

Proactive Safety in the Rail Industry: Safety Management Systems at Work

Improving Safety In Railroad Operations

To maintain vigilance on safety, the **Federal Railroad Administration** (FRA) taps into proactive risk management expertise at **Volpe**, **The National Transportation Systems Center**. Volpe supports two FRA demonstration programs —

- **Clear Signal for Action (CSA)**
- **Confidential Close Call Reporting System (C3RS)**

These programs respectively zero in on **risky behavior and conditions**, and **close calls** in the rail industry. These programs showcase how Volpe's safety management design and analysis can stimulate safety culture change across an entire industry.

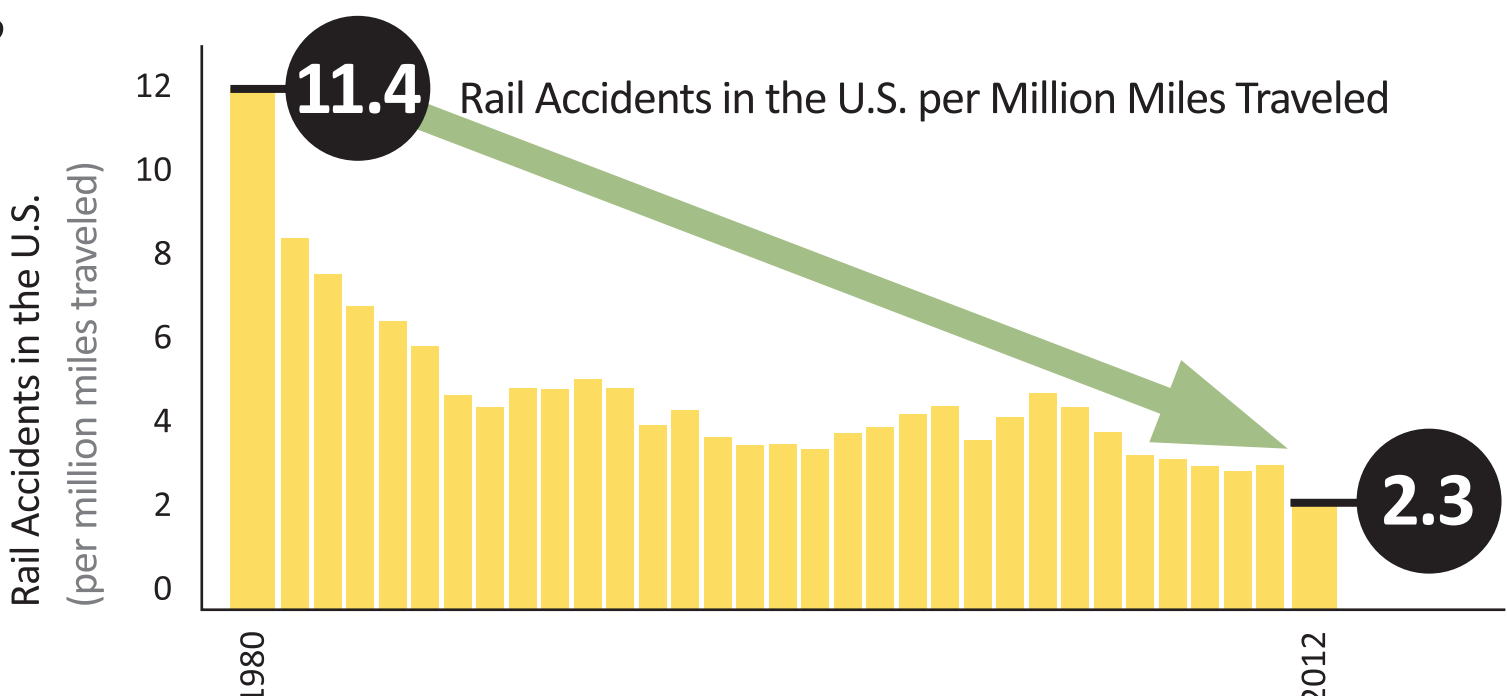
CSA and C3RS haven't just improved safety, they've transformed the worker-manager paradigm. CSA and C3RS mean **safer railways** and **more collaboration**.

CSA and C3RS: Why Now?

Accidents are down across the rail industry, and that's a good thing.

But **fewer accidents means less accident data**.

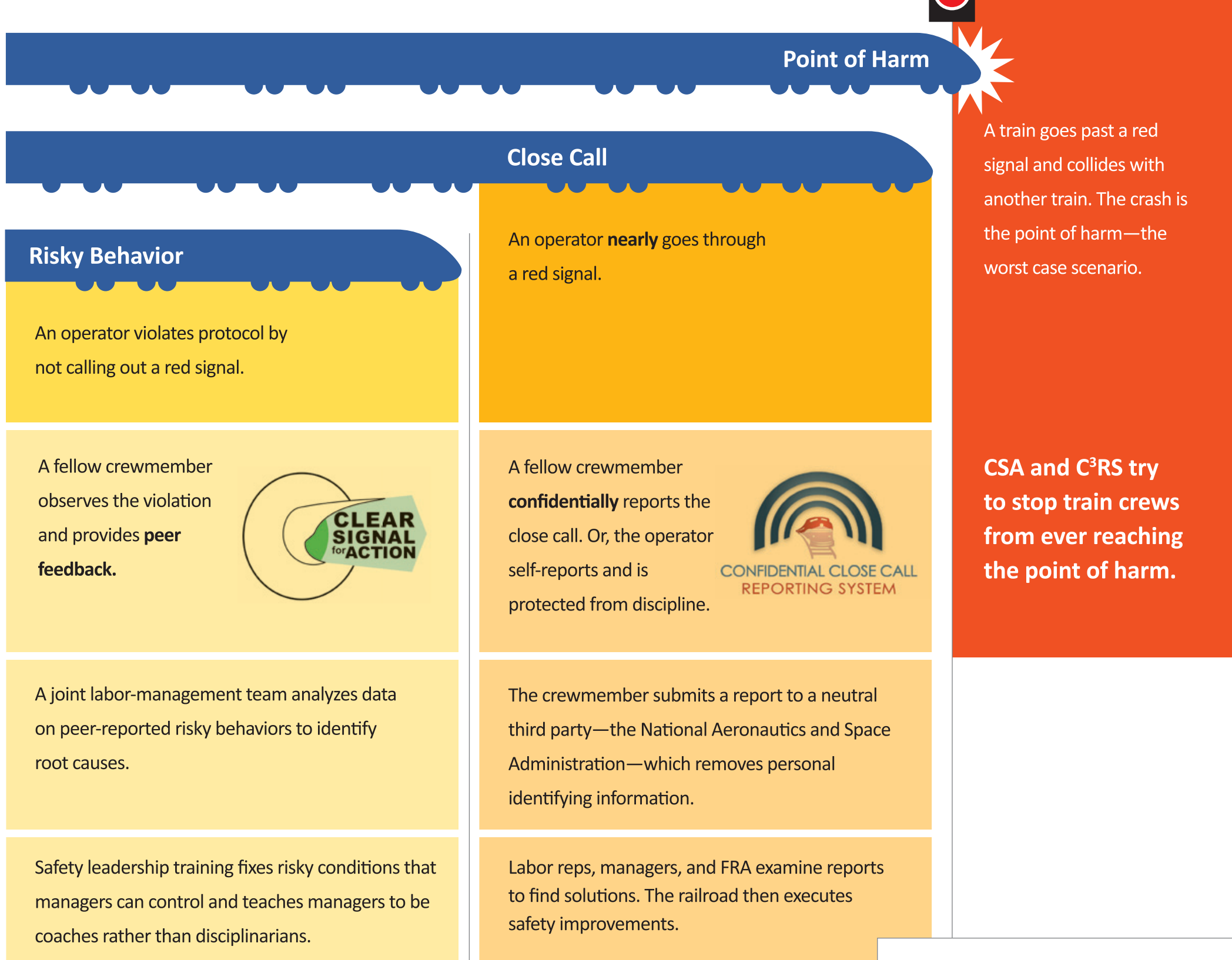
With less data, there is more opportunity for safety issues to go unrecorded and become invisible.



CSA and C3RS: Changing the Way Railroads Think About Safety

Random accidents are rare. Nearly all accidents could have been prevented **if the preceding chain of events had gone differently**. CSA and C3RS extract the lessons that can be learned from the chain of events leading up to an accident. When railroads apply those lessons, **risky behaviors and conditions** and **close calls** are reduced and accidents can be avoided.

CSA and C3RS can improve safety for nearly any railway scenario. Say a train is approaching a red signal. The operator will almost always follow protocol: call out the signal, slow down, and then stop. But **sometimes, the signal isn't called out**. Or, the **operator barely stops in time**.



CSA Results

Injuries drop 76%
to 2.59 injuries per 200,000 worker hours
Chicago, IL—Amtrak baggage handlers

Train operator decertifications drop 79%
FRA may decertify a train operator who goes through a red signal.
San Antonio, TX—Union Pacific locomotive engineers

Derailments drop 62%
Livonia, LA—Union Pacific switching yard crews

C3RS Results

seen at Union Pacific, Canadian Pacific, New Jersey Transit, or Amtrak

Speeding reports drop 51%

31% more train cars moved between incidents.
A railroad is safer when it operates more train cars between incidents.

Discipline cases drop 90%

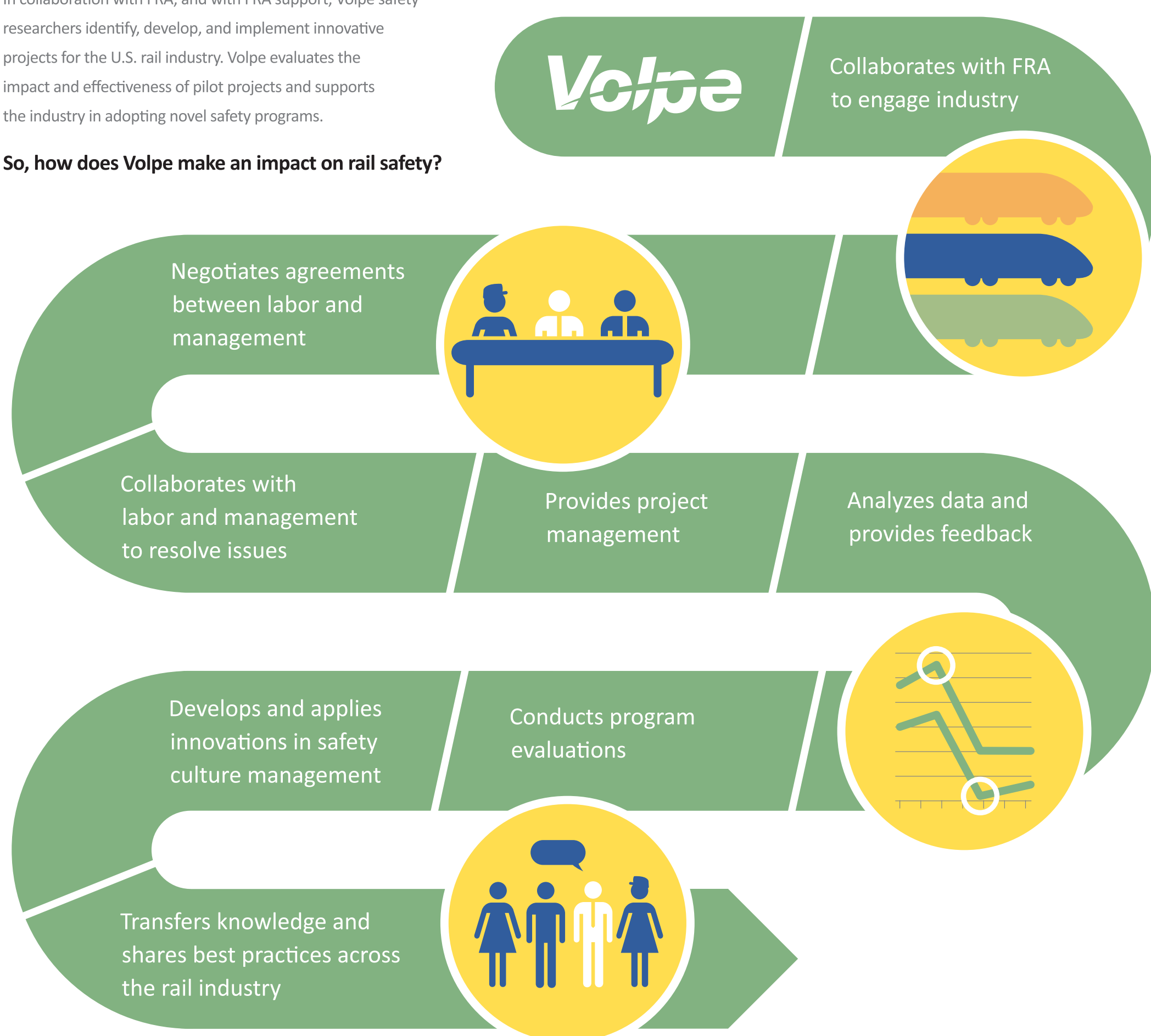
Volpe's results inform important industry decisions

- Safe-2-Safer:** A program designed to transform Amtrak into a proactive safety culture organization that systematically reduces risk at all work sites, improves labor-management collaboration, and encourages peer-to-peer communication.
- Total Safety Culture:** A voluntary, employee-driven process at Union Pacific that focuses on training and peer-to-peer coaching. Total Safety Culture directly empowers employees to address risky behavior and conditions.
- Metro-North:** Is implementing the confidential close calls reporting system.
- Rail Safety Improvement Act:** Requires that railroads develop systematic risk-reduction programs.

CSA and C3RS: Volpe's Role

In collaboration with FRA, and with FRA support, Volpe safety researchers identify, develop, and implement innovative projects for the U.S. rail industry. Volpe evaluates the impact and effectiveness of pilot projects and supports the industry in adopting novel safety programs.

So, how does Volpe make an impact on rail safety?



CSA and C3RS: Creating a Culture of Cooperation

CSA and C3RS haven't just improved safety — they've transformed the worker-manager paradigm.

BEFORE

"Most people don't trust managers. There are maybe a handful of managers that workers trust to talk to."
Worker, pre-CSA
San Antonio, TX

DURING

"The more we teach, the more we get buy in, educating people on what this is: changing at-risk behavior through a non-disciplinary process."
Manager, mid-CSA
San Antonio, TX

AFTER

"The managers hear the workers talking about safety and say, 'Hey, that's what we're concerned about out there.'"
Worker, post-CSA
San Antonio, TX

Volpe technical experts have contributed **24 publications** on Close Calls and Clear Signal for Action.

Available at the Volpe library:
<http://www.volpe.dot.gov/library>

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U.S. Department of Transportation
Volpe, The National Transportation Systems Center