UNION PACIFIC RAILROAD SAFETY UPDATE

—

Colorado Transportation Legislation Review Committee
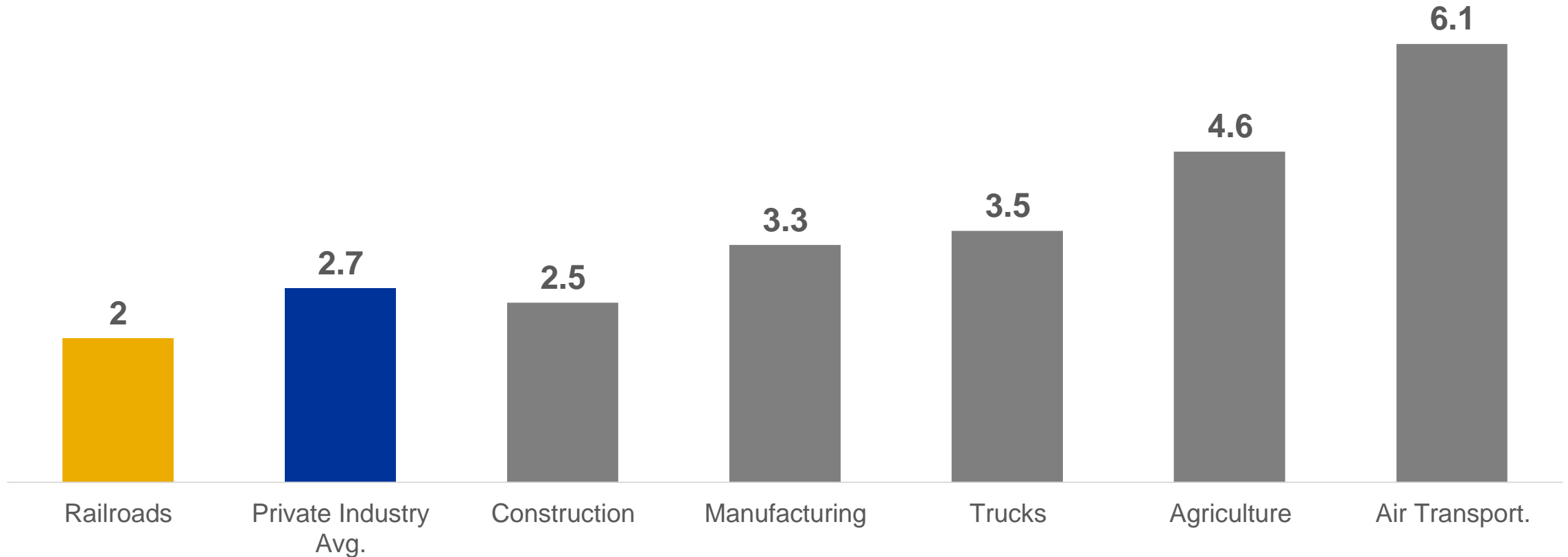
July 24, 2023

Rail Is One of America's Safest Industries

Injuries and Illnesses per 100 Full-time Employees, 2021

Railroads	Private Industry Avg.	Construction	Manufacturing	Trucks	Agriculture	Air Transport.
2	2.7	2.5	3.3	3.5	4.6	6.1

Source: U.S. Bureau of Labor Statistics for 2021 data.

Drones inspect bridges and examine track located in remote terrain or during extreme weather.

Machine visioning identifies defects on passing rail cars; maintenance teams are notified to make repairs.

Underground fiber-optic cables listen to sound waves of passing trains; railroads monitor track safety in real-time.

Freight railroads use technology to make the network safer and more efficient.

ASSOCIATION OF AMERICAN RAILROADS

Get more freight rail facts straight to your inbox **AAR.org/Signal**

3

Keeping Communities Safe

More than 7,000 wayside detection devices monitor the condition of freight cars and locomotives in real time.

Hot Box Detectors
measure bearing temperatures.

Wheel Temperature Detectors
measure the temperature of the wheel plate.

Acoustic Bearing Detectors
record bearing sound signatures.

Wheel Impact Detectors
measure force exerted by an out-of-round wheel.

Wheel Profile Detectors
measure wheel shapes with lasers to determine wear.

Machine Vision Systems
analyze captured images to identify defects.

Wayside detectors generate more than 16M data points that send immediate alerts, allowing Union Pacific to:

STOP TRAIN IMMEDIATELY

REPAIR AT NEXT PLANNED MAINTENANCE VISIT

REPAIR AT NEXT LOCATION

UNION PACIFIC

99.9%

of all hazmat shipments by rail reach destination without incident.

UNION PACIFIC

ROD DOERR

—

Vice President, Chief Safety Officer