The Concept of Self-Regulation and observed successes in South Africa

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RTMS National Steering Committee
Research Group Leader: Network Asset Management Systems
CSIR Built Environment
CONTENTS

- The bigger picture
- Freight issues in South Africa
- The concept of self-regulation
- (Some) observed successes
What are the big issues?

**QUALITY OF LIFE**
- Road safety
- Congestion
- Cost of logistics
- Road condition

**GLOBAL COMPETETIVENESS**
- Transport efficiency
- Cost of logistics
- Cross-border delays
- Optimum road maintenance

**SUSTAINABLE ENVIRONMENT**
- Road crashes
- Road condition
- Energy consumption
- Emissions

"maintaining and preserving natural systems"
Key Elements in Road Freight Transport

- Road infrastructure
- Vehicles (design, maintenance & operation)
- Drivers
## Brake & Tyre Watch Results

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<th>Inspected</th>
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<td><strong>TOTAL</strong></td>
<td><strong>306</strong></td>
<td><strong>202</strong></td>
<td><strong>66%</strong></td>
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</table>
Heavy Vehicle Fatal Crash Rates

Fatal truck crash per 100 million vehicle kilometres travelled

Source: OECD report, Moving Freight with Better Trucks, 2010
Condition of surfaced roads

- Very Poor
- Poor
- Fair
- Good
- Very Good

- United States
- Japan
- Brazil
- South Africa


Graph showing the condition of surfaced roads over the years.
Problem Statement Summary

• Typical problems regarding heavy vehicle operations in South Africa: Crashes involving heavy vehicles, overloading, congestion and a high cost of logistics

• Traditional approach of law enforcement is not sufficiently effective

• Is there another approach?
  – Self-regulation (voluntary compliance)
  – Responsibility of consignor and consignee in freight transport (recently-approved legislation)
  – Performance-Based Standards (PBS)
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)

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

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

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

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

Road Safety

Fair Competition between modes & operators
Strategic thrusts & programmes

Road Freight Strategy

1. Strategic thrusts

   - Integrated transport mechanisms
   - Road infrastructure management & funding
   - Overload control management system
   - Self-regulation & road safety

2. Integrated transport mechanisms
   - Integrated Transport Commission
   - Alignment of Transnet’s mandate
   - Rail linkages with other modes /IMT
   - Minimum targets for rail at ports
   - Efficient border posts

3. Road infrastructure management & funding
   - Change authority over roads
   - Establish road maintenance fund
   - Introduce heavy vehicle user-pay principles

4. Overload control management system
   - Overload control inspectorate
   - Optimisation of existing weighbridges
   - Credible penalties
   - Infringement system and training
   - Weigh-in-motion technology
   - Overload control database
   - Resolve non-physical barriers

Operation issues: Driver and vehicle fitness; system and systems integration; performance
The Road Transport Management System

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

• Key focus areas are:
  - load optimisation
  - driver wellness
  - vehicle maintenance
  - productivity
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
## Management of Driver Wellness

<table>
<thead>
<tr>
<th>DRIVER</th>
<th>ID NO</th>
<th>CONTRACT</th>
<th>TRAINING (VOLVO)</th>
<th>MEDICALS</th>
<th>LICENCE NO</th>
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</table>
Vehicle & Load Safety

**Fatigue**

1. Probable Causes
   - Insufficient sleep
   - Poor nutrition
   - Drugs
   - Alcohol

2. What may go wrong?
   - Death
   - Injury
   - Financial Loss
   - Environment
   - Frequency
   - High
   - Risk Assessed if hazard occurs
   - High

3. Potential Hazards
   - Check load before departure
   - Check load during journey
   - Get sufficient rest

4. How can we achieve Minimal Risk?
   - Proper Nutrition
   - Drug/Alcohol Test
   - Medical Test
   - 9 Hour Rest Interval
   - Training/Education

5. Risk can be Minimized
   - Controller/Phone Check
   - Sleep on Route
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<th>NUTRITION</th>
<th>MODULE TWO</th>
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<td>Probable Causes</td>
<td>How can we achieve Minimal Risk?</td>
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<td>Education Culture</td>
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<td>Fall Asleep</td>
<td>2 Canteen on depot</td>
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<td>Bad Habits Poverty Planning Unbalanced Diet Hydration</td>
<td>3 Subsidised Meals</td>
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<td>Get Sick Irritable Impatient Poor Senses Unsafe Stops</td>
<td>4 Medical Tests</td>
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<td>Financial Loss Environmental Illness</td>
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<td>Accidents Stress Diabetes</td>
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<td>Take Aways/ Facilities Heart Problems</td>
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<td>5 Risk - if hazard happens</td>
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<td>6 Risk Can Be</td>
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<td>7 Prohibit Stops</td>
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# Management of Driver Wellness

## Driving Hours Monitoring Report

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<td>6/2/5</td>
<td>6/5</td>
<td>6/3/5</td>
<td>2/7/3</td>
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<tr>
<td>SX Mdamba</td>
<td>Sunny</td>
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<td>2/5/4</td>
<td>LEAVE</td>
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</table>
RTMS benefits

• Whilst overloading is contained, there is also the opportunity to optimize payload. Records show that RTMS members have a higher average payload, yet overload less, than non-members;
• Drivers are more likely to be better looked after, e.g. health, training, due to auditing;
• The safety record of the company will most likely improve;
• Vehicles are better maintained, have less breakdowns and so give better utilization;
• The business will run better. There will be less wastage and the “bottom line” will be improved;
• There is the opportunity for management to be exposed to and take on board improved and standardized systems from the RTMS (best practice);
• The owners and top management will have an improved insight as to what actually happens in their companies. Not just what they are told by staff;
• Staff in the companies will have to carry out what they say they do, since they will be audited on an annual basis
Heavy Vehicle Overloading trends in the forestry industry in South Africa
Source: Forestry RTMS monthly report, May 2011
RTMS in forestry: Payload distribution
Heavy Vehicle overloading and speeding trends in the coal industry in South Africa

Source: Coal RTMS monthly report, Aug 2009
Barloworld RTMS card for drivers

WHAT DOES RTMS MEAN TO ME?

- I will abide by traffic Rules and Regulations;
- I will ensure that my vehicle is roadworthy and safe to drive;
- I will share the roads responsibly with fellow road users;
- I will comply with the indicated speed limits;
- I will drive defensively and safely;
- I will ensure that my vehicle is not over loaded;
- I will buckle up at all times;
- I will keep a safe following distance;
- I will acknowledge that pedestrians are important road users;
- I will acknowledge that cars, busses, taxis, as modes of transport, carry someone’s loved one.

“RTMS* accredited, we don’t just talk good governance, we practice it.”

* Road Traffic Management System accreditation, APR067-1:2007
Success Stories

• Imperial Logistics, Paarl, W. Cape (Consul Glass)
  – Most significant improvement: Improved driver attitude and motivation
Success Stories

• Timber Logistics Services, Umkomaas, KZN
  – Reduced rollovers
  – Reduced turnover of drivers (due to HIV-related deaths)
  – Significantly improved standard of living of drivers
  – NOSA awards
    • NOSA KwaZulu-Natal Midlands Branch – Best Integrated and Aligned Five Star Forestry System Occupational Environmental Programme
    • NOSA KwaZulu-Natal Midlands Branch – Best Integrated and Aligned Five Star Forestry System Occupational Safety Programme
    • NOSA KwaZulu-Natal Midlands Branch – Best Integrated and Aligned Five Star Forestry System Health Programme
    • NOSA EASTERN REGION – Best Integrated and Aligned Five Star System Occupational Health Programme.
    • BRIAN HUNT – NOSA KwaZulu-Natal Midlands Branch – MANAGING DIRECTOR OF THE YEAR.
Success Stories

• Timber Logistics Services, Umkomaas, KZN
  – Improvement in driver wellness, leading to a reduction in absenteeism
  – Reduction in breakdowns and improvement in drivers reporting breakdowns
  – Significant reduction in driver turnover (partly as a result of a reduction in HIV/AIDS-related deaths
  – 50% reduction in accidents and incidents from 5.0 per million km to 2.5 per million km
  – Improvement in uptime
# CB Creydt Transport (Timber)

<table>
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<th>Month</th>
<th>Overloading %</th>
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<td>Jan-11</td>
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</tr>
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<td>Feb-11</td>
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<tr>
<td>Mar-11</td>
<td>29.0%</td>
</tr>
<tr>
<td>Apr-11</td>
<td>3.4%</td>
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<td>May-11</td>
<td>1.4%</td>
</tr>
<tr>
<td>Jun-11</td>
<td>0.0%</td>
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</table>

### Overloading %

- **Jan-11**: 33.0%
- **Feb-11**: 21.0%
- **Mar-11**: 29.0%
- **Apr-11**: 3.4%
- **May-11**: 1.4%
- **Jun-11**: 0.0%
# Success Stories

## Motorvia (Car carrier)

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<th>Before</th>
<th>After</th>
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<tbody>
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<td>No. of excessive speeding incidents (above 80km/h)</td>
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<td>5</td>
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<tr>
<td>Drivers tested for medical fitness</td>
<td>42</td>
<td>120</td>
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<tr>
<td>Drivers trained on Fatigue Management (Rest, Nutrition etc.)</td>
<td>0</td>
<td>120</td>
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</table>

![Success Stories Chart](image_url)
UNITRANS
Amatikulu Depot
(Sugar cane)

RTMS Benefits

THE SPIRIT OF CAN DO
Control Measures Implemented

- Driver Wellness – strict screening and medicals for all drivers at the start of the season
- Alcohol testing of all staff entering the premises
- Weekly vehicle checks and immediate defect reporting and defects fixed
- Speed limiter on all vehicles – buzzer goes off at 81 km/hr
- Screening of all drivers before getting into a vehicle by Controller
- Onboard weighing on all vehicles
Achieved Benefits

• Improved driver wellness
• Improved driver training with ongoing evaluation
• Improved vehicle performance, less down time for major defects
• Improved fuel consumption
• Projected benefit of less tyre and brake wear, improved fuel consumption and safer driving with the lowering of speed limiter to 81 km/hr
• Overloads under 4% for last 5 months
• Reduced number of overload fines - front axle overload still a problem

THE SPIRIT OF CAN DO
Achieved Benefits

- Reduced crashes and incidents over R30 000 damage
  - 2007 – 20 crashes, with 6 serious crashes
    » 12 due to Unitrans driver fault
    » Several small crashes due to poor driver training
  - 2008 – 9 crashes, with 5 serious crashes
    » 4 due to Unitrans driver fault
    » Accident damage – 10% down on 2007
    » 1 major crash cost of R800 000
  - 2009 – 3 crashes, with 1 serious crash
    » 1 due to Unitrans driver fault
    » Accident damage – 52% down on 2007 figure
  - 2010 – 4 crashes, 1 due to driver falling asleep
    » Accident damage – 47% down on 2007 figure
Achieved Benefits cont

• Improved tyre wear (base of 100)
  – Sep 2007 YTD 100
  – Sep 2008 YTD 105
  – Sep 2009 YTD 89
  – Sep 2010 YTD 95
Fleet management was generally viewed as a fleet maintenance service, which led to the various activities being dealt with on a decentralised somewhat fragmented basis.

During the financial year 05 / 06 the organisational structure of fleet services was reviewed and consequently aligned with a proposed business model which provided functionally aligned vehicles to the operations in terms of an internal price recovery agreement.

The Electricity Services fleet comprised a fleet of 680 vehicles ranging from off road utility vehicles, sedans, ldv's and panel vans to light, medium and heavy trucks as well as a variety of truck mounted aerial platforms.

The fleet stock replacement cycle at the time was 33 years which was far above the industry norms for vehicle replacement.

Functional alignment - 40%

Fleet availability – 65%

Committed to service excellence and protection of the environment
KPI Improvements

Maintenance compliance

Proactive Maintenance Compliance

Feb 2008 - Jan 2011

Committed to service excellence and protection of the environment
KPI Improvements

Maintenance costs reduction

In 06/07 Fleet were 57% compliant to servicing.

R&M Primary Costs

The projected savings in real terms of R9.8mil in 09/10 is due to the capital investment.

Projected savings due to CAPEX

Marked improvement in fleet availability ✓

Improved public image. ✓

Less pressure on maintenance management ✓

In 09/10 Fleet were 98% compliant to servicing.

Committed to service excellence and protection of the environment
KPI Improvements

Fuel Consumption

Benefits derived from adequate investment in fleet

Fleet functional alignment

Fuel efficient technology

Committed to service excellence and protection of the environment

Improved fuel consumption

Km / Litre

5.9
6.0
6.5
7.0
7.5
8.0

07/08
08/09
09/10

Km/l
KPI Improvements
Incident Rate vs Km travelled

Committed to service excellence and protection of the environment
RTMS Progress

- Currently 30 certified companies/depots representing approx. 800 trucks
- 10 new certifications since Jan 2011
- Approx. 25 companies/depots in the process of being certified
- A small number of consignors (mines) considering becoming RTMS certified
RTMS Audit findings
(2011 YTD)

• 1 major accident per 350 000km travelled
• Reduction of overloading frequency to 2.3%
• 94% of drivers possessed medical fitness certificates
• 88% compliance to prescribed vehicle maintenance schedule
• Zero fatalities within audited sample (on-site and during transit)
THANK YOU