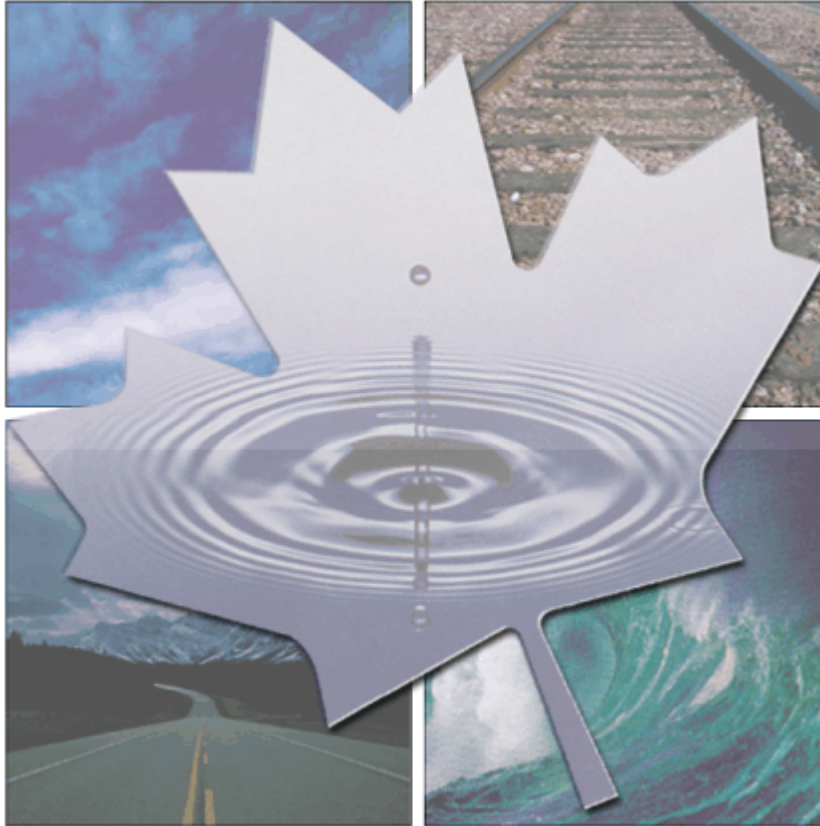


Audit and Advisory Services
Integrity, Innovation and Quality



Follow-up Audit of Rail Safety

June 2015

File Number: 1577-14/15-105

EXECUTIVE SUMMARY	I
Introduction	i
Audit Objectives & Scope	i
Conclusions	i
Statement of Conformance	ii
1. INTRODUCTION	3
1.1. Context	3
1.2. Background On Rail Safety	4
1.3. Audit Objective, Scope, Criteria and Approach	5
1.3.1. Audit Objective	5
1.3.2. Audit Scope	5
1.3.3. Audit Criteria	5
1.3.4. Audit Approach	5
1.4. Report Structure	5
2. OAG AUDIT OF RAIL SAFETY RECOMMENDATIONS	7
2.1. Regulatory Framework	7
2.2. Planning Oversight Activities	10
2.3. Conducting Oversight Activities	16
2.4. Quality Assurance	20
2.5. Human Resources	22
3. TRANSPORTATION SAFETY BOARD RECOMMENDATIONS	25
3.1. Class 111 Tank Cars	25
3.2. Key Routes Key Trains	26
3.3. Emergency Response Action Plans	27
3.4. Securing Trains	29
4. CONCLUSIONS	32
5. MANAGEMENT RESPONSE	33

EXECUTIVE SUMMARY

INTRODUCTION

The Office of the Auditor General (OAG) conducted an audit of Transport Canada's oversight of Rail Safety that was tabled in Parliament in November 2013. Their work examined Transport Canada's regulatory framework, how it plans and conducts its oversight activities, its human resources planning, and its quality assurance regime for the period of 2010/11 to 2011/12. The OAG made 11 recommendations.

Following the tragic events in Lac-Mégantic of July 2013, the Transportation Safety Board (TSB) conducted an investigation. The TSB's interim report of January 2014 made three recommendations and its final report of August 2014 included two further recommendations. These recommendations were directed to both the Rail Safety Directorate and Transportation of Dangerous Goods Directorate.

AUDIT OBJECTIVES & SCOPE

The objective of this internal follow-up audit is to provide assurance that the Department's management action plans addressing the recommendations from the OAG's Rail Safety audit and the TSB's investigation reports have either been fully implemented or are on track to being implemented.

Several of the recommendations required regulatory changes that were part of an accelerated regulatory development plan. The audit focused on whether there are plans in place to ensure required changes to operational processes and systems were in place as the regulations came into effect.

CONCLUSIONS

Our follow-up examination confirms that Transport Canada (TC) is making progress implementing the action plans established to address the OAG and TSB recommendations. Most actions have been implemented and others are on track for implementation by their targeted completion date.

In addition, our follow-up has identified key areas where Rail Safety needs to focus its improvement efforts to ensure a mature and robust oversight regime consistent with stakeholder expectations. This includes further developing its risk-based inspection planning tools and practices, determining the optimal mix of oversight activities using Safety Management System audit results, and improving its follow-up and quality assurance regimes. Successfully implementing these improvements will require Senior Management's commitment and sustained leadership.

STATEMENT OF CONFORMANCE

This audit conforms to the Internal Auditing Standards for the Government of Canada, as supported by the results of an external assessment of Internal Audit’s Quality Assurance and Improvement Program.

Signatures

Dave Leach	June 26, 2015
_____ Dave Leach (CIA, MPA) Director, Audit and Advisory Services	_____ Date
Martin Rubenstein	June 26, 2015
_____ Martin Rubenstein (CIA, CPA, CFE), Chief Audit and Evaluation Executive	_____ Date

1. INTRODUCTION

1.1. CONTEXT

The Office of the Auditor General (OAG) conducted an audit of Transport Canada's oversight of Rail Safety that was tabled in Parliament in November 2013. Their work examined Transport Canada's regulatory framework, how it plans and conducts its oversight activities, its human resources planning, and its quality assurance program for the period of 2010/11 to 2011/12. The OAG made 11 recommendations; one of which was for the Department to complete the implementation of 13 recommendations stemming from the 2007 Review of the *Railway Safety Act* and four from the 2008 study by the Standing Committee on Transportation and Infrastructure and Communities (SCOTIC).

Following the tragic events in Lac-Mégantic of July 2013, the Transportation Safety Board (TSB) conducted an investigation. The Minister of Transport also requested that SCOTIC undertake a review of the Canadian Transportation Safety Regime: Transportation of Dangerous Goods and Safety Management Systems. SCOTIC did not make any recommendations in its interim report of June 2014. However, the TSB's interim report of January 2014 made three recommendations and its final report of August 2014 included two further recommendations. These recommendations were directed to both the Rail Safety Directorate and Transportation of Dangerous Goods Directorate. Finally, the Standing Committee on Public Accounts (PACP) also released a report with recommendations in November 2014. These recommendations were consistent with the OAG's recommendations and TC's response to PACP on March 13, 2015, was consistent with their response to the OAG.

As part of the Department's risk-based audit plan for 2014/15 to 2016/17, Transport Canada's internal audit function planned to undertake audit follow-up work on Rail Safety. The initial timing of the follow-up audit was 2016/17 but was subsequently brought forward at the request of the Department's senior management team because they felt it was important to confirm early in the implementation phase, that recommendations were being addressed as intended. The audit scope was also expanded to include follow-up on the recommendations from the OAG's 2013 report and the TSB's reports.

1.2. BACKGROUND ON RAIL SAFETY

Transport Canada is responsible for the regulatory framework setting out requirements for approximately 70 federal and local railway companies operating across Canada. Under the *Railway Safety Act* the Department has implemented a regulatory framework that includes safety rules, engineering standards, regulations, and guidelines, and includes education and awareness activities. Other relevant statutes are the *Canadian Transportation Accident Investigation and Safety Board Act* and the *Canadian Transportation Act*. Within Safety and Security, the Rail Safety Program (Rail Safety) is headed by a Director General at Headquarters (HQ) and Regional Directors General in the regions (Pacific, Prairie and Northern, Ontario, Quebec and Atlantic). The Program conducts audits and inspections of railway operations, develops policies and regulations, promotes education and awareness of rail safety hazards, issues notices and orders to address safety threats, and develops and delivers training programs for inspectors. There are eight functional areas referred to as disciplines: operations, occupational health and safety, equipment, engineering-grade crossings, engineering-signals, engineering-natural hazards, engineering-track and engineering-bridges.

The inspection methodology for Rail Safety includes three types of inspections:

- Program A inspections are national inspections for each of the rail safety disciplines. According to the methodology random samples should be selected annually based on the assessed risk of individual entities. The objective is to determine national defect rates (rates of compliance) for the various inspected entities.
- Program B inspections are inspections identified by the Regions. These inspections are based on risks identified at the regional level.
- Program C inspections are unplanned and responsive inspections. They are conducted at sites identified throughout the year to address emerging issues. These sites may be identified by either HQ or the Regions.

The Department is also responsible for administering the regulations that stem from the *Transportation of Dangerous Goods Act, 1992*.

Within Safety and Security, the Transportation of Dangerous Goods (TDG) Directorate promotes public safety in the transportation of dangerous goods by all modes. It is also headed by a Director General at HQ and Regional Directors General oversee the five regions, namely Pacific, Prairie and Northern, Ontario, Quebec, and Atlantic.

1.3. AUDIT OBJECTIVE, SCOPE, CRITERIA AND APPROACH

1.3.1. Audit Objective

The objective of this follow-up audit was to provide assurance that the Department's management action plans addressing the recommendations from the OAG's Rail Safety audit and the TSB's investigation reports have either been fully implemented or are on track to being implemented.

1.3.2. Audit Scope

Several of the recommendations required regulatory changes that were part of an accelerated regulatory development plan. Given the significance of the required changes, the audit focused on whether there are plans in place to ensure that the required changes to operational processes and systems will be implemented as planned.

We reviewed inspection and safety management system (SMS) audit files created between April 1 and December 31, 2014, in addition to some files from the 2013/14 fiscal period.

1.3.3. Audit Criteria

We used the action plans made in each of the OAG's and TSB's reports as our audit criteria.

1.3.4. Audit Approach

Throughout the audit, we consulted with functional managers of both the Rail Safety and Transportation of Dangerous Goods directorates in headquarters as well as Legal Services and Human Resources. We visited each of the five regions as part of our planning and conduct phases to interview staff, observe inspection activities and review documentation. A member of our team also participated as an observer on an SMS audit conducted by the Ontario regional office.

1.4. REPORT STRUCTURE

The OAG recommendations and the TSB recommendations have been addressed separately in the report with the exception of TSB recommendation R14-05. This recommendation was similar to the OAG's recommendation on Safety Management Systems OAG 7.65 and has been addressed with it. The recommendations have been grouped by the following categories:

- Regulatory Framework
- Planning Oversight Activities
- Conducting Oversight Activities
- Quality Assurance

- Human Resources
- Transportation Safety Board Recommendations

We identify each recommendation as it originally appeared in the relevant report, the Department's Action Plan as it had originally been drafted to meet the recommendation, the Department's most recent reported status of implementation of the recommendation, our expectations and assessment of progress at the time of our audit, some context around our assessment, and a summary of areas requiring further attention.

To assess the Department's progress, Internal Audit used the following scale:

Implementation Assessment	Description
Complete	All aspects of the audit recommendation have been met.
On Track	Some aspects of the audit recommendation have been met and the remainder of actions to be taken will be implemented by the targeted completion date.
Not on Track	Implementation of the recommendation is not progressing as anticipated and the targeted completion date may not be met.

We have not made any further recommendations to the OAG and TSB recommendations. We have identified areas related to the existing recommendations and management action plans that require further attention. We expect Safety and Security to adjust their existing management action plans to ensure that these areas are fully addressed.

Management has provided their response to the audit after the Conclusions section.

2. OAG AUDIT OF RAIL SAFETY RECOMMENDATIONS

2.1. REGULATORY FRAMEWORK

Recommendations		
<p>OAG 7.26: Transport Canada should complete the implementation of the recommendations raised in the <i>Railway Safety Act</i> review and relevant recommendations of the rail safety review conducted by the House of Commons Standing Committee on Transport, Infrastructure and Communities. It should integrate the changes into the regulatory framework for federal railways to comply with and for the Department to oversee.</p> <p>OAG 7.32: Transport Canada should accelerate the resolution of important and long-standing safety issues. The Department should establish a formal process with clear timelines to monitor significant safety issues, from the time they are identified until they are mitigated to an acceptable level.</p>		
Department's Action Plan	Status as per Rail Safety	Status as per IA
<ul style="list-style-type: none"> • Transport Canada completed a plan, with timelines, to guide completion of the remaining outstanding recommendations from the <i>Railway Safety Act</i> review and the SCOTIC review. (November 2013) 	Complete	Complete
<ul style="list-style-type: none"> • An accelerated regulatory plan, with timelines, is in place to address the following changes to the regulatory framework: (November 2013) <ul style="list-style-type: none"> ○ Grade Crossing Regulations to be pre-published in Gazette 1. (December 2014) ○ Safety Management System Regulations to be amended and pre-published in Gazette 1. (April 2015) ○ Rail Operating Certificates to be pre-published in Gazette 1. (Winter 2014) ○ Administrative Monetary Penalties to be pre-published in Gazette 1. (Spring 2014) ○ Collection of safety performance information from federal railways to be in place in Transportation Information Regulations. (Summer 2014) 	Complete	Complete
<ul style="list-style-type: none"> • For the remaining recommendations, priorities will be set and detailed actions will be identified for completion. (Fall 2015) 	On Track	On Track
<ul style="list-style-type: none"> • Rail Safety will use their Risk-Based Business Planning Process to identify and monitor progress on important safety issues. 	Complete	Complete

They will be formally tracked and monitored in the Rail Safety Integrated Gateway. (Spring 2014)		
--	--	--

Internal Audit expected:

- *Rail Safety would implement the new regulations and implement a process to ensure that significant safety issues are monitored from the time they are identified until they are mitigated to an acceptable level.*

Internal Audit's Assessment

Based on our review, new regulations have been put in place consistent with the management action plan. Rail Safety continues to work on formalizing a process to ensure that identified issues are resolved in a timely manner.

Observations to Support Internal Audit's Assessment

Transport Canada completed a plan, with timelines, to guide completion of the remaining outstanding recommendations from the *Railway Safety Act* review and the SCOTIC review. An accelerated regulatory plan, with timelines, was put in place to address changes to the regulatory framework for Grade Crossings, Railway Operating Certificates, Administrative Monetary Penalties, Safety Management Systems and rail-related Transportation Information. The plans for each of these activities included consultation, communication and outreach to the rail industry. The regulations came into effect as follows:

- Grade Crossing November 2014
- Rail Operating Certificate January 1, 2015
- Transportation Information Requirements April 1, 2015
- Administrative Monetary Penalties April 1, 2015
- Safety Management Systems Requirements April 1, 2015

The OAG identified six long-standing safety issues that they believed took too long for TC to resolve. TC is in the process of resolving or has resolved these issues. New issues that required resolution will be monitored through the risk-based business planning process and the Rail Safety Integrated Gateway (RSIG) system. Rail Safety is in the process of establishing a process to identify when an issue moves from being identified in the risk-based plan to when it needs a longer term solution (e.g., updating or creating a regulation).

2.2. PLANNING OVERSIGHT ACTIVITIES

Recommendations

OAG 7.42: To oversee the safety management systems implemented by federal railways, including their compliance with the regulatory framework, Transport Canada should:

- review its methodology to identify key safety risk and performance indicators, and the safety performance information it needs from railway companies, in order to make risk-based planning decisions;
- collect the relevant risk and safety performance information from federal railways and assess its completeness and reliability; and
- develop an approach to make better use of the information on federal railways' safety risks and performance when preparing annual oversight plans.

OAG 7.49: Transport Canada should reassess the number of its planned audits and inspections so that it takes into account the new safety management system environment. It should review how it allocates resources, with the aim of conducting the minimum level of oversight necessary to obtain assurance that federal railways have implemented adequate and effective safety management systems to comply with the regulatory framework. The Department should conduct this minimum level of oversight.

Department's Action Plan	Status as per Rail Safety	Status as per IA
<ul style="list-style-type: none"> • Meeting with HQ and the regions to discuss safety risk and performance indicators currently available to Rail Safety and to develop a consistent approach to their usage. (December 2013) 	Complete	Complete
<ul style="list-style-type: none"> • Complete discussions with HQ and the regions on performance information required from federal railways. (December 2013) 	Complete	Complete
<ul style="list-style-type: none"> • Bring together the Information Collection, Analysis and Dissemination (ICAD) working group, which includes members of industry, to review & discuss the performance information required from federal railways. (January 2014) 	Complete	Complete
<ul style="list-style-type: none"> • Develop regulations related to the collection of performance information from federal railways (see also 7.26). (Summer 2014) 	Complete	Complete
<ul style="list-style-type: none"> • Develop a data portal system to capture the performance information from federal railways (based on approval of the Capital project for 2014-15). (Spring 2015) 	On Track	On Track

<ul style="list-style-type: none"> Update the “<i>Risk-Based Business Planning Procedure</i>” to include the consistent use of safety risk and performance indicators and safety performance information from federal railways (when available). Training and guidance material will be developed to ensure that this information is taken into account when developing annual oversight plans. (Fall 2014; Summer 2015 with railway data) 	On Track	On Track
<ul style="list-style-type: none"> Meeting with HQ and the regions to review the number of planned audits and inspections, with the goal of addressing the highest risks and providing adequate coverage. (Winter 2014) 	Complete	Complete
<ul style="list-style-type: none"> Update the number of audits and inspections to reflect the minimum level of oversight required and allocate the appropriate resources to ensure that federal railways have adequate and effective safety management systems. (Fall 2014) 	Complete	Complete

Internal Audit expected:

- Safety and Security would review requirements for minimal level of oversight and address any changes required to ensure the approach is both risk-based and coverage is adequate to assess industry compliance.*
- Internal and external performance indicators are used consistently as key inputs to the Risk-Based Planning Process (RBBP) ensuring resource allocation to the areas of highest risk. It is also expected that these performance indicators are used to assess the effectiveness of the various oversight activities conducted (i.e., inspections, audits, outreach).*
- RBBP procedures would provide specific direction on how to carry out data analysis (both during planning and during fieldwork) across the various rail safety disciplines (e.g., engineering, operations, equipment etc.) and would include guiding principles that ensure national consistency.*

Internal Audit’s Assessment

The methodology for planning national oversight activities (Program A inspections) employed by Rail Safety is designed to be risk-based and measure industry’s rate of compliance (i.e., with Regulations and Rules). However, we found the implementation of the methodology, with the exception of the Grade crossings discipline, is not risk-based and it is not applied consistently amongst disciplines or across regions. While we found the methodology uses a statistically sound formula to calculate the number of sites for inspection, the selection of the required number of samples is problematic for the following reasons:

- The selection is not always random. As a result, a defect rate cannot be extrapolated for an entire population, which negates the ability to measure overall compliance.*

2. *The majority of Rail Safety disciplines and regions do not risk-rank all potential inspection entities prior to selecting the samples to be inspected. As a result, inspection resources are not targeted to areas of higher risk compromising Rail Safety's ability to allocate its resources to focus on the highest risks and still collect sufficient data to measure the rate of compliance for a specific population.*

Program B inspections completed by the regions are risk based, however the process used for identifying risk is not consistent and is not always documented.

Observations to Support Internal Audit's Assessment

Risk and Performance Indicators

HQ and the Regions have met to discuss safety risk and performance indicators currently available to Rail Safety. Historically, Rail Safety has used data generated by “lagging” performance indicators to carry out its risk assessments. Lagging indicators provide important information about the safety performance of the industry, but are more reactive (versus proactive) in nature. These indicators include safety data collected after incidents or accidents have taken place and compliance information collected through inspections and audits carried out by TC inspectors.

In response to the *Railway Safety Act* review, Transport Canada established a working group to review information collection and analysis. The Information, Collection, Analysis and Dissemination (ICAD) Working Group was comprised of industry, union and TC representatives. ICAD prepared a final report for the *Railway Safety Act* Review Steering Committee in 2010. This report became the basis for establishing new information requirements and ICAD members were brought back together as part of the consultation process for amending the existing *Transportation Information Regulation*.¹ The amended regulation, which came into force on April 1, 2015, requires railway companies to report on “leading” indicators that can be used to identify risk areas in order to introduce mitigation measures before accidents occur. Leading indicators include the data that railways gather on equipment failures such as train pull-aparts caused by a broken knuckle or broken drawbar, in-service joint pull-aparts, and the number of bridges with Temporary Slow Orders. While individually these events may not be significant, a review of this cumulative data could result in an action that could prevent a major derailment. The data portal system to capture the performance information from federal railways is being developed and it is planned to be completed by June 2015. The first reports from railways will be due by January 2016.

¹ <http://laws-lois.justice.gc.ca/eng/regulations/sor-96-334/>

While Rail Safety collects a variety of data there was little evidence of data analysis that provides a comprehensive national picture of risks. Moreover there is no documented plan with respect to how the new data that will be collected will be used for analysis.

Risk-Based Planning Procedure

In January 2007, Rail Safety implemented its risk-based business planning procedure whereby both regional and headquarters safety and program management issues are identified, analyzed, reviewed, and approved for inclusion in the national rail safety business plan. The procedure was updated in October 2014 to take into account some improvements identified following an internal assessment of the procedure. Training and guidance material on the updated procedure were developed and shared with staff. Planning for 2015-2016 used the updated RBBP procedure.

Program B inspections are identified in the regions based on risks identified in each individual region. One Region completed a formal document on how they arrived at their Program B inspections while in other regions the process was more informal and not always documented. There was evidence that all regions were completing risk based analysis and completing inspections based on the risks identified.

Areas Requiring Further Attention

Rail Safety should consider providing specific direction to regions to ensure a certain level of consistency in their risk based approach and require regions to document how they completed their risk analysis to arrive at their Program B inspection selection.

Minimum Level of Oversight

Inspections

In 2012, Rail Safety contracted with a consulting company to develop a sampling methodology to determine how many inspections should be performed in each fiscal year to assess the industry's level of compliance with safety regulations, rules and standards. Each discipline is using some variation of this approach. For example, the Grade Crossings discipline identifies risk factors and ranks sites as high, moderate or low risk. A sample from each risk ranking is selected and specific sites are provided to the Regions for inspection. The Equipment discipline does a calculation for each Region as to the number of sites that require inspection. Each Region is left to determine which specific sites they will inspect. Regions do consider risk when selecting sites for Equipment inspections but in most cases these risk considerations are not documented.

Internal Audit conducted an independent review of the sampling methodology and found the design to be sound but we have concerns with its application. The following summarizes our concerns and outlines recommended improvements to help ensure the sampling methodology addresses the areas of highest risk while providing adequate coverage across the whole system.

Risk Ranking

Risk ranking is not applied by all disciplines to prioritize their inspections of higher risk entities. The application of the risk ranking system should be tailored to the individual functional groups (i.e., different risk factors), and there should be consistency across functional groups with respect to the framework used to measure the risk factors.

Sample Sizes

Internal Audit did not find a documented rationale to confirm the current sample sizes selected for Program A provide sufficient information to address high-risk areas, provide adequate coverage, and are cost effective. Rail Safety should document their rationale describing how the sample sizes they have selected provide sufficient information to mitigate risks to rail safety within an acceptable resource cost.

Randomness

The ability to extrapolate and generalize results from a sample depends solely on the presence of randomness. We found that randomness is not well understood by Rail Safety Inspectors (RSIs) and, in the majority of cases, randomness is compromised by how inspection entities are selected and thus the results are not representative of the larger population. To correct this deficiency:

- Strategies need to be developed to assist RSIs in the random selection of inspection entities in areas where the number of inspection entities and/ or the geographic spread of the inspection entities present problems² to cost effective random sampling.
- Procedures detailing how to perform random sampling need to be created and consistently applied across all functional groups and regions.
- Sampling strategies need to specifically consider both random and non-random sampling. To implement such a strategy would involve reducing the number of sampled inspection entities dedicated to the random sample and increasing the number that are non-randomly selected. It should be noted that the non-random items must be selected in advance of the random items and kept separate from the random sample.

² Selecting a sample for equipment cannot be done in advance of arriving at a rail-yard. Equipment is not stationary and moves constantly. Inspectors go to a rail-yard and select cars that are available for inspection. Currently the cars are selected haphazardly by inspectors, which does not meet the standards of random selection.

Defect Rates

The purpose of calculating defect rates is to determine the percentage of the rail industry that is compliant with rules, regulations and standards as set out in the *Railway Safety Act*³. A defect is identified when a piece of equipment or an action is not consistent with a guideline or standard or is non-compliant with a rule or regulation.

Rail Safety has been treating all defects equally and not distinguishing between major defects that may constitute a threat to rail safety and those that although still important would be considered less-critical. A common definition of what constitutes a major defect for the item being inspected would help ensure consistency between what is being measured and what population is being inspected.

Areas Requiring Further Attention

Rail Safety should improve the application of its risk-based business planning procedure and related sampling methodology to address the issues we identified above related to risk ranking, sample size, randomness and defining defects for calculating defect rates.

SMS Audits

At the time of our follow-up, the results from Rail Safety's SMS audits were not being directly factored into establishing the minimum level of oversight as well as helping to make resource allocation decisions. This is primarily due to the fact that there have been too few SMS audits completed in the last five years to provide sufficient data to help determine the right allocation of resources between audits and inspections. With the new SMS regulations, Rail Safety plans to carry out education and awareness interactions and initial SMS inspections for each railway company between April and October, 2015 to verify that critical SMS elements are in place. A second targeted inspection will be undertaken with each railway between October 2015 and March 2016 to evaluate and report on the level of compliance to minimal legal requirements to implement systems to ensure that they can operate in a safe manner. This will provide data to incorporate into the risk-based business planning process. As Rail Safety proceeds under the new SMS regulations all railway companies will have a full SMS audit every three to five years.

Areas Requiring Further Attention

³ https://www.tc.gc.ca/media/documents/corporate-services/Transport_Canada_RPP_2014-15_Eng.pdf; Page 55

As SMS audits are completed, the results of these audits will need to be incorporated into the risk-based planning process to help determine the minimum level of oversight and the optimal allocation of resources for inspections, audits and other oversight activities.

2.3. CONDUCTING OVERSIGHT ACTIVITIES

Recommendations		
<p>OAG 7.58: Transport Canada should</p> <ul style="list-style-type: none"> • provide better documentation tools to inspectors to carry out their oversight activities, so that they can better document and communicate to federal railways what they assessed and what they found; • improve its oversight of federal railways' safety management systems by having inspectors assess their quality and effectiveness; • require federal railways to make the necessary changes to correct deficiencies affecting the safety of their operations; and • conduct timely follow-up on deficiencies affecting the safety of federal railways' operations, to assess whether they have been corrected. <p>OAG 7.65: Transport Canada should improve its methodology to set clear expectations for planning and conducting audits and inspections, and for drafting and communicating findings to the federal railways.</p> <p>TSB R14-05: The Department of Transport audit the safety management systems of railways in sufficient depth and frequency to confirm that the required processes are effective and that corrective actions are implemented to improve safety.</p>		
Department's Action Plan	Status as per Rail Safety	Status as per IA
<ul style="list-style-type: none"> • The Rail Safety Integrated Gateway (RSIG) data system was developed to provide inspectors with the tools needed to carry out their oversight activity. Training for inspectors on the oversight modules began in the fall 2013. Implementation is expected to be complete by mid 2014. See RSIG implementation plan. (Summer 2014) 	Complete	Complete

<ul style="list-style-type: none"> Develop assessment criteria for inspectors to assess the quality and effectiveness of railways' safety management system. (Fall 2014) 	Not on Track⁴	Not on Track
<ul style="list-style-type: none"> Amend the <i>Railway Safety Management System</i> regulations to require railways to address their deficiencies. (Spring 2014) 	Complete	Complete
<ul style="list-style-type: none"> Develop follow-up procedures for both audits and inspections. (Spring 2014) 	Complete	Complete
<ul style="list-style-type: none"> Provide training and guidance material, as needed, for the follow-up procedures to enhance consistency on follow-up activity. (Spring 2014) 	Complete	Complete
<ul style="list-style-type: none"> Track follow-up activity using the Rail Safety Integrated Gateway data system and use this information for risk-based business planning. (Summer 2014) 	Complete	Complete
<ul style="list-style-type: none"> The audit procedure was revised in September 2013 and communicated to all staff. (September 2013) 	Complete	Complete
<ul style="list-style-type: none"> Training is underway on both the updated audit procedure and the audit module in the Rail Safety Integrated Gateway data system. (Fall 2014) 	Complete	Complete
<ul style="list-style-type: none"> The inspection procedure will be updated following the Quality Assurance assessment (see also 7.81) scheduled to be completed in the fall of 2014. (Spring 2015) 	On Track	On Track
<ul style="list-style-type: none"> Provide training and guidance material, as needed, for the updated inspection procedure. (Fall 2015) 	On Track	On Track

Internal Audit expected:

- the Rail Safety Integrated Gateway (RSIG), which is a data system to provide inspectors with the ability to document, analyze, and report on the results of their oversight activities;*
- a process in place for planning and conducting SMS audits that would satisfy OAG expectations and TSB's concerns; and*
- a follow-up procedure that provided direction on how to complete timely follow-up on deficiencies to assess whether they have been corrected.*

⁴ Rail Safety has indicated that September 2015 is the revised date for the completion of the assessment criteria to assess quality and effectiveness of railways' safety management system.

Internal Audit's Assessment

The required information is being inputted into RSIG however, because of RSIG's limited reporting capacity, the information cannot easily be used for planning and analysis. With the implementation of the new Transportation Information Regulations, Transport Canada will be receiving even more information from railway companies. It will be important that a plan be in place to determine how best to analyze this information in support of national risk-based planning and allocation of resources to areas of highest risk.

The development of criteria required by inspectors to complete SMS audits has been delayed and is expected to be completed by September 2015.

Rail Safety has developed procedures for staff to follow when determining if a follow-up site visit is required. The regions have not fully implemented the procedures and the criteria established are too subjective. More focused or objective criteria are required to ensure consistency.

Observations to Support Internal Audit's Assessment

Tools for Oversight Activities

Rail Safety has developed a data system, the Rail Safety Integrated Gateway (RSIG), to help ensure the consistent documentation of the results of oversight activities and provide information to support planning, monitoring and reporting. Training has been provided to staff on the modules that have been implemented to date. Inspectors are currently using the system to record the results of their inspections.

Concerns were expressed with the completeness and reliability of the RSIG data because of the learning required for accurate data entry and the range and limitations of a new system's functionalities. The current system's analysis and reporting functionalities are limited. Consequently, most inspectors and some HQ functional disciplines are maintaining their own databases (e.g., excel spreadsheets) to generate reports and complete data analysis to support their planning decisions.

Areas Requiring Further Attention

To ensure the system is being optimized, Rail Safety should address the analysis and reporting functionality in RSIG and continue to provide training so that inspectors can carry out their oversight activities more efficiently and effectively.

Oversight of Federal Railways' SMS

Rail Safety implemented an RSIG module to capture SMS audit results. In addition, an audit procedure and a follow-up procedure were established. Staff have been trained on the use of the module and procedures.

As part of its regulatory framework, Rail Safety drafted new regulations pertaining to the safety management system requirements of federally regulated railways. At the time of our audit, under the previous regulations, Rail Safety could only assess compliance using the SMS criteria developed by the railway companies. The new regulations which came into force April 1, 2015, establish the minimum requirements that Transport Canada expects railways to develop and implement for the purposes of achieving the highest level of safety in their railway operations. This should enable TC to assess whether railways' SMS programs meet the requirements set out in the new regulations, including the quality and effectiveness of the railway's SMS program.

Rail Safety is currently working on common audit programs and tools in relation to the new SMS regulations to ensure a consistent approach to auditing across all Regions and HQ. This work was still in process at the time of our follow-up audit.

Follow-up on Deficiencies

Follow-up inspection procedures were implemented in July 2014 and Web training was provided to staff on the new procedures. As part of the procedures, inspectors are to complete a checklist to document any deficiencies they find. The procedure then requires inspectors to determine the level of follow-up activity that is warranted, based on the risk associated with the deficiency identified.

Our file review indicated that 53% of files requiring a checklist had one. Even though not all checklists were being completed, there was evidence in all regions that inspectors did not accept a rail company's corrective action plan for identified deficiencies until they were satisfied that the plan was adequate.

Areas Requiring Further Attention

To ensure that the follow-up process is robust, Rail Safety should review the criteria used to determine when an on-site visit is required, in order to assess its effectiveness and identify what improvements are needed.

2.4. QUALITY ASSURANCE

Recommendations		
<p>OAG 7.62: Transport Canada should set a clear expectation for management review and approval in the planning, conducting, and reporting of oversight activities, with the aim of ensuring that inspectors comply with the methodology and that their reports are accurate. Transport Canada should provide guidance to management on how to document the timing and extent of management involvement.</p> <p>OAG 7.81: Transport Canada should develop a detailed quality assurance plan to assess its oversight methodology against best practices and to regularly evaluate audits and inspections against its methodology, with the goal of promoting continuous improvement.</p>		
Department's Action Plan	Status as per Rail Safety	Status as per IA
<ul style="list-style-type: none"> Develop a management review process for oversight activities, outlining roles and responsibilities for managers and inspectors, to ensure that inspectors follow the procedures and produce accurate reports. (Spring 2014) 	Complete	Complete
<ul style="list-style-type: none"> Develop and include performance expectations in managers' annual performance agreements requiring them to review & approve oversight activities. (Spring 2014) 	Complete	Complete
<ul style="list-style-type: none"> Provide training and guidance material, as needed, for the management review process. (Spring 2014) 	Complete	Complete
<ul style="list-style-type: none"> A quality assurance plan was established, using a risk based approach, which includes periodic assessments of oversight activities. (September 2013) 	Complete	Complete
<ul style="list-style-type: none"> The quality assurance plan will be reviewed and updated regularly at Rail Safety Senior Management Committee meetings. (September 2013) 	Complete	Complete
<ul style="list-style-type: none"> Conduct a quality assurance assessment of the inspection procedure. (Fall 2014) 	Complete	Complete

Internal Audit expected:

- *Rail Safety developed a quality assurance plan that assesses how well its activities conform to established methodologies, and to identify opportunities for improvement.*

Internal Audit's Assessment

Rail Safety has developed and implemented a management review process. At the time of the audit, managers in both the regions and HQ were not following the requirements of the process. While management oversight activities are being carried out they have not been documented as required.

Observations to Support Internal Audit's Assessment*Management Review Process*

A management review process was implemented in September 2014. The process requires that managers review a fixed number of inspections per quarter and document the results in a checklist. Managers were trained on the procedures prior to its implementation and their performance agreements were updated in 2014 to include performance expectations regarding these oversight activities. These new agreements will be used in 2015.

Managers were overseeing the work completed by their inspectors. Specifically, managers were copied on emails; staff meetings included round tables to discuss issues; and inspectors described to us the oversight their manager provided whether it was through informal discussions or accompanying them on site visits.

While we did see oversight, we did not see the required checklists being consistently used to document the oversight. At the second quarter of 2014-15, approximately 50% of regional managers and 100% of HQ managers had not completed the required checklists. As well, there was no evidence that information collected by HQ through the management review process was being analyzed to identify opportunities for improvement.

Areas Requiring Further Attention

Expectations for the management review process should be clarified and communicated to employees. A methodology should be developed for analyzing individual results and applying the lessons learned throughout the organization, as appropriate.

Quality Assurance Plan

Quality assurance (QA) plays an important role in the overall Rail Safety quality management system. Rail Safety developed a QA plan and directives and procedures have been implemented.

The Rail Safety Senior Management Committee regularly reviews the plan, which outlines activities to be reviewed in each year including internal assessments. The Quality and Performance Management unit in Rail Safety is responsible for completing annual internal assessments on various procedures (e.g., risk-based planning procedure, inspection procedures etc). An assessment of the inspection procedure was completed in July 2014, which produced a number of recommendations for improvement. A working group was established in September 2014 to update the procedures accordingly.

2.5. HUMAN RESOURCES

Recommendations		
<p>OAG 7.70 - Transport Canada should identify and develop a strategy to ensure that it has the needed number of inspectors with the necessary skills and competencies required to plan and conduct the oversight of federal railways, including oversight of safety management systems.</p> <p>OAG 7.74 - Transport Canada should ensure that inspectors and managers receive in a timely manner training to carry out their responsibilities.</p> <p>OAG 7.76 - The Department should put a process in place to monitor whether inspectors maintain their independence and objectivity when conducting audits and inspections of federal railways.</p>		
Department's Action Plan:	Status as per Rail Safety	Status as per IA
<ul style="list-style-type: none"> A human resources strategy was developed. (September 2013) 	Complete	Complete
<ul style="list-style-type: none"> Identify and document inspector competencies required for a systems-based approach to oversight. (Spring 2014) 	Complete	Complete
<ul style="list-style-type: none"> Review and update inspector work descriptions to ensure work reflects the systems based approach to oversight. (Fall 2014) 	Complete	Complete
<ul style="list-style-type: none"> Assess current inspector workforce to determine if there are any gaps in skills and competencies. (Fall 2014) 	Complete	Complete
<ul style="list-style-type: none"> Update training, recruitment and retention strategies to ensure Rail Safety has the required staff with the skills and competencies needed. (Fall 2014) 	Complete	Complete
<ul style="list-style-type: none"> An annual training schedule was put in place in April 2013 to 	Complete	Complete

ensure that managers and inspectors receive training in a timely manner. (April 2013)		
<ul style="list-style-type: none"> Target time frames for mandatory training will be established and monitored regularly at Rail Safety Senior Management Committee meetings. (Spring 2014) 	Complete	Complete
<ul style="list-style-type: none"> Values and Ethics training was provided to all staff, including inspectors, in the summer of 2013. (Summer 2013) 	Complete	Complete
<ul style="list-style-type: none"> Inspectors are required to update their “conflict of interest” declarations every two years. They must also submit new declarations should their circumstances change in a manner that could impact their objectivity and independence. All declarations are assessed and reasonable measures are taken to ensure they maintain their independence and objectivity. (Fall 2013) 	Complete	Complete

Internal Audit expected:

- Reviewed and updated inspector work descriptions to ensure work reflects the systems based approach to oversight.*
- Updated training, recruitment and retention strategies to ensure Rail Safety has the required staff with the skills and competencies needed.*
- Updated “conflict of interest” declarations for inspectors every two years with a requirement they submit new declarations should their circumstances change in a manner that could impact their objectivity and independence.*

Internal Audit’s Assessment

Based on our review, the work that has been completed is consistent with the management action plan. To further minimize the risk of conflicts of interest, guidance is required to define “cooling off” periods.

Observations to Support Internal Audit’s Assessment

Inspector Competencies

An HR strategy that includes capacity, competencies, recruitment and training was developed in September 2014 and updated in November 2014. Work descriptions have been updated for

inspectors to reflect the competencies they require to plan and conduct activities for the oversight of federal railway companies, including the oversight of the companies' SMS.

- Rail Safety developed a Competency Framework for Railway Safety Inspectors, conducted an inspectors' self assessment of competencies and completed a gap analysis of competencies. A competency framework report was completed to identify necessary competencies, including those related to SMS, planning and conduct of oversight activities.

Inspector Training

With respect to training, a learning curriculum is in place with mandatory training on SMS, audits, risk and RSIG. Currently, a Transport Canada Multimodal Integrated Technical Program is being established to provide training across modes that will focus on the regulator role of an inspector's duties and a systems-based approach to inspections.

Inspector Independence

The majority of RSIs are recruited from the railway industry as knowledge required to complete an inspection is mainly obtained from technical experience by working in the railway industry. Under TC's *Code of Values and Ethics* and the *Policy on Conflict of Interest and Post Employment*, inspectors must now sign a declaration of Conflict of Interest form when they join the Department and every two years thereafter. There is evidence that this is being respected and it is being monitored by Human Resources staff. Regions are also tracking inspectors' attendance at Values and Ethics training sessions.

Although it takes approximately three months for inspectors to obtain the necessary credentials to carry out inspections on their own, there is no specific guidance for managers with respect to an appropriate elapsed period of time before inspectors should conduct work at sites where they were previously employed, known as a "cooling off" period.

Areas Requiring Further Attention

Rail Safety should work with Transport Canada's Values and Ethics group to develop multi-modal guidelines for an appropriate "cooling off" period.

3. TRANSPORTATION SAFETY BOARD RECOMMENDATIONS

3.1. CLASS 111 TANK CARS

Recommendation		
<p>TSB R14-01 The Department of Transport and the Pipeline and Hazardous Materials Safety Administration require that all Class 111 tank cars used to transport flammable liquids meet enhanced protection standards that significantly reduce the risk of product loss when these cars are involved in accidents.</p>		
Department's Action Plan	Status as per TDG	Status as per IA
<ul style="list-style-type: none"> In response to TSB Recommendation R14-01, TC indicated that it will prohibit the use of the highest-risk group of pre-CPC-1232 Class 111 tanks cars. Under subsection 32(1) of the Transportation of Dangerous Goods Act (1992), Protective Direction No. 34 was issued on 23 April 2014 prohibiting the use of tank cars that have no continuous reinforcement of their bottom shell for carrying any Class 3 flammable liquids, including crude oil and ethanol. The industry had 30 days to fully comply. 	Complete	Complete
<ul style="list-style-type: none"> TC further stated that it will require that all pre-CPC-1232/ TP 14877 tank cars used for the transportation of crude oil and ethanol be phased out of service or retrofitted within 3 years. 	On Track	On Track
<ul style="list-style-type: none"> In the interim, the train routing restrictions outlined in TC's response to Recommendation R14-02 (see section 4.1.2.2) are designed to reduce the associated risks. TC plans to meet or exceed any new U.S. standard; therefore, it will continue to work closely with its U.S. counterparts on the development of more stringent tank car construction and retrofit standards to further enhance safety of the integrated North American rail system. 	On Track	On Track
<ul style="list-style-type: none"> In addition, TC will proceed expeditiously with the Canada Gazette, Part II, publication of the 13 updated means of containment standards, including the AAR 2011 CPC-1232 standard for DOT-111 tank cars, that were introduced for consultation in Canada on 11 January 2014. 	Complete	Complete

Internal Audit expected:

- Changes would be made requiring Class 111 Tank cars meet enhanced protection standards.*

Internal Audit's Assessment

In addition to issuing Protective Direction No.34, TDG has worked with its US counterpart to develop an even higher standard tank car, TC 117, which will have enhanced safety features that represent a considerable improvement over previous tank car standards.

Observations to Support Internal Audit's Assessment

The TDG Directorate published regulations in July 2014 requiring manufacturers to build flammable liquid tank cars to a higher standard. Further to this, the Directorate continued to work with US regulators to develop tank car standards for an even more robust class of tank car. (TC 117). An update on the new tank car was posted to the Transport Canada website on March 11, 2015. The Department has published regulations on May 1, 2015 that require phased-in implementation of the TC 117 standards that would require that Class 111 tank cars be replaced by TC 117 cars or that they be retrofitted to meet the TC 117 standards.

3.2. KEY ROUTES KEY TRAINS

Recommendation		
<p>TSB R14-02 The Department of Transport set stringent criteria for the operation of trains carrying dangerous goods, and require railway companies to conduct route planning and analysis as well as perform periodic risk assessments to ensure that risk control measures work.</p>		
Department's Action Plan	Status as per Rail Safety	Status as per IA
<ul style="list-style-type: none"> On 23 April 2014, in response to TSB Recommendation R14-02, TC issued an emergency directive under section 33 of the Railway Safety Act (RSA) requiring railways carrying dangerous goods to implement minimum critical operating practices, including speed restrictions, enhanced inspection and maintenance requirements, and risk assessments on key routes over which key trains operate. The emergency directive is in force for 6 months, and may need to be renewed to reflect further consultation with stakeholders and consideration of any additional U.S. requirements that may be established. 	On Track	On Track

<ul style="list-style-type: none"> At the same time, TC also issued a ministerial order under section 19 of the RSA. This ministerial order requires railways carrying dangerous goods to formulate and submit for approval, within 180 days, new rules based on these above-described operating practices to further improve the safe transportation of dangerous goods by rail in the long term. 	On Track	On Track
---	-----------------	-----------------

Internal Audit expected:

- Rail Safety to set stringent criteria for the operation of trains carrying dangerous goods, and require railway companies to complete route planning and periodic risk assessments.*

Internal Audit's Assessment

An Emergency Directive for "key routes key trains" was issued in April 2014. The Railway Association of Canada (RAC) filed their rules and TC is currently reviewing these rules.

Observations to Support Internal's Audit Assessment

The Emergency Directive regarding "key routes key trains" came into effect on April 23, 2014 and has subsequently been extended for another year. Inspectors have been monitoring compliance with the Directive and recording and tracking results in RSIG.

RAC filed their rules in October 2014. The rules are not approved and the Emergency Directive was extended until such time as new rules are approved.

3.3. EMERGENCY RESPONSE ACTION PLANS

<p>Recommendation</p> <p>TSB R14-03 The Department of Transport requires emergency response assistance plans for the transportation of large volumes of liquid hydrocarbons.</p>		
Department's Action Plan	Status as per TDG Complete	Status as per IA
<ul style="list-style-type: none"> On 23 April 2014, in response to TSB Recommendation R14-03, TC issued Protective Direction No. 33 under the Transportation of Dangerous Goods Act (1992). This protective direction, in effect 150 days from the issue date, requires an ERAP for certain higher-risk hydrocarbons and flammable liquids, including crude oil and ethanol, when offered for transport or imported by rail in 1 or more tank cars that are each filled to 10% of capacity or more. 	Complete	Complete

<ul style="list-style-type: none"> • TC indicated that it will establish an emergency response planning task force with members from key partners and stakeholders to provide a dedicated forum, and with support from a team of experts, to respond to recommendations of the emergency response working group of the Transportation of Dangerous Goods General Policy Advisory Council. The task force will focus on ERAP activation processes, cooperative industry approaches, development of information-sharing protocols, and promotion of unified incident command structures. The task force will also review and provide advice on the possible expansion of ERAP requirements to other Class 3 flammable liquids. 	Complete	Complete
---	-----------------	-----------------

Internal Audit expected:

- *TDG would require ERAPs for the transportation of large volumes of liquid hydrocarbons.*

Internal Audit's Assessment

Protective Directive 33 was issued that required an ERAP for transportation of large volumes of hydrocarbons. This was replaced by a Regulation in December 2014. Companies submitted the required ERAPs and were given interim approval until such time as TC has criteria established to measure the effectiveness of the fire fighting component of the ERAP.

Observations to Support Internal's Audit Assessment

An Emergency Response Task Force supported by a Secretariat and reporting directly to the Director General, TDG, has been formed, is meeting regularly and is providing interim quarterly reports. Several interim recommendations have already been implemented. The Task Force is comprised of multiple subcommittees that are working on recommendations to be delivered by June 2015 in areas such as first responder training, and incident command and management.

Protective Direction No. 33 (PD 33) was issued in April 2014 and extended the requirement for an emergency response assistance plan (ERAP) to certain higher risk liquid hydrocarbons (Class 3, flammable liquids in packing Groups I, II and III). In December 2014, PD33 became a regulation and directed that an ERAP was required when a single tank car contains one of the designated flammable liquids, including ethanol.

To meet the requirements of PD 33 an ERAP required both technical expertise for fire fighting and a fire fighting capacity. ERAPs submitted for approval were reviewed to ensure they included these basic criteria and were approved on an interim basis for three years. The interim approval letters issued to applicants clearly specified that Transport Canada was developing recommendations for those ERAPs required in accordance with Protective Direction 33 and

could at any time impose changes to improve the effectiveness of the ERAP. Interim approvals were granted based on response organizations demonstrating that a combination of training and experience of their Technical Advisors was sufficient to properly support firefighters. This combination of training and experience addresses the lack of a recognized industry standard for response to an oil-on-rail fire. TDG Directorate has facilitated meetings with the National Fire Protection Association and First Responders, municipalities, Aboriginal firefighters, industry, rail carriers and response organizations to develop a North American standard and, once in place, ERAP holders will be required to demonstrate to TDG Directorate that their Technical Advisors meet this new industry standard.

TDG Directorate's plan for ERAPs required by the December 31, 2014 amendments to the TDG Regulations (formerly referred to as PD33) is aligned with the TDG ERAP Assessment Framework. This framework requires that ERAP applications demonstrate the availability and placement of specialized equipment, technical expertise, 24-hour call centre and other key elements to support First Responders.

Areas Requiring Further Attention

TDG Directorate should develop a clear plan to ensure that the ERAP criteria for fire-fighting capacity be established before the three-year interim approvals expire.

3.4. SECURING TRAINS

Recommendation		
<p>TSB R14-04 The Department of Transport requires Canadian railways to put in place additional physical defences to prevent runaway equipment.</p>		
Department's Action Plan	Status as per Rail Safety	Status as per IA
<ul style="list-style-type: none"> • On 29 October 2014, TC issued an Emergency Directive pursuant to Section 33 of the Railway Safety Act, requiring railways to improve their operating practices with respect to the securement of railway equipment. Specifically, railways were ordered (in part) to <ul style="list-style-type: none"> ○ use standardized hand brake charts; ○ ensure the adequacy of hand brake applications through hand brake effectiveness testing; ○ use additional physical securement mechanisms/measures (a list was provided); ○ apply hand brakes to the locomotive(s) in addition to 	On Track	On Track

<p>those on the cars;</p> <ul style="list-style-type: none"> ○ use air brakes in addition to hand brakes on trains or equipment left unattended on the main track; and ○ verify every 2 hours by a qualified employee the securement of cars left unattended on the main track during switching, picking up or setting off enroute. 		
<ul style="list-style-type: none"> • TC will be developing monitoring procedures to ensure operators adhere to the outlined requirements. 	Complete	Complete
<ul style="list-style-type: none"> • Also on 29 October 2014, TC issued a Ministerial Order, pursuant to Section 19(1)(a) of the Railway Safety Act, requiring companies to formulate rules to address the provisions of the Emergency Directive permanently. The rules are to be filed with TC within 180 days of the issuance of the order. TC will continue to work with the railway industry to identify and address any possible residual risks well in advance of the rule submission deadline. Should any unforeseen vulnerabilities be identified that are not addressed sufficiently in the Rule proposed by industry, TC would issue an amended Emergency Directive to immediately address any such issues. 	On Track	On Track
<ul style="list-style-type: none"> • TC will hire additional specialized staff to strengthen oversight related to train securement and to monitor compliance with these additional levels of defence to prevent runaways. Rail Safety personnel will <ul style="list-style-type: none"> ○ develop and implement targeted oversight requirements related to new rule(s) focused directly on securing trains; and ○ identify and challenge any technical gaps in railways' risk assessments and provide technical advice/ direction on new securement rules, special instructions, and daily bulletins/ safety issues identified by inspectors in the field. 	On Track	On Track
<ul style="list-style-type: none"> • Furthermore, as of April 1, 2015, enforcement action for any instances of non-compliance will include the option of issuing fines in the event of contraventions to the Railway Safety Act, and its rules and regulations. 	Complete	Complete
<ul style="list-style-type: none"> • Recognizing that technological solutions may provide for additional improvements to mitigate risks of runaway trains in the coming years, TC will intensify its collaboration with industry through the Railway Research Advisory Board to help lead the implementation of technologies to enhance railway safety. In July 2014, TC signed a Memorandum of Cooperation with the U.S. Federal Railroad Administration to facilitate further information exchange, and to help in identifying technical cooperation projects. TC will also initiate a strategic research initiative program to investigate alternatives that would enhance brake system performance, focusing on braking 	On Track	On Track

systems and train securement technologies. Such technologies will be developed under, but not limited to, the following themes: remote brake application systems, wayside temperature detectors, and hand brake monitoring devices.		
---	--	--

Internal Audit expected:

- *Rail Safety would have implemented requirements for additional physical defences to prevent runaway equipment.*

Internal Audit's Assessment

Rail Safety implemented an Emergency Directive and inspectors have been monitoring compliance against the Directive. RAC is in the process of filing their rule with respect to physical defences against runaway equipment.

Observations to Support Internal Audit's Assessment

Since October 29, 2014, inspectors have been monitoring compliance to the Emergency Directive regarding train securement through their planned inspections. Guidance and tools have been developed and provided to inspectors to specify the monitoring requirements related to the Emergency Directive. The results related to the compliance to the Emergency Directive are tracked in RSIG.

Although much work and consultation has been done, a final rule has not yet been approved under section 19 of the *Railway Safety Act*. The filing of the rules was extended for 30 days until May 27, 2015 to allow rail companies additional time to further develop the rule and for consultation. In the meantime, Transport Canada has renewed the Emergency Directive until October 29, 2015.

Additional specialized staff will be fully in place by July 2015 to strengthen oversight related to train securement and to monitor compliance with additional defenses in place to prevent runaway trains.

Transport Canada has initiated a strategic research initiative program with the National Research Council to investigate alternatives to enhance train brake system performance.

4. CONCLUSIONS

Our follow-up examination confirms that TC is making progress in addressing the OAG and TSB recommendations: most of the action plans have been completed to meet the recommendations and the remainder of actions are on track with some aspects implemented and the rest planned to be in place by the targeted completion date.

Nevertheless, there are key areas where the Department needs to continue to focus its attention to successfully implement the many changes underway and anticipated going forward:

- Risk-based planning for national inspections (Program A inspections) should be based on identified risk and consistently applied amongst disciplines and across regions.
- Selecting inspection samples from risk ranked populations for national inspections (Program A inspections) would enable Rail Safety to allocate its resources to areas of higher risk and continue to collect data to measure defect rates.
- The functionality of RSIG should be developed to support reporting and data analysis of the current information collected as well as new information that will be collected effective January 2016.
- As Rail Safety transitions to operating under the new SMS regulations, the SMS of railway companies will be audited every three to five years. The results of these audits will also need to be incorporated into the risk-based planning process to help determine the minimum level of oversight and the optimal allocation of resources for inspections, audits and other oversight activities.
- TDG should have a detailed plan to ensure that the ERAP criteria for fire-fighting capacity be established before the three year interim approvals expires.

Overall, there is a need to improve documentation practices for management's oversight of inspection activities in Rail Safety. We saw evidence of managers providing direction and assessing the quality of their employee's activities, but documentation is lacking to clearly demonstrate that managers are actively exercising their supervisory responsibilities. We cannot emphasize enough the significance of their role in ensuring adherence to national standards.

Finally, we acknowledge that Safety and Security has initiated a number of significant changes over the last year including establishing five new regulations and several Emergency Directives and their associated policies and procedures. It must be recognized that the resulting new requirements will take time and effort to be fully implemented and operational, and will require senior management's commitment and sustained leadership.

5. MANAGEMENT RESPONSE

The Rail Safety Program and the TDG Program would like to thank the Audit and Advisory Services group for undertaking the *Follow-up Audit of Rail Safety* to determine whether the management action plans to address recommendations from the OAG's Rail Safety audit and the TSB's investigation reports have been implemented or are on track to be implemented.

Rail Safety and TDG accept all of the observations and conclusions provided in this report and will work towards continuous improvement in the areas noted in the report as requiring further attention.

Rail Safety will focus its efforts on its Risk-Based Business Planning (RBBP) process to ensure that the identification of risk is consistently understood and applied amongst the functional areas and across regions. In addition, Rail Safety will review its methods for selecting inspection samples, and will consider risk-ranked populations as well as random or other selection methods for calculating defect rates.

Rail Safety has recently developed and implemented new compliance analysis tools for each of the functional areas using the current information collected in RSIG. These tools have been well received in both HQ and the regions. Also, work is underway to update RSIG for the collection & reporting of the new leading indicator data that will be arriving January 2016.

With the coming into force of the new Safety Management System Regulations (2015), SMS monitoring activities conducted this year will focus on the railways coming into compliance with the new regulations. Going forward, Rail Safety will assess the implementation of railways' SMS through targeted and comprehensive audits. The results of these monitoring activities will inform the RBBP process and contribute to TC's assessment of the effectiveness of SMS regimes.

To improve the documentation practices associated with the Management Review Procedure, Rail Safety sent out a reminder email to managers in December 2014, to clarify their roles, responsibilities and expectations. Documentation practices improved considerably for the 4th quarter of 2014-15, showing 81% for the regions and 100% for headquarters. Going forward, Rail Safety will be monitoring the process on a regular basis and producing quarterly statistics on management reviews. Lastly, a process will be developed for analyzing individual results and lessons learned.

The TDG program will develop a plan that identifies criteria for fire-fighting capacity to be provided by Plan Holders of interim ERAPs prior to the expiry of the current three-year interim approval. The plan will be developed by December 2015, and tabled for TDG Senior Management Committee approval no later than March 2016, then communicated to affected

ERAP Plan Holders prior to the September 2017 expiry of the existing three-year interim approval.