Compliance as an enabler

Workshop

OECD / ITF study on
Truck Transport Safety, Productivity and Sustainability

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The message

Improved tools for compliance and enforcement enable the use of more flexible regulation through demonstration to the community that heavy vehicles will comply with regulatory requirements.
Outline

– Traditional approaches
  • Direct observation
  • Focus on driver and operator
  • Monetary penalties

– Modern approaches
  • More effective observation
  • Targeted interventions
  • Flexible sanctions
  • Accreditation
  • Safety ratings
  • Chain of responsibility

– WIM as a compliance tool
  • WIM technologies
  • Applications of WIM
Traditional road transport regulation

- enforcement rather than compliance focused
- drivers and vehicle owners/operators are the targets
- role of other parties not addressed
The problems with this ...

- not effective in producing long-term improvements in compliance
- little incentive for other responsible parties to prevent breaches
- unfair commercial advantage gained by all who cause or contribute to breaches
- company managers can hide behind the corporate veil
What influences heavy vehicle compliance?

- Vehicle capability
- Staff demands
- Customer demands
- Scheduling
- Competitive pressure
- Travel delays
- Loading practices
- Travel delays
- Loading practices
Comprehensive compliance programme

- Incentives Schemes
- Privileges Schemes
- Conventional Compliance
  - legislative provisions for:
    - chain of responsibility
    - risk-based offences
    - enforcement powers
    - evidentiary provisions
    - penalties and sanctions
- Training
- Education & Communication
- Effective & well targeted enforcement practices

ONGOING RESEARCH

ONGOING MONITORING
Hierarchy of penalties

- Prohibition orders
- Orders affecting licences / registration
- Supervisory intervention orders
- Compensation orders
- Commercial benefits penalties
- Fines (based on risk)
- Infringement notices
- Formal warnings
- Improvement notices
The trend in trucking enforcement is

- Electronic detection of non-compliance
- Use of IT to gather and apply information on patterns of behaviour, to enable the focussing of enforcement resources on high-risk drivers and operators
- Imposition of legal requirements on off-road parties with control over truck operations
Key observations

- ITS systems in trucks or in the infrastructure are efficient tools for control and monitoring of compliance with regulations.
- ITS systems enable drivers and operators to self-monitor any trip and ascertain compliance with regulations.
- Databases of control and safety records enable authorities to target controls efficiently on high-profile trucks with minimum disturbance to complying companies.
Databases for targeted control and inspections of high-risk drivers and trucking companies

- Integrated recording of breaches
- Safety classification of carriers and drivers
- Direct access to database from roadside inspection sites
- Screening of trucks for control by safety rating
- Targeted auditing of companies
- SafeStat, CVISN, etc
Electronic monitoring of compliance

- Weigh-in-motion
- On-board axle load measurement
- On-board digital recording systems for rest and work (EOBRs, electronic logbooks)
- RFID tags and Automatic Number Plate Recognition for electronic vehicle identification
- Position and tracking systems for network access control
WEIGH-IN-MOTION

- Definition: measure of an estimate of axle loads and gross vehicle weight while the vehicle is in motion…
- …using road sensors (scales, plates, mats, strips…), or bridges (B-WIM), or on-board sensors
- WIM was developed since the 50’s, first for pavement design, for bridge engineering, and then for traffic monitoring and overload detection and enforcement
- WIM standards: ASTM-1318, COST323, OIML R134
- Int. Conferences ICWIM1 to 5 (1995-2008), Int. Society for WIM: ISWIM
WIM technologies (1)

1. Bending plates (HS-WIM)
2. Load cell plates (LS-WIM)
3. Piezoceramic strip sensors (HS-WIM)
4. Multiple sensor (MS-) WIM
WIM technologies (2)

5. Video-WIM (enforcement)
6. Bridge WIM (B-WIM)
7. On-board WIM
WIM applications to infrastructures

- Extensive unbiased data collection for:
  - Code calibration (AASHTO, Ontario bridge code, Eurocodes…)
  - Structure (re)assessment (dynamic behavior, fatigue, etc.)

- Structure monitoring against traffic loads:
  - Pavement lifetime (load intensity, axle configuration, cycles), maintenance planning
  - Bridge load effects, extreme loads, damage in fatigue, dynamic amplification

- Infrastructure management:
  - Access control, load limitation
  - Charging by load classes, toll systems
WIM applications to enforcement

- Accurate pre-selection for more efficiency & safety:
  - to target highly overloaded trucks and avoid unnecessary interception and control
  - to reduce the probability of no detection

- Need of more control of longer and heavier vehicles:
  - to ensure fair competition between transport modes…
  - … and transport companies
  - to maintain road and infrastructure safety

- New concepts:
  - Prevention and warnings (video-WIM in NL and FR)
  - Perspectives for direct enforcement (MS- and B-WIM)
WIM perspectives and needs

- Technologies become mature, but better accuracy and reliability required for direct enforcement.
- Harmonization of WIM standards and International standard (ISO) would be welcome.
- WIM is an efficient tool to ensure compliance of weights and dimensions.
- WIM becomes part of ITS solution:
  - dialog between vehicle and infrastructure
  - data for vehicle routing, Intelligent Access Programs, pavement and bridge monitoring…
  - on-board WIM is a promising technology
Electronic monitoring of route compliance

Route compliance is a major issue for freight productivity.

Satellite-based telematics (GPS) is the preferred answer.
Intelligent Access Program (IAP)

Allows better matching of trucks and road types
Intelligent Access Program

(TCA = Transport Certification Australia)
What is the ‘chain of responsibility’?

- Responsibility may overlap
- Liability for actions / inactions
- ‘Reasonable steps’ defence
What is the ‘reasonable steps’ defence?

- did not know of breach
- could not be reasonably expected to have known
- took all reasonable steps to prevent breach
- ‘industry code of practice’ may assist to prove the defence
Compliance assurance: Chain of Responsibility

Currently offences tend to focus on this part of the chain.
Chain of responsibility concept and procedure

All who have control, whether direct or indirect, over a transport operation bear responsibility for conduct which affects compliance and should be made accountable for failure to discharge that responsibility

- Identification of carriers, transport types or industry sectors with high propensity for breaches
- Compulsory acquisition of business records
- Potential to enforce along the entire chain
## NSW Grain Harvest: impact of sector-wide investigations (%)

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<th>Legal</th>
<th>Minor overload (up to 5%)</th>
<th>Substantial overload (5% to 20%)</th>
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Compliance

- Technology making on-road enforcement more effective
  - speed cameras, weigh-in-motion, etc
- New techniques needed for differentiated access
  - accreditation
  - electronic monitoring, incl. GPS
- Third party compliance assurance
- More emphasis on systematic/management approaches
  - safety ratings
  - accreditation – external auditors
- Use of IT to target high-risk drivers and operators
  - SafeStat
  - CVISN
- Flexible sanctions and penalties
  - improvement notices
  - supervisory intervention orders
- Chain of Responsibility
  - legal liability of all responsible parties
    • consignors, freight forwarders, receivers, etc.
Evaders
• have decided not to comply

Resistance
• don't want to comply; don't care

Engaged
• Try to, but don’t always succeed

Commitment
• willing to do the right thing

Apply pressure to move down

Less risky

Moderate deterrence
Educate and inform
Performance management

Very risky

Use full force of the law

Vigorous deterrence
Surveillance and detection
Performance intervention

Compliance assurance: more effective enforcement
Conclusion

The key to effective utilization of trucks is to demonstrate to the community and their political leaders that these vehicles comply with regulatory requirements, deliver high safety and environmental outcomes and recover all costs associated with their use of the network.

The tools to deliver these outcomes are available. The challenge for regulatory agencies is to implement an integrated and effective approach to the regulation of trucking.
Thank you