Forgiving roads:
safe for motorcyclists, safe for everyone

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Basic questions

- Can you see?
- Is the road surface safe?
- If forced off the road, what will you hit?
- How would you like to be sliding down this road?
- Simple test: stand by any road and imagine coming off a motorcycle or being forced off the road in a car – you'll see the problems!

Visibility

See and be seen

Predictability: Road signing

Which one tells you most?

Road surface: paving

Road surface: maintenance of standards

Traffic management?

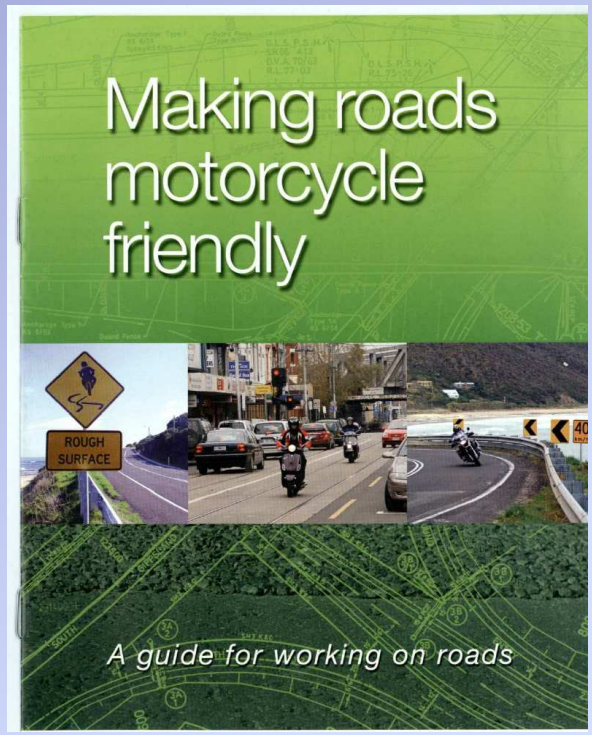
What you can hit

Protected protective barriers

Separation: a helpful concept

Two sources for road engineers

Victoria Roads, Australia



- **Institute of highway engineers, IHE (UK),**
- **"Guidelines for motorcycling: improving safety though engineering and integration"**

http://www.motorcyclingguidelines.org.uk

The safe system

- A safe road system protects people from their mistakes or the errors of others
- The infrastructure contribution to a safe system is:

"Forgiving Roads"

Safe for motorcyclists, safe for everyone

Safe vehicles: UN ECE safety regulations

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The Dark Mark

Have you seen one of these?

43 *R* – 01 2439

It's an ECE Approval mark: issued by Russia for the first amendment to Regulation 43 – Safety Glazing

Look on your windscreen!

The purpose of harmonised ECE Regulations

UNITED NATIONS

- To facilitate trade, by eliminating Technical Barriers to Trade (TBT)
- To improve the safety and environmental performance of vehicles by:
  - setting minimum standards
  - forcing technology
- No harmonisation slows down the introduction of safety technology

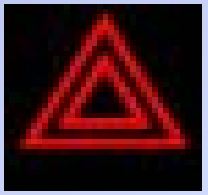
Signatories to the 1958 Agreement

- E10 Serbia
- E19 Romania
- E22 Russian Federation
- E23 Greece
- E34 Bulgaria
- E37 Turkey
- E39 Azerbaijan
- E46 Ukraine

The ECE Regulations

- Active safety (preventing the accident): 71 (35 on lighting)
- Passive safety (protecting people after the accident has started): 30
- Emissions: 12
- Noise: 6
- Miscellaneous (EMC, fuel consumption etc): 8

Active safety



- Lighting: light sources, lighting and signalling devices, installation on the vehicle
- Tyres and braking (including replacement brake assemblies)
- Controls and telltales
- Mirrors and cameras
- Stability and couplings for trucks
- Audible warning devices

Passive safety

- Front, side and rear under-run protection
- Frontal and lateral collision tests
- Seatbelts and replacement airbags
- Doors and latches
- Safety glazing (windows)
- Truck and bus construction/strength of superstructure
- Truck and bus interiors, including fire resistance
- Fire risks (fuel tanks)
- Child restraints
- Safety helmets for motorcyclists

Examples of new "high-tech" worldwide safety requirements

- Electronic vehicle stability control systems
- Adaptive front lighting systems
- Under development:
  - ✓ Advance emergency braking systems
  - ✓ Lane keeping assistance
  - ✓ Pedestrian safety
- NB The higher the tech, the higher the price

Enforcement

- Type approval tests the vehicle before sale
- Conformity of Production (CoP), is built into the ECE Regulations, as a means of checking manufacturers' production
- Some Regulations are specifically for use in roadside enforcement, e.g. brake assemblies, light sources, motorcycle exhausts
- If you are not doing it, don't complain!

Incentives to adopt new technology

- Well established for the environment and the emissions regulations
- There are also general incentives to trade in old vehicles for new ("cash for clunkers"), e.g. old trucks in Turkey, cars in many countries
- Very few safety related incentives, only Denmark and Sweden have these; they are based on the equipment fitted to the car and a performance rating
- How many times has your ABS worked this year?
- **Caveat:** Insurance companies do not usually offer reductions on safety equipment because of the problem of proving its effectiveness

www.unece.org/trans

Priorities

- Collect good data on accidents, you will need it for the cost-effectiveness studies
- Use the ECE regulations: they facilitate trade and upgrade safety (you can adopt them without becoming a full signatory):
  - introduce the basic regulations first
  - introduce the “high-tech” regulations after a cost-effectiveness study
- Enforce the regulations: use CoP and roadside testing
- Join the World Forum (WP29) to develop your knowledge and influence the discussions