

Rail Innovation Keeps America's Freight Moving Safely



BUILDING AMERICA

Union Pacific uses cutting-edge technology to transform how we operate, safeguard our people and communities, and serve our customers.

Our history is one of constant evolution, driven by innovation that sets the standard for safety and operational excellence – to power America's supply chain.



Trains are the safest way to move goods over land.



In 2025, Union Pacific achieved best-ever personal injury and derailment rates.



Union Pacific invests about \$10 million a day to protect and enhance infrastructure.



TRUSTED TECHNOLOGY, PROVEN RESULTS

Union Pacific's long-standing commitment to innovation reduces risk and aides decision-making for our employees:

- **Remote-control locomotives** have enhanced yard safety and productivity for 20+ years, putting control of a train's movement directly into the hands of its operator.
- **SwitchPro NX** automates switching at 20+ terminals, letting employees safely throw hundreds of switches from a handheld device without walking miles across a rail yard daily.
- **Autonomous unloading systems** eliminate manual handling of track materials, cutting unloading time from 10 days to just 5–7 hours.
- **UPGo** and **Fast Gate** technologies streamline intermodal terminal access, while **GPS tracking** improves intermodal shipping container visibility.
- **Energy Management Systems (EMS)** on 3,700+ locomotives optimize throttle and braking to improve train handling and fuel efficiency.

81% fewer manifest train separations with EMS engaged



ZERO separations for intermodal trains



SAFETY AT THE CORE

Our innovative systems proactively identify risks and enhance operations:

- **Positive Train Control** has enhanced rail safety for 9+ years, evaluating train and track conditions across roughly 7 million miles monthly, intervening when necessary to help prevent potential incidents.
- **Point protection cameras** give crews clear, real-time near, far and 180-degree panoramic views of their surroundings.
- **Wayside detectors** generate 16 million data points daily, with 7,000 devices sending real-time alerts on locomotives and rail cars conditions.
- **Track geometry** vehicles scan 500,000+ track miles annually, in addition to the 4.5 million miles of track we visually inspect.



Track inspection teams use advanced tools to enhance safety.



UP.com/innovation

Learn how Union Pacific continually advances technologies that aid employee decision-making, enhance safety and improve efficiency.