

PUTTING TECHNOLOGY TO WORK

HOW FREIGHT RAIL DELIVERS THE 21ST CENTURY



ASSOCIATION OF
AMERICAN RAILROADS

MAY 2018

POSITIONING FREIGHT RAIL FOR THE FUTURE

Technology fuels America's freight railroads, making a modern network capable of meeting today's transportation challenges — and those of the future.

Integrated teams of data scientists, software developers and engineers develop and apply technology across every aspect of the nationwide freight rail network. Today's trains are powered by 200-ton locomotives equipped with supercomputers capable of processing a billion data points per second to maximize operational and fuel efficiency. Smart sensors throughout the network assess the health of the nation's rail infrastructure and equipment to ensure safe operations. Railroad experts at command centers analyze this data to develop real-time maintenance and operational recommendations that improve fluidity and productivity of the rail network.

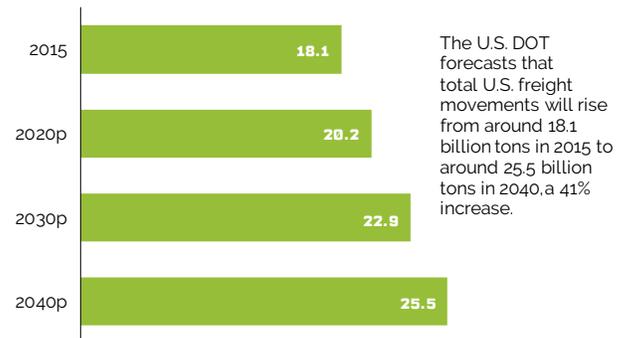
Thanks to steady, substantial spending on infrastructure, equipment and technology — \$100 billion over the last four years alone — America's freight railroads move more freight more efficiently, safely and cleanly than ever before.

Freight rail's massive spending has produced meaningful results:

- > The mainline train accident rate has fallen 32% over the past 10 years.
- > Railroads moved one ton of freight an average of 479 miles per gallon of fuel in 2017, double the average in 1980.¹
- > Rail traffic volume has increased 84% since 1981, with no significant increase in the size of the railroad network.

DEMAND FOR FREIGHT TRANSPORTATION WILL RISE

BILLIONS OF TONS TRANSPORTED IN U.S.



The U.S. DOT forecasts that total U.S. freight movements will rise from around 18.1 billion tons in 2015 to around 25.5 billion tons in 2040, a 41% increase.

p - Projected

Source: FHWA Office of Freight Management and Operations, Freight Analysis Framework version 4.4

These benefits extend beyond the 140,000-mile rail network to automakers, energy producers, farmers and other important American industries. Today, adjusted for inflation, rail shippers, on average, pay about 46% less than what they did more than 35 years ago.

Technological advances, combined with ongoing private investment, uniquely position the freight rail industry to meet the most significant transportation challenges of the 21st century. Forecasts from the Federal Highway Administration indicate total U.S. freight shipments will rise from an estimated 18.1 billion tons in 2015 to 25.5 billion tons in 2040, a 41% increase.²

Looking to the future, the freight rail industry will use today's technology as the foundation for even more innovation to further enhance network safety and efficiency.

By putting technology to work, freight rail is focused on the present while shaping the future, committed to keeping the American economy on track.

¹ "Freight Rail: The Most Environmentally Friendly Way to Move Freight Over Land." Association of American Railroads. Accessed May 14, 2018 <https://www.aar.org/wp-content/uploads/2018/05/AAR-Railroad-Environment-Issue.pdf>

² "Freight Railroad Capacity and Investment." Association of American Railroads. Accessed May 14, 2018 <https://www.aar.org/wp-content/uploads/2018/05/AAR-Freight-Railroad-Capacity-Investment.pdf>

ENHANCING AN ALREADY SAFE NETWORK

We are living in the safest era ever for U.S. railroads. According to Federal Railroad Administration (FRA) data, U.S. railroads had their lowest mainline train accident rate on record in 2017 — down 32% over the past decade. This achievement is due in large part to the industry's strong safety culture, visible in everything from training to operational protocols.³

RAIL INVESTMENT LEADS TO FEWER TRAIN ACCIDENTS

TRAIN ACCIDENT RATE DOWN 32 PERCENT SINCE 2008



*Class I railroad capital spending and maintenance expenses for infrastructure and equipment
**Total mainline train accidents per million train-miles
2008=100

Source: Association of American Railroads, U.S. Federal Railroad Administration

Even so, accidents sometimes occur. From 2013 to 2017, issues with track and equipment were responsible for 54% of mainline train accidents, while human error was the leading factor in 26% of accidents.⁴ Railroads prioritize investments to address and eliminate the causes of these accidents, knowing they will have a significant impact on the long-term safety of the freight rail network.

Technology plays a crucial role in achieving that goal. Today's rail technology enables railroads to inspect their track and equipment with greater frequency, efficiency and reliability. These advanced tools also empower rail employees to make better decisions, giving them an inside view of the rail

network's infrastructure, well beyond what can be seen by the human eye.

"Today's rail technology enables railroads to inspect their track and equipment with greater frequency, efficiency and reliability."

The power and promise of rail technology will become even more evident in the years ahead as railroads seek to apply technology solutions to their ultimate goal — an accident-free future.

3 "Association of American Railroads Analysis of Federal Railroad Administration Data." April 2018

4 Ibid.

Ensuring Healthy Track Structure

The components of railroad track — the rails, crossties, fasteners and ballast — are the foundation of the 140,000-mile rail network. Together, they support trains — which on average weigh more than 6,600 tons — as they move across the country. Tiny flaws imperceptible to the human eye can lead to accidents, so railroads rely on technology, such as ultrasound and radar, to look deep inside rail and its supporting crossties.

Just as a doctor uses ultrasound to see inside a body, railroads use it to look inside steel rail. Similarly, ground-penetrating electromagnetic radar allows railroads to assess the condition of ballast and detect any abnormalities, such as water intrusion, which can cause degradation. The information provided by these technologies allows railroads to identify potential problems and proactively schedule maintenance, helping to keep small issues from becoming big problems.

Thanks in large part to technologies such as these, coupled with ongoing research into and deployment of vastly improved track components, mainline track-caused accidents have dropped 50% since 2008 to an all-time low.⁵

Maintaining Equipment Through Advanced Monitoring

The more than 600 railroads comprising the U.S. freight rail industry are highly interconnected and interdependent. The North American industry's combined fleet of over 1.6 million railcars are often exchanged between railroads as they move goods across the country. Collaboration is key not only to the efficient movement of these cars, but also to the health of each individual railcar as it travels on multiple railroads.

Using a combination of smart sensors, advanced analytics software and industry-wide data sharing, railroads monitor the health of rail equipment in real time. Wayside detectors positioned along the track use a host of technologies — such as infrared and lasers — to assess the condition of bearings, axles, wheels and springs as trains pass by, sometimes at speeds of up to 60 miles per hour. Machine visioning, for example, captures 50,000 images per second of service and safety critical components on a passing train. These images are immediately analyzed by specialized software, which alerts rail personnel to anomalies that require further analysis.

The data collected by these sensors is pooled as part of the Asset Health Strategic Initiative (AHSI), an innovative industry-wide collaboration to enhance safety. All Class I railroads feed their equipment and component performance data to Railinc, an industry-owned information technology and services company in Cary, North Carolina. Railinc data analysts, working in conjunction with research scientists at the Transportation Technology Center, Inc. (TTCI), use specialized software to identify trends that help inform modifications in maintenance practices. This unprecedented collaboration, between two wholly-owned subsidiaries of The Association of American Railroads, enables railroads to identify and address equipment problems with greater speed and accuracy.

The data collection and analysis effort is paying off. Research into improved equipment components and their maintenance has helped reduce mainline equipment-caused accidents 36% since 2008.⁶

5 "Association of American Railroads Analysis of Federal Railroad Administration Data." April 2018

6 Ibid.

TTCI: Building the Trains of Tomorrow

Against the splendor of Colorado's prairie sits the world's most advanced rail research facility. At the Transportation Technology Center, Inc. (TTCI), a wholly-owned subsidiary of AAR, engineers and researchers test emerging rail technologies and develop technology solutions to address some of the industry's greatest challenges in an effort to make rail transportation even safer, more efficient and reliable.

Today — using the facility's specialized laboratories and 48 miles of test track — researchers at TTCI are developing a rail inspection system that would employ multidimensional phased array ultrasonic technology to inspect tracks. The system is designed to identify defects that are difficult to find using conventional ultrasound. The new system will have over 400 inspection elements compared to the six or eight in the conventional system. The additional inspection elements will give railroads a much fuller picture of the health of their tracks.⁷ The additional inspection elements will also provide the basis for development of Big Data based predictive indicators of track component performance and reliability.

TTCI is also home to the Security and Emergency Response Training Center, a world-class facility that trains first responders to safely handle accidents involving railcars and other transportation vehicles carrying hazardous materials. More than 65,000 local, state and tribal emergency responders, as well as chemical and petroleum industry employees, from 49 states have benefited from the Center's classes.

7 "TTCI: Taking rail inspection to the next level," by Jeff Stagl. Accessed May 14, 2018 <https://www.progressiverailroading.com/mow/article/TTCI-Takingrail-inspection-to-the-next-level--49384>

PTC: Preventing Human Error

Freight railroads are meeting the challenge of implementing Positive Train Control (PTC) head on with unprecedented investment and collaboration among industry partners. This potentially transformative technology, designed to automatically slow or stop a train under certain circumstances, will address a leading factor in train accidents: human error.

PTC is a complex, nationwide system of newly developed and deployed technologies designed to address specific situations: train-to-train collisions, over-speed derailments, incursions into work zones and misaligned track switches. The technology analyzes a large number of variables at any given time to ensure trains are able to slow or stop safely should one of these incidents be imminent, likely preventing an accident. During a train's operation, the length of time and distance needed to stop across a segment of track changes continuously. PTC must accurately consider thousands of variables at any given moment to safely control a train wherever it might be on its route. For PTC to work effectively, it must be interoperable — on a daily basis, hundreds of locomotives owned by one railroad must be able to quickly and reliably communicate with the PTC system of another railroad when they operate on that other railroad's tracks. Achieving this interoperability is complex but vital because of the interconnected nature of the industry.

By December 31, 2018, first generation PTC will operate on approximately 80% of the required Class I rail network, well beyond the amount mandated by the federal government. The system will be fully active and interoperable by the end of 2020.

MOVING MILES AHEAD ON SUSTAINABILITY

Preserving the natural environment is a responsibility railroads take seriously. Freight rail is well ahead of other modes of transportation when it comes to limiting greenhouse gas emissions, increasing fuel efficiency and reducing its carbon footprint. From advanced locomotive technology to zero emission cranes, freight railroads leverage technology in all aspects of their operations to limit their impact on the environment.

Thanks in part to these technologies, today U.S. freight railroads can, on average, move one ton of freight 479 miles per gallon of fuel, making rail the most environmentally friendly way to move freight over land.

Maximizing Fuel Efficiency

Railroads use advanced computer programs, known as fuel management systems, to ensure that each gallon of fuel moves a train as far as possible. The systems, fully integrated into the trains' locomotives, provide engineers with real-time recommendations on how to operate the train to maximize fuel efficiency and train performance based on numerous variables including topography, track curvature, the weight and length of the train and even wind effect. Fuel management systems can improve fuel efficiency by up to 14%, depending on the route.⁸

The most advanced diesel locomotives, known as Tier 4 locomotives, make freight rail even more environmentally friendly. Today's Tier 4 locomotives have hundreds of sensors that generate thousands of readings on locomotive performance every minute. The diesel engine alone has 50 sensors, which monitor a variety of factors, including engine speed, valve control and air/fuel mix, to continuously maximize fuel efficiency. These readings are monitored in operations centers across the network and alert railroads when individual locomotives are not performing optimally, allowing for fast, timely maintenance that minimizes the impact of poor locomotive performance on the environment and network fluidity.⁹

The results are significant: Tier 4 locomotive technology reduces particulate emissions from diesel locomotives by as much as 90% and nitrogen oxide emissions by as much as 80%. As additional locomotives are needed, or older units replaced, Tier 4 Locomotives are being phased into rail fleets nationwide.

8 "The Tech That Makes GE's New Locomotive Its Cleanest Ever," by Jordan Golson, Wired, Accessed May 14, 2018 <https://www.wired.com/2015/05/tech-makes-ge-new-locomotive-cleanest-ever/>

9 Ibid.

Railinc: Leveraging Big Data for Safer, Smarter Trains

At Railinc, a wholly-owned subsidiary of AAR and information technology company in Cary, North Carolina, engineers work to make U.S. freight railroads safer and more efficient through Big Data. Using homegrown software systems and cutting-edge data analysis, the Railinc team analyzes staggering amounts of data generated by smart sensors deployed across the Class I freight railroads' network. This advanced data analysis provides railroads with a more complete understanding of the rail network than ever before. These insights enable railroads to identify improvements to maintenance procedures and better coordinate the movement of nearly two million pieces of rail equipment.

Today, Railinc's data warehouse contains 50 terabytes of data,¹⁰ roughly the equivalent of 50,000 copies of the Encyclopedia Britannica.¹¹ Experts at Railinc expect to be storing double that in coming years.

The innovative and collaborative approach taken at Railinc has produced measurable results. For instance, after Railinc analyzed data about emergency brake applications on tracks between terminals, it was able to suggest proactive maintenance routines. This work prevented more than 5,600 train delays in 2017.¹²

10 "How Railinc is helping to build a smarter rail network leveraging automation and big data," by Robert Reid, BMC Blogs, Accessed May 14, 2018 <https://www.bmc.com/blogs/how-railinc-is-helping-to-build-a-smarter-rail-network-leveraging-automation-and-big-data/>

11 "Megabytes, Gigabytes, Terabytes... What Are They?," What's A Byte, Accessed May 14, 2018 <http://whatsabyte.com/>

12 "Delivering Innovation: 2017 Railinc Annual Report," Accessed May 14, 2018 <https://www.railinc.com/2017-annual-report/>

Reducing Emissions in the Rail Yard

The freight rail industry's commitment to sustainability extends beyond locomotives and into rail yards, where trains are sorted and, in some cases, loaded and unloaded.

In the yard, freight railroads deploy anti-idling technologies to minimize fuel consumption and air pollution. Automatic Engine Start Stop (AESS) units, for instance, turn off a locomotive if it has been idle too long and automatically restart it to prevent freezing if the temperature drops too much. Similarly, Auxiliary Power Units (APU) — small diesel engines — keep the main locomotive engine warm when powered down to prevent freezing in cold weather. These technologies significantly reduce the amount of fuel wasted during idling periods; APUs, for example, can reduce emissions from one locomotive by more than 80 tons of nitrogen oxides, 12 tons of carbon monoxide and three tons of particulate matter, per year.

"Today U.S. freight railroads can, on average, move one ton of freight 479 miles per gallon."

Zero emission cranes, rather than traditional diesel cranes, move shipping containers in ports and intermodal facilities across the country, seamlessly transferring goods between ships, trucks and trains. The electric cranes, which reduce ambient noise and pollution, can recharge their own batteries each time they lower a load.¹³ Technologies like these play an important role in decreasing emissions in densely populated urban areas where intermodal rail yards are often located.

This commitment to technology is a growing factor in freight rail's impressive environmental record. Railroads move approximately one-third of all U.S. exports and intercity freight volume in the United States. Despite the large volume of freight moved, U.S. EPA data show freight railroads only account for 0.5% of total U.S. greenhouse gas emissions and just 2.0% of emissions from transportation-related sources.¹⁴

13 "BNSF's Wide-span Electric Cranes Reduce Emissions, Improve Operations," Logistics Park, Accessed May 14, 2018 <http://www.logisticsparkkc.com/bnsfs-wide-span-electric-cranes-reduce-emissions-improve-operations/>

14 "Freight Railroads Help Reduce Greenhouse Gas Emissions," Association of American Railroads, Accessed May 14, 2018 <https://www.aar.org/wp-content/uploads/2018/05/AAR-Railroads-Greenhouse-Gas-Emissions.pdf>

MOVING FREIGHT MORE EFFICIENTLY THAN EVER

Each day, nearly 600 freight railroad companies use a shared fleet of 1.6 million freight cars to move goods for thousands of customers spread across North America's vast rail network. Ensuring that operations run safely and efficiently allows railroads to maintain their competitive edge. By applying advanced software and technologies to operations, railroads are moving freight more efficiently and cost-effectively than ever before. Since 1980, rail traffic density increased approximately 300% with no significant increase in the size of the railroad network; locomotive productivity rose 93%; and average freight carried per train rose 63%.

Improving the rail industry's operational efficiency produces dividends for rail shippers, too. Efficiency and productivity improvements help railroads keep prices low. In fact, when adjusted for inflation, rail shippers today can move roughly twice the amount of freight for nearly the same price paid in 1980, giving them an edge in an increasingly globalized economy.

Improving Network Efficiency

Sophisticated computer software, with the potential of transforming the way the freight rail industry manages its train operations, is already beginning to make rail networks more efficient than ever before.

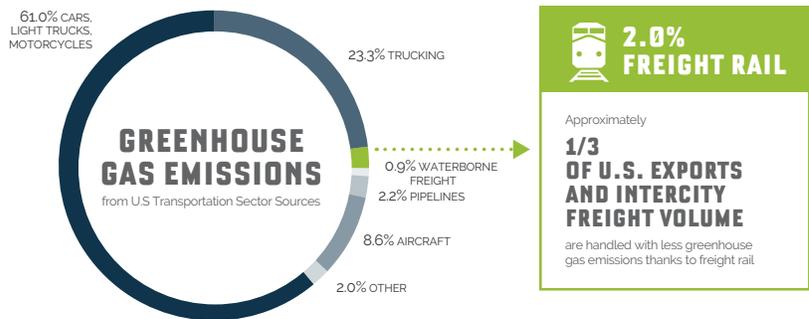
Freight rail dispatchers have started using advanced dispatch-planning software, similar to advanced air traffic control systems, to optimize the movement of trains across the network. Sophisticated software analyzes several factors, including system-wide train schedules, speed restrictions, crew schedules and other important train operation factors to help train dispatchers determine the best operating plan for their portion of the rail system. Only recently have these network algorithms and the computing power that support them become efficient enough to help provide real-time management of problems as complex as those faced by railroads every day. Today, this advanced software can reassess a train management plan every two minutes, giving dispatchers the flexibility to respond in near real time to changing conditions, such as train delays and unplanned maintenance work.

This type of network management software will ultimately make it possible for railroads to serve their customers more reliably and do so in a more efficient manner. It will also make possible the conservation of the most scarce and costly of all rail resources — network capacity.

Keeping Equipment in Service

The industry's use of smart sensors to identify equipment issues does not just make railroads safer, it has also made them more efficient. As the train passes a sensor, components on the locomotives and railcars are assessed to identify wear or defects. Once an anomaly is found, a small transponder on the car — known as an Automatic Equipment Identification (AEI) tag — transmits information to a reader along the tracks

SHIPPING BY RAIL HELPS REDUCE GREENHOUSE GAS EMISSIONS



Source: Environmental Protection Agency, Draft Inventory of U.S. Greenhouse Emissions and Sinks: 1990–2016

“Rail shippers today can move roughly twice the amount of freight for nearly the same price paid in 1980.”

which alerts railroads to the location of the specific car and component in need of evaluation or repair. Analyzing the health of equipment in real time enables railroads to schedule maintenance at optimal times and places, so shipments stay as close to schedule as possible. Data analysis on the performance of components identified as failing also helps improve the design of these components. This further helps reduce shipment delays and improves the flow of traffic across the rail network.

Minimizing Costs

Thanks in part to investments in technology, railroads are more productive than ever, delivering more goods without significantly increasing the size of the railroad network.

Remarkably, these increases in productivity and efficiency have not resulted in higher prices for shippers. Average rail rates (measured by inflation-adjusted revenue per ton-mile) were 46% lower in 2017 than in 1981. These competitive rates allow businesses to produce affordable goods, so consumers see the benefits, too. They are also the reason many firms located far inland are able to successfully export the goods they produce to markets around the world.

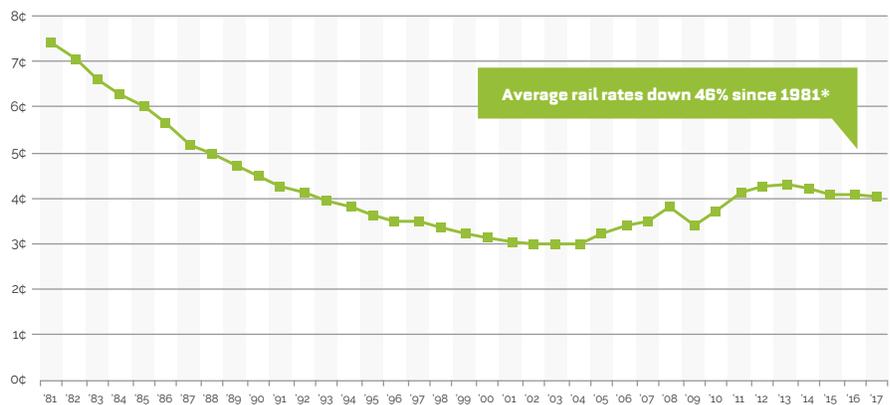
REALIZING THE FUTURE OF RAIL

Technology helps railroads achieve incredible safety milestones, minimize their impact on the natural environment and maintain a competitive edge in today's fast-paced global economy. In the coming years, railroads look to build upon these successes.

While rail technology is pervasive, the industry is on the verge of an exciting new era of innovation. Advanced algorithms and data analysis software will enable railroads to harness the massive amounts of data being collected nationwide to enhance safety, reliability and service to customers. Next generation automation technology will continue to reduce the impact of human error and human limitations on railroad operations, improving safety and efficiency.

Looking toward the future, federal regulations must both permit and encourage railroads to continue to develop and deploy these vital technologies that produce meaningful benefits for citizens, American businesses and the U.S. economy.

LOW RATES KEEP RAIL SHIPPERS GLOBALLY COMPETITIVE



*Based on inflation adjusted revenue per ton-mile

Source: Association of American Railroads

Generating Big Data and Big Solutions

Railroads are harnessing the power of Big Data to solve big challenges in unimaginable ways. Aided by smart sensors deployed across the network and advancements in track inspection technologies, railroads have amassed databases with hundreds of trillions of bytes of information about the condition of track and equipment. This virtual goldmine of data coupled with improved data analytics software has allowed railroads to uncover critical data trends and apply those learnings to enhance safety and operations.

“Federal regulations must both permit and encourage railroads to continue to develop and deploy these vital technologies.”

Once data trends have been identified, researchers at the Transportation Technology Center, Inc. (TTCI) extensively study the data and develop recommendations for how to apply it to improve operations. One aspect of data analysis is the ability to analyze multiple factors at once and develop “composite rules” — industry-wide standards that are developed by identifying a factor or combination of factors that can indicate if a piece of equipment is near risk of failure. Recently, industry members issued a composite rule that sets the industry-wide standards for wheel safety and integrity. TTCI's InterRIS® database provides the foundation for future composite rules.

As railroads gather more data through next generation inspection technology and refine the software capable of analyzing it, the ability to enhance safety and maximize the efficiency of operations will only increase. Today, track inspection machines operate independent of trains, but the next generation of track inspection technology could be incorporated into locomotives generating up to 250 gigabytes of data daily per locomotive. Onboard inspection technologies such as these would allow for continuous and more frequent inspection and data collection that informs annual capital and maintenance planning.

Moving Toward Automation

Automation holds great promise for the future of railroad safety and efficiency. Today, automation of inspection technology and PTC has started to deliver on its great promise to reduce the impact of human error and go beyond human limitations to make railroad operations safer and more efficient. Recently, an advanced algorithm analyzed the track alignment — known as track geometry — of more than 1,500 curves in track in just a few hours, whereas it would have taken a team of four people 10 months to manually complete the same task.¹⁵

Today, all Class I railroads use some sort of automated technology for inspections to supplement the manual inspections required by federal regulation. With increased use enabled by next generation technology and modifications to federal regulation, railroads will be able to conduct safety inspections more frequently, detect more flaws more reliably and respond more quickly while keeping workers out of harm's way.

Automation of train operations also has the potential to enhance both network efficiency and safety, enabling the transport of more goods by rail — reducing the demand on highway capacity and providing fuel efficiency and air emissions benefits — while further reducing accidents related to human factors. PTC — technology designed to prevent rail accidents related to human error — is central to advances in automated train operations. When deployed, the next generation of PTC will know the precise location of all trains operating across the network as well as the distance required between individual trains for them to operate safely. Armed with this information, railroads will be able to safely increase the number of trains on a track and better manage how closely they operate together, improving both network velocity and fluidity.

Developing 21st Century Regulations for a 21st Century Industry

For railroads to realize the full potential of technology, a paradigm shift must occur. Today, railroads are required by federal regulation to perform manual inspections, despite the existence of technology that can perform these inspections more reliably and quickly while keeping workers out of harm's way. Realizing the full benefit of these future technologies will require modernization of regulatory processes from the current historic perspective to one which actively encourages the development of safe and productive technological solutions that allow the industry to better serve American businesses and consumers.

"Regulators should start with the premise that technological progress can solve many problems," Joe Kennedy of the Information Technology & Innovation Foundation wrote in a recent paper. "They should therefore welcome technological development, and act to speed the process of making it safe and reliable and introducing it into markets, rather than act as gatekeepers who slow the pace of innovation."¹⁶

A regulatory environment based on today's technology — and flexible enough to embrace future innovations — will enable railroads to meet the challenges of tomorrow while maintaining its status as the world's best transportation network.

15 "Better railroading through Big Data," by Dr. Allan M. Zaremski, Accessed May 14, 2018

<https://www.railwayage.com/analytics/better-railroading-through-big-data/?RAchannel=mv>

16 How Regulatory Reform Can Advance Automation in the Freight Transportation Sector" by Joe Kennedy, Information Technology & Innovation Foundation, Accessed May 14, 2018

<https://itif.org/publications/2017/06/12/how-regulatory-reform-can-advance-automation-freight-transportation-sector>

AskRail: Keeping Emergency Responders Safe

Former Charlottesville Fire Chief Charles Werner spent decades fighting fires in his community. Now, he is helping firefighters across the country through his work on the AskRail mobile app.

The app, which Werner helped develop with the industry in 2014, adds an extra layer of safety to rail's transport of hazardous materials, such as chlorine. In the unlikely event of an accident, first responders can use it to see what chemicals are on a train and plan the best course of action.

Werner explained how the app works, why it's vital and how first responders can access it:

WHAT INFORMATION DOES ASKRAIL PROVIDE?

The rail industry designed this app in coordination with the International Association of Fire Chiefs specifically to meet first responders' needs. AskRail gives you instantaneous information about what is on the cars and the hazards of those materials, allowing you to rapidly diagnose the situation. It also uses GIS mapping to identify vulnerable areas like hospitals, schools and rivers, and develop an isolation zone that protects the public.

WHY IS ASKRAIL A MUST-HAVE APP FOR FIRST RESPONDERS?

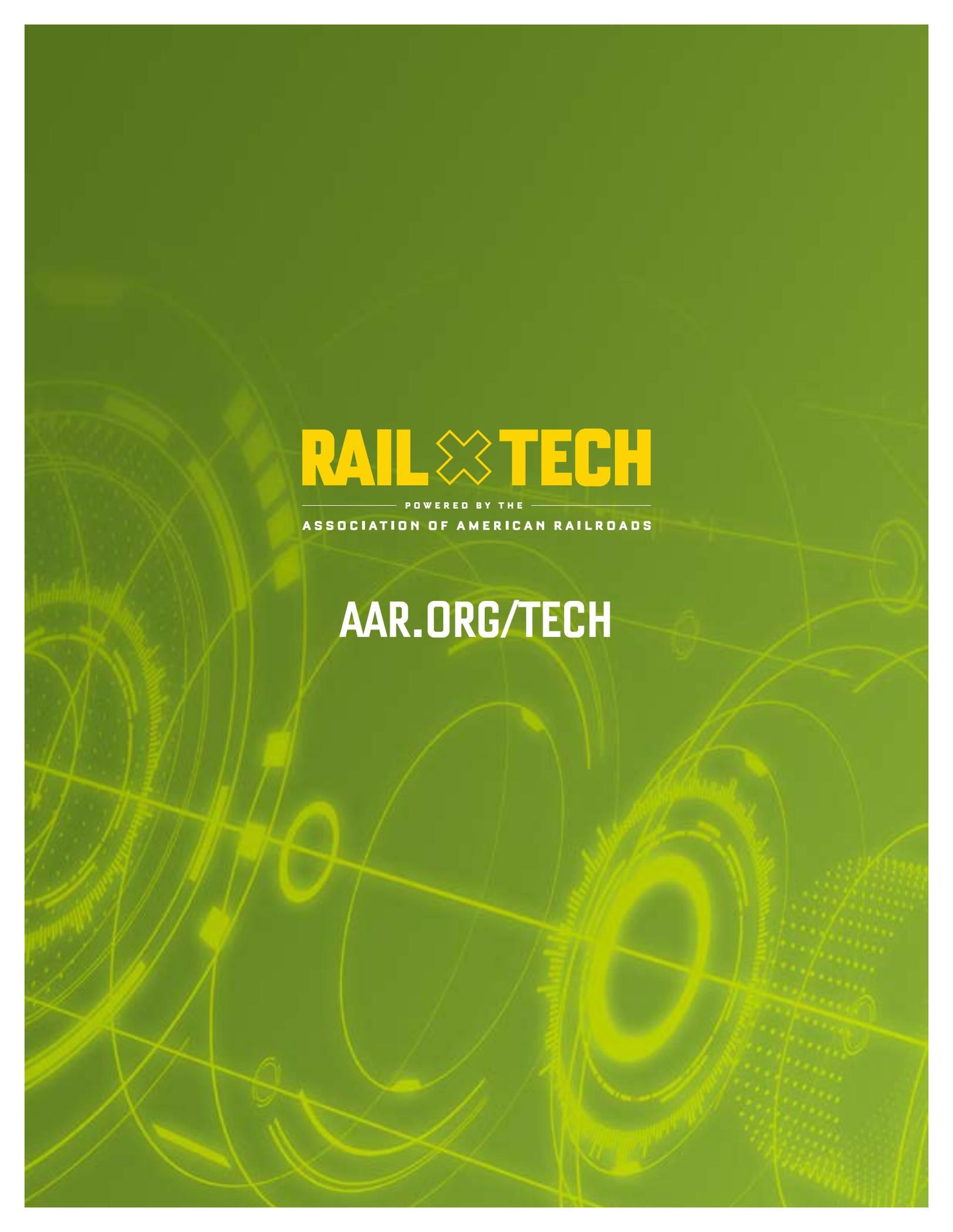
Back in 1978, a rail emergency involving carbon disulfide in Charlottesville took us nearly 24 hours to contain. A significant share of that time was spent assessing the scene and identifying exactly what was on that train. If the same thing happened today, I would immediately have a full view of the information I needed to make better decisions.

The AskRail app provides first responders with accurate, real-time information about the situation at hand, helping them make fast and safe decisions as they work to protect our communities and save lives. It really is a game-changer.

WHO IS USING THE APP AND HOW DO YOU GET IT?

More than 21,000 first responders in all 50 states and Canada have already downloaded AskRail. After downloading, there is an easy, secure verification process that unlocks the app's full features.

For more information about AskRail visit <http://askrail.us/>

The background is a vibrant green with a complex pattern of glowing yellow and white lines, circles, and dots, creating a sense of motion and technology. The lines are of varying thickness and some have arrowheads, suggesting a network or data flow. There are also several concentric circles and smaller dots scattered throughout.

RAIL X TECH

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