The Road Transport Management System: A self regulation initiative to promote load optimisation, vehicle maintenance and driver wellness in heavy vehicle transport in South Africa

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Abstract

Heavy vehicle overloading and road safety continue to be major problems on South African roads despite efforts at more effective enforcement by the road and traffic authorities. Overloading causes premature road deterioration and, together with inadequate vehicle maintenance, driver fatigue and poor driver health, contributes significantly to South Africa's poor road safety record. This paper describes the most recent developments of an initiative to introduce meaningful self-regulation in the heavy vehicle transport industry through a Road Transport Management System (RTMS) with the aim of contributing to the road authorities' efforts to address the above problems. During 2003 a heavy vehicle accreditation scheme was developed and implemented in the forestry industry in the provinces of KwaZulu-Natal and Mpumalanga. Based on an Australian model, the scheme seeks to promote compliance with standards in the areas of load control and securement, vehicle maintenance and driver wellness. In line with the Department of Transport's National Overload Control Strategy, its aim is to encourage heavy vehicle operators, consignees and consignors to take more responsibility for ensuring that their loads are transported legally. The success of the project in forestry resulted in similar initiatives commencing in other industries including pulp, paper and board, bitumen, coal, sugar and aggregate and sand. A national steering committee was established to co-ordinate the various initiatives and a strategy document developed. As part of this strategy, Standards SA of the SABS was approached to develop national standards for transport operators, consignors and consignees using the documentation developed for the forestry industry as a starting point. Although this is essentially a private sector initiative, since the commencement of the project in forestry, there has been strong support and involvement from government, including the national Department of Transport, the SA National Roads Agency, various provincial road authorities and the Department of Trade and Industry.

1. Introduction

Heavy vehicle overloading has been a nemesis in South Africa for decades despite efforts at more effective law enforcement. Overloading causes accelerated road deterioration (Figure 1) and together with inadequate vehicle maintenance, driver fatigue and poor driver health, contributes significantly to South Africa's poor road safety record. In July 2003, the forestry industry embarked on a **dti**/Forestry South Africa-funded project with the CSIR, National Productivity Institute (NPI) and Crickmay & Associates to introduce a self-regulation system, the

Load Accreditation Programme (LAP) to address overloading, vehicle maintenance and driver wellness in the timber transport industry (National Productivity Institute et al, 2004). The initiative was in line with the DoT's national overload control strategy (NOCS) (Department of Transport, March 1994) in which one of the recommended interventions was to explore the concept of self-regulation and to facilitate such an industry-led initiative to complement law enforcement (Kekwick, 2003). The NOCS identified the Australian National Heavy Vehicle Accreditation Scheme (NHVAS) as one that had a number of components appropriate to the South African situation (National Road Transport Commission, 1998; Queensland Transport, 2000; Roads and Traffic Authority, 2000).

The NHVAS is a voluntary alternative to conventional enforcement. It allows heavy vehicle operators to demonstrate, through audit of their transport management systems and vehicle or driver assessments that their vehicles and drivers comply with regulatory standards. By doing this, operators gain access to some variation from compliance and enforcement practices.

The primary long-term objectives of the scheme are intended to:

- Improve efficiency for scheme members by reducing the impact of conventional regulatory enforcement;
- Raise levels of compliance for non-accredited operators through more effective deployment of enforcement resources;
- Reduce accelerated road infrastructure damaged caused by overloaded vehicles;
- Improve road safety;
- Increase the productivity of the transport industry through adoption of good management practices.

Figure 1. Heavy vehicle overloading contributes to accelerated pavement deterioration, which not only increases the cost of road maintenance (exponentially) but also increases vehicle operating costs.

2. History of the RTMS

The successful implementation of LAP in the forestry industry – the extent of overloading in terms of number of heavy vehicles charged for overloading reduced by some 40 percent over a two year period – led to various stakeholders identifying the need to establish a national LAP steering committee in order to expand the programme to other industries. A national LAP workshop was held in June 2004 during which issues such as the vision, mission, mandate, objectives, structure and terms of reference of the proposed committee were discussed and debated. Stakeholder and organisations represented at the workshop included the DoT, SANRAL, Forestry South Africa (FSA), the Institute for Commercial Forestry Research (ICFR), SA Canegrowers (SACGA), Road Freight Association (RFA), NPI and CSIR. The first meeting of the national committee was held in July 2004 and one of the first tasks was to compile a national LAP strategy. During the next 12 months various industries were approached with a view to participating in the LAP initiative. By the end of 2005, a number of these industries had indicated a willingness to participate in LAP. These included the Chamber of Mines, Sabita, ASPASA, SARMA, SACGA and the pulp, paper and board industry (distinct from the timber industry).

In November 2005, the national steering committee identified the need to revise the LAP strategy document and in particular consider the possibility of a name change, as it was felt that the name "Load Accreditation Programme" put too much emphasis on the aspect of vehicle overloading without recognising the other important aspects of vehicle maintenance, driver wellness and productivity. In fact, the issue of the name of the project had been raised and debated at the initial national LAP workshop in June 2004, but at that stage it was decided to keep the name. After some consideration, the committee decided to rename the initiative the Road Transport Management System (RTMS). A Technical Working Group was appointed with the task of drafting the new RTMS strategy.

The RTMS five-year strategy (National Productivity Institute, October 2006) was officially launched in October 2006 (Transport month) and in the foreword by the Minister of Transport, Mr Jeff Radebe states that "(The RTMS) is an industry driven process that complements Government programmes aimed at promoting efficient road based operations, road infrastructure protection and ensuring road safety. I therefore commend the pro-activity shown by the leadership of this initiative and have no doubt that it will lead to tremendous improvement in the performance of the logistics chain".

3. The Road Transport Management System

The RTMS is an industry-led, government–supported, voluntary self-regulation scheme that encourages consignees, consignors and transport operators engaged in the road logistics value chain to implement a vehicle management system that preserves road infrastructure, improves road safety and increases the productivity of the logistics value chain. This scheme also supports the Department of Transport's National Freight Logistics Strategy (Department of Transport, 2005) – see Figure 2.

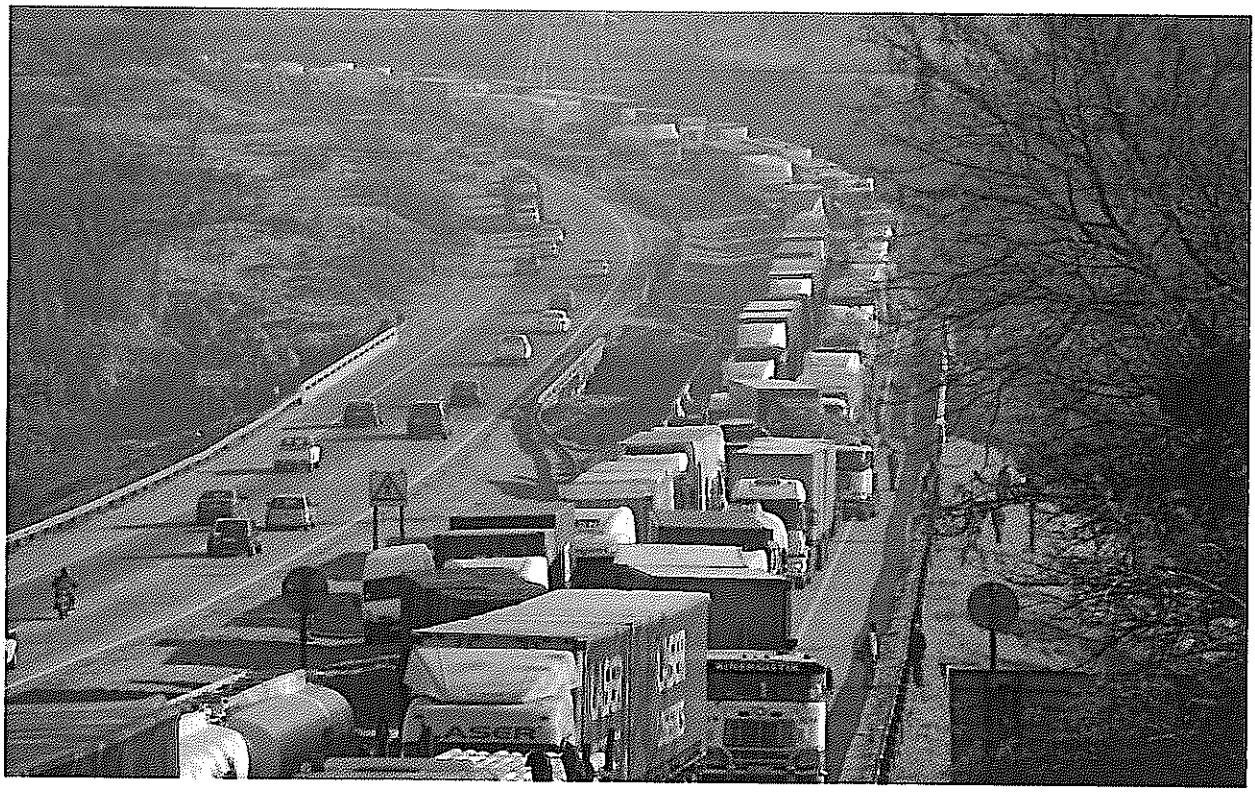

Figure 2. Accidents involving heavy vehicles often involve road closures, in some cases causing long delays, thereby negatively impacting the total cost of logistics in South Africa (which is almost double that of the USA and 50 percent more than Japan and Brazil as a percentage of GDP).

The RTMS has standards on:

- Loading
- Driver Wellness
- Vehicle Operations and
- Productivity

Furthermore, the RTMS offers support for implementation of the following components:

- National standards
- Auditors (accredited by SANAS)
- Tools (manuals, templates, implementation guidelines)
- Information portals (website, data sharing)
- Recognition and concessions
- Promotion (brand promotion to create meaningful recognition among public and industry stakeholders)
- Special projects (selected by the RTMS stakeholders and that are aligned to RTMS objectives)
- Research and technology innovation

The 2012 vision of the RTMS is that it will become a nationally recognised self-regulating scheme for heavy vehicle road transport, resulting in a safe, equitable and competitive heavy vehicle logistics value chain.

3.1 Stakeholders

The RTMS strategy identifies the following stakeholders:

Value-chain

- Consignees, consignors and transport operators;
- Organised business and industry associations
- Organised labour

Other Stakeholders

- Government (Department of Transport, the dti, Department of Science and Technology, Provincial and Local Government, SANRAL, law enforcement agencies, etc)
- Public Sector Institutions (standards generating bodies, productivity institutions, research institutions)
- Travelling public

3.2 RTMS structure

The proposed RTMS structure is shown in Figure 3. The National Steering Committee has been functional since July 2004. A Technical Working Group was established in November 2005 and there are currently three industry steering committees (forestry, mining and bitumen). To date there has also been strong participation and support from the DoT, SANRAL and the KwaZulu-Natal DoT as well as various corporate sponsors and associations (FSA, ICFR, Chamber of Mines, Sabita, ASPASA, SARMA, RFA).

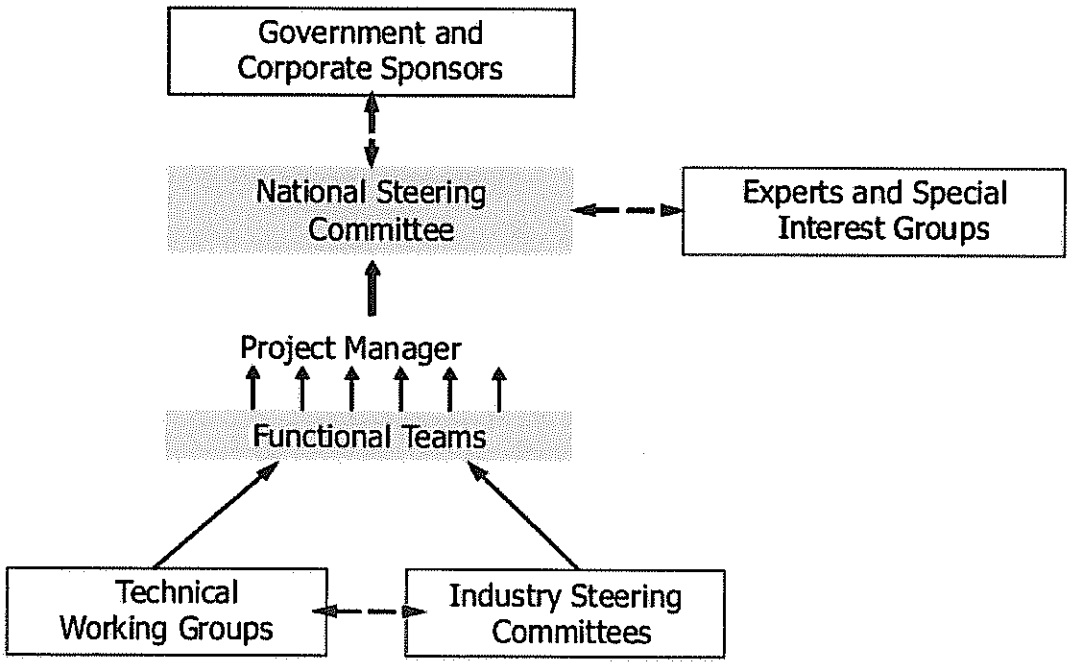

Figure 3. Proposed RTMS structure

4. Development of Standards

In August 2006 the SABS was approached to develop the RTMS as a national standard. Through a consultative process, it was decided to first publish the standards as a "Recommended Practice" (ARP 067), Part 1 being the recommended practice for Operators. An SABS Technical Committee, STANSA TC181B: Road Transport Management Systems, was constituted in October 2006 and a Working Group appointed to transform the LAP standards developed by the CSIR for the forestry industry into an SANS Recommended Practice. The ARP 067-1:2007 Part 1: Operator Requirements – Goods (Standards South Africa, 2007) was published by Standards South Africa in February 2007 and Parts 2 and 3, the RTMS standards for consignors and consignees are expected to be published in January 2008.

ARP 067 Part 1 sets minimum standards for road transport through ten rules as follows:

- Maintenance of a haulage fleet inventory
- Assessment of the vehicle mass and dimensions before each laden trip
- Verification of the mass determination method
- Maintenance of vehicles in a road worthy condition
- Vehicle and load safety
- Management of driver wellness
- Training and education
- Tasks and responsibilities
- Records and documentation
- Performance assessments

Templates are provided in the Appendix of ARP 067 as examples to assist operators in preparing for certification, which is achieved through a successful external audit by a SANAS-accredited auditor.

5. RTMS in the coal industry

The majority of coal-fired power stations and coal mines are located in the province of Mpumalanga, east and southeast of the cities of Johannesburg and Pretoria. The past 15 years has seen a steady and significant deterioration of many of the provincial roads in Mpumalanga, particularly those that carry large volumes of coal trucks (see Figure 1). Because a significant portion of the coal consumed by the power stations is transported by road, increased costs of road transport (travel times, vehicle maintenance and crashes) due to the poor condition of the road network has had a negative impact on the cost of logistics in the coal industry.

During 2007, ongoing discussions between the major stakeholders (Mpumalanga Dept. of Roads and Transport, the national DoT, SANRAL, the Chamber of Mines and Eskom, South Africa's state-owned electricity supply commission) resulted in a decision to embark on a project to identify and reconstruct/upgrade the critical road network for coal haulage. Early on in the discussions, the concern of heavily overloaded coal trucks and their negative impact on the life of the road was raised.

At a Coal Haulage Conference held in October 2007 a number of resolutions were taken with regards the defined primary network for coal haulage, control of overloading and funding of the

project. One of the resolutions indicates the need to include the RTMS self-regulation scheme as part of the project to ensure compliance of the regulations regards the permissible maximum mass of vehicles as well as adequate vehicle maintenance and driver wellness. This project will no doubt add further momentum to the RTMS initiative, which is still in its early stages.

6. Conclusions

The RTMS is an industry-driven initiative in co-operation with government, which attempts to address issues such as overloading, load securement, vehicle maintenance, driver fatigue and driver health and their impacts on road deterioration, road safety and the cost of logistics. The pending legislation regarding the responsibilities of consignors and consignees with regards heavy vehicle road transport will no doubt have a significant impact on the nature of road transport contracts. It is anticipated that consignors and consignees will in future be required to assume a far greater responsibility for the manner in which their goods are transported on the public road network. The RTMS is a tool that can be used by consignors, consignees and transport operators as part of their quality management systems to address the current problems in road transport, thereby demonstrating their commitment to corporate governance.

7. Abbreviations

ASPASA – Aggregate and Sand Producers Association of South Africa
BEE – Black Economic Empowerment
CSIR – Council for Industrial and Scientific Research
DoT – Department of Transport
dti – Department of Trade and Industry
FSA – Forestry South Africa
ICFR – Institute for Commercial Forestry Research
ISO – International Standards Organisation
LAP – Load Accreditation Programme
NHVAS – National Heavy Vehicle Accreditation Scheme (Australia)
NOCS – National Overload Control Strategy
NPI – National Productivity Institute
RFA – Road Freight Association
RTMS – Road Transport Management System
Sabita – South African Bitumen Association
SABS – South African Bureau of Standards
SACGA – South African Cane Growers Association
SADC – Southern Africa Development Community
SADCSTAN – SADC Standard
SANAS – South African National Accreditation Scheme
SANRAL – South African National Roads Agency Limited
SANS – South African National Standard
SARMA – South African Ready Mix Association
STANSA – Standards South Africa, a Division of SABS

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