NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Improve Safety of Airport Surface Operations

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating every civil aviation accident the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the Federal Government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

National Transportation Safety Board

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Improve Safety of Airport Surface Operations

What is the issue?

Some of the deadliest accidents involving airplanes have occurred not in the air, but on the runway. In 1977, 583 people were killed when two jumbo jets collided on a runway in the Canary Islands. The deadliest U.S. runway incursion accident involving two aircraft was a collision between a USAir 737 and a Skywest Metroliner commuter airplane at Los Angeles International Airport in February 1991, which killed 34 people. In December 2005, a pilot unfamiliar with the braking system ran off the runway during landing at Chicago's Midway airport and collided with a car. In August 2006, 49 people were killed in Lexington, Kentucky, when a pilot used the wrong runway for takeoff. In December 2008, an airplane departed the side of the runway at Denver International Airport during takeoff when the captain failed to compensate for a strong and gusty crosswind. A postcrash fire ensued, resulting in serious injuries to 6 and minor injuries to 41 crew and passengers. The risk of similar catastrophes remains today.

What can be done . . .

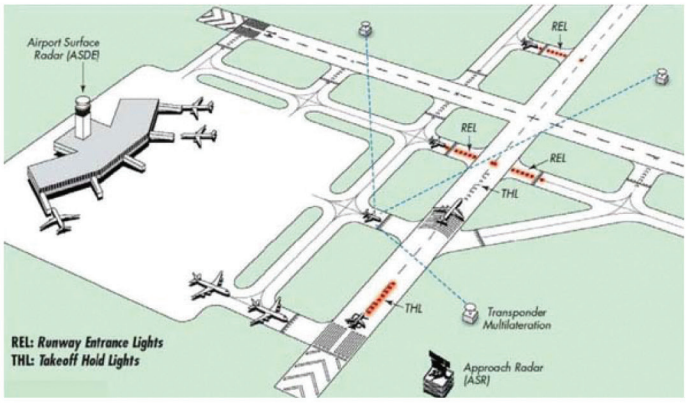
This problem, though simple on the surface, requires all parties involved in airport operations to work together to create a safer, more vigilant environment. To make better decisions during takeoff and landing, pilots require better resources to improve their situational awareness. Ground movement safety systems, such as cockpit moving map displays that provide a timely warning to flight crews to prevent runway incursions, are just one potential solution. Another is a system of cross-checking the airplane's location at the assigned runway before preparing for takeoff. New technology-such as runway status lights and enhanced final approach runway occupancy signals—can provide a direct warning capability to the cockpit, thereby eliminating the delay in warning the pilots by relaying it through an air traffic controller. Pilot training is also critical to a pilot's success on the airport surface. Flight simulator training programs should include realistic conditions, such as gusty crosswinds, to prepare pilots for actual conditions before they experience them. These resources would not only assist the pilot in ensuring takeoff at the correct runway, but also in addressing the confusion factor that is often associated with undesirable airport surface events, such as the Lexington accident where the pilots took off from the wrong runway.

Although pilots are statistically at fault in over 62 percent of runway incursions according to most recent statistics, air traffic controllers and ground operations staff also play a critical role in ensuring safe airport surface area operations. Air traffic controllers could provide pilots with additional information, such as the maximum winds that might be encountered during takeoff or landing, allowing them to make better informed decisions on runway use. Air traffic control could also develop and apply a robust program to select a runway that accounts for current and projected weather and wind conditions. A runway utilization plan, using current and projected weather and wind as the primary factors for runway selection, would contribute to safer airport surface operations.

Statistics

Airport surface operations include runway incursions, runway excursions, runway confusion, and collision with other aircraft and/or airport vehicles. The number of serious runway incursions has decreased dramatically over the past 10 years from 67 in fiscal year 2000 to 7 in the first 11 months of fiscal year 2011. However, the overall numbers are trending at a constant rate of approximately 975 runway incursions per year throughout the National Airspace System.

Although airport surface safety tends to focus on Part 121 Air Carriers, commercial passenger carrying air operations, it is important to note that general aviation pilots are the single most prevalent contributor to the total number of runway incursions. In spite of progress, there is still room for improvement in airport surface operations.



http://www.ll.mit.edu/mission/aviation/surveillanceandnav/runwaystatuslights.html

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NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Improve the Safety of Bus Operations

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating every civil aviation accident the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the Federal Government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

National Transportation Safety Board

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Improve the Safety of Bus Operations

What is the issue?

Travel by buses is among the safest modes of transportation. However, because these vehicles carry a larger number of passengers, when something does go wrong, more people are at risk of injury or death. Bus safety is a multifaceted issue involving not just the vehicle, but also the drivers, bus and motorcoach operators, and oversight agencies.

In recent years, the national focus has been on adequately protecting bus occupants in a crash, which is critical to improving survival rates and avoiding injury during a crash. Much can be done, however, to decrease the likelihood of a crash in the first place. Through its investigations, the NTSB has found that the problem is often with the individual driver or company operations. The actions of impaired, distracted, or fatigued drivers have had catastrophic consequences. Additionally, bus operators continue to demonstrate unsafe operating practices, particularly those operators who have been placed out-of-service by oversight agencies and are then reincarnated under another name or with a new U.S. Department of Transportation number.

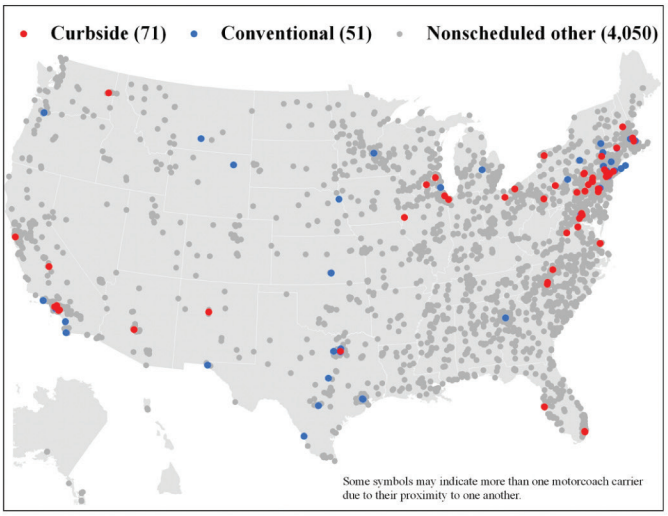
What can be done . . .

Bus operators require government authority, their drivers require professional driver's licenses, and their customers pay for service. As a result, bus passengers deserve and expect the highest level of safety. An important step in improving safety is to ensure that the professional motorcoach driver is qualified. For example, bus operators should review a longer, more comprehensive driving history during the recruitment/hiring process and use video event recorder information to assess on-the-job performance. In addition, drivers should undergo regular medical examinations by an authorized medical professional to ensure that they are fit to operate such complex machinery. Drivers and operators should also work together to limit hours of service to ensure that drivers have adequate opportunity for rest—and to institute measures, such as fatigue risk management programs and vehicle technologies, that can assist operators and drivers in recognizing and mitigating fatigue.

But there can be no guarantee that drivers are qualified unless their companies are held to a proper standard. New companies should be required to demonstrate their safety fitness before the Federal Motor Carrier Safety Administration (FMCSA) grants authority to operate. When reviewing a company's ongoing operations, the FMCSA should place greater emphasis on vehicle and driver performance, which are disproportionately factors in accidents. And if the FMCSA determines that a company is not fit to continue operations, there should be methods for verifying that the company has ceased operating. Consumers can further reinforce these standards by doing business and contracting only with those bus operators that employ best practices and have the best safety records.

Statistics

Nationwide, 750 million passengers—12 million more people than the entire population of Europe—are transported by buses annually. Most travel to and from their destinations safely. Yet despite the strong safety record of buses, according to the FMCSA, 13,417 buses crashed in 2009, resulting in more than 250 fatalities and 20,000 injuries.



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NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Eliminate Distraction in Transportation

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating every civil aviation accident the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the Federal Government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

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Eliminate Distraction in Transportation

What is the issue?

Over the past 10 years, the NTSB has investigated accidents that have demonstrated time and again the danger of using portable electronic devices while operating a vehicle, plane, train, or vessel. Talking hands-free on a cell phone led to a seasoned motorcoach driver colliding with a bridge in Alexandria, Virginia, in November 2004. Pilots overflew their destination, Minneapolis-St. Paul International Airport, by 100 miles in October 2009 because they were distracted by their laptops. In September 2008, an engineer ignored a red signal while texting, resulting in a head-on collision near Chatsworth, California, and 25 deaths. Two years later, in July 2010, a tugboat operator in the Delaware River in Philadelphia, Pennsylvania, was paying more attention to his phone and laptop than to his job, which resulted in the tugboat/barge combination colliding with a passenger vessel and killing two tourists. The use of portable electronic devices in transportation has led to an increased number of crashes and an increased number of deaths.

Distraction in transportation, however, did not start with the advent of the cell phone and other portable electronic devices. The attention of a driver, pilot, or operator can be diverted by other internal or external sources. For teen drivers, other teen passengers in particular can take the driver's attention away from the primary task and lead to tragic consequences.

What can be done . . .

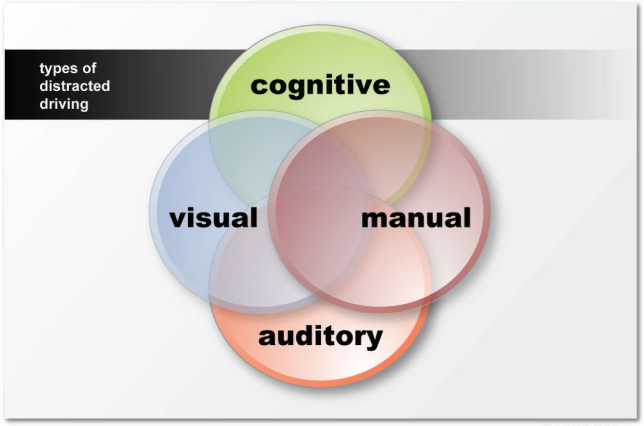
Portable electronic devices that do not directly support the task at hand have no place in vehicles, planes, trains, and vessels. States and regulators can set the proper tone by banning the nonessential use of such devices in transportation. Companies should develop and vigorously enforce policies to eliminate distractions. Manufacturers can assist by developing technology that disables the devices when in reach of operators. Accident investigators at the Federal, state, and local levels should also incorporate in their protocols a system for checking whether the nonessential use of portable electronic devices led to accidents; such information is essential to better identify safety issues and where to dedicate resources to stop this dangerous behavior.

Young drivers are more likely to use portable electronic devices while behind the wheel. Laws, education, and enforcement efforts should place special emphasis on curbing the use of portable electronic devices by these drivers. States must also understand that teen passengers increase crash risk for this population and should expand antidistraction campaigns to include banning teen passengers during the early licensing stages.

Research

Two studies examining crash data, one published in the New England Journal of Medicine in 1997 and one published in the British Medical Journal in 2005, identified as much as a fourfold increase in crash risk when engaging in a cell phone conversation. More recently, researchers at Monash University in 2007 and at the University of Calgary in 2008 concluded that performance was degraded using both handheld and hands-free cell phones. In a 2010 naturalistic study of distraction in commercial trucks and buses, the Virginia Tech Transportation Institute determined that texting, e-mailing, or accessing the Internet increases the likelihood of an accident by more than 163 times.

Many people underestimate the risks of a phone conversation, believing that it is equivalent to chatting with a passenger. In a 2008 University of Utah study, researchers found that passengers take an active role in supporting the driver by more frequently talking about surrounding traffic and mentioning cues such as exit signs. The exception is when teen drivers transport their peers. Two recent studies by The Children's Hospital of Philadelphia and State Farm Insurance revealed that teen drivers carrying multiple peer passengers were more likely to be thrill-seekers and more likely to be distracted prior to a crash. In the second study analyzing a nationally representative sample of 677 teen drivers involved in serious crashes, among those who said they were distracted by something inside the vehicle before they crashed, 71 percent of males and 47 percent of females said they were directly distracted by the actions of their passengers.



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NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Improve Fire Safety in Transportation

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Improve Fire Safety in Transportation

What is the issue?

Fire safety combines many elements, such as design, materials, and fire detection and suppression technologies. NTSB accident investigations have revealed deficiencies in the implementation of fire safety in many modes of transportation.

In 2005, the NTSB found deficiencies in design, materials, and fire detection capabilities that led to a tragic highway accident near Wilmer, Texas. This motorcoach fire was caused by ignition of a tire and resulted in the death of 23 passengers.

In 1996, near Juneau, Alaska, a fire in the main laundry area of a passenger ship killed 5 and injured 56. In 2000, a fire in the unmanned engine room of a commuter ferry in the Hudson River caused $1.2 million in damages, but all people on board were rescued. In Boston Harbor in 2006, another fire in the unmanned engine room of a commuter ferry resulted in no serious injuries or fatalities, but damages were estimated at $800,000. These accidents were exacerbated by inadequate fire detection.

Three cargo fire accidents in the past 6 years have resulted in the deaths of two flight crews and the total loss of three aircraft. Two of those accidents involved Boeing 747-400 freighters. The NTSB involvement in these accident investigations revealed deficiencies in the fire safety strategy employed both for fire detection and fire suppression. The construction material for cargo containers was also identified as being directly related to the fire protection of cargo compartments.

What can be done . . .

Recognizing that fire safety issues can be unique to certain modes, vehicle types, or operating conditions, it is necessary to address each case individually. There is, however, a common need in all modes of transportation for detecting a fire, or impending fire, as early as possible. The installation of fire detection devices in the engine rooms of marine small passenger vessels could provide an early warning to the crew. For motorcoaches, having the capability of monitoring temperatures in the wheel wells could prevent an impending tire fire. In cargo aircraft, detecting fires before they begin to burn through the cargo containers could provide the crew additional response time.

In addition to fire detection, the maintenance of fire safety also requires fire suppression. Vehicles such as cargo aircraft and marine small passenger vessels often are a long way from a suitable landing area or a dock. It is imperative that such vehicles be capable of controlling a fire. Fire suppression systems in the cargo compartments or containers of cargo aircraft and in the engine rooms of marine small passenger vessels can lessen this threat.

Material selection and design constitute the more prescriptive layer of fire safety and must be tailored to a particular situation or fire threat. For instance, in motorcoaches, the use of fire-resistant materials for sidewalls in fire-prone areas could prevent fires from entering the passenger compartment. In aircraft cargo containers, the selection of fire-resistant materials could help limit available fuel in the event of a fire in the cargo compartment.

United Parcel Service Company Flight 1307

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NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Improve General Aviation Safety

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Improve General Aviation Safety

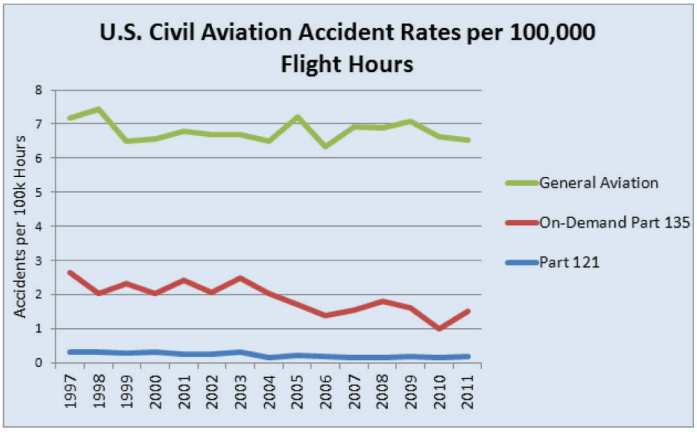
What is the issue?

While commercial aviation continues to have a strong safety record of 2 years without a fatal accident, the NTSB continues to investigate about 1,500 accidents each year in general aviation. In many cases, pilots did not have the adequate knowledge, skills, or recurrent training to fly safely, particularly in questionable weather conditions. In addition, the more sophisticated "glass" cockpit displays present a new layer of complications for general aviation pilots. And not only are pilots dying due to human error and inadequate training, but also they are frequently transporting their families who suffer the same tragic fate.

What can be done . . .

In our general aviation accident investigations, the NTSB sees similar accident circumstances time after time. Adequate education and training and screening for risky behavior are critical to improving general aviation safety. For example, guidance materials should include information on the use of Internet, satellite, and other data sources for obtaining weather information. Training materials should include elements on electronic primary flight displays, and pilots should have access to flight simulators that provide equipment-specific electronic avionics displays. Knowledge tests and flight reviews should test for awareness of weather, use of instruments, and use of "glass" cockpits. And there should be a mechanism for identifying at-risk pilots and addressing risks so that both the pilot and passengers can safely fly.

Human error in general aviation accidents is not solely a pilot problem. Aircraft maintenance workers should also be required to undergo recurrent training to keep them up to date with the best practices for inspecting and maintaining electrical systems, circuit breakers, and aged wiring



Statistics

General aviation has the highest aviation accident rate within civil aviation. The rate is 6 times higher than for small commuter operators and 40 times higher than for transport category operations. Although the overall general aviation accident rate has remained relatively steady at an average of 6.8 per 100,000 flight hours, the components of that figure have changed dramatically over the last 10 years. In particular, personal flying accident rates have increased 20 percent, while the fatal accident rate has increased 25 percent over the same 10-year period. The NTSB sees this statistic play out frequently, having investigated an average of 1,500 general aviation accidents each year, in which more than 400 pilots and passengers are killed annually.

Related Reports

Safety Recommendation Letter October 12, 2005
NTSB Recommendation Numbers A-05-024 through A-05-029, adopted on 10/12/2005
[PDF Document]

Aviation Accident Report: In flight Fire, Emergency Descent, and Crash in a Residential Area Cessna 310R, N501N, Sanford, FL
July 10, 2007
NTSB Report Number: AAR-09-01, adopted on 01/28/2009
[Summary | PDF Document]

Safety Study: Introduction of Glass Cockpit Avionics into Light Aircraft
NTSB Report Number: SS-10/01, adopted on 3/9/2010
[Summary | PDF Document]

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NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Enhance Pipeline Safety

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Enhance Pipeline Safety

What is the issue?

Two and a half million miles of pipeline crisscross the nation. These pipelines power thousands of homes and deliver important resources, such as oil and gasoline, to consumers. While one of the safest and most efficient means of transporting these commodities, there is an inherent risk that can lead to tragic consequences, especially when safety standards are not observed or implemented.

In 1998 in South Riding, Virginia, a leak resulted in $18 million in damages and repairs. In 2007, in Carmichael, Mississippi, a pipeline ruptured, and the ensuing cloud of natural gas ignited and created a large fireball, killing two people, injuring seven, and destroying four homes. In 2010, in Marshall, Michigan, another pipeline ruptured and was not discovered for over 17 hours. As a result, almost 850,000 gallons of crude oil spilled into the surrounding wetlands and flowed into local waterways, resulting in by far the most expensive environmental clean-up for an onshore oil spill. Later that year, one of the worst ruptures occurred in San Bruno, California, where a natural gas leak ignited, killing 8 people, and destroying 34 homes. Pipeline leaks can cause significant damage to people, homes, products, and the environment.

What can be done . . .

The first key to enhancing pipeline safety is to improve oversight of the industry. Many of these accidents occurred because the pipeline operator's safety program was insufficient to identify potential problems. With hazardous materials coursing through pipelines, it is vital that pipeline operators be routinely evaluated according to effective performance-based standards. These standards should address the adequacy of an operator's integrity management and inspection protocols. Federal and state oversight agencies should work together to identify deficiencies in a pipeline operator's safety program and ensure that those deficiencies are corrected. Oversight also means testing involved employees for drugs and alcohol when an accident occurs.

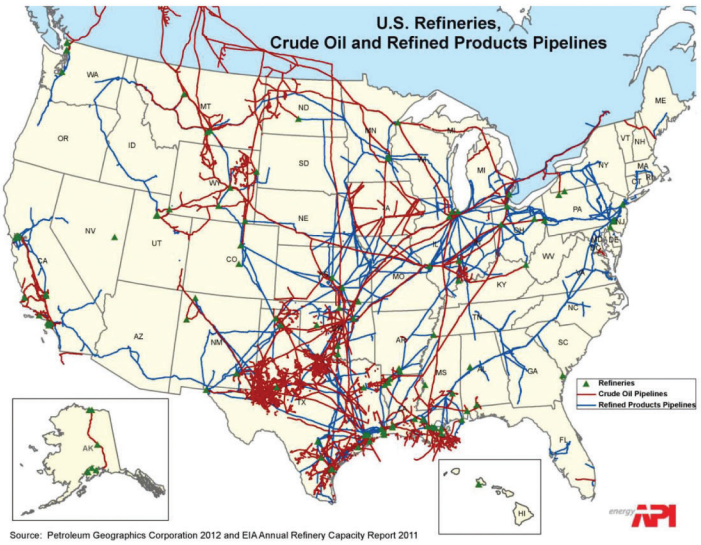
When there is a problem, timely response to shut down pipelines is critical. In both the Marshall and San Bruno investigations, we identified a delay in the operator's understanding of the nature of the rupture and leak and therefore a delay in activating an appropriate response. Pipelines delivering products like natural gas into residential areas must have automatic excess flow valves that terminate the flow of product upon reaching a certain threshold. On the industrial side, remote shutoff valves serve the same purpose, though these could be manual or automatic. With such valves installed, companies would have the ability to stop the flow and isolate a rupture sooner, minimizing both the potential damage and the potential for an explosion.

Emergency response in the event of a leak is also critical. Pipeline operators can help ensure adequate emergency response by providing local jurisdictions and residents key information on pipelines in their areas. When a rupture occurs, operators should notify 911 emergency call centers as part of the standard response. Pipeline operators should also review their internal emergency response procedures and conduct periodic drills. Preparing for a robust emergency response will translate into faster and better response, less damage, and fewer injuries.

Statistics

The vast pipeline network covering most of the United States demands our attention. Over 175,000 miles of onshore and offshore pipelines carry hazardous liquids, while both onshore and offshore gas transmission and gathering pipelines account for 321,000 miles, and a stunning 2,066,000 miles are dedicated to gas distribution mains and services. The natural gas these pipelines distribute accounts for 24 percent of total energy consumption in the country, while petroleum pipelines account for 39 percent.

According to the Pipeline and Hazardous Materials Safety Administration, in 2010, there were 34 serious pipeline incidents in which 19 people were killed, 104 were injured, and 3,104 barrels of hazardous liquid were spilled. In 2011, another 12 people were killed and 55 injured in 34 serious pipeline incidents.



Source: Petroleum Geographics Corporation 2012 and EIA Annual Refinery Capacity Report 2011

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NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Implement Positive Train Control Systems

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Implement Positive Train Control Systems

What is the issue?

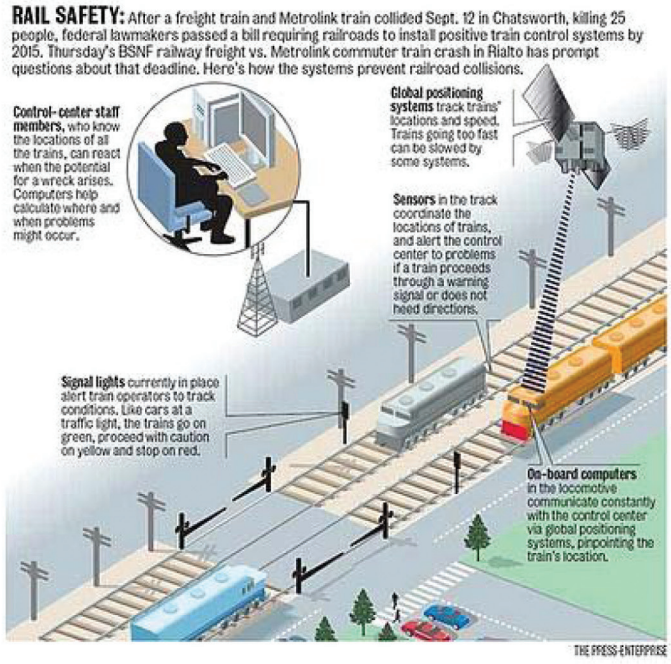
Trains are a part of daily life, whether transporting passengers or cargo. But we do not have to accept train accidents as a given, particularly those involving head-on collisions. Such collisions are often due to human factors, such as fatigue, sleeping disorders, use of medications, and distractions. Fatigue played a role in a July 2005 train collision in Anding, Mississippi, that killed all four operators. In May 2008 in Newton, Massachusetts, the operator of a transit train was killed after she fell into a microsleep and her train collided with another train. And once again, in April 2011 near Red Oak, Iowa, fatigue was the issue when two trains collided, killing two crew members.

What can be done . . .

Although human error cannot be eradicated, there is technology capable of supplementing the human operation of trains—positive train control. Such systems provide a safety redundancy by slowing or stopping a train that is not being operated in accordance with signal systems and operating rules, as was the case in every accident listed above. Positive train control prevents train-to-train collisions and overspeed derailments. For years, it has been in place on Amtrak trains in the Northeast, but for positive train control to reach its greatest safety potential, it must be implemented on all passenger and freight trains. With this technology, even if the train operator has fallen asleep or is distracted in some way, human lives will not be at risk.

Statistics

Although legislation enacted in the aftermath of the Chatsworth, California, collision mandated positive train control systems by 2015, as of March 9, 2011, 10,000 miles of track were exempt from this mandate—which is a troubling fact. The Federal Railroad Administration accident database for 2011 attributes human factors issues as causal to most train collisions. Ninety-six head-on, rear-end, and side collision accidents occurred in 2011, and 83 percent of those accidents were determined to be caused by human factors. Positive train control can provide the critical redundancy to compensate for human error.



Picture from Landairsea.com

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NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Eliminate Substance-Impaired Driving

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Eliminate Substance-Impaired Driving

What is the issue?

For more than 30 years, we have known that the consequences of drinking and driving are deadly. In fact, for the last 15 years, one-third of highway deaths have involved an alcohol-impaired driver. People impaired by alcohol are at a substantially greater risk of being involved in a traffic crash, and those crashes frequently result in injuries or deaths. Impairment does not start when a person's blood alcohol concentration reaches 0.08 percent; it begins with that first drink.

Impaired driving is not just about alcohol. Drugs can also affect your driving ability. Illegal, prescription, or over-the-counter drugs can have impairing side effects. This problem is all the more frightening because drugs can affect each person differently.

What can be done . . .

There are numerous variables on why people use substances and how these substances affect driving. Eliminating substance-impaired driving requires a comprehensive solution, starting with basic concepts for changing behavior. General deterrence encourages the general population not to engage in the dangerous behavior in the first place. It includes such measures as high visibility enforcement and administrative license revocation. Specific deterrence is used after a person is caught and focuses on preventing repeat behavior. Examples include fines and jail terms, but in cases where the impaired driver has a substance-abuse problem, neither fines nor incarceration addresses the root cause of recidivism.

Successful programs should include assessment for substance abuse and treatment when warranted. Alternatives to jail, such as home detention with electronic monitoring or intensive supervision probation, allow offenders to maintain employment and obtain treatment while still holding them accountable for the underlying crime. Technology also holds great promise. Ignition interlocks and continuous alcohol monitoring devices can prevent an impaired driver from getting behind the wheel. Developing new technology that can quickly and effectively test drivers for drugs is also critical. The key is to establish a comprehensive toolbox and tailor the program to the specific offender's situation.

Statistics

More people die on the highways than in any other mode of transportation. In fact, over 90 percent of all transportation-related deaths occur on highways. Unfortunately, the substance-impaired driver greatly contributes to this average. For example, in 2010, more than 10,000 deaths (30 percent of all highway deaths) involved an alcohol-impaired driver. Over the last decade, 130,000 people have died in crashes involving an alcohol-impaired driver—20,000 more than the number of seats at the University of Michigan football stadium! According to the 2011 Traffic Safety Culture Index of the AAA Foundation for Traffic Safety, over 14 percent of drivers admit to driving when they thought they were close to or over the legal limit.

The statistics for drugged driving are no less concerning. According to the 2009 National Survey on Drug Use and Health, roughly 10.5 million people age 12 and above admitted to driving while impaired by illicit drugs. And among drivers fatally injured in 2009 who were tested for drugs and for whom results were known, one-third tested positive. From 2005–2009, the proportion of fatally injured drivers who tested positive for illicit drugs rose from 13 to 18 percent. The battle against substance-impaired driving is far from over.

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NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Mandate Motor Vehicle Collision Avoidance Technologies

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Mandate Motor Vehicle Collision Avoidance Technologies

What is the issue?

Regardless of a driver's skills, sudden changes by other drivers and changes in vehicle controllability pose significant safety risks. For unaware drivers, the consequences can be deadly. Some of the most deadly accident circumstances involve rear-end collisions, run-off-the road, loss of control, speeding, and out-of-adjustment breaks, which are often not under the control of a single person. In June 2009, a truck driver did not react to the queue of slowing and stopped vehicles ahead and collided with 6 passenger vehicles in Miami, Oklahoma, because of fatigue. If a driver receives warnings of an imminent collision, he or she may be able to bring the vehicle to a safe and controlled stop.

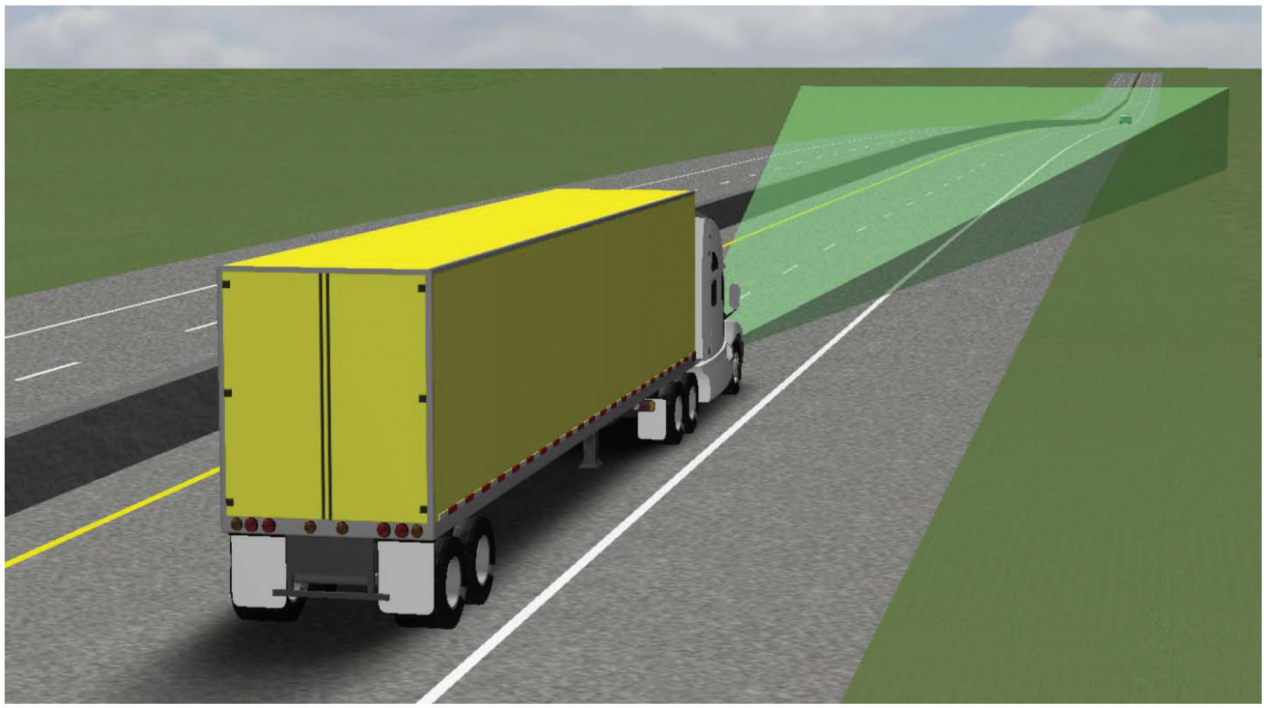
What can be done . . .

There are technologies that can work with the driver to improve driver reaction time. Lane departure warning, forward collision warning, adaptive cruise control, automatic braking, and electronic stability control have all been proven to aid drivers when they are faced with unexpected conditions, particularly when traveling at highway speeds or when operating larger commercial vehicles that require greater stopping distances. Other systems, such as tire pressure monitoring, onboard monitoring (for commercial drivers), and speed-limiting technology, can warn drivers of imminent threats or diminish the possibility of encountering dangerous conditions.

These technologies are available today in many vehicles. However, they are options that a vehicle owner can add, and some technologies are not even required to meet performance standards. The National Highway Traffic Safety Administration should establish performance standards where still needed and mandate that these technologies be included as standard equipment in cars and commercial motor vehicles alike. Their full life-saving and crash-avoidance potential will not be realized until supported by federal rulemaking and related standards.

Statistics

The National Highway Traffic Safety Administration indicates that run-off-road, rear-end, and lane change maneuvers account for 23, 28, and 9 percent of highway accidents, respectively. Vehicle collision avoidance technologies can prevent these types of accidents. In fact, the Insurance Institute for Highway Safety estimates that forward collision warning can prevent 879 fatal crashes annually for passenger vehicles and 115 fatal crashes annually for large trucks. The Insurance Institute estimates that lane departure warning can prevent 247 fatal crashes annually, and electronic stability control, 439 fatal crashes annually. With such promising potential to improve highway safety, this technology should be robustly deployed throughout the passenger and commercial fleets.



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NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

Preserve the Integrity of Transportation Infrastructure

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating every civil aviation accident the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the Federal Government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

National Transportation Safety Board

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Preserve the Integrity of Transportation Infrastructure

What is the issue?

The transportation system is the backbone of America's economy. Every day, people, goods, and services move across the country through our skies, and on our highways, pipelines, railways, and waterways. The system includes more than 3,300 airports, more than 3.9 million miles of public roads, 2 million miles of oil and gas pipelines, 120,000 miles of major railroads, and over 25,000 miles of commercially navigable waterways. It is imperative that our more than 6 million miles of roadways, pipelines, track, and waterways be adequately inspected and maintained.

With aviation's rapid movement of people, goods and services it is vital that investments in technology, facilities, and runways be made. While inspection guidance exists in the United States, the inspection guidance provided for the owners and inspectors of the 600,000 bridges across the country is sometimes incomplete-which has contributed to disasters such as the 2007 collapse of a bridge in Minneapolis, Minnesota, which killed 13 people. Our pipeline infrastructure was installed decades ago, yet it continues to transport reources and energy supplies to residential and commercial customers. Eight people were killed in San Bruno, California, in 2010 due to a pipeline rupture and subsequent fire. On the railways, a cracked segment of track caused a train to derail 22 cars in February 2003 in Tamaroa, Illinois, which released toxic chemicals and required the evacuation of 850 people. These incidents are clear indicators that it is imperative to maintain the integrity of our infrastructure.

What can be done…

We must invest in, maintain, and allocate appropriate resources to preserve our transportation infrastructure. When making these critical decisions, safety needs to have a seat at the table.

We are seeing a lot of recent investments in aviation infrastructure, but there are some key areas on which we should be focusing. For example, because of the encroachment on airports by their surrounding communities, appropriate airport runway safety areas should be proactively upgraded using an engineered materials arresting systems to prevent aircraft runway overruns that can lead to human injury and aircraft damage. The Federal Aviation Administration (FAA) can also take steps to improve weather information, particularly in harsh weather climates. For example, the FAA should correct deficiencies with the in-service automated weather sensor system (AWSS) stations, specifically the problems with present weather sensors and ceilometers, to ensure that the AWSS stations provide accurate information as soon as practical.

Other transportation modes also need to take steps to ensure that infrastructure can age gracefully and retain its structural integrity. For example, the Pipeline and Hazardous Materials Safety Administration can promote pipeline integrity management by requiring pipeline operators to establish robust and effective route inspection procedures. Operators should also make sure that supervisory control and data acquisition systems are equipped to detect leaks and breaks. Railways also require periodic, standard inspection-from the tracks used to replace defective segments, to the track originally laid down, to even the railcars. But the highway network may present the largest problem in ensuring structural integrity. Although state and local governments control most roadways and bridges in the United States, highways serve as part of an integrated national network. It is, therefore, imperative that the Federal Highway Administration ensure that bridge inspector training is comprehensive and consistent across the country so that no issues are overlooked. Despite state and local governments owning roadways and bridges, there must be a national inspection standard that raises the bar of infrastructure integrity.

Statistics

Consider the following information from the Bureau of Transportation Statistics. In 2010, 4.2 trillion passenger miles were traveled on our nation's roadways. With that mileage, you could take over 750 roundtrips to the planet Neptune. Another 389 million passenger miles occurred on ferryboats and 6.4 billion passenger miles on Amtrak and intercity rail. Domestic freight traffic carried by air, truck, rail, water, and pipeline totaled more than 4.3 trillion ton-miles. Maintaining the integrity of the roads, waterways, rails, and pipelines is critical to ensuring the safety of our families and friends and the security of our commercial goods.

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