COMPREHENSIVE PROTECTION
For the High Speed Rail System
Five Key Ideas about Security in High Speed Rail
#1. Safety & Security are like twins: different, but close to each other
SAFETY

- No malicious intent
- Technical / human failure / hazards
- Accident
- Risk assessment (probability)
- Predictable
- Safety Management System
- Treatment
- Culture

WANTED

- Malicious intent
- Threats
- Attack
- Threat assessment
- Unpredictable
- Security approach
- Protection
- Culture
Risks and threats for railways...
Concept of comprehensive protection

- Integrative approach: safety + security + natural hazards
- “Open system” security model: fluid transport and security by design
- Integrating all devices and actors in the security chain: interdependence and interactions across several security layers

Towards Integrated Railway Protection

Jacques Colliard

Abstract Since their inception, railways have been built upon the need for transport to be as safe as possible. Although incidents remain a fact of life in railway field due to the volumes carried, the density of traffic and the extent of services offered by railways, rail transport remains one of the safest mode of transport. However, another threat is jeopardizing the railway sector: crime and terrorist. Over the past 10-20 years, security issues have increasingly come to the fore, requiring strong sector action. This chapter presents a briefly overview about the present challenges for security in railway system. It provides a clear picture of the current scenario illustrating the most relevant threats, experiences, best practices and possible counter measurements all matured by the experience of UIC, in about one century of activity in the railway sector.

https://link.springer.com/chapter/10.1007%2F978-3-319-04426-2_2
#2. Risks & threats have a higher impact in HS compared to conventional rail
Security challenges within the High Speed Rail system

- Worse consequences because of the high-speed
- Attractive target for terrorist attacks: iconic aspects
- Protection of important public funding
- Special requirements (e.g. stations)
- Delays are incompatible with HS concept
- Vandalized HS trains are unacceptable
- Need for door-to-door coherence on international trains
The costs of security
Who decides? Who implements? Who pays?

Economic costs
- investment
- deployment + integration of different technological systems
- operation
- maintenance

Social costs
- longer door-to-door travel time
- reduced freedom and privacy for citizens
- public perception, acceptability
- internal changes, staff training

Legislative framework and ethical aspects
- compliance with (inter)national laws
- sensitivity to environmental issues
1. Theoretical and practical aspects of HSR security requirements

2. Proposal of Railway Security Management System (RSMS) concept

3. List of security measures and concepts
#3. Security is: technology, procedures, human factors and design
Example: access control to trains
Security levels ranging from an “open model” to a “fortress model”

Open model

- No or very limited access control to HS trains

Semi-open models

- Temporary X-RAY and body scanners (physical security)
  E.g. Thalys (Paris)

- Access gates and automatic turnstiles (digital security)
  E.g. Italy

“Fortress”/ airport model

- ID control + luggage & body scanners + ticket screening (digital and physical security)
  E.g. Eurostar

- X-RAY scanners (physical security)
  E.g. Spain
Security by design
Large stations & transport hubs

CPTED principles

- Natural Territorial Reinforcement
- Natural Access Control
- Natural Surveillance
- Maintenance
- Activity support
Technical Measures
- Access control gates
- Body cameras
- CCTV + Video Analytics
- Drones
- Passenger and baggage screening
- Security dog

Institutional, organizational and procedural measures
- Alcohol prohibition
- Interaction with third parties
- Security Operation Centre
- Security concept

Human Factors Measures
- Help applications
- Help points at stations
- Information for passengers about security actions
- Pre-designed signage for evacuation
- Railway staff presence
- Reception desks
- Social Media analysis

Design, construction and ambience
- Calming ambience
- Car barriers
- Transparent materials
#4. Safety & Security are basic needs of passengers
Feeling of security

Abraham Maslow’s pyramid of human needs

http://dx.doi.org/10.1016/j.tranpol.2014.07.008
Creating a security culture

- Presence and visibility of railway staff
- Training non-technical security skills among railway staff
- Training railway staff on emerging threats (e.g. CBRN attacks)
- Mass surveillance and its ethical limits
- Profiling criteria and their ethical limits
- Citizens’ awareness level and involvement in the security chain
#5. There are similar ways to manage the negative consequences of risks & threats
Cover the whole Crisis Management cycle

<table>
<thead>
<tr>
<th>Before event</th>
<th>During event</th>
<th>Post event</th>
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<tbody>
<tr>
<td><strong>Preparedness &amp; Prevention</strong></td>
<td><strong>Response</strong></td>
<td><strong>Recovery</strong></td>
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<tr>
<td>- Awareness</td>
<td>- Decision-making based on crisis level</td>
<td>- Resilience (operations, staff, passengers)</td>
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<td>- Precautions</td>
<td>- Security (Crisis Management)</td>
<td>- Up / down scaling of measures</td>
</tr>
<tr>
<td>- Authorities</td>
<td>- Evacuation</td>
<td>- Debriefing</td>
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| - Organization, Staff | - Communication | |}

Quite similar approaches, independent of the event origin (safety / security)
Crisis Management Guide

Outline

- Introduction and method
- Crisis Management Plan
  - Risk analysis
  - Priorities in CM
  - Structure and Content of the CM plan
  - Alert levels
  - CM team
  - CM infrastructure
  - Crisis communication
  - Training
  - Cooperation
  - Evaluation of the CM plan
- Conclusion and outlook
- Annex with checklists
1. Safety & Security are like twins: different, but also close to each other

2. Risks & threats have a higher impact in HS compared to conventional rail

3. Security is: technology, procedures, human factors and design

4. Safety & Security are basic needs of passengers

5. There are similar ways to manage the negative consequences of risks & threats
Stay in touch with UIC!

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Thank you for your kind attention!