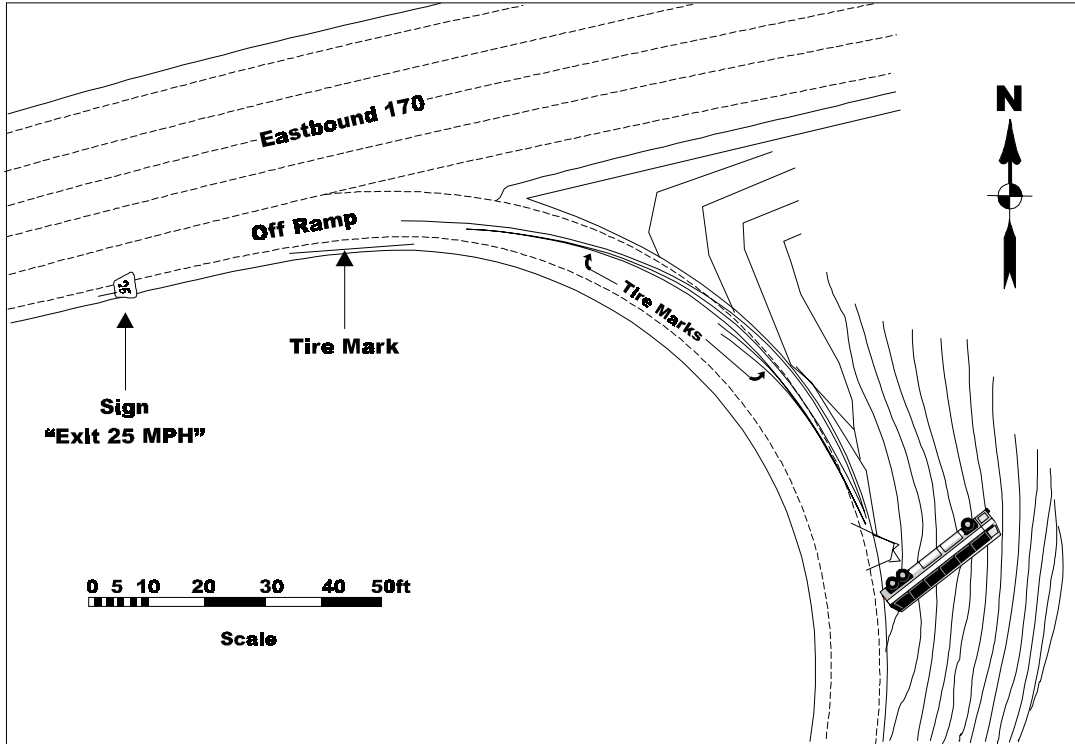


Figure 1. Schematic of Indianapolis accident scene



Figure 2. Indianapolis accident scene

Several passengers reported that the driver was attempting to take the exit at highway speed, that is, 55 mph or “possibly a little faster,” when he lost control. The busdriver also stated that he was driving at highway speed, took the exit ramp too fast, and was unable to control the bus. He said that he did not remember applying the brakes, although he was sure that he must have done so. Tire marks on the ramp indicate that the brakes were applied.

The driver stated that he had not fallen asleep and that he was alert when the accident occurred, although he was not familiar with the ramp. A bus passenger stated, however, that the driver did not appear alert and that about 1.5 miles from the accident site, where I-70 East and I-65 North diverge, she had had to remind him to move over into the right lane. The busdriver recalled the passenger reminding him about the route, but he stated that he was alert at the time.

Two passengers on the left side of the bus (a 9-year-old child in row 10 and a 30-year-old woman in row 5) were partially ejected and died from massive head injuries. Thirteen passengers received serious injuries, and the driver and 25 passengers received minor injuries. (See table 1.)

Stony Creek, Virginia

Operator Background.

Rite-Way, the motorcoach operator involved in the Stony Creek accident, is headquartered in Detroit, Michigan. At the time of the accident, the company owned and operated 6 motorcoaches and 72 school buses and employed 6 full-time charter busdrivers and 60 school busdrivers during the school terms. Rite-Way was an interstate, for-hire common carrier of passengers that began business in 1991 as a taxi company. In 1992, Rite-Way expanded into the charter bus business and began contracting with the Detroit School District to provide pupil transportation, which included regular school-bus and special-activities services.

Preaccident Events.

The Pathways to Freedom tour program,³ sponsored by the Rosa and Raymond Parks Institute for Self Development (Institute)⁴ in Detroit, began with registration and orientation at the Institute on Thursday, July 7, 1997. The tour group was scheduled to

³ The tour was funded by a \$50,000 grant from the FTA as part of its Garrett A. Morgan Technology and Transportation Futures Initiative for students at the K-12 level. Children receive school credit for participating in the tour. The tour was designed to educate students about the Underground Railway during the pre-Civil War era, and tell them about the field of transportation, transit awareness, and job opportunities in the transportation industry.

⁴ The Institute is a private, non-profit organization engaged in mentoring and guiding young people.

travel to several States, including Ohio, Illinois, Nebraska, Missouri, Oklahoma, Tennessee, Alabama, and South Carolina (figure 3). The tour began with one motorcoach bus and one driver. Two days after the bus left Detroit, a second driver joined the tour in Cincinnati, Ohio. Because of the amount of luggage that the tour participants had, the second driver was assigned to a van for carrying excess baggage.

About midnight on Saturday, July 26, 1997, the tour departed Montgomery, Alabama, for Charleston, South Carolina. The busdriver's duty status record indicates that after the tour arrived in Charleston on Sunday morning, he was off duty until the bus departed for Washington, D.C., on Monday evening. The busdriver said that on Monday, July 28, he arose about 7 a.m. and spent the day sightseeing (not driving) with the tour group. He did not sleep between the time he awoke and the time he began driving, about 8 p.m. that evening. In the 360 miles between Charleston and the accident site, the driver stopped twice for fuel and twice for rest breaks. He indicated that he rested about 1 hour at each of the two rest stops; the last one being at the Virginia border, about 28 miles south of the accident site.

According to the driver of the luggage van, about 7:10 a.m. on July 29, he was following the bus, traveling about 55 to 60 mph, when he observed the bus start to drift to the right. He said that he honked the van's horn, but the bus continued off the roadway.

The bus, which was traveling in the right lane, drifted off the pavement on the right side of the roadway at an angle of 4 degrees. The bus continued drifting to the right, passing behind the approach guardrail for the Nottoway River bridge. The bus proceeded down an increasingly steep dirt and grass embankment about 350 feet where it struck a mesh fence, continued over a 16-foot precipice, and vaulted into the river. (See figure 4.)

The front of the bus struck the water, and the vehicle rolled onto its left side, coming to rest in about 5 feet of water. The front of the bus was severely damaged; the two sections of windshield glass were displaced. The bus immediately began to fill up with water through the displaced front windshield and the broken windows on the left side. Many of the passengers who had been sleeping stated that the impact and water entering the bus were their first indications of an emergency. Some passengers recalled having to swim to the surface of the water to escape.

The roof emergency escape hatches were almost completely submerged, preventing their use for egress. Occupants stated that they escaped through the right-side emergency escape windows, pulling themselves out and onto the side of the bus. Several passengers reported that they had difficulty evacuating the bus because the emergency window would not remain open. Some occupants stood on the edges of the seats and held the windows open so that others could exit. Two passengers stated that they were not tall or strong enough to open the emergency exit windows. After evacuating the bus, some of the passengers formed a "human chain" to help others reach the riverbank.



Figure 3. Route of the Pathways to Freedom Tour



Figure 4. Stony Creek accident scene

The van driver stopped his vehicle on the Nottoway River bridge. He said that a motorist stopped and called for help on a citizens band radio and that another motorist stopped and called the police on a cellular telephone.

The 25-year-old passenger who had been seated in the first row on the right side of the coach died in this accident. While the cause of his death was listed as drowning, he also received multiple lacerations and contusions on the chest and upper and lower extremities. The motorcoach driver and 3 teenagers sustained serious injuries, and 28 passengers received minor injuries of various types. Two occupants were not injured.

Injuries

Table 1 is based on the injury criteria of the International Civil Aviation Organization, which the Safety Board uses in accident reports for all transportation modes.

Table 1. Injuries Sustained in the Accidents

Indianapolis Accident (Hammond)			
Type	Busdriver	Passengers	Total
Fatal	0	2	2
Serious	0	13	13
Minor	1	25	26
None	0	0	0
Total	1	40	41
Stony Creek Accident (Rite-Way)			
Fatal	0	1	1
Serious	1	3	4
Minor	0	28	28
None	0	2	2
Total	1	34	35
<p>Title 49 <i>Code of Federal Regulations</i> (CFR) 830.2 defines <i>fatal injury</i> as “Any injury which results in death within 30 days of the accident.” It defines serious injury as an injury that: “(1) Requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, or tendon damage; (4) involves any internal organ; or (5) involves second or third degree burns, or any burn affecting more than 5 percent of the body surface.”</p>			

Busdriver Fatigue

The busdrivers in both of the accidents had exhibited signs of fatigue. The Safety Board has been concerned about the impact of fatigue in transportation for some time. Fatigue can degrade most aspects of human capability, although to what degree depends on the individual. Fatigue can be associated with decrements in decision making, vigilance, reaction time, memory, psychomotor coordination, and information processing.

Hammond Busdriver

The 49-year-old busdriver held a valid Illinois class B commercial driver's license (CDL) issued on May 16, 1995, with a passenger endorsement with no restrictions. Illinois records indicate that he been convicted of speeding in a commercial vehicle in 1992 on a Michigan CDL.

The driver had attended Trainco Truck Driving school for 6 weeks in 1975. He had driven motorcoaches for Indian Trails, Inc., (ITI) of Owosso, Michigan, from 1976 to 1994. The ITI Safety Director indicated that before the driver left the ITI, under favorable terms, he had completed almost 1 million accident-free miles in a coach bus. The busdriver had moved from Michigan to Illinois, where he had worked for Motorcoach Industries in April and May 1995. He had been hired by Hammond in September 1995; the accident trip was his first driving assignment for the company. He had a second job with Fred Brown Transportation, for which he had driven one charter trip a few weeks before the accident.

The busdriver supplied the following information regarding his sleep habits and his activities during the 3 days before the accident. He said that he normally went to bed between 11 p.m. and 1 a.m. and slept for 8 hours. On October 11, 1995, he spent the day with his girlfriend, had dinner, and retired between midnight and 1 a.m. On October 12, he awoke around 9 a.m. In the morning, the company notified him that he would be driving to Indianapolis the following day. He then reported for his pre-employment physical about noon. When his blood pressure reading was slightly higher than acceptable,⁵ the examining physician told him to come back the following morning. He remained at home the rest of the day and went to sleep about 11 p.m.

On October 13, the busdriver awoke about 8 a.m. and went to the doctor at 10 a.m. to finish his physical examination. After picking up the bus at the Hammond terminal about 11 a.m., he returned to his home in Calumet, Illinois, for lunch. About noon,

⁵ The busdriver advised Safety Board investigators that he was not using any medication for high blood pressure.

he left on the 180-mile trip to Indianapolis, stopping twice en route at roadside rest areas before arriving at North Central High School, about 4:15 p.m. After picking up the booster club members, he left, between 5 and 5:30 p.m., on the 110-mile trip to Jeffersonville, arriving about 7:15 p.m. He said that he stayed on the bus during the game and attempted to nap. He recalled that he could not fall asleep. However, a booster club member who returned to the bus at half-time said that he observed the busdriver asleep. About 10:45 p.m., the bus departed Jeffersonville for the return trip to Indianapolis.

According to one of the bus passengers, when the bus was about 1.5 miles from the accident site, the driver did not appear to be alert, and she considered it necessary to remind him to change lanes. Between that point and the exit ramp, I-70 had six signs alerting him to the exit. The advisory sign indicating "Exit 25 MPH" and the geometry of the ramp were visible from more than 220 feet. Despite these cues, the driver failed to slow for the exit. The accident occurred about 12:33 a.m.

The Hammond motorcoach operator was an experienced driver, was physically qualified, and was not impaired by alcohol or drugs, as evidenced by the results of his postaccident toxicological test. The Safety Board therefore attempted to identify why an experienced driver would fail to respond to a routine situation in which he was required to reduce his speed. The Safety Board identified several factors that probably put the busdriver at risk for fatigue, primarily the time of day and the length of time that he had been awake, on duty, and driving. At the time of the crash, he was nearing the end of his allowable duty cycle. He had been awake for 16.5 hours and on duty for about 11 hours, during which he had driven for 7.5 hours. The accident occurred at a time of day when he normally was asleep or preparing to go to sleep. Another factor potentially contributing to fatigue included his operating a motorcoach that was not mechanically sound; the vehicle had a broken speedometer and a broken air conditioner that was blowing hot air. (Additional information about the mechanical condition of the Hammond vehicle appears later in this report.)

Fatigue is capable of degrading performance, which in turn can lead to an increased potential for operational errors. In this case, the possibly fatigued driver was also driving a route with which he was unfamiliar. The Safety Board concludes that although the exact cause of the Hammond driver's failing to respond appropriately cannot be determined, several factors, including fatiguing conditions and the driver's unfamiliarity with the route, may have contributed to his failing to slow down for the exit ramp.

Rite-Way Busdriver

The 54-year-old driver held a valid Michigan Class A CDL with endorsements for hazardous materials, double-trailer vehicles, and passenger vehicles. His medical card was valid until September 21, 1997. His driver's license had no restrictions. Before going to work for Rite-Way in 1992, he had been a busdriver, a cab driver, and a road supervisor for the Southeast Michigan Transit Authority.

His driving record showed no traffic accidents or traffic violations for the past 5 years. His postaccident toxicological test results were negative for alcohol and illicit drugs.

The tour schedule (see table 2)⁶ for several days before the accident called for the group to travel one night and then stay in a hotel the following night. Consequently, the busdriver's duty-sleep periods were constantly inverted as he alternately drove or slept on successive nights. On July 26 and 27, the busdriver slept during the evening at a Charleston hotel. On July 28, he arose about 7 a.m. and took a local-area tour during the day. He began driving Monday night about 8 p.m. He took two 1-hour rest breaks, the last one ending about ½ hour before the accident. The accident occurred about 7 a.m. The busdriver therefore had not had any bed rest and probably had obtained only 2 hours of split sleep⁷ during the 24 hours before the accident.

Split rest, such as that experienced by the driver in this accident, has been associated with driver fatigue and a resulting decrease in performance. Research has shown that the sleep accumulated in short time blocks is less refreshing than the sleep accumulated in one long time period.⁸ Other research indicates that "the more sleep is disturbed or reduced, for whatever reason, the more likely [that] an individual will inadvertently slip into sleep."⁹

The circumstances of this accident provide evidence that the busdriver's performance was affected by fatigue. The van driver following the bus observed it drifting toward the highway shoulder. The van driver stated that he sounded his horn to alert the busdriver but saw no brake lights or other apparent response as the bus continued off the road. A vehicle drifting off the road at a shallow angle without displaying turn signals or brake lights is frequently an indicator that the operator has fallen asleep. In addition, when the Virginia State Police asked him what happened, the busdriver replied, "I fell asleep, I guess." The Safety Board therefore concludes that the Rite-Way busdriver fell asleep and ran off the road.

⁶ Appendix A contains a graphic depiction of the tour schedule.

⁷ Sleep that is accumulated in short blocks of time.

⁸ Dinges, D.F. 1989. "The Nature of Sleepiness: Causes, Contexts, and Consequences." In Stunkard, A.J. and Baum, A. *Perspectives in Behavioral Medicine: Eating, Sleeping, and Sex*. Lawrence Erlbaum Associates. Hillsdale, NJ. p. 147.

⁹ Mitler, M.; Carskadon, M.A.; Ceisler, C.A.; and others. 1988. "Catastrophes, Sleep and Public Policy: Consensus Report." In *Sleep*. p. 107; Rosekind, M.R.; Gander, P.H.; Connell, L.J.; Co, E.L. 1994. "Crew Factors in Flight Operations X: Alertness Management in Flight Operations." In NASA/FAA Technical Memorandum DOT/FAA/RD-93/1.

Table 2. Rite-Way Tour Bus Schedule

Driver Night Sleep/Drive*	July Date	Day of Week	Time	Tour Activity
	7-9	Mon to Wed		Registration, orientation, and work-shops in Detroit
Night sleep	10	Thurs	8:30 a.m. - 1 p.m.	Detroit to Cincinnati, Ohio
Night sleep	11	Fri	3 - 6 p.m.	Cincinnati to Clarksville, Ohio
Night sleep	12	Sat	All day	Activities in Clarksville
Night drive	13	Sun	11 a.m. - 5 p.m. 9 p.m. - 4 a.m.	Clarksville to Peoria, Illinois Peoria to Omaha, Nebraska
Night sleep	14	Mon	10:30 - 11:30 a.m. 3 - 4 p.m.	Omaha to Nebraska City, Nebraska Nebraska City to Omaha
Night drive	15	Tues	3 - 4 p.m. 6 - 7:30 p.m. 7 p.m. - midnight	Omaha to Lincoln, Nebraska Lincoln to Omaha Lincoln to Kansas City, Missouri
Night sleep	16	Wed	All Day	Kansas City
Night drive	17	Thurs	5 p.m. - midnight	Kansas City to Tulsa, Oklahoma
Night sleep	18	Fri		Tour Tulsa
Night drive	19	Sat	5 p.m. - 1 a.m.	Tulsa to Memphis, Tennessee
Night sleep	20	Sun	All Day	Tour Memphis
Night sleep	21	Mon	All Day	Tour Memphis
Night sleep	22	Tues	7:30 p.m. - 11 p.m.	Memphis to Huntsville, Alabama
Night sleep	23	Wed	All Day	Tour Huntsville
Night drive	24	Thurs	7 p.m. - 2 a.m.	Huntsville to Montgomery, Alabama
Night sleep	25	Fri		
Night drive	26	Sat	11 p.m. - 9 a.m.	Montgomery to Charleston, South Carolina
Night Sleep	27	Sun		Tour Charleston
Night drive	28	Mon	8 p.m. -	Charleston to accident

*For the purposes of this report a “night drive” is one that includes driving all or part of the hours between 10 p.m. and 6 a.m.

Extended bus tours such as the Pathways to Freedom tour impose unique fatigue-inducing conditions on drivers. By their very nature, “extended” bus tours (longer than 2 or 3 days) are likely to entail inverted duty-sleep periods for the busdriver. For a variety of reasons, tour organizers create schedules that alternate nights of travel with nights at a hotel. Such schedules reduce the hotel expenses and the passengers’ monotony by having

them sleep on the bus while traveling at night and maximize the number of daylight hours that passengers have available for sightseeing. But these efficiencies are gained at the expense of the busdriver's ability to acquire proper rest.

The contract specified two drivers; however, circumstances resulted in the second driver operating a van to carry excess baggage. No additional well-rested drivers were added throughout the tour.

The Safety Board concludes that the Rite-Way driver became fatigued because the Pathways to Freedom tour schedule imposed inverted duty-sleep periods and because additional well-rested drivers were not provided for relief. The Safety Board believes that the American Bus Association (ABA) and the United Motorcoach Association (UMA) should alert their members to the dangers of inverted duty-sleep periods. Further, the Safety Board believes that the ABA and the UMA should encourage their members to revise their scheduling practices to avoid inverted duty-sleep periods or to provide a well-rested relief driver if the schedule requires alternate day-night driving.

The Safety Board has addressed the issue of operator fatigue and the need to provide employees with fatigue awareness training in all modes of transportation. In 1989, the Safety Board issued Safety Recommendation I-89-2, which asked the U.S. Department of Transportation (DOT) to develop and disseminate educational material for transportation industry personnel and management regarding shift work; work and rest schedules; and proper regimes of health, diet, and rest. While the highway, aviation, and railroad modes have made educational efforts in fatigue awareness, the marine and pipeline modes have not. The recommendation was, therefore, classified "Open—Acceptable Response" on July 19, 1996.

In its study of factors affecting fatigue in heavy truck accidents,¹⁰ the Safety Board addressed the hazards of inverted duty-sleep periods. The study found that 17 of 107 drivers had inverted duty-sleep periods on their accident trips; of these 17 drivers, 16 had fatigue-related accidents. As a result, the Safety Board issued the following recommendation to the FHWA and trucking organizations:

H-95-5

Develop and disseminate, in consultation with the DOT Human Factors Coordinating Committee, a training module to inform truckdrivers of the hazards of driving while fatigued. It should include information about the need for an adequate amount of quality sleep, strategies for avoiding sleep loss, such as strategic napping, consideration of the behavioral and physiological consequences of sleepiness, and an awareness that sleep can

¹⁰ For more detailed information, read: *Factors that Affect Fatigue in Heavy Truck Accidents, Volume 1: Analysis*. Safety Study Report NTSB/SS-95/01. Washington, DC.

occur suddenly and without warning to all drivers regardless of their age or experience.

The FHWA subsequently worked with several different organizations to educate truckdrivers about the dangers of driving while drowsy, which resulted in the Safety Board classifying Safety Recommendation H-95-5 “Closed—Acceptable Action” on July 7, 1998. The FHWA developed brochures and videotapes, such as “Awake at the Wheel,” “Alert Driver,” and “Fatigue and the Truck Driver.” Although the FHWA developed its fatigue-awareness brochures and videotapes with the trucking industry in mind, the information provided in them applies to the motorcoach industry as well. The FHWA and the American Trucking Associations (ATA) are promoting a toll-free telephone number, 1-800-ATA-LINE (1-800-282-5463), that commercial carriers can call to obtain information on fatigue awareness and countermeasures.

According to FHWA officials, the agency has a stated goal of educating all 7 million CDL holders on recognizing fatigue and on the importance of adequate rest and healthy work and lifestyle choices. The FHWA is planning a two-phase project to specifically address busdriver fatigue. In the first phase, the FHWA intends to study the differences between motorcoach operations and truck operations as they relate to operator fatigue. The second phase is the development of a fatigue awareness and countermeasure video for motorcoach drivers, which will be distributed through the National Technical Information Service to industry. The Safety Board believes that the DOT should require that the FHWA video being developed discuss the dangers of inverted duty-sleep periods.

The Safety Board is also aware that the ABA’s Safety Committee is in the process of producing a driver training video on recognizing fatigue. The Safety Board realizes that the FHWA project may affect the ABA’s development of a video, potentially preempting it. However, if the ABA proceeds with its project, the Safety Board believes the ABA busdriver fatigue training video currently under production should discuss the dangers of inverted duty-sleep periods.

The Transportation Efficiency Act for the 21st Century (TEA-21), enacted June 9, 1998, provides for the DOT to assess how the operations of shippers, brokers, freight forwarders, consignees, or others, such as tour or charter operators, encourage violations of the hours-of-service rules. The Safety Board believes the DOT should include the inverted work schedules of motorcoach tours and charters in the TEA-21 assessment.

Office of Motor Carriers Safety Rating Methodology

In postaccident mechanical examinations, discussed below, Safety Board investigators determined that the condition of the brakes on both accident vehicles met the Commercial Vehicle Safety Alliance (CVSA)¹¹ criteria to be placed out of service for deficiencies requiring repair. As part of its investigation, the Safety Board reviewed the history of oversight reviews for the two carriers and found that they both had OMC safety ratings of satisfactory at the time of the accidents. The Safety Board then reviewed the OMC method for rating the safety fitness of commercial passenger vehicles.

Mechanical Condition of the Accident Vehicles

Hammond Bus

The driver stated that the inoperative speedometer and the faulty air conditioner were the only mechanical problems with the Hammond bus. The company's maintenance records indicate that in September and October 1994, the drive axle brakes and drums were replaced. On March 31, 1995, the right drive axle brake chamber was replaced in response to a reported leak. On July 21, 1995, the right drive axle brake chamber was repaired rather than replaced in response to a reported leak. The industry-recommended practice is to replace a leaking air chamber. Maintenance records also show that the brakes were adjusted 2 weeks before the accident and that the air conditioner blower was repaired in July 1995.

Although Hammond's records showed that maintenance had been performed on the accident vehicle several times during 1994 and 1995, Safety Board investigators identified a number of defects not related to accident damage during their postaccident mechanical inspection of the bus. An air leak was found in the engine's air-operated high-idle system and the diaphragm of the left rear air chamber. With the engine off, the air reservoir pressure dropped from 108 to 70 pounds per square inch (psi) in 30 seconds during a service brake application. The air brake manufacturer recommends a drop of no more than 6 psi in 2 minutes. In addition, three of the six brakes on the bus were out of adjustment, and three tires had less than the minimum required 2/32-inch tread depth; the condition of the brakes met CVSA criteria for the bus to be placed out of service. The out-of-adjustment

¹¹ The CVSA is an international organization consisting of State, provincial, and Federal officials responsible for administering and enforcing Motor Carrier Safety Laws in the United States, Canada, and Mexico. The CVSA standards are used by U.S., State, and local officials for commercial vehicle inspections.

brakes resulted in the bus having only 50 percent braking efficiency. The Safety Board therefore concludes that the condition of the brakes probably contributed to the Hammond busdriver's inability to slow his vehicle when he entered the ramp too fast.

Rite-Way Bus

Examination of the maintenance records for the accident bus revealed that the records for 1996 were complete but that some service records for 1997 were missing. Recent repairs included a rebuilt engine on March 15, 1997, and a brake adjustment after receipt of two notices: one on May 29, 1997, of "the brakes pulling to the right," and the second on July 8, 1997, of "wheels shake 70 mph."

Postaccident inspection of the accident bus found that both the left and right drive axle brakes were out of adjustment. Although the Safety Board determined that the condition of the brakes did not contribute to the bus drifting off the road, the condition of the brakes did meet the CVSA criteria for the bus to be placed out of service.

Motor Carrier Oversight of Hammond.

Before the accident, the OMC had conducted reviews of Hammond nine times between 1987 and 1995. After the accident, the OMC conducted a compliance review¹² that resulted in an unsatisfactory rating and a subsequent out-of-service order. Table 3 summarizes the OMC's ratings and notes on Hammond.

In response to numerous complaints from several sources, including many commuter passengers, the Hammond City Council, the NIRPC, and the Indiana Department of Revenue, a terminal, or on-site, inspection was conducted of Hammond's vehicles by the Indiana State Police on June 22, 1994. The police found 104 defects, of which 39 were out-of-service defects, and placed 11 of 11 buses, or 100 percent of the vehicles reviewed, out of service. On September 14, 1994, the Indiana State Police performed another terminal inspection of the carrier's vehicles. During this review, the police found 154 defects, of which 22 were out-of-service defects, and placed 12 of 19 buses, or 63 percent of the vehicles reviewed, out of service.¹³

¹² Title 49 CFR Part 385.3 defines "compliance review" as an on-site examination of motor carrier operations, such as drivers' hours of service, maintenance and inspection, driver qualification, CDL requirements, financial responsibility, accidents, hazardous materials, and other safety and transportation records, to determine whether a motor carrier meets the safety fitness standard. A compliance review may be conducted in response to a request to change a safety rating, to investigate potential violations of safety regulations by motor carriers, or to investigate complaints or other evidence of safety violations. The compliance review may result in the initiation of an enforcement action.

¹³ FHWA inspection records for 1997 indicate that the national out-of-service rate for motorcoaches from roadside safety inspections is 9 percent for vehicles and 2 percent for drivers.

**Table 3. Motor Carrier Compliance Reviews
of Hammond from 1987 to 1995**

Date	Rating	Notes
09/22/87	Satisfactory	Review at carrier's request due to a prior enforcement action
10/25/88	No rating/violations on vehicles operating in commercial zone	Initiated because of congressional complaint
02/06/90	Conditional	Initiated because of complaint regarding hours-of-service violations
07/31/91	No rating	Initiated because of complaint/enforcement action underway
07/02/92	Conditional	Follow-up review due to prior enforcement action
11/13/92	Conditional	Initiated because of complaint regarding push-out windows
09/30/93	Unsatisfactory	Due to accident rate and hours-of-service violations
12/17/93	Satisfactory	45-day follow-up review. Maintenance program moderately deficient/mechanics have not promptly repaired safety-related defects
June 22, 1994, Indiana police inspection places 100 percent of the 11 vehicles reviewed out of service.		
09/14/94*	Satisfactory	High percentage of vehicles out-of-service [63 percent]
October 15, 1995, Indianapolis Accident Occurs		
11/01/95	Unsatisfactory	Postaccident compliance review. The OMC places 10 of 10 vehicles reviewed out of service.
11/20/95		Out-of-service order as a result of noncompliance within 45 days of the proposed unsatisfactory safety rating
*An Indiana State police inspection also occurred.		

While the Indiana State Police were conducting the September 14, 1994, terminal inspections, the OMC conducted a follow-up compliance review as a result of enforcement actions stemming from its September 30, 1993, review. The OMC used the Indiana State Police's inspection results in determining the rating for its compliance review. The high number of vehicles meeting criteria to be placed out of service (63 percent) resulted in Hammond receiving a conditional rating for the vehicle factor portion of the compliance review. The OMC rated all other factors satisfactory; therefore, Hammond's overall rating for the compliance review was satisfactory.

Motor Carrier Oversight of Rite-Way.

The Michigan Department of Transportation performed three compliance reviews of Rite-Way, in 1993, 1995, and 1996. After the accident, the OMC performed a compliance review. The ratings and deficiencies are summarized in table 4.

**Table 4. Motor Carrier Compliance Reviews
of Rite-Way from 1993 to 1997**

Date	Rating	Comments/Deficiencies *
12/15/93	Conditional	<ul style="list-style-type: none"> - failure to have some driver qualification records - failure to have accurate duty status records - failure to conduct preemployment and random drug tests
4/21/95	Conditional	<ul style="list-style-type: none"> - failure to comply with driver "hours of service" rules (49 CFR 395) - failure to have complete employment applications - use of an unqualified driver - failure to complete a pre-employment background check - use of a motorcoach that had not received its annual inspection - failure to have some driver qualification records - failure to conduct random drug tests on 50 percent of drivers
4/26/96	Satisfactory	<ul style="list-style-type: none"> - failure to fully comply with drug testing requirements - use of a motorcoach that had not received its annual inspection
Postaccident 7/31/97	Satisfactory	<ul style="list-style-type: none"> - failure to perform annual vehicle inspections - failure to conduct random alcohol tests - failure of driver to record hours of service while driving on local charter tours (minor violations)
* The company was fined for the violations noted during each review.		

The ratings that both carriers received in the compliance reviews were in accordance with Federal guidelines. Concerned that carriers with significant regulatory violations received satisfactory ratings, the Safety Board looked at the Federal standards for determining the safety fitness of carriers.

Regulatory Background

The Motor Carrier Safety Act of 1984 directed the U.S. Secretary of Transportation to establish a procedure to determine the safety fitness of owners and operators of commercial motor vehicles operating in interstate or foreign commerce. Subsequently, the FHWA promulgated a set of safety fitness standards and established a methodology for determining whether a carrier has adequate safety management controls to ensure acceptable compliance with the safety requirements. The original methodology was modified as a result of the Motor Carrier Safety Act of 1990 and a 1997 rulemaking.

Six factors (see table 5) form the basis for a carrier's safety rating, that is, the degree to which a carrier is in compliance with the Federal Motor Carrier Safety Regulations (FMCSR) and therefore meets the safety fitness standard. Appendix B lists the safety fitness procedures contained in Part 385 of 49 CFR.

Each factor is rated satisfactory, conditional, or unsatisfactory. A satisfactory factor rating means the carrier has not violated any acute or critical regulations. A conditional factor rating means the carrier has violated one acute regulation or has a pattern of noncom-

Table 5. Motor Carrier Safety Rating Factors

Factor*	Applicable FMCSR
Factor 1 - General	Parts 387 and 390
Factor 2 - Driver	Parts 382, 383, and 391
Factor 3 - Operational	Parts 392 and 395
Factor 4 - Vehicle	Parts 393 and 396
Factor 5 - Hazardous Materials	Parts 397, 171, 177, and 180
Factor 6 - Accident Factor	Recordable Preventable Rate
*All factors are given equal weight.	

pliance with critical regulations. An unsatisfactory factor rating means the carrier has violated two or more acute regulations or has patterns of noncompliance with two or more critical regulations. The accident factor is based on the carrier's size and number of accidents.

Acute violations are FMCSR or Hazardous Materials Regulation violations demanding immediate corrective action regardless of the overall safety posture of the motor carrier. For example, requiring or permitting the operation of a vehicle declared out of service before repairs are made (49 CFR 396.9[c][2]) is an acute violation.

Critical violations are regulatory violations that indicate breakdowns in a carrier's management controls. For instance, requiring or permitting a driver to drive after having been on duty for 15 hours (49 CFR 395.3[a][2]) is a critical violation.

The ratings for the first five factors and the accident rate for the 12 months before the review are then entered into a rating table, which is used to establish the motor carrier's safety rating (see table 6). Each of the six factors is given equal weight. The current rating

Table 6. Motor Carrier Safety Rating Table

Factor Ratings		Safety Rating
Number of Unsatisfactory Ratings	Number of Conditional Ratings	Resultant Safety Rating
0	2 or fewer	Satisfactory
0	more than 2	Conditional
1	2 or fewer	Conditional
1	more than 2	Unsatisfactory
2 or more	0	Unsatisfactory

methodology resulted in the OMC giving Hammond a conditional rating for the vehicle factor portion of the compliance review based on the high number of motorcoaches that the Indiana State Police identified as meeting criteria to be placed out of service. However, because all other factors were rated as satisfactory, the OMC's overall compliance rating for Hammond was satisfactory.

As of September 30, 1998, the FHWA's Motor Carrier Management Information System (MCMIS) showed the following safety fitness statistics (see tables 7 and 8).

Table 7. MCMIS Safety Fitness Statistics

Description	Number
Total number of interstate carriers, including trucks, hazardous materials carriers, and passenger carriers, in the MCMIS census	467,539
FY'97 Federal-conducted compliance reviews (interstate carriers)	4,087
FY'97 State-conducted compliance reviews* (36 States reporting)	2,521
* Includes inter- and intrastate carriers	

Table 8. MCMIS Safety Fitness Statistics for Passenger Carriers

Description	Number
Total passenger carriers in the MCMIS census*	13,736
Cumulative number of passenger carriers rated since 1984	3,288 (24%)
Percentage rated "satisfactory"	82% (2,648)
Percentage rated "conditional"	17% (545)
Percentage rated "unsatisfactory"	1% (35)
*Includes all interstate carriers with the authority to carry passengers, including school buses, limousine services, vans, private carriers and for-hire passenger carriers	

Preventing Operation of Unsafe Carriers

Existing Regulatory Tools.

Federal regulations contain two tools for preventing unsafe motor carriers from operating on the roadway. The first tool is part of the current safety rating methodology. When any motor carrier receives an unsatisfactory rating in two of six rating factors, the carrier receives a proposed unsatisfactory rating, which becomes effective after 45 days. A passenger or hazardous-materials carrier then has an additional 45 days to correct the noncompliance.¹⁴ Carriers of property have an additional 60 days to correct the noncompliance. If the carrier corrects the noncompliance to the satisfaction of the OMC, the carrier receives a satisfactory or conditional rating. If the passenger carrier does not correct the noncompliance within 45 days, the carrier receives an “out-of-service order” and is prohibited from operation.¹⁵ In the case of Hammond, the postaccident compliance review conducted on November 1, 1995, resulted in an unsatisfactory rating. On November 20, 1995, the FHWA issued an out-of-service order.

The second tool for removing an unsafe carrier from the road is the imminent hazard rule contained in 49 CFR 386.72 (b), which allows any driver, vehicle, or carrier posing an imminent hazard to safety to be placed out of service. *Imminent hazard* means any condition of vehicle, employee, or commercial motor vehicle operation that is likely to result in serious injury or death if not discontinued immediately.

Despite the availability of these tools for removing unsafe carriers from the road, OMC records for 1992 to 1996 indicate that they are used infrequently. (See table 9.)

Since 1968, the Safety Board has investigated many fatal motorcoach accidents caused by fatigued drivers and loss of speed control due to poorly maintained brakes, conditions that would put a driver or vehicle out of service. Table 10 lists the motorcoach accidents investigated by the Safety Board that resulted from loss of speed control due to deficient brakes.

In the Indianapolis accident, the inoperative speedometer on the Hammond bus contributed to the driver’s lack of speed control, the condition of the brakes probably contributed to the driver’s inability to slow down on the exit ramp, and the faulty air conditioner may have contributed to the driver’s fatigue and resulted in the passengers opening the windows, which may have contributed to the partial ejection and fatal injury

¹⁴ The November 6, 1997, final rule was amended to give all motor carriers a 45-day grace period before a less-than-satisfactory rating takes effect.

¹⁵ This tool, regarding passenger and hazardous materials carriers, became available in 1991 as a result of the Motor Carrier Safety Act of 1990, when the FHWA promulgated 49 CFR 385.13. The Transportation Efficiency Act for the 21st Century, enacted June 9, 1998, provides for this tool to be extended to all motor carriers within 60 days of receiving an unsatisfactory rating.

Table 9. Number of Out-of-Service Orders from 1992 through 1996

FY	Carriers Subject to 45-day Rule Passenger and Hazardous Materials Carriers				Carriers Subject to Imminent Hazard Rule All Motor Carriers	
	Received Unsatisfactory Safety Ratings		Received Operations Out-of-Service Order		Received Notices of Investigation	Received Operations Out-of-Service Order
	Passenger	Hazardous Materials	Passenger	Hazardous Materials		
92	5	43	0	19	101	4
93	20	152	2	15	106	15
94	23	235	3	25	26	8
95	23	141	4	16	58	29
96	40	217	6	53	27	17

of two occupants. The Safety Board concludes that had the OMC given Hammond an unsatisfactory rating based on the high percentage of vehicle defects, the brakes, speedometer, and air conditioner on the accident vehicle might have been repaired.

Table 10. Past Safety Board Investigations in which the Motorcoach Accidents Resulted from Loss of Speed Control due to Deficient Brakes

Location/Date	Injured	Fatalities
Jasper, Arkansas June 5, 1980	13	20
Eureka Springs, Arkansas September 13, 1985	37	5
Big Pine, California May 18, 1990	43	2
Vernon, New Jersey June 23, 1993	37	6

In its 1992 report, *Heavy Vehicle Airbrake Performance*,¹⁶ the Safety Board determined that available data do not allow the role of braking deficiencies in accidents to be evaluated readily. The Safety Board stated that its investigations suggested that deficient brakes on heavy vehicles are a factor in more accidents than statistics currently reveal. The Board found that in 9 of 15 brake-related accidents that it had investigated, State and local investigating agencies had failed to identify deficient brakes as a factor in their final reports. The Safety Board also determined that the accidents in the study resulted from a variety of deficiencies, the most common being out-of-adjustment brakes.

Given its findings in both truck and motorcoach accident investigations, the Safety Board has no doubt that the incidence of deficient brakes is probably far greater for motorcoaches than statistics indicate. The Safety Board concludes that during a passenger carrier compliance review, if a passenger carrier does not meet the vehicle factor rating due to out-of-service vehicles, that determination should be serious enough to rate the carrier unsatisfactory overall.

Table 11 lists motorcoach accidents investigated by the Safety Board in which the driver was fatigued. The busdrivers in the Hammond and Rite-Way accidents were fatigued or at risk for fatigue: one fell asleep and drove off the road, and the other's alertness was diminished. At the time of the accidents, both drivers were within the hours-of-service rules. Had both drivers completed their scheduled trips, they probably would have exceeded the hours-of-service rules, resulting in the drivers meeting the criteria to be placed out of service. The Safety Board therefore concludes that during a passenger compliance review, if a passenger carrier does not meet the driver factor rating due to out-of-service drivers, that determination should be serious enough to rate the carrier unsatisfactory overall.

The FHWA has developed a ranking system to target for additional attention those carriers presenting risks. According to the FHWA, the Motor Carrier Safety Status Measuring System, or SAFESTAT, makes extensive use of performance data and assesses carrier performance over time. The results of a compliance review, accident rates, roadside vehicle inspections, driver performance, and enforcement actions are included in SAFESTAT. This ranking system is used to determine which carriers should be given compliance reviews.

Satisfactory safety fitness ratings have become an important part of doing business. Cargo shippers routinely monitor the carriers they use, and some insurance companies will not insure cargo unless the carrier has a satisfactory rating. The Motor Carrier Safety Act of 1990 requires that carriers have a satisfactory rating to be eligible to be hired by a Federal agency to transport passengers or hazardous materials. As table 8 indicates, less than one third of the passenger carriers in the MCMIS census have been

¹⁶ Safety Study NTSB/SS-92/01. Washington, DC.

**Table 11. Past Safety Board Accident Investigations
in which the Motorcoach Driver was Fatigued**

Location/Date	Injured	Fatalities
Richmond, Virginia September 3, 1972	39	3
Jasper, Arkansas June 5, 1980	13	20
Livingston, Texas November 30, 1983	5	6
Cheyenne, Wyoming July 18, 1984	10	1
Middleton, New Jersey September 6, 1987	32	1
Phoenix, Arizona September 10, 1993	33	0
Chestertown, New York April 24, 1994	20	1
Roanoke Rapids, North Carolina August 2, 1996	19	0
Albuquerque, New Mexico June 6, 1997	35	1

rated. Even with the Motor Carrier Safety Assistance Program and the States performing compliance reviews, as Michigan did in the case of Rite-Way, the FHWA cannot keep up with the need for compliance reviews.

On July 20, 1998, the FHWA issued an advance notice of proposed rulemaking¹⁷ asking for comments and suggestions regarding the “current safety fitness rating process and methodology and the limitations on the availability of resources required to maintain a safety fitness evaluation process at the level many in the public and even the Congress expect.” The FHWA asked what issues should be considered in constructing a rating system for the future.

¹⁷ *Federal Register* (FR) July 20, 1998. Vol 63. No. 138. pp 38788-38791.

Although the FHWA has established a performance-based system of selecting carriers for safety fitness evaluation, it does not give sufficient priority to or place sufficient weight on performance data in determining overall safety fitness.

The Safety Board is convinced that it is important to give more weight to the performance data in the driver and vehicle factors in passenger carrier compliance reviews. Deficiencies in these factors have been shown to be directly related to accidents. Considering the number of unrated carriers, Hammond and Rite-Way received above average attention from the OMC and the States of Indiana and Michigan. Yet the OMC's rating methodology enabled those carriers that had repeatedly received conditional or unsatisfactory ratings in either the vehicle or driver factor of the compliance review to operate, potentially placing school children and other passengers at risk. Hammond had received conditional and unsatisfactory ratings for 3 years, yet still was allowed to operate. The public rightfully expects motorcoaches to be safe. The Hammond, Rite-Way, and other accidents demonstrate that greater Federal oversight of passenger carrier operations is needed. Therefore, the Safety Board believes that the DOT should change the safety fitness rating methodology so that adverse vehicle or driver performance-based data alone are sufficient to result in an overall unsatisfactory rating for the carrier.

Consumer Awareness.

OMC safety ratings are a matter of public record. An individual can call the OMC or access the ratings through the internet. The OMC and the UMA offer consumers guidelines on the internet for chartering a motorcoach. Excerpts from their web pages appear in appendix C.

Emergency Egress

Although quick and orderly egress from a motorcoach is important during any emergency, it is critical when fire or water is involved. In the Indianapolis accident, the survivors evacuated through the front of the vehicle without incident. In the Stony Creek case, the water and the attitude, or position, of the bus made evacuation difficult.

The Rite-Way bus interior (see figure 5) had 11 rows of two seats on each side of a center aisle. A row of three seats and an enclosed lavatory were at the rear of the coach. The bus had two 23- by 16-inch roof emergency escape hatches; one near the front and the other near the rear of the coach along the center aisle.

Seven 56- by 36-inch windows on each side of the vehicle were designated emergency exit windows. Each window was hinged at the top, allowing the window to swing open when the emergency release bar was activated (see figure 6). Postaccident tests done by the manufacturer indicated that an upward force of 85 pounds was needed to fully open an emergency exit window if the coach was lying on its side.¹⁸

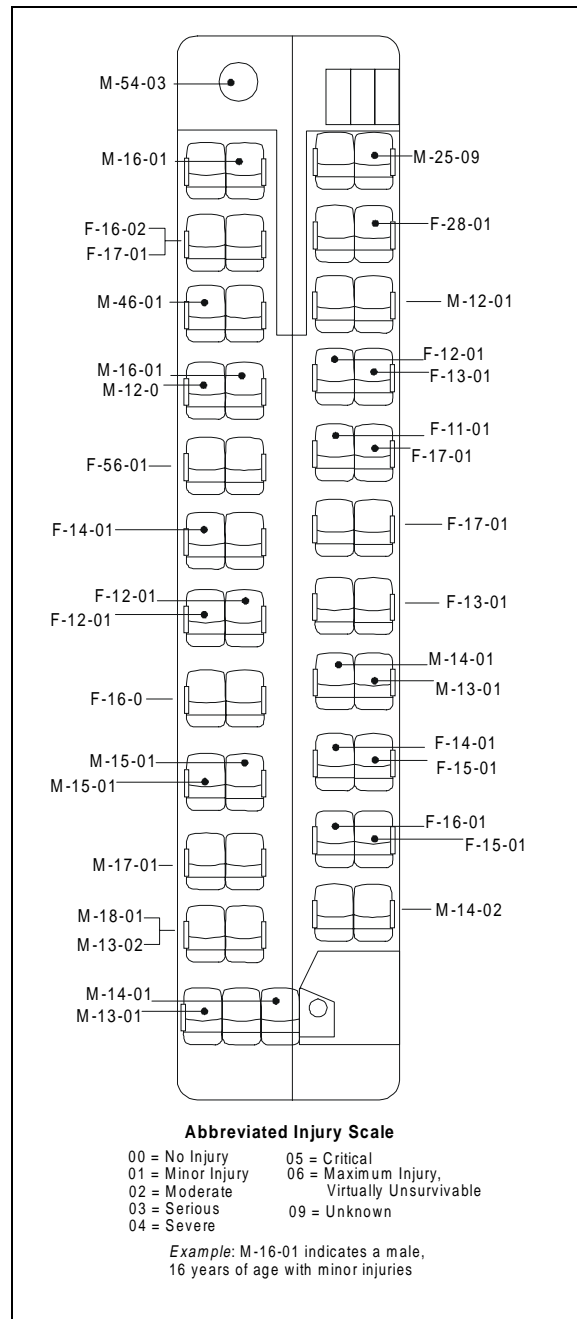


Figure 5. Rite-Way Bus Seating Chart

¹⁸ Title 49 CFR 571.217 regulates emergency exit windows. Testing requirements, which are based on a vehicle being upright on a flat horizontal surface and not on its side, stipulate a low-force application, rotary or straight, of not more than 20 pounds and a high-force application, straight and perpendicular to the undisturbed exit surface, of not more than 60 pounds.



Figure 6. Instructions on motorcoach's emergency window release bar

The bus was equipped with three video monitors, two on the right side at rows one and six, and one on the left side at row three. Eleven compartmentalized and enclosed overhead storage racks were installed along the length of the motorcoach on each side of the center aisle, above the passenger seats.

The only seatbelt on the bus was a lapbelt with an automatic retractor at the driver's seat. The police found that the belt was operational and unfastened.

The bus sustained major exterior damage to the entire front and the left side. Inside, the floor immediately behind the driver's seat had buckled downward. The driver's seat had tilted forward about 5 degrees, and the steering shaft was displaced from the cup at the floor. Several passenger seatbacks were deformed or collapsed forward. The overhead storage racks had broken in several places; the door locks on some storage racks had opened, allowing the contents to spill out. The video monitor at the right front had become dislodged and was not recovered.

Many passengers, some of whom were as young as 11, indicated that they had difficulty evacuating the vehicle, which was overturned and partially submerged in 5 to 6 feet of water. To escape, they had to stand on the seats, push up on the emergency windows, and climb out and onto the top of the bus. Their heavy water-soaked clothing encumbered the passengers, and they had trouble lifting themselves up through the windows. Other passengers said that they had trouble wading through the water or keeping themselves above the water, which nearly filled the bus. One passenger experienced difficulty opening an emergency window when she could not see through the

murky water to read the instructions. She said that she began to panic when other passengers began shoving her.

Some passengers said that because of their height or the window weight, they were unable to push the windows open after unlatching them. Because the bus was on its side, several passengers had difficulty in keeping the windows open. The windows had to be pushed open and back until they rested on the side of the vehicle, a rotation of 180 degrees, to prevent them from closing on the escaping passengers. Thus, the individual opening the window not only had to have sufficient strength to push it open, but also sufficient height and arm length to rotate the window to this degree.

Injured passengers particularly had problems evacuating through the emergency windows. One passenger who had sustained bilateral ankle fractures could not stand to evacuate. Another passenger with a broken finger could not pull himself up through the window frame without great difficulty and pain. A passenger with an eye injury had trouble opening the window and required assistance from another passenger.

For more than 30 years, the Safety Board has addressed the issue of passengers having difficulty with emergency evacuations of motorcoaches.

On December 18, 1968, as a result of its investigation of the March 7, 1968, coach-automobile collision on I-15 near Baker, California, in which 19 people died and 12 people were injured,¹⁹ the Safety Board issued the following safety recommendation to the FHWA:

H-68-25

Change the basis of regulatory requirements intended to ensure escape from buses so that they are based upon tests of performance of occupants in escaping from buses standing or lying in all basic attitudes. In the development of test criteria, it is suggested that consideration be given to test procedures presently employed by the Federal Aviation Administration [FAA] for the regulation of the adequacy of escape techniques and systems. Further, consideration should be given to adopting for buses, the airline practice of placing emergency escape instructions at each passenger location. It is further recommended that necessary regulations be expedited to ensure that no new types of buses go into service which have not been tested to ensure that all occupants can escape rapidly when the bus is in any of its basic attitudes after a crash. This recommendation refers to docket 2-10 of the National Highway Safety Bureau, as well as to Motor Carrier Safety Regulations.

¹⁹ For more detailed information, read: *Interstate Bus--Automobile Collision, Interstate Route 15, Baker, California, March 7, 1968*. Highway Accident Report NTSB/SS-H-3. Washington, DC.

In a letter dated January 17, 1969, the FHWA responded that the contemplated regulations would require time to develop from performance-based emergency escape tests because of the numerous bus configurations in existence. The agency indicated that research was being planned “to correlate escape operations from on-side attitude with on-wheels condition.” It also stated that it was using FAA airworthiness standards to develop an escape demonstration technique for buses.

On March 19, 1970, as a result of its investigation of the December 26, 1968, chartered motorcoach crash on Interstate Route I-80S near Beaver Falls, Pennsylvania, in which 3 people died and 36 people were injured,²⁰ the Safety Board issued the following safety recommendation to the FHWA:

H-70-9

Review our recommendation in the report of the interstate coach-auto collision near Baker, California, to change the basis of its regulatory requirements intended to ensure escape from buses standing or lying in all basic attitudes. In the development of test criteria, it is suggested that consideration be given to test procedures presently employed by the FAA for the regulation of the adequacy of escape techniques and systems. Further, consideration should be given to adopting for buses, the airline practice of placing emergency escape instructions at each passenger location. It is further recommended that necessary regulations be expedited to ensure that no new types of buses go into service which have not been tested to ensure that all occupants can escape rapidly when the bus is in any of its basic attitudes after a crash. This recommendation refers to docket 2-10 of the National Highway Safety Bureau, as well as to Motor Carrier Safety Regulations.

On August 23, 1973, the FHWA advised the Safety Board that Federal Motor Vehicle Safety Standard (FMVSS) 217, specifying requirements for window retention, emergency release handles, and passenger escape, would be effective September 1, 1973.

Shortly thereafter, the Safety Board investigated the November 3, 1973, accident near Sacramento, California, in which a 1953 GMC motorcoach operated by Greyhound Lines, Inc., (Greyhound) ran off the left side of I-880, overrode a guardrail, and collided

²⁰ For more detailed information, read: *Chartered Interstate Bus Crash, Interstate Route I-80S Near Beaver Falls, Pennsylvania, December 26, 1968*. Highway Accident Report NTSB/SS-H-5. Washington, DC.

with a bridge column. The driver and 12 passengers sustained fatal injuries, 22 passengers sustained serious injuries, and 11 passengers sustained minor injuries.²¹

Although the bus remained upright, passengers reported that they had difficulties getting out because it was dark, they were confused and jammed between seats, and the windowsill was 8 feet from the ground. In addition, some passengers stated that “the windows were heavy and that there was no way to hold them open.”

As a result of its investigation, the Safety Board recommended that the FHWA:

H-74-37

Establish regulations to facilitate evacuation of buses in an emergency. The incorporation of emergency lighting systems actuated through impact and entry for rescuers should be included in the regulation. Attention is called to the Board’s investigation of the interstate bus accident in Baker, California, in 1968, in which it was recommended that “no new type buses go into service which have not been tested to ensure that all occupants can escape rapidly.”

The FHWA advised the Safety Board on February 2, 1975, that FMVSS 217 set forth requirements for emergency exits on the sides, rear, and roof of buses to ensure passenger escape. The FHWA further stated that the Bureau of Motor Carrier Safety (BMCS)²² had been monitoring the result of FMVSS 217 by reviewing accident reports, and that in FY-76, the BMCS was scheduled to study the availability and cost benefits of emergency lighting systems.

In a letter dated December 16, 1985, the Safety Board discussed the status of several open safety recommendations, advising the FHWA:

The problem of escape from buses can be addressed satisfactorily through the more general Safety Recommendation H-70-9; therefore, H-68-25 has been classified as “Closed—Superseded,” and H-74-37 has been classified as “Closed—Reconsidered.” The last response to these recommendations was that the BMCS was planning a research and development effort to address escape from buses. We would appreciate a further discussion of FHWA action in this area. Safety Recommendation H-70-9 will be held in an “Open—Acceptable Action” status, pending your response.

²¹ For more detailed information, read: *Greyhound Bus Collision with Concrete Overpass Support Column on I-880, San Juan Overpass, Sacramento, California, November 3, 1973*. Highway Accident Report NTSB-HAR-74-5). Washington, DC.

²² The forerunner of the OMC.

In a letter dated May 4, 1988, the FHWA stated,

We believe that the issues of Safety Recommendation H-70-9 are adequately covered in the NHTSA FMVSS 217 and no additional regulatory requirements are necessary. The NHTSA has the responsibility for all commercial vehicle manufacturers specifications such as those relating to Safety Recommendation H-70-9.

As a result of this response, on June 28, 1988, the Safety Board classified Safety Recommendation H-70-9 “Closed—Acceptable Alternate Action.”

Since the 1968 and 1973 accidents, the Safety Board has investigated several other accidents in which a bus left the roadway and either rolled or vaulted into water and the passengers had difficulty evacuating. On May 30, 1986, a motorcoach chartered for a tour rolled over 360 degrees into the Walker River.²³ Of the 41 occupants, mostly senior citizens, 21 were fatally injured. Of the 21 passengers who were fatally injured, seven drowned.

More recently, on August 2, 1996, a 1980 TMC motorcoach operated by Greyhound drove off the right side of I-95 and came to rest upright in Chockoyotte Creek near Roanoke Rapids, North Carolina.²⁴ The bus was submerged in water up to the bottom of the push-out emergency windows. Some passengers exited through the push-out windows; others exited through the broken windshield. Several passengers indicated that people were screaming and there was a state of panic. One passenger stated that “the bus windows wouldn’t stay open, so we all had a hard time getting out.” Of the 50 occupants, 19 sustained minor to serious injuries.

As the Stony Creek accident illustrates, the emergency exit windows are very difficult to operate in an evacuation when a motorcoach is not upright. In particular, some children and those with minor injuries were not tall or strong enough to push the heavy emergency windows open far enough to evacuate. The Safety Board therefore concludes that the strength and height needed to open an emergency window when a motorcoach is not upright poses a problem for some passengers, especially children, senior citizens, and some injury victims.

Although the number of rollover accidents is relatively small, the increased chance of injury is dramatic. Of 42 motorcoach accidents involving fatalities that the Safety Board investigated between 1968 and 1998, more than 50 percent were rollover accidents.

²³ For more detailed information, read: *Intercity Tour Bus Loss of Control and Rollover into the West Walker River, Walker, California, May 30, 1986*. Highway Accident Report NTSB/HAR-87/04. Washington, DC.

²⁴ For more detailed information, read: Safety Board Docket Number SRH-96-FH-015.

The Safety Board is convinced that, to facilitate emergency evacuations, emergency exits and windows should be designed so that they do not open accidentally during normal use and accidents, but do open easily when the vehicle comes to rest. The Safety Board therefore believes that NHTSA should revise FMVSS 217, “Bus Window Retention and Release,” to require that other than floor-level emergency exits can be easily opened and that they remain open during emergency evacuation when a motorcoach is upright or at unusual attitudes.

The Safety Board has made similar recommendations regarding floor-level door openings on school buses. In September 1989, the Safety Board investigated an Alton, Texas,²⁵ accident in which a school bus involved in the crash went into a caliche pit and was completely submerged in dark, murky water within 60 seconds. The 21 passengers who drowned were unable to escape from the submerged vehicle because the emergency exits would not remain open or were too small for egress.

On August 22, 1990, the Safety Board issued Safety Recommendation H-90-074 asking that NHTSA revise FMVSS 217, “Bus Window Retention and Release,” to require that floor-level emergency exits be designed so that once opened, they remained open during emergencies and school bus evacuations. On November 2, 1992, NHTSA published the final rule revising FMVSS 571.217 S 5.4.2, “School Bus Emergency Exit Opening.” The new regulation states, in part:

The positive door opening device shall perform the functions specified in...this section without the need for additional action beyond opening the door past the point at which the door is perpendicular to the side of the bus body.

On February 19, 1993, the Safety Board classified Safety Recommendation H-90-074 “Closed—Acceptable Action.”

²⁵ For more detailed information, read: *Collision Between Mission Consolidated Independent School District School Bus and Valley Coca-Cola Bottling Company, Inc., Tractor Semitrailer, Intersection of Bryan Road and Texas Farm-to-Market Road 676, Alton, Texas, September 21, 1989*. Highway Accident Report NTSB/HAR-90/02. Washington, DC.

Passenger Briefings

In many of the bus accidents investigated by the Safety Board, passengers have described a general sense of panic because they did not know what to do or how to get out of the bus. The Stony Creek accident occurred when the river was comparatively low. Two days before the accident, the water in the river was 7 to 8 feet deeper.²⁶ On the day of the accident, had the water been deeper, it probably would have filled the vehicle. Had this occurred, the passengers might not have been able to plan their escape or had the time to read the window latch instructions, assist each other with opening the windows, and aid the injured and incapacitated students, as they did in this case.

Before the Pathways to Freedom 97 trip began, Rite-Way did not provide passengers with instructions on the use of emergency exits on the bus. Many passengers stated that they felt a briefing from the driver on the emergency exits would have been beneficial. The Safety Board determined that Rite-Way had not trained the driver to provide passengers with a safety briefing before or during the trip; such training was not required.

The bus was equipped with a public address system, a videotape player, and television monitors, which Rite-Way could have used to tell passengers what to do in the event of an accident, vehicle fire, or submersion in water. Passenger briefings, such as those provided on airplanes, could include instructions on emergency egress through the emergency windows or roof hatches. The Safety Board concludes that emergency instructions can be crucial to a safe and expedient evacuation in the event of an accident or emergency.

Carriers have a variety of opportunities to provide passengers with emergency evacuation information. Depending on the size of the carrier or the scope of its operation, safety materials could include all or any number of the following: videos, briefings, pamphlets, or cards attached to seatbacks.

Safety Board investigators discussed the availability of safety briefing videos with industry representatives for the two major trade associations, the ABA and the UMA, and for a marketing and tour brokering organization, the National Motorcoach Network (NMN). The NMN representatives said that many carriers, with the exception of Greyhound and some companies serving senior citizen groups, have motorcoaches that are equipped with television monitors that can show videotapes. The ABA, UMA, and NMN representatives said that passenger safety videos similar to those shown on aircraft are available, but are not widely used throughout the motorcoach industry.

²⁶ On July 28, 1997, at a gage 38.5 miles downstream of the accident site, an area of the river that is normally 4 to 5 feet deep crested at 12.6 feet. U.S. Geological Survey officials estimated that the river would have crested at the accident site on July 27, 1997.

The ABA's safety committee has discussed the development of a safety briefing video, but does not plan to produce one in the near future. The UMA has produced a safety video similar to those shown on airplanes. The 4-minute video gives safety messages, such as obeying the driver's instructions, locating the fire extinguisher, escaping during an emergency, and using the handholds while the motorcoach is moving. While the video mentions the UMA, the film does not contain advertising.

The NMN representatives said that their company had produced customized video and audio tapes, providing passengers with emergency and general safety information, as part of a commercial project from 1994 through 1996. The NMN found that carriers did not enforce the showing of the video because they reportedly "did not like to tell their drivers what to do when on the road." Some carriers did not wish to pay for the video. To continue the program, the NMN solicited funding from outside sources, who frequently were mentioned in the films. According to the NMN, carriers objected to the identification of the sponsors in the films because they "did not like to help promote the business of the outside sources on their trips." In October 1998, the NMN provided a total of 1,000 free video safety tapes to all of its motorcoach charter and tour operator affiliates having video-equipped motorcoaches; however, the tape contains a 6-minute advertisement.

The Safety Board has stressed the importance of passenger safety education in all modes of transportation. FAA regulations at 14 CFR Parts 121 and 135 provide minimum requirements for conveying safety information to passengers. FAA advisory circulars and air carrier operations bulletins provide general guidance to air carriers and to FAA inspectors for developing flight attendant oral safety presentations and safety cards. The guidance generally is in the form of what information should be presented, but not how it should be presented.²⁷ Although the Federal Railroad Administration does not specifically include information requirements in its passenger safety regulations, Amtrak uses signs and placards, as well as briefings, to inform passengers about safety features on its trains. U.S. Coast Guard regulations require safety drills on all cruise ships embarking passengers from U.S. ports.

The Safety Board believes that the DOT should provide Federal guidance on the minimum information to be included in safety briefing materials for motorcoach operations. In addition, the DOT should require motorcoach operators to provide passengers with pretrip briefing information. In the interim, the ABA and the UMA should encourage their members to provide pretrip passenger safety briefings and to develop training programs for their drivers on how to make pretrip passenger safety briefings.

²⁷ For more detailed information, read: *Airline Passenger Safety Education: A Review of Methods Used to Present Safety Information*. Safety Study NTSB/SS-85/09. Washington, DC.

Conclusions

1. The Rite-Way busdriver fell asleep and ran off the road.
2. The Rite-Way driver became fatigued because the Pathways to Freedom tour schedule imposed inverted duty-sleep periods and because additional well-rested drivers were not provided for relief.
3. Although the exact cause of the Hammond driver's failing to respond appropriately cannot be determined, several factors, including fatiguing conditions and the driver's unfamiliarity with the route, may have contributed to his failing to slow down for the exit ramp.
4. The condition of the brakes probably contributed to the Hammond busdriver's inability to slow his vehicle when he entered the ramp too fast.
5. Had the Office of Motor Carriers given Hammond an unsatisfactory rating based on the high percentage of vehicle defects, the brakes, speedometer, and air conditioner on the accident vehicle might have been repaired.
6. During a passenger carrier compliance review, if a carrier does not meet the vehicle factor rating due to out-of-service vehicles, that determination should be serious enough to rate the carrier unsatisfactory overall.
7. During a passenger carrier compliance review, if a carrier does not meet the driver factor rating due to out-of-service drivers, that determination should be serious enough to rate the carrier unsatisfactory overall.
8. The strength and height needed to open an emergency window when a motorcoach is not upright poses a problem for some passengers, especially children, senior citizens, and some injury victims.
9. Emergency instructions can be crucial to a safe and expedient evacuation in the event of an accident or emergency.

Recommendations

As a result of its investigation, the National Transportation Safety Board makes the following Safety Recommendations:

to the Department of Transportation:

Require that the Federal Highway Administration's fatigue video that is being developed for motorcoaches discuss the dangers of inverted duty-sleep periods. (H-99-4)

In the assessment that is mandated by the Transportation Efficiency Act for the 21st Century, include the inverted work schedules of motorcoach carriers in the study of how the operations of shippers, brokers, freight forwarders, consignees, or others, such as tour or charter operators, encourage the violations of the hours-of-service rules. (H-99-5)

Change the safety fitness rating methodology so that adverse vehicle or driver performance-based data alone are sufficient to result in an overall unsatisfactory rating for the carrier. (H-99-6)

Provide guidance on the minimum information to be included in safety briefing materials for motorcoach operations. (H-99-7)

Require motorcoach operators to provide passengers with pretrip safety information. (H-99-8)

to the National Highway Traffic Safety Administration:

Revise the Federal Motor Vehicle Safety Standard 217, "Bus Window Retention and Release," to require that other than floor-level emergency exits can be easily opened and that they remain open during an emergency evacuation when a motorcoach is upright or at unusual attitudes. (H-99-9)

to the American Bus Association:

Alert your members to the dangers of inverted duty-sleep periods. (H-99-10)

Encourage your members to revise their scheduling practices to avoid inverted duty-sleep periods or to provide a well-rested relief driver if the schedule requires alternate night driving. (H-99-11)

Include an explanation of the dangers of inverted duty-sleep periods in the busdriver fatigue training video currently under production. (H-99-12)

Encourage your members to provide pretrip passenger safety briefings. (H-99-13)

Encourage your members to develop training programs for their drivers on how to make pretrip passenger safety briefings. (H-99-14)

to the United Motorcoach Association:

Alert your members to the dangers of inverted duty-sleep periods. (H-99-15)

Encourage your members to revise their scheduling practices to avoid inverted duty-sleep periods or to provide a well-rested relief driver if the schedule requires alternate night driving. (H-99-16)

Encourage your members to provide pretrip passenger safety briefings. (H-99-17)

Encourage your members to develop training programs for their drivers on how to make pretrip passenger safety briefings. (H-99-18)

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

JAMES E. HALL
Chairman

JOHN A. HAMMERSCHMIDT
Member

ROBERT T. FRANCIS II
Vice Chairman

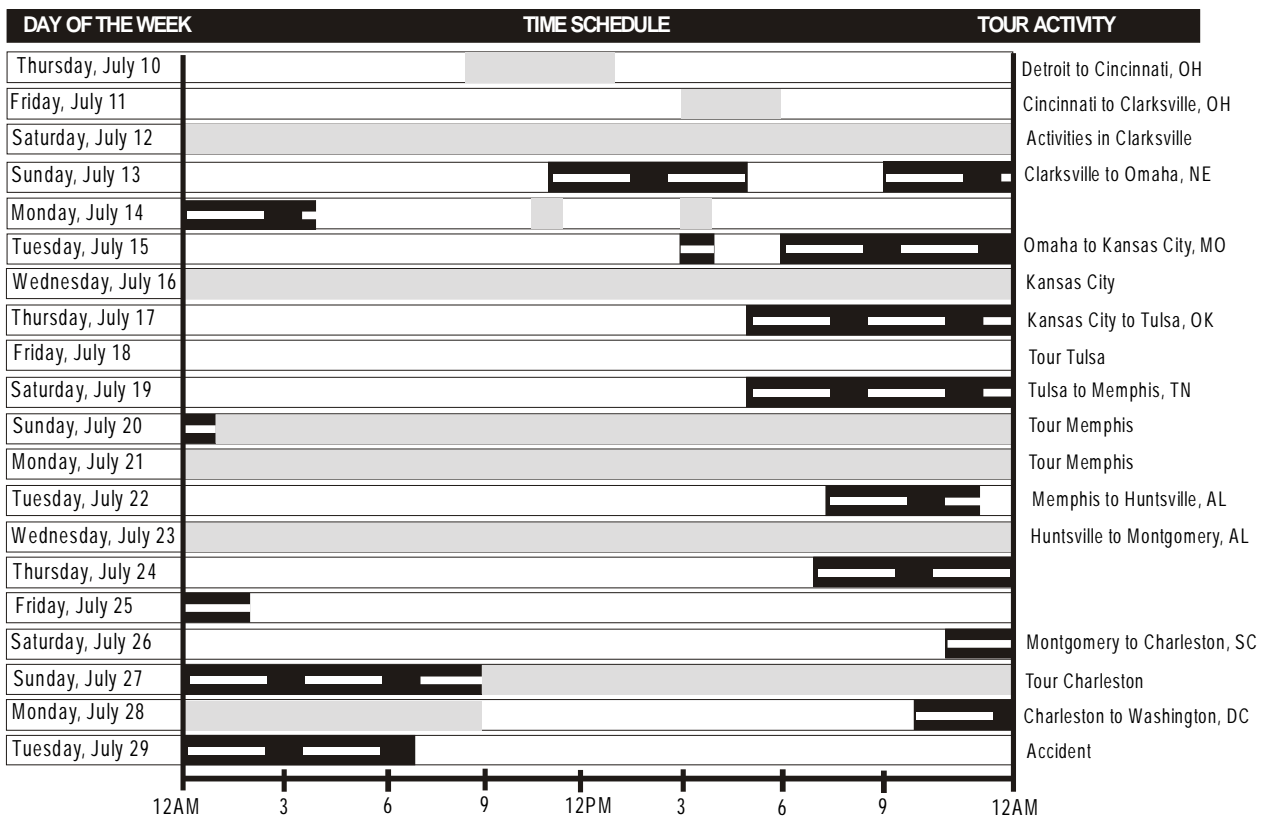
JOHN J. GOGLIA
Member

GEORGE W. BLACK, JR.
Member

February 11, 1999

Appendix A

Pathways to Freedom Tour Schedule



Appendix B

Title 49, Code of Federal Regulations Part 385—Safety Fitness Procedures

Sec.	
385.1	Purpose and scope.
385.3	Definitions.
385.5	Safety fitness standard.
385.7	Factors to be considered in determining a safety rating.
385.9	Determination of a safety rating.
385.11	Notification of a safety rating.
385.13	Unsatisfactory safety rating--Prohibition on transportation of hazardous materials and passengers.
385.15	Request for a change in a safety rating; facts and procedure.
385.17	Request for a change in a safety rating; corrective action taken.
385.19	Safety fitness information.
385.21	Motor carrier identification report.
385.23	Failure to report.

APPENDIX A TO PART 385—FORM MCS-150,
MOTOR CARRIER IDENTIFICATION REPORT
APPENDIX B TO PART 385--SAFETY RATING
PROCESS

AUTHORITY: 49 U.S.C. 104, 504, 521(b)(5)(A), 5113, 31136, 31144, 31502; and 49 CFR 1.48.

SOURCE: 53 FR 50968, Dec. 19, 1988, unless otherwise noted.

§ Sec. 385.1 Purpose and scope.

(a) This part establishes procedures to determine the safety fitness of motor carriers, to assign safety ratings, to take remedial action when required, and to prohibit motor carriers receiving a safety rating of "unsatisfactory" from operating a commercial motor vehicle:

(1) To provide transportation of hazardous materials for which vehicle placarding is required in accordance with part 172, subpart F, of this title; or

(2) To transport more than 15 passengers, including the driver.

(b) The provisions of this part apply to all motor carriers subject to the requirements of this subchapter.

[56 FR 40805, Aug. 16, 1991]

§Sec. 385.3 Definitions.

Applicable safety regulations or requirements means 49 CFR subtitle B, chapter III, Subchapter B--Federal Motor Carrier Safety Regulations; and 49 CFR subtitle B, chapter I, Subchapter C--Hazardous Materials Regulations.

Commercial motor vehicle shall have the same meaning as described in § 390.5 of this subchapter.

Preventable accident on the part of a motor carrier means an accident (1) that involved a commercial motor vehicle and (2) that could have been averted but for an act, or failure to act, by the motor carrier or the driver.

Reviews. For the purposes of this part:

(1) *Compliance review* means an on-site examination of motor carrier operations, such as drivers' hours of service, maintenance and inspection, driver qualification, commercial drivers license requirements, financial responsibility, accidents, hazardous materials, and other safety and transportation records to determine whether a motor carrier meets the safety fitness standard. A compliance review may be conducted in response to a request to change a safety rating, to investigate potential violations of safety regulations by motor carriers, or to investigate complaints or other evidence of safety violations. The compliance review may result in the initiation of an enforcement action.

(2) *Safety review* means an on-site assessment to determine if a motor carrier has adequate safety management controls in place and functioning to meet the safety fitness standard. The safety review includes an inspection of selected motor carrier records and operations. It is used to gather information for assigning ratings to unrated carriers. The safety review is not ordinarily employed to gather evidence in support of enforcement actions, but will if certain serious violations are discovered (e.g., absence of proof of financial responsibility; document falsification).

(3) *Safety management controls* means the systems, policies programs, practices, and procedures used by a motor carrier to ensure compliance with applicable safety and hazardous materials regulations which ensure the safe movement of products and passengers through the transportation system, and to reduce the risk of highway accidents and hazardous materials

incidents resulting in fatalities, injuries, and property damage.

Safety ratings: (1) *Satisfactory safety rating* means that a motor carrier has in place and functioning adequate safety management controls to meet the safety fitness standard prescribed in §385.5. Safety management controls are adequate if they are appropriate for the size and type of operation of the particular motor carrier.

(2) *Conditional safety rating* means a motor carrier does not have adequate safety management controls in place to ensure compliance with the safety fitness standard that could result in the occurrences listed in §385.5 (a) through (h).

(3) *Unsatisfactory safety rating* means a motor carrier does not have adequate safety management controls in place to ensure compliance with the safety fitness standard which has resulted in occurrences listed in §385.5 (a) through (h). Motor carriers receiving an “unsatisfactory safety rating” may be subject to the provisions of §385.13.

(4) *Unrated carrier* means that a safety rating has not been assigned to the motor carrier by the FHWA.

[53 FR 50968, Dec. 19, 1988, as amended at 56 FR 40805, Aug. 16, 1991]

§ Sec. 385.5 Safety fitness standard.

The satisfactory safety rating is based on the degree of compliance with the safety fitness standard for motor carriers. To meet the safety fitness standard, the motor carrier shall demonstrate that it has adequate safety management controls in place, which function effectively to ensure acceptable compliance with applicable safety requirements to reduce the risk associated with:

- (a) Commercial driver’s license standard violations (part 383),
- (b) Inadequate levels of financial responsibility (part 387),
- (c) The use of unqualified drivers (part 391),
- (d) Improper use and driving of motor vehicles (part 392),
- (e) Unsafe vehicles operating on the highways (part 393),
- (f) Failure to maintain accident registers and copies of accident reports (part 390),
- (g) The use of fatigued drivers (part 395),
- (h) Inadequate inspection, repair, and maintenance of vehicles (part 396),
- (i) Transportation of hazardous materials, driving and parking rule violations (part 397),
- (j) Violation of hazardous materials regulations (parts 170 through 177), and
- (k) Motor vehicle accidents and hazardous materials incidents.

[53 FR 50968, Dec. 19, 1988, as amended at 58 FR 33776, June 21, 1993]

§ Sec. 385.7 Factors to be considered in determining a safety rating.

The factors to be considered in determining the safety fitness and assigning a safety rating include information from safety reviews, compliance reviews, and any other data. The factors may include all or some of the following:

(a) Adequacy of safety management controls. The adequacy of controls may be questioned if their degree of formalization, automation, etc., is found to be substantially below the norm for similar carriers. Violations, accidents, or incidents substantially above the norm for similar carriers will be strong evidence that management controls are either inadequate or not functioning properly.

(b) Frequency and severity of regulatory violations.

(c) Frequency and severity of driver/vehicle regulatory violations identified in roadside inspections.

(d) Number and frequency of out-of-service driver/vehicle violations.

(e) Increase or decrease in similar types of regulatory violations discovered during safety or compliance reviews.

(f) Frequency of accidents; hazardous materials incidents; accident rate per million miles; preventable accident rate per million miles; and other accident indicators; and whether these accident and incident indicators have improved or deteriorated over time.

(g) The number and severity of violations of State safety rules, regulations, standards, and orders applicable to commercial motor vehicles and motor carrier safety that are compatible with Federal rules, regulations, standards, and orders.

[53 FR 50968, Dec. 19, 1988, as amended at 58 FR 33776, June 21, 1993]

§ Sec. 385.9 Determination of a safety rating.

(a) Following a safety or compliance review of a motor carrier operation, the FHWA, using the factors prescribed in § 385.7, shall determine whether the present operations of the motor carrier are consistent with the safety fitness standard set forth in § 385.5 and assign a safety rating accordingly.

(b) Unless otherwise specifically provided in this chapter, a safety rating will be issued to a motor carrier within 30 days following the completion of a compliance review.

[53 FR 50968, Dec. 19, 1988, as amended at 62 FR 28809, May 28, 1997]

Effective Date Note: At 62 FR 28809, May 28, 1997, in § 385.9, the existing text was designated as paragraph (a), and a new paragraph (b) was added, effective May 28, 1997, until Nov. 28, 1997.

§ Sec. 385.11 Notification of a safety rating.

(a) The FHWA shall provide written notification to the motor carrier of the assigned safety rating.

(b) Notification of a “conditional” or “unsatisfactory” rating will include a list of those items for which immediate corrective action must be taken.

(c) A notification of an “unsatisfactory” safety rating will also include a notice that the motor carrier will be subject to the provisions of § 385.13, which prohibit motor carriers rated “unsatisfactory” from transporting:

(1) Hazardous materials requiring placarding under part 172, subpart F, of this title; or

(2) 15 or more passengers, including the driver.

[56 FR 40806, Aug. 16, 1991]

§ Sec. 385.13 Unsatisfactory safety rating—Prohibition on transportation of hazardous materials and passengers.

(a)(1) A motor carrier that receives a safety rating from the Federal Highway Administration which is “unsatisfactory” shall have 45 calendar days from the effective date of that rating or from the date of notice of that rating, whichever is later, to take such action as may be necessary to improve such safety rating to “conditional” or “satisfactory.”

(2) *Prohibition on transportation.* After the last day of the 45-day period established pursuant to paragraph (a)(1) of this section and until notification is issued pursuant to this part of either a “conditional” or “satisfactory” safety rating, a motor carrier rated “unsatisfactory” shall be prohibited from operating a commercial motor vehicle to transport--

(i) Hazardous materials for which vehicle placarding is required pursuant to this title; or

(ii) More than 15 passengers, including the driver.

(3) *Ineligibility for Federal Government transportation.* Any motor carrier that receives a safety rating of “unsatisfactory” shall be ineligible to contract or subcontract with any Federal agency for the transportation of--

(i) Hazardous materials for which vehicle placarding is required pursuant to this title; or

(ii) More than 15 passengers, including the driver.

(b) *Penalties.* Any motor carrier that operates commercial motor vehicles in violation of this section will be subject to the penalty provisions of 49 U.S.C. App. 1809 and 49 U.S.C. 521.

[56 FR 40806, Aug. 16, 1991]

Sec. 385.15 Request for a change in a safety rating; facts and procedure.

(a) A petition for review of a safety rating, where there are factual or procedural disputes, must list all issues in dispute and be accompanied by any informa-

tion or documents the motor carrier is relying upon as the basis for its petition.

(b)(1) The petition must be submitted to the Director, Office of Motor Carrier Field Operations, within 90 days of the date of notification of the assignment or change of a safety rating.

(2) Motor carriers affected by the provisions of § 385.13 should submit their petitions and supporting documentation to the Director, Office of Motor Carrier Field Operations, within 15 days from the date of notification of the assignment of a safety rating.

(c) As part of the consideration of a petition, the Director, Office of Motor Carrier Field Operations, may request the motor carrier to submit additional data and attend a conference to discuss the safety rating. Failure to provide such data or to attend the conference may result in dismissal of the petition.

(d) The Director, Office of Motor Carrier Field Operations, shall notify the motor carrier in writing of a decision on a petition for review of a safety rating, which will constitute the final agency action. The decision may:

(1) Confirm the rating; or

(2) Revise the rating.

[56 FR 40806, Aug. 16, 1991]

§ Sec. 385.17 Request for a change in a safety rating; corrective action taken.

(a) A request for a change in a safety rating may be made when the basis for the change is evidence that corrective actions have been taken and that operations currently meet the safety fitness standard specified in § 385.5. The request shall be directed in writing, via certified mail, to the Regional Director of Motor Carriers for the FHWA Region in which the motor carrier maintains its principal place of business for safety. The Regional Office addresses are listed in § 390.27 of this subchapter. Such a request shall include a written description of corrective actions taken and other documentation that may be relied upon as a basis for improving the assigned rating.

(b) The FHWA will make its determination based upon documentation submitted or any additional investigation deemed necessary.

(c) In cases where the FHWA is unable to make a determination within the 45-day period established in § 385.13 and the motor carrier has submitted evidence that corrective actions have been taken pursuant to paragraph (a) of this section and has cooperated in any investigation, the FHWA may conditionally suspend the effective date of the “unsatisfactory” safety rating for an additional period of up to 10 days.

[56 FR 40806, Aug. 16, 1991, as amended at 61 FR 1843, Jan. 24, 1996]

§ Sec. 385.19 Safety fitness information.

(a) Safety rating information on motor carriers will be made available to all Federal agencies telephonically or by remote computer terminals.

(b) The safety rating assigned to a motor carrier will be made available to the public upon request. Any person requesting the assigned rating of a motor carrier should provide the FHWA with the motor carrier name, principal office address, and the ICC assigned docket number or the U.S. DOT identification number.

(c) Requests should be addressed to: OMC--Safety Rating, P.O. Box 13028, Arlington, Virginia 22219.

(d) Oral requests by telephone will be accepted and may be made by calling (703) 276-6876. Oral requests made by telephone will be sent a written response if so requested.

[56 FR 51344, Oct. 11, 1991]

§ Sec. 385.21 Motor carrier identification report.

(a) All motor carriers currently conducting operations in interstate or foreign commerce shall file a Motor Carrier Identification Report, Form MCS-150, within 90 days after the effective date of this rule. Exception: The provisions of this section do not apply to a motor carrier that has received written notification of a safety rating from the FHWA.

(b) All motor carriers beginning operation after the effective date of this rule shall file the Motor Carrier Identification Report, Form MCS-150, within 90 days after beginning operations.

(c) The Motor Carrier Identification Report, Form MCS-150, is available from all FHWA region and division motor carrier safety offices nationwide and from FHWA Office of Motor Carrier Information Management and Analysis, 400 Seventh Street, SW., Washington, DC 20590.

(d) The completed Motor Carrier Identification Report, Form MCS-150, shall be filed with the FHWA, Office of Motor Carrier Information Management and Analysis, 400 Seventh Street, SW., Washington, DC 20590.

§ Sec. 385.23 Failure to report.

Failure by a motor carrier to file a Motor Carrier Identification Report, Form MCS-150, pursuant to the provisions of § 385.21 or furnishing misleading information or making false statements upon the MCS-150 shall subject the offender to the penalties prescribed in title 49, United States Code, 522(b).

[53 FR 50968, Dec. 19, 1988, as amended at 60 FR 38743, July 28, 1995]

APPENDIX A TO PART 385--FORM MCS-150, MOTOR CARRIER IDENTIFICATION REPORT

(Approved by OMB under control number 2125-0544)

[FORM NOT SHOWN]

NOTICE

The Form MCS-150, Motor Carrier Identification Report, must be filed by all motor carriers operating in interstate or foreign commerce. A new motor carrier must file Form MCS-150 within 90 days after beginning operations. Exception: A motor carrier that has received written notification of a safety rating from the Federal Highway Administration (FHWA) need not file the report. To mail, fold the completed report so that the self-addressed postage-paid panel is on the outside. This report is required by 49 CFR Part 385 and authorized by 49 U.S.C. 504 (1982 & Supp. III 1985).

The public reporting burden for this collection of information on the Form MCS-150 is estimated by the FHWA to average 20 minutes. If you wish to comment on the accuracy of the estimate or make suggestions for reducing this burden, please direct your comments to Office of Management and Budget and the FHWA at the following addresses:

Office of Management and Budget, Paperwork Reduction Project, Washington, DC 20503
and

Federal Highway Administration, Office of Motor Carrier Field Operations, HFO-10, 400 7th Street, SW, Washington, DC 20590

INSTRUCTIONS FOR COMPLETING THE MOTOR CARRIER IDENTIFICATION REPORT (MCS-150)

(Please Print or Type All Information)

1. Enter the name of the business entity (i.e. corporation, partnership, or individual) that owns and controls the motor carrier operation.
2. If the business entity is operating under a name other than that in Block 1, i.e. "trade name," enter that name. Otherwise, leave blank.
3. Enter the principal place of business (where all safety records are maintained) street address.
4. Enter the city where the principal place of business is located.
5. Enter the name of the county in which the principal place of business is located.
6. Enter the two-letter postal abbreviation for the State, or the name of the Canadian Province or Mexican State, in which the principal place of business is located.
7. Enter the zip code number corresponding with the street address.
8. Enter the telephone number, including area code, of the principal place of business.

9. Enter the motor carrier "M" number under which the Interstate Commerce Commission (ICC) issued your operating authority, if appropriate. Otherwise, enter "N/A."
10. Enter the identification number assigned to your motor carrier operation by the U.S. Department of Transportation, if known. Otherwise, enter "unknown."
11. Circle appropriate classification. Circle all that apply. If F "other" is circled, enter the type of operation in the space provided.
- A. Authorized For Hire
 B. Exempt For Hire
 C. Private
 D. Migrant
 E. U.S. Mail
 F. Other _____

Authorized For Hire--transportation for compensation as a common or contract carrier of property owned by others or passengers under the provisions of the ICC.

Exempt For Hire--transportation for compensation of property exempt from the economic regulation by the ICC.

Private--transportation of property owned or leased by the motor carrier in furtherance of a commercial enterprise other than for-hire transportation.

Migrant--interstate transportation, including a contract carrier, but not a common carrier of 3 or more migrant workers to or from their employment by any motor vehicle other than a passenger automobile or station wagon.

U.S. Mail--transportation of U.S. mail under contract with the U.S. Postal Service.

12. Circle the letter of the types of cargo you usually transport. If Z "other," is circled enter the name of the commodity in the space provided.
13. Circle the appropriate type of operation.
- A. Interstate
 B. Intrastate, transporting hazardous materials (49 CFR 100-178)
 C. Intrastate, NOT transporting hazardous materials.
- Interstate*--transportation of persons or property across State lines, including international boundaries, or wholly within one State as part of a through movement that originates or terminates in another State or country.
- Intrastate*--transportation of persons or property wholly within one State.
14. Circle the letter of all of the types of hazardous materials (HM) you transport. In the columns following the HM types, either circle T if the HM is transported in cargo tanks or P if the HM is transported in other packages.
15. Enter the total number of vehicles owned, term leased and trip leased, that are, or can be, operational the day this form is completed.

16. Enter the number of drivers used on an average work day. Part-time, casual, term leased, trip leased, and company drivers are to be included.

100 mile radius driver--a driver that operates within a 100 air-mile radius of the normal work reporting location.

17. Print or type the name, in the space provided, of the individual authorized to sign documents on behalf of the entity listed in Block 1. That individual must sign, date, and show his or her title in the spaces provided. (Certification Statement, see 49 CFR 385.21 and 385.23)

[56 FR 5365, Feb. 11, 1991]

APPENDIX B TO PART 385--SAFETY RATING PROCESS

Section 215 of the Motor Carrier Safety Act of 1984 (49 U.S.C. 31144) directed the Secretary of Transportation to establish a procedure to determine the safety fitness of owners and operators of commercial motor vehicles operating in interstate or foreign commerce. The Secretary, in turn, delegated this responsibility to the Federal Highway Administration (FHWA).

As directed, FHWA promulgated a safety fitness regulation, Safety Fitness Procedures, which established a procedure to determine the safety fitness of motor carriers through the assignment of safety ratings and established a safety fitness standard which a motor carrier must meet to obtain a satisfactory safety rating.

To meet the safety fitness standard, a motor carrier must demonstrate to FHWA that it has adequate safety management controls in place which function effectively to ensure acceptable compliance with the applicable safety requirements. A "safety fitness rating methodology" (SFRM) was developed by FHWA, which uses data from onsite reviews to rate motor carriers.

The safety rating process developed by FHWA's Office of Motor Carriers is used to:

1. Evaluate safety fitness and assign one of three safety ratings (*satisfactory*, *conditional*, or *unsatisfactory*) to motor carriers operating in interstate commerce. This process conforms with 49 CFR 385.5--Safety fitness standard and § 385.7--Factors to be considered in determining a safety rating.
2. Identify motor carriers needing improvement in their compliance with the Federal Motor Carrier Safety Regulations (FMCSRs) and applicable Hazardous Material Regulations (HMRs). These are carriers rated *unsatisfactory* or *conditional*.

SOURCE OF DATA FOR RATING METHODOLOGY

The FHWA's rating process is built upon the operational tool known as the compliance review (CR). This tool was developed to assist Federal and State safety specialists in gathering pertinent motor carrier compliance and accident information.

The CR is an in-depth examination of a motor carrier's operations and is used (1) to rate unrated motor carriers, (2) to conduct a follow-up investigation on motor carriers rated *unsatisfactory* or *conditional* as a result of a previous review, (3) to investigate complaints, or (4) in response to a request by a motor carrier to reevaluate its safety rating. Documents such as those contained in driver qualification files, records of duty status, and vehicle maintenance records are thoroughly examined for compliance with the FMCSRs and HMRs. Violations are cited on the CR document. Performance-based information, when available, is utilized to evaluate the carrier's compliance with the vehicle regulations. Recordable preventable accident information is also collected.

CONVERTING CR INFORMATION INTO A SAFETY RATING

The FHWA gathers information through an in-depth examination of the motor carrier's compliance with portions of the FMCSRs and HMRs which have been identified as "acute" or "critical" regulations.

Acute regulations are those so essential that noncompliance is obvious and requires immediate corrective actions by a motor carrier regardless of its overall safety posture. An example of an acute regulation is § 383.37(b)--Allowing, requiring, permitting, or authorizing an employee with more than one Commercial Driver's License (CDL) to operate a commercial motor vehicle. Noncompliance with § 383.37(b) is usually discovered when the motor carrier's driver qualification file reflects that the motor carrier had knowledge of a driver with more than one CDL and still permitted the driver to operate a commercial motor vehicle. If the motor carrier did not have knowledge or could not reasonably be expected to have knowledge, then a violation would not be cited.

Critical regulations are those which relate directly to management and/or operational controls. Noncompliance with those regulations is indicative of a breakdown in a carrier's management controls. An example of a critical regulation is § 395.3(a)(1)--Requiring or permitting a driver to drive more than 10 hours.

The list of the acute and critical regulations used in determining safety ratings is provided at the end of this document.

Noncompliance with acute regulations and patterns of noncompliance with critical regulations are quantitatively linked to inadequate safety management controls and usually higher than average rates of recordable preventable accidents. The FHWA has used noncompliance with acute regulations and patterns of noncompliance with critical regulations since 1989 to determine motor carriers' adherence to the § 385.5--Safety fitness standard. Compliance with the regulatory factors, (1) [Parts 387, & 390]; (2) [Parts 382, 383 & 391]; (3) [Parts 392 & 395]; (4)

[Parts 393 & 396, when there are *less* than three vehicle inspections in the last 12 months to evaluate]; and (5) [Parts 397, 171, 177 & 180], will be evaluated as follows:

For each instance of noncompliance with an acute regulation or each pattern of noncompliance with a critical regulation documented during the CR, one point will be assessed. A pattern is more than one violation. When large numbers of documents are reviewed the number of violations required to meet a pattern is equal to at least 10 percent of those examined.

However, each pattern of noncompliance with a critical regulation relative to Part 395, Hours of Service of Drivers, will be assessed two points.

VEHICLE FACTOR

When there are a combination of *three or more inspections recorded in the Motor Carrier Management Information System (MCMIS) during the twelve months prior to the CR or performed at the time of the review*, the Vehicle Factor (Parts 393 & 396) will be evaluated on the basis of the Out-of-Service (OOS) rate and noncompliance with acute regulations and/or a pattern of noncompliance with critical regulations. The results of the review of the OOS rate will affect the Vehicle Factor rating as follows:

1. If a motor carrier has three or more roadside vehicle inspections in the twelve months prior to the carrier review, or three vehicles inspected at the time of the review, or a combination of the two totaling three or more, and the vehicle OOS rate is 34% or greater, the initial factor rating will be *conditional*. The requirements of Part 396--Inspection, Repair, and Maintenance--will be examined during each review. The results of the examination could lower the factor rating to *unsatisfactory* if noncompliance with an acute regulation or a pattern of noncompliance with a critical regulation is discovered. If the examination of Part 396 requirements reveals no such problems with the systems the motor carrier is required to maintain for compliance, the Vehicle Factor remains *conditional*.

2. If a carrier's vehicle OOS rate is less than 34%, the initial factor rating will be *satisfactory*. If non-compliance with an acute regulation or a pattern of noncompliance with a critical regulation is discovered during the examination of Part 396 requirements, the factor rating will be lowered to *conditional*. If the examination of Part 396 requirements reveals no such problems with the systems the motor carrier is required to maintain for compliance, the Vehicle Factor remains *satisfactory*.

Nearly two million vehicle inspections occur on the roadside each year. This vehicle inspection information is retained in the MCMIS and is integral to evaluating motor carriers' ability to successfully maintain their vehicles. Since many of the roadside

inspections are targeted to visibly defective vehicles and since there are a limited number of inspections for many motor carriers, the use of that data is limited. Each CR will continue to have the requirements of Part 396--Inspection, Repair, and Maintenance reviewed as indicated by the above explanation.

ACCIDENT FACTOR

In addition to the five regulatory rating factors, a sixth factor is included in the process to address the accident history of the motor carrier. This factor is the recordable preventable accident rate which the carrier has experienced during the past 12 months. *Recordable preventable accident* means an accident that (1) involves a commercial motor vehicle; (2) that meets the definition of an accident in § 390.5; and (3) that could have been averted but for an act, or failure to act, by the motor carrier or driver. The sixth factor is assigned a rating based on the carrier's recordable preventable accident rate compared to the national accident rate distribution.

To determine this national distribution, recordable preventable accidents per million miles were computed for each CR performed in a year. Most of these carriers (over 50%) had no recordable accidents. The national average for all carriers reviewed in 1988 was 0.46 per million miles; in 1996, 0.50 per million miles. From these data, the percent of all carriers below or above any proposed accident per million mile breakpoint could be established. The breakpoints shown below were determined from consideration of both the national average and the percentage of carriers below and above alternative breakpoints, i.e.:

The Recordable Preventable Accident Rating Scale (total recordable preventable accidents divided by total mileage times 1 million) is:

- Satisfactory = less than 0.3
- Conditional = 0.3 to 1.0
- Unsatisfactory = greater than 1.0

Exceptions to the Recordable Preventable Accident Rating Scale

Single Accident Exception: The accident factor excludes the accident rates for all motor carriers that have only one recordable preventable accident. One accident occurring in 12 months is too isolated an occurrence to allow it to impact the accident factor.

Urban Carriers Exception: Experience has shown that urban carriers, those motor carriers operating entirely within a radius of less than a 100 air miles (normally in urban areas) have a higher exposure to accident situations because of their environment and normally have higher accident rates. Therefore, the rating does not become unsatisfactory for an urban carrier until it exceeds the 2.0 recordable preventable accident rate per million miles.

Small Carrier Exception: Accident rates for small carriers (fewer than 20 drivers) vary to a great extent from one year to the next. Therefore, the lowest

"accident factor" rating assigned to a small carrier is *conditional*.

The Factor rating is determined by the following table.

FACTOR #6.--RECORDABLE PREVENTABLE ACCIDENT RATE TABLE

Calculated accident rate	Rating	Rating: urban carriers only
Less than .3	Satisfactory	Satisfactory
0.3 to 1.0	Conditional	Conditional
Greater than 1.0 to 2.0	Unsatisfactory	Conditional
Greater than 2.0	Unsatisfactory	Unsatisfactory

Factor Ratings

In the methodology, parts of the FMCSRs and the HMRs having similar characteristics are combined together into five regulatory areas called "factors." The following table shows the five regulatory factors, parts of the FMCSRs and HMRs associated with each factor, and the accident factor.

FACTORS

- Factor 1--General=Parts 387 & 390
- Factor 2--Driver=Parts 382, 383 & 391
- Factor 3--Operational=Parts 392 & 395
- Factor 4--Vehicle=Parts 393 & 396
- Factor 5--Haz. Mat=Parts 397, 171, 177 & 180
- Factor 6--Accident Factor=Recordable Preventable Rate

Factor Ratings are determined as follows:
 "Satisfactory"--if the acute and/or critical=0 points
 "Conditional"--if the acute and/or critical=1 point
 "Unsatisfactory"--if the acute and/or critical=2 or more points

SAFETY RATING

The ratings for the five factors, along with the recordable preventable accident rate for the 12 months prior to the review, are then entered into a rating table which establishes the motor carrier's safety rating.

The FHWA has developed a computerized rating formula for assessing the information obtained from the CR document and is using that formula in assigning a safety rating.

MOTOR CARRIER SAFETY RATING TABLE

Factor ratings		Overall safety rating
Unsatisfactory	Conditional	
0	2 or less	Satisfactory.
0	more than 2	Conditional.
1	2 or less	Conditional.
1	more than 2	Unsatisfactory.
2 or more	0 or more	Unsatisfactory.

ANTICIPATED SAFETY RATING

The *anticipated* (emphasis added) safety rating will appear on the CR.

The following appropriate information will appear after the last entry on the CR, MCS-151, Part B.

“It is anticipated the official safety rating from Washington, D.C., will be SATISFACTORY.”

Or

“It is anticipated the official safety rating from Washington, D.C., will be CONDITIONAL. The safety rating will become effective thirty days from the date of the CR.”

Or

“It is anticipated the official safety rating from Washington, D.C., will be UNSATISFACTORY. The safety rating will become effective thirty days from the date of the CR.”

ASSIGNMENT OF RATING/MOTOR CARRIER NOTIFICATION

When the official rating is determined in Washington, D.C., the FHWA notifies the motor carrier in writing of its safety rating as prescribed in § 385.11. An anticipated safety rating which is higher than the existing rating becomes effective as soon as the official safety rating from Washington, D.C. is issued. Notification of a *conditional* or *unsatisfactory* rating includes a list of those Parts of the regulations, or recordable preventable accident rate, for which corrective actions must be taken by the motor carrier to improve its overall safety performance.

Motor Carrier Procedural Rights

Under §§ 385.15 and 385.17, motor carriers have the right to petition for a review of their ratings *if there are factual or procedural disputes* and to request another review after corrective actions have been taken. They are the procedural avenues a motor carrier, which believes its safety rating to be in error, may use and the means to request another review after corrective action has been taken.

Conclusion

The FHWA believes this “safety rating methodology” is a reasonable approach for assigning a safety rating which best describes the current safety fitness posture of a motor carrier as required by the safety fitness regulations (§ 385.9).

Improved compliance with the regulations leads to an improved rating, which in turn increases safety. This increased safety is our regulatory goal.

List of Acute and Critical Regulations

- § 382.115(c) Failing to implement an alcohol and/or controlled substance testing program. (acute)
- § 382.201 Using a driver who has an alcohol concentration of 0.04 or greater. (acute)

- § 382.211 Using a driver who has refused to submit to an alcohol controlled substances test required under Part 382. (acute)
- § 382.213(b) Using a driver who has used a controlled substance. (acute)
- § 382.215 Using a driver who has tested positive for a controlled substance. (acute)
- § 382.301(a) Failing to require driver to undergo pre-employment controlled substance testing. (critical)
- § 382.303(a) Failing to conduct post-accident testing on driver for alcohol and/or controlled substances. (critical)
- § 382.305(a) Failing to implement a random controlled substances and/or an alcohol testing program. (acute)
- § 382.305(b)(1) Failing to conduct random alcohol testing at an annual rate of not less than 25 percent of the average number of driver positions. (critical)
- § 382.305(b)(2) Failing to conduct random controlled substances testing at an annual rate of not less than 50 percent of the average number of driver positions. (critical)
- § 382.309(a) Using a driver who has not undergone a return-to-duty alcohol test with a result indicating an alcohol concentration of less than 0.02. (acute)
- § 382.309(b) Using a driver who has not undergone a return-to-duty controlled substances test with a result indicating a verified negative result for controlled substances. (acute)
- § 382.503 Driver performing safety sensitive function, after engaging in conduct prohibited by Subpart B, without being evaluated by substance abuse professional, as required by § 382.605. (critical)
- § 382.505(a) Using a driver within 24 hours after being found to have an alcohol concentration of 0.02 or greater but less than 0.04. (acute)
- § 382.605(c)(1) Using a driver who has not undergone a return-to-duty alcohol test with a result indicating an alcohol concentration of less than 0.02 or with verified negative test result, after engaging in conduct prohibited by Part 382, Subpart B. (acute)
- § 382.605(c)(2)(ii) Failing to subject a driver who has been identified as needing assistance to at least six unannounced follow-up alcohol and controlled substance tests in the first 12 months following the driver’s return to duty. (critical)
- § 383.23(a) Operating a commercial motor vehicle without a valid commercial driver’s license. (critical)
- § 383.37(a) Allowing, requiring, permitting, or authorizing an employee with a Commercial Driver’s License which is suspended, revoked, or canceled by a State or who is disqualified to operate a commercial motor vehicle. (acute)
- § 383.37(b) Allowing, requiring, permitting, or authorizing an employee with more than one Commercial Driver’s License to operate a commercial motor vehicle. (acute)

- § 383.51(a) Allowing, requiring, permitting, or authorizing a driver to drive who is disqualified to drive a commercial motor vehicle. (acute)
- § 387.7(a) Operating a motor vehicle without having in effect the required minimum levels of financial responsibility coverage. (acute)
- § 387.7(d) Failing to maintain at principal place of business required proof of financial responsibility. (critical)
- § 387.31(a) Operating a passenger carrying vehicle without having in effect the required minimum levels of financial responsibility. (acute)
- § 387.31(d) Failing to maintain at principal place of business required proof of financial responsibility for passenger vehicles. (critical)
- § 390.15(b)(2) Failing to maintain copies of all accident reports required by State or other governmental entities or insurers. (critical)
- § 390.35 Making, or causing to make fraudulent or intentionally false statements or records and/or reproducing fraudulent records. (acute)
- § 391.11(a)/391.95 Using an unqualified driver, a driver who has tested positive for controlled substances, or refused to be tested as required. (acute)
- § 391.11(b)(6) Using a physically unqualified driver. (acute)
- § 391.15(a) Using a disqualified driver. (acute)
- § 391.45(a) Using a driver not medically examined and certified. (critical)
- § 391.45(b) Using a driver not medically examined and certified each 24 months. (critical)
- § 391.51(a) Failing to maintain driver qualification file on each driver employed. (critical)
- § 391.51(b)(1) Failing to maintain medical examiner's certificate in driver's qualification file. (critical)
- § 391.51(c)(1) Failing to maintain medical examiner's certificate in driver's qualification file. (critical)
- § 391.51(c)(3) Failing to maintain inquiries into driver's driving record in driver's qualification file. (critical)
- § 391.51(d)(1) Failing to maintain medical examiner's certificate in driver's qualification file. (critical)
- § 391.87(f)(5) Failing to retain in the driver's qualification file test finding, either "Negative" and, if "Positive," the controlled substances identified. (critical)
- § 391.93(a) Failing to implement a controlled substances testing program. (acute)
- § 391.99(a) Failing to require a driver to be tested for the use of controlled substances, upon reasonable cause. (acute)
- § 391.103(a) Failing to require a driver-applicant whom the motor carrier intends to hire or use to be tested for the use of controlled substances as a pre-qualification condition. (critical)
- § 391.109(a) Failing to conduct controlled substance testing at a 50% annualized rate. (critical)
- § 391.115(c) Failing to ensure postaccident controlled substances testing is conducted and conforms with 49 CFR Part 40. (critical)
- § 392.2 Operating a motor vehicle not in accordance with the laws, ordinances, and regulations of the jurisdiction in which it is being operated. (critical)
- § 392.4(b) Requiring or permitting a driver to drive while under the influence of, or in possession of, a narcotic drug, amphetamine, or any other substance capable of rendering the driver incapable of safely operating a motor vehicle. (acute)
- § 392.5(b)(1) Requiring or permitting a driver to drive a motor vehicle while under the influence of, or in possession of, an intoxicating beverage. (acute)
- § 392.5(b)(2) Requiring or permitting a driver who has consumed an intoxicating beverage within 4 hours to operate a motor vehicle. (acute)
- § 392.6 Scheduling a run which would necessitate the vehicle being operated at speeds in excess of those prescribed. (critical)
- § 392.9(a)(1) Requiring or permitting a driver to drive without the vehicle's cargo being properly distributed and adequately secured. (critical)
- § 395.1(i)(1)(i) Requiring or permitting a driver to drive more than 15 hours. (Driving in Alaska.) (critical)
- § 395.1(i)(1)(ii) Requiring or permitting a driver to drive after having been on duty 20 hours. (Driving in Alaska.) (critical)
- § 395.1(i)(1)(iii) Requiring or permitting a driver to drive after having been on duty more than 70 hours in 7 consecutive days. (Driving in Alaska.) (critical)
- § 395.1(i)(1)(iv) Requiring or permitting a driver to drive after having been on duty more than 80 hours in 8 consecutive days. (Driving in Alaska.) (critical)
- § 395.3(a)(1) Requiring or permitting a driver to drive more than 10 hours. (critical)
- § 395.3(a)(2) Requiring or permitting a driver to drive after having been on duty 15 hours. (critical)
- § 395.3(b) Requiring or permitting a driver to drive after having been on duty more than 60 hours in 7 consecutive days. (critical)
- § 395.3(b) Requiring or permitting a driver to drive after having been on duty more than 70 hours in 8 consecutive days. (critical)
- § 395.8(a) Failing to require a driver to make a record of duty status. (critical)
- § 395.8(e) False reports of records of duty status. (critical)
- § 395.8(l) Failing to require a driver to forward, within 13 days of completion, the original of the record of duty status. (critical)
- § 395.8(k)(1) Failing to preserve a driver's record of duty status for 6 months. (critical)
- § 395.8(k)(1) Failing to preserve a driver's records of duty status supporting documents for 6 months. (critical)

-
- § 396.3(b) Failing to keep minimum records of inspection and vehicle maintenance. (critical)
- § 396.9(c)(2) Requiring or permitting the operation of a motor vehicle declared “out-of-service” before repairs are made. (acute)
- § 396.11(a) Failing to require a driver to prepare driver vehicle inspection report. (critical)
- § 396.11(c) Failing to correct out-of-service defects listed by driver in a driver vehicle inspection report. (acute)
- § 396.17(a) Using a commercial motor vehicle not periodically inspected. (critical)
- § 396.17(g) Failing to promptly repair parts and accessories not meeting minimum periodic inspection standards. (acute)
- § 397.5(a) Failing to ensure a motor vehicle containing Class A or B explosives (Class 1.1, 1.2, or 1.3) is attended at all times by its driver or a qualified representative. (acute)
- § 397.7(a)(1) Parking a motor vehicle containing Class A or B explosives (1.1, 1.2, 1.3) within 5 feet of traveled portion of highway. (critical)
- § 397.7(b) Parking a motor vehicle containing hazardous material(s) within 5 feet of traveled portion of highway or street. (critical)
- § 397.13(a) Permitting a person to smoke or carry a lighted cigarette, cigar, or pipe within 25 feet of a motor vehicle containing explosives, oxidizing materials, or flammable materials. (critical)
- § 397.19(a) Failing to furnish driver of motor vehicle transporting Class A or B explosives (Class 1.1, 1.2, 1.3) with a copy of the rules of Part 397 and/or emergency response instructions. (critical)
- § 397.67(d) Requiring or permitting the operation of a motor vehicle containing Division 1.1, 1.2, or 1.3 (explosive) material that is not accompanied by a written route plan. (critical)
- § 171.15 Carrier failing to give immediate telephone notice of an incident involving hazardous materials. (critical)
- § 171.16 Carrier failing to make a written report of an incident involving hazardous materials. (critical)
- § 177.800(a) Failing to instruct a category of employees in hazardous materials regulations. (critical)
- § 177.817(a) Transporting a shipment of hazardous materials not accompanied by a properly prepared shipping paper. (critical)
- § 177.817(e) Failing to maintain proper accessibility of shipping papers. (critical)
- § 177.823(a) Moving a transport vehicle containing hazardous material that is not properly marked or placarded. (critical)
- § 177.841(e) Transporting a package bearing a poison label in the same transport vehicle with material marked or known to be foodstuff, feed, or any edible material intended for consumption by humans or animals. (acute)
- § 180.407(a) Transporting a shipment of hazardous material in cargo tank that has not been inspected or retested in accordance with § 180.407. (critical)
- § 180.407(c) Failing to periodically test and inspect a cargo tank. (critical)
- § 180.415 Failing to mark a cargo tank which passed an inspection or test required by § 180.407. (critical)
- § 180.417(a)(1) Failing to retain cargo tank manufacturer’s data report certificate and related papers, as required. (critical)
- § 180.417(a)(2) Failing to retain copies of cargo tank manufacturer’s certificate and related papers (or alternative report) as required. (critical)

[62 FR 28809, May 28, 1997]

Effective Date Note: At 62 FR 28809, May 28, 1997, in part 385, the existing appendix was designated as appendix A, and a new appendix B was added, effective May 28, 1997 until Nov. 28, 1997.

Appendix C

Available Consumer Guidance for Chartering a Motorcoach

The following are safety concerns and instructions for chartering motorcoach services that were available from the OMC and the UMA websites at the time of this report.

OMC Guidance:

THE SAFE TRANSPORTATION OF PASSENGERS BY MOTORCOACH -- AND WHAT IT MEANS TO YOU A CONSUMERS GUIDE TO CHARTERING A MOTORCOACH

WHO ARE WE?

As part of the U.S. Department of Transportation, the Federal Highway Administration, Office of Motor Carriers, is the truck and bus "safety agency." Our vision is to create a CRASH-FREE environment including the safe and efficient transportation of passengers by motorcoach.

WHAT DO WE DO?

The Office of Motor Carriers sets minimum safety standards that motorcoach companies must follow for the buses they operate and the physical qualifications and operating rules for their drivers. The following information will provide assistance in evaluating the safety practices of interstate motorcoach companies before you charter a bus from them ! While it is always an important consideration, price should not be the only deciding factor used when chartering a bus.

WHAT SHOULD I ASK?

When speaking to motorcoach companies, you should ask about the factors listed here. Companies should always be willing to

answer any questions you have about their safety practices.

QUALIFICATION OF DRIVERS

Under DOT regulations, carriers are required to ensure their drivers are fully qualified. Ask the carrier:

Will the driver hold a current Commercial Driver's License with a "passenger" endorsement ?

Will the driver hold a valid medical certificate ?

Does the company have a driver drug/alcohol testing program that complies with DOT regulations ?

LIMITATIONS ON DRIVING

There are limits on how long a driver may drive, basically not more than 10 hours following 8 consecutive hours off duty. If planning a long trip, ask if it can be done within Federal hours-of-service limitations.

VEHICLE STANDARDS

At a minimum, buses are subject to periodic safety inspections. Verify that the buses have been inspected as required. Carriers must systematically inspect, repair, and maintain all buses subject to their control. Additionally, many States have mandated motorcoach inspection programs. You may wish to speak to your State's regulatory agency responsible for passenger carriers. You should also consider asking the carrier what procedures are in place for roadside emergencies requiring repair or replacement of their motorcoaches.

SUBCONTRACTING AGREEMENTS

Carrier's occasionally use other motor carriers' equipment and drivers to perform their trips. Inquire as to whose bus will be used on your trip. All of the above conditions also apply to the contracted carrier. You may wish to make similar inquiries of the subcontracting company.

INSURANCE

When a vehicle has a seating capacity of more than 15 passengers including the driver, passenger carriers are required to have a minimum of \$5 million public liability insurance. Ask for proof of financial responsibility.

OPERATING AUTHORITY

Ask for the carrier's U.S. DOT identification number and its MC number. The MC number represents interstate operating authority issued by the Federal Highway Administration. Using the MC number, you may obtain insurance information about the carrier by calling (202) 358-7000. Using the U.S. DOT identification number, you may obtain safety information about the carrier by calling (703) 280-4001.

This information is also available on the Internet at <http://www.safersys.org>.

QUESTIONS???

If you have any questions, please contact the FHWA Office of Motor Carriers office within your State.

UMA Guidance:

UMA's Consumer Guide to Purchasing Professional Motorcoach Services

Transportation by motorcoach is America's safest, most convenient and hassle-free mode of ground transportation. A group trip or tour is made easy by using one of the professional motorcoach company members of the United Motorcoach Association (UMA).

While it's a simple matter to arrange for your group's transportation by motorcoach, most consumers feel "under-educated" when they first step into the process. This quick checklist is designed to help you find the right transportation company and ask the right questions. It's intended to serve only as a guide. The list is divided into safety considerations, a shopping checklist and a travel group transportation needs survey.

Use this guide when you plan your trip and make photocopies for your future travel use. Once you've reviewed the list, we invite you to browse through our directory of more than 800 member companies to locate the UMA professional operators in your area. If you have any other questions, we also invite you to drop us a note at info@uma.org.

THE CARDINAL RULE: DON'T BUY ON PRICE ALONE.

All motorcoach companies are not alike. When you're deciding on which company to use, remember that *safety* can be affected by many mechanical components which you can't see. If the price you receive from one operator is significantly or surprisingly lower than others in your community, it may be because that company is saving money by poor or inadequate preventative maintenance procedures. ***Don't risk heartache to save a couple of bucks!*** Follow these guidelines and remember that *safety* is a reputable company's *first* priority.

As a final safety note, you may wish to check with your local law enforcement agency or the closest state police installation to ask about their experiences with the company you'd like to hire.

1. SAFETY & OPERATIONAL CHECKLIST:

Operating Authority

- Operator should provide proof of current operating authority from the *Interstate Commerce Commission (ICC) if your trip will cross state lines. Some states also require their own operating authority if your travel does not cross any state or international boundaries.

* Note: The Interstate Commerce Commission was eliminated by Congress at the start of 1996. It's safety and carrier certification responsibilities have now been transferred to the U.S. Department of Transportation .

Insurance

- Operators should be willing to provide proof of valid, current insurance coverage for any vehicle which might be used. The insurance must provide \$5 million per incident minimum liability if the carrier is authorized for interstate service by the ICC (now the USDOT).

Vehicle Inspection

- Look for proof that the vehicle you will be using has passed a complete mechanical inspection within the previous 12 months. Most states will issue decals or reports to be placed on the coach indicating the date of a successful inspection. If the carrier's state does not require a periodic inspection, look for a decal issued by the Commercial Vehicle Safety Alliance (CVSA) or, at a minimum, a copy of the operator's own annual inspection form for that vehicle.

Company Inspection

- Operator should NOT have an UNSatisfactory USDOT Safety Rating. Some operators, however, may have not been yet been rated by the USDOT. You may call the USDOT to ask about a carrier's current safety rating. You may also check the carrier's record online using the USDOT's new "SAFER" (Safety Fitness & Electronic Records System) database for the carrier's safety profile. We caution, however, that the SAFER system is new and is acknowledged by USDOT to contain some errors.

Driver Licensing

- All drivers must possess valid, current "commercial driver's licenses" or "CDLs" at the time of your trip. CDL's are issued only after drivers have demonstrated their ability -- through skills and written tests -- to control the type of heavy vehicle they will be using on the job.

Emergency & Breakdown policies

Ask about any affiliations with state or national professional associations or emergency aid organizations which might be expected to assist in the case of a mechanical breakdown or other complication during your trip.

Subcontracting Agreements

If the motorcoach company will not be providing all of the vehicles needed for your journey, ask your prime operator about other companies which might be used to augment his vehicles. Ensure that the subcontracted company also provides satisfactory answers to each of your checklist questions.

2. MOTORCOACH SHOPPER'S CHECKLIST:**Inspection of Vehicles**

- The consumer should be provided an opportunity to conduct an inspection of available vehicles to determine vehicle and equipment preferences and review vehicle cleanliness.

Vehicle Preferences

- Do you desire newer vehicles or (often) less expensive older vehicles?
- Do you desire a motorcoach equipped with video or audio playback capabilities?
- Do you need a vehicle with disabled passenger boarding assistance devices?

Price and Package Costs

- Determine how the trip price is determined? (Hourly costs, mileage, complete package?)
- Ask if special rates or discounts are available for off-season, weekend or other packages?
- Ask about driver accommodations and costs. Are they included in a package price or are they the travel group's responsibility to arrange?
- Ask about driver gratuity policies? Are they included in the price of the coach?
- Ask if an additional driver will be needed for itineraries which extend daily service beyond the legal USDOT hours of service rules.
- What is the contract deposit policy? How much is expected at the time of the reservation.
- What is the refund/cancellation policy?
- When is final payment due?
- If your group wishes to view commercial video tapes or movies, ask the motorcoach operator who is responsible for meeting copyright law requirements.

- Ask about smoking, alcoholic beverage and carry-on food policies of the motorcoach company.
- Ask if the operator is aware of any costs normally incurred by consumers which are NOT part of his package price (destination charges, city taxes, permits, etc.)

3. DETERMINE YOUR TRAVEL GROUP NEEDS

- Determine what size coach and what level of luxury or additional equipment you will need or desire.
- Determine whether or not you will need a coach on which smoking, alcoholic beverages or food are allowed.
- Determine if your group will include any disabled persons who may need boarding/disembarking assistance.
- Determine the TOTAL number of persons who will be travelling in your group.
- Determine the total length of your trip, including preferred time-of-day starting and ending times, departure and return points.
- Determine your itinerary, including time-of-day preferences for specific attractions.
- Determine who will serve as the responsible liaison to the motorcoach company for any en route changes or decisions.

For a UMA member motorcoach provider in your area, you may turn to the [map locator](#) page or, if you already know the name of a motorcoach company you'd like to use, you may turn to our [alphabetized list](#) of members to ensure that the professional coach you've selected is a member of UMA.

If you're considering a motorcoach company which is not a UMA member, you may also wish to check the [USDOT's Passenger Carrier Safety Ratings](#) list to certify that the carrier does NOT have an UNSatisfactory safety rating.

4. A FINAL NOTE

We're pleased to help you better understand the professional motorcoach industry and we invite your inquiries through info@uma.org. You will also find that each UMA member may be reached through the Internet's e-mail system.

We regret, however, that UMA is unable to make travel arrangements for callers or provide specific carrier recommendations. Similarly, while UMA members are regarded as professional motorcoach operators, UMA can not guarantee the service or performance of any member.

You may write to UMA at 113 S. West Street, Alexandria, VA 22314 or phone us at 1-(800) 424-8262 or (703) 838-2929. Thank you for using UMA member professional motorcoach operators.

Acronyms

ABA	American Bus Association
ATA	American Trucking Associations
BMCS	Bureau of Motor Carrier Safety
CDL	commercial driver's license
CFR	<i>Code of Federal Regulations</i>
CVSA	Commercial Vehicle Safety Alliance
DOT	Department of Transportation
FAA	Federal Aviation Administration
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
FMCSR	Federal Motor Carrier Safety Regulations
FMVSS	Federal Motor Vehicle Safety Standard
FR	<i>Federal Register</i>
FTA	Federal Transit Administration
ITI	Indian Trails, Inc.
MCMIS	Motor Carrier Management Information System
NHTSA	National Highway Traffic Safety Administration
NIRPC	Northwest Indiana Regional Planning Commission
NMN	National Motorcoach Network
OMC	Office of Motor Carriers
psi	pounds per square inch
SAFESTAT	Safety Status Measuring System
TEA-21	Transportation Efficiency Act for the 21 st Century
TMC	Transportation Manufacturing Corporation
UMA	United Motorcoach Association