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.

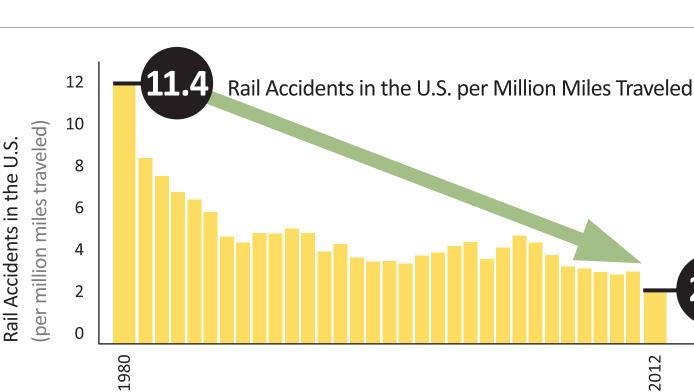
CSA and C³RS: Why Now?

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.

Point of Harm

Close Call

An operator violates protocol by

Risky Behavior

not calling out a red signal.

A fellow crewmember observes the violation and provides peer feedback.



A joint labor-management team analyzes data on peer-reported risky behaviors to identify root causes.

managers can control and teaches managers to be coaches rather than disciplinarians.

Safety leadership training fixes risky conditions that

An operator **nearly** goes through a red signal.

A fellow crewmember confidentially reports the close call. Or, the operator self-reports and is CONFIDENTIAL CLOSE CALL REPORTING SYSTEM protected from discipline.

The crewmember submits a report to a neutral third party—the National Aeronautics and Space Administration—which removes personal identifying information.

Labor reps, managers, and FRA examine reports to find solutions. The railroad then executes safety improvements.

CSA and C³RS try to stop train crews from ever reaching the point of harm.

A train goes past a red

signal and collides with

the point of harm—the

worst case scenario.

another train. The crash is

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 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 riskreduction 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?

Negotiates agreements between labor and management

labor and management to resolve issues

Collaborates with

Collaborates with FRA to engage industry

Provides project management

provides feedback

Analyzes data and

Develops and applies innovations in safety culture management

evaluations

Conducts program

Transfers knowledge and shares best practices across the rail industry

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

Available at the Volpe library: Volpe technical experts

have contributed

24 publications on Close Calls and Clear Signal for Action.

http://www.volpe.dot.gov/library





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