



Railway Safety Management Systems Experience To Date & Lessons Learned

Presentation to System Safety Society

Ottawa,

June 18, 2009

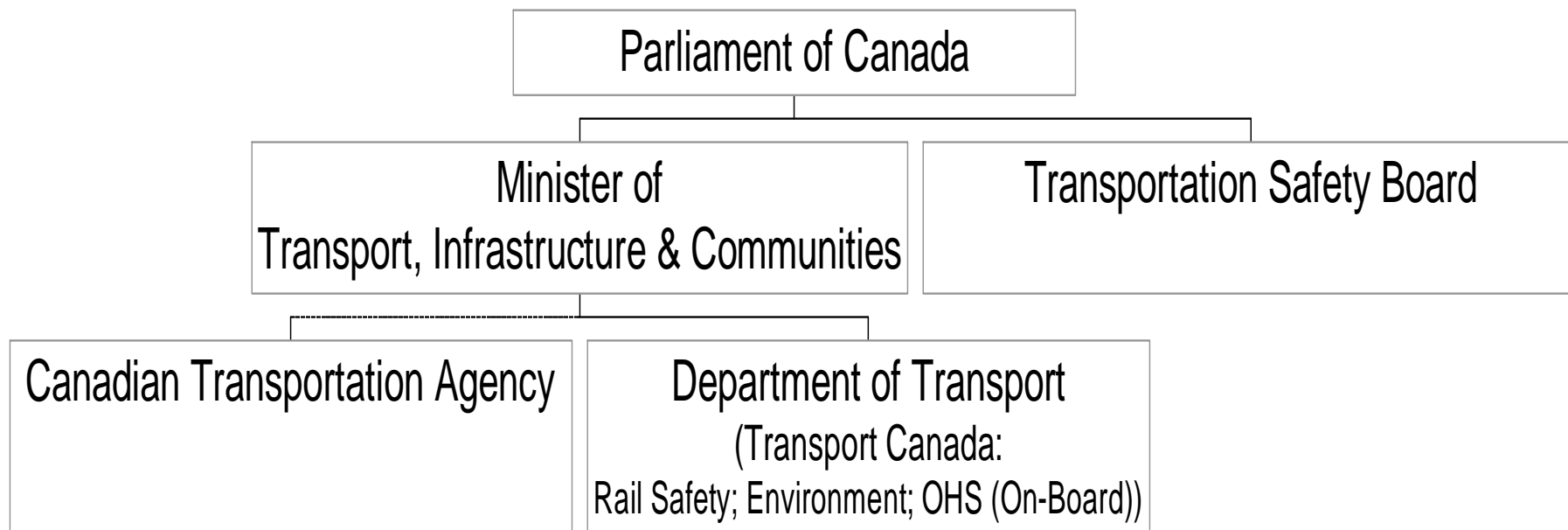


Overview of Presentation

- Summary of TC and the Rail Industry in Canada
- Current Challenges facing TC and the Industry
- Railway Safety Management System (SMS) Regulations
- Lessons Learned/Challenges
- Moving Forward



RAIL REGULATIONS IN CANADA





SAFETY AND SECURITY

Assistant Deputy Minister

Aircraft Services

Civil Aviation

Aviation Security

Security Program
Support

Safety Programs
Strategies & Coord.

Road Safety

Marine Safety

Marine Security

Rail Safety

Transportation of
Dangerous Goods

Surface & Intermodal
Security



TC Rail Safety - Key Activities

- Policy, Regulation, Standards & Research
- Outreach – Education, Awareness & Funding Programs
- Monitoring, Investigation & Enforcement
- Program Planning & Management



Canada's Railway Industry

Federally regulated railways	31
(+ 12 Prov. Companies as per Fed/Prov Agreements)	
Employees	34,500
Miles of track	30,000
Locomotives.....	3,270
Carloads (originating from Canada).....	4,5 M
Trains Dispatched per Day.....	780
Bridges	4,600
Crossings	
Public	17,000
Private	15,000
Grade separated	3,000



Current Challenges

External

- Increased complexity within the rail industry
- New developments – high-speed, long trains
- Strong competition – pressure on resources
- Level of infrastructure investment by industry
- Increase in security concerns
- Harmonization of rules/regulations

Strategic Plan 2005-2010



Current Challenges

Internal

- Aging workforce and ongoing recruitment challenges
- Programs need to be better integrated and coordinated to improve consistency
- Data systems need to be developed for better information sharing
- Resources are limited and risk-based management is needed in order to meet program requirements
- Resistance to change from traditional ways

Strategic Plan 2005-2010



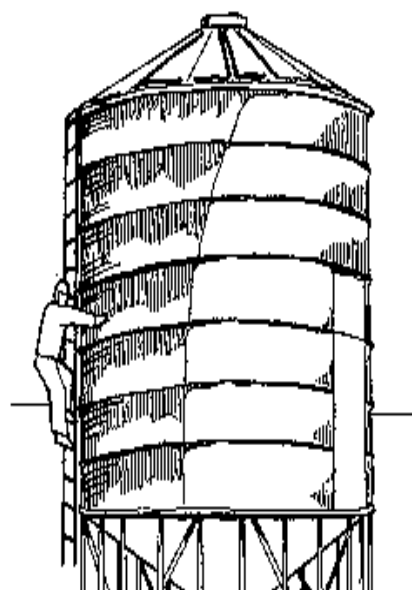
SMS – A bit of History

- 1989 – *Railway Safety Act* (RSA)
- 1994 – Legislated review of the RSA – (Three-Member Review Committee)
- 1997 – Minister initiates a second review of the RSA (Project Team)
- 1998 – Project Team Recommends to implement SMS
- 1999 – The RSA was amended - SMS
- 2001 – Railway SMS Regulations come into force
- 2007 – Minister calls for Independent Review of the RSA

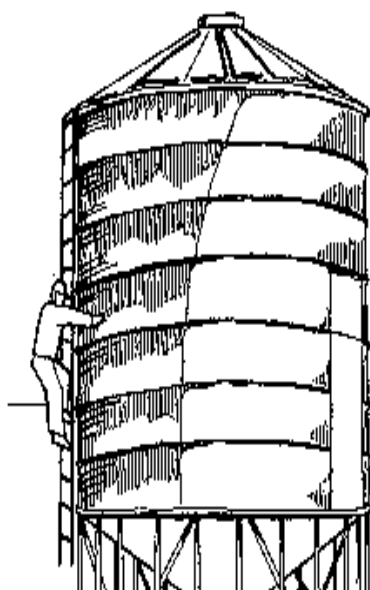


Introduction of SMS 2001

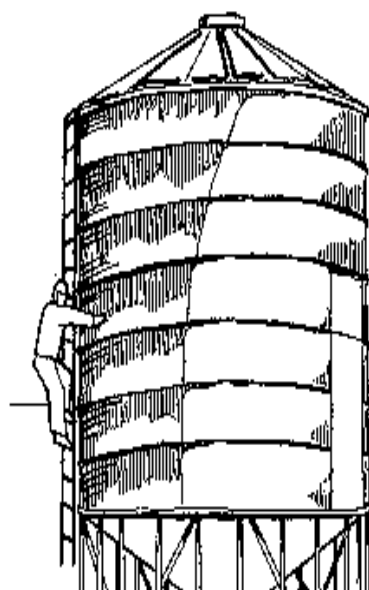
- SMS became another silo
- Performance measured by the number of inspections/audits



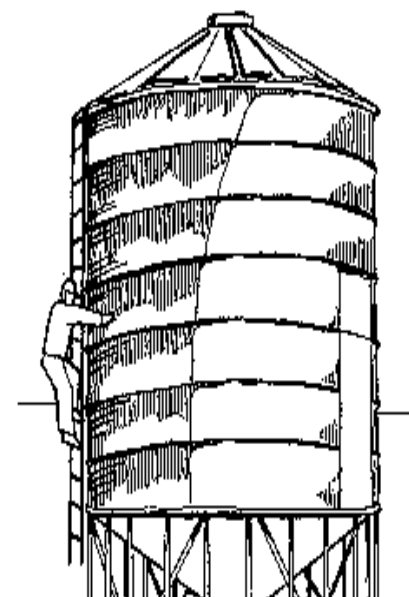
Engineering



Operations



Equipment



SMS



Myths of SMS

- Workforce Reduction Exercise
- De-Regulation
- Self-Regulation
- No more inspections
- Elimination of corrective actions



What is a SMS?

“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, monitoring and evaluation processes.”
(*RSA*)

Understanding Safety Management Systems



Loss Prevention Theory

- losses are the consequence of the interaction or coincidence of a series of deficiencies within a “system”



The Safety Management System Concept

- to prevent losses, it is necessary to control the entire “system” from which the loss can arise -- which is ultimately an issue of management policy and practices



SMS - Obligations of Railways

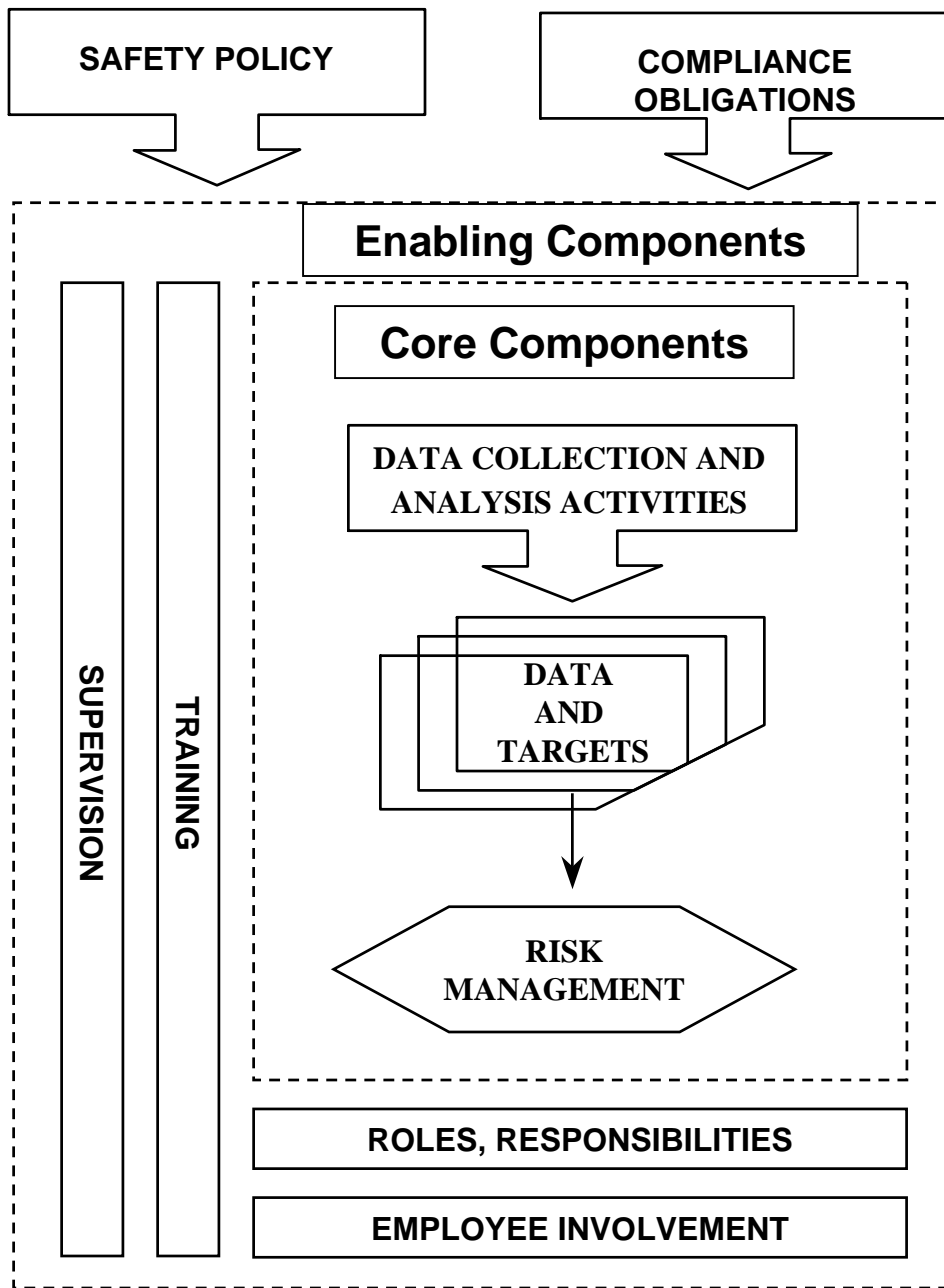
- Document, implement and maintain an SMS containing 12 specified components
- Maintain safety performance records as specified
- Submit selected information on the SMS 60 days prior to startup for new railways
- Submit updated information annually

SMS - Obligations of Railways



Implement/maintain a SMS with specified components

- A. Safety Policy, Annual Safety Targets and Associated Safety Initiatives
- B. Safety Authorities, Responsibilities and Accountabilities
- C. Employee and Representative Involvement
- D. Compliance with Applicable Regulations, Rules, Standards and Orders
- E. Risk Management Process
- F. Risk Control Strategies
- G. Accident and Incident Reporting, Investigation and Analysis
- H. Skills, Training and Supervision
- I. Safety Performance Data Collection and Analysis
- J. Safety Audit and Evaluation
- K. Corrective Action and Development, Approval and Monitoring
- L. Documentation



The RSMS Process



TC's Railway SMS Audit Program

- Documentation

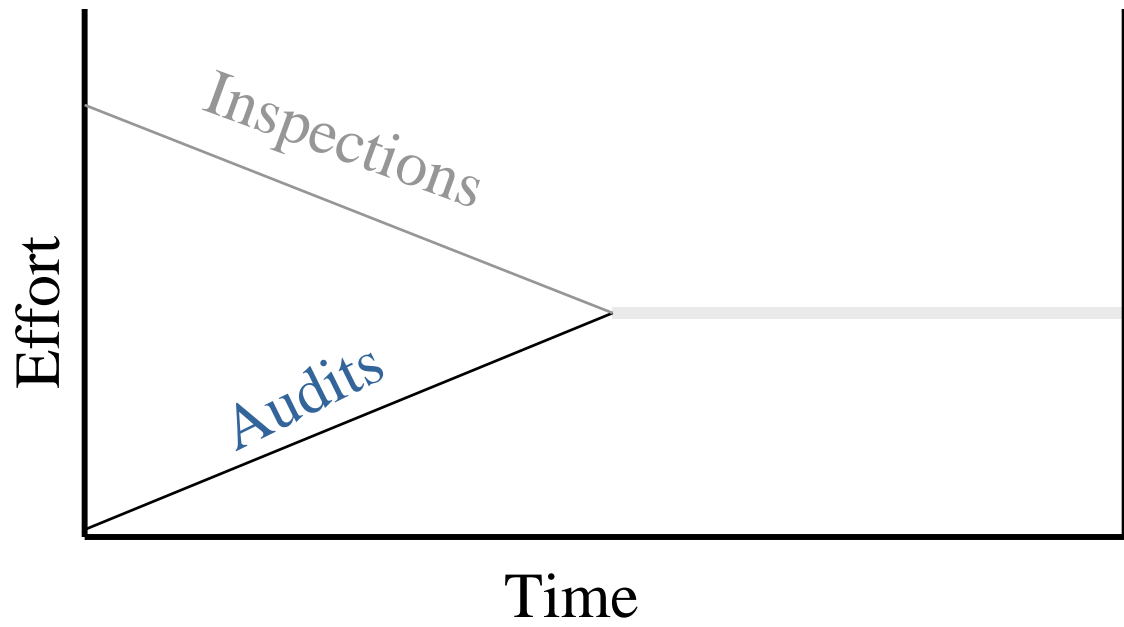
- To determine if the company has produced the documentation stipulated by the regulation
- To prepare the Verification audit team by documenting (mapping) specific references within the company's documented process

- Verification

- To assess implementation and effectiveness.



Inspections and Audits



Both are complementary.



Lessons Learned/Challenges

Regulated Group:

- Some success, notably at Management Level
- Different Corporate vs Front-line Field Understanding
- Improvements needed:
 - “Silos” vs overall systems approach
 - Risk Assessment: Need to “Walk the Talk”
 - Involvement of Employees
 - “Pass/Fail” attitude vs Continuous Improvement
 - Need to enhance Safety Culture

Lessons Learned/Challenges



Rail Safety – TC:

- Resistance to change (*“flavour of the month”*)
- Integration:
 - Need to mesh with existing prescriptive framework
 - Need to address organizational risk factors within all levels of a Railway
 - Need to adopt systems-based thinking
- *RSA* Review Panel: supports SMS and recommends that both railway companies and TC focus their efforts to improve its implementation

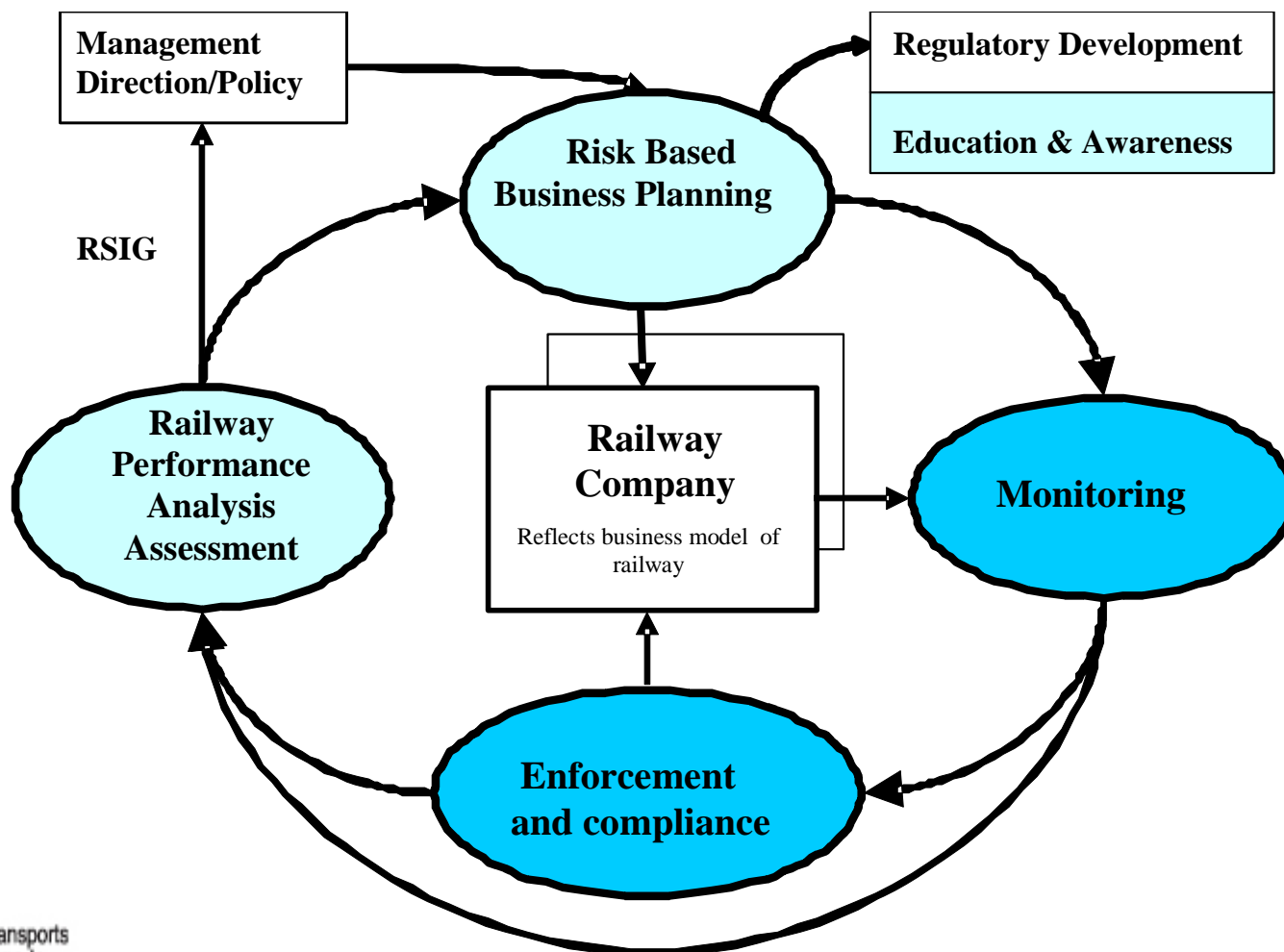
Results of 2007 RSA Review - SMS



- Transport Canada (nationally) and railway companies are at different stages of implementing SMS.
- More work is needed to ensure SMS is communicated throughout all levels of railway companies.
- Industry should improve use of local health and safety committees in identifying hazards and mitigating risks.
- Transport Canada should improve capacity to audit (vs. inspect) railway companies.
- Transport Canada should work with industry to develop tools to assist railway companies to improve their SMS.



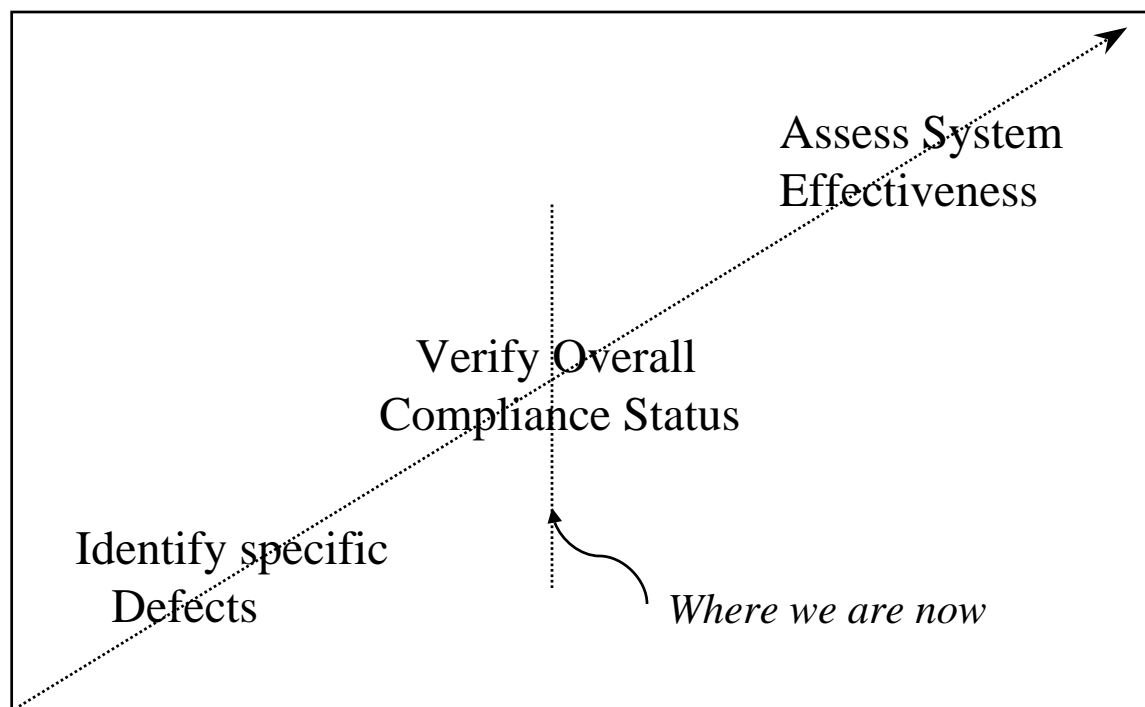
RS OVERSIGHT MODEL





Shift in Monitoring Focus

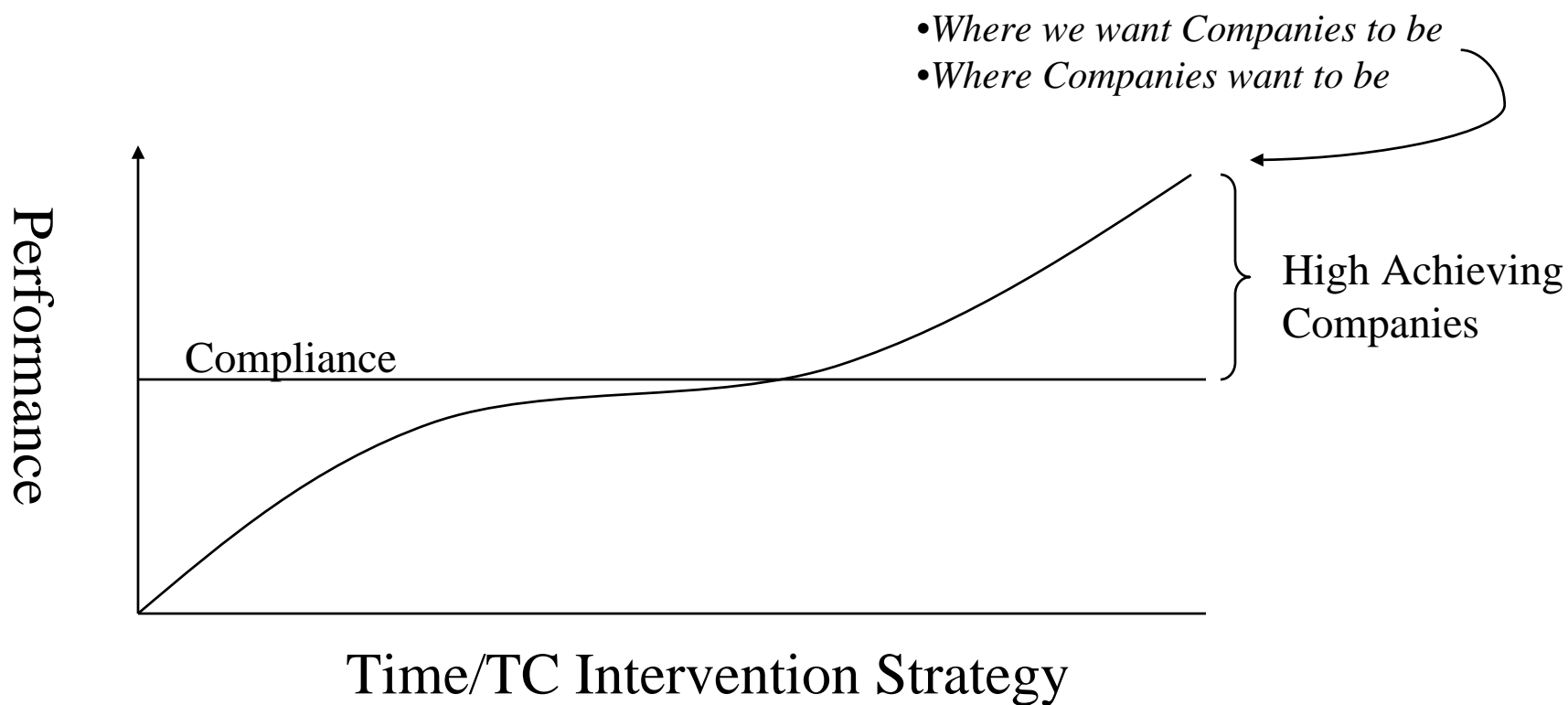
Complexity
of Monitoring



Time Required



Safety is More Than Compliance





A Changing Regulatory Approach

- From inspections only, to audits, to safety system assessments
- Resource implications - #'s, skill sets
- No one-size fits all approach – recognize differences in size/nature of Railways
- Incentive for companies to establish & maintain an effective SMS
- Gives regulator flexibility in determining best regulatory framework



Cultural Shift

From

To

Program based	—————▶	Risk based
“Find it/fix it” mentality	—————▶	Focus on systemic causes
Reactive	—————▶	Proactive
Measured by #'s of interventions	—————▶	Result oriented
Inspect individual elements	—————▶	Audit the System



Moving Forward

We Are:

- Changing the way we do business – focussing on Safety Management Culture
- Expecting improved safety performance
- Supporting consultation
- Ensuring safety information is shared



Conclusion

SMS leads to an enhanced safety culture
– it is a journey requiring cultural
change on the part of the Railways and
the Regulator