



Level crossings: how safe can they be?

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Rational approaches?



- Dispassionate risk assessment and prioritised actions
- Media and community response to an accident
- Underlying sensitivity about level crossings differs significantly
- It's just a railway problem

What's the priority?

● Road deaths (2006, source ETSC):

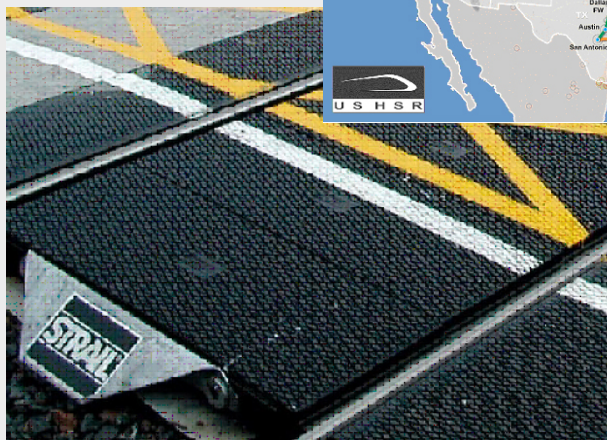
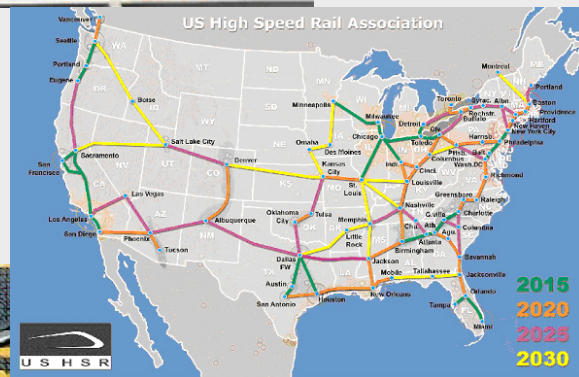
○ France	4,709 / 75 per million population
○ Germany	5,091 / 62 per million population
○ United Kingdom	3,300 / 57 per million population
○ Sweden	445 / 49 per million population
○ Netherlands	730 / 45 per million population

● Level crossing deaths (2004-5, source ERA):

○ Sweden	14 / 1.54 per million population
○ Netherlands	18 / 1.11 per million population
○ France	38 / 0.61 per million population
○ Germany	45 / 0.55 per million population
○ United Kingdom	7 / 0.12 per million population

- 2008 saw 14 unintentional deaths on level crossings in Great Britain

Economic stimulus



- Australia: upgrading 290 crossings for AU\$150m
- United States: Upgrade & elimination as a precursor to high speed passenger rail
 - Slow to get underway
- Spain: Upgrading crossing surfaces with a proprietary product

National imperative

- Spain: 1,931 level crossings to be eliminated by 2012 at a cost of €1,230m
 - Pragmatic
 - Partnership with regional and local government
 - Looks wider than the individual crossing
 - Differentiated solutions for pedestrian and vehicular traffic



Post accident knee-jerk

- Multi-fatality rail accidents create a political imperative
- Additional funding as a route to action
- Visible and quick action to assuage the conscience
- Benefit compromised if spending not focused on the greatest risk



International collaboration

- Generic issues, generic solutions
- Pockets of good practice
- Wide-ranging agenda
 - Lower cost solutions
 - Innovation
 - Human factors
 - Research
 - Benchmarking



A bridge between business and the local community

Education works

- More than raising awareness
- Changing behaviours
- Long-term commitment
- Multi-faceted partnerships
- Likely to be cost effective
- Independent validation



Enforcement



- Officer based approaches are expensive
- Case for photo-enforcement
 - Slow progress due to legal issues
 - Best if integrated in wider highway safety schemes



Noise

- US “quiet zone” requires upgrades and closures to address risk
- Wayside horns are an attractive response
- Other jurisdictions
 - Tough it out
 - Reduce requirement to sound horns



Delay and congestion



- Not a problem for the railway alone
- Community needs to pay for time saved
- Closure and grade separation often locally contentious
- Best addressed in wider highways context
- However, cost is often beyond the reach of local government

Cost effective measures



- The answer isn't to add more bells and whistles regardless of cost
- Neither is it a post-accident knee jerk "we must do something" issue
- Don't forget the learning from research in the past

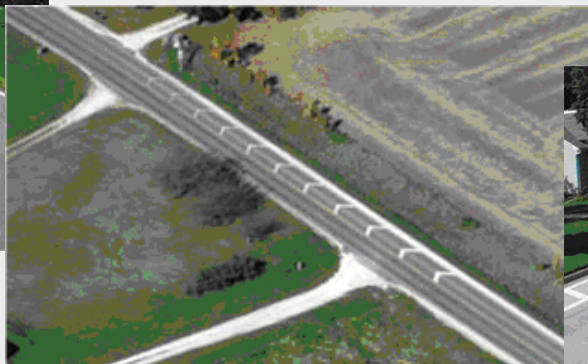
- Keep on learning lessons from accident investigation
- Look for transferable lessons wherever the might be found
- Objective means of determining priorities
- Look for measures which influence and change behaviours
- Evaluation of efficacy



Rip off and replicate



- A host of traffic calming measures exist



A bridge between business and the local community

In conclusion

- Driving down cost is an option for most
- Pursue lower cost and novel technology together
- Long term funding needs to be available
- Most cost-effective models balance:
 - Engineering
 - Education
 - Enforcement



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