Detection of derailment in Switzerland

13.10.2014 Colin Bonnet

Risk analysis

Rail infrastructure
- Open track, tunnels, stations, marshalling yards

Rolling stock
- Passenger trains
- Freight trains incl. dangerous goods

Surroundings
- Population
- Environment
Acceptable risks today but...

Significant progress achieved in last years
- risks taken into account by main actors
- many safety measures taken
- current risk is considered acceptable

Risk is increasing due to growing population and transported goods

Potential solutions:
- reduction of transport needs (on site production, etc.)
- safety measures on rolling stock
- ...

Federal Office of Transport, Colin Bonnet
13.10.2014
**History of DDD in Switzerland**

Agreement Chemical industry / SBB / Government → 623 wagons equipped with EDT100 (2002)

Sensitivity problems require development → EDT101

Several initiatives lead to equipment of > 1000 wagons with EDT 101: Wascosa, RhB, BLS,...

SBBCargo: 1-2 DDD-tripping/year. These cases indicate defects of infrastructure, helping improving its safety

**WASCOSA tank cars**

- 800 wagons equipped with EDT101
- no significant technical problem
- costs: 1’200 EUR/new wagon (retrofit 2’200 EUR/wagon)
**WASCOSA tank cars**

DDD avoids large catastrophes but also reduces significantly the costs of smaller incidents.

Costs for repair of Wascosa wagons only!

- **With DDD:**
  - 7'100 EUR
  - 6'800 EUR

- **Without DDD:**
  - 119'600 EUR
  - 32'800 EUR

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**Car transport BLS**

- 138 wagons
- EDT 101 since 2008
- 600'000 km/year
Car transport BLS

- no significant technical problem
- very few tripping cases in first years, at locations where infrastructure presented defects
- similar initiative by RhB (narrow gauge)

Conclusions

Solutions required to maintain risks of dangerous goods transports at acceptable level

Technical developments and extended experiences of the past years allow to see the detection of derailment as a reliable, largely available and economically positive way of avoiding catastrophic consequences of freight train derailments.
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