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ADAPTING CLEAR SIGNAL FOR ACTION: AN EARLY RISK IDENTIFICATION AND REMOVAL PROCESS

SUMMARY

Clear Signal for Action (CSA) is a safety process that seeks to change safety culture through the organizational hierarchy. It is a non-regulatory, proactive risk reduction method for improving safety and safety culture, which integrates safety leadership development (SLD), peer-to-peer feedback (PPF) and coaching, and continuous improvement (CI). The CSA project aimed to develop/customize and provide low-cost, comprehensive training and software materials to implement and sustain the CSA safety method for all crafts in passenger railroad operations, specifically related to high-speed and intercity passenger railroads.

From January 2012 to January 2020, Volpe National Transportation Systems Center (Volpe) contracted with a company experienced in applying CSA principles to the railroad industry to adapt the technology from freight operations to high-speed intercity passenger and commuter operations. This included developing the CSA documentation and accompanying software. Volpe created a stakeholder review panel to work with both Volpe and the contractor to adapt the materials in a way that would meet the needs of the passenger railroads and leverage lessons learned from the three Federal Railroad Administration (FRA) -sponsored evaluations of CSA (Zuschlag M. R., 2016; Zuschlag, Ranney, Coplen, & Harner, 2012; Ranney, 2017).

Two passenger railroads were selected to perform the pilot test and demonstrate the full materials and software once fully developed. The contractor's software underwent a usability analysis to adapt the software to meet the needs of the passenger railroad community. Following the development of the materials, the contractor planned to train FRA in how to implement the program and coach FRA in training a railroad.

BACKGROUND

CSA is a proactive safety-culture method for addressing human factors issues in the railroad industry; for example, training, supervision, policy, procedure, and practices. CSA integrates PPF, continuous improvement (CI), and safety leadership development (SLD) to proactively improve the safety of worker practices (i.e., behavior), work conditions, and organizational culture (see Figure 1).

FRA sponsored three research projects to study and measure the impacts of several safety processes found in CSA that together addressed the identification and mitigation of safety risks associated with railroad operations (Zuschlag M. R., 2016) (Zuschlag, Ranney, Coplen, & Harner, 2012) (Ranney, 2017).

One study of CSA took place at a passenger railroad, and the other two studies examined the use of CSA at a freight railroad. The demonstrations found that the use of these CSA processes contributed to measurable improvements in safety.

Over time, the organizations implementing and using this process recognized that it would be incomplete without the continuous improvement process to analyze trends in behavior over time and without identifying conditions outside of the

employee's control that may contribute to unsafe behaviors. Analysis of trends over time and examination and mitigation of conditions that contributed to at-risk behaviors are key to improving safety effectiveness. Organizations that used this process learned that without the CI process and safety leadership, they addressed only part of the safety challenges they faced. Over time, organizations recognized that senior leadership and their involvement is critical to safety management and safety outcomes. As a result, there was additional training for senior leadership added to address their role in managing safety as part of the CSA process.

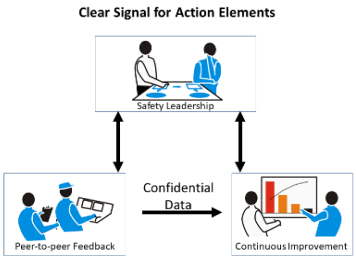

Figure 1. Three elements of CSA

Together, the three elements provided a more holistic approach to safety processes.

OBJECTIVES

The objective of the CSA project was to demonstrate and introduce this holistic approach to safety aimed at addressing core safety culture issues, conducting a series of three pilot projects to demonstrate the usefulness of the CSA approach to safety, and then transferring that technology to the passenger railroad participants in the CSA project.

METHODS

The first of three pilot studies examined the use of CSA in station services on injury rates and cost savings at Amtrak (Zuschlag, Ranney, Coplen, & Harner, 2012).

The second study examined the use of CSA by train crews in main line operations at Union Pacific Railroad (UP) (Zuschlag, Ranney, Coplen, & Harner, 2012; Zuschlag M. R., 2016)

RESULTS

Following the conclusion of the studies, both railroads (i.e., UP and Amtrak) expanded the pilot demonstration to railroad-wide programs. At Amtrak, the CSA program became known as Safe-to-Safer. At UP, the program was called Total Safety Culture. Both railroads hired the same consultant that implemented the three pilot projects that FRA evaluated to assist them with the design and implementation of the programs for their organizations. Based on the positive outcomes from these studies, FRA believed that this program could contribute to safety for passenger railroads, which represents most of the industry, as well as for the large Class I railroads.

CONCLUSIONS

The CSA materials project was an ambitious undertaking that occurred from January 2012 to January 2020, to transfer safety behavior-based technology from industry to the Federal Government for use by passenger railroads. The intent of the project was to provide an affordable mechanism for passenger railroads to adopt a suite of organizational processes that together would contribute to safety improvement. These processes included peer-to-peer observations and feedback, continuous improvement of safety processes, and safety leadership development.

FUTURE ACTION

The CSA project illustrates the challenges of initiating a project to transfer technology from private industry to the Federal Government involving organizational processes. The long project duration (i.e., 8 years) resulted in unanticipated conditions that proved challenging to address within the contract. Changes in funding priorities and varying commitment of finite human and financial resources created conditions that prohibited the project's

completion. In the future, where long projects or contracts are necessary, maximizing flexibility in the contract vehicle can facilitate adapting to unanticipated changes that may arise.

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