

## **WORKING PAPER**

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# **“Smart Regulation” and Public Safety: Transport Canada’s Safety Management System (SMS) Model and the Lac- Mégantic Disaster<sup>1</sup>**

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### **Abstract**

This paper examines the regulatory regime for railway safety in Canada in the context of the July 2013 Lac- Mégantic disaster. Building on the author’s previous work in the evaluation of regulatory regimes related to public goods, the paper employs an evaluative structure organized around criteria related to governance, accountability and performance. The paper identifies significant weaknesses in the existing regime, particularly its focus on the implementation of a regulatory framework focused on the oversight of railway company developed safety management system (SMS) plans from 2001 onwards. While the SMS initiative began as a well-intended effort to improve railway safety performance, grounded in combination of “smart regulation” and management systems thinking prevalent in Canada and elsewhere in the OCED in the late 1990s, in practice the initiative is found to have become a significant distraction away from Transport Canada’s traditional safety oversight functions. The simultaneous implementation of the SMS based regime and traditional regulatory oversight functions appears to be beyond the existing capacity of the department. Drawing on experience in environmental regulatory regimes, the paper suggests that the SMS-based regime be replaced with strengthened statutory provisions regarding the personal responsibility and liability of company officers and directors in ensuring the safe operation of railways,

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and that Transport Canada's oversight activities be refocused on conventional regulatory functions. A number of additional suggestions for strengthening the railway safety regime are also presented.

## **Introduction**

In the early hours of July 6<sup>th</sup>, 2013, an unattended train of 73 car-loads of crude oil from the Bakken shale formation in North Dakota, operated by the Montreal, Maine and Atlantic (MMA) railway ran away and then derailed, exploded and burned in the heart of the small Quebec town of Lac-Mégantic. Forty-seven of the town's residents died in the ensuing inferno, making it the deadliest rail accident in Canada of the past century.

The disaster has drawn close attention to Transport Canada's role as a public safety regulator and the department's approach to rail safety regulation. Although there has been no public inquiry into the tragedy, reports from the Transportation Safety Board (TSB), Auditor General of Canada (OAG), Canadian Centre for Policy Alternatives (CCPA), and a number of media outlets, particularly the Globe and Mail, Toronto Star, and Radio-Canada, have highlighted gaps in Transport Canada's oversight of railway operators that are seen to have contributed to the accident. Indeed in eyes of many observers a major disaster in the rail sector was almost inevitable, particularly in the context of the rapid increase in the movement of crude oil by rail in North America from 2010 onwards (Winfield 2013).

Particular attention has been given to the "safety management system (SMS)" based regulatory model adopted by Transport Canada under 1999 amendments to the *Railway Safety Act* (RSA). Under the SMS model the details of establishing and implementing the operating practices required to meet safety requirements for railway operations were placed in the hands of the railways themselves, with Transport Canada overseeing the development and implementation of their plans.

This paper began as an examination of the SMS-based dimension of the regulatory regime employed by Transport Canada as an example of the "smart regulation" concept

that was widely promoted within the Organization for Economic Cooperation and Development (OECD) in the late 1990s and first half of the past decade. The Department's application of the model was extended to aviation as well as rail safety from 2005 onwards, and is currently in the process of being expanded to encompass marine and road safety (SCOTIC 2015). As the paper's examination of the role of SMS requirements in rail safety oversight regime evolved it became apparent that the SMS component was only one aspect of the system that contributed to the Lac-Mégantic disaster. A wider consideration of the regime was necessary.

In undertaking that broader assessment, the paper builds on author's previous work on organizational and regulatory models related to public safety regulation. This includes specific research related to drinking water safety oversight (Winfield and Benevides 2001), public safety regulation (Winfield et.al. 2002; Winfield 2015 forthcoming) and natural resources management and environmental regulation (Winfield and Benevides 2005).

The assessment framework employed in this paper to examine the railway safety regulatory regime is grounded in criteria related to governance, accountability and performance established and refined through this earlier work, and modified in a manner specific to the case of railway safety regulation. The updated criteria, which were developed through reviews of the literature on 'new public management' approaches to public administration and "smart regulation," are shown in **Table 1**.

**Table 1 – Evaluative Criteria – Public Goods Regulatory Regimes**

Category	Criteria
Governance	<ul style="list-style-type: none"> <li>• Clarity in assignment of responsibilities (APC 2000)</li> <li>• Separation of policy and administrative functions between the government and delivery agent (Charih and Rouillard, 1997)</li> <li>• Potential for conflicts of interest in structure (Bakvis 1997).</li> <li>• Capacity of delegated agencies to undertake required functions (APC</li> </ul>

	<p>2000)</p> <ul style="list-style-type: none"> <li>• Impacts on democratic policy discourse and dialogue (Bakvis 1997)</li> </ul>
Accountability	<ul style="list-style-type: none"> <li>• Clarity of lines of responsibility and authority (APC 2000).</li> <li>• Oversight and control mechanisms (APC 2000); <ul style="list-style-type: none"> <li>○ Oversight by Transport Canada <ul style="list-style-type: none"> <li>▪ Capacity</li> <li>▪ Legal authority to revoke delegations, make orders</li> </ul> </li> <li>○ Oversight by Legislative officers and other agencies (OAG 1999) <ul style="list-style-type: none"> <li>▪ OAG</li> <li>▪ TSB</li> </ul> </li> <li>○ Public Oversight <ul style="list-style-type: none"> <li>▪ Access to information</li> </ul> </li> </ul> </li> <li>• Liability and insurance issues</li> </ul>
Performance/outcomes	<ul style="list-style-type: none"> <li>• Inspection and compliance rates</li> <li>• Safety outcomes (Politt 1995; APC 2000)</li> <li>• Risks of policy learning/operational experience de-coupling (Thomas, 2000)</li> <li>• Interagency coordination vs. reinforced siloing (Dunleavy et.al., 2005; Pal 2014)</li> <li>• Cost-effectiveness (Politt 1995; APC 2000)</li> </ul>

Building on the insights of Paul Thomas (2000) and others (Boston 2000) that structural changes of the type involved with the SMS regime may not be need to improve performance, the paper follows the assessment of the existing regime, with a consideration of alternative approaches for achieving the goal of enhancing the levels of management attention and oversight given by regulated entities to public goods, such as safety, health and the environment. The paper specifically draws on experiences in the realm of environmental regulation at the federal and provincial levels in Canada in this regard. The paper finds that the RSA lacks features that have become standard features of Canadian environmental regulatory statutes, particularly since the ‘reformation’ of environmental law in the direction of more rigorous enforcement

regimes from the mid-1980s onwards. Differences in provisions around the liability of company officers and directors in the event of offenses, order powers and other oversight structures are particularly noteworthy in this regard.

### **Background: SMS and “Smart Regulation”**

The SMS component of the regulatory regime for railway safety established through the 1999 amendments to the RSA emerged at time of confluence of two major themes around the regulation and management of firms engaged in activities that could pose risks to public safety, health or the environment.

The first of these themes was the application of the concept of “smart regulation” to public goods regulation. Applying ‘new public management’ (Pal 2014, 195-204) themes the regulatory functions of governments, the “smart regulation” concept emphasized the building of “partnerships” with regulated entities in the delivery of regulatory programs. More specifically “smart regulation” was grounded in arguments that it had become impossible for governments alone to carry out the required levels of standards development, inspection, and oversight, particularly in periods of fiscal restraint, and that the non-state actors, including the regulated firms, need to be enlisted as “partners” in the implementation of regulatory systems (Gunningham and Sinclair 1998). These principles were explicitly embraced by the Canadian federal government’s External Advisory Committee on Smart Regulation (EACSR 2004), established by the Privy Council Office (PCO) in 2003, and in subsequent PCO and Treasury Board Secretariat policies (TBS 2011).

The federal government’s approach to the implementation of NPM/“smart regulation” principles to public goods regulation drew on a second major emerging theme around the management and regulation of firms whose activities posed risks to public safety, health and the environment. From the mid-1980s onwards, firms began to develop internal management systems around these types of activities. These systems were usually required to conform to some form of externally established requirements, as confirmed through an industry association or via third party audits and approvals. The chemical industry’s ‘Responsible Care’ launched in the aftermath of the 1984 Bhopal

disaster in India provided the leading example of such an initiative. Formalized non-sector specific systems around quality (ISO 9000 - 1987) and environmental management (ISO 14000 – 1996) have subsequently emerged under the auspices of the International Organization for Standardization. These management systems typically focus on conformity with required management processes, as opposed to requiring the achievement of specific environmental, safety or health outcomes (Clapp 2001). They have also been employed as a strategy for pre-empting the imposition of more stringent formal regulatory regimes by the state (Macdonald 2007).

The integration of “smart regulation” and management systems concepts is sometimes referred to as a form of “reflexive” regulation – regulatory regimes intended to encourage self-reflective and self critical processes within organizations (Orts 1995). The “reflexive” regulatory model has been strongly pursued by the Canadian federal government where it is the front-line safety or health regulator, as is the case with foods, drugs, and rail, air, and marine transportation. Specifically it has sought to formally incorporate the “management system” concept into its regulatory oversight regime. Under this model, regulated entities are required to develop their own strategies for protecting public safety and health in their operations and products. These strategies are then subject to approval by the relevant federal regulator. Federal regulatory oversight and inspection efforts are then increasingly focused overseeing the implementation of these management systems processes rather than on the actual observation of the regulated firms’ activities in the field (OAG 2012, 2013). The Hazard Analysis and Critical Control Point (HACCP) systems employed in food and drug regulation, and the Safety Management System (SMS) regime adopted by Transport Canada for rail, aviation, road freight and marine safety are prominent examples of this practice.

### The Railway Safety Regime and SMS

Canada’s railway safety regime is established principally through the *Railway Safety Act*. The legislation underwent significant amendments in 1999, mainly for the purpose

of establishing the SMS dimension of the oversight regime. The act was updated with respect to SMS in 2012 and further amendments were introduced by the government in February 2015 (Bill C-52 – *The Safe and Accountable Rail Act*), as part of the government's response to the Lac-Mégantic disaster. The government has also made a number of changes to specific rules and requirements since the Lac-Mégantic disaster (SCOTIC 2015 4-7).

The regime as it currently exists consists of three major components. General rules, regulations and engineering standards for railway operations are set by Transport Canada through such instruments as the Canadian Railway Operating Rules (CROR). Railways are required to have Railway Operating Certificates (ROC) issued by Transport Canada under the RSA (s.17.4 (1)). These certificates may be subject to such terms and conditions as the minister considers appropriate (s.17.4(2)) although railways may request variations to these conditions (s.17.4(3)).

Secondly, individual railways are permitted under the RSA (ss.19&20) to establish their own operating rules, subject to Transport Canada review and approval. These company rules cover such subjects as track and rolling stock maintenance, and most aspects of operations (SCOTIC 2015 pg.9). The approved rules have the same force and effect of regulations, but regulations take precedence over company rules. The RSA provides highly qualified direction to the minister to ensure that the rules are uniform in dealing like matters among different companies (“the Minister shall, to the extent that it is, in the opinion of the Minister, reasonable and practicable to do so, ensure that those rules are uniform (s.21)).”

The third component of the system are the SMS requirements for railway safety that flowed from 1999 amendments to the RSA, and were first implemented through the *Safety Management System Regulations* adopted in 2001.

“Safety management systems” were defined in the amendments to the RSA as

“a formal framework for integrating safety into day-to-day railway operations and includes safety goals and performance targets, risk assessments, responsibilities and authorities, rules and procedures, and monitoring and evaluation processes” (RSA s.4).

The components of a SMS are defined through the 2015 SMS regulations (s.5A) as including:

- “(a) a process for accountability;
- (b) a process with respect to a safety policy;
- (c) a process for ensuring compliance with regulations, rules and other instruments;
- (d) a process for managing railway occurrences;
- (e) a process for identifying safety concerns;
- (f) a risk assessment process;
- (g) a process for implementing and evaluating remedial action;
- (h) a process for establishing targets and developing initiatives;
- (i) a process for reporting contraventions and safety hazards;
- (j) a process for managing knowledge;
- (k) a process with respect to scheduling; and
- (l) a process for continual improvement of the safety management system.”

Under the SMS regulations, companies were required to collect and submit performance and safety data to minister on request (s.3(2)), submit an initial description of their SMS, including the company’s organizational structure, operations and rail network, copies of its safety policy, safety performance targets, risk management and control strategies, training and qualification programs, internal safety audit processes and titles of the documents constituting in the SMS (s.4). Annual submissions were then required on any changes to this information along with information on safety performance and accident rates (s.5). The SMS requirements applied to the 28 federally regulated railways, including the MMA.

Transport Canada described the SMS model as a shift from a ‘traditional’ approach where the department performed inspections of federal railways’ compliance with



regulations, rules, and engineering standards, such as the Canadian Rail Operating Rules (CROR) under the *Railway Safety Act*, to a system where Transport Canada focussed on assessing whether railways have implemented effective safety management systems to manage their safety risks in day-to-day operations.

The approach was stated to continue to include inspections of federal railways' compliance with regulations, rules, and engineering standards (OAG 2013 Exhibit 7.5), although these are seen to be secondary activities relative to the role of inspectors as safety system evaluators (OAG April 2012 exhibit 5.3.) The railways were supposed to manage rail safety risks and improve safety performance on a continuing basis, while Transport Canada was to ensure that safety management systems were free of deficiencies that might compromise rail safety (OAG 2013, para 7.9). Part of the theoretical basis for the SMS concept was that safety research demonstrated that organizations could be compliant with prescriptive regulations, yet still be unsafe. More specifically, it was argued that compliance did not necessarily mean effectively managing risks, and that therefore additional structures were required to ensure safety (RSA Review Advisory Panel 2007 s.5.1).

Consistent with this view, Transport Canada has always taken the position that the SMS system was to operate over and above traditional regulations, rather than as a substitute for them (Campbell 2014 17; Canada 2014 2). However no additional resources were initially provided to Transport Canada to implement the SMS system over and above the existing 'traditional' regulatory regime when it came into operation in 2001.

The SMS system was subject to significant criticism from the outset. A Canada Safety Council report released in 2007 described the system as one which "allows rail companies to regulate themselves, removing the federal government's ability to protect Canadians and their environment, and allowing the industry to hide critical safety information from the public"(Quoted in Campbell 2013 pg.23).

A series of high profile rail accidents between 2005 and 2007 led to the establishment of a *Railway Safety Act* Review Advisory Panel and a study on rail safety by the House of

Commons Standing Committee on Transport, Infrastructure and Communities (SCOTIC). The panel (RSA Review Advisory Panel 2007) and standing committee (SCOTIC 2008) made extensive recommendations regarding rail safety, with both placing a strong emphasis on accelerating and improving implementation of the SMS regime. The standing committee recommended that:

“Transport Canada and the railroad companies develop, within one year of the presentation of this report in the House of Commons, an action plan for the implementation of SMS, including timelines for full implementation of the system (Recommendation 4).

The panel, for its part, stated that its support for the safety management system approach and recommended that both the railway companies and Transport Canada focus their efforts to improve its implementation (Recommendation 17). The panel further recommended that:

“Transport Canada, Rail Safety Directorate should be organized so as to better integrate safety management systems as the key focus of its oversight activities (Recommendation 20).”

In 2009, the Parliament approved \$71 million in funding for Transport Canada, including \$43 million to improve the regulatory framework and the department’s oversight of the federal railways’ safety management systems, (OAG 2013. 7.21).

Amendments to the *Railway Safety Act* flowing from the work of the railway safety advisory panel and standing committee were adopted in 2012 and came into force in May 2013, just before the Lac-Mégantic accident. The amendments introduced administrative penalties for certain violations of the act, and required that each SMS to name an ‘accountable executive’ responsible for safety, introduced whistleblower protection for railway employees who reported safety violations to their companies and required companies to demonstrate that they continuously manage risks (Transport Canada 2013). Subsequent amendments to the SMS regulations announced in July

2014 and adopted in February 2015 added substantial detail to the SMS requirements with the intention of facilitating more effective implementation and enforceability, required continuous monitoring and regular assessments of safety and expanded the application of the SMS regime to 35 “local railway companies” that operated on federal track (Canada, 2014).

Although always presented by Transport Canada as a supplement to the regulatory regime, the Auditor General’s reports on aviation (2012) and railway safety (2013) make it clear that SMS implementation and oversight has become foundation of the department’s safety regulation regime. The centrality of the SMS system to the rail safety regime was reinforced significantly by the reports of the RSA review advisory panel and the SCOTIC (2008). The recommendations contained in the Auditor General’s 2012 and 2013 reports on aviation and rail safety respectively also reinforced the focus on SMS implementation.

### **Evaluation of current SMS Model.**

The following section of this paper assesses the current status of the railway safety regime relative to the criteria outlined in **Table 1**.

#### Governance

##### *Clarity in assignment of responsibilities*

The *Railway Safety Act* and related regulations establish a complex allocation of roles and responsibilities among Transport Canada and railway operators through the three part regulatory regime described above. In some cases, Transport Canada sets general rules, regulations and standards, with which railway operators are required to comply. In addition, individual operators can, with Transport Canada approval, set and vary their own operating rules. Railways are to ensure implementation of both Transport Canada and their individual railway established rules through their SMS. The SMS plans are subject to Transport Canada and oversight/audit of their implementation. Transport Canada can also continue to do ‘traditional’ regulatory inspections for compliance with rules, regulations and engineering standards and remains responsible for enforcement

actions. Violations of the SMS regulations are considered offences under the RSA (s.41(2)).

The situation is further complicated by the consideration that the Transport Canada general standards whose implementation the SMS are supposed to ensure, such as the CROR, have moved increasingly in the direction of performance/outcome requirements. On the question of the parking of trains, for example, an issue central to the Lac-Mégantic disaster, s.112 CROR states that “when equipment is left at any point a sufficient number of hand brakes must be applied to prevent it from moving” and “the effectiveness of the hand brakes must be tested” as opposed to specifying the number of handbrakes to be applied in given situation. The latter would be a function of the combination of train weight and track grade. In the result, even the Transport Canada established rules have provided railways which much greater discretion on how the required performance outcomes are to be met, with much of the specific details being embedded in the SMS.

*Separation of policy and administrative functions between the government and delivery agent.*

NPM models for public administration have traditionally relied on a strong separation of policy and administrative functions between the state and service delivery agents respectively. The intent has been that governments, who are subject democratic accountability structures retain control over the content of policy, and that non-traditional delivery agents only carry out the administrative implementation of policy decisions (Gabler and Osborne, 1993).

The current rail safety regulatory regime departs from these principles in a number of important ways. As noted above, even where Transport Canada retains nominal control over the general formulation of rules, regulations and standards, the move towards performance standards provides increasingly broad discretion to railway operators in terms of how the required outcomes can be met through their SMS. The situation is further reinforced by the availability of the option of formulating company-specific rules

subject to Transport Canada approval. In the result, important policy decisions regarding balance being struck between efficiency and safety in operating practices are being embedded in the company rules and SMS developed by the railways. Significant concerns over the department's ability to review the contents of these rules and SMS in a timely manner were identified by the Auditor General (2013). Without such capacity, Transport Canada's role becomes one of being the enforcer of policy choices made by the railway operators. The situation effectively reverses the NPM principles of government retaining control of the content of policy, while routine administrative oversight tasks are allocated to non-governmental actors.

*Potential for conflicts of interest in structure.*

The existing oversight system embeds considerable potential for conflict of interest on the part of railway operators in the design and implementation of their individual company operating rules and SMS plans. The system potentially puts firms in the position of making their own choices about the balance between safety and efficiency in achieve the performance outcomes required by the Transport Canada and company rules. In their testimony before the SCOTIC's 2014-15 study of transportation safety, the union representing Transport Canada railway safety inspectors (Union of Canadian Transportation Employees (UCTE)) noted that "there is an inherent conflict of interest built into unbridled accountability to SMS as the primary means to ensure the safety of the public... Safety can sometimes get in the way of economy and self-interest. It is difficult and sometimes impossible for private, profit maximizing corporations to effectively make these choices." (UCTE 2014 6). Unions representing railway workers have raised similar concerns regarding the role of company formulated rules in the regulatory framework and have argued for a consistent set of rules across all railways (SCOTIC 2015 pg.4)

*Capacity of delegated agencies to undertake required functions*

When the SMS model was introduced it was applied to all 28 federally regulated railways in Canada. Smaller 'local railway companies' were exempted from the requirements. Among the railways to which the SMS requirements applied, there does

not appear to have been any assessment of the capacity of individual railways to develop appropriate SMS or to implement the plans that they did develop.

This approach is open to serious question, particularly with respect to smaller, marginal short-line operators like the Montreal, Maine and Atlantic (MMA) railway that operated the train involved in the Lac-Mégantic disaster. Given their very limited management infrastructure – typically only the minimum required to sustain day to day operations – such operators are unlikely to have institutional capacity to develop plans or the margins in financial and personnel capacity need to implement the plans once they are drafted. In the case of the MMA for example, which was subject to the SMS requirements from its formation in 2002, the Transportation Safety Board (TSB), the investigative agency of Transport Canada, noted in its August 2014 report on Lac-Mégantic, that: “Although MMA had some safety processes in place and had developed a safety management system in 2002, the company did not begin to implement this safety management system until 2010—and by 2013, it was still not functioning effectively” (TSB 2014, 7).

The February 2015 amendments to the SMS regulations extend their application, in modified form, to “local railway companies” that operate on federal main track<sup>2</sup> and set minimum SMS requirements for local railways that do not operate on main track. The reduced requirements for “local railway companies” does suggest some consideration of the capacity of such entities. However, there are no provisions for the assessment of the capacity of individual railways to develop and implement an SMS or indications of an alternative approach where they lack such capacity.

### *Impacts on democratic policy discourse and dialogue*

There have been longstanding concerns regarding the impact of NPM arrangements on democratic discourse and dialogue. In particular there are risks that they may privilege the influence of actors to whom important service delivery/policy implementation functions are assigned relative to other actors (Bakvis 1997). In the case of the Transport Canada SMS model the combination of the focus of the department’s

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<sup>2</sup> “federal main track” is defined in the SMS regulations 2015 as “a line of railway on which the movement of railway equipment is authorized by a railway company” falling under federal jurisdiction.

regulatory oversight on SMS development and implementation, availability of the option of individual company formulated operating rules, and the increasingly 'performance' oriented nature of the general Transport Canada regulations mean that key choices about the balance between safety and efficiency are embedded within the SMS and rules developed by the individual railway operators.

There are no provisions in the RSA regarding public participation in the development of company rules or consultation prior to their approval.<sup>3</sup> Similarly there were initially no provisions for third party input in SMS development. The plans were developed internally by the operators or their consultants and then submitted to Transport Canada. The 2012 amendments to the *Railway Safety Act* did provide for the establishment of regulations requiring the inclusion of employees and their collective bargaining agents in SMS development (s.47.1). However, the unions representing railway employees stated before the SCOTIC's 2014-15 study on transportation safety that in practice their members were not involved in SMS development, did not know what is in the SMSs or how the SMSs manage safety (SCOTIC 2015, pg.27).

#### Accountability

##### *Clarity of lines of responsibility and authority.*

As noted earlier, the Canadian railway safety regime is grounded in a complicated three dimensional set of requirements involving Transport Canada rules and regulations, individual company rules approved by Transport Canada, and company SMS, which are subject to Transport Canada review. The Lac-Mégantic disaster revealed some of the ambiguities about the lines of responsibility and authority flowed from this structure. In response to media and other inquiries regarding whether Transport Canada had approved MMA's shift to one person operation of trains in the Lac-Mégantic area, the department stated that it "does not grant permissions or authority to operate single person train operations" (Campbell 2013, 13). The response seemed to imply that

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<sup>3</sup> The minister may "engage any person or organization having expertise in matters relating to safe railway operations to furnish advice" in relation to the revision of company rules (RSA s.19(5)).

operators could make significant changes in their operating practices, with substantial safety implications, without approval by Transport Canada.

### *Oversight and control mechanisms*

#### *Oversight by Transport Canada*

Reviews in the aftermath of the Lac-Mégantic disaster have identified significant weaknesses in Transport Canada's oversight of railway safety. The TSB, for example, noted in its August 2013 report that "Transport Canada must take a more hands-on role when it comes to railways' safety management systems—making sure not just that they exist, but that they are working and that they are effective." (TSB 2013, R14-05)

#### *Capacity – Inspection, Audit and Enforcement*

As of 2013 Transport Canada had 116 rail safety inspectors on staff, who conducted 32,000 field inspections (SCOTIC 2015, 7). There were also 35 dangerous goods inspectors, responsible for inspections of all transportation modes (rail, road, marine and air) (SCOTIC 2015, 3)

The Auditor General's November 2013 audit of Transport Canada's approach to rail safety regulation identified a number of more specific problems including:

- Failures to take enforcement action to require railways to maintain adequate and effective SMSs, even when inspectors identified deficiencies that could affect the safety of railway operations (7.52).
- Failures to follow up where corrective actions were ordered (7.57)
- Failures to provide guidance, tools and training for federal inspectors inspecting and auditing SMS (7.63-7.74).

The department was also found to be far behind in auditing SMS development and implementation (7.43).

The implication of these finding was that the department lacked capacity both in terms of numbers of staff available to conduct audits and inspections, and the training and guidance of what staff the agency did have, to effectively implement the SMS system



over and above its traditional regulatory responsibilities. Indeed the department had not assessed the resources needed to fully implement the SMS system while maintaining its traditional oversight functions (SCOTIC 2014, 25).

Earlier audits of Transport Canada implementation of the SMS system with respect to aviation safety had raised concerns with respect to the diversion of resources away from traditional oversight activities (OAG 2008, 3.19) and ongoing problems similar to those found with respect to rail safety (OAG 2012). The TSB has stated that the department has yet to find the right balance between SMS auditing and traditional inspection functions (Quoted by SCOTIC 2015, 33).

The MMA case demonstrated a number of the gaps around oversight of the railway SMS requirements in graphic terms. In its August 2014 report, the TSB noted that “although MMA had developed a safety management system in 2002, Transport Canada's regional office in Quebec did not audit it until 2010—even though this is Transport Canada's responsibility, and despite clear indications (via inspections) that the company's safety management system was not effective. Transport Canada Headquarters in Ottawa, meanwhile, did not effectively monitor the Region's activities. As a result, it was not aware of any weaknesses in oversight of regional railways in Quebec, and it did not intervene (7).”

It has been noted that Transport Canada's budget for rail safety was reduced by nineteen per cent between 2010-11 and 2013-14, and the budget for Transportation of Dangerous Goods (TDG) oversight from \$14 to \$13 million per year (Campbell 2013, 31). The Commissioner for Environment and Sustainable Development has highlighted significant weaknesses in Transport Canada's regulatory oversight of the transportation of dangerous goods, highlighting the absence of any risk-based approach to inspections, and a backlog in reviewing and approving carriers' emergence response plans (CESD, 2011). At the same time, the Auditor General noted to the SCOTIC that with the expansion of the SMS requirements to 35 'local railway companies' as a result of the 2015 amendments to the SMS regulations, “the challenge isn't getting smaller, its getting bigger.” (SCOTIC 2015, 25)

SCOTIC itself highlighted the capacity issue in its 2015 report on transportation safety. The committee's first recommendation in the report was that "Transport Canada ensure that it has an adequate number of transportation of dangerous goods and rail safety inspectors to fulfil its oversight function."

#### *Capacity – Policy, Standards and Regulation Development*

In addition to these specific weaknesses in Transport Canada's direct safety oversight capacity, the Lac-Mégantic disaster raised questions about the department's capacity to establish appropriate rules and standards for rail safety. A number of reports have highlighted the department's failure to address the public safety risk implications of the dramatic growth in rail transportation of crude oil in North America from 2011 onwards (Campbell 2014, 21-22, 30-31). Shipments of crude oil by rail in Canada increased from 500 carloads in 2009 to 160,000 carloads in 2013 (SCOTIC 2015, 3). More specifically it has been pointed out that the department failed to establish appropriate hazard classifications for unconventional oil products, like that produced from the Bakken shale formation (Campbell 2014, 15-17). Others have noted the department's failure to address concerns regarding the safety performance of the DOT-111-type tank cars that dominated the railway car fleets being used to transport oil, particularly in the event of accidents. These vulnerabilities had been well-known in the railway industry since the early 1990s (NTSB 1991). TSB found the use DOT-111 tank cars as a significant contributing factor to the severity of the fire and explosion at Lac-Mégantic (TSB 2014, 6).

Oil-carrying trains accidents resulting spills, explosions and fires involving the type of tank car mandated in the aftermath of Lac-Mégantic (CPC-1232 cars) have raised questions about the adequacy of the new standards adopted by the department (Mackrael, 2015). The same incidents have given rise to questions about whether the department had appropriately assessed the volatility of crude oil being carried by rail other than that sourced from the Bakken shale (Mackrael, 2015a). Concerns have also been raised by the parliamentary opposition and rail safety experts as to whether Transport Canada had actually assessed the potential damages associated with a major rail accident involving dangerous goods in an urban area when setting the

insurance requirements and establishing the compensation fund announced by the government in February 2015. The requirements were seen to fall well short of the actual damages likely to arise from such an incident (McDiarmid, 2015).

*Legal authority to revoke delegations, make orders*

The 1999 amendments to the *Railway Safety Act* establishing the SMS regime and subsequent amendments flowing from the 2007-9 reviews, provided no authority Transport Canada to make determinations regarding the capacity or suitability of railway operators to move to the SMS regime, or to transfer operators to another, more direct, system of regulatory oversight where their performance under the SMS was inadequate. The amendments to the RSA adopted in 2012 made no provisions of this nature. The further amendments proposed in February 2015 are also silent on the issue. The 2015 SMS regulations did partially extend the system to small “local railways.”

The RSA does provide authority to the Minister to suspend or cancel ROCs (s17.4(5)), require the revision of company developed operating rules (s.19), and issue orders with respect to railway works, and violations of regulations and SMS (s.32). However these powers are subject to extensive consultation and appeal rights on the part of the affected companies and are subject to stays until appeals are heard (s.32.1).

Experience in environmental regulation suggests that such provision are likely to discourage the issuance of orders even in situations where they may be appropriate, given the potential burdens on government officials that would result from an having to defend an order through the appeal process (Gibson 1983; Estrin and Swaigen 1993, 451). Emergency directives (s.33) may be issued, although these are only effective for six months. Amendments to the RSA introduced in February 2015, would remove the automatic stays of safety related orders under appeal (Bill C-52, s.28).

The Lac-Mégantic disaster revealed that there seemed to be no legislative or regulatory requirements for Transport Canada approval of significant changes in operational practices that might affect safety. In the case of the MMA Transport Canada was emphatic in denying that it was its role to grant permission or authority for operational changes like single person train operations (Campbell 2014). The requirement to apply

for an exemption for one-person operations was eliminated from the CROR in 2008 (CROR Rule M).

The 2001 SMS regulations only required the filling of an initial set of information around operations and safety practices, and then annual updates requiring updates to the original filing (SMS regulations s.5). The regulations are at best ambiguous about whether the updates would need to contain information on changes in operating practices. The regulations only required annual rather than immediate updates on changes, with the implication that as much as a year could pass before Transport Canada was even aware of significant changes in the operation of a railway.

The significance of the resulting gap and the need for it to be addressed was emphasized by the TSB in August 2013 report on the disaster, noting that “If railways in Canada intend to implement single-person train operations, then they need to examine all the risks and make sure measures are in place to mitigate those risks. Transport Canada, for its part, should consider a process to approve and monitor the railways' plans so as to assure safety” (TSB 2013, 8).

#### *Oversight by Legislative officers and other agencies*

##### *Auditor General/CESD*

As the Commissioner for Environment and Sustainable Development's December 2011 report on Transport Canada's oversight of the transportation of dangerous goods, and the Auditor General's audits of the department's oversight of civil aviation (2008, 2012) and rail safety (2013), these legislative officers have the authority to review Transport Canada's implementation of SMS systems and other transportation safety related matters. However, they have no authority to examine or assess the contents of SMS plans developed by railway and civil aviation operators, as these are considered third party documents.

It is important to consider that, consistent with overall OAG audit practices, the OAG's approach to these audits, accepted the existing SMS focussed oversight regime as

given, and looked at the management of its implementation. Such an approach carries the risk of having the perverse effect of reinforcing existing system by making recommendations to 'fix' it as opposed to considering whether a different regime/regulatory model might be more effective.

#### *Transportation Safety Board (TSB)*

The TSB has substantial investigative authority with respect to transportation accidents, but its role is largely *x-post facto*. Where accidents or incidents do occur the board has the ability to interview witnesses and company and government personnel, and examine company, vehicle, government and other records. Although the TSB may grant 'observer' status to persons with a direct interest in the subject matter of the investigation, and allow them to 'attend' investigations, the process involves no public testimony, record or cross-examination of principals in events. When it reports on accidents the TSB does not assign fault or determine civil or criminal liability, and its findings cannot be used in legal or disciplinary proceedings (TSB 2015). The board can make recommendations to the Government of Canada on the basis of its findings, but cannot compel the government or operators to comply with these recommendations. It is also important to consider that the TSB's approach is similar to that of the OAG in that it largely accepts the existing regulatory structure as given and attempts to make incremental improvements to it, as opposed to considering whether a different model might be more effective. The RSA gives the Minister of Transport authority to order "inquiries" into safety related matters or incidents (s.40), although this authority is rarely used, and was not employed in the Lac-Mégantic case.

#### *Public Oversight*

The Lac-Mégantic disaster and subsequent media inquiries revealed major gaps with respect to municipal and public access to information regarding the movement of dangerous goods by rail and with respect to the SMS regime. Municipal governments through which trains carrying dangerous goods moved were granted some access to information regarding transportation of dangerous goods through their jurisdictions, although this was entirely at the discretion of the railways involved. In practice

municipal information access was subject to severe prohibitions on the sharing of information beyond emergency response personnel (McDiarmid, 2014; Oved, 2014). Emergency response plans were also regarded as confidential by rail operators (McDiarmid, 2014a) and therefore likely cannot be accessed via access to information requests. *Access to information Act* prohibits release documents provided by third parties that contain trade secrets; financial, commercial, scientific or technical information that is confidential information supplied to a government institution by a third party; or whose disclosure could result in material financial loss or gain to, or could reasonably be expected to prejudice the competitive position of, a third party (s.20).

Transport Canada has declined media requests for access to the contents of SMS themselves, directing requests to the companies involved, stating that the documents were “third party information” on this basis. Requests to the railways, including the MMA, for access to the plans were declined on the basis that the SMS were confidential internal documents (Gillis, 2013). The principal rationales offered by the railways for non-disclosure have been competitive considerations and security considerations. The government’s proposed Bill C-52 amendments to the RSA do not address the issue of third party access to the contents of SMS.

The situation creates significant gaps in the oversight of the SMS system, as it eliminates the possibility of any review by third parties, such as parliamentarians, other federal departments and agencies (e.g. OAG), other levels of government, unions, independent experts, and members of the public of the contents of the plans with respect to the adequacy and the balance between safety and risk struck within them.

### *Liability and insurance requirements*

The SCOTIC (2015,10-12) provides a detailed discussion of the issues related to the role of the Canadian Transportation Agency, (the economic regulator for the federal transportation system) and requirements for third party liability insurance on the part of railway freight carriers. The federal government has proposed amendments to the *Canadian Transportation Act* to expand the insurance requirements around the

transportation of dangerous goods, although as noted above there are questions about the adequacy of the proposed coverage provisions.

Transport Canada's role in auditing company SMS does potentially raise the issues of the department contributing to company defenses of due diligence in the event of violations of the RSA. Positive outcomes of Transport Canada audits of SMS could be interpreted as indicating that the company had an adequate management system in place to provide such a defense.

### Performance

There have been longstanding concerns regarding railway safety in Canada. The 2007 rail safety review, for example, was prompted in large part by increases in railway accidents between 2002 and 2005 following the initial introduction of the SMS system (RSA Review Advisory Panel 2007, 2). The Lac-Mégantic accident and a series of similar although non-fatal accidents in Canada and the United States following major increases in the transportation of crude oil by train from the end of 2010 onwards have resulted in a renewed parliamentary, media and public focus on rail safety.

#### *Inspection, compliance rates; enforcement activities*

The most detailed assessments of Transport Canada's railway safety inspection and enforcement efforts flow from the CESD's 2011 audit of the department's oversight of the transportation of dangerous goods and the OAG's 2013 audit of the department's oversight of railway safety. Some anecdotal information is also available, as well as testimony before SCOTIC's 2014-15 study on transportation safety (SCOTIC 2015).

As noted earlier the CESD and OAG audits highlighted significant gaps in the department's approach to inspection and oversight with respect to SMS and dangerous goods. In addition to gaps in the training of inspectors and auditors, OAG identified specific gaps in Transport Canada information gathering efforts, noting that some of the information collected by the department was incomplete or not up to date, such as federal railways' capital plans and track geometry data. Transport Canada was also

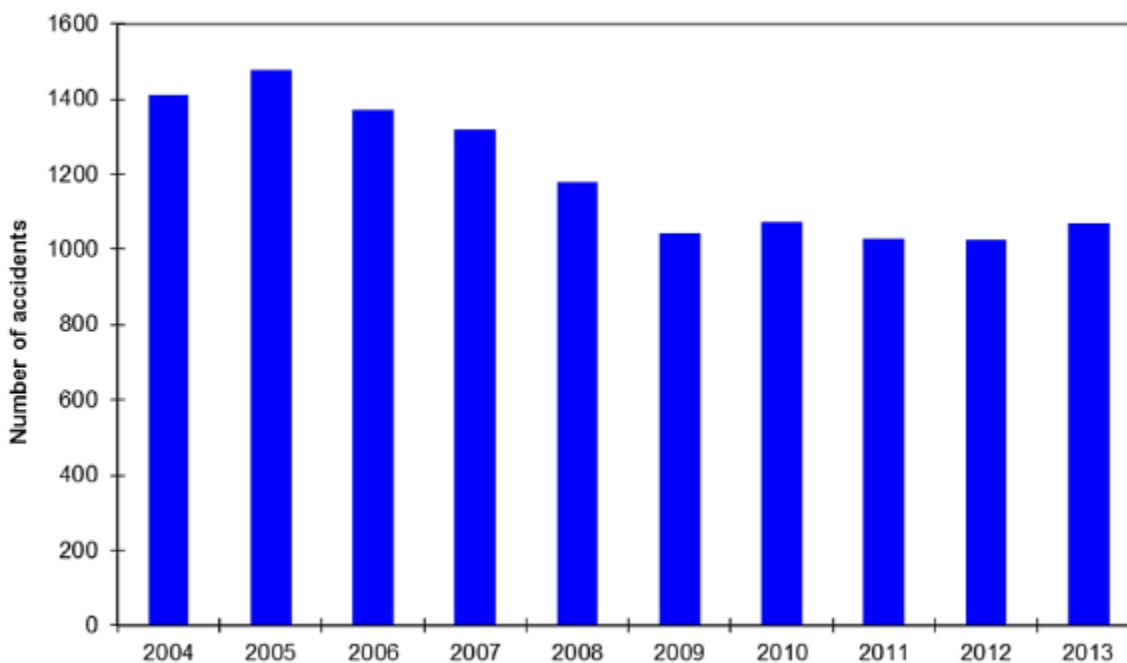
found to be missing key information on the federal railways' safety management systems in making planning decisions, such as safety performance data related to signals, track, equipment, bridges and personnel (OAG 2013, para 7.35 and [Exhibit 7.9](#)). The Department was found to be missing other important data to supplement inspectors' knowledge gained from previous inspections, including the federal railways' risks assessments, information on the sections of track used in transporting dangerous goods, information on the condition of railway bridges, and the financial information on privately owned federal railways that was not otherwise available to the public.

*Safety outcomes (deaths, injuries and incidents in areas of responsibility)*

The Transportation Safety Board provides statistics on rail safety from 2002 onwards. The available data indicates an overall downward trend in terms of accidents, serious injuries, incidents and accidents resulting in the release of dangerous goods from a peak in 2005 to 2011. However, these outcomes cannot be directly attributed to a more rigorous oversight effort on Transport Canada's part. Other factors may have also influenced these trends, including the decline in rail traffic associated with the 2008 economic downturn. As shown in **Figure 1**, the number of accidents began to trend upwards again from 2011 onwards (TSB 2013), coinciding with the emergence of the oil-to-rail phenomena.

**Figure 1 – Number of Rail Accidents – 2004-2013 (TSB 2013)**





The past two years have been marked by several severe, high profile accidents involving the movement of crude oil by rail. The Lac-Mégantic accident itself represents the worst railway accident in Canada in terms of fatalities in more than a century. It was preceded and followed by a number of non-fatal derailments, explosions and fires including the following:

### **Completing Full List**

- June 26, 2013: Six cars on a 102-car train in Calgary, Alberta derail when the bridge they crossing over the Bow River partially collapses.
- October 19, 2013: Thirteen cars — four carrying petroleum crude oil and nine carrying liquefied petroleum gas — come off the tracks in tiny Gainford, Alta., sparking a huge fireball and evacuation of about 100 people.
- January 8, 2014: Seventeen cars on a 122-car train in northwestern New Brunswick come off the tracks, resulting in a fire and evacuation of about 150 people.
- February 14, 2015, 29 cars carrying oil derail near Timmins, Ontario. Seven cars catch fire.
- March 7, 2015. Ten cars in a 30-40 car train carrying oil derail and catch fire near Gogama, Ontario.

More broadly it has been noted that more oil was spilled from trains in North America in 2013 than the combined total from 1975, when the US federal government began gathering such data (Tate, 2014).

The TSB's overall assessment of the performance of the transportation safety oversight system has been that "some transportation companies are not effectively managing their safety risks, and Transport Canada oversight and intervention has not always proven effective at changing companies unsafe operating practices" (TSB quoted in SCOTIC 2015, 22)

*Risks of policy learning/operational experience de-coupling*

The emphasis on implementation and oversight of the SMS regime has the potential to significantly severely limits opportunities with Transport Canada for policy learning based on operational observation and experience. The increasing dedication of the department's inspection and oversight capacity to reviewing and auditing SMS, reinforced by the successive reports from SCOTIC, OAG, and TSB recommending greater emphasis on SMS implementation reduces the resources available for first-hand observation of railway operating conditions and practices and other functions. This may have the effect of reducing the department's capacity to identify and respond to emerging problems before they begin to manifest themselves as accidents or disasters. The potential tension between SMS oversight and traditional regulatory functions was initially identified by the OAG in its 2008 report aviation safety SMS implementation, and emphasized by Transport Canada staff unions testifying before the 2014-15 SCOTIC study on transport safety. Transport Canada's failure to identify and provide any sort of policy-based response to the hazards posed by the emergence of the crude-to-rail phenomena may have reflected this problem.

In theory some experience based policy learning, feeding back into the design and operation of individual company operating rules and SMS, may be occurring within railways themselves. However, given the confidential nature of the SMS there is no way to assess this possibility.

### *Interagency coordination/reinforce siloing?*

Railway safety regulation in Canada has tended to be relatively 'islanded' or siloed from other fields of regulation already. It engages with a relatively limited range of stakeholders, principally the railways themselves and the unions representing their workers. As noted earlier, there is little evidence of policy-learning from other fields of public goods regulation, particularly environmental regulation, in terms of how to ensure that the attention of company directors and managers is focussed on matters that are regulatory priorities. The SMS regime is likely to further reinforce the inward focus rail safety regulation. Even the 2015 revisions to the SMS regulations tend to focus on involvement of non-company actors already involved in the railway operations (e.g. collective bargaining agents and employees) as opposed to a wider policy community including municipalities, NGOs and the public.

### *Cost-effectiveness*

In theory the SMS regime is intended as a supplement to Transport Canada's traditional oversight functions with respect to rail safety. In practice, as made apparent in the OAG's 2013 report, and consistent with the recommendations contained in previous reports by the RSA review advisory panel and the SCOTIC, oversight of the SMS regime has come to dominate the department's railway safety oversight activities.

It is at best uncertain whether the department has adequate resources to both oversee the SMS regime, and carry out its conventional core regulatory activities of policy and standards development, field inspections and enforcement actions. The findings of the TSB, OAG and SCOTIC in the aftermath of the Lac-Mégantic disaster suggest serious questions about whether the department has the capacity to carry out both of these functions simultaneously. The Auditor General has noted (SCOTIC 2015, 26) that the department itself has not assessed the capacity it needs to complete its functions. It is likely that very substantial increase in the department's capacity would be needed to fully implement the SMS regime as recommended by the OAG (2013), and to have the capacity to carry out its traditional policy, standards development and operational inspection, oversight and enforcement activities adequately. Moreover, Transport

Canada's 2015-16 Report on Plans and Priorities (60) indicates that overall spending on railway safety will decline slightly to 2017-18 and spending on rail safety oversight will decline from \$20 million in 2015-16 to \$16 million in 2017-18.

### Overall assessment

The structure of the railway safety oversight regime in Canada is complex, combining a mixture of Transport Canada defined rules, regulations and engineering standards, operating rules developed by the railway companies themselves, and then approved by Transport Canada, and company developed SMS, whose contents and implementation are subject to Transport Canada audits.

The SMS regime was originally conceived of as a supplement to Transport Canada's traditional regulatory functions with respect to railway safety. In practice, oversight of the development and SMS by railway operators has emerged as the *de facto* focus of the department's regulatory oversight activities with respect to rail safety. This direction has been reinforced by the recommendations of the RSA review advisory panel (2007), SCOTIC (2008), OAG (2013) and TSB (2014).

In terms of the governance criteria established at the beginning of this paper, the resulting system is found to suffer from a number of serious problems. The combination of the SMS regime, company developed operating rules and the move towards 'performance' based Transport Canada defined railway operating standards means significant policy choices about the balance between efficiency and safety are increasingly embedded within individual company rules and SMS. The result is a substantial blurring of the lines between administrative and policy functions, which then embeds a potential for significant conflicts of interest on the part of firms in the design and implementation of their operating rules and SMS.

The SMS requirements were applied universally to railway operators, with the exception of "local railway companies" not operating on federal main track. There appears to have been no assessment of the capacity of individual railways to develop and implement

SMS, and no consideration of an alternative approach for small operators like the MMA who may have lacked such capacity. Despite the potential for significant trade-offs between efficiency and occupational and public safety embedded in SMS, participation in their development was initially limited to the railway operators themselves. Participation by employees and their bargaining agents was only mandated through the 2012 amendments to the RSA and subsequent revisions to the SMS regulations. Other interests in railway safety, including other levels of government and the public remain excluded from the process.

The review identifies significant concerns about Transport Canada's capacity to both oversee implementation of SMS regime, and simultaneously carry out its traditional regulatory functions of policy and standards development, field oversight and inspection, and enforcement. Indeed as the OAG's 2008, 2012 and 2013 reports make clear the SMS regime implies a substantial shift in effort from conventional regulatory oversight to SMS implementation. At the same time, the Lac-Mégantic disaster has drawn attention Transport Canada's apparent failures to act to long-standing issues around railway tank-car safety standards and more recent concerns related to the crude-to-rail phenomena.

Beyond the question of Transport Canada's institutional capacity to carry out its conventional and SMS oversight functions, significant limitations in the regulatory authority provided by the RSA are identified. Important gaps are noted with respect to the requirements to report changes in operational practices and to seek approvals for such changes, and make corrective orders with respect to risks to safety. These gaps are only partially addressed via proposed C-52 amendments to RSA.

Oversight of the SMS regime by the OAG, other levels of government and the public is limited by consideration SMS are considered 3<sup>rd</sup> party documents for the purposes of the *Auditor General* and *Access to Information Acts*. The documents are therefore not accessible without the consent of the individual railway concerned. The railways, including the MMA, have so far declined to provide such access.

The SMS regime was itself intended to address long-standing concerns over railway safety. The 2007 and 2008 RSA advisory panel and SCOTIC reviews were prompted by increases in the numbers of railway accidents and incidents following the initial implementation of the SMS regime. The numbers of accidents and incidents declined through from 2005 onwards, but then began to rise again from 2011 onwards. The recent increase in accidents and incidents coincides with the major increase in transportation of crude oil by rail in North America. A number of significant but non-fatal accidents involving trains carrying oil both preceded and followed the Lac-Mégantic disaster.

The cost-effectiveness of the SMS regime, as currently configured, is open to serious question. It appears that Transport Canada lacks capacity to both oversee SMS regime adequately as recommended by OAG, and to carry out its more conventional regulatory functions of policy and standards development, and operational oversight, inspection and enforcement. A substantial investment of additional resources in the department would be required address these needs. In practice the department plans to reduce spending on rail safety oversight over the next three years.

The situation invites questions whether the oversight of company SMS is, as suggested by the Canadian Federal Pilots Association before the SCOTIC, a diversion of already inadequate resources away from Transport Canada's core regulatory effort functions. While in theory SMS and similar internal management systems may have the potential to improve safety outcomes (RSA Review Advisory Panel 2007, s.5.1) the rationale for the department's direct involvement in the development and oversight of these systems is less clear. Indeed, there may be ways in which operators can be provided with powerful incentives to establish such internal management systems without the direct involvement of Transport Canada and the diversion of resources from traditional regulatory oversight that the current approach implies.

### **A way forward: Alternative means of establishing management systems**

Transport Canada SMS initiative began as bold experiment in “smart regulation,” which attempted to draw on elements of emerging thinking around management systems to address the consistently poor safety performance of Canada railways.

Declining safety performance in the immediate aftermath of the implementation of the SMS regime led to reviews of the department’s regime oversight by an independent advisory panel appointed by the Minister of Transport and by the SCOTIC. Both reviews recommended a deepening of the commitment to implementation of the SMS regime. The same direction was effectively recommended by the OAG in its 2012 and 2013 audits of aviation and rail safety respectively, and has been followed by the department in its responses to the Lac-Mégantic disaster, although the OAG did raise concerns regarding the capacity and the balance between traditional regulatory functions and SMS oversight.

Despite the decline in railway safety performance, coinciding with the emergence of the crude-to-rail phenomena, in the years leading up to the disaster, other significant, although non-fatal accidents after July 2013, there has been no serious reconsideration of the department’s approach to rail safety regulatory oversight. Subject to some very specific adjustments (summarized by SCOTIC 2015, 3), the system continues to relying on a three-part oversight regime, grounded in a combination of federally established operating rules, individual company developed and federally approved rules, and individual company developed and federally reviewed SMS.

Railway sector unions have expressed long-standing concerns regarding the inconsistencies, oversight complications and potential conflicts of interest inherent in the role of individual company developed rules in the regime (SCOTIC 2015, pg4). The adoption of the SMS regime embedded a further level of individual company based discretion in the design and implementation of operating and safety requirements, and an additional demand on Transport Canada’s railway safety oversight capacity.

While a review of the role of company developed rules in the regime is beyond the scope of this paper, alternative paths regarding the development of internal company management systems can be identified. In particular, experience in the field of

environmental regulation suggests that strengthened statutory provisions regarding the liability of company officers and directors for offenses committed by firm can be an effective driver for the establishment of effective internal management systems, without the need for direct statutory direction or oversight by regulatory agencies.

With respect to officers' and directors' liability, Section 43 of the RSA currently provides that:

“Where a corporation commits an offence under this Act, any officer, director or agent of the corporation who directed, authorized, assented to, acquiesced in or participated in the commission of the offence is a party to and guilty of the offence, and is liable on conviction to the punishment provided for the offence, whether or not the corporation has been prosecuted or convicted.”

The provision effectively establishes a criminal standard for the liability company officers and directors in the event of a violation of the act. Officers and directors have to knowingly direct a violation or at least be aware of a violation and give tacit approval to be personally liable for an offense. This is a very high standard of proof, which is likely only to be met in exceptional circumstances (Swaijen, 1992), with the implication that there is very little risk of company officers and directors being found personally liable for offenses in the normal course of events.

Canadian environmental legislation began to incorporate provisions regarding the personal liability of company officer and directors in the mid-1980s, as part of an overall effort to strengthen the focus on compliance and enforcement (Winfield 2012, ch.3). These provisions now incorporate more active, civil, standards of liability regarding the duties of company officers and directors. Ontario's *Environmental Protection Act* (EPA) and *Ontario Water Resources Act* (OWRA), for example, require that officers and directors take “all reasonable care” to prevent violations of legislation, regulations and terms and conditions of specific approvals (EPA s.92 (1); OWRA 116(1)). Similar provisions exist in the *Canadian Environmental Protection Act, 1999* (s.280.1), *Ontario Pesticides Act* (s.49), *Oak Ridges Moraine Conservation Act* (s.24(4)) and Newfoundland and Labrador's *Endangered Species Act* (s.42). The *Criminal Code*



establishes a duty those who supervise work to prevent harm to workers and the public (s.217.1). Under these provisions officers and directors may be personally liable in the event of an offense if they have failed in their general duty of “due diligence” or reasonable care to prevent an offense. In contrast the current RSA standard requires that officers and directors to play active or knowing roles in an offense to attract personal liability. 2005 amendments (Bill 133)<sup>4</sup> to the Ontario legislation added a statutory reverse onus provision – meaning that a director or officer who is charged has the burden of proving that he or she took reasonable care to prevent the infraction (EPA 194(2.1); OWRA 166(2.1)) (Shier and Bharati, N.D.).

The introduction of these types of liability for officers and directors in environmental legislation from mid-1980s onwards has been widely identified as a trigger for the establishment of environmental management systems (EMS) in Canada by firms covered by the environmental regulatory regime (Shier and Bharati N.D.; Saxe 1990; Swaigen 1992; KPMG 1996; Lee-Anderson 2014, ). The existence of such systems provide the foundation of defenses of ‘due diligence’ or reasonable care in the event of prosecutions for environmental offenses. It is important to note that unlike the RSA, the relevant environmental legislation does not require development of EMS and environmental regulators play no direct role in prescribing or reviewing their contents. Prosecutions by environment ministries and the resulting case law around officers and directors environmental liability, beginning with the 1992 *R. v. Bata Industries* case,<sup>5</sup> have identified a range of elements that officers and directors can take to demonstrate “due diligence” including (adapted from Shier and Bharati, N.D.):

- instructing appropriate officers to establish an EMS to ensure compliance with environmental laws, anticipate, prevent and respond to environmental events, and that will meet or exceed industry standards and practices;

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<sup>4</sup> Environmental Enforcement Statute Law Amendment Act, 2005, S.O. 2005, c. 12., assented to June 13, 2005

<sup>5</sup> (1992), 9 O.R. (3d) 329 (Prov. Div.); sentence varied by (1993), 14 O.R. (3d) 354 (Gen. Div.) and (1995), 25 O.R. (3d) 321 (C.A

- ensuring that officers have sufficient authority and resources to establish and maintain all elements of the EMS, including training and documentation;
- requiring officers to report regularly to the board on the operation of the system, and that any substantial non-compliance is reported to the board in a timely manner;
- carefully considering the recommendations of the environment committee, and actively responding to them;
- critically assessing whether the board is justified in placing reliance on reports provided by corporate officers, consultants, counsel, or other parties;
- ensuring that environmental concerns of government agencies or other concerned parties, including shareholders, are considered and addressed;
- ensuring that there is active supervision, inspection, and training of employees; and
- ensuring corrective action is taken immediately when the system fail.

EMS are themselves typically subject to some form of third party certification and audit, whose maintenance is considered an important element of their ability to support a due diligence offense in the event of a prosecution.

The adoption of similar provisions in the RSA requiring a duty of “all reasonable care” on the part of officers and directors to prevent violations would be likely to prompt the development of internal company SMS, similar to those prescribed by the SMS regulations, without the need for direct Transport Canada oversight and review. Such a provision would be particularly effective if reinforced by a reverse onus provision similar to that in the Ontario EPA and OWRA. The SMS requirements could be removed from the RSA and the formal regulatory regime prescribed by the department more generally. Such an arrangement would avoid the diversion of the department’s already overextended oversight capacity away from its core regulatory functions of policy and standards development, field inspection and oversight and enforcement, towards SMS implementation, audit and oversight. At the same time it would maintain the benefits of companies developing and implementing management systems for safety. The cessation of Transport Canada audits and oversight of company developed SMS would

also eliminate the risk of providing defenses officially induced error in the event of violations of the RSA.

An approach of significantly strengthening company officers' and directors' liability with respect to safety would be significantly reinforced by the addition of a general offense provision to the RSA (e.g. "no person shall engage in the unsafe operation of a railway in a manner that causes or may cause harm to any person, property, business or the environment<sup>6</sup>"), similar to those which exist in provincial environmental legislation (Ontario EPA, ss.6 and 14;<sup>7</sup> OWRA s.30<sup>8</sup>) and occupational health and safety legislation (*Ontario Occupational Health and Safety Act*, s.23 (1)(c), s.24(1)(c), s.25.

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<sup>6</sup> CEPA 1999 defines the environment as follows:

*"environment"* means the components of the Earth and includes

- (a) air, land and water;
- (b) all layers of the atmosphere;
- (c) all organic and inorganic matter and living organisms; and
- (d) the interacting natural systems that include components referred to in paragraphs (a) to (c).

<sup>7</sup> 14. (1) Subject to subsection (2) but despite any other provision of this Act or the regulations, a person shall not discharge a contaminant or cause or permit the discharge of a contaminant into the natural environment, if the discharge causes or may cause an adverse effect. 2005, c. 12, s. 1 (5). Adverse effect is defined in s.1 as follows: "adverse effect" means one or more of,

- (a) impairment of the quality of the natural environment for any use that can be made of it,
- (b) injury or damage to property or to plant or animal life,
- (c) harm or material discomfort to any person,
- (d) an adverse effect on the health of any person,
- (e) impairment of the safety of any person,
- (f) rendering any property or plant or animal life unfit for human use,
- (g) loss of enjoyment of normal use of property, and
- (h) interference with the normal conduct of business; ("conséquence préjudiciable")

<sup>8</sup> 30. (1) Every person that discharges or causes or permits the discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters is guilty of an offence. R.S.O. 1990, c. O.40, s. 30 (1).

## Conclusions

The Lac-Mégantic disaster has drawn substantial parliamentary, media and public attention to the question of railway safety regulation in Canada. Studies by TSB, OAG, SCOTIC, CCPA, Canada Safety Council and others both before and after the disaster have identified significant weaknesses in Transport Canada's oversight regime. To date the governments' responses to the situation have been to make adjustments at the margins of the regime, strengthening or changing specific rules and requirements. There has been no overall review of the current approach to safety oversight, grounded in a three part system of Transport Canada defined general rules and regulations, individual company developed and Transport Canada approved rules, and company developed and Transport Canada audited SMS. Such a response is inadequate given the scale of the Lac-Mégantic disaster, and ongoing concerns about the effectiveness of the oversight regime

Serious questions exist around the department's capacity to simultaneously implement SMS regime and maintain adequate traditional oversight activities. Alternatives to the incorporation of SMS requirements and oversight into the regulatory regime are available to focus board and senior management attention on important regulatory goals. Experience in environmental law, for example, suggests that expanded statutory duties of care on the part of company officers and directors, can trigger the development of internal environmental management systems without the need for direct involvement or oversight by regulatory agencies. Such an approach should be incorporated into the RSA, and Transport Canada's regulatory resources should be refocused on traditional safety policy development and oversight activities rather than SMS implementation and audit. The incorporation of a general offense provision in the RSA would further reinforce the effectiveness of expanded provisions regarding officers' and directors' liability.

In addition to these changes related to officers' and directors' liability and general offenses under the RSA, the safety related order powers of the Minister of Transport and provisions related to public access to information should be significantly strengthened and the consultation and appeal processes streamlined. Clear reporting

and approval requirements for significant changes in operations need to be established. The role of individual company developed rules in the regulatory regime requires re-examination as well.

The SMS initiative began as a well-intended effort to improve railway safety performance, grounded in a combination of “smart regulation” and management systems thinking prevalent in Canada and elsewhere in the OCED in the late 1990s intended to produce a “reflexive” regulatory regime. The Lac-Mégantic disaster has highlighted the extent to which in practice the initiative became a significant distraction away from Transport Canada’s traditional, but essential safety oversight functions. As such it provides a cautionary tale regarding the risks associated with pursuing these regulatory models. The disaster has made it clear that the approach requires serious reconsideration if it is to ensure safety in the transportation sector.

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