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## SENIOR CROSS-FUNCTIONAL SUPPORT— ESSENTIAL FOR IMPLEMENTING CORRECTIVE ACTIONS AT C<sup>3</sup>RS SITES

### SUMMARY

The Federal Railroad Administration's (FRA) Office of Railroad Policy and Development believes that, in addition to process and technology innovations, human factors-based solutions can make a significant contribution to improving safety in the railroad industry. This led FRA to implement the Confidential Close-Call Reporting System (C<sup>3</sup>RS), which includes voluntary confidential reporting of near-miss events and root-cause-analysis problem solving by a team composed of labor, management, and FRA; implementation of corrective actions; tracking the results of change; and reporting of the results of change to employees. Confidential reporting and joint labor-management-FRA root-cause problem solving are the most innovative of these characteristics for programs in the railroad industry, with demonstration pilot projects under way at Union Pacific Railroad (UP), Canadian Pacific Railway (CP), New Jersey Transit (NJT), and Amtrak.

FRA is also sponsoring a rigorous evaluation of three important aspects of C<sup>3</sup>RS functioning:

- (1) What conditions are necessary to implement C<sup>3</sup>RS successfully?
- (2) What is the impact of C<sup>3</sup>RS on safety and safety culture?
- (3) What factors help to sustain C<sup>3</sup>RS over time?

This report is part of a series of *Research Results* published to provide the public with the evaluation's findings. Two sets of findings are presented. The first set, the baseline of C<sup>3</sup>RS at **one demonstration site**, was obtained using two data sources: worker, manager, and other

stakeholder interviews; and railroad newsletters. The second set of findings uses interviews conducted at the first **three demonstration sites**.

**Evaluation findings at one demonstration site:** The baseline results at this demonstration site indicate that C<sup>3</sup>RS was implemented successfully, and a Peer Review Team (PRT) carried out many corrective actions, even at an early stage of its operations. The PRT Support Team (a senior-management, corrective-actions approval group comprising mechanical, transportation, engineering, finance, and safety and training departments) functioned effectively and exhibited strong communication with the PRT (see Figure 1).

**Collective observations across three sites:** Interview data from the three demonstration pilots in operation suggest a need for cross-functional management support to implement PRT corrective actions at the local and senior levels. Without this communication and support, corrective actions that need assistance from functions other than transportation (i.e., mechanical, engineering, finance, safety and training) prove difficult to implement. This observation about support changed the view of the C<sup>3</sup>RS corrective-action process (see Figures 2 and 3).

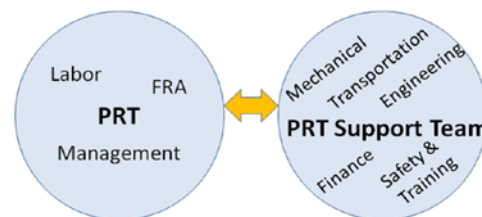


Figure 1. The PRT and PRT Support Team at a Demonstration Site



## BACKGROUND

C<sup>3</sup>RS contains two critical elements designed to help it succeed in railroad settings. First, employees' voluntary reports of close calls are routed through a neutral third party, the U.S. Bureau of Transportation Statistics (BTS) or the National Aeronautics and Space Administration (NASA), which removes any identifiers or personal information. Second, sanitized information from BTS/NASA is sent to a joint labor/management/FRA PRT whose members have been specially trained in collaborative, root-cause problem solving, including implementing corrective actions. FRA is conducting C<sup>3</sup>RS pilot projects on four railroads: UP, CP, Amtrak, and NJT are participating.

A process flow for a C<sup>3</sup>RS report has six steps: (1) a worker experiences or observes a close-call event and reports it to BTS or NASA, the two third-party agencies that have processes to maintain the confidentiality; (2) BTS/NASA debriefs the worker, analyzes the incident, sanitizes identifying data, and forwards the report to the PRT; (3) PRT determines root causes and suggests corrective actions; (4) corrective actions are reviewed, evaluated, and, if appropriate, implemented; (5) implementation process is tracked, and the results of the change are determined; and (6) results are reported. Additional information is available on FRA's Close Calls Web site [1].

## OBJECTIVES

The evaluation is intended to provide knowledge about how C<sup>3</sup>RS can be implemented successfully, its impact on safety and safety culture, and the conditions necessary for long-term viability. Previous *Research Results* [2, 3] summarized earlier evaluation findings.

## METHODS

### Worker, Manager, and Other Stakeholder Interviews

Two types of interviews were conducted.

1) Baseline-phased interviews involved railroad employees and managers both within and

outside of C<sup>3</sup>RS program. These interviews asked about safety, labor-management relations, and C<sup>3</sup>RS program operations.

2) Phone implementation interviews involved key stakeholders, such as PRT members, senior managers, labor officials, FRA, the Volpe Implementation Team, and the third party. These interviews asked about key events related to the functioning and sustainability of C<sup>3</sup>RS.

## BASELINE RESULTS FOR A SITE

### PRT and Support Team Already Making Progress

During the baseline phase, the PRT, with help from the PRT Support Team, analyzed 66 cases and implemented many corrective actions, which included increased safety-related communication, improved training, and changes in equipment. For example, one corrective action helped to improve radio communications between train dispatchers and the yardmaster.

Interviewees reported that the PRT Support Team functioned effectively, meeting every 2 months. It provided feedback to the PRT on the prioritization and status of corrective actions, called PRT members to ask for more information when needed, performed cost-benefit analyses, and provided the perspective of functions other than transportation. Cross-functional involvement on the Support Team included the crafts of transportation, engineering, mechanical, finance, and safety and training (see Figure 1).

### Managers Provide Strong Support for C<sup>3</sup>RS

Interviewees also indicated strong management commitment to C<sup>3</sup>RS. For example, senior management supported the PRT's recommendation to allow some incidents that did not fit perfectly into the scope of the program to be dealt with through C<sup>3</sup>RS. In another example, an employee turned himself in after a violation, not realizing he could have received immunity through C<sup>3</sup>RS, and management let him report it through C<sup>3</sup>RS anyway to prove to labor the strength of its commitment. At the beginning of the program, management quickly



funded and implemented some corrective actions to demonstrate its support. The PRT was also given more days per month to work on cases.

### Cross-Functional Involvement

C<sup>3</sup>RS was originally implemented to include only the transportation labor crafts (conductors, engineers, and dispatchers). At baseline, this railroad found it useful to include a mechanical manager, as well as other functional area managers, on the PRT Support Team to provide interdisciplinary insight into corrective actions that involved mechanical activities. This inclusion generated interest by mechanical labor employees to be able to submit their own close-call reports so that their safety issues could be addressed.

## CROSS-SITE FINDINGS

### Importance of Management Support in Implementing Corrective Actions

The role of the PRT is to analyze data from the C<sup>3</sup>RS reports and to recommend potential corrective actions based on the contributing factors. Because the PRT includes local transportation labor and managers, sometimes it can implement local corrective actions by itself. Other corrective actions are more complicated and require additional stakeholder involvement, analysis, and funds. This requires support from people outside the PRT who understand both the overall C<sup>3</sup>RS process and the root causes of the specific safety issues being addressed. The group requires:

- Cross-functional participation, for example, among transportation, mechanical, maintenance-of-way, and engineering.
- Cost-benefit analysis capability, as well as access to cost data.
- Authority to implement corrective actions both locally and systemwide.
- A tracking system for corrective actions.
- A budget for implementing actions

The group must also have effective communication with the PRT. It should hold periodic meetings that are frequent enough to keep up with the workload. A strong PRT Support Team, like the one at the demonstration site described earlier in this summary, can fill this role.

### C<sup>3</sup>RS CORRECTIVE-ACTION PROCESS

Two findings emerged that were not part of the C<sup>3</sup>RS corrective-action process as originally envisioned by the program's designers. These findings concerned the importance of (1) local and senior management (transportation and other functions) in implementing corrective actions; and (2) reporting, analysis, and development of corrective actions for other major functions (not just transportation).

The original view of the C<sup>3</sup>RS corrective-action process (see Figure 2) shows reports leading to analysis and then to the implementation of corrective actions. The visible improvement caused by the corrective actions would lead to more reporting. The current view (see Figure 3) shows that there are multiple processes for analysis and corrective actions (indicated by the layers behind the Analysis/Corrective Actions box) for functions such as transportation and maintenance. It also shows that corrective-action implementation can require local and/or senior-management cross-functional support. This support contributes to visible improvement in safety and productivity.

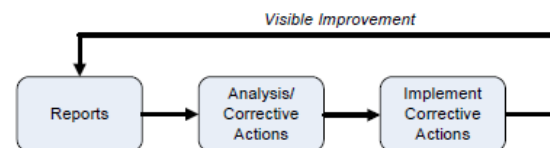


Figure 2. Original View of Corrective-Action Process

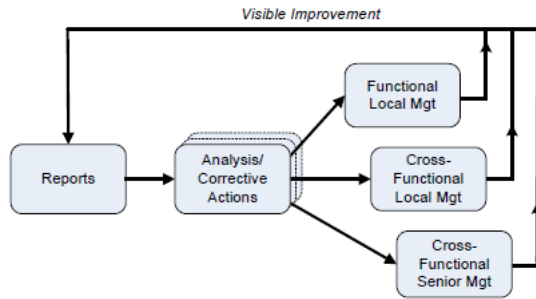


Figure 3. Current View of Corrective-Action Process

## CONCLUSIONS

Current findings show that C<sup>3</sup>RS was successfully implemented, resulting in corrective actions to successfully address safety concerns at this demonstration site. The strong role of the PRT Support Team played a key part in the initial success of C<sup>3</sup>RS. This site served as a good model for an effective and functional PRT Support Team and demonstrated the importance of cross-functional involvement.

## FUTURE DIRECTIONS FOR C<sup>3</sup>RS EVALUATION

This summary focuses on baseline evaluation results at one of the demonstration pilots and on lessons learned across the sites about the importance of senior cross-functional support for implementing corrective actions. As data becomes available, future reports will present additional findings for this demonstration site and other participating railroads and will include formative, summative, and sustainability evaluation findings.

## REFERENCES

- [1] C<sup>3</sup>RS Web site <http://www.closecallsrail.org/>.
- [2] *Confidential Close Call Reporting System: Preliminary Evaluation Findings*. FRA Research Results, December 2008. [DOT/FRA/RR08-33](#).
- [3] *Derailments Decrease at a C3RS Site at Midterm*. FRA Research Results. April 2012. [DOT/FRA/RR12-04](#).

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## KEYWORDS

Close calls, human factors, safety culture, risk reduction, continuous improvement, employee involvement, passenger rail

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