Railway Safety, a personal perspective

Mr. Vince C. Murtagh (VMA Limited)

Wednesday, 16 February 2011 - 16:00

Location: Room 610, Skempton (Civil Eng.) Bldg, Imperial College London

Abstract
Vince will provide a personal view from his 38 years of working within the railway of how the approach to safety and accidents has changed. He will aim to derive a systems view of the railway with regard to accidents in order to help the understanding of the railway.

Biography
Vince has spent 38 years in the railway since graduating from Leicester University. He has worked on the shop floor, as Forman in traction Depots and in Depot management positions. He became High Speed Train fleet engineer (Western) in the 1980s subsequently moving into project management of fleet overhauls. He was Head of train systems for the WCRM project before moving to start up Network rail’s Crossrail Engineering team which he headed up for 5 years before retiring.
Railway systems & safety
a personal view
Vince Murtagh, C.Eng
Imperial College
February 16th
December 1973
1718 Paddington to Oxford, 650 passengers
Vince Murtagh
Loco body

"Pear drop” Safety Catch

Battery Box Door

Carriage Type Locks

DRAWING No. 1

As modified at build due to in service problems
Pivot point
Loco body
carriage lock
carriage lock
Door Hinges
As modified by Depot
Local working practices
R 66

grub screw modification
R 67: Door re-design
Local working practices
R 66
grub screw modification
R 67: Door re-design

Unforeseen hazard, unauthorised mods
R69: reminder not to do it again
Underlying Cause

Local working practices
R 66
grub screw modification
R 67: Door re-design

Unforeseen hazard, unauthorised mods
R69: reminder not to do it again

Company attitudes & behaviours
Today’s Agenda

1973

Legislation

Equipment

The System approach

Discussion

Conclusion
Legislation

- Health & safety at Work Act 1974
- Railways (Safety Critical Work) Regulations 1994
- Interoperability Regulations
- Management Of Health & safety at Work Regulations 1992
- The Railways and Other Guided Transport Systems (Safety) 2006 ROGS
- The Railways & Other Transport Systems (Approval Works, plant & equipment) Regulations 1994 ROTS
- Railways (Safety) Regulations 1999
- Railways Safety Cases Regulations 1994
- Railways & Transport Safety Act 2003
- Health & safety at Work Act 1974
- The Railways and Other Guided Transport Systems (Safety) 2006 ROGS
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- 1973
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- The System approach
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- Conclusion
Railway System

Workers

Infrastructure

Trains

Trespassers

Customers

Neighbours
Managed Infrastructure
Workers
Trains

Vince Murtagh
Passing clearance

End throw
Structures
Platform edges
Signals & signs
Track mounted equipment

OHLE
Primary
System level
Sub system
Component

FL operatives
M/Managers
HQ Direction

Operational
Maintenance
Construction
Design

Assets &
Interfaces

Human
activity

The railway
state
Standards and Instructions

Primary
Systems
Sub system
Component

Operational
Maintenance
Construction
Design

Front line operatives
Local management
HQ Direction
Primary Systems Sub system Component

Standards and Instructions

Operational Maintenance Construction Design

Front line operatives Local management HQ Direction

Customers & Trespassers & Neighbours
Customers & Passengers & Neighbours

Standards and Instructions

Primary Systems

Operational

Maintenance

Construction

Design

Front line operatives

Local management

HQ Direction

Technology

SICs

Human factors approach

Risk profiling

Confidential reporting

External programs

Design for safety

Site Safety initiatives

RAIB recs

Monitoring of recommends

Vince Murtagh
Today's Agenda

1973
Legislation
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December 1973
1718 Paddington to Oxford, 650 passengers
Standards and Instructions

Primary

Operational

Behaviour & Culture

Systems

Maintenance

Construction

Sub system

Design state

Component

Front line operatives

Local management

HQ Direction

Vince Murtagh
Today's Agenda

- 1973
- Legislation
- Equipment
- The System approach
- Discussion
- Conclusion
Conclusion

Culture & behaviour drives actions

Legislation  We have enough!

Equipment     Getting better!

Understand the system = understand the safety issues

Discussion

Conclusion