The Road Transport Management System

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President: SA Road Federation
Contents

• Background
  - Road Freight Transport problem statement
• New transport legislation
• The Road Transport Management System (RTMS)
• Performance-based standards (PBS) project
Growth in Freight – South Africa

Paved national and provincial roads, passenger vehicles and commercial vehicles for transport of goods

32% increase since 2000
INTERNATIONAL ROAD FATALITY STATISTICS
BENCHMARKING HEAVY VEHICLE SAFETY REPORT 2002

Heavy vehicle fatalities per 100 million km
The cost of logistics as a percentage of GDP in South Africa is almost double that of the United States and 50% more than Japan and Brazil.
Some SA Road Statistics

• Current value: R 1 trillion
• Maintenance backlog: R 100 billion
  (Provincial roads: R 95 billion)
• Annual maintenance need: R 32 billion
• Current maintenance expenditure: R 8 billion
Road deterioration – long-term trends
Provincial Roads

Condition of surfaced roads

Very Poor Poor Fair Good Very Good

y = -1.153x + 8.76
Road deterioration - long-term trends
National Roads

Condition of surfaced roads

Condition index

y = -0.3218x + 71.174
HGV Vehicle Operating Costs

Road condition has a negative impact on VOCs – estimated at more than R 12 billion p.a. for heavy vehicles.
80 - 85% are legally loaded

15 - 20% are overloaded

EFFECT OF OVERLOADED VEHICLES

Heavy Vehicles

Cars

Heavy Vehicles

40%

60%
### Condition of Surfaced Roads

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<thead>
<tr>
<th>Year</th>
<th>Very Poor</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Very Good</th>
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National Road Traffic Amendment Act (No. 64 of 2008)
National Road Traffic Amendment Act (No. 64 of 2008)

- Deals with numerous issues in the RTA including:
  - Definition of a traffic warden
  - Amendments regarding driving licences
  - Speeding and licence suspensions
  - Certain drivers may exceed the speed limit
  - Reporting of accidents (by drivers and RTMC)
  - Definition of a haulage tractor
  - Principal approval for Abnormal Load vehicles
National Road Traffic Amendment Act (No. 64 of 2008)

- Deals with numerous issues in the RTA including:
  - Responsibilities of consignors and consignees with regards actions and omissions;
  - Proof of certain facts (goods declaration or any other document relating to the load of a vehicle is adequate proof)
74A. (1) Whenever any manager, agent or employee of a consignor or consignee, as the case may be, does or fails to do anything which, if the consignor or consignee had done or failed to do it, would have constituted an offence in terms of this Act, the consignor or consignee, as the case may be, shall be regarded to have committed the act or omission personally in the absence of evidence indicating —

(a) that he or she did not connive at or permit such act or omission;
(b) that he or she took all reasonable measures to prevent such act or omission; and
(c) that such act or omission did not fall within the scope of the authority of or in the course of the employment of such manager, agent or employee,
be deemed to have committed or omitted that act and be liable to be convicted and sentenced in respect thereof.
74A. (2) In the circumstances contemplated in subsection (1) the conviction of the consignor or consignee shall not absolve the manager, agent or employee in question from liability or criminal prosecution.
National Road Traffic Amendment Act  
Section 74B (Proof of certain facts)  

(1) In any prosecution under this Act, a goods declaration or any other document relating to the load of a vehicle and confiscated from such vehicle shall be proof of the matters stated in such document unless credible evidence to the contrary is adduced.

(2) A copy of or extract from any document referred to in subsection (1), and certified as a true copy or extract by the officer in whose custody the original document is, shall, unless credible evidence to the contrary is adduced, be admissible as evidence and be proof of the truth of all matters stated in such document without the requirement of having to produce the original document from or of which such extract or copy was made.
KEY ELEMENTS IN HEAVY VEHICLE ROAD TRANSPORT

- Road infrastructure
- Vehicles (design, maintenance & operation)
- Drivers
OVERLOAD CONTROL
National Overload Control Strategy
Implemented by National, Provincial and Local Authorities

Infrastructure & Equipment
- Main routes (major facilities)
- Alternative routes (minor facilities/screening)
- Monitoring (HS-WIM)
- Alternative weighing equipment
- Private weighbridges

Self-regulation
- Road Transport Management System (RTMS)
- Performance-Based Standards (PBS)

Legislation
- Consignors/Consignees
- 5% Tolerance
- User charges
- Habitual Overloaders
- Public Prosecutors
- Alternative weighing equipment
- AARTO

Information sharing & Public Awareness
- Overload website
- Overload information booklet

Operations
- Human Resources
- PPP
- Training
- Guideline document for law enforcement

Co-operation
- Provinces
- Local authorities
- Department of Justice
- Private sector

Road Safety

Fair Competition between modes & operators
Road Transport Management System

- During 2003 a heavy vehicle accreditation scheme was developed and implemented in the forestry industry in the provinces of KwaZulu-Natal and Mpumalanga.

- The scheme was developed to promote compliance with standards in the areas of load control and securment, vehicle maintenance & driver wellness.

- The success of the project in the forestry resulted in similar initiatives being discussed in other industries including pulp, paper & board, bitumen, coal, sugar, aggregate & sand and readymix concrete.
WHAT IS THE RTMS?

• RTMS is an industry-led, government-supported, voluntary, self-regulation scheme that encourages consignees, consignors & road transport operators to implement a management system (a set of standards) with outcomes that contribute to preserving road infrastructure, improving road safety & increasing productivity.

• Key focus areas are:
  • load optimisation
  • driver wellness
  • vehicle maintenance
  • productivity
NATIONAL STANDARDS in place to promote and support RTMS

- SANS 10187 Part 1-9, Load Securement on vehicles
- ARP 067 Part 1, RTMS for Hauliers
- ARP 067 Part 2, Consignors
- ARP 067 Part 3, Consignees
STANDARDS SOUTH AFRICA

Recommended practice

Road transport management systems

Part 1: Operator requirements — Goods

This document does not have the status of a South African National Standard.
Road Transport Management System: Rules of Compliance

- Maintain a haulage fleet inventory
- Assess the vehicle mass before each trip
- Verify mass determination method
- Vehicle and load safety
- Vehicle maintenance
- Driver wellness (fatigue and health)
- Provide training & education
- Assign tasks and responsibilities
- Keep records and documentation
- Perform internal reviews
RTMS Structure

- RFA
- Industry Associations
- FESARTA
- Transport Workers Union

RTMS National Steering Committee

- DOT
- SANRAL
- Provincial Road Authorities
- Accreditation Bodies
- RTMS Technical Working Group

RTMS
Section 21 Company

Industry Committee
Industry Committee
Industry Committee
RTMS Technical Working Group
Measurement

- Measure loads
- Assign vehicles to configurations
- Monthly reporting
  - Consignors (dispatchers)
  - Transport operators
  - Consignees (pulp mills)
- Industry targets
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<tr>
<th>Dispatcher</th>
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<th>Nov</th>
<th>Dec</th>
<th>Degree</th>
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## Best operators

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<th>Dec</th>
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## Worst offenders

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<th>Gross</th>
<th>Limit</th>
<th>Over</th>
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<td>56000</td>
<td>12800</td>
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</table>
Progress with Certification

- 10 transport companies
  - Buhle Beftu Carriers
  - Supergroup PMB Timber Division
  - Supergroup Richards Bay
  - Gaskells Timber Logistics
  - Barloworld Logistics Africa
  - Timber 24
  - Timber Logistics
  - DS Preen
  - Zabalaza Hauliers
  - Jowells Transport

- 150+ truck tractors

- Primarily in forestry
Road crashes kill more than 1.2 million people globally a year and for every death there are 20 to 50 serious injuries.

In February 2008 ISO approved the creation of a new project committee to develop an international standard for road traffic safety (RTS) management systems.

Secretariat assigned to the Swedish Standards Institute (SIS).

Stakeholders on the committee represent road authorities responsible for road traffic infrastructure, public authorities, government departments, the transport sector, manufacturers, emergency services, health services and other associations concerned with aspects of road safety.
ISO/PC241 Road Traffic Safety Management Systems

• Task of the committee is to develop a standard following a generic management system approach pioneered by ISO 9001 for quality management and since applied to other standards, including ISO 14001 (environmental management) and ISO 28000 (supply chain security).

• The standard will be applicable to all stakeholders with an influence of road safety including companies and organisations involved in:
  ◦ The design, building and maintenance of roads
  ◦ The design and production of road vehicles, including parts and equipment
  ◦ The transport of goods and people
  ◦ The generation of significant flows of goods and people
  ◦ Having personnel working on road transport systems
  ◦ Responding to road traffic accidents
KEY ELEMENTS IN HEAVY VEHICLE ROAD TRANSPORT

- Road infrastructure
- Vehicles (design, maintenance & operation)
- Drivers
Prescriptive vs Performance-based Standards

- What the vehicle looks like
- What the vehicle can do
Low-Speed Offtracking

from NTC/Austroads PBS National Workshops
Maximum Width of Swept Path

from Ervin and Guy (1986)
Static Rollover Threshold (SRT)

from NTC/Austroads PBS National Workshops
Rollover in a steady turn
PBS Lane Change Manoeuvre
(SAE J2179)

Course and test specifications:

- 2.5 second period
- 24.5 m/sec (55mph)
- 61 m (200 ft) maneuvering section
- 1.46 m (4.8 ft) lateral displacement
- 0.13 g peak lateral acceleration

Traffic cone pairs: 4.58 m (15 ft) stripes placed 0.6 m (2 ft) apart*

500 m 152.5 m 400 m 122 m 300 m 91.5 m 200 m 61 m 100 m 30.5 m 0

Preliminary straight start section, traffic cone pairs, 30.5 m (100 ft) spacing
Initial Straight section, 6.1 m (20 ft) spacing
"Maneuvering" section, 3 m (10 ft) spacing
Exit section, 6.1 m (20 ft) spacing

4.58 m (15 ft) stripe

4.8 ft* 1.46 m

100 ft 30.5 m 100 ft 30.5 m

* not drawn to scale
Baseline cf. PBS vehicle

baseline

PBS
Mondi PBS Vehicle Route

- Mooiriver
- N3
- Underberg
- Mondi Merebank Mill
- Durban
Mondi PBS vehicle: Fuel Usage Comparisons

LITRES FUEL USED PER 400,000 TONNES @ 171 KM LEAD DISTANCE
### Summary of Performance Outcomes

**Two vehicles, 8 months operation**

<table>
<thead>
<tr>
<th>Performance indicator</th>
<th>Measured result</th>
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<tr>
<td>Payload</td>
<td>Average improvement: 19.3 %</td>
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<tr>
<td>Payload Efficiency Factor</td>
<td>Increase from 69.3 % to 70.5 %</td>
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<tr>
<td>Tons transported per month</td>
<td>Average increase: 19.3 %</td>
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<tr>
<td>Fuel consumption</td>
<td>Average savings: 12.7 %</td>
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<tr>
<td>Fuel savings (based on 700 000 tons/annum contract)</td>
<td>485 000 litres per annum</td>
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<tr>
<td>Fleet size</td>
<td>Reduction of 17 %</td>
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<tr>
<td>Incident/accidents*</td>
<td>Reduction from 3.1 to 1.1 per month</td>
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<tr>
<td>CO₂ emissions (based on 700 000 tons/annum contract)</td>
<td>Reduction of 1 280 tons of CO₂ per annum</td>
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<tr>
<td>Road wear</td>
<td>Reduction varies from 2 to 23 %</td>
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*Based on a fleet of 45 new vehicle combinations incorporating a number of PBS design features*
THANK YOU