U.S. Department
of Transportation
**Federal Railroad
Administration**

Research
Results

RR09-19
September 2009

Improved Safety Culture and Labor-Management Relations Attributed to Changing At-Risk Behavior Process at Union Pacific

SUMMARY

Changing At-Risk Behavior (CAB) is a safety process that is being conducted at Union Pacific's San Antonio Service Unit (SASU) with the aim of improving road and yard safety. CAB is an example of a proactive safety risk-reduction method called Clear Signal for Action (CSA) by the Federal Railroad Administration (FRA) Human Factors Program within the Office of Research and Development. CSA combines behavior-based safety, continuous improvement, and safety leadership development. With sponsorship from FRA, Behavioral Science Technology, Inc. is instructing and advising on the implementation of CAB. The impact of CAB on safety culture, specifically labor-management relations, is evaluated in this paper based on forced-choice safety-culture surveys and semistructured interviews of workers and managers.

Quantitative analysis of the survey data indicates that, from the start of CAB in 2005 through the end of the evaluation period in 2008, workers and managers reported improved perceptions of cooperation between labor and management. This finding is corroborated by comparing responses to interviews conducted from 2005 to 2008, with a wide cross-section of workers and managers. Responses show an increase in perceived management commitment to safety and greater trust and cooperation between labor and management.

Figure 1. CAB facilitators, along with their unions and Union Pacific (UP) management, receive an FRA Distinguished Public Service Award for cooperating together on the implementation of CAB.

Left to right: United Transportation Union Local Chair John Dunn, CAB Facilitator Kelvin Phillips, UP Executive Vice President Dennis Duffy, Brotherhood of Locomotive Engineers and Trainmen Local Chair Russell Elley, CAB Facilitator Michael Byars.

BACKGROUND

Union Pacific Railroad's (UP) San Antonio Service Unit (SASU) management, the Brotherhood of Locomotive Engineers and Trainmen (BLET), and the United Transportation Union (UTU), in collaboration with the Office of Research and Development's (R&D's) Human Factors Program, instituted a new safety process called Changing At-Risk Behavior (CAB). CAB is a demonstration of a Clear Signal for Action (CSA) process, a cooperative effort designed to affect both employees and management. This proactive, employee-directed, risk-reduction method includes the following components:

- *Behavior-based safety (BBS)*: trained peers take responsibility for safety by observing each other and providing safety-related, confidential, constructive feedback to change their behavior.
- *Continuous improvement*: data, compiled by workers in the course of providing feedback, are used to identify and implement corrective actions to improve safety.
- *Safety leadership development*: managers are trained to effectively support the process.

The CAB process began in August 2005 with the initiation of regular peer-to-peer feedback sessions. CAB initially focused on behaviors to improve alertness and teamwork for locomotive cab operations on the road under constraining signals, a situation that UP calls Cab Red Zone (CRZ), for which specific CRZ rules are in the General Code of Operating Rules. Fourteen months after its origination, the implementation broadened its focus to include safety in yard-switching operations.

Training workers on the BBS component has continued systematically with over half the workforce trained by November 2007. Safety leadership training has also been completed with SASU managers. In the fall of 2007, workers completed approximately 300 peer-to-peer feedback sessions each month across a transportation workforce of 1,100, a rate below what was targeted by the steering committee but still effective. Other evaluations of CAB indicated safety improvements in worker behaviors in response to worker observations. These were associated with significant reductions in incident and engineer decertification rates. Management has been improving the work environment in response to data provided by CAB, reportedly spending $65,000 in one month on one yard alone. Data provided by CAB also encouraged corporate management to institute a policy to provide locomotives with air conditioning at the head end of all trains. With such strength in the implementation, one would expect to see improvements in safety culture from CAB.

OBJECTIVES

While other reports have covered changes in employee safety behavior (see Research Results RR08-08), this paper presents changes in labor-management relations since CAB began as indicated through:

- A survey of workers and managers, using a standard scale of labor-management relations.
- Semistructured interviews of workers and managers, focusing on labor-management relations.

METHODS

Labor-Management Relations Survey

A forced-choice safety-culture survey was administered that included a scale to measure labor-management relations, specifically the perceived cooperation between labor and management.[1]

SASU management distributed the survey by mail to workers and managers at the start of the CAB process in 2005 and again, 28 months later, in 2008. Fourteen percent of the surveys were returned, a not-uncommon rate for mail-in surveys. The distribution of respondents' ages and their tenure on the railroad was not significantly different than that of the SASU workforce population, suggesting a representative sample. If CAB is effective at improving organizational culture, there should be improvements in the labor-management relations scale from the first to the second administrations.

Interviews

Interviews that included questions on labor-management relations were conducted three times: in the winters of 2005–2006 ("initial"), 2006–2007 ("midterm"), and 2007–2008 ("final"). The interviews were confidential, were conducted with one interviewee at a time, and lasted about an hour. Diverse viewpoints were sought by interviewing workers and managers, BLET and UTU members, yard and road workers, and workers at various levels of involvement in CAB, and steering committee members, workers trained to conduct CAB observation-feedback sessions, and workers

[1] Two other scales for organizational culture were included in the survey, but subsequent analyses indicated that they were unreliable for this population of respondents.

not trained in CAB. A total of 53 interviews were conducted across the three times, with approximately the same number of respondents each time.

RESULTS

Labor-Management Relations Survey

Labor-management relations at SASU were regarded on average to be significantly better in 2008 (M = 2.881) than in 2005 at the start of CAB (M = 2.649, $F(1, 303) = 11.123$, $p = 0.001$). There was no tendency for managers to see a greater improvement than workers, or vice versa ($F(1, 303) = 0.050$, $p = 0.823$), although in both 2005 and 2008, managers on average saw relations as significantly better than workers (Ms = 3.472 versus 2.378, $F(1, 303) = 56.296$, $p < 0.001$).

Interviews

Analysis of the interviews revealed several recurring themes related to labor-management relations, which are emphasized in italics below.

From the initial interviews through midterm and final, respondents reported improvements in relations between labor and management. For workers, an important change was seeing a shift toward *greater commitment to safety by management*, as indicated by the following example interview responses contrasting the start of CAB with two years later:

> *2006 Worker: "Management has a great [safety attitude] if it benefits them. They push cars through even if they are not safe. Then they strong-arm employees with safety when they want to."*
>
> *2008 Worker: "Management has improved their focus on safety in the last couple of years. Safety has been a bigger priority."*

Management's commitment toward safety implies that rules are enforced consistently and managers can be relied on for safety. Some workers and many managers report greater *fairness by management and trust* between workers and managers since the initial interviews, as illustrated by this response:

> *2008 Worker: "I have a lot more trust with my managers. I can go to all of them. ... I know that my managers want me to work safe."*

Two years later changes in worker perceptions coincided with reciprocation by managers:

> *2008 Manager: "I used to hate to… come to San Antonio. ... But there has been a lot of change here [in relations]. CAB is a start in improving trust."*
>
> *2008 Worker: "The managers are seeing the difference out there and hear the workers talking about safety and say, 'Hey that's what we are concerned about out there.'"*

With greater trust between workers and managers, some reported better *communication and cooperation* between the two groups on safety:

> *2006 Worker: "[A worker] was told to pull 100-plus cars out [under certain conditions that] broke the train in two. It was a manager's idea to not cut away a smaller set. [He] could have avoided it, but he wouldn't listen to [the worker's] idea."*
>
> *2008 Worker: "I have experienced one incident myself, where managers approached me after letting them know about problems in getting a switch lined up. … They talked to us and said, 'Thank you for bringing it to our attention.'"*

Such openness in turn is associated with more reported communication from workers to managers:

> *2008 Manager: "It used to be that the employees wouldn't even talk to a manager without their Local Chair, but now I can deal with the employees directly."*

Overall, many workers and managers indicated that *relations between workers and managers* have improved. Many respondents see CAB as assisting this transformation:

> *2008 Manager: "I think CAB has opened up the relationship between management and workers. It may be the one avenue that opened doors that hadn't been available before."*

CONCLUSIONS

Overall, there is strong evidence from the surveys and the interviews that safety culture in the form of labor-management relations at SASU is improving as a result of the CAB process. Survey data indicates that workers and managers have improved perceptions of cooperation between labor and management. This is corroborated by the interviews, which over time showed increases in perceived management commitment to safety and greater trust and cooperation between labor and management.

Because of the design of this field evaluation, it is not possible to assess the relative impacts from each of the three components of CSA: BBS as practiced by workers, safety leadership as practiced

by management, or continuous improvement as practiced by both. Instead, these results should be regarded as the joint impact of labor and management working together on safety.

FUTURE DIRECTION AND ACTIVITIES

Another CSA demonstration pilot focusing on yard work is underway on UP's Livonia Service Unit. Analyses will assess impacts on switching practices, yard injuries and incidents, and culture.

WANT MORE INFORMATION?

For more details about CAB at SASU:

Clear Signal for Action Program Addresses Locomotive Cab Safety Related to Constraining Signals, May 2006, Research Results RR07-08.

Promising Evidence of Impact on Road Safety by Changing At-Risk Behavior Process at Union Pacific, June 2008, Research Results RR08-08.

For findings from another CSA project:

Behavior-Based Safety at Amtrak-Chicago Associated with Reduced Injuries and Costs, March 2006, Research Results RR07-07.

Positive Safety Outcomes of Clear Signal for Action Program at Union Pacific Yard Operations, June 2008, Research Results RR08-09.

Safety Improvements Attributed to Changing At-Risk Behavior Process at Union Pacific, Research Results, in press.

These papers are available on the FRA website (http://www.fra.dot.gov) and the Volpe website (http://www.volpe.dot.gov/hf/pubs.html).

ACKNOWLEDGMENTS

Behavioral Science Technology, Inc. (BST), a company that has implemented CSA-like programs in a broad range of industries, is instructing and advising on the implementation of CAB. BST's proprietary CSA method is called Behavioral Accident Prevention Process (known as BAPP)®.

This study would not have been possible without the cooperation of a large number of managers and employees at UP. The authors would especially like to thank Brian Gorton, Michael Byars, and Kelvin Phillips for their considerable assistance, along with Lance Fritz, Joe Santamaria, Roby Brown, Michael Mitchell, Mark Barnum, Ted Lewis, Shane Keller, Ronald Tindall, Greg Burger, John Dunn, Russell Elley, Mike Araujo, Paul Dillon, Carl Eddington, Jose Gutierez, Wil Hardiman, Chad Jistel, Oscar "Doctor" Mayfield, Fernando Nanez, Pat Pino, Martin Vacca, Mario Valadez, and Andy Wright. Thanks also to George Wollard and Jay Finny of BST for providing education and insights into implementing CSA-type methods in the railroad industry. Along with Kelly Johnson and others at BST, George also gathered data for us from a survey customized to our requirements. Jonny Morell from NewVectors and Demetra Collia from the Bureau of Transportation Statistics provided additional technical assistance. Shuang Wu of Computer Sciences Corporation assisted in the processing and analyses of the data. The work is being performed under an interagency agreement between FRA's Human Factors R&D Program and the Volpe National Transportation Systems Center's Human Factors Division.

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KEYWORDS: railroad safety culture, behavior-based safety (BBS), continuous improvement, safety leadership, Clear Signal for Action (CSA), observation-feedback, lessons learned