



AN EVALUATION OF SAFETY CULTURE INITIATIVES AT BNSF RAILWAY

SUMMARY

Major safety culture (SC) initiatives initiated in the FRA Office of Research, Technology and Development (RT&D), such as Clear Signal for Action (CSA), the Investigation of Safety Related Occurrences Protocol (ISROP), the Participative Safety Rules Revision, and the Confidential Close Calls Reporting System (C³RS) have evolved from successful pilot demonstration projects to company-wide and industry-wide initiatives, including Amtrak's Safe-2-Safer program, the BNSF Railway (BNSF) SC program, Union Pacific Railroad's Total Safety Culture program, and FRA R&D CSA's Program for the Passenger/High-Speed Rail Industry, among others.

These successful SC pilot initiatives illuminate challenges which occur when similar but larger-scale implementations are evaluated:

- *How can a very large, complex dynamic corporate railroad organization, with a multitude of crafts and locations, improve upon and institutionalize a stronger safety culture company-wide?*
- *How can FRA R&D support broad scale acceptance, adoption and implementation of stronger safety cultures across the rail industry?*

To address these key questions, FRA R&D has begun to evaluate company-wide or industry-wide SC initiatives. This report describes the evaluation of one such initiative at BNSF.

BNSF SC INITIATIVES

To develop a corporate culture that is committed to safety and makes safety a core value, BNSF has partnered with outside contractors to implement numerous safety culture initiatives throughout its organization.

In recent years, four major SC initiatives have been implemented: *SafeAlign*® (SA) for leadership development; *Enhanced Safety Training* (EST) and *Approaching Others About Safety* (AO) for employee-led safety training; and the *Behavioral Accident Prevention Process* (BAPP®) for peer-to-peer (P2P) coaching and feedback via a proprietary process, as well as organizational restructuring.

Leadership Development

The *SafeAlign*® initiative is intended to train managers in transformational leadership styles and specific best practices for safety leadership. SA provides multiple workshops such as *Foundations*, *Collaboration*, and *Effective Feedback*.

In 2014, these workshops integrated three additional components including skill-building for on-the-job safety briefings, communicating with employees about safety (which includes creating planned opportunities for managers to observe, provide feedback, and reinforce safe practices), and effective safety coaching.



Employee-led Safety Training

More than a decade ago, BNSF craft employees started EST as a voluntary, company-wide training opportunity for peers to improve safety collectively in divisions and at terminals. In 2013, the AO initiative, which emerged as a component of EST, was designed to focus on effective and proactive safety operating practices, procedures and protocols, including identification of top occupational hazards or risks (e.g., line of fire/release of energy, pinch point, etc.), discussion of safe and at-risk behavior, and provision of informal, ad hoc P2P feedback. EST-AO currently uses a “train-the-trainer” model where supervisors and craft employees learn to facilitate key safety sessions for peers.

Peer-to-Peer Coaching and Feedback

BAPP is a voluntary initiative implemented by BNSF craft employees in collaboration with the Brotherhood of Locomotive Engineers and Trainmen (BLET), the Sheet Metal, Air, Rail and Transportation Workers Transportation Division (SMART TD), and supported by management.

BAPP involves the analysis of FRA reportable accidents or injuries to identify operational practices that contributed to those safety incidents. Based on the identified practices, a checklist is created and employees are trained to use it with their peers to recognize and identify safe and potentially at-risk practices in the workplace. The peer-to-peer checklist is designed to heighten safety awareness by encouraging and promoting immediate feedback and dialogue. The conversations between peers

are intended to reinforce safe work practices in conditions that increase risk of incidents.

As safety trends are identified, descriptive data about SC barriers are collected and used as part of a continuous improvement process designed to remove barriers through additional training, process changes, etc. BAPP also includes a component that trains managers to support the work performed during the process.

Organizational Restructuring

In addition to the BAPP initiative, BNSF restructured its system safety staff. For example, BNSF added several new positions that emphasize proactive safety efforts, particularly the identification of leading safety indicators and precursors to accidents, incidents or workplace injuries. The intent is by adding mid-level manager positions at BNSF, field leaders will be provided with professional development opportunities that enable them to enter the safety department and return to the field with greater responsibilities.

CURRENT EVALUATION EFFORT

BNSF has reported significant reductions in reportable injuries and incidents, which it attributes to its SC initiatives. However, if its initiatives are not independently evaluated, it is uncertain if these efforts have any influence on these positive outcomes.

As a result, BNSF has partnered with FRA R&D and Volpe to conduct an in-depth, three-year program evaluation of its safety culture initiatives. This independent evaluation effort has four goals: (a) describe BNSF SC initiatives



within the context of industry-wide efforts; (b) analyze the implementation of BNSF SC initiatives for lessons learned, which will help guide on-going implementations of SC initiatives across the industry; (c) assess the impacts of these SC initiatives, both separately and combined, to document accomplishments and provide for government accountability; and (d) provide company- and industry-wide guidance on SC change by examining the utility and long-term sustainability of BNSF SC initiatives.

FRA R&D, with the support of Volpe, The National Transportation Systems Center (Volpe), is evaluating the BNSF safety initiatives in three phases: (1) context and input, (2) implementation, and (3) impact and sustainability. *The Program Evaluation Standards* (2010) are being used to guide and assess the evaluation's design, execution, and findings as well as better understand how company-wide SC initiatives like these will fit with the new Risk Reduction Rule.

FRA R&D EVALUATION APPROACH

A multi-method approach will be used to evaluate BNSF's SC programs and activities. Two sites have been selected to compare the implementation of safety culture initiatives, with attention to implications for implementing them throughout BNSF.

Key stakeholders with particular interest in the outcomes of the evaluation, such as leaders from

labor, railroad management and government, will be invited to participate in a Stakeholder Review Panel (SRP). Once formed, the SRP will serve multiple functions: review the feasibility and appropriateness of the FRA R&D proposed evaluation approach; provide on-going input during the evaluation process; and communicate with the industry about the evaluation to provide stronger understanding and utilization of the evaluation products.

PHASE 1: CONTEXT EVALUATION

In Phase 1, which is currently underway, a context and input evaluation is being conducted. FRA R&D and Volpe is reviewing and documenting the history, development and launch of the BNSF SC initiatives. This phase will analyze and describe the safety environment at each site, relate the history of these safety initiatives, examine the resources invested and discuss how the initiatives could improve safety and safety culture company-wide.

A brief evaluation report will describe Phase 1 results and the implications for the design of Phase 2, the implementation evaluation.

CONCLUSION

In recent years, the U.S. rail industry has invested hundreds of millions of dollars to improve safety culture, in large part due to rigorous evaluations of pilot safety culture demonstrations [1]. FRA R&D is building on evaluations of successful safety culture pilot projects to evaluating company- and industry-



wide change initiatives. Now, the major challenge to be addressed is effectively and successfully scaling up these initiatives at both the organizational and industry levels.

As the initiatives are being scaled up, the following questions are key:

- *How can an organization develop, implement, institutionalize and sustain positive changes in safety culture that continuously improves safety outcomes over the long-term?*
- *What lessons learned can be gained from company-wide and industry-wide safety culture change initiatives to help guide strategic planning, policies and procedures, budgeting, staffing, training, communications and accountability more broadly?*

To provide answers, FRA R&D supports the development, implementation and evaluation of four industry- and company-wide safety culture interventions in the U.S. rail industry: (1) the Short Line Safety Institute, (2) the Amtrak Safe-2-Safer program, (3) the FRA R&D CSA Training & Software Materials project for the passenger and high speed rail industry, and (4) the BNSF SC initiatives. Evaluations, such as the current effort at BNSF that is described in this report, are being used to systematically analyze and document the key factors that influence organizational safety improvements and outcomes. They can improve the effectiveness of other safety culture programs, and may stimulate broad-scale adoption of similar company- and industry-wide initiatives across the U.S. rail industry.

REFERENCES

[1] Safety and security: Opportunities exist to improve the safe-2-safer program
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