

IMPLEMENTING SAFETY MANAGEMENT SYSTEMS IN THE CANADIAN RAIL INDUSTRY

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Introduction

In 2001, Transport Canada introduced new regulations that required Canadian railway companies to implement Safety Management Systems (SMS). Although the SMS regulations had been developed in consultation with the railway industry, it became obvious that the railway companies' expectations were not clear and that the regulator was far from being ready to measure compliance to the SMS regulations.

By 2007, nearly seven years after the SMS regulations were introduced, their implementation throughout the rail industry and by the regulator remained inconsistent.

The intent of this paper is not to provide a lecture on the theory or the benefits related to the implementation of Safety Management Systems. Rather, it is to provide an overview of a successful approach that brought railway companies, railway unions and the regulator to the same table to jointly develop and endorse guiding material aimed at enhancing the implementation of SMS within the Canadian rail industry.

Implementation of SMS in the Canadian Rail Industry

In 1999, in order to enhance Canada's transportation safety regime, the *Railway Safety Act* was amended to provide authority to require railways to implement Safety Management Systems. From 1999 to 2001, the regulator consulted its stakeholders in order to develop the SMS regulations.

A truly functioning SMS is the cornerstone of an effective safety culture, and the ultimate objective of the SMS regulations was to enhance safety culture within the rail industry. The 1999 amendments to the *Railway Safety Act* had defined SMS as: "...a formal framework for integrating safety into day-to-day railway operations and include safety goals and performance targets, risk assessments, responsibilities and authorities, rules and procedures, and monitoring and evaluation process".

In 2001, the SMS regulations came into force and the railways were required to file a Safety Management System with the regulator by April of that same year. Most railways did file their SMS on time, after which the regulator did a documentation review of all the submissions. For the most part, all railways were in compliance. However, the documentation review could only verify if the supplied documents met the intent of the regulations. The degree to which the SMS was actually implemented could only be verified through on-site verification audits.

Once the regulator began to formally audit the railways, it became obvious that there were several shortfalls. First, although the auditors had been trained to conduct SMS audits, they had not received adequate training on the fundamental principles of SMS. Second, neither the regulator nor the railway companies had established clear expectations on the anticipated progress of implementation over time. Third, although employee involvement was an important component of SMS, there had been little direct involvement by employees and their unions. Furthermore, without clear protocols, audits were being performed in an inconsistent fashion, which resulted in a lack of credibility in the expected outcomes of SMS.

Consequently, many of the regulator's auditors were becoming frustrated by the lack of established processes. The industry was concerned about the lack of consistency in the audit process and results and rail employees were losing faith in SMS because they were not being involved to the extent that the regulations prescribed.

The 2006 Railway Safety Act Review

In 2006, the Minister of Transport, Infrastructure and Communities tasked an independent four-member panel to conduct a full review of the *Railway Safety Act*. The review was triggered by a sharp increase in railway accidents between 2002 and 2005. Many of the accidents that occurred during this period had dramatic consequences and collectively they resulted in serious injuries and fatalities, significant environmental damages and negative economic impacts. The RSA review was aimed at identifying gaps in the Act, and making recommendations to strengthen the regulatory regime to meet the changing nature of the railway industry and its operations.

Although the RSA review encompassed many key issues concerning rail safety, one of the main objectives of the panel members was to improve rail safety in Canada and, ultimately, promote an enhanced safety culture in the railway industry.

The Panel held 15 public consultation meetings across Canada in all provinces with railway services so that individuals and groups were afforded the opportunity to present their views. Overall, the Panel heard more than 70 presenters and received over 185 written submissions.

One of the main themes that emerged during the public consultations was SMS implementation and related topics such as safety culture, appropriate oversight and risk management. Among those largely concerned about SMS were Transport Canada, the major railways and union representatives. Interestingly, railway employees had less to say on the issue of SMS because, as many of them told the Panel, they were unaware of SMS, did not know that their company had one, or had not been trained in its objectives. The Panel was quite surprised to hear this since compliance to the SMS regulations had been a requirement for nearly seven years.

Never-the-less, in most of the submissions received, stakeholders indicated that SMS was the right approach, but that significant improvement was needed before SMS could be considered fully implemented.

It also became very clear during the review that there were misunderstandings about the intent of SMS. For example, some stakeholders were under the impression that SMS would replace rules and regulations, which is definitely not the case. Misunderstandings such as this proved that there were some serious SMS communication issues that needed to be addressed as the ultimate success of SMS depends largely on effective communication and information sharing at all levels within an organization.

The RSA review also concluded that there were issues with the implementation of SMS across the country. Maturity of SMS plans varied widely across companies, whereas some companies had made remarkable progress, others had not. The weakest components appeared to be in the management of human and organizational factors, risk assessments and information sharing. Although one of the ultimate objectives of SMS is to enhance the safety culture within an organization, the review demonstrated that safety culture in many of the railways had not progressed as much as it should have since the SMS regulations came into force.

Considering the above, the Panel made the following recommendations to the regulator and the rail industry to enhance SMS implementation:

- The Panel supports the Safety Management Systems approach and recommends that both the railway companies and Transport Canada focus their efforts to improve its implementation.
- Transport Canada, Rail Safety Directorate and the railway industry must take specific measures to attain an effective safety culture.
- Transport Canada and the industry should work together to develop the tools and to assist railway companies in improving their safety management systems including:
 - *Proactive safety performance measures;*
 - *Identification of the company data needed to support these measures;*
 - *Measurement of safety culture;*
 - *Guidance on company safety-risk profiles and risk assessments of ongoing activities;*
 - *User-friendly safety management system tools for small railway companies;*
 - *Evaluation techniques to supplement existing audits and inspections; and*
 - *A means of involving railway employees at all levels and, where possible, through health and safety committees and representatives.*

How were the recommendations addressed?

In order to address the RSA review recommendations as well as many others, Transport Canada and the rail industry decided to create a Working Group that would include representatives from the regulator and railway companies, as well as representatives from all railway labour organizations. Engaging labour was essential to ensure the high level of employee involvement required to enhance safety culture in the industry.

The composition of the Working Group allowed for several productive meetings during 2008-2009, and the group generated a number of proposals to address and advance the recommendations formulated by the Panel. Working collaboratively, the group produced four core documents that are clear and simple to use and provide excellent guidance material to all stakeholders:

- *Railway Safety Management System – Guide*
- *Railway Safety Management System – Best Practices*
- *Railway Safety Management System – Best Practices for Small Railways*
- *Safety Culture Checklist*

Railway Safety Management Systems – Guide. The Guide is intended to assist railway companies in developing, implementing and enhancing SMS to meet the requirements of Transport Canada's *Railway Safety Management Systems Regulations*. It discusses the 12 core components of safety management systems that are required by section 2 of the Railway SMS Regulations and demonstrates how these components are integrated in the SMS process. Finally, the Guide defines the key concept of safety culture, and describes how a strong safety culture can be achieved by applying the information contained in the previous chapters.

Guide for Developing, Implementing and Enhancing Railway Safety Management Systems – Best Practices. This compendium of best practices is to be read with the *Guide* and provides practical advice and suggestions for railways to meet the requirements of Transport Canada's *Railway Safety Management Systems Regulations*. It contains excerpts from relevant standards and guidelines, as well as specific examples of SMS methods and approaches that have been adopted by various Canadian railway companies to implement the 12 core SMS components required by the regulations.

Guide for Developing, Implementing and Enhancing Railway Safety Management Systems – Best Practices for Small Railways. This guide is to be read in conjunction with the *Guide* and *Best Practices* and provides practical advice and suggestions for smaller railways to meet the requirements of Transport Canada's *Railway Safety Management Systems Regulations*. Similar to the *Best Practices* guide, this document contains excerpts from relevant standards and guidelines as well as specific examples of SMS methods and approaches that have been adopted by various Canadian railway companies to implement the 12 components of the safety management systems required by the regulations -- but from a smaller railways' perspective.

Safety Culture Checklist. The Checklist was developed to assess the safety culture of a particular railway. The checklist is easy to use and is based on five key practices:

1. Leadership and commitment to safety culture
2. Two-way communication
3. Stakeholders/employee/employee representative involvement
4. A learning culture
5. A just culture

The Working Group members also developed their own definition of safety culture. The members defined safety culture in the Canadian rail industry as:

“The safety culture of an organization is the result of individual and group values, attitudes, perceptions, competencies and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization’s health and safety management system.”

“Organizations with a positive safety culture are characterized by communications from various stakeholders founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures.”

Although these new guidelines have been out for only two years, they have provided a better understanding on what is expected from railway companies. They have also clarified the role of labour organizations and provide a solid template for Transport Canada's inspectors when performing an audit.

Following the review, SMS was also added as a permanent agenda item for the national Advisory Council on Railway Safety, which meets approximately three times per year. The Advisory Council on Railway Safety includes representatives from the rail industry, governments (federal and provincial), shippers, suppliers and all railway labour organizations. This forum provides an opportunity for all represented stakeholders to raise and discuss issues pertaining to rail safety, including SMS. SMS is being considered by all members as a holistic approach to safety that will improve the safety of the Canadian rail industry.

Proposed Amendments to the *Railway Safety Act*

The *Railway Safety Act* is currently undergoing a legislative review and amendments are being proposed to enhance Safety Management Systems. Among the proposed amendments are the following provisions:

- the identification of an executive who is responsible for company operations and activities and accountable for the extent to which the requirements of the safety management system have been implemented;
- the implementation, as a result of a risk management analysis, of remedial action required to maintain the highest level of safety;
- the continuous monitoring and regular assessment of the level of safety achieved;
- in the case of a railway company, the implementation of non-punitive internal reporting by employees of contraventions of the Act or of any regulations, rules, certificates, orders or emergency directives under the Act relating to safety or of other safety concerns;
- in the case of a railway company, the implementation of non-punitive internal reporting by employees of contraventions of the Act or of any regulations, rules, certificates, orders or emergency directives under the Act relating to safety or of other safety concerns;
- the involvement of railway company employees and their bargaining agents in the ongoing operation of the company's applicable safety management system; and
- the Governor in Council will have the authority to make regulations respecting the criteria to which the SMS must conform.

So what have we learned?

Although we firmly believe that we are now on the right path, we would use a different approach if we had the opportunity to start all over again.

- 1) Before initiating the development of the SMS regulations, we would train our workforce in the fundamental principles of SMS.
- 2) Once the fundamental principles of SMS were well understood by all our people, the SMS regulation development could be initiated in consultation with stakeholders. The regulations would also provide more criteria than the current ones to ensure that expectations are clear for the railways and their employees.
- 3) We would develop a robust audit protocol that would provide a measurement tool that would allow the regulator to evaluate the degree of implementation of the SMS regulations.
- 4) We would train all our inspectors on proper audit techniques. The training program would be developed to support the regulation and the audit protocol.
- 5) Implement the SMS regulations.

We believe this approach would have provided far better expectations to all stakeholders resulting in full implementation over a shorter period of time.

Conclusion

The success of SMS depends largely on a strong commitment from all stakeholders and will not occur unless employees are fully involved in both the development and the implementation of SMS.

The Working Group tasked to address the recommendations formulated by the RSA review Panel has clearly demonstrated that it is possible for all stakeholders to work cooperatively and efficiently towards the same objectives.

The guidelines developed by the SMS Working Group now provide all stakeholders with a common understanding of what is expected in order to comply with the SMS regulations. The net result for all will eventually be an enhanced safety culture in the Canadian rail industry.