2019–2020 MWL-Associated

AS OF DECEMBER 11, 2018

Open Safety Recommendations

AVIATION
HIGHWAY
MARINE
RAILROAD
PIPELINE

2019–2020 MOST WANTED LIST OF TRANSPORTATION SAFETY IMPROVEMENTS

This document provides a listing of open NTSB safety recommendations most strongly associated with the **2019–2020 NTSB Most Wanted List.** The recommendations are grouped by each MWL topic area and include the recommendation number, classification status, and recommendation text. For the most current recommendations, please visit **ww.NTSB.gov/MostWanted.**

About the NTSB Most Wanted List of Transportation Safety Improvements

Tens of thousands of people die in transportation accidents and crashes every year—our neighbors, our coworkers, our schoolmates, our family members. But they don't have to. Most of these deaths are completely preventable. With each accident, we learn lessons about safety gaps and make recommendations that, if acted upon, could close these gaps.

The **MOST WANTED LIST**, the NTSB's premier advocacy tool, identifies the top safety improvements that can be made across all modes to prevent accidents, minimize injuries, and save lives in the future. These issue areas are ripe for action now; if addressed, they would make a significant impact.

The **MOST WANTED LIST** is our road map from lessons learned to lives saved. We urge lawmakers, industry, and every American to learn more about what they can do to implement and champion these critical safety improvements.

Together, we can save lives.

To learn more about the Most Wanted List, visit **www.NTSB.gov/MostWanted** or contact **SafetyAdvocacy@NTSB.gov**

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NTSB | National Transportation Safety Board

Eliminate Distractions

Distraction is a growing and life-threatening problem in all modes of transportation. All drivers, pilots, and operators need to eliminate distractions and stay focused on safely operating their vehicle, aircraft, vessel, or train. Pedestrians are equally susceptible to distraction and need to remain aware of their surroundings. **We believe distraction should be addressed through education, legislation, and enforcement.**

RECOMMENDATION NO. STATUS

Aviation

A-13-014 **Open—Acceptable Response**
TO AIR METHODS CORPORATION: Expand your policy on portable electronic devices to prohibit their nonoperational use during safety-critical ground activities, such as flight planning and preflight inspection, as well as in flight.

Highway

H-03-009 **Open—Acceptable Response**
TO 34 STATES: Add driver distraction codes, including codes for interactive wireless communication device use, to your traffic accident investigation forms.

H-06-029 **Open—Await Response**
TO 6 MOTORCOACH INDUSTRY, PUBLIC BUS, AND SCHOOL BUS ASSOCIATIONS AND 3 UNIONS: Develop formal policies prohibiting cellular telephone use by commercial driver's license holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies.

H-11-039 **Open—Await Response**
TO THE 50 STATES AND THE DISTRICT OF COLUMBIA: (1) Ban the nonemergency use of portable electronic devices (other than those designed to support the driving task) for all drivers; (2) use the National Highway Traffic Safety Administration model of high visibility enforcement to support these bans; and (3) implement targeted communication campaigns to inform motorists of the new law and enforcement, and to warn them of the dangers associated with the nonemergency use of portable electronic devices while driving.

H-11-047 **Open—Await Response**
TO CTIA–THE WIRELESS ASSOCIATION AND THE CONSUMER ELECTRONICS ASSOCIATION: Encourage the development of technology features that disable the functions of portable electronic devices within reach of the driver when a vehicle is in motion; these features should include the ability to permit emergency use of the device while the vehicle is in motion and have the capability of identifying occupant seating position so as not to interfere with use of the device by passengers.

H-14-013 **Open—Await Response**
TO THE FIFTY STATES, THE DISTRICT OF COLUMBIA, AND THE COMMONWEALTH OF PUERTO RICO: Ban the nonemergency use by pilot/escort vehicle drivers of portable electronic devices (other than those designed to support the pilot/escort vehicle driving task), except to communicate hazard-related information to the escorted vehicle.

Marine

M-16-027 **Open—Acceptable Response**
TO THE UNITED STATES COAST GUARD: Distribute a safety alert on amphibious passenger vehicle operations that addresses the role of risk assessment to mitigate driver distraction, as well as the need to tell passengers to remove seat belts before waterborne operations begin.

M-16-028 **Open—Initial Response Received**
TO THE PASSENGER VESSEL ASSOCIATION: Notify all your amphibious passenger vehicle (APV) operator members of the importance of the following: (1) learning the lessons from the Seattle, Washington, and Boston, Massachusetts, crashes; (2) completing proper maintenance and service bulletin repairs; (3) using the pretrip safety orientation to tell passengers of APVs equipped with passenger seat belts to unbuckle their belts before the APV begins any marine operations; (4) conducting a visual inspection to ensure that passengers have unbuckled their seat belts prior to water entry; (5) reducing the risk of driver distraction by having a tour guide conduct each tour; (6) managing risk in tour operations by addressing such factors as driver distraction, route planning, vehicle characteristics, traffic density, and vehicle speed; and (7) conducting operations according to Navigation and Vessel Inspection Circular 1-01 guidance and US Coast Guard safety alerts.

Railroad

R-13-005 **Open—Acceptable Alternate Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Identify, and require railroads to use in locomotive cabs, technology-based solutions that detect the presence of signal-emitting portable electronic devices and that inform the railroad management about the detected devices in real time.

R-13-011 **Open—Acceptable Response**
TO THE CANADIAN NATIONAL RAILWAY COMPANY: Incorporate the use of handheld signal detection devices into your operational efficiency program on the use of portable electronic devices.

R-17-022 **Open—Initial Response Received**
TO AMTRAK (NATIONAL RAILROAD PASSENGER CORPORATION): Revise its train dispatcher rules so that potentially distracting activities, such as making personal telephone calls, are not allowed while dispatchers are on duty and responsible for safe train operations.

R-16-037 **Open—Acceptable Response**
TO THE NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK): Incorporate strategies into your initial and recurrent training for operating crewmembers for recognizing and effectively managing multiple concurrent tasks in prolonged, atypical situations to sustain their attention on current and upcoming train operations.

End Alcohol and Other Drug Impairment in Transportation

Impairment is a contributing factor in far too many transportation accidents across all modes, with alcohol impairment as a leading cause of highway crashes. **We want to continue to see states adopt per se BAC limits of 0.05 percent or below, as well as broaden their use of other effective countermeasures, like ignition interlock devices and high-visibility enforcement.** Impairment in transportation is not limited to just alcohol; it also includes impairment by other drugs—legal or illicit. **We want a national drug testing standard for passenger vehicles and stronger screening and toxicology testing in commercial transportation.**

RECOMMENDATION NO. STATUS

Aviation

A-07-043 **Open—Acceptable Response**
TO THE FEDERAL AVIATION ADMINISTRATION: Require that all airmen clinically diagnosed with substance dependence (including dependence on alcohol), as defined in Title 14 *Code of Federal Regulations* 67.107(a)(4)(ii), 67.207(a)(4)(ii), and 67.307(a)(4)(ii), who are medically certified by the FAA subsequent to such diagnosis, are followed under guidelines for special issuance of medical certificates for the period that they hold such certificates.

A-14-092 **Open—Acceptable Response**
TO THE FEDERAL AVIATION ADMINISTRATION: Develop, publicize, and periodically update information to educate pilots about the potentially impairing drugs identified in your toxicology test results of fatally injured pilots, and make pilots aware of less impairing alternative drugs if they are available.

A-14-095 **Open—Acceptable Response**
TO THE FEDERAL AVIATION ADMINISTRATION: Conduct a study to assess the prevalence of over-the-counter, prescription, and illicit drug use among flying pilots not involved in accidents, and compare those results with findings from pilots who have died from aviation accidents to assess the safety risks of using those drugs while flying.

Highway

H-09-018 **Open—Acceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Establish a regulatory requirement within Title 49 *Code of Federal Regulations* 382.405 that provides the National Transportation Safety Board, in the exercise of its statutory authority, access to all positive drug and alcohol test results and refusal determinations that are conducted under the U.S. Department of Transportation testing requirements.

H-12-032 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop and disseminate to the 50 states, the Commonwealth of Puerto Rico, and the District of Columbia blood alcohol concentration testing and reporting guidelines based on the 2012 report, State Blood Alcohol Concentration Testing and Reporting for Drivers Involved in Fatal Crashes: Current Practices, Results, and Strategies, 1997–2009.

H-12-033 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop and disseminate to appropriate state officials a common standard of practice for drug toxicology testing, including (1) the circumstances under which tests should be conducted, (2) a minimum set of drugs for which to test, and (3) cutoff values for reporting the results.

H-12-034 **Open—Await Response**
TO THE 45 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA, WHICH HAVE LOW REPORTING RATES FOR BAC TESTING: Increase your collection, documentation, and reporting of blood alcohol concentration (BAC) test results by taking the following actions, as needed, to improve testing and reporting rates: (1) enact legislation, (2) issue regulations, and (3) improve procedures used by law enforcement agencies or testing facilities.

H-12-035 **Open—Await Response**
TO THE 45 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA, WHICH HAVE LOW REPORTING RATES FOR BAC TESTING: Once the National Highway Traffic Safety Administration has developed the blood alcohol concentration (BAC) testing and reporting guidelines recommended in Safety Recommendation H-12-32, incorporate the guidelines into a statewide action plan to achieve BAC reporting rates of at least 80 percent of fatally injured drivers and at least 60 percent of drivers who survived fatal crashes.

H-12-036 **Open—Await Response**
TO THE 50 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA: Require law enforcement agencies to collect place of last drink (POLD) data as part of any arrest or accident investigation involving an alcohol-impaired driver.

H-12-037 **Open—Await Response**
TO THE INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE AND THE NATIONAL SHERIFFS' ASSOCIATION: Inform your members of the value of collecting place of last drink (POLD) data as part of any arrest or accident investigation involving an alcohol-impaired driver.

H-12-043 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with the Automotive Coalition for Traffic Safety, to accelerate widespread implementation of Driver Alcohol Detection System for Safety (DADSS) technology by (1) defining usability testing that will guide driver interface design and (2) implementing a communication program that will direct driver education and promote public acceptance.

End Alcohol and Other Drug Impairment in Transportation *— continued*

H-12-045 **Open—Await Response**
TO 33 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA: Enact laws to require the use of alcohol ignition interlock devices for all individuals convicted of driving while intoxicated (DWI) offenses.

H-12-048 **Open—Acceptable Response**
TO THE AUTOMOTIVE COALITION FOR TRAFFIC SAFETY: Work with the National Highway Traffic Safety Administration to accelerate widespread implementation of Driver Alcohol Detection System for Safety (DADSS) technology by (1) defining usability testing that will guide driver interface design and (2) implementing a communication program that will direct driver education and promote public acceptance.

H-13-001 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Seek legislative authority to award incentive grants for states to establish a per se blood alcohol concentration (BAC) limit of 0.05 or lower for all drivers who are not already required to adhere to lower BAC limits.

H-13-005 **Open—Await Response**
TO THE 50 U.S. STATES AND THE COMMONWEALTH OF PUERTO RICO AND THE DISTRICT OF COLUMBIA: Establish a per se blood alcohol concentration (BAC) limit of 0.05 or lower for all drivers who are not already required to adhere to lower BAC limits.

H-13-006 **Open—Await Response**
TO THE 50 STATES, THE COMMONWEALTH OF PUERTO RICO AND THE DISTRICT OF COLUMBIA: Include in your impaired driving prevention plan or highway safety plan provisions for conducting high-visibility enforcement of impaired driving laws using passive alcohol-sensing technology during law enforcement contacts, such as routine traffic stops, saturation patrols, sobriety checkpoints, and accident scene responses.

H-13-007 **Open—Await Response**
TO THE 50 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA: Include in your impaired driving prevention plan or highway safety plan elements to target repeat offenders and reduce driving while intoxicated (DWI) recidivism; such elements should include measures to improve compliance with alcohol ignition interlock requirements; the plan should also provide a mechanism for regularly assessing the success of these efforts. [This recommendation supersedes Safety Recommendation H-00-26.]

H-13-008 **Open—Await Response**
TO THE 50 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA: Take the following steps to move toward zero deaths from impaired driving: (1) set specific and measurable targets for reducing impaired driving fatalities and injuries, (2) list these targets in your impaired driving prevention plan or highway safety plan, and (3) provide a mechanism for regularly assessing the success of implemented countermeasures and determining whether the targets have been met.

H-13-009 **Open—Await Response**
TO THE 41 STATES THAT HAVE ADMINISTRATIVE LICENSE SUSPENSION OR REVOCATION LAWS AND THE DISTRICT OF COLUMBIA: Incorporate into your administrative license suspension or revocation laws a requirement that drivers arrested for driving while intoxicated (DWI) use an alcohol ignition interlock on their vehicle for a period of time before obtaining full license reinstatement.

H-13-010 **Open—Await Response**
TO THE 10 STATES THAT DO NOT HAVE ADMINISTRATIVE LICENSE SUSPENSION OR REVOCATION LAWS AND THE COMMONWEALTH OF PUERTO RICO: Establish administrative license suspension or revocation laws that require drivers arrested for driving while intoxicated (DWI) to use an alcohol ignition interlock on their vehicle for a period of time before obtaining full license reinstatement.

H-15-038 **Open—Acceptable Alternate Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Determine the prevalence of commercial motor vehicle driver use of impairing substances, particularly synthetic cannabinoids, and develop a plan to reduce the use of such substances.

H-15-039 **Open—Unacceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Work with motor carrier industry stakeholders to develop a plan to aid motor carriers in addressing commercial motor vehicle driver use of impairing substances, particularly those not covered under current drug-testing regulations such as by promoting best practices by carriers, expanding impairment detection training and authority, and developing performance-based methods of evaluation.

H-15-043 **Open—Await Response**
TO AMERICAN BUS ASSOCIATION, AMERICAN TRUCKING ASSOCIATIONS, COMMERCIAL VEHICLE SAFETY ALLIANCE, OWNER-OPERATOR INDEPENDENT DRIVERS ASSOCIATION, UNITED MOTORCOACH ASSOCIATION: Inform your members about the dangers of driver use of synthetic drugs and encourage them to take steps to prevent drivers from using these substances.

H-16-008 **Open—Unacceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Disseminate information to motor carriers about using hair testing as a method of detecting the use of controlled substances, under the appropriate circumstances.

H-18-035 **Open—Await Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Examine the influence of alcohol and other drug use on motorcycle rider crash risk compared to that of passenger vehicle drivers, and develop guidelines to assist states in implementing evidence-based strategies and countermeasures to more effectively address substance-impaired motorcycle rider crashes.

H-18-056 **Open—Await Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop and disseminate best practices, identify model specifications, and create a conforming products list for oral fluid drug screening devices.

H-18-057 **Open—Await Response**
TO THE NATIONAL TRAFFIC SAFETY ADMINISTRATION: Evaluate best practices and countermeasures found to be the most effective in reducing fatalities, injuries, and crashes involving drug-impaired drivers and provide additional guidance to the states on drug-impaired driving in *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices*.

H-18-060 **Open—Await Response**
TO THE STATE OF TEXAS: Conduct an executive-level review of your impaired driving program and implement data-driven strategies that result in a downward trend in the number of fatalities, injuries, and crashes involving alcohol- and other drug-impaired drivers.

H-18-061 **Open—Await Response**
TO THE TEXAS DEPARTMENT OF TRANSPORTATION: Promote the importance of attending drug-impaired driving enforcement training and increase training access to meet the demands of local and state law enforcement.

Intermodal

I-14-001 **Open—Acceptable Response**
TO THE FIFTY STATES, THE DISTRICT OF COLUMBIA, AND THE COMMONWEALTH OF PUERTO RICO: Include in all state guidelines regarding prescribing controlled substances for pain a recommendation that health care providers discuss with patients the effect their medical condition and medication use may have on their ability to safely operate a vehicle in any mode of transportation.

I-14-002 **Open—Acceptable Response**
TO THE FIFTY STATES, THE DISTRICT OF COLUMBIA, AND THE COMMONWEALTH OF PUERTO RICO: Use existing newsletters or other routine forms of communication with licensed health care providers and pharmacists to highlight the importance of routinely discussing with patients the effect their diagnosed medical conditions or recommended drugs may have on their ability to safely operate a vehicle in any mode of transportation.

Marine

M-12-008 **Open—Acceptable Response**
TO THE UNITED STATES COAST GUARD: Align your standards for postaccident toxicological testing of Coast Guard military personnel with the requirements specified in Title 46 *Code of Federal Regulations* 4.06-3.

M-12-009 **Open—Acceptable Response**
TO THE UNITED STATES COAST GUARD: Align your standards for postaccident toxicological testing of Coast Guard civilian personnel, seeking appropriate legislative authority if necessary, with the requirements specified in Title 46 *Code of Federal Regulations* 4.06-3.

M-12-010 **Open—Acceptable Response**
TO THE UNITED STATES COAST GUARD: Disseminate guidance within the Coast Guard so that commanding officers have unambiguous instruction detailing the requirements for timely drug and alcohol testing of Coast Guard military and civilian personnel whose work performance may be linked to a serious marine incident.

Railroad

R-00-002 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop, then periodically publish, an easy-to-understand source of information for train operating crewmembers on the hazards of using specific medications when performing their duties.

R-00-003 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Establish and implement an educational program targeting train operating crewmembers that, at a minimum, ensures that all crewmembers are aware of the source of information described in R-00-2 regarding the hazards of using specific medications when performing their duties.

R-00-004 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Establish, in coordination with the U.S. Dept. of Transportation, the Federal Motor Carrier Safety Administration, the Federal Transit Administration, and the U.S. Coast Guard, comprehensive toxicological testing requirements for an appropriate sample of fatal highway, railroad, transit, and marine accidents to ensure the identification of the role played by common prescription and over-the-counter medications. Review and analyze the results of such testing at intervals not to exceed every 5 years.

R-01-017 **Open—Acceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Modify Title 49 *Code of Federal Regulations* 219.201(b) as necessary to ensure that the exemption from mandatory postaccident drug and alcohol testing for those involved in highway-rail grade crossing accidents does not apply to any railroad signal, maintenance, and other employees whose actions at or near a grade crossing involved in an accident may have contributed to the occurrence or severity of the accident.

R-08-007 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Revise the definition of covered employee under Title 49 *Code of Federal Regulations* Part 219 for purposes of Congressionally mandated alcohol and controlled substances testing programs to encompass all employees and agents performing safety-sensitive functions, as described in Title 49 *Code of Federal Regulations* 209.301 and 209.303.

R-10-005 **Open—Unacceptable Response**
TO THE FEDERAL TRANSIT ADMINISTRATION: Seek authority similar to Federal Railroad Administration regulations (Title 49 *Code of Federal Regulations* 219.207) to require that transit agencies obtain toxicological specimens from covered transit employees and contractors who are fatally injured as a result of an on-duty accident.

R-13-021 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop medical certification regulations for employees in safety-sensitive positions that include, at a minimum, (1) a complete medical history that includes specific screening for sleep disorders, a review of current medications, and a thorough physical examination, (2) standardization of testing protocols across the industry, and (3) centralized oversight of certification decisions for employees who fail initial testing; and consider requiring that medical examinations be performed by those with specific training and certification in evaluating medication use and health issues related to occupational safety on railroads. [This recommendation supersedes Safety Recommendations R-02-24 through -26.]

Ensure the Safe Transportation of Hazardous Materials

More than 2 million miles of pipeline deliver 24 percent of the natural gas and 39 percent of the total oil consumed in the United States, yet only 16 percent of U.S. rail tank cars carrying flammable liquids meet the improved safety specifications for DOT-117/DOT-117R cars. As infrastructure ages, the risk to the public from pipeline ruptures also grows, and older, more dangerous tank cars continue to carry flammable liquids. **We are calling on the railroad industry to meet existing federal deadlines for replacing or retrofitting rail tank cars, and on the pipeline industry to conduct adequate risk assessments. Failure to meet safety standards by—or ahead of—deadlines places communities near railroads or above pipelines at an unacceptable risk.**

RECOMMENDATION NO. STATUS

Pipeline

P-10-004 **Open—Acceptable Response**
TO THE PACIFIC GAS AND ELECTRIC COMPANY: If you are unable to comply with Safety Recommendations P-10-2 (Urgent) and P-10-3 (Urgent) to accurately determine the maximum allowable operating pressure of Pacific Gas and Electric Company natural gas transmission lines in class 3 and class 4 locations and class 1 and class 2 high consequence areas that have not had a maximum allowable operating pressure established through prior hydrostatic testing, determine the maximum allowable operating pressure with a spike test followed by a hydrostatic pressure test.

P-10-006 **Open—Acceptable Response**
TO THE CALIFORNIA PUBLIC UTILITIES COMMISSION: If such a document and records search cannot be satisfactorily completed, provide oversight to any spike and hydrostatic tests that Pacific Gas and Electric Company is required to perform according to Safety Recommendation (P-10-4).

P-11-010 **Open—Acceptable Response**
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Require that all operators of natural gas transmission and distribution pipelines equip their supervisory control and data acquisition systems with tools to assist in recognizing and pinpointing the location of leaks, including line breaks; such tools could include a real-time leak detection system and appropriately spaced flow and pressure transmitters along covered transmission lines.

P-11-011 **Open—Acceptable Response**
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Amend Title 49 *Code of Federal Regulations* 192.935(c) to directly require that automatic shutoff valves or remote control valves in high consequence areas and in class 3 and 4 locations be installed and spaced at intervals that consider the factors listed in that regulation.

P-11-014 **Open—Acceptable Response**
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Amend Title 49 *Code of Federal Regulations* 192.619 to delete the grandfather clause and require that all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test.

P-11-015 **Open—Acceptable Response**
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Amend Title 49 *Code of Federal Regulations* Part 192 of the federal pipeline safety regulations so that manufacturing- and construction-related defects can only be considered stable if a gas pipeline has been subjected to a postconstruction hydrostatic pressure test of at least 1.25 times the maximum allowable operating pressure.

P-11-023 **Open—Acceptable Response**
TO THE CALIFORNIA PUBLIC UTILITIES COMMISSION: Require the Pacific Gas and Electric Company to correct all deficiencies identified as a result of the San Bruno, California, accident investigation, as well as any additional deficiencies identified through the comprehensive audit recommended in Safety Recommendation P-11-22, and verify that all corrective actions are completed.

P-12-003 **Open—Unacceptable Response**
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Revise Title 49 *Code of Federal Regulations* 195.452 to clearly state (1) when an engineering assessment of crack defects, including environmentally assisted cracks, must be performed; (2) the acceptable methods for performing these engineering assessments, including the assessment of cracks coinciding with corrosion with a safety factor that considers the uncertainties associated with sizing of crack defects; (3) criteria for determining when a probable crack defect in a pipeline segment must be excavated and time limits for completing those excavations; (4) pressure restriction limits for crack defects that are not excavated by the required date; and (5) acceptable methods for determining crack growth for any cracks allowed to remain in the pipe, including growth caused by fatigue, corrosion fatigue, or stress corrosion cracking as applicable.

P-12-004 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Revise Title 49 *Code of Federal Regulations* 195.452(h)(2), the "discovery of condition," to require, in cases where a determination about pipeline threats has not been obtained within 180 days following the date of inspection, that pipeline operators notify the Pipeline and Hazardous Materials Safety Administration and provide an expected date when adequate information will become available.

P-14-001 Open—Unacceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Revise Title 49 *Code of Federal Regulations* Section 903, Subpart O, Gas Transmission Pipeline Integrity Management, to add principal arterial roadways including interstates, other freeways and expressways, and other principal arterial roadways as defined in the Federal Highway Administration's *Highway Functional Classification Concepts, Criteria and Procedures* to the list of "identified sites" that establish a high consequence area.

P-15-004 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Increase the positional accuracy of pipeline centerlines and pipeline attribute details relevant to safety in the National Pipeline Mapping System.

P-15-005 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Revise the submission requirement to include high consequence area identification as an attribute data element to the National Pipeline Mapping System.

P-15-010 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Update guidance for gas transmission pipeline operators and inspectors on the evaluation of interactive threats. This guidance should list all threat interactions that must be evaluated and acceptable methods to be used.

P-15-011 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Develop and implement specific risk assessment training for inspectors in verifying the technical validity of risk assessments that operators use.

P-15-013 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Update guidance for gas transmission pipeline operators and inspectors on critical components of risk assessment approaches. Include (1) methods for setting weighting factors, (2) factors that should be included in consequence of failure calculations, and (3) appropriate risk metrics and methods for aggregating risk along a pipeline.

P-15-017 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Develop a program to use the data collected in Response to Safety Recommendations P-15-15 and P-15-16 to evaluate the relationship between incident occurrences and (1) inappropriate elimination of threats, (2) interactive threats, and (3) risk assessment approaches used by the gas transmission pipeline operators. Disseminate the results of your evaluation to the pipeline industry, inspectors, and the public annually.

P-15-018 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Require that all natural gas transmission pipelines be capable of being in-line inspected by either reconfiguring the pipeline to accommodate in line inspection tools or by the use of new technology that permits the inspection of previously uninspectable pipelines; priority should be given to the highest risk transmission pipelines that considers age, internal pressure, pipe diameter, and class location. (Safety Recommendation P-15-18 superseded Safety Recommendation P-11-17)

P-15-020 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Identify all operational complications that limit the use of in-line inspection tools in piggable pipelines, develop methods to eliminate the operational complications, and require operators to use these methods to increase the use of in-line inspection tools.

P-15-021 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Develop and implement a plan for eliminating the use of direct assessment as the sole integrity assessment method for gas transmission pipelines.

P-15-022 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Develop and implement a plan for all segments of the pipeline industry to improve data integration for integrity management through the use of geographic information systems.

P-15-034 Open—Acceptable Response
TO CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.: Revise your plastic pipe fusion welding procedure to require cleaning of the surfaces to be welded with suitable solvents to remove all dirt, water, oil, paint, and other contaminants as recommended in ASTM F2620, *Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings*.

P-17-001 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Work with pipeline trade and standards organizations to modify the pipeline dent acceptance criteria to account for all the factors that lead to pipe failures caused by dents, and promulgate regulations to require the new criteria be incorporated into integrity management programs.

P-17-002 Open—Unacceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Require operators to either (a) repair all excavated dent defects, or (b) install a local leak detection system at each location where a dent is not repaired, continuously monitor for hydrocarbons, and promptly take corrective action to stop a detected leak.

P-17-003 Open—Await Response
TO THE COLONIAL PIPELINE COMPANY: Revise the dent excavation evaluation procedure to require either (a) the repair of all excavated dent defects, or (b) the installation of a local leak detection system at each location where a dent is not repaired, continuous monitoring for hydrocarbons, and prompt corrective action to stop a detected leak.

Ensure the Safe Transportation of Hazardous Materials
— continued

P-18-001 Open—Initial Response Received
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Work with state pipeline regulators to incorporate into their inspection programs a review to ensure that gas distribution pipeline operators are using best practices recommended by the manufacturer in their distribution integrity management programs, including using the specified tools and methods, to correctly install PermaLock mechanical tapping tee assemblies.

P-18-003 Open—Initial Response Received
TO HONEYWELL: Update your PermaLock mechanical tapping tee assembly installation instructions to specify the exact tools that should be used during installation and explain what an installer should sense while using those tools throughout the installation process.

P-18-004 Open—Initial Response Received
TO HONEYWELL: Specify in your PermaLock mechanical tapping tee assembly installation instructions a not-to-exceed torque limit for nylon bolts and have that value checked and adjusted with a torque wrench immediately after installation.

P-18-005 Open—Await Response
TO THE COMMONWEALTH OF MASSACHUSETTS: Eliminate the professional engineer licensure exemption for public utility work and require a professional engineer's seal on public utility engineering drawings.

P-18-006 Open—Await Response
TO NISOURCE: Revise the engineering plan and constructability review process across all of your subsidiaries to ensure that all applicable departments review construction documents for accuracy, completeness, and correctness, and that the documents or plans be sealed by a professional engineer prior to commencing work. (Urgent)

P-18-007 Open—Await Response
TO NISOURCE: Review and ensure that all records and documentation of your natural gas systems are traceable, reliable, and complete. (Urgent)

P-18-008 Open—Await Response
TO NISOURCE: Apply management of change process to all changes to adequately identify system threats that could result in a common mode failure. (Urgent)

P-18-009 Open—Await Response
TO NISOURCE: Develop and implement control procedures during modifications to gas mains to mitigate the risks identified during management of change operations. Gas main pressures should be continually monitored during these modifications and assets should be placed at critical locations to immediately shut down the system if abnormal operations are detected. (Urgent)

Railroad

R-01-002 Open—Acceptable Response
TO THE FEDERAL RAILROAD ADMINISTRATION: Evaluate, with the assistance of the Research and Special Programs Administration, the Association of American Railroads, and the Railway Progress Institute, the deterioration of pressure relief devices through normal service and then develop inspection criteria to ensure that the pressure relief devices remain functional between regular inspection intervals. Incorporate these inspection criteria into the U.S. Department of Transportation hazardous materials regulations.

R-04-007 Open—Acceptable Response
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop and implement tank car design-specific fracture toughness standards, such as a minimum average Charpy value, for steels and other materials of construction for pressure tank cars used for the transportation of U.S. Department of Transportation class 2 hazardous materials, including those in "low temperature" service. The performance criteria must apply to the material orientation with the minimum impact resistance and take into account the entire range of operating temperatures of the tank car.

R-14-002 Open—Acceptable Response
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop a program to audit response plans for rail carriers of petroleum products to ensure that adequate provisions are in place to respond to and remove a worst-case discharge to the maximum extent practicable and to mitigate or prevent a substantial threat of a worst-case discharge.

R-14-005 Open—Acceptable Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Revise the spill response planning thresholds contained in Title 49 *Code of Federal Regulations* Part 130 to require comprehensive response plans to effectively provide for the carriers' ability to respond to worst-case discharges resulting from accidents involving unit trains or blocks of tank cars transporting oil and petroleum products.

R-14-013 Open—Acceptable Response
TO THE CONSOLIDATED RAIL CORPORATION: Amend *Hazardous Materials Instructions for Rail, HM-1* to require train crews to immediately provide their train consists and the emergency response information for all hazardous materials on the train to federal, state, or local emergency response officials when accidents occur.

R-14-014 Open—Unacceptable Response
TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: Require railroads transporting hazardous materials through communities to provide emergency responders and local and state emergency planning committees with current commodity flow data and assist with the development of emergency operations and response plans.

R-14-019 Open—Acceptable Alternate Response
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Require railroads transporting hazardous materials to develop, implement, and periodically evaluate a public education program similar to Title 49 *Code of Federal Regulations* Parts 192.616 and 195.440 for the communities along railroad hazardous materials routes.

R-14-022 **Open—Acceptable Response**
TO THE ASSOCIATION OF AMERICAN RAILROADS: Amend the *United States Hazardous Materials Instructions for Rail* to require train crews to immediately provide their train consists and the emergency response information for all hazardous materials on the train to federal, state, or local emergency response officials when accidents occur.

R-15-016 **Open—Unacceptable Response**
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Require an aggressive, intermediate progress milestone schedule, such as a 20 percent yearly completion metric over a 5-year implementation period, for the replacement or retrofitting of legacy DOT-111 and CPC-1232 tank cars to appropriate tank car performance standards, that includes equipping these tank cars with jackets, thermal protection, and appropriately sized pressure relief devices. (Urgent)

R-17-001 **Open—Acceptable Response**
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Evaluate the risks posed to train crews by hazardous materials transported by rail, determine the adequate separation distance between hazardous materials cars and locomotives and occupied equipment that ensures the protection of train crews during both normal operations and accident conditions, and collaborate with the Federal Railroad Administration to revise Title 49 *Code of Federal Regulations* 174.85 to reflect those findings.

R-17-002 **Open—Acceptable Response**
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Pending completion of the risk evaluation and action in accordance with its findings prescribed in Safety Recommendation R-17-01, withdraw regulatory interpretation 06-0278 that pertains to Title 49 *Code of Federal Regulations* 174.85 for positioning placarded rail cars in a train and require that all trains have a minimum of five nonplacarded cars between any locomotive or occupied equipment and the nearest placarded car transporting hazardous materials, regardless of train length and consist.

R-17-003 **Open—Acceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Evaluate the risks posed to train crews by hazardous materials transported by rail, determine the adequate separation distance between hazardous materials cars and locomotives and occupied equipment that ensures the protection of train crews during both normal operations and accident conditions, and collaborate with the Pipeline and Hazardous Materials Safety Administration to revise Title 49 *Code of Federal Regulations* 174.85 to reflect those findings.

R-18-027 **Open—Await Response**
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Sponsor research to study and publish the difference in characteristics between denatured and undenatured ethanol and the benefits that could be achieved by transporting fuel ethanol without the use of volatile organic chemical denaturants.

Fully Implement Positive Train Control

Positive train control (PTC) can stop a train before a crash happens. Although Congress mandated that PTC be installed and operating by December 31, 2018, only 25 percent of passenger route miles and just 60 percent of passenger locomotives have met that criteria. A two-year extension has been granted to rail lines that are not fully compliant. **PTC must be fully implemented before the extended deadline to ensure the safety of railroad passengers and the people who live and work near railroads.**

RECOMMENDATION NO. STATUS

Railroad

R-05-013 **Open—Acceptable Response**
TO METRA (NORTHEAST ILLINOIS REGIONAL COMMUTER RAILROAD): Install a positive train control system on your commuter train routes.

R-07-007 **Open—Acceptable Response**
TO THE CANADIAN NATIONAL RAILWAY: Develop and implement a positive train control system that includes collision avoidance capabilities on main line tracks, establishing priority requirements for high-risk corridors such as those where passenger trains operate.

R-09-014 **Open—Acceptable Response**
TO THE MASSCHUSETTS BAY TRANSPORTATION AUTHORITY: Develop and implement a positive train control system for all of your rail lines.

R-10-023 **Open—Acceptable Response**
TO ALSTOM SIGNALING, INC.: Develop and implement periodic inspection and maintenance guidelines for use by the Washington Metropolitan Area Transit Authority and other rail transit operators and railroads equipped with General Railway Signal Company audio frequency track circuit modules and assist them in identifying and removing from service all modules that exhibit pulse-type parasitic oscillation in order to ensure the vitality and integrity of the automatic train control system.

R-12-020 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Require the use of positive train control technologies that will detect the rear of trains and prevent rear-end collisions.

R-12-027 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to install, along main lines in nonsignaled territory not equipped with positive train control, appropriate technology that warns approaching trains of incorrectly lined main track switches sufficiently in advance to permit stopping.

R-13-009 **Open—Unacceptable Response**
TO THE CANADIAN NATIONAL RAILWAY COMPANY: Discontinue the use of after-arrival track authorities in nonsignaled territory not equipped with positive train control.

R-13-016 **Open—Unacceptable Response**
TO CANADIAN PACIFIC RAILWAY LIMITED, KANSAS CITY SOUTHERN RAILWAY COMPANY, NORFOLK SOUTHERN RAILROAD, AND UNION PACIFIC RAILROAD: Discontinue the use of after-arrival track authorities for train movements in nonsignaled territory not equipped with a positive train control system.

R-13-027 **Open—Await Response**
TO ALL RAILROADS SUBJECT TO THE POSITIVE TRAIN CONTROL PROVISIONS OF THE RAIL SAFETY IMPROVEMENT ACT OF 2008: Provide positive train control implementation update reports to the Federal Railroad Administration every 6 months until positive train control implementation is complete. The update reports should consist of two sections: components and training. The components section should include a description of the positive train control component to be implemented, the number of components, the number of components completed on the report date, the number of components that remain to be completed, the overall completion percentage, and the estimated completion date. Components are defined as locomotives, wayside units, switches, base station radios, wayside radios, locomotive radios, and any new and novel technologies that are part of a positive train control system. The training section shall include the number of safety-related employees and equivalent railroad carrier contractors and subcontractors that need to be trained, by class and craft; minimum training standards for those employees and contractors, meaning the knowledge of and ability to comply with federal railroad safety laws and regulations and carrier rules and procedures to implement positive train control; the percentage of employees who have completed training; the percentage of employees who remain to be trained; and the estimated date that training will be completed.

R-13-039 **Open—Acceptable Response**
TO THE FEDERAL TRANSIT ADMINISTRATION: Issue a directive to all transit properties requiring redundant protection for roadway workers, such as positive train control, secondary warning devices, or shunting. (Urgent)

R-15-022 **Open—Acceptable Response**
TO THE FEDERAL TRANSIT ADMINISTRATION: Require rail transit agencies to implement transmission-based train control systems that prevent train collisions. [Supersedes Safety Recommendation R-09-008]

R-15-024 **Open—Acceptable Response**
TO THE CHICAGO TRANSIT AUTHORITY: Install a transmission-based train control system on all passenger train routes.

R-17-018 Open—Initial Response Received
TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to install technology on hi-rail, backhoes, other independently operating pieces of maintenance-of-way equipment, and on the leading and trailing units of sets of maintenance-of-way equipment operated by maintenance workers to provide dispatchers and the dispatch system an independent source of information on the locations of this equipment to prevent unauthorized incursions by trains onto sections of track where maintenance activities are taking place in accordance with the Congressional mandate under the Rail Safety Improvement Act of 2008.

R-18-005 Open—Unacceptable Response
TO THE FEDERAL RAILROAD ADMINISTRATION: Issue an Emergency Order directing railroads to require that when signal suspensions are in effect and a switch has been reported relined for a main track, the next train or locomotive to pass the location must approach the switch location at restricted speed. After the switch position is verified, the train crew must report to the dispatcher that the switch is correctly lined for the main track before trains are permitted to operate at maximum-authorized speed. (Urgent)

R-18-023 Open—Await Response
TO THE AMERICAN PUBLIC TRANSPORTATION ASSOCIATION: Develop performance standards for the use of forward collision avoidance systems technology for light-rail vehicles operating on an urban street environment.

R-97-026 Open—Acceptable Response
TO CSX TRANSPORTATION INC.: Develop and install a positive train separation control system on track segments that have commuter and intercity passenger trains.

Implement a Comprehensive Strategy to Reduce Speeding-Related Crashes

Speeding increases the likelihood of being involved in a crash and intensifies the severity of injuries sustained in a crash. Speeding-related crashes kill more than 10,000 people and cost society more than $52 billion annually. **Proven countermeasures—including automated enforcement technology, vehicle technology, infrastructure design, and education campaigns—must be used more broadly to reduce speeding-related crashes.**

RECOMMENDATION NO. STATUS

Highway

H-05-020 **Open—Acceptable Response**
TO THE TEXAS DEPARTMENT OF TRANSPORTATION: Install variable speed limit signs or implement alternate countermeasures at locations where wet weather can produce stopping distances that exceed the available sight distance.

H-12-020 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop performance standards for advanced speed-limiting technology, such as variable speed limiters and intelligent speed adaptation devices, for heavy vehicles, including trucks, buses, and motorcoaches.

H-12-021 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: After establishing performance standards for advanced speed-limiting technology for heavy commercial vehicles, require that all newly manufactured heavy vehicles be equipped with such devices.

H-17-018 **Open—Acceptable Response**
TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: Complete the actions called for in your 2014 Speed Management Program Plan, and periodically publish status reports on the progress you have made.

H-17-019 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Identify speeding-related performance measures to be used by local law enforcement agencies, including, but not limited to, the numbers and locations of speeding-related crashes of different injury severity levels, speeding citations, and warnings, and establish a consistent method for evaluating data-driven, high-visibility enforcement programs to reduce speeding. Disseminate the performance measures and evaluation method to local law enforcement agencies.

H-17-020 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Identify best practices for communicating with law enforcement officers and the public about the effectiveness of data-driven, high-visibility enforcement programs to reduce speeding, and disseminate the best practices to local law enforcement agencies.

H-17-021 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with the Governors Highway Safety Association, the International Association of Chiefs of Police, and the National Sheriffs' Association to develop and implement a program to increase the adoption of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and improve consistency in law enforcement reporting of speeding-related crashes.

H-17-022 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with the Federal Highway Administration to update the *Speed Enforcement Camera Systems Operational Guidelines* to reflect the latest automated speed enforcement (ASE) technologies and operating practices, and promote the updated guidelines among ASE program administrators.

H-17-023 **Open—Acceptable Alternate Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with the Federal Highway Administration to assess the effectiveness of point-to-point speed enforcement in the United States and, based on the results of that assessment, update the *Speed Enforcement Camera Systems Operational Guidelines*, as appropriate.

H-17-024 **Open—Acceptable Alternate Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Incentivize passenger vehicle manufacturers and consumers to adopt intelligent speed adaptation (ISA) systems by, for example, including ISA in the New Car Assessment Program.

H-17-025 **Open—Acceptable Alternate Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Collaborate with other traffic safety stakeholders to develop and implement an ongoing program to increase public awareness of speeding as a national traffic safety issue. The program should include, but not be limited to, initiating an annual enforcement mobilization directed at speeding drivers.

H-17-026 Open—Acceptable Response
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Establish a program to incentivize state and local speed management activities.

H-17-027 Open—Acceptable Response
TO THE FEDERAL HIGHWAY ADMINISTRATION: Revise Section 2B.13 of the *Manual on Uniform Traffic Control Devices* so that the factors currently listed as optional for all engineering studies are required, require that an expert system such as USLIMITS2 be used as a validation tool, and remove the guidance that speed limits in speed zones should be within 5 mph of the 85th percentile speed.

H-17-029 Open—Acceptable Response
TO THE FEDERAL HIGHWAY ADMINISTRATION: Work with the National Highway Traffic Safety Administration to update the *Speed Enforcement Camera Systems Operational Guidelines* to reflect the latest automated speed enforcement (ASE) technologies and operating practices, and promote the updated guidelines among ASE program administrators.

H-17-030 Open—Acceptable Response
TO THE FEDERAL HIGHWAY ADMINISTRATION: Work with the National Highway Traffic Safety Administration to assess the effectiveness of point-to-point speed enforcement in the United States and, based on the results of that assessment, update the *Speed Enforcement Camera Systems Operational Guidelines*, as appropriate.

H-17-031 Open—Initial Response Received
TO THE SEVEN STATES PROHIBITING AUTOMATED SPEED ENFORCEMENT (MAINE, MISSISSIPPI, NEW HAMPSHIRE, NEW JERSEY, TEXAS, WEST VIRGINIA, AND WISCONSIN): Amend current laws to authorize state and local agencies to use automated speed enforcement.

H-17-032 Open—Initial Response Received
TO THE TWENTY EIGHT STATES WITHOUT AUTOMATED SPEED ENFORCEMENT LAWS (ALABAMA, ALASKA, CALIFORNIA, CONNECTICUT, DELAWARE, FLORIDA, GEORGIA, HAWAII, IDAHO, INDIANA, IOWA, KANSAS, KENTUCKY, MASSACHUSETTS, MICHIGAN, MINNESOTA, MISSOURI, MONTANA, NEBRASKA, NEW MEXICO, NORTH CAROLINA, NORTH DAKOTA, OKLAHOMA, PENNSYLVANIA, SOUTH DAKOTA, VERMONT, VIRGINIA, AND WYOMING): Authorize state and local agencies to use automated speed enforcement.

H-17-033 Open—Initial Response Received
TO THE 15 STATES WITH AUTOMATED SPEED ENFORCEMENT RESTRICTIONS (ARIZONA, ARKANSAS, COLORADO, ILLINOIS, LOUISIANA, MARYLAND, NEVADA, NEW YORK, OHIO, OREGON, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, UTAH, AND WASHINGTON): Amend current laws to remove operational and location restrictions on the use of automated speed enforcement, except where such restrictions are necessary to align with best practices.

H-17-034 Open—Acceptable Response
TO THE GOVERNORS HIGHWAY SAFETY ASSOCIATION: Work with the National Highway Traffic Safety Administration, the International Association of Chiefs of Police, and the National Sheriffs' Association to develop and implement a program to increase the adoption of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and improve consistency in law enforcement reporting of speeding-related crashes.

H-17-035 Open—Initial Response Received
TO THE INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE: Work with the National Highway Traffic Safety Administration, the Governors Highway Safety Association, and the National Sheriffs' Association to develop and implement a program to increase the adoption of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and improve consistency in law enforcement reporting of speeding-related crashes.

H-17-036 Open—Acceptable Response
TO THE NATIONAL SHERIFFS' ASSOCIATION: Work with the National Highway Traffic Safety Administration, the Governors Highway Safety Association, and the International Association of Chiefs of Police to develop and implement a program to increase the adoption of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and improve consistency in law enforcement reporting of speeding-related crashes.

Improve the Safety of Part 135 Aircraft Flight Operations

Air tour, air medical service, air taxi, charter, and on-demand flights are not required to meet the same safety requirements as commercial airlines, leaving them susceptible to disaster. **Part 135 operators must implement safety management systems that include a flight data monitoring program, and they should mandate controlled-flight-into-terrain-avoidance training that addresses current terrain-avoidance warning system technologies.**

RECOMMENDATION NO. STATUS

Aviation

A-07-018 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: In cooperation with Hawaii commercial air tour operators, aviation psychologists, and meteorologists, among others, develop a cue-based training program for commercial air tour pilots in Hawaii that specifically addresses hazardous aspects of local weather phenomena and in-flight decision-making.

A-07-019 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Once a cue-based training program that specifically addresses hazardous aspects of local weather phenomena and weather-related, decision-making issues is developed (as requested in Safety Recommendation A-07-18), require all commercial air tour operators in Hawaii to provide this training to newly hired pilots.

A-07-112 Open—Acceptable Alternate Response
TO THE FEDERAL AVIATION ADMINISTRATION: Ensure that the minimum equipment lists for helicopters used in helicopter emergency medical services operations require that radar altimeters be operable during flights conducted at night.

A-09-092 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Permit the helicopter emergency medical services (HEMS) Aviation Digital Data Service Weather Tool to be used by HEMS operators as an official weather product.

A-10-029 Open—Acceptable Alternate Response
TO THE FEDERAL AVIATION ADMINISTRATION: Require Title 14 *Code of Federal Regulations* Part 121, 135, and 91K operators to (1) routinely download and analyze all available sources of safety information, as part of their flight operational quality assurance program, to identify deviations from established norms and procedures; (2) provide appropriate protections to ensure the confidentiality of the deidentified aggregate data; and (3) ensure that this information is used for safety-related and not punitive purposes.

A-13-012 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Require the installation of a crash-resistant flight recorder system on all newly manufactured turbine-powered, nonexperimental, nonrestricted-category aircraft that are not equipped with a flight data recorder and a cockpit voice recorder and are operating under Title 14 *Code of Federal Regulations* Parts 91, 121, or 135. The crash-resistant flight recorder system should record cockpit audio and images with a view of the cockpit environment to include as much of the outside view as possible, and parametric data per aircraft and system installation, all as specified in Technical Standard Order C197, "Information Collection and Monitoring Systems."

A-13-013 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Require all existing turbine-powered, nonexperimental, nonrestricted-category aircraft that are not equipped with a flight data recorder or cockpit voice recorder and are operating under Title 14 *Code of Federal Regulations* Parts 91, 121, or 135 to be retrofitted with a crash-resistant flight recorder system. The crash-resistant flight recorder system should record cockpit audio and images with a view of the cockpit environment to include as much of the outside view as possible, and parametric data per aircraft and system installation, all as specified in Technical Standard Order C197, "Information Collection and Monitoring Systems."

A-15-007 Open—Unacceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Require that all existing aircraft operated under Title 14 *Code of Federal Regulations* (*CFR*) Part 121 or 135 and currently required to have a cockpit voice recorder and a flight data recorder be retrofitted with a crash-protected cockpit image recording system compliant with Technical Standard Order TSO-C176a, "Cockpit Image Recorder Equipment," TSO-C176a or equivalent. The cockpit image recorder should be equipped with an independent power source consistent with that required for cockpit voice recorders in 14 *CFR* 25.1457. (Supersedes Safety Recommendation A-00-30)

A-15-008 Open—Unacceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Require that all newly manufactured aircraft operated under Title 14 *Code of Federal Regulations* (*CFR*) Part 121 or 135 and required to have a cockpit voice recorder and a flight data recorder also be equipped with a crash-protected cockpit image recording system compliant with Technical Standard Order TSO-C176a, "Cockpit Image Recorder Equipment," or equivalent. The cockpit image recorder should be equipped with an independent power source consistent with that required for cockpit voice recorders in 14 *CFR* 25.1457. (Supersedes Safety Recommendation A-00-31)

A-16-034 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Require all Title 14 *Code of Federal Regulations* Part 135 operators to install flight data recording devices capable of supporting a flight data monitoring program.

A-16-035 Open—Acceptable Alternate Response
TO THE FEDERAL AVIATION ADMINISTRATION: After the action in Safety Recommendation A-16-34 is completed, require all Title 14 *Code of Federal Regulations* Part 135 operators to establish a structured flight data monitoring program that reviews all available data sources to identify deviations from established norms and procedures and other potential safety issues.

A-16-036 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Require all Title 14 *Code of Federal Regulations* Part 135 operators to establish safety management system programs.

A-17-035 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Implement ways to provide effective terrain awareness and warning system (TAWS) protections while mitigating nuisance alerts for single-engine airplanes operated under Title 14 *Code of Federal Regulations* Part 135 that frequently operate at altitudes below their respective TAWS class design alerting threshold.

A-17-037 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Work with members of the Ketchikan air tour industry to improve existing training programs aimed at reducing the risk of weather-related accidents involving continuation of flight under visual flight rules into instrument meteorological conditions, with special attention paid to the human factors issues identified in this investigation, including (1) the need to help pilots better calibrate what constitutes safe weather conditions to conduct flights based on objective standards and requirements, such as set criteria for what landmarks must be clearly visible from which locations in order to proceed on a particular route; (2) the need to help pilots who are new to the area recognize dynamic local weather patterns that can place them in a dangerous situation; and (3) operational influences on pilot decision-making.

A-17-038 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Expand the application of Federal Aviation Administration Order 8900.1, volume 3, chapter 19, section 6, "Safety Assurance System: Flight Training Curriculum Segments," paragraphs 3-1251(B) and 3-1252, which address controlled flight into terrain-avoidance training programs for Title 14 *Code of Federal Regulations* (*CFR*) Part 135 helicopter operations, to all 14 *CFR* Part 135 operations.

A-17-042 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Analyze automatic dependent surveillance-broadcast data from Ketchikan air tour operations on an ongoing basis and meet annually with Ketchikan air tour operators to engage in a nonpunitive discussion of any operational hazards reflected in the data and collaborate on mitigation strategies for any hazards identified.

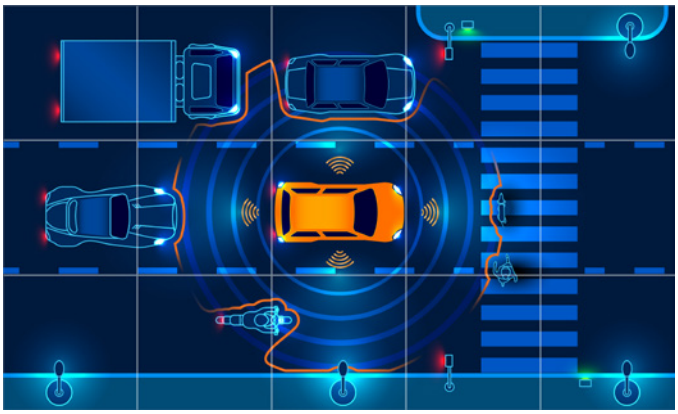
A-17-043 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Develop and implement special operating rules for the Ketchikan air tour industry that include en route visual flight rules weather minimums that are tailored to the industry's unique requirements and are more conservative than those specified in Title 14 *Code of Federal Regulations* Part 135.

A-18-013 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Although controlled flight into terrain (CFIT)-avoidance training programs are not required by federal regulation for Title 14 *Code of Federal Regulations* Part 135 fixed-wing operations, work with Part 135 operators in Alaska to improve any voluntarily implemented training programs aimed at reducing the risk of CFIT accidents involving continuation of flight under visual flight rules (VFR) into instrument meteorological conditions, with special attention paid to the human factors issues identified in recent Alaska accident investigations, including, but not limited to, (1) the challenges of flying in mountainous terrain in Alaska and low-altitude VFR flight in an area subject to rapid changes in weather; and (2) limitations of the Alaska infrastructure, particularly weather observations, communications, and navigation aids.

A-18-014 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Work with Title 14 *Code of Federal Regulations* Part 135 certificate holders that operate under visual flight rules in the aircraft's required terrain awareness and warning system (TAWS) class to (1) ensure that management and pilots are aware of the risks associated with distraction (from continuous nuisance alerts) and complacency (brought about by routine use of the terrain inhibit feature); (2) develop plans for mitigating those risks and minimizing nuisance alerts; and (3) develop procedures that specifically address when pilots should test, inhibit, and uninhibit the TAWS alerts, considering the operator's typical operations and the TAWS manufacturer's guidance.

A-18-016 Open—Await Response
TO THE FEDERAL AVIATION ADMINISTRATION: Install communications equipment throughout Alaska, after determining what would be most effective, to allow increased access to the instrument flight rules system, giving priority to those areas used by Title 14 *Code of Federal Regulations* Part 135 operators.

A-18-017 Open—Await Response
TO THE FEDERAL AVIATION ADMINISTRATION: Ensure that Alaska airports that are served by Title 14 *Code of Federal Regulations* (*CFR*) Part 135 operators and have instrument approaches are equipped with weather-reporting capabilities to enable instrument flight rules operations in accordance with 14 *CFR* 135.225(a).



Increase Implementation of Collision Avoidance Systems in All New Highway Vehicles

Motor vehicle crashes are a leading cause of death and injury in the U.S., and many of them could be prevented with collision avoidance systems that are already available. **Vehicle manufacturers should make this technology standard equipment on all vehicles. And consumers, informed about the technology's capabilities and limitations, should buy vehicles equipped with it.**

RECOMMENDATION NO. STATUS

Highway

H-15-004 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop and apply testing protocols to assess the performance of forward collision avoidance systems in passenger vehicles at various velocities, including high speed and high velocity-differential.

H-15-005 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Complete, as soon as possible, the development and application of performance standards and protocols for the assessment of forward collision avoidance systems in commercial vehicles. (Safety Recommendation H-15-005 supersedes Safety Recommendation H-01-006)

H-15-006 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Expand the New Car Assessment Program 5-star rating system to include a scale that rates the performance of forward collision avoidance systems.

H-15-007 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Once the rating scale, described in Safety Recommendation H-15-6, is established, include the ratings of forward collision avoidance systems on the vehicle Monroney labels.

H-15-008 **Open—Acceptable Response**
TO PASSENGER VEHICLE, TRUCK-TRACTOR, MOTORCOACH, AND SINGLE-UNIT TRUCK MANUFACTURERS: Install forward collision avoidance systems that include, at a minimum, a forward collision warning component, as standard equipment on all new vehicles.

H-15-009 **Open—Acceptable Response**
TO PASSENGER VEHICLE, TRUCK-TRACTOR, MOTORCOACH, AND SINGLE-UNIT TRUCK MANUFACTURERS: Once the National Highway Traffic Safety Administration publishes performance standards for autonomous emergency braking, install systems meeting those standards on all new vehicles.

H-18-008 **Open—Await Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Require all new school buses to be equipped with collision avoidance systems and automatic emergency braking technologies.

H-18-019 **Open—Await Response**
TO BLUE BIRD CORPORATION, COLLINS INDUSTRIES, INC., IC BUS, STARCRAFT BUS, THOMAS BUILT BUSES, INC., TRANS TECH, AND VAN–CON, INC.: Install a collision avoidance system with automatic emergency braking as standard equipment on all newly manufactured school buses.

H-18-029 **Open—Await Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Incorporate motorcycles in the development of performance standards for passenger vehicle crash warning and prevention systems.

H-18-043 **Open—Await Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Incorporate pedestrian safety systems, including pedestrian collision avoidance systems and other more-passive safety systems, into the New Car Assessment Program.

H-18-044 **Open—Await Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop a detailed pedestrian crash data set that represents the current, complete range of crash types and that can be used for local and state analysis and to model and simulate pedestrian collision avoidance systems.

Reduce Fatigue-Related Accidents

Fatigue is a pervasive problem in transportation that degrades a person's ability to stay awake, alert, and attentive to the demands of safely controlling a vehicle, vessel, aircraft, or train. **We are calling for a comprehensive approach to combatting fatigue in transportation, focusing on research, education, and training; technology; sleep disorder treatment; hours-of-service regulations; and on- and off-duty scheduling policies and practices.**

RECOMMENDATION NO. STATUS

Aviation

A-13-003 Open—Acceptable Alternate Response
TO THE FEDERAL AVIATION ADMINISTRATION: Require that personnel performing maintenance or inspections under Title 14 *Code of Federal Regulations* Parts 121, 135, 145, and 91 Subpart K receive initial and recurrent training on human factors affecting maintenance that includes a review of the causes of human error, including fatigue, its effects on performance, and actions individuals can take to prevent the development of fatigue.

A-14-072 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Require principal operations inspectors to ensure that operators with flight crews performing Title 14 *Code of Federal Regulations* Part 121, 135, and 91 subpart K overnight operations brief the threat of fatigue before each departure, particularly those occurring during the window of circadian low.

A-14-087 Open—Acceptable Response
TO UPS (UNITED PARCEL SERVICE) AIRLINES: Work with the Independent Pilots Association to conduct an independent review of the fatigue event reporting system to determine the program's effectiveness as a nonpunitive mechanism to identify and effectively address the reported fatigue issues. Based on the findings, implement changes to enhance the safety effectiveness of the program.

A-14-088 Open—Acceptable Response
TO UPS (UNITED PARCEL SERVICE) AIRLINES: Work with the Independent Pilots Association to counsel pilots who call in fatigued and whose sick bank is debited to understand why the fatigue call was made and how to prevent it from recurring.

A-14-089 Open—Acceptable Response
TO THE INDEPENDENT PILOTS ASSOCIATION: Work with UPS to conduct an independent review of the fatigue event reporting system to determine the program's effectiveness as a nonpunitive mechanism to identify and effectively address the reported fatigue issues. Based on the findings, implement changes to enhance the safety effectiveness of the program.

A-14-090 Open—Acceptable Response
TO THE INDEPENDENT PILOTS ASSOCIATION: Work with UPS to counsel pilots who call in fatigued and whose sick bank is debited to understand why the fatigue call was made and how to prevent it from recurring.

A-18-029 Open—Await Response
TO TRANSPORT CANADA: Revise current regulations to address the potential for fatigue for pilots on reserve duty who are called to operate evening flights that would extend into the pilots' window of circadian low.

A-94-194 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Revise the Federal Aviation Regulations contained in Title 14 *Code of Federal Regulations* Part 135 to require that pilot flight time accumulated in all company flying conducted after revenue operations—such as training and check flights, ferry flights and repositioning flights—be included in the crewmember's total flight time accrued during revenue operations.

A-95-113 Open—Acceptable Response
TO THE FEDERAL AVIATION ADMINISTRATION: Finalize the review of current flight and duty time regulations and revise the regulations, as necessary, within 1 year to ensure that flight and duty time limitations take into consideration research findings in fatigue and sleep issues. The new regulations should prohibit air carriers from assigning flightcrews to flights conducted under Title 14 *Code of Federal Regulations* (*CFR*) Part 91 unless the flightcrews meet the flight and duty time limitations of 14 *CFR* Part 121 or other appropriate regulations.

Highway

H-09-009 Open—Await Response
TO THE AMERICAN BUS ASSOCIATION AND THE UNITED MOTORCOACH ASSOCIATION: Inform your members through Web sites, newsletters, and conferences of the circumstances of the Mexican Hat, Utah, accident. The prepared information should encourage charter operators to develop written contingency plans for each charter to ensure that trip planning is in place in the event of driver fatigue, incapacitation, or illness or in the event of trip delays necessitating replacement drivers to avoid hours-of-service violations and inform drivers of their trip's contingency plans. The prepared information should also provide information about the risks of operating in rural areas without wireless telephone coverage and advise members to carry mobile cellular amplifiers or satellite-based devices to communicate emergency events.

H-09-010 **Open—Acceptable Response**
TO ARROW STAGE LINES: Develop written contingency plans for each charter to ensure that trip planning is in place in the event of driver fatigue, incapacitation, or illness or in the event of trip delays necessitating replacement drivers to avoid hours-of-service violations and inform drivers of their trip's contingency plans.

H-09-015 **Open—Unacceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Implement a program to identify commercial drivers at high risk for obstructive sleep apnea and require that those drivers provide evidence through the medical certification process of having been appropriately evaluated and, if treatment is needed, effectively treated for that disorder before being granted unrestricted medical certification.

H-09-016 **Open—Acceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Develop and disseminate guidance for commercial drivers, employers, and physicians regarding the identification and treatment of individuals at high risk of obstructive sleep apnea (OSA), emphasizing that drivers who have OSA that is effectively treated are routinely approved for continued medical certification.

H-12-029 **Open—Unacceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Establish an ongoing program to monitor, evaluate, report on, and continuously improve fatigue management programs implemented by motor carriers to identify, mitigate, and continuously reduce fatigue-related risks for drivers. (This safety recommendation supersedes Safety Recommendation H-08-14.)

H-12-030 **Open—Unacceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Incorporate scientifically based fatigue mitigation strategies into the hours-of-service regulations for passenger-carrying drivers who operate during the nighttime window of circadian low.

H-15-022 **Open—Acceptable Response**
TO WAL-MART STORES, INC. (ORIGINALLY ISSUED TO WALMART TRANSPORTATION LLC): Develop and implement a fatigue management program based on the North American Fatigue Management Program guidelines.

H-17-049 **Open—Acceptable Alternate Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Make the 2016 Medical Review Board/Motor Carrier Safety Advisory Committee recommendations on screening for obstructive sleep apnea (OSA) easily accessible to certified medical examiners, and instruct the examiners to use the recommendations as guidance when evaluating commercial drivers for OSA risk.

H-17-056 **Open—Await Response**
TO THE UNITED STATES DEPARTMENT OF LABOR: Develop and disseminate guidelines and training material for agricultural employers and farm labor contractors on the dangers of driving while tired and on strategies for managing driver fatigue.

Marine

M-16-004 **Open—Acceptable Response**
TO THE UNITED STATES COAST GUARD: Address the risks associated with watch stander fatigue by implementing Commandant Instruction 3500.2, Crew Endurance Management, issued on March 30, 2006, in all operational units.

Railroad

R-06-003 **Open—Acceptable Response**
TO THE FEDERAL TRANSIT ADMINISTRATION: Require transit agencies, through the system safety program and hazard management process if necessary, to ensure that the time off between daily tours of duty, including regular and overtime assignments, allows train operators to obtain at least 8 hours of uninterrupted sleep.

R-09-011 **Open—Acceptable Response**
TO 46 US RAIL TRANSIT AGENCIES: Establish a program to identify operators who are at high risk for obstructive sleep apnea or other sleep disorders and require that such operators be appropriately evaluated and treated.

R-12-016 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to medically screen employees in safety-sensitive positions for sleep apnea and other sleep disorders.

R-12-017 **Open—Acceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Establish an ongoing program to monitor, evaluate, report on, and continuously improve fatigue management systems implemented by operating railroads to identify, mitigate, and continuously reduce fatigue-related risks for personnel performing safety-critical tasks, with particular emphasis on biomathematical models of fatigue.

R-12-018 **Open—Acceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Conduct research on new and existing methods that can identify fatigue and mitigate performance decrements associated with fatigue in on-duty train crews.

R-12-019 **Open—Acceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Require the implementation of methods that can identify fatigue and mitigate performance decrements associated with fatigue in on-duty train crews that are identified or developed in response to Safety Recommendation R-12-18.

R-12-025 **Open—Acceptable Alternate Response**
TO THE BNSF RAILWAY: Require all employees and managers who perform or supervise safety-critical tasks to complete fatigue training on an annual basis and document when they have received this training.

R-12-026 **Open—Unacceptable Response**
TO THE BNSF RAILWAY: Medically screen employees in safety-sensitive positions for sleep apnea and other sleep disorders.

R-13-021 Open—Unacceptable Response
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop medical certification regulations for employees in safety-sensitive positions that include, at a minimum, (1) a complete medical history that includes specific screening for sleep disorders, a review of current medications, and a thorough physical examination, (2) standardization of testing protocols across the industry, and (3) centralized oversight of certification decisions for employees who fail initial testing; and consider requiring that medical examinations be performed by those with specific training and certification in evaluating medication use and health issues related to occupational safety on railroads. [This recommendation supersedes Safety Recommendations R-02-24 through -26.]

R-14-062 Open—Acceptable Response
TO METRO-NORTH RAILROAD: Revise your medical protocols for employees in safety-sensitive positions to include specific protocols on sleep disorders, including obstructive sleep apnea.

R-14-064 Open—Acceptable Response
TO METRO-NORTH RAILROAD: Develop and implement protocols to routinely screen and fully evaluate your safety-sensitive employees for sleep disorders and ensure that such disorders are adequately addressed if diagnosed.

R-14-065 Open—Acceptable Response
TO THE LONG ISLAND RAILROAD: Develop and implement protocols to routinely screen and fully evaluate your safety-sensitive employees for sleep disorders and ensure that such disorders are adequately addressed, if diagnosed.

R-14-071 Open—Unacceptable Response
TO THE ASSOCIATION OF AMERICAN RAILROADS, THE AMERICAN PUBLIC TRANSPORTATION ASSOCIATION, THE AMERICAN SHORT LINE AND REGIONAL RAILROAD ASSOCIATION, THE BROTHERHOOD OF LOCOMOTIVE ENGINEERS, AND THE INTERNATIONAL ASSOCIATION OF SHEET METAL, AIR, RAIL AND TRANSPORTATION WORKERS: Collaborate to develop a model national labor agreement that supports effective programs for addressing sleep disorders and other medical conditions among safety-sensitive train operating personnel.

R-15-018 Open—Acceptable Response
TO THE FEDERAL TRANSIT ADMINISTRATION: Develop a work scheduling program for rail transit agencies that incorporates fatigue science—such as validated biomathematical models of fatigue—and provides for the management of personnel fatigue risks, and implement the program through the state safety oversight program.

R-15-019 Open—Acceptable Response
TO THE FEDERAL TRANSIT ADMINISTRATION: Establish (through the state safety oversight program) scientifically based hours-of-service regulations that set limits on hours of service, provide predictable work and rest schedules, and consider circadian rhythms and human sleep and rest requirements.

R-15-020 Open—Acceptable Response
TO THE FEDERAL TRANSIT ADMINISTRATION: Identify the necessary training and certification needs for work schedulers in the rail transit industry and require the transit agencies—through the state safety oversight program—to provide additional training or certification for their work schedulers.

R-15-021 Open—Acceptable Response
TO THE FEDERAL TRANSIT ADMINISTRATION: Require (through the state safety oversight program) rail transit employees who develop work schedules to complete initial and recurrent training based on current fatigue science to identify and mitigate work schedule risks that contribute to operator fatigue.

R-16-043 Open—Unacceptable Response
TO THE FEDERAL RAILROAD ADMINISTRATION: Require freight railroads to use validated biomathematical fatigue models, similar to the models used by passenger railroads, to develop work schedules that do not pose an excessive risk of fatigue.

R-16-044 Open—Unacceptable Response
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop and enforce medical standards that railroad employees in safety-sensitive positions diagnosed with sleep disorders must meet to be considered fit for duty.

R-16-045 Open—Await Response
TO BNSF RAILWAY, CANADIAN NATIONAL RAILWAY, CANADIAN PACIFIC RAILWAY, CSX TRANSPORTATION, KANSAS CITY SOUTHERN RAILWAY, NORFOLK SOUTHERN RAILWAY, INTERCITY RAILROADS, AND COMMUTER RAILROADS: Review and revise as necessary your medical rules, standards, or protocols to ensure you are informed of any diagnosed sleep disorders that employees in safety-sensitive positions must report and, when an employee makes such a report, perform periodic evaluations to ensure the condition is appropriately treated and the employee is fit for duty.

R-16-046 Open—Await Response
TO CLASS I RAILROADS: Revise your scheduling practices for train crews and implement science-based tools, such as validated biomathematical models, to reduce start time variability that results in irregular work-rest cycles and fatigue.

R-16-047 Open—Acceptable Response
TO UNION PACIFIC RAILROAD: Revise your medical rules to add any diagnosed sleep disorder to the list of medical conditions that employees in safety-sensitive positions must report and, when an employee makes such a report, perform periodic evaluations to ensure the condition is appropriately treated and the employee is fit for duty.

R-18-004 Open—Initial Response Received
TO NEW JERSEY TRANSIT AND METROPOLITAN TRANSPORTATION AUTHORITY: Ensure that operator impairment due to medical conditions, including obstructive sleep apnea, is part of the hazard management portion of your system safety program plan.

Require Medical Fitness—Screen for and Treat Obstructive Sleep Apnea

Undiagnosed and untreated obstructed sleep apnea continues to be deadly on our roads and rails, causing too many preventable accidents. **We want to see mandatory screening and treatment for obstructive sleep apnea for rail and highway personnel in safety-sensitive positions.**

RECOMMENDATION NO. STATUS

Highway

H-09-015 **Open—Unacceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Implement a program to identify commercial drivers at high risk for obstructive sleep apnea and require that those drivers provide evidence through the medical certification process of having been appropriately evaluated and, if treatment is needed, effectively treated for that disorder before being granted unrestricted medical certification.

H-09-016 **Open—Acceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Develop and disseminate guidance for commercial drivers, employers, and physicians regarding the identification and treatment of individuals at high risk of obstructive sleep apnea (OSA), emphasizing that drivers who have OSA that is effectively treated are routinely approved for continued medical certification.

H-17-049 **Open—Acceptable Alternate Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Make the 2016 Medical Review Board/Motor Carrier Safety Advisory Committee recommendations on screening for obstructive sleep apnea (OSA) easily accessible to certified medical examiners, and instruct the examiners to use the recommendations as guidance when evaluating commercial drivers for OSA risk.

Railroad

R-09-011 **Open—Acceptable Response**
TO 46 US RAIL TRANSIT AGENCIES: Establish a program to identify operators who are at high risk for obstructive sleep apnea or other sleep disorders and require that such operators be appropriately evaluated and treated.

R-12-016 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to medically screen employees in safety-sensitive positions for sleep apnea and other sleep disorders.

R-12-026 **Open—Unacceptable Response**
TO THE BNSF RAILWAY: Medically screen employees in safety-sensitive positions for sleep apnea and other sleep disorders.

R-13-021 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop medical certification regulations for employees in safety-sensitive positions that include, at a minimum, (1) a complete medical history that includes specific screening for sleep disorders, a review of current medications, and a thorough physical examination, (2) standardization of testing protocols across the industry, and (3) centralized oversight of certification decisions for employees who fail initial testing; and consider requiring that medical examinations be performed by those with specific training and certification in evaluating medication use and health issues related to occupational safety on railroads. [This recommendation supersedes Safety Recommendations R-02-24 through -26.]

R-14-062 **Open—Acceptable Response**
TO METRO-NORTH RAILROAD: Revise your medical protocols for employees in safety-sensitive positions to include specific protocols on sleep disorders, including obstructive sleep apnea.

R-14-064 **Open—Acceptable Response**
TO METRO-NORTH RAILROAD: Develop and implement protocols to routinely screen and fully evaluate your safety-sensitive employees for sleep disorders and ensure that such disorders are adequately addressed if diagnosed.

R-14-065 **Open—Acceptable Response**
TO THE LONG ISLAND RAILROAD: Develop and implement protocols to routinely screen and fully evaluate your safety-sensitive employees for sleep disorders and ensure that such disorders are adequately addressed, if diagnosed.

R-14-071 **Open—Unacceptable Response**
TO THE ASSOCIATION OF AMERICAN RAILROADS, THE AMERICAN PUBLIC TRANSPORTATION ASSOCIATION, THE AMERICAN SHORT LINE AND REGIONAL RAILROAD ASSOCIATION, THE BROTHERHOOD OF LOCOMOTIVE ENGINEERS, AND THE INTERNATIONAL ASSOCIATION OF SHEET METAL, AIR, RAIL AND TRANSPORTATION WORKERS: Collaborate to develop a model national labor agreement that supports effective programs for addressing sleep disorders and other medical conditions among safety-sensitive train operating personnel.

R-16-044 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop and enforce medical standards that railroad employees in safety-sensitive positions diagnosed with sleep disorders must meet to be considered fit for duty.

R-16-045 **Open—Await Response**

TO BNSF RAILWAY, CANADIAN NATIONAL RAILWAY, CANADIAN PACIFIC RAILWAY, CSX TRANSPORTATION, KANSAS CITY SOUTHERN RAILWAY, NORFOLK SOUTHERN RAILWAY, INTERCITY RAILROADS, AND COMMUTER RAILROADS: Review and revise as necessary your medical rules, standards, or protocols to ensure you are informed of any diagnosed sleep disorders that employees in safety-sensitive positions must report and, when an employee makes such a report, perform periodic evaluations to ensure the condition is appropriately treated and the employee is fit for duty.

R-16-047 **Open—Acceptable Response**

TO UNION PACIFIC RAILROAD: Revise your medical rules to add any diagnosed sleep disorder to the list of medical conditions that employees in safety-sensitive positions must report and, when an employee makes such a report, perform periodic evaluations to ensure the condition is appropriately treated and the employee is fit for duty.

R-18-004 **Open—Initial Response Received**

TO NEW JERSEY TRANSIT AND METROPOLITAN TRANSPORTATION AUTHORITY: Ensure that operator impairment due to medical conditions, including obstructive sleep apnea, is part of the hazard management portion of your system safety program plan.

Strengthen Occupant Protection

Seat belts, child car seats, and child safety restraint systems in highway vehicles and on airplanes reduce the risk of injury and death. Restraints in motor vehicles saved 14,668 lives in 2016 alone. **We want all states to enact laws and regulations requiring all motor vehicle occupants to use seatbelts, and allowing primary enforcement of seat belt laws for all vehicle occupants. We also want to see requirements for enhanced vehicle design to provide better occupant protection, and for general aviation aircraft owners to install shoulder harness systems.**

RECOMMENDATION NO. STATUS

Aviation

A-15-012 **Open—Acceptable Response**
TO THE FEDERAL AVIATION ADMINISTRATION: Require, for all newly manufactured rotorcraft regardless of the design's original certification date, that the fuel systems meet the crashworthiness requirements of Title 14 *Code of Federal Regulations* 27.952 or 29.952, "Fuel System Crash Resistance."

A-16-011 **Open—Acceptable Response**
TO THE EUROPEAN AVIATION SAFETY AGENCY: Once Airbus Helicopters completes development of a retrofit kit to incorporate a crash-resistant fuel system into AS350 B3e and similarly designed variants, prioritize its approval to accelerate its availability to operators.

A-16-025 **Open—Acceptable Response**
TO THE FEDERAL AVIATION ADMINISTRATION: Require Title 14 *Code of Federal Regulations* Part 121 operators to provide (1) guidance that instructs flight attendants to remain at their assigned exits and actively monitor exit availability in all non-normal situations in case an evacuation is necessary and (2) flight attendant training programs that include scenarios requiring crew coordination regarding active monitoring of exit availability and evacuating after a significant event that involves a loss of communications.

A-16-026 **Open—Unacceptable Response**
TO THE FEDERAL AVIATION ADMINISTRATION: Develop best practices related to evacuation communication, coordination, and decision-making during emergencies through the establishment of an industry working group and then issue guidance for Title 14 *Code of Federal Regulations* Part 121 air carriers to use to improve flight and cabin crew performance during evacuations.

A-17-012 **Open—Acceptable Response**
TO THE ASSOCIATION OF CRITICAL CARE TRANSPORT: In collaboration with the Association of Air Medical Services and the Air Medical Operators Association, establish a working group to develop and distribute guidelines, for those who purchase, lease, or contract for helicopters, regarding the equipment and systems that would enhance the helicopters' crashworthiness, including, at a minimum, a crash-resistant fuel system and energy-absorbing seats.

A-17-013 **Open—Await Response**
TO THE ASSOCIATION OF AIR MEDICAL SERVICES AND AIR MEDICAL OPERATORS ASSOCIATION: Work with the Association of Critical Care Transport to establish a working group to develop and distribute guidelines, for those who purchase, lease, or contract for helicopters, regarding the equipment and systems that would enhance the helicopters' crashworthiness, including, at a minimum, a crash-resistant fuel system and energy-absorbing seats.

A-18-009 **Open—Acceptable Response**
TO THE FEDERAL AVIATION ADMINISTRATION: Conduct research to (1) measure and evaluate the effects of carry-on baggage on passenger deplaning times and safety during an emergency evacuation and (2) identify effective countermeasures to reduce any determined risks, and implement the countermeasures.

Highway

H-11-036 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Modify Federal Motor Vehicle Safety Standard 217 to require that all emergency exits on school buses be easily opened and remain open during an emergency evacuation.

H-11-038 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: To cover the interim period until Federal Motor Vehicle Safety Standard 217 is modified as specified in Safety Recommendations H-11-36 and -37, provide the states with guidance on how to minimize potential evacuation delays that could be caused by protruding latch mechanisms on emergency exit windows and by exit windows that require additional manual assistance to remain open during egress.

H-11-045 **Open—Initial Response Received**
TO THE STATE OF MISSOURI: Revise your bus evacuation regulations to require that pupils traveling to an activity or on a field trip in a school bus or a school-chartered bus be instructed in safe riding practices and on the location and operation of emergency exits prior to starting the trip.

H-12-022 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Evaluate the effects of seat spacing and armrests as factors for potential occupant injury, and if safer spacing or armrest configurations are identified, develop and implement appropriate guidelines.

H-13-032 **Open—Await Response**
TO THE STATES OF CALIFORNIA, FLORIDA, LOUISIANA, NEW JERSEY, NEW YORK, AND TEXAS: Develop: (1) a handout for your school districts to distribute annually to students and parents about the importance of the proper use of all types of passenger seat belts on school buses, including the potential harm of not wearing a seat belt or wearing one but not adjusting it properly; and (2) training procedures for schools to follow during the twice yearly emergency drills to show students how to wear their seat belts properly.

H-13-033 **Open—Await Response**
TO THE STATES OF CALIFORNIA, FLORIDA, LOUISIANA, NEW JERSEY, NEW YORK, AND TEXAS: Upon publication of the National School Transportation Specifications and Procedures document, revise the handout and training procedures developed in Safety Recommendation H-13-32 to align with the national procedures as appropriate.

H-13-035 **Open—Acceptable Response**
TO THE NATIONAL ASSOCIATION OF STATE DIRECTORS OF PUPIL TRANSPORTATION SERVICES, NATIONAL ASSOCIATION FOR PUPIL TRANSPORTATION, NATIONAL SCHOOL TRANSPORTATION ASSOCIATION, SCHOOL BUS MANUFACTURERS TECHNICAL COUNCIL, AND NATIONAL SAFETY COUNCIL, SCHOOL TRANSPORTATION SECTION: Develop guidelines and include them in the next update of the National School Transportation Specifications and Procedures to assist schools in training bus drivers, students, and parents on the importance and proper use of school bus seat belts, including manual lap belts, adjustable lap and shoulder belts, and flexible seating systems.

H-13-036 **Open—Acceptable Alternate Response**
TO THE NATIONAL ASSOCIATION OF STATE DIRECTORS OF PUPIL TRANSPORTATION SERVICES, NATIONAL ASSOCIATION FOR PUPIL TRANSPORTATION, AND NATIONAL SCHOOL TRANSPORTATION ASSOCIATION: Provide your members with educational materials on lap and shoulder belts providing the highest level of protection for school bus passengers, and advise states or school districts to consider this added safety benefit when purchasing seat belt-equipped school buses.

H-13-037 **Open—Acceptable Alternate Response**
TO THE SCHOOL BUS MANUFACTURERS TECHNICAL COUNCIL: Develop a recommended practice for establishing and safeguarding the structural integrity of the entire school bus seating and restraint system, including the seat pan attachment to the seat frame, in severe crashes—in particular, those involving lateral impacts with vehicles of large mass.

H-15-010 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop requirements addressing the minimum aisle width for safe evacuation from all buses, including those with moveable seats.

H-15-020 **Open—Await Response**
TO THE NATIONAL LIMOUSINE ASSOCIATION: Develop and distribute guidelines to your member operators urging them, during pretrip safety briefings, to (1) direct passengers to use seat belts where required by law and strongly encourage passengers to use seat belts where not required by law, and (2) encourage passengers to use properly adjusted head restraints.

H-15-042 **Open—Await Response**
TO THE FIFTY STATES, DISTRICT OF COLUMBIA, AND PUERTO RICO: Enact legislation that provides for primary enforcement of a mandatory seat belt use law for all vehicle seating positions equipped with a passenger restraint system. (Safety Recommendation H-15-042 supersedes Safety Recommendation H-97-2)

H-17-001 **Open—Await Response**
TO MOTOR COACH INDUSTRIES INTERNATIONAL, INC.: Evaluate and, if appropriate, modify the driver and passenger floor structure design on new motorcoaches to prevent driver seat separation during crashes.

H-17-008 **Open—Await Response**
TO THE AMERICAN BUS ASSOCIATION AND THE UNITED MOTORCOACH ASSOCIATION: Encourage member passenger-carrying companies to (1) establish procedures to ensure that the seat belts on all buses are regularly inspected to maintain their functionality and accessibility, and (2) provide pretrip safety briefings emphasizing the benefits of seat belt use.

H-17-012 **Open—Acceptable Response**
TO GREYHOUND LINES, INC.: Provide pretrip safety briefings at all stops prior to departure when taking on new passengers, which describe the use of the emergency exits and the benefits of wearing seat belts.

H-17-061 **Open—Acceptable Response**
TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Work with SAE International and the National Highway Traffic Safety Administration to improve truck-tractor side-mounted fuel tank crashworthiness to prevent catastrophic tank ruptures and limit postcollision fuel spillage, and develop and promulgate an updated standard.

H-17-062 **Open—Acceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with SAE International and the Federal Motor Carrier Safety Administration to improve truck-tractor side-mounted fuel tank crashworthiness to prevent catastrophic tank ruptures and limit postcollision fuel spillage, and develop and promulgate an updated standard.

H-17-065 **Open—Await Response**
TO SAE INTERNATIONAL: Work with the Federal Motor Carrier Safety Administration and the National Highway Traffic Safety Administration to improve truck-tractor side-mounted fuel tank crashworthiness to prevent catastrophic tank ruptures and limit postcollision fuel spillage, and develop and promulgate an updated standard.

H-18-009 **Open—Await Response**
TO THE STATES OF FLORIDA, LOUISIANA, NEW JERSEY, AND NEW YORK: Amend your statutes to upgrade the seat belt requirement from lap belts to lap/shoulder belts for all passenger seating positions in new large school buses in accordance with Federal Motor Vehicle Safety Standard 222.

Strengthen Occupant Protection — *continued*

H-18-010 **Open—Await Response**
TO THE STATES OF ALABAMA, ALASKA, ARIZONA, COLORADO, CONNECTICUT, DELAWARE, GEORGIA, HAWAII, IDAHO, ILLINOIS, INDIANA, IOWA, KANSAS, MAINE, MARYLAND, MICHIGAN, MINNESOTA, MISSISSIPPI, MISSOURI, MONTANA, NEBRASKA, NEW HAMPSHIRE, NEW MEXICO, NORTH CAROLINA, NORTH DAKOTA, OHIO, OKLAHOMA, OREGON, RHODE ISLAND, SOUTH CAROLINA, SOUTH DAKOTA, TENNESSEE, UTAH, VERMONT, WASHINGTON, WEST VIRGINIA, WISCONSIN, AND WYOMING; THE COMMONWEALTHS OF KENTUCKY, MASSACHUSETTS, PENNSYLVANIA, AND VIRGINIA; THE DISTRICT OF COLUMBIA; AND THE TERRITORY OF PUERTO RICO: Enact legislation to require that all new large school buses be equipped with passenger lap/shoulder belts for all passenger seating positions in accordance with Federal Motor Vehicle Safety Standard 222.

H-18-058 **Open—Await Response**
TO THE NATIONAL TRAFFICS SAFETY ADMINISTRATION: Amend Federal Motor Vehicle Safety Standard 210 to increase the minimum anchorage spacing for individual seat belt assemblies, taking into account the dynamic testing of seat belt designs, seat belt fit, and vehicle configuration.

H-18-059 **Open—Await Response**
TO THE NATIONAL TRAFFIC SAFETY ADMINISTRATION: Amend Federal Motor Vehicle Safety Standard 208 to require lap/shoulder belts for each passenger seating position on all new buses with a gross vehicle weight rating of more than 10,000 pounds but not greater than 26,000 pounds.

H-18-062 **Open—Await Response**
TO MEDIUM-SIZE BUS MANUFACTURERS ARBOC SPECIALTY VEHICLES, LLC; COACH & EQUIPMENT MANUFACTURING CORPORATION; REV GROUP, INC.; DIAMOND COACH CORPORATION; FOREST RIVER, INC.; GIRARDIN BLUE BIRD; SVO GROUP, INC.; AND THOMAS BUILT BUSES: Install lap/shoulder belts in all seating positions as standard, rather than optional, equipment in all newly manufactured medium-size buses.

H-18-063 **Open—Await Response**
TO THE SEAT MANUFACTURERS FREEDMAN SEATING COMPANY AND HSM TRANSPORTATION SOLUTIONS: Supply seating systems equipped with lap/shoulder belts as standard, rather than optional, equipment for medium-size buses.

H-96-014 **Open—Acceptable Response**
TO THE 50 STATES, THE 5 US TERRITORIES, AND THE DISTRICT OF COLUMBIA: Review existing laws and enact legislation, if needed, that would: ensure that children up to 8 years old are required by the state's mandatory child restraint use law to use child restraint systems and booster seats.

H-99-009 **Open—Unacceptable Response**
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 remain open during an emergency evacuation when a motorcoach is upright or at unusual attitudes.

H-99-049 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Expand your research on current advanced glazing to include its applicability to motorcoach occupant ejection prevention, and revise window glazing requirements for newly manufactured motorcoaches based on the results of this research.

H-99-050 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: In 2 years, develop performance standards for motorcoach roof strength that provide maximum survival space for all seating positions and that take into account current typical motorcoach window dimensions.

H-99-051 **Open—Unacceptable Response**
TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Once performance standards have been developed for motorcoach roof strength, require newly manufactured motorcoaches to meet those standards.

Marine

M-16-026 **Open—Acceptable Response**
TO THE UNITED STATES COAST GUARD: Amend Navigation and Vessel Inspection Circular 1-01 to ensure that (1) amphibious passenger vehicle (APV) operators tell passengers that seat belts must not be worn while the vessel/vehicle is operated in the water and (2) before the APV enters the water or departs the dock, the master or other crewmember visually checks that each passenger has unbuckled his or her seat belt.

M-16-027 **Open—Acceptable Response**
TO THE UNITED STATES COAST GUARD: Distribute a safety alert on amphibious passenger vehicle operations that addresses the role of risk assessment to mitigate driver distraction, as well as the need to tell passengers to remove seat belts before waterborne operations begin.

Railroad

R-12-021 **Open—Acceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Revise Title 49 *Code of Federal Regulations* Part 229 to ensure the protection of the occupants of isolated locomotive operating cabs in the event of a collision. Make the revision applicable to all locomotives, including the existing fleet and those newly constructed, rebuilt, refurbished, and overhauled, unless the cab will never be occupied.

R-14-074 **Open—Acceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop a performance standard to ensure that windows (e.g., glazing, gaskets, and any retention hardware) are retained in the window opening structure during an accident and incorporate the standard into Title 49 *Code of Federal Regulations* (*CFR*) 238.221 and 49 *CFR* 238.421 to require that passenger railcars meet this standard.

R-15-001 **Open—Unacceptable Response**
TO THE FEDERAL RAILROAD ADMINISTRATION: Revise Title 49 *Code of Federal Regulations* 238.213 to require the existing forward-end corner post strength requirements for the back-end corner posts of passenger railcars.

R-16-035 Open—Initial Response Received
TO THE FEDERAL RAILROAD ADMINISTRATION: Conduct research to evaluate the causes of passenger injuries in passenger railcar derailments and overturns and evaluate potential methods for mitigating those injuries, such as installing seat belts in railcars and securing potential projectiles.

R-16-036 Open—Initial Response Received
TO THE FEDERAL RAILROAD ADMINISTRATION: When the research specified in Safety Recommendation R-16-35 identifies safety improvements, use the findings to develop occupant protection standards for passenger railcars to mitigate passenger injuries likely to occur during derailments and overturns.

If acted upon,
these recommendations
will save lives and improve
transportation safety.

For more details and
a complete history of
action or inaction on these
recommendations, see our
Safety Recommendations
database at **ntsb.gov**.

AVIATION | HIGHWAY | RAILROAD | MARINE | PIPELINE

Critical changes needed to reduce transportation accidents, injuries, and fatalities

2019–2020 NTSB MOST WANTED LIST OF TRANSPORTATION SAFETY IMPROVEMENTS

Eliminate Distractions

Improve the Safety of Part 135 Aircraft Flight Operations

End Alcohol and Other Drug Impairment

Increase Implementation of Collision Avoidance Systems in All New Highway Vehicles

Ensure the Safe Shipment of Hazardous Materials

Reduce Fatigue-Related Accidents

Fully Implement Positive Train Control

Require Medical Fitness—Screen for and Treat Obstructive Sleep Apnea

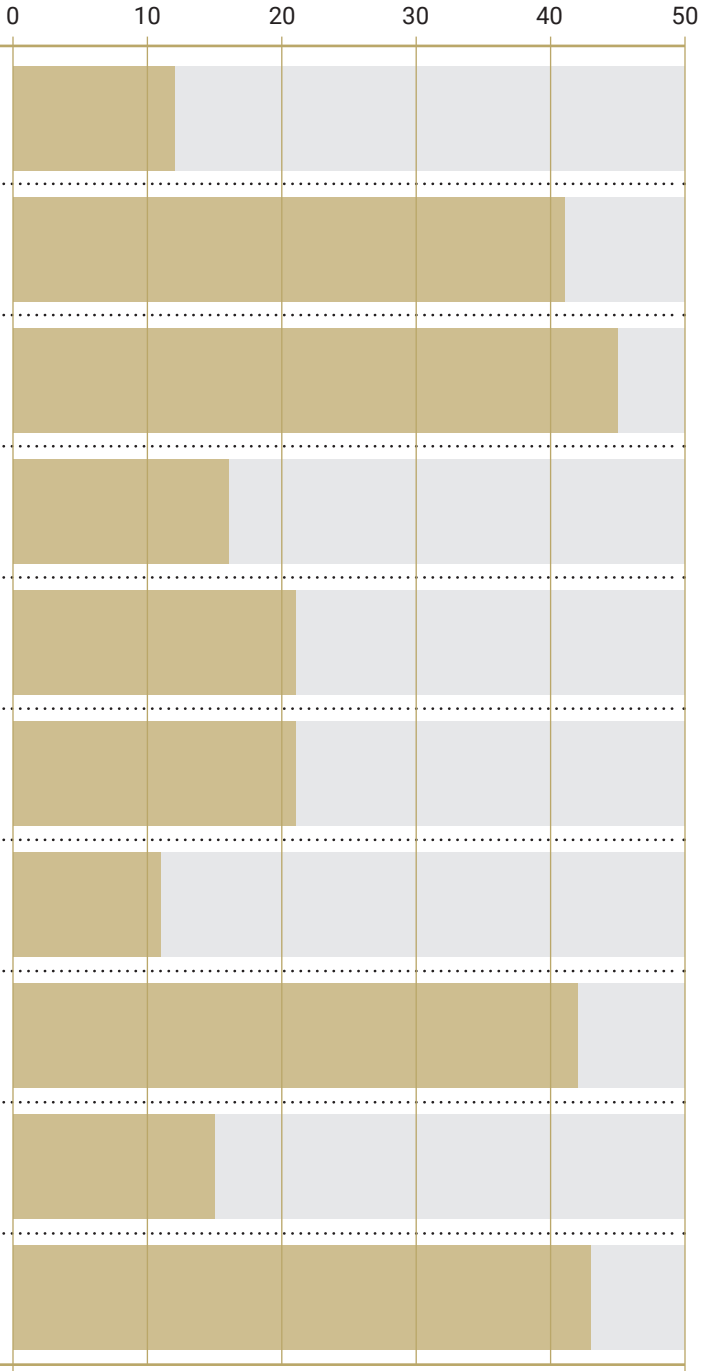
Implement a Comprehensive Strategy to Reduce Speeding-Related Crashes

Strengthen Occupant Protection

To Learn more about the Most Wanted List visit www.NTSB.gov/MostWanted or contact SafetyAdvocacy@NTSB.gov

Summary Table of 2019–2020 MWL-Associated Open Safety Recommendations (as of December 11, 2018)

MWL Topic Area	Number of Associated Safety Recommendations
Eliminate Distractions	12
End Alcohol and Other Drug Impairment	41
Ensure the Safe Shipment of Hazardous Materials	45
Fully Implement Positive Train Control	16
Implement a Comprehensive Strategy to Reduce Speeding-Related Crashes	21
Improve the Safety of Part 135 Aircraft Flight Operations	21
Increase Implementation of Collision Avoidance Systems in All New Highway Vehicles	11
Reduce Fatigue-Related Accidents	42
Require Medical Fitness—Screen for and Treat Obstructive Sleep Apnea	15
Strengthen Occupant Protection	43
Total	**267**



To learn more about the Most Wanted List, visit **www.NTSB.gov/MostWanted** or contact **SafetyAdvocacy@NTSB.gov**

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—highway, marine, railroad, and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. For more information, visit **www.ntsb.gov.**

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