A SELF REGULATION INITIATIVE IN HEAVY VEHICLE TRANSPORT TO ADDRESS ROAD SAFETY, ACCELERATED ROAD DETERIORATION AND TRANSPORT PRODUCTIVITY IN SOUTH AFRICA

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ABSTRACT

Heavy vehicle overloading and road safety continue to be major problems in South Africa notwithstanding 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. The Heavy Vehicle Accreditation Scheme (LAP) is an initiative to introduce self-regulation, as opposed to legal enforcement, in the heavy vehicle transport industry, and aims to promote professionalism in heavy vehicle transport. 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.

A pilot project, initially funded by the Department of Trade and Industry and Forestry South Africa, commenced in August 2003 to establish such a self-regulation system in the forestry transport industry. The overall aim of the initiative is to promote transport efficiency within the legal framework by creating awareness with transport operator management. The main focus is thus the management of vehicle loading, load securement, vehicle maintenance and driver wellness and training. Although the pilot project was initiated in forestry, the project has been executed keeping the broader heavy vehicle transport industry in mind. During the past 12 months similar initiatives have started in other industries including coal, asphalt, aggregate and sand, pulp, paper and board and sugar. The aim of the Department of Transport is to establish a national accreditation system in association with the South African National Accreditation System.

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1 INTRODUCTION

Heavy vehicle overloading continues to be a major problem in South Africa notwithstanding efforts at more effective overload control by the authorities. Overloading causes premature road deterioration and, together with poor vehicle maintenance and driver fatigue, contributes significantly to South Africa's poor road safety record. Overloading also results in unfair competition between transport operators and transport modes, leading to unrealistically low transport rates. One of the tasks of the Department of Transport's National Overload Control Strategy was to investigate the possibility of implementing some form of self-regulation in the heavy vehicle transport industry to complement the enforcement efforts of the roads authorities to address the problem of overloading. The strategy recognises that the ability to monitor vehicle loads at origin and/or destination based on operator supplied data is very attractive, strategic and feasible, and could greatly assist in addressing the problem of vehicle overloading (and under-loading). This could save the trucking industry significant time and costs, and improve the logistics of transporting goods by road.

2 THE NATIONAL HEAVY VEHICLE ACCREDITATION SCHEME IN AUSTRALIA

An international review found that the National Heavy Vehicle Accreditation Scheme (NHVAS) that has been implemented in Australia over the past few years has a number of components appropriate to the South African situation. The aim of the initiative is to increase the responsibility of the transport operator and/or consignor/consignee of loading vehicles correctly, thereby reducing the occurrence of overloading *and* under loading. The national policy on alternative compliance was put forward under the auspices of the National Road Transport Commission (now the National Transport Commission) and approved by government in 1997. The self-regulation initiative was developed and implemented as the NHVAS and covered two distinct modules: *mass management* and *maintenance management*. A third module for *fatigue management* was in the process of being finalised.

The NHVAS is a voluntary alternative to conventional enforcement. It allows heavy vehicle operators to demonstrate, through audits 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;

In reviewing the Australian scheme, which extends beyond vehicle mass/overload control to the crucial safety issues of vehicle condition and driver fatigue, it was clear that the fundamentals are well-grounded and that scheme was developed with input from a wide range of stakeholders.

3 THE LOAD ACCREDITATION PROGRAMME IN THE TIMBER INDUSTRY

An initiative in the timber industry that commenced in 2002 aimed at reducing overloading in order to reduce accelerated road infrastructure deterioration, and to promote good corporate governance. In order to realise the full impact of protecting the road infrastructure it became important to obtain buy-in from other industries. The project in the timber industry therefore resulted in a national pilot project, which was initially funded by the Department of Trade and Industry (DTI) and Forestry South Africa under the DTI's Sector Partnership Fund (SPF). The Institute for Commercial Forestry Research (ICFR) is directing the project and the project team consists of the National Productivity Institute (NPI), CSIR Built Environment and Crickmay and Associates. Consignees/consignors (Sappi, Mondi and NCT) are also actively involved in the project and are represented on the project Steering Committee together with representatives from the Department of Transport, the South African National Roads Agency (SANRAL) and the Road Freight Association (RFA), including transport operators. To date a number of aspects have been addressed, all of which have involved consultation with representatives of the timber industry and other role players:

- Underlying principles and business rules
- Rules of compliance for accreditation
- Proposed incentives/concessions for accredited operators
- Heavy vehicle management system incorporating vehicle loading, vehicle maintenance, load safety and driver wellness
- Monitoring of vehicle combination masses at destinations (pulp mills)
- Implementation plan (Application, Pre-accreditation and Accreditation phases)
- Development of training modules
- Training workshops for senior management

- Meetings with the KwaZulu-Natal Department of Transport, Mpumalanga Provincial Government and TRAC (N4 Maputo corridor concessionaires)
- Negotiation of possible concessions with regulative authorities.
- Broadening of stakeholder base to include several other industries (pulp, paper and board, coal, asphalt, aggregate and sand, and sugar)

The project is essentially driven by the private sector with involvement and support from government. It is viewed as a proactive response not only to the rapidly deteriorating road infrastructure (particularly provincial roads) and poor road safety statistics in South Africa, but also to the impending amendments to the Road Traffic Act such as extending the responsibility of overloading to the consignor and/or consignee and the introduction of a road damage "fee" over and above fines for overloading.

4 UNDERLYING PRINCIPLES

The pilot project commenced with the development of "underlying principles". Input was obtained from a wide range of stakeholders at meetings and workshops held during August and September 2003 as well as the Australian NHVAS. These principles are as follows:

- *Objectives*. The objectives of the project are to increase transport efficiency (and therefore global competitiveness), reduce road infrastructure damage due to overloading, improve road safety and reduce the costs of law enforcement.
- *Supply chain.* The programme is aimed at transport operators as well as consignors and consignees.
- *Simplicity.* Rules, measurement and record keeping must be kept simple. Existing mechanisms should be used to keep costs low and avoid unnecessary audits.
- *Uniformity and consistency.* National and other industry programmes should as far as possible be implemented on a uniform and consistent basis.
- *Industry involvement.* The road transport industry, including consignors and consignees, should be involved in the development, implementation and operation of the programme.
- *Benefits to the transport industry.* Accreditation should present tangible benefits to operators through the granting of certain well-defined incentives/concessions. Such incentives/concessions should also benefit the regulative authorities.
- *Non-mandatory.* Participation in the programme should not be mandatory. Access should be non-discriminatory and be based on criteria that are objective and relevant.
- *Sanctions and appeals procedures.* Sanctions imposed within the programme should be appropriate to the offence. A set of graduated sanctions should be available.
- *Identification and promotion.* Vehicles, drivers and hauliers participating in the programme should be easily identifiable by enforcement agencies.
- *Review.* The programme should be subject to review and improvement on a continuous basis.

5 RULES OF COMPLIANCE

The rules of compliance for accreditation were also developed through an extensive consultation process with stakeholders in the timber industry as well as government (national and provincial) representatives. The major rules address the following aspects of the programme:

- Vehicle inventory
- Vehicle mass and load securement
- Vehicle maintenance and safety
- Driver wellness (including health and fatigue)
- Training and education
- Records and documentation
- Audits

The majority of the rules of compliance are generic and would be applicable in most transport industries. However it is envisaged that "Codes of Practice" will be developed that will address industry-specific requirements.

6 INCENTIVES

Because LAP is a self-regulation scheme, and thereby non-mandatory (which is also the Australian approach), it is necessary to identify and adopt incentives or concessions that will encourage operators to participate in the scheme.

The first incentive to be accepted by the KwaZulu-Natal and Mpumalanga provincial authorities is the principle of "weigh-less", i.e. limiting the weighing of accredited operators' vehicles to spot checks, preferably when the weighbridge is not busy. Accredited operators have already benefited from reduced delays at provincial weighbridges and roadside checks. The regulative authorities also benefit by being able to focus their law enforcement efforts on non-compliant operators.

The second incentive to receive support is the introduction of Performance-Based Standards (PBS) vehicles to increase payload efficiency without compromising vehicle safety and infrastructure protection. The National Department of Transport has approved a pilot project that has been launched in the timber industry. Two test vehicles are currently in the design phase and will be built in the 2nd and 3rd quarters of 2006. These vehicles are based on the Australian PBS guidelines, and will be monitored for a period of three years. The National Department of Transport will monitor the project closely to determine the feasibility of rolling it out as a national incentive.

Other possible incentives that are being investigated include discounts on vehicle insurance premiums and discounts on toll fees.

7 VEHICLE LOAD MONITORING

An important aspect of the project is the load monitoring that is done (in the case of the timber project) at the consignee weighbridges. The primary purpose of the weighing is to monitor the payload of each vehicle on delivery at the pulp mills. Currently, only the vehicle or combination mass is recorded, as the mills have platform rather than multi-deck scales. Thus only the total vehicle or combination mass and not the individual axle and axle unit masses are measured and monitored. A future development in the project could be the requirement for multi-deck scales in place of platform scales. The weighbridge data is made available to the project team, which allows the monitoring of overloading and under-loading by operator and by mill. The standard deviation of the loads is also determined per operator, which gives an indication of the degree of control on the vehicle loading procedure. This enables a certain amount of benchmarking to be done and reporting on best and worst practice in the industry. The tare masses of the various vehicle combinations are also monitored, again giving an indication of best practice. For example, the tare mass of seven-axle vehicle combinations (1222) used for transporting timber has reduced from approximately 27 tons in 1992 to less than 17 tons in 2002. This has resulted in an increase in the legal payload of 34%. Some of the old designs are still in operation, forcing transport operators using these to overload in order to match the higher payload of the newer, lighter designs.

Although not considered as one of the rules of compliance, a prerequisite for becoming an accredited operator is that all production vehicles must be coded (which enables the monitoring process) and that 96 per cent of *all* vehicle/combination masses must fall within the legal load plus the tolerance for a minimum of three consecutive months. Opinions have been expressed that allowing 4 per cent of vehicle trips to be prosecutable (more that 5 per cent overloaded) is unacceptable, and that no vehicles of an accredited operator should be found to be prosecutable. However, a pragmatic approach has been adopted initially. In any event, an improvement by an individual operator from 40% (or as much as 100%) of vehicle trips being prosecutable to less than 4% is a significant improvement! These statistics would never be observed at provincial weighbridges, as in most cases less than 5% of all vehicle trips are weighed at provincial weighbridges and in addition, there are numerous routes in the country where no overload control is done at all.

8 PHASES OF ACCREDITATION

Three phases of accreditation have been defined as part of the pilot project:

- Application. During the application phase, the transport operator is visited by one of the current service providers to discuss the Heavy Vehicle Load Management System manual. The transport operator also commences with meeting the requirements of the rules of compliance. These include compiling an inventory of nominated vehicles, implementing some form of vehicle loading control, as well as vehicle maintenance procedures, developing a plan for driver training according to the prescribed standards, identifying responsible persons who will be involved in the programme and ensuring that the necessary records and documentation are in place and are kept up to date. In the case of “mass” industries, monitoring of the vehicle loads either at the origin or destination would commence. As

mentioned in Section 7, at this stage the prerequisite for advancing to the pre-accreditation phase is to achieve a minimum of 96% of vehicle combination masses complying with the legal load plus the 5% tolerance for three consecutive months.

- Pre-accreditation. At this stage of the project, LAP has not been implemented through the South African National Accreditation System (SANAS). Audits are currently being conducted by a registered auditor, and four transport operators have been pre-accredited to date.
- Accreditation. Operators will be awarded full accreditation once the system has been implemented through the South African National Accreditation System (SANAS). Audits (and certification) will then be carried out by SANAS-approved accreditation bodies. Monitoring of the vehicle loads will continue during the accreditation phase. Annual audits will be required by an auditor from a SANAS-approved accreditation firm.

9 IMPLEMENTATION RESULTS AND CONCLUSIONS

Since vehicle monitoring commenced in November 2002, the incidence of prosecutable vehicle overloading (overloads greater than 5%) in the timber industry has reduced by between 40 and 45%. Figure 1 shows the reduction in overloaded vehicles (exceeding the 5% tolerance) in the timber industry from November 2003 as a percentage of the base in November 2002. Furthermore, the average overload per vehicle has reduced by 14% during the same period. These figures are impressive, particularly as only four transport operators have been accredited to date. Others are in the application phase, preparing for an external audit. The success of the project is to a great extent due to the active involvement of the consignees and consignors. At certain mills a four hour delay penalty has been introduced which is applied to any vehicle that arrives at the mill and is found to be more than 5% overloaded on total vehicle mass. At these mills, improvements of more than 80% in terms of incidence of vehicle overloading have been observed.

The enactment of the pending legislation regarding the responsibility of the consignor and/or consignee in terms of ensuring that vehicles are legally loaded is likely to add significant momentum to the LAP initiative.

The following general conclusions can be drawn:

- The Load Accreditation Programme is a significant initiative in self-regulation in the South African road transport industry;
- It provides an opportunity for consignors, consignees and transport operators to lead the way in a new generation of alternative compliance;
- It also provides an opportunity to promote professionalism in heavy goods vehicle transport;
- The likelihood of success is enhanced because of the strong support from government (Department of Transport, SANRAL and the provinces) for private sector initiatives;
- There is a potential for major economic benefits to the road transport industry in South Africa as a whole as a result of a reduction of accelerated road infrastructure deterioration due to overloading, an improvement in road safety and an increase in vehicle payload efficiency.

One of the aims of the Department of Transport is to roll out this initiative to other industries, and to eventually establish a national accreditation system for the whole of the road transport industry.

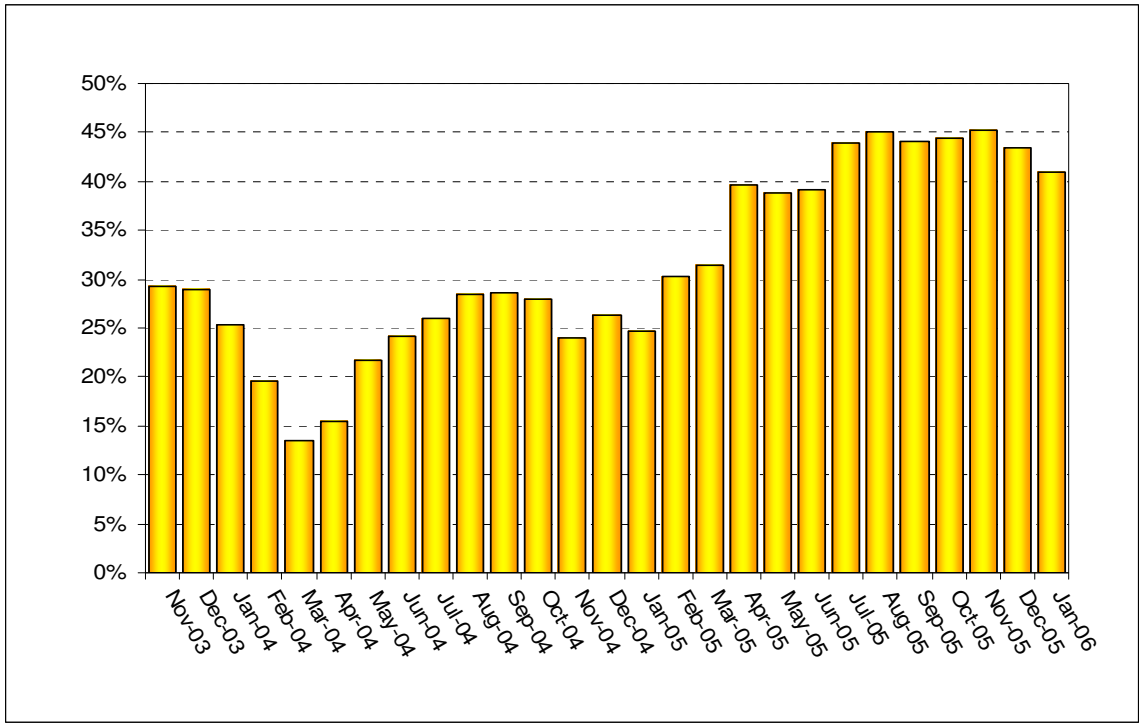

Figure 1. Reduction in incidence of overloaded vehicles exceeding the 5% tolerance limit.

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