



Transportation  
Safety Board  
of Canada

Bureau de la sécurité  
des transports  
du Canada



# **On the right track? An examination of rail safety**

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Chair, Transportation Safety Board of Canada

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Canada

# TSB 101: who we are, what we do

**Mandate:** To advance transportation safety in the marine, pipeline, rail, and air modes by:

- conducting **independent investigations**
  - identifying **safety deficiencies, causes, and contributing factors**
  - making **recommendations** to address systemic issues
- 
- It is not the function of the Board to assign fault or determine civil or criminal liability
  - TSB is not a regulator



# Watchlist 2016



## **Railway crossing safety**



**Transportation of flammable liquids by rail**



**Following railway signal indications**



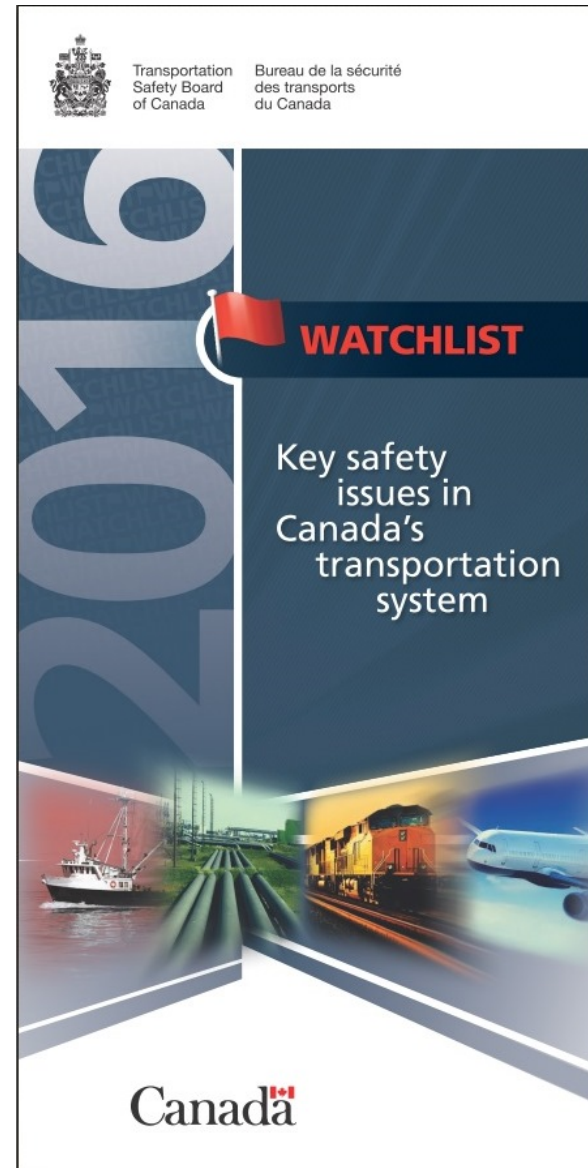
**Slow progress addressing TSB recommendations**



**Fatigue management systems for train crews**



**On-board voice and video recorders**



## Issue removed: Railway crossing safety

- TC published new ***Grade-Crossings Regulations and Standards*** (2014)
- Crossing accidents are now declining

YTD (January-September)	
2011-2015 (avg.)	129
2015	117
2016	89

Source: TSB website



# Transportation of flammable liquids

*The transportation of flammable liquids, such as crude oil, by rail across North America, has created an elevated risk that needs to be mitigated effectively.*



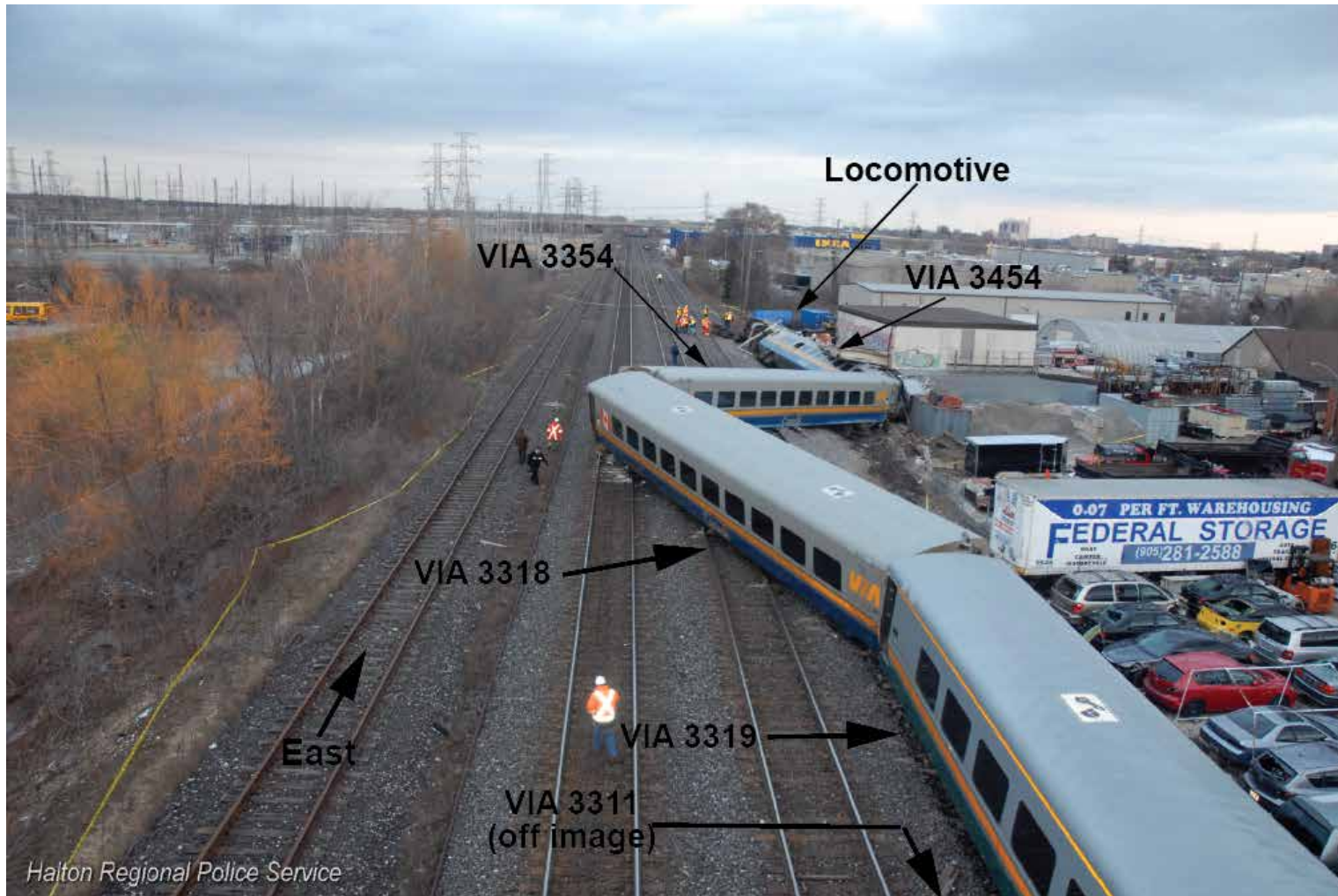


## Following signal indications

*Railways signals are not consistently recognized and followed, which poses the risk of serious collisions or derailments*



# R12T0038 – Main track derailment near Burlington, Ontario (February 2012)



# Slow progress on addressing TSB recommendations

*Transport Canada action to address TSB recommendations is too slow.*

## Outstanding recommendations (2016)

Mode	10–14 years	15–19 years	More than 20 years	Total
Air	3	4	32	39
Rail	1	1	1	3
Marine	3	1	6	10
Total	7	6	39	52





# Fatigue management systems for train crews

*Sleep-related fatigue in operating crew can impair the safe operation of freight trains.*

## Why this matters:

- Since 1994, **20%** of TSB investigations involving human factors showed fatigue as a contributing or risk factor.
- **Almost all** of these (19 of 23) involved operating crews on **freight trains**



## On-board locomotive voice and video recorders

*Without these, key information to advance railway safety may not always be available for accident investigations and proactive safety management.*



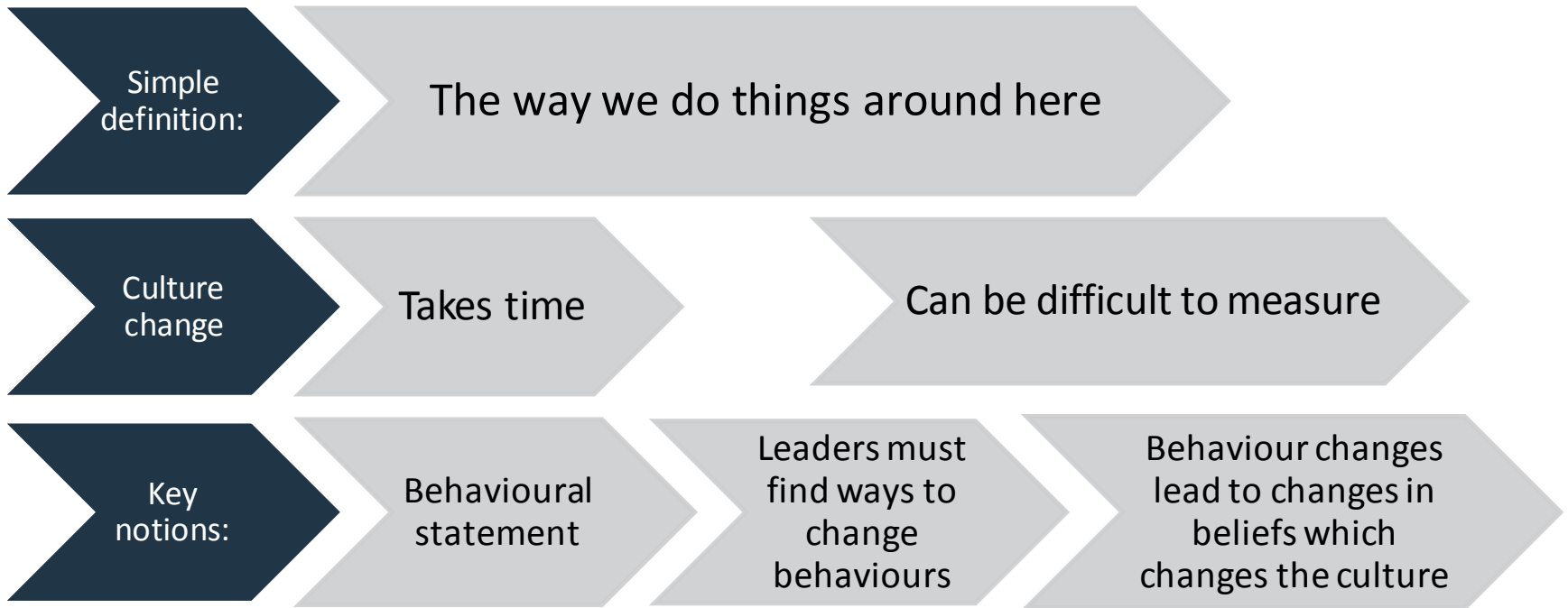
Source: TSB investigation report R16H0002



Source: TSB investigation report R16H0002



# What is culture, and why is it so important?



## Over 100 years of:

- History
- pride
- ... and inertia



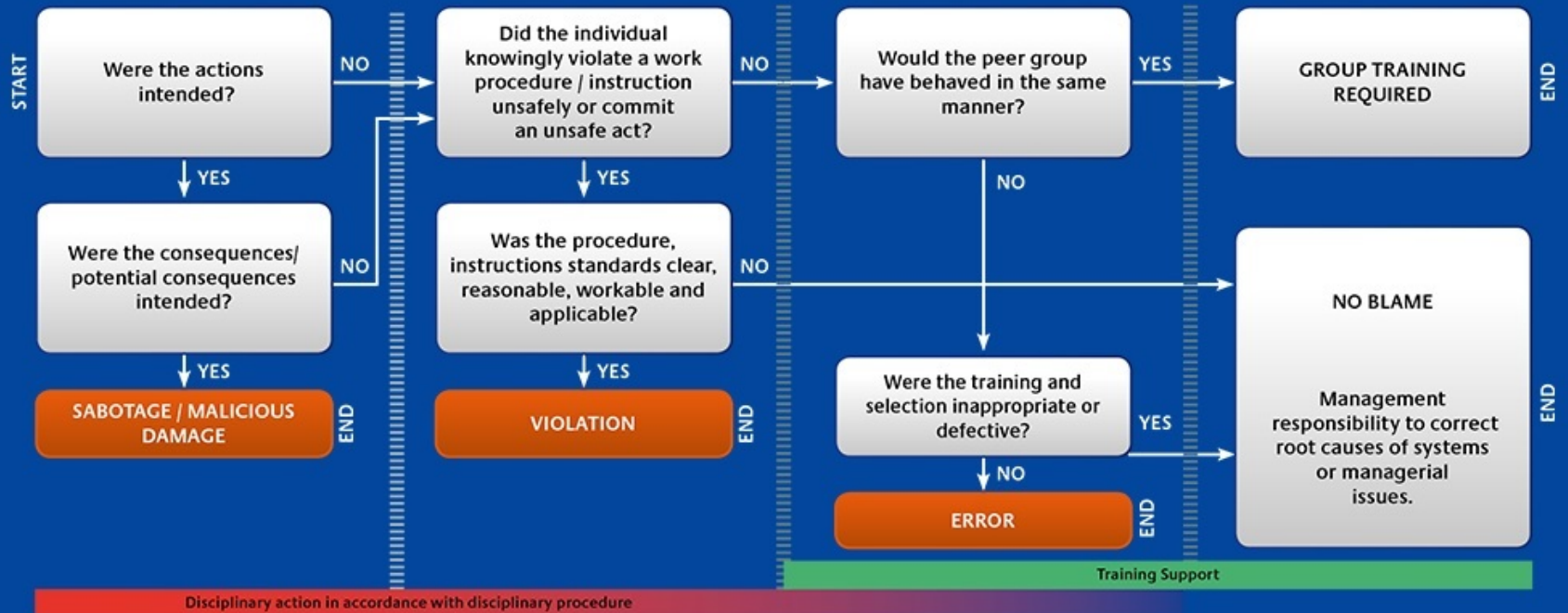
# Elements of a robust safety culture

- Doing what you say you'll do
- Just culture
- Reporting culture
- Learning culture





## JUST CULTURE DECISION TREE



## Conclusions

- Improving the safety of our transportation network is beneficial to all.
- Ask yourself **why** things happened, and don't accept "rule-breaking" as an answer.
- What's driving **your** safety culture?
  - what assumptions?
  - what values?
  - what beliefs?





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