



# SHORT LINE SAFETY INSTITUTE: 2023 SYSTEMATIC REVIEW

## SUMMARY

The Short Line Safety Institute (SLSI) is dedicated to the continuous improvement of safety and safety culture across all short line and regional railroads in the United States. Strengthening a railroad's safety culture may result in less frequent or severe accidents and create a safer working environment. SLSI defines safety culture as the shared values, actions, and behaviors that demonstrate a commitment to safety over competing goals and demands, based on the U.S. Department of Transportation (DOT) Safety Council's safety culture definition (Morrow & Coplen, 2017).

SLSI conducts an annual analysis to assess the status of safety culture in the industry. This report summarizes findings from a systematic review of the 20 SLSI Safety Culture Assessment Reports created in 2023 and discusses industry trends in the strengths and opportunities for improvement related to safety culture practices. These strengths (e.g., employees are willing to assist each other in understanding and performing safety-related work tasks) and Opportunities for Improvement (Opportunities; e.g., employees express a desire for more recognition of safe work practices in the field) provide insight into and indicators of the status of safety culture in the short line and regional railroad industry. Lastly, this report introduces new ways SLSI can continue to serve the industry.

## BACKGROUND

Since 2015, SLSI has conducted voluntary, non-punitive, and confidential assessments of the safety cultures at participating short line and regional freight railroads (i.e., Class II and Class

III railroads) across the United States. SLSI uses a multi-method model, which has been recognized as “the most robust assessment model in the industry” by a Volpe National Transportation Systems Center evaluation (Kidda & Howarth, 2019). SLSI's Safety Culture Assessment (SCA) model, which includes interviews, on-site observation, and surveys, continues to provide tangible, action-oriented results for participating railroads.



**Figure 1. SLSI created 20 Assessment Reports in 2023.**

After an SCA, the participating railroad receives an Assessment Report. Organized around the 10 Core Elements of a Strong Safety Culture (Morrow & Coplen, 2017), this report presents “Findings” about the strength of safety culture at that railroad, as well as “Opportunities for Improvement”. SLSI offers Technical Assistance to railroads that seek to implement changes with the goal of strengthening their safety culture. In addition, SLSI can conduct follow-up SCAs to further assist participating railroads in their efforts to improve safety culture. As of May 2024, SLSI has conducted 147 SCAs. As of FY22, SLSI can also serve passenger, commuter, historic, and tourist railroads.

## OBJECTIVE

The objective of the systematic review is to examine the strengths and opportunities for improvement in safety culture across the short



line and regional railroad industry, based on SLSI's 2023 SCAs. The annual systematic review informs SLSI of the industry's needs as it continues to develop its programs, resources, and service offerings.

## METHODS

SLSI collected and reviewed the 2023 SCA Assessment Reports (N = 20). SLSI analyzed the Findings (both positive and negative) and Opportunities in each report.

**Report Elements.** The Findings are descriptions of safety culture indicators that the Assessors identified at a railroad. These indicators are based on the 10 Core Elements of a Strong Safety Culture (Morrow & Coplen, 2017). SLSI aggregated, analyzed, and then classified the Findings as either positive or negative across the reports.

The Findings classified as "positive" identify areas in which a railroad demonstrates a characteristic supporting strength in safety culture. The Findings classified as "negative" identify areas in which a railroad demonstrates a weakness in characteristics supporting a strong safety culture, indicating an area for improvement. Following the Findings in the SCA Assessment Reports, Assessors list Opportunities that suggest organizational changes or actions that, if implemented, may strengthen a railroad's current safety culture. Assessment Reports present Opportunities that address any identified gaps in safety culture (i.e., negative Findings). For example, a Finding may be that employees do not always use Personal Protective Equipment (PPE) provided by the railroad. Subsequently, an Opportunity may be that the railroad could clearly define and communicate criteria for PPE usage across all crafts and ensure that PPE is readily available.

## ANALYSIS

The strengths and Opportunities for Improvement in safety culture identified in the reports were reviewed, themed, and coded into a two-level categorical hierarchy (see [Figure 2](#)).

The prevalence of themes and the categories that comprised them were then estimated by calculating their frequencies across reports. The high-level themes that were identified in these reports closely align with safety culture constructs that have previously been established in the scientific literature. These themes and their measures have further been adapted and used as part of the SCA process (Kidda & Coplen, 2016).



Figure 2. Overview of the data hierarchy

## RESULTS

Frequency analyses revealed the prevalence of the strengths and Opportunities for Improvement as organized by the safety culture categories. Key results in order of prevalence are listed below.

### Safety Culture Strengths

- Provision of PPE: Railroads provide PPE to employees as needed and it is readily available.
- Approaching Management with Safety Concerns: Employees feel comfortable communicating safety related issues/concerns.
- Helping Coworkers: Employees are willing to assist each other in understanding and performing safety-related work tasks.
- Safety Communication Quality/Quantity: Bulletins and alerts are used as a learning opportunity on how to prevent safety incidents.
- Leadership/Management Field Presence: There is an adequate presence of management members in the field.



## Safety Culture Opportunities for Improvement

- System for Reporting Safety Concerns/Resolutions: Some railroads could improve their systems for reporting and tracking employee concerns and resolutions to these concerns.
- Recognition of Safe Work Practices: Some employees express a desire for more recognition (beyond awards) and reinforcement in the field for engaging in safe work practices.
- Safe Work Practices: There is a perception at some railroads that work practices may allow unsafe behaviors in order to get the job done faster.
- Orderly Workplace: The organization or maintenance of the property at some railroads could be improved.
- Safety Action Plan: Some railroads could create a safety action plan that is well communicated.

## CONCLUSIONS

SLSI's systematic review of 20 Safety Culture Assessment Reports from 2023 suggests there are prominent strengths in safety culture across the short line and regional railroad industry, such as employees feeling comfortable approaching management with safety concerns and being willing to help coworkers. However, there are also noteworthy Opportunities for Improvement in the industry that require additional attention, such as a need for greater recognition of safe work practices while in the field. By assessing safety culture and examining the practices of the short line and regional railroads, SLSI can gain insight into the industry at large. With this information, SLSI can report generally on the needs of the industry and take action to create and offer resources that address identified railroad safety Opportunities.

## FUTURE ACTION

The 2023 systematic review demonstrates various needs of the industry that can be

addressed by SLSI. SLSI continues to reflect and take action on these needs year-over-year. Actions being taken based on this year's review are described below.

SLSI is working to expand its series of webinars to address industry opportunities for improvement related to formal and well-communicated safety action plans, systems for reporting and tracking safety concerns and resolutions, and how management can encourage safe work practices. SLSI is also in the process of creating a new "Safety Tip" for safe work practices. All currently available webinars and Safety Tips can be found online at <https://www.shortlinesafety.org/>.

SLSI's "Leading Forward" program—focused on teaching industry leaders about leadership principles and how they apply to fostering a strong safety culture—is now planning to integrate best practices around recognizing safe work practices in the field. As of May 2024, SLSI has conducted 38 training courses and continues to promote and offer this program free of charge to interested railroads across the country. SLSI also recently adapted this existing program and created a course specifically designed for women in railroad leadership. SLSI will host its second Women's Leading Forward class in August 2024. For more information or to register for either of these programs, please go to <https://www.shortline safety.org/build-successful-leaders/>.

During the final Close-Out meetings with railroads at the end of an SCA, SLSI is now planning to provide hard copies of its various online resources (e.g., templates and best practices). This will help promote more meaningful discussions in these meetings around how to use SLSI resources and where they are located online. Assessors can answer questions and help clarify the intended use of these resources.

Lastly, SLSI plans to provide their Assessors with the most recent research and publications on safety culture and other related issues. This



consistent flow of information will help keep Assessors current on safety culture and inspire new ideas and points of discussion to have with railroads during SCAs.

## REFERENCES

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