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On the Cover

Scania enters 2012 on a roll, with the launch of a state-of-the-art dealership in the Western Cape and the promise of the first Euro 6 trucks in South Africa.

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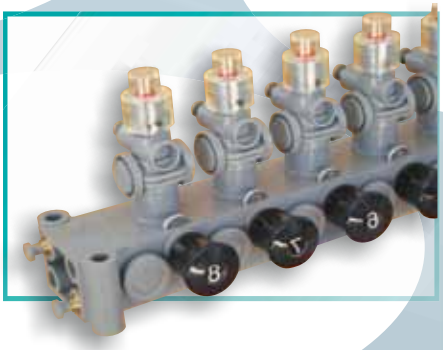

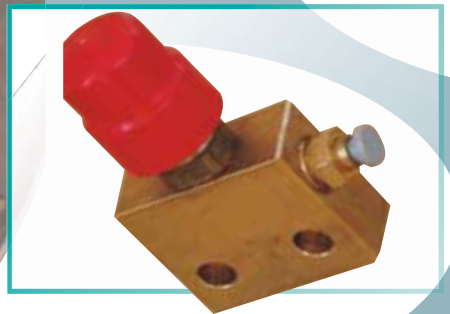

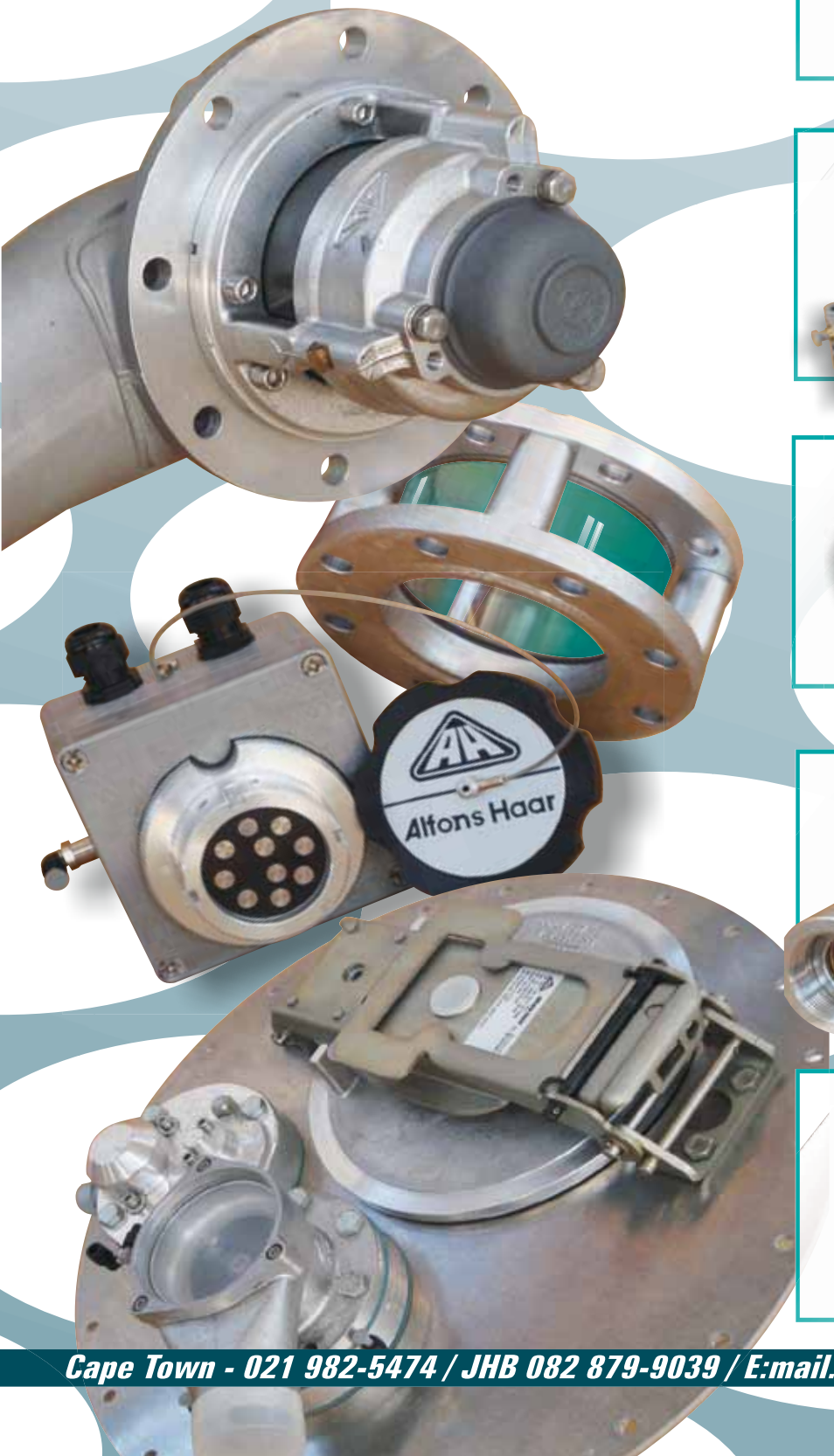

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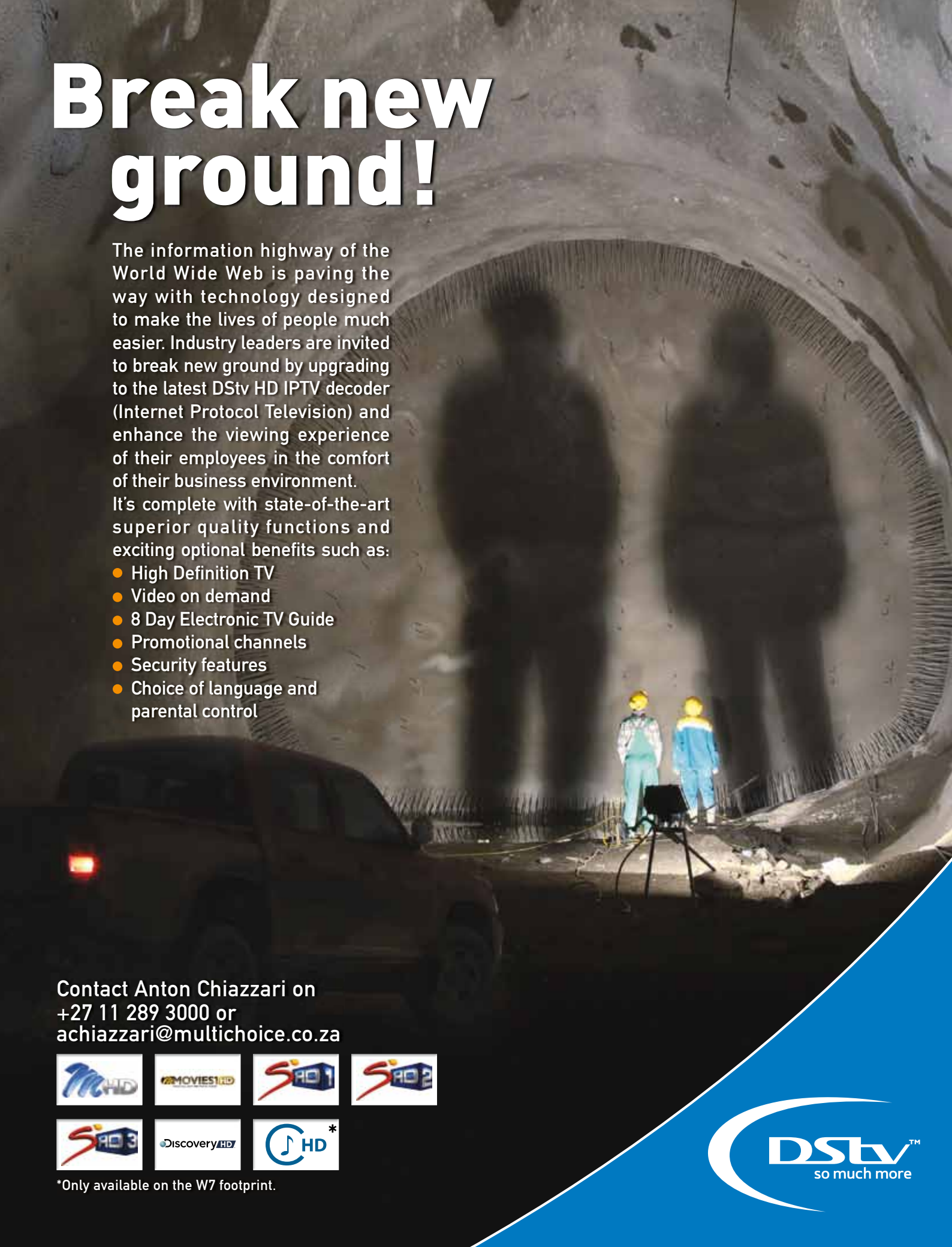

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Foreword

Holding our collective breath

On 22 February 2012 at 14h00, South Africa will be holding its collective breath to hear what plans the government, via the mouth of Finance Minister Pravin Gordhan, has in store to provide better service delivery to the Rainbow Nation's people, and how much it will tax them this time to be able to do so.

My critical eye, and that of many others, will focus in particular on what is in store for the road transport industry in terms of public transport and road freight – both of which share a road network with a maintenance backlog that is now sitting at approximately R149 billion.

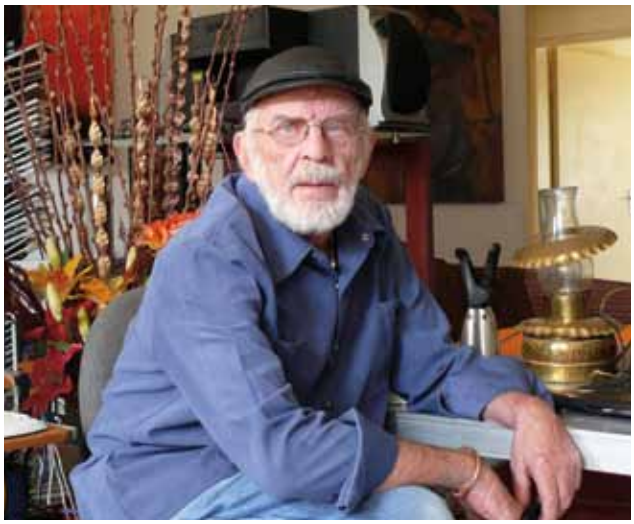
Perhaps by the time Gordhan speaks, there may be clarity on or a solution to the e-Tag tolling issue. Worse, we may be suffering from the effects of a nationwide strike led by the Congress of South African Trade Unions (Cosatu) if the proposed tariffs and method of funding the costly project (and other highway projects) are applied despite huge public outcry.

Whether people use the toll roads or not, everyone will be affected by higher food prices arising from any increase in toll tariffs.

According to the Democratic Alliance – the main opposition party to the ANC-led government – the "stop-go" approach to the costly Gauteng tolling project clearly shows that the Minister of Transport Sibusiso Ndebele is not in control of his portfolio.

"Only after a massive public outcry across all sectors of society has the minister acted decisively, leaving it possibly too late to amend Phase One of the project," said the DA.

Forcing people to use the secondary road network is not a solution, and perhaps Ndebele will have something more to say about the R23-billion dedicated road fund "S'hamba Sonke" that he announced last year, the grants of which are conditional to certain performance standards.



According to the DA, the fund has not materialised in the manner envisaged, adding that Ndebele lacks a coherent vision for his department.

For these reasons, the official opposition party says Ndebele has been largely ineffectual and needs to be replaced with an efficient minister who can actually do the job.

I am inclined to disagree. The minister is merely the figurehead for a department that is understaffed and ineffectual. He is simply a representative on transport matters for a Cabinet of other ministers who clearly underestimate the importance of his transport portfolio to the electorate and national economy.

Perhaps Gordhan's speech will finally reflect that the threat by Cosatu – to go on "the mother of all strikes" if there is not a major rethink on transport matters – has been a wake-up call.

Udo Rypstra

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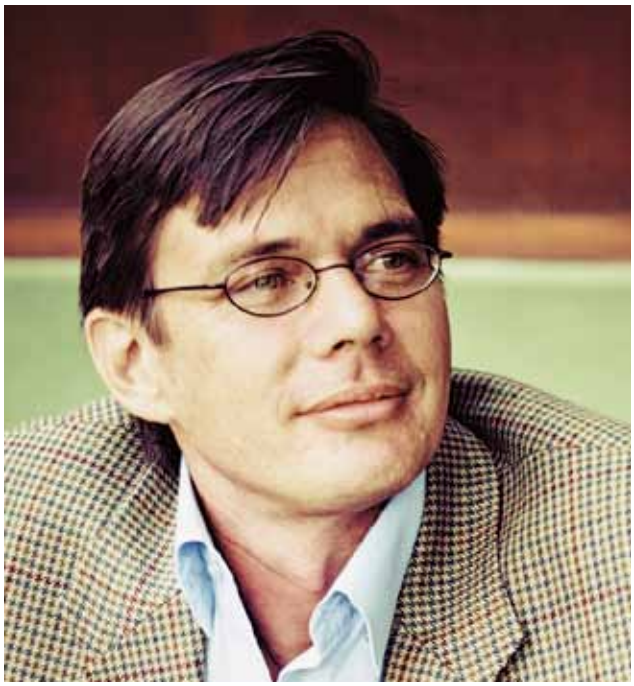
Ed's Note

Commuter times

I did it: I upgraded. I just could not take it anymore. Ordinarily, upgrades are best treated with caution, particularly ones that come at two-year intervals. Cellphones, tablets – somehow something much better comes along as soon as you have renewed your contract. But that is not likely to happen with Metrorail.



It was an interesting year, 2011. I undertook an experiment: ride Metro for 12 months.

Metro, formerly known as third-class, costs R99 a month for unlimited trips between Cape Town and False Bay – a saving of R92 by comparison with MetroPlus ("first-class" – what happened to second class, I just do not know). For that reason, it is very popular among people for whom R92 goes a long way: that is, the majority of Metrorail commuters.

The same number of carriages is usually allocated per class per train, but the number of Metro passengers is disproportionate. The more the merrier! Particularly at rush hour, when two previous trains have been cancelled. MetroCrush. MetroFail.

I have got up close and personal with hundreds of complete strangers. Short people have snuggled up to my armpits. Babies have squatted between my legs.

I have stared death unflinchingly in the face (when the stampede for the exit began before the train had stopped). I have been entertained by blind singers, the zany merchants of "sweeties and tsokolits", child dancers and preachers of the Word.

My understanding of the Cape Town commuter has been immeasurably enriched, as has my appreciation of the vital role of public transport. A city without decent public transport is no city at all (with bus rapid transit, Cape Town is getting there).

I started getting angry when I noticed that sometimes there are fewer carriages on Metro than on MetroPlus. More than once I have boarded MetroPlus for sheer lack of space. But commuters caught travelling the wrong class are detained in cages. R40 to be released. Appeals to reason fall on deaf ears.

So I upgraded. It is a different world. Even when I have to stand, I am not in close personal contact with my fellow commuters.

But the anger remains. It is time to do away with the class system on Metrorail. Make a better plan – it's the right thing to do.

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COMMERCIAL VEHICLES

Middle weights come out punching

The medium truck market is on a roll

Rising vehicle prices and vehicle operating costs continue to pose the question whether it is advisable to migrate from a light commercial vehicle to a medium commercial vehicle, or to 'buy down' into that market sector, which is experiencing an exceptionally strong demand for vans and freight carriers.

According to South Africa's truck classification system, vehicles with up to 3 500 kilogrammes gross vehicle mass (GVM) are referred to as light commercial vehicles (LCVs). Vehicles between 3 501kg and 8 500kg GVM are classified as medium commercial vehicles (MCVs). Vehicles between 8 501kg and 16 500kg GVM are heavy commercial vehicles (HCVs), and those over 16 500kg GVM are termed extra-heavy commercial vehicles (EHCVs).

There has been a recent upsurge in demand for MCVs. The latest estimates by the National Association of Automobile Manufacturers of South Africa (Naamsa) show that, out of all the CV sectors, the MCV sector posted the biggest rate of sales growth at 22.5% (from 7 557 to 9 257 units) last year, followed by a rate of 20.6% for the HVC and EHVC sectors combined; 17.3% in the car sector; and only 11.6% in the LCV sector.

Furthermore, Naamsa predicts that MCV unit sales will grow 11% to 10 000 MCV units this year. This assumes that the South African economy will grow, in real terms, by between 3% and

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Sector	2008	2009	2010	2011 estimated	2012 projected
Cars	329 262	258 129	337 130	395 423	422 500
Light commercials	169 466	118 159	133 756	149 302	160 000
Medium commercials	12 130	7229	7 557	9257	10 000
Heavy. extra-heavy commercials / buses	22 529	11 705	14 464	17 443	19 000
Total vehicles	533 387	395 222	492 907	571 425	611 500

3.5% in 2012, and takes expected domestic and international trends into account.

Naamsa's outlook for 2012 in terms of vehicle sales by sector is summarised in the table below:

Why this positive outlook for mediums?

The 10 000 unit sales expected this year is well below the 12 130 units sold in 2008, before the global financial crisis struck and people put fleet expansion and vehicle replacement on hold.

The older vehicles become, the more expensive the cost to operate them. This is in addition to vehicle and fuel prices rising due to a weak rand, as well as toll fees, vehicle registration and tyre replacement costs. All these factors are causing people to rethink which sector they would like to buy from. That, in a nutshell, is what industry gurus have been saying.

Many people who operate a small business – such as electricians, plumbers and florists – need nothing more than an LCV to get around.

Even Telkom runs a large fleet of bakkies with specialised canopies.

This sector therefore includes pickup trucks (bakkies) and panel vans with a GVM up to 3 500kg only, and may be driven – together with a trailer not exceeding 750kg GVM – with a Code B licence.

If the trailer is more than 750kg GVM, a Code EB driver's licence must be obtained.

But there comes a time when a medium commercial vehicle is required to carry more weight or a bigger volume (in cubic metres) of goods and/or people. Sometimes both.

An expanding business further complicates whether one should buy another one-tonne bakkie or small van, or go for an MCV with a bigger one- to four-tonne payload that can do the job of two LCVs.

Stricter law enforcement on overloading and carrying labourers on the back of an open bakkie instead of in a crewcab are having people taking a look at options available in the medium sector.

The range of choice in the market is huge. If one wants to determine which MCVs are the most popular, the Naamsa annual and monthly sales figures are the best indicator. Often the leading brand in this sector is the well-known Mercedes-Benz Sprinter, which is available as a panel van or a little freight carrier, with different engine capacities, vehicle lengths (even dual tyres at the back) and panel van heights for the hauling of high-volume loads.

But always running a close battle for supremacy are the Hino 300 series (previously known as the Toyota Dyna Series) and the Isuzu N-Series freight carriers. These vehicles are often used in a multitude of distribution, workshop, municipal and other specialised applications.

In fact, along with the Fuso Canter and the UD-M Series from UD Trucks SA (formerly Nissan Diesel), these Japanese freight carrier brands dominate the entire MCV sector, with the European vans/freight carriers – the Sprinter, the Iveco Daily, VW Crafter, Peugeot Boxer, Fiat Ducato and Citroen Relay – taking a back seat.

European vans improve one's corporate image – at a price, of course. When competitively priced workhorses are required, Asia is the answer.

Not to be underestimated are the Tata freight carriers from India of which, Naamsa reported, no less than 55 units were sold in December last year. For the most part these are not corporate sales. Rather, they reflect demand from individuals and small businesses such as bakeries.

Last but not least, there is the unknown sales factor represented by other manufacturers from the Asian mainland who do not report sales to Naamsa. Serious, unquantified inroads in the MVC sector are being made by Asian manufacturers FAW, Foton and Hyundai.

Importance

The importance of the African and local MCV market is reflected by South Africa being the first country in which Hino

will officially launch its new 300 Series medium truck range, and the first country outside Japan to assemble the products.

Hino previewed the new 300 range at the Johannesburg International Motor Show, and it planned to officially launch vehicles early this year.

Hino South Africa vice president Dr Casper Kruger said the line-up would include wide and narrow cabs, as well as a crew cab derivative for the first time.

There is a strong resemblance to the 500 and 700 Series models in the design of the cab, but the new vehicles are more aerodynamic than the current products.

There is more interior space and improved visibility, while the interior has been restyled with new storage areas as well as instrument panels.

The engines have been improved and are more fuel-efficient derivatives of the Euro 3 Hino power units. The previous 611 model, which had an 81-kilowatt (110-horsepower) power unit, becomes the 614 model and gets the 100kW (140hp) version of the four-litre engine.

The engine produces 392Nm of torque and is fitted to the 714 and 814 derivatives; while the 815 and 915 models have a 110kW (150hp) version of the same engine. The range would further include the introduction of a conventional six-speed automatic transmission in addition to five- and six-speed manual gearboxes.

The Hino 300 series will be the first medium truck on the local market to have standard air bags with seat belt pretensioners for the driver and passenger.

Drawback

The decision whether or not to buy upward into the MCV market is not an easy one, as a number of factors – such as access to townhouse complexes, turning circles, turnaround times, etc. – come into play.

Another major drawback is that by going over the 3 500kg GVM limit, a code C driver's licence is required. A trailer with GVM of 750kg or less may be attached.

In addition, if the vehicle is used on public roads to transport goods, dangerous goods or passengers for profit (as a

professional driver), a professional driving permit (PrDP) must be obtained. This permit is issued in addition to an ordinary driving licence.

A PrDP applies to the following motor vehicle categories:

- A goods vehicle with a GVM exceeding 3 500kg;
- A breakdown vehicle or a bus; and
- A minibus weighing more than 3 500kg, or designed to carry 12 or more people (including the driver).

Export

Meanwhile, the sub-Saharan market – MCVs included – is becoming increasingly important to South African truck manufacturers. UD Trucks SA, in particular, having been on a year-long regional export campaign covering the region and announcing further plans on this soon.

It may find the competition, coming from Kenya, becoming tough – with both Tata and Foton having announced plans to increase their production capacities in sub-Saharan Africa in the face of increasing competition for market share.

For example, Tata Africa Holdings, a subsidiary of Tata International, is planning to start a motor vehicle assembly unit in Kenya to enhance their presence on the east side of the continent and compete with Chinese rivals such as Chery Automobile and Beiqi Foton Motor, General Motors, CMC Motors, DT Dobie, Simba Colt as well as Toyota East Africa.

Currently, Tata Motors operates in Africa through Tata Motors (SA) (Pty), which is a joint venture with Tata Africa Holding (Pty) Ltd.

Tata Motors' pickups, LCVs and MCVs represent one of the strongest emerging brands in the region. Competition is set to intensify in the East African auto industry following the entry of a leading Chinese vehicle manufacturer in the region.

Beiqi Foton Motor Co. Ltd last year announced it was to invest $14 million (R111.08m) to set up an assembly plant in Kenya, targeting the growing East African market.

The plant, to be located in Mlolongo on the outskirts of Nairobi, will produce some 10 000 units of prime movers, tippers, buses, MCVs, pickups and light commercial trucks annually.

"East Africa is an important region for us and that is why we have decided to invest in an assembly plant, and we intend to sell 5 000 trucks in the region over the next two years," said Foton East Africa general manager, Calvin Guo.

The assembly plant is expected to start its operations by May this year.

Udo Rypstra

The state of the art

Scania launches new premises

Scania South Africa celebrated the inauguration of its 20 000m² state-of-the-art new premises in Kraaifontein, Cape Town, at a gala evening on 25 October last year.

Gideon de Swardt, Scania's southern African marketing and communication manager, unveiled the company's largest dealership in Africa – proudly proclaiming Scania's quest to be Africa's number-one premium package in the trucking industry.

The majority of Scania truck operations in the Cape region is based in Kraaifontein, which affords easy access for long-distance hauliers from Johannesburg, Durban and Bloemfontein.

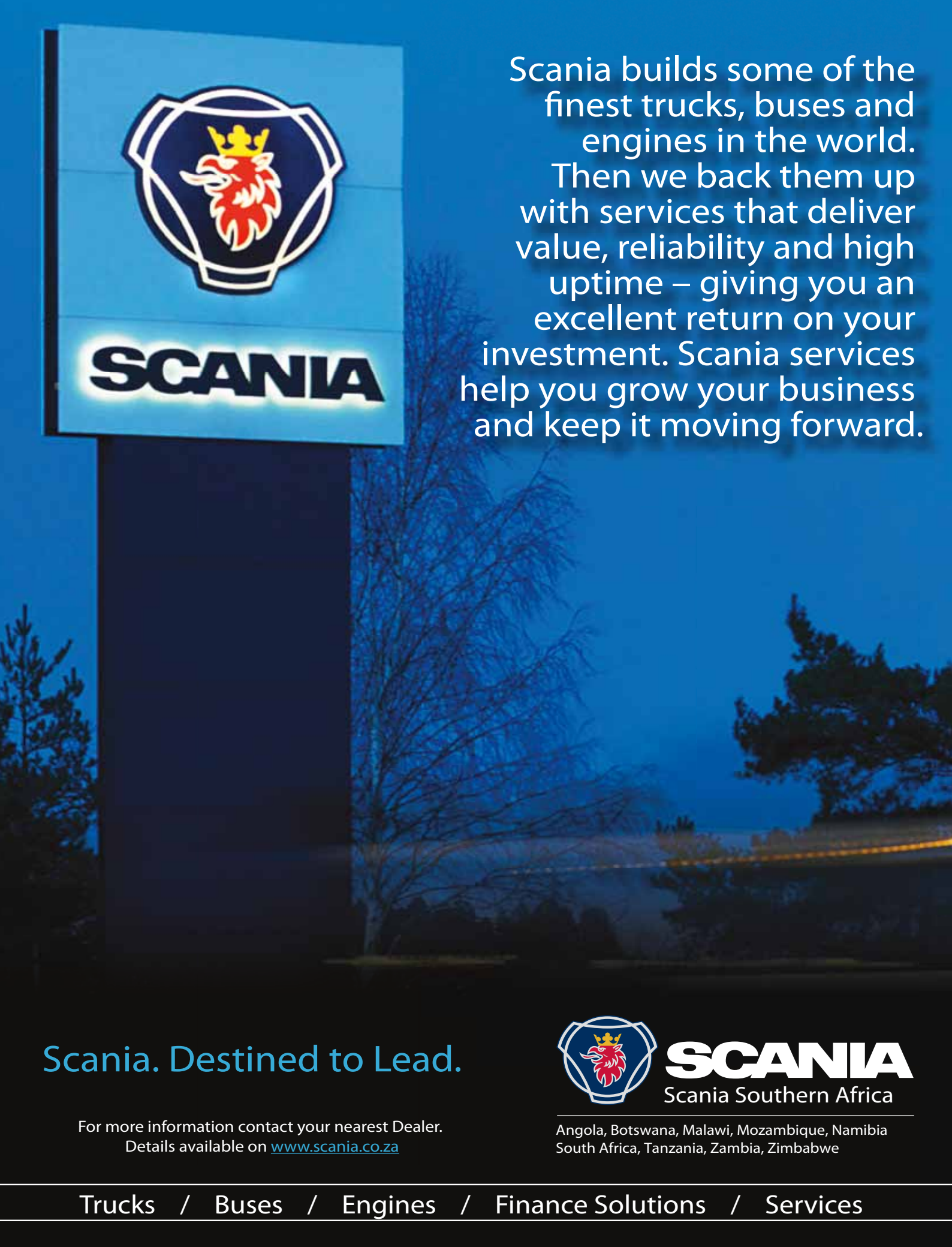
De Swardt welcomed his clients, employees and guests alike to a feast in the genuine Swedish custom. Guest included many of Scania's own from Sweden and from as far afield as Tanzania.

Clients and media were treated to a fantastically adorned workshop draped in Sweden's traditional navy blue and yellow, and served tantalising drinks, followed by a banquet fit for a king. This was followed by tastefully performed live music and some very beautiful ornate decorations – all reinforcing the seriousness with which Scania wants to go about business and be viewed as Africa's premium brand.

Guest speakers David Frost and Christian Lavine spoke strongly about the importance of South Africa on the world stage as well as Scania establishing itself as a brand in southern Africa.

While the Western Cape is not the traditional trucking hub of South Africa, Scania's intentions were made clear to all present: this is THE brand to watch.

Guests had the honour and pleasure of viewing some of the R series vehicles as showcased at the Johannesburg International Motor Show in early October 2011. Scania proudly boasted being the greenest truck manufacturer, having the only accredited Euro 6 trucks in production, which will be available in South Africa in 2012.



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David Frost

Gideon de Swardt (Scania SA), and David Frost (Western Cape Department of Transport & Public Works) – Photographs by Chris Reilly

Being "green" is of paramount concern to Scania. The firm's "Green Ambition" is a social responsibility most appreciated by all. Besides claiming to be the very best service provider in southern Africa, Scania intends to make green logistics its cornerstone in business in the region.

With market share growing at a rapid rate due to "the Scania family feeling", as De Swardt put it, the phrase "Stay with us – we'll make you profitable" was received with great applause by all fleet owners present.

Frost, from the Department of Transport and Public Works, reminded all present of the importance of road safety and fleet owners' responsibility for truck roadworthiness; yet he, too, seemed blown away by the host's product – even going as far as to say that Scania's product is the "Rolls Royce of trucks".

Frost took the opportunity to deliver the message that the government had stepped up its road safety drive, but needed to see greater partnerships between itself and business to cement this cause.

He thanked private entities such as South African Breweries for its "Safe Home" initiative, and Pick n Pay – in partnership with Scania – for the role it played in the Arrive Alive campaign.

The Department of Transport has named this decade the "Decade of Action", with emphasis on safer roads, safer vehicles, maintenance of vehicles, anti-bribery, safer road users and better post-trauma care.

Marius Steenkamp, Scania Kraaifontein dealership manager, together with his highly qualified team at the Kraaifontein/Cape Town dealership, look forward to welcoming you into the "family" and providing you and your fleet with the best service experience you can enjoy.

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Mercedes-Benz

BRT rollout heats up

Tender battle looms for bus manufacturers

South Africa, crying out for a proper world-class integrated public transport system, has reached another stage in achieving this – with much attention to be placed this year on the rolling out of bus rapid transit (BRT) systems in metropolitan areas and their feeder bus systems.

While both Johannesburg and Cape Town over the past few years have already implemented the first phases of their respective BRT systems and are expected to expand on them this year, the metropolitans of Pretoria, Port Elizabeth and Rustenburg should come on board in 2012 with government-approved plans.

No wonder the bus industry was keenly awaiting the issuing of government tenders for BRT buses (only) late last year. Sales had taken quite a dip after the 2010 Fifa Soccer World Cup and the preceding bus and coach buying spree.

No doubt the rollout is keenly awaited by the public at large as they face the usual annual toll fee increases, as well as those of the new controversial e-Tag system, to be implemented in Gauteng in February. Apart from the threatened nationwide

strike by the Congress of South African Trade Unions against toll fees, many are waiting to see what their alternative options could be. It will be a long wait.

This year, the City of Johannesburg is due to complete phase 1B of its Rea Vaya BRT system. It is the second loop, or second trunk route, in the system and will run from Noordgezicht to Parktown, and on to the Johannesburg central business district.

This expansion is expected to bring several industrial areas online, as well as hospitals and universities, as the route will cover the universities of Johannesburg and Witwatersrand, as well as the Helen Joseph and Rahima Moosa hospitals.

Phase 1B will add 150 buses to the existing fleet of 143 Scania buses. A tender was to have been issued in December last year, possibly including a maintenance component, and is now overdue.

Early last year, the 18-kilometre, 10-station 1B project carried an estimated infrastructure cost of R1.2 billion, to be funded by the national government, but this amount may well have escalated since.

The next phase for Rea Vaya is 1C, running from Parktown to Sandton, but its development is subject to this route's environmental impact assessment.

Further Rea Vaya phases will include links from Dobsonville, Protea Glen, Chris Hani Baragwanath Hospital, Sunninghill and Alexandra into the existing Rea Vaya system.

The already operational R1.6-billion phase 1A of Rea Vaya runs from Thokoza Park in Soweto, to Ellis Park, and includes routes through the CBD. It covers 25.5km and has 33 stations. The largest portion of this route opened in August 2009.

The feeder bus service between Cape Town International Airport and the city centre became operational in May 2010 while that of Phase 1 of Cape Town's MyCiTi integrated rapid transit (IRT) system – the West Coast trunk route between Bayside Shopping Centre, Table View, and the CBD/ Victoria & Alfred Waterfront – was completed last year after many delays.

This is a BRT route with bus stations every 500 metres, which will eventually link the city centre with other coastal suburbs and, finally, with Atlantis.

Implementation of Phase 2 of the IRTS in the metro southeast, linking Khayelitsha and Mitchells Plain, will require more buses, as will the feeder bus system.

A trunk route is typically supported by several BRT feeder services ferrying passengers to and from the main routes.

An inner-city feeder system, supporting the West Coast and airport trunk routes, was scheduled to be in place by October 2011, but has suffered delays. It was only in late November last year that the City of Cape Town announced Busmark 2000 had been awarded the tender to supply the 190 Optare Solo feeder buses to boost the existing and interim fleet of MyCiTi vehicles.

With the government and local metropolitans planning to spend billions on new BRT buses and feeder midi buses, it is no wonder it is now setting high demands when specifying the vehicles it requires.

Much has been learnt from the rollout of the Rea Vaya project's first phase of the inner-city service, which had tight deadlines ahead of the Fifa Confederations Cup in June 2009, followed by the World Cup a year later. This required the importation of fully built-up Scania buses, and led to criticism that job opportunities through local assembly and high local content had been missed.

The government now seems hell-bent on establishing a bus manufacturing and bus operator industry that not only creates more jobs and uses more local content, but will promote the local gas fuel industry as well. This was already made clear at the annual Southern African Bus Operators Association conference last year, when the state-owned Industrial Development Corporation (IDC) urged bus manufacturers and operators to make use of a R10-billion IDC scheme, to run over five years, to create more jobs in public transport by localising local bus production and content, and by using locally produced fuel.

Hannes Malan, project manager of the IDC's Local Bus and Green Transport Programme, said the corporation hoped to achieve these objectives by encouraging operators to buy locally produced buses, by making "favourable" funding available to manufacturers and end users of "qualifying" buses.

Financing would be made available in 50/50 joint ventures between the IDC and commercial banks, the latter having the necessary systems, industrial relationships and knowledge to maintain such a fund.

The bus chassis had to be manufactured from local completely knocked-down (CKD) kits on a designated bus chassis (no more truck chassis!), and the bus body had to be manufactured locally with at least 90% local content. The fuel used had to be Euro 4, refined biogas or compressed natural gas which had been approved by the IDC, largely to maximise job creation in the gas production industry.

Since then, the IDC has engaged a large number of original equipment manufacturers (OEMs) to explore localisation at an advanced level, including minibus manufacturers such as Toyota, which is looking at setting up a dedicated minibus taxi plant in South Africa.

It is expected that tender documents for this year's bus procurement will echo these requirements.

There were some rumblings about this in the bus industry during the Johannesburg International Motor Show's Truck Show last year. The dedicated bus chassis requirement holds bad news for Isuzu, Hino and UD Trucks, the truck chassis of which are often used for commuter buses, although mostly in the private sector.

At the show, industry people questioned the Optare Solo deal in terms of meeting the requirements of the government and the


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IDC, but Busmark 2000 has been quick to announce that the vehicles were to be imported CKD from the United Kingdom in CKD kits for assembly in Elsies River, Cape Town.

The contract awarded to Busmark 2000 has a value of R660 million and includes a maintenance programme, the training of maintenance staff and the equipping of a new MyCiTi depot and workshops. And 70% of the components will be imported from Optare in the UK, with the remainder being sourced locally.

The assembly facility is being established in rented premises in Elsies River industrial area in Cape Town, and more than 110 staff will be employed for the assembly phase. Some 100 jobs will be created during the maintenance and training phase.

Meanwhile, state and other tenders can expected to be hotly contested by members of the bus manufacturing industry, with individual bus chassis and bus body manufacturers often forming joint ventures to go in for the kill.

South Africa has relied for years solely on imported CKD rear- and front-engined bus chassis from major European suppliers and, to this day, even uses imported truck chassis from European and Japanese manufacturers for conversion and the production of commuter buses and coaches.

Leading local bus chassis suppliers are MAN/Volkswagen, which locally assembles and supplies its own best-selling Lion Explorer commuter bus body; as well as Mercedes-Benz, Scania, Volvo and Iveco. More recently, they have been joined by Asian manufacturers such as FAW and Tata.

Twenty years ago, there was a thriving local bus and coach body manufacturing industry in South Africa, using much local content and providing work for hundreds of people, including highly trained coach builders.

However, due to the arrival of competitors such as Marcopolo, Irizar and VDL, which have the economies of scale to build buses cheaper and faster, most of them have disappeared, leaving only a few. They include Busmark 2000, which can build high-quality buses on virtually every OEM bus chassis listed above as well as on Atego and Japanese truck chassis and Dubigeon Bus & Coach, which has a close liaison with Iveco and Putco, but which now build on almost every chassis available.
South Africa manufactures about 1 000 buses a year.

Udo Rypstra

Optare Solo

A common sight in England, Denmark, Holland and even the United States, the Optare Solo is a low-floor, low-entry bus, measuring 9 metres in length and 2.5m in width, which will be used as feeder bus to high-volume routes and serve to alleviate the congestion in suburbs by bringing people from within suburbs to the trunk routes and then connecting to the CBD.

The Optare Solo can accommodate 50 passengers, with seating space for 25 people. The bus includes a wheelchair bay and is designed such that wheelchair-bound passengers are able to enter the bus without assistance.

A strapping mechanism that can be used for tying down bicycles in the bus has been provided as well.

Production in Cape Town is expected to start towards the middle of this year.

SABOA – representing your interests

The South African Bus Operators' Association (SABOA) was formed to represent the interest of the industry at government level as well as among its stakeholders. SABOA has become known and respected as the voice of the bus industry and represents its members at national and provincial level with government, fulfils a watchdog function regarding policy and legislation, facilitates training for its SMME members and negotiates benefits for its members. Formed in 1980 by the five leading bus companies operating at the time, SABOA has gone through a three-phase transformation that has resulted in its representation today of about 76% of the public transport bus fleet.

BEING PART OF SABOA

Research: One of the core values of the Association is to contribute to the industry through research activities.

Training: Since its inception SABOA has been actively involved in establishing and promoting training in the industry. These initiatives saw it working in close partnership with the University of Johannesburg to introduce training programmes tailored to meet the needs of the industry. Many SMME operators have also benefited over several years through the SABOA bursary scheme that has enabled them to enrol for these programmes.

Workshops & Planning: An annual strategic planning session is held in January of every year. The purpose of the session is to review the activities of the previous year and to set priority action areas for the ensuing year.

Conferences: SABOA has established an annual bus conference that is widely regarded as the main South African bus conference on public transport matters. More than 400 delegates from a range of stakeholders regularly attend the conference which is organised alongside an exhibition that attracts exhibitors in more than 50 exhibition areas.

Lobbying: The Association is in direct contact with the following role players:

National Department of Transport;Provincial Departments of Transport; various education departments – nationally and on a provincial basis; Department of Labour; local government; law enforcement agencies; the Transport Education and Training Authority (TETA); training providers such as universities and TETA-accredited service providers; parliamentary institutions such as the Portfolio Committees on Transport (national and provincial); organised labour; various suppliers to the industry such as bus chassis suppliers, bus body suppliers, finance companies and fuel, tyres and ticket machine suppliers, and so forth; South African Revenue Services; institutions such as the Rail Commuter Corporation, the Road Freight Association, the Cross-Border Road Transport Agency, international trade associations and so forth; passenger and community groups through its operating members; and international conference series such as THREDBO.

SABOA and Policy Formulation: SABOA has played an important role in the transport policy formulation process since 1994 through the White Paper on National Transport Policy, the Moving South Africa Strategy, the National Land Transport Transition Act, the tendering system, negotiated contract system, the Tripartite Heads of Agreement, and the BEE Charter process, as well as being involved in the policy formulation process of the Cross-Border Road Transport Agency and provincial policies.

SABOA and Transformation - The Council and Exco management structures of the Association are fully transformed and fully reflect the demographics of the country. The Association has been at the forefront of transformation for many years and continues to set the pace when measured against other similar industry associations.

SABOA SMME empowerment: SABOA has a number of committees that focus on the needs of SMME operators such as funding and the development of mechanisms on how to participate and become part of the established operator fraternity. The Association is also supporting SMMEs through advice on a wide range of technical, operational and management issues, not only on the SABOA level but also on the established operator level.

For more information about the Association, please contact the SABOA office on (011) 011 9288 or email any enquiries to saboa@saboa.co.za

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How do oils degrade?

A technical examination of a vital process

Oils have a finite lifetime: they will eventually degrade and/or become contaminated, and will need to be changed. Lubricants consist of a base stock that can either be mineral or synthetic. In the case of synthetic base stocks, these are a family of compounds that are manufactured in a laboratory to have precisely the properties that the chemists and engineers want. Mineral base stocks are derived from crude oil that comes out of the ground, and is refined to produce a base stock that can do the desired job. Synthetic bases are superior to mineral ones, but are much more expensive.

The other component of a lubricant is the additive package. This is a range of 20 or more chemicals that the refinery blends with the base stock so that it can do its job. Most additives are sacrificial in nature, which means they are used up during the lifetime of the oil.

As the oil is used to lubricate a piece of machinery, the additives become depleted and deactivated, and eventually the oil will wear out and will need to be replaced.

The reason oils degrade has been covered extensively in many technical papers, but this article will deal with how lubricants degrade: in other words, what the mechanisms for additive depletion and degradation are.

The mechanisms we will look at are the following:

- Neutralisation
- Shear down
- Hydrolysis
- Oxidation
- Thermal degradation
- Water washing
- Particle scrubbing
- Surface adsorption
- Rubbing contact
- Condensation settling
- Filtration
- Aggregate adsorption
- Evaporation
- Centrifugation

Neutralisation

Although the sulphur levels of fossil fuels have been reduced dramatically over the last 10 years, many fuels still contain small amounts of sulphur; and some parts of the world still use fuels with sulphur in excess of 0.5%. Residual fuels used in marine applications can have sulphur contents very much higher than this.

During combustion, the sulphur is oxidised to sulphur oxides which, in turn, react with water vapour (also a combustion byproduct) to form sulphur acids. These acids are neither good for the machinery (engine) nor the oil. Engine oils are blended with additives that neutralise these acids. They are typically over-based sulphonates of calcium or magnesium – an oil analysis report is based on these results.

As has already been noted, these additives are sacrificial – once they have neutralised the acids, they cannot be regenerated to do the job again. Once all the additive has been used up, acid buildup will proceed very quickly.

Nitrogen fixation from the atmosphere can generate nitrogen-based acids through a similar mechanism, which need to be neutralised in the same manner to avoid damage to both the oil and the equipment. This becomes more of an issue with high combustion temperatures found in gas engines.

Shear down

It is vitally important that the temperature at which viscosity is measured be noted, as viscosity changes with temperature. As temperature increases, the viscosity decreases.

To further complicate matters, different oils thin out at different rates as the temperature increases. This introduces the concept of a viscosity index (VI). The VI of an oil is a unitless number that gives a measure of how quickly the viscosity will change with temperature. Oils with a low VI will thin out more rapidly than oils with a higher VI as the temperature increases.

The VI of an oil can be increased in a number of ways. Typical mineral multigrade oils have an additive (viscosity index improver, or VII) which is a long-chain organic polymer that remains tightly curled up when it is cold. As the temperature increases, the polymers uncoil and retard the thinning action of the increase in temperature. Very highly refined mineral oils

A technician testing oil samples for neutralisation additives

have a naturally high VI, as the refining process removes the components of the crude oil that have poor VI properties.

Unfortunately, these long organic polymers that uncoil when the oil heats up are not completely shear-stable. This means that when the compounds are subjected to high shearing forces, such as may be encountered in an automatic transmission, they start to break up – resulting in a permanent loss of viscosity.

However, oils that achieve a high VI through the refining process or by virtue of their synthetic base stock are not subject to this phenomenon.

Hydrolysis

Hydrolysis quite literally means "water cutting", and is the reaction of water with certain additives that cause them to break down. This is a chemical reaction of water that alters the chemical makeup of the additive or base stock.

As an example, esters are formed by the chemical reaction of an acid with an alcohol and the subsequent loss of a water molecule. This reaction is reversible, and water can be added to an ester to break it back down into its constituent alcohol/acid parts. This process is known as hydrolysis.

Water can be responsible for the breakdown of ester-based synthetic base stocks, but can also react with additives – such a zinc dithio diphosphate – which make up the anti-wear and antioxidant chemicals found in almost all engine oils. This is why engine oils are prone to emulsification – that mayonnaise-like deposit that is sometimes found in engines that have been contaminated with water.

Oxidation

Oxidation can cause a fundamental change in the base stock of the oil and is the reason even very clean and well-maintained oils eventually wear out and need to be changed. Oxidation is the reaction between the oil's base stock (and its additives) and the oxygen that is found in the atmosphere.

The air that we breathe consists of roughly 20% oxygen. It is this gaseous element that permits us to live on planet earth, and is also responsible for the combustion of fuels that takes place in the cars we drive and the buses, trucks and bulldozers that we operate.

The rate at which the oil reacts with oxygen is critically dependent on the temperature at which that reaction takes place; the higher the temperature, the faster the oil will oxidise.

For every 10°C increase in oil operating temperature, the rate at which the oil oxidises is doubled and, by logical extension, the lifetime of the oil is halved.

This situation is not quite as dire as it sounds, since oils naturally have quite a long lifetime. Temperature really only becomes a significant issue over 75°C, and oils that are subjected to high temperatures for extended periods of time are blended with additives that retard the reaction of the oil with oxygen.

So what happens to the oil when it reacts with oxygen, and why does it do so much damage? When crude oil is taken from the ground, it contains many, many different chemical compounds, yet many of these chemicals are closely related. The crude oil is taken to a refinery where these chemicals are separated according to various chemical and physical properties.

What follows is a very brief chemistry lesson. When an oil is subjected to elevated temperatures in the presence of oxygen, the base stock reacts and forms compounds that are known as peroxides which, in turn, form another class of compounds called free radicals. Both peroxides and free radicals are highly reactive species and cause the formation of acids and sludge, and increase the viscosity of the oil. This increase in viscosity of the oil is due to another chemical process known as polymerisation, which simply means the sticking together of the smaller fractions of the base stock to form fractions of larger chemicals that have higher boiling points and higher viscosities.

A question that is often asked is: What is the maximum temperature that this oil can withstand? Unfortunately, there is no answer, as the lifetime of the oil is not only dependent on operating temperature, but time as well.

What we need to know is: how hot, and for how long? An engine oil may happily deal with 150ºC for an hour or so, but degrade severely at 100ºC over a longer period of time.

Thermal degradation

The main effect of both oxidation and the loss of the thermal stability (sometimes called the loss of light ends) is an increase in viscosity. Increased viscosity can result in oil pump cavitation, poor fluidity on start-up, increased energy consumption, and the reduction of the oil's ability to shed water and release air. Poor fluidity, due to increased viscosity and cold starts, causes the majority of engine wear.

Another phenomenon that is related to overheating and which can result in oil degradation is micro-dieseling. Air can exist in oil in four forms: dissolved, entrained, foam and free. It is the microscopic bubbles of entrained air that cause the problem.

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These bubbles can be compressed, according to Boyle's law, to very high pressures which, in turn, can create very high temperatures on a microscopic scale. At times, these high temperatures can actually burn the tiny amounts of oil that surround the air bubbles, leading to the formation of resins, varnishes and lacquers.

Water washing

Whereas hydrolysis involves the chemical breakdown of the oil by the action of water, water washing is the physical removal of additives from the oil.

Almost all additives are formulated to be soluble in the oil's base stock, so will have limited solubility in aqueous (water) solutions. However, some additives are selectively soluble in water: some of the additives can become dissolved in the water, which will cause them to be removed from the oil. As water is not generally soluble in oil in high concentrations, this process results in the water washing of additives from the oil.

Hydrolysis is the chemical degradation of additives; water washing is the physical depletion.

Particle scrubbing

This is sometimes known as additive stripping. Some additives such as extreme pressure (EP) additives, metal deactivators, rust inhibitors, tackiness agents and friction modifiers work by attaching themselves to the metal surfaces that they are protecting. However, these additives are not selective as to which metal surfaces they bind to. If there is a large amount of very finely powdered wear metal sitting in the bottom of the sump, then this is where the additives will go.

Note that the more finely divided a mass is, the greater its surface area.

Wear debris has the effect of stripping the additives out of the oil where they do not do any good.

Surface adsorption

This is quite similar to particle scrubbing, in that surface-active additives bind to metal surfaces. This can happen selectively so that additives are taken out of circulation, or others are selectively adsorbed at the expense of others.

Particle scrubbing occurs when surface-active additives attach themselves to the wear debris lying in the bottom of the sump.

Surface absorption is the same phenomenon applied to intact metal surfaces.

Rubbing contact

Certain gear and EP additives work by chemically reacting with the metal surfaces of the gear teeth. Borate gear oils work by forming boron-based crystalline structures on the gear surfaces, which results in greatly improved frictional properties. With time, it is possible for these compounds to break down during rubbing contact – resulting in the loss of the effectiveness of the oil additive.

Other EP additives that contain sulphur and phosphorus react by forming metal sulphides and phosphides on the gear surface under the high contact temperatures and pressures encountered. These compounds have good frictional properties, too, but can be lost during rubbing and sliding contact.

Condensation settling

Some additives such as dispersants work by keeping contaminants such as soot in suspension; however, when the additives get used up, the soot will start to agglomerate and will eventually settle out of the oil, forming deposits on metal surfaces and collecting at the bottom of the sump.

Other additives that have interfacial properties, such as defoamants and demulsifiers, can be prone to condensation settling as well.

Filtration

A commonly asked question is: can an oil filter remove the additives from the oil? This is most often asked when ultra-filtration or centrifugal filters are being used on engines.

Can this super-fine filtration damage the oil additive package? Essentially, no: the filter will not remove additives. It is possible for a filter to remove the anti-foamant additive, as the molecules are quite big and can form micelles; however, the other additives will all be well less than one-tenth of a micron in size.

The additives that work by attaching themselves to contaminants such as soot and water can be removed by filtration, but these are essentially 'dead' additives that are being removed.

Aggregate adsorption

Often the laboratory will be presented with a bank bag full of sludge that looks incredibly like grease and has a very similar feel and texture. The customer wants to know what is contaminating the lubrication system.

Invariably, the sludge is a combination of very fine (less than five micron in size) wear debris (usually iron), coarse dirt, a trace of water and some oil residues. This mixture is held together by the oil itself, much the same way that milk may hold flour together in a batter.

The bottom of most sumps will have varying concentrations of this sludge, and surface-active additives will be attracted to these aggregates and be removed or stripped from the oil.

The oil residues will be part of the lubricant's additive package.

Evaporation

Some additives such as ZDDP are quite volatile, and it is possible for evaporation to take place, particularly where high temperatures are being experienced; this usually occurs in engine applications.

In the case of thermal degradation of oil, the loss of light ends may result in the apparent increase in additives. This is due to the loss of the more volatile components of the base stock, resulting in the apparent concentration of additives. This is particularly noted in engines that are overheating.

Sludge like this is often found at the bottom of many sumps

However, not all additives will appear to increase at the same rate, as the more volatile additives will evaporate as well.

Centrifugation

Components that are fitted with centrifugal filters, usually engines, may be prone to additive loss by filtration. Once again, these will tend to be additives that have interfacial properties and it is usually 'dead' additives that are being removed from the system.

Analysis of filter cake from these types of filters reveals very high levels of oil additives along with wear metals and contaminants.

This explains the most common mechanisms that cause lubricant additive depletion and degradation. As can be seen, the process is quite complex, and there are many competing mechanisms that are taking place at the same time.

Lubrication technology is very intricate, and each can of oil is a very delicate and sophisticated blend of many chemicals that all have very specific jobs to do. The base stock is an elaborate mix of compounds.

Additives can often compete with each other for active sites in an attempt to do the jobs that are required of them. Likewise, the degradation of the oil is a complex web with many competing processes taking place simultaneously.

Even the best oil, in the best equipment, operating in an ideal environment with perfect maintenance practices will eventually degrade, wear out and need to be changed.

John Evans
Diagnostic manager: WearCheck

Scrap tyre dilemma addressed – at a price

New green levy on tyres will cost fleet operators, but may solve SA's escalating scrap tyre problem

South Africa produces more than 10 million tyres annually and there are an estimated 60 million scrap tyres lying in stockpiles (many illegal and unsafe) or in the veld. With vehicle sales increasing year-on-year, the problem of dealing with scrap tyres and the lack of tyre or rubber recycling facilities have been escalating year after year. A solution to the problem is now in sight with the recent introduction of new legislation and a plan to establish a full cradle-to-grave process for the recycling of tyres.

The revenue expected to be generated from implementation of the Integrated Industry Waste Tyre Management Plan, developed by the Recycling and Economic Development Initiative of South Africa (REDISA), and which REDISA will use in accordance with the agreed apportioning of the levy, is estimated to be approximately R624 million.The Minister of the Department of Water and Environmental Affairs, Ms Edna Molewa, gazetted the implementation date of the plan on 28 November last year.

The long overdue initiative is aimed at ensuring a cradle-to-grave monitoring process of all tyres, preventing illegal dumping, preventing rubber from combusting in uncontrolled environments, and ensuring waste tyres are used effectively in recycling processes.

Tyres currently pose an environmental problem, both as pollutants and as breeding grounds for mosquitoes and other vermin; and many believe there is currently no effective technology for disposing of them in an environmentally friendly yet economically viable way.

"The informal sector traditionally has burnt the tyres, so that's obviously an environmental nightmare," said Hermann Erdmann, CEO for REDISA, an industry-independent not-for-profit organization. "The other problem is that if you're putting it into water and so on, it's also a water pollutant."

The REDISA plan addresses several issues. According to the REDISA website, the first objective is to avoid the scrap in the first place, which will be supported by education programmes for the general user on how to maximise tyre life.

The next priority is reuse. "Retreading is used far less in South Africa than in European countries, where even – and sometimes especially – high-performance tyres are retreaded," said Erdmann. "We need to fight the bad name that retreading has here, as well as drive the economics and volumes to make it more attractive."

The next objective is then to remove waste tyres from the South African environment through a subsidised collection and recycling process by attaching a value to scrap tyres, as is done in overseas countries. REDISA provides a business and employment opportunity for entrepreneurs who register with the organisation to remove tyres from their commun ity and deliver them to a collection point.

A key element of the REDISA plan is that it will specifically and exclusively target small and very small businesses. The aim is to address the waste tyre problem while at the same time creating jobs in the area where they are needed most: in the informal and small, medium and micro enterprise (SMME) sectors.

It was actually this latter part of the route that has been hanging in the air for almost two years. According to the South African Tyre Manufacturers Conference (SATMC), the promulgation of the Waste Tyre Regulation Act (WTRA) has been delayed by red tape and legal hassles such as the Competition Commission of South Africa having intervened – stating that it is against the Competition Act for companies (tyre manufacturers) to speak to one another on issues such as this.

Another reason for the delay was that the new legislation was expected to create an entirely new industry, one in which the government was determined to ensure it would be open to all and not monopolised by a few big players.

Consequently, the next few months will see the rollout of a network of collection depots – about 150 in rural areas alone

– and recyclers, augmented by the training and support of SMMEs such as entrepreneurs, one- and two-man operations, and the very informal sector. This support will range from advice to financial assistance, to which part of the revenue from the REDISA NPC plan will be devoted.

According to Erdmann, who has been working for several years on this project, some 5 000 people are already involved in tyre collection – many illegally – with their current objective being mostly to recover the high-tensile steel content. He estimates the plan will create approximately another 10 000 jobs as South Africa begins to fully embrace the need for recycling efforts.

Recycling

Tyre recycling is the process of recycling tyres that are no longer suitable for use on vehicles due to wear or irreparable damage such as punctures. Often, they become one of the largest and most problematic sources of waste due to the large volume produced as well as their durability.

But those same characteristics make them one of the most reused waste materials, as whole or shredded rubber is very resilient and can be reused in building projects ranging from highways to soccer fields and basketball courts, plant containers, shoe manufacture, etc.

Rubber has huge latent energy and can save on depleting fossil fuel reserves. Once the infrastructures are in place and the WTRA is implemented, power stations and paper factories may well be looking at rubber instead of coal to generate energy.

Tyres can also be recycled to produce hot-melt asphalt (typically known as crumb rubber modifier) recycled asphalt pavement and Portland cement.

Shredded tyres are now being used in landfills, replacing other construction materials, for a lightweight backfill in gas venting systems, leachate collection systems, and operational liners.

Overseas, shredded tyre material is used to cap, close or cover landfill sites daily.

In fact, the compounds produced from processed tyre scrap can be blended with virgin rubber compounds, maintaining performance while substantially reducing the raw material cost. The substantial economies of scale and value addition now make the burning of tyres entirely unnecessary.

It would appear, however, that REDISA has taken a very cautious look at the recycling part of the "route", and just as well. Many tyre recycling schemes have been launched worldwide, with the originators – usually manufacturers of expensive tyre-shredding machinery – claiming it can be a viable investment opportunity. But there are as many tales on the Internet of such schemes having failed and plants that cost R30m to build, only fetching R3m at an auction afterward.

A component of the REDISA plan will be allocated to research and development to create environmentally sustainable recycling processes. Processes for handling scrap tyres will be prioritised based on where they sit in the waste management hierarchy.

The plan will research and support initiatives to create products such as rubber, oils, bricks and tiles from the waste tyres, and finally converting the scrap tyres into fuel.

Cost

But it will come at a price. Funding of the plan will be through a per-kilogramme levy on tyres manufactured in or imported into South Africa.

It is important to understand that, one way or another, the country will have to carry the cost of dealing with waste tyres. This approach puts the cost where it belongs: at source. If you introduce tyres into the market, you must contribute up front to the cost of the eventual disposal of the tyres.

Tyre importers and manufacturers will be charged a levy of R2.30 per kilogramme of tyre, and they will obviously pass that on to motorists and transport operators.

Udo Rypstra

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NEWS FROM THE NBCRFLI

NBCRFLI
National Bargaining Council for the Road Freight and Logistics Industry
Your Road Freight Partner.

UPDATE ON THE NEW SIMPLIFIED COLLECTIVE AGREEMENT

The main aim of the new Main Simplified Collective Agreement is to rectify grammar, language and contradictions.

It has also been drafted in such a manner that issues of a similar nature are grouped together, allowing for better flow within the Agreement and improved understanding thereof.

According to the new Agreement, holiday pay bonuses (13th cheque), leave pay as well as sick and absence pay contributions will in future no longer be calculated on the number of shifts worked during a specific month or period. It will also be compulsory to submit monthly returns online.

The new Simplified Main Agreement was promulgated on the 6 January 2012, with an effective date of 16 January 2012. The changes stipulated in the Agreement will now be implemented. All the agents at the respective regions have received training on the Simplified Agreement. It is envisaged that further workshops will be held for industry stake-holders not later than the first quarter of 2012.

COUNCIL APPOINTS NEW COMMISSIONERS FOR 2011/2012 PERIOD

After the NBCRFLI AGM resolved on the matter, in September 2011, the Dispute Resolution section of the NBCRFLI finalised the appointment and renewal of Commissioners and related service level agreements.

The service level agreement is a yearly agreement signed by the Council and the Commissioners. All the Commissioners appointed are CCMA-accredited with high levels of expertise in dispute resolution processes.

“All the appointed commissioners received an improved service level agreement in respect of the new rate of pay for their services,” says Joe Letswalo, CEO of the NBCRFLI. “It must be noted that the new service level agreement fully commits the appointee to rendering a professional service.”

“We are proud to state that Council still maintains a good relationship with the CCMA and the Department of Labour,” says Ezra Bulose, Dispute Resolution Manager. “The NBCRFLI is a professionally managed bargaining council that provides a good service to its stakeholders. Our Commissioners play a vital role in delivering this service.”

VISION INT 0092-3B ROAD AHEAD

NBCRFLI TIMEOUS YEAR-END PAYOUTS.




In our quest to build a stronger better transport and logistics industry, the NBCRFLI **successfully processed and finalised all submitted year-end applications** by **23 December 2011**. The timely process was largely due to an impressive **96%** of Council's membership responding to our request for **online submissions** to ensure faster payouts and minimal human error. Our heartfelt thanks goes out to you.

Please note:

- All applications for annual/sick leave and holiday bonuses were paid out to employees or employers, as requested.
- Suggestions received from employers will be taken into account during this year's payouts processes.
- The submission of incorrect banking details and banking details for third parties posed a major hindrance to the payouts process. Please remember that we are not allowed to accept banking details for third parties. We also dissuade members from changing their bank account details shortly before or after payments are made. In order to ensure a smooth payment process, we implore employers to always submit their employees' correct banking details. Should you have any queries, please direct them to your regional office or designated agent.

Registered Office 31 De Korte Street, Braamfontein, Johannesburg, 2017
Private Bag X69, Braamfontein, 2017 **Tel** 011 703 7000 **Fax** 011 403 1555/1726 **Website** www.nbcrfi.org.za

NBCRFLI
National Bargaining Council for the Road Freight and Logistics Industry
Your Road Freight Partner.

Revolutionary new trailer hits SA

Dolphin offers a no-tears solution

The teardrop or dolphin trailer – a new concept in trailer design hardly noticed at the Johannesburg International Motor Show (JIMS) 2011 – has arrived in South Africa to complement the efforts local manufacturers are making to provide fleet operators with solutions that will help reduce the cost of road freight transport and lower carbon dioxide emissions.

South Africa's trailer designers are most innovative when it comes to designing trailers for local conditions, with new designs popping up all the time. In many cases, they follow overseas trends and designs that could work here, but usually have to be adapted to cater not only to our harsher operating conditions, but also regulations governing our maximum vehicle dimensions and axle masses, which are generous compared to the rest of the world.

But they also come up with homegrown designs that are of world-class standard. In the case of tippers, for example, there have been ongoing chassis modifications and newly shaped tipper bodies incorporating new hydraulic systems. Last year even saw the arrival of a multipurpose trailer from Top Trailers (designer of the original Sloper), which has also introduced sliding bin tippers, tridem side tippers and interlink side tippers.

The multipurpose trailer was in response to a radical new concept from Buks van Rensburg, owner of Buks Haulage Limited (BHL) Zambia, which hauls copper concentrates on the Copperbelt one way, and sulphuric acid or cooking oil on the return leg.

It saw Top Trailers and Flexi Manufacturers, the well-known producer of liquid and chemical tankers, producing a tridem semi trailer that has a 28.5-tonne side-tipping bin in the middle of two 8 000-litre tanks. Another version consists of a flatbed replacing the tipper body in the middle to transport copper plates or a 20-foot container.

Another major development last year was the introduction of the Imvubu ("tough as a rhino") seven-compartment, 50 000-litre aluminium tanker by GRW Engineering, whose tankers are so good they have been exported to the United Kingdom. The Imvubu is a cost-effective solution for fuel tanker operators who want to deliver sealed (SPD) or metered consignments, or both, to

fuel stations. This design incorporates the latest instrumentation equipment and vehicle components from the United States and Europe, including BPW Ltd's axles, suspension and ECO Disc brake system, released late in 2010.

Durban-based Serco came up with a new drive-through interlink trailer combination for Bakers and Manline with standout features such as new inter-leading double centre doors and ramp, a sliding fifth wheel and an aluminium rollover door – all of which allow a forklift to drive through from the rear trailer to the front trailer for through-loading.

Several of these and other new designs were exhibited at the JIMS 2011 Truck & Bus Show late last year, including other advanced tipper designs by Top Trailers and a 65m^3 high-volume semitrailer from Afrit.

Surprisingly, as I write (early January 2012), there have been few – if any – trade press reports on the latest exciting offering from SA Truck Bodies/Henred Fruehauf: the local version of the aerodynamic Teardrop semitrailer – a world first – which has become all the rage in the UK and Europe among leading fleet operators because it offers fuel savings averaging 11.3% and more payload volume than a standard trailer.

Built for Lafarge South Africa, it was exhibited at JIMS, and South African operators can now purchase it as a semitrailer or in the form of an interlink – another world first.

The arrival of this new concept in trailer manufacture in South Africa is an important event – not only for fleet operators, but also to their clients who want to be seen making a contribution to reducing CO_2 emissions in this country.

But let us first explain the teardrop concept:

Scientists have known for almost a century that the liquid teardrop is perfectly shaped from an aerodynamic point of view. Aircraft designers discovered this with the aid of the wind tunnel – the Brothers Wright had one – and knew about its low co-efficient drag (cD or cW), which was later to be determined through extensive computer analysis to be 0.27.

A German inventor, Edmund Rumpler, is widely reported to have been among the first to introduce the concept to the automotive industry in 1921 when he developed and launched

the *Tropfenauto,* or "teardrop car". This was followed in the 1930s by small teardrop camping trailers that gained international popularity when magazines such as *Mechanics Illustrated* published plans for these so-called "trailers for two" that could be hitched onto a (still brick-shaped) car.

It was not until the 1950s and 1960s that aerodynamics played a more crucial role in the design of racing cars, where engineers started to feel the need to match higher speeds with so-called lift and down forces, and had to add wings and spoilers to achieve better road stability, including cornering.

Aerodynamics was introduced to other sports equipment to reduce the power-sapping drag and to gain improved performance. For example, cyclists, skiers and tobogganists all use teardrop streamlining in their equipment.

It then moved into the design of passenger cars by the likes of Citroën, Porsche and Chevrolet and, more lately, in that of the Toyota Prius and Honda Insight.

It also moved into heavy commercial vehicle design, but was mostly limited to the front end of the truck-tractor through the use of a rooftop spoiler, an under-run and side skirts, plus side skirts on the trailer.

What is now called a revolution in trailer design is the result of designers looking at the entire vehicle combination – not only the truck-tractor – and extending the teardrop principle to the shape of the trailer.

According to MAN Nutzfahrzeuge, almost 40% of the total energy expended to keep a 40-tonne truck moving at a constant speed of 85 kilometres per hour on a flat road section is to overcome air resistance alone.

In Europe, however, strict limits are imposed on the aerodynamic improvements that can be made to trucks by manufacturers due to the legal requirements governing length and height. When developing the current TGS and TGX truck series, MAN was able – through aerodynamic streamlining – to improve the air resistance by 4% compared to the TGA predecessor model.

MAN said that, taking these existing general requirements into account, the best possible aerodynamic performance of the conventional front-drive truck had therefore already been achieved. MAN added that, if the legal (European) requirements were to change, the air resistance of trucks could be significantly reduced even further.

To prove the point, MAN presented an aerodynamically optimised semitrailer truck at the IAA 2010 in Hanover, but this time based on the "flow topology of a dolphin". The tractor, that had been extended by 80 centimetres together with the semitrailer, increased in height by 20cm and had a truncated rear end, achieved a sensationally low cD value of 0.30.

Maximum vehicle length and gross vehicle mass in most of Europe are limited to 16.5 metres and 40 tonnes respectively. Since the IAA 2010, and with European Union governments seeking ways to cut their CO_2 emissions, MAN, as well as Volvo and Renault, have been pushing for new 25-metre, 60-tonne articulated combinations. They say these are a greener alternative to the shorter trucks now plying European roads, as they can carry increased loads at a lower fuel consumption and reduced CO_2 emissions.

Such trucks, also known as longer and heavier vehicles or Gigaliners, already roar along roads in the US, Australia and South Africa – allowing a maximum vehicle length of 22m and a GVM of 56 tonnes.

But other than in the Netherlands, Finland and Sweden, they are still outlawed in Europe where roads are generally too narrow; and environmentalists, as well as the road safety brigade, are strongly opposed to the introduction of these "dangerous behemoths".

The truth is that a leading UK trailer and truck body manufacturer, Don-Bur, based in Stoke on-Kent in Staffordshire, has been supplying teardrop-shaped semitrailers to many reputable fleet operators such as DHL (on contract to Mark & Spencer), UK Mail, Royal Mail and Wincaton Lafarge and now also to Lafarge in South Africa.

Don-Bur claims it was the first to come up with the teardrop concept in 2006 and, having patented it worldwide, it appears to have stolen some kind of a march on MAN.

Commenting in *The Economist* on MAN's Dolphin concept, Don-Bur said: "Whilst being the most aerodynamically efficient shape, it also restricts rear aperture and load space to the point where viability is questionable. In addition, their design would appear to be in breach of the Don-Bur Teardrop trailer patent!"

Don-Bur describes its concept as "a unique commercial vehicle shape that mimics the natural and perfect aerodynamic properties of a liquid teardrop. The streamlined shape generates significant fuel savings and an increase in cubic capacity."

Commenting on the rationale behind pursuing the concept, it said truck-tractor and trailer combinations have been some of the least aerodynamic shapes found on the planet and have contributed some of the largest proportions of the country's CO_2 emissions. "This because they are designed to carry as much load as possible, as efficiently as possible and to withstand the rigours exerted on them by the industry," said Don-Bur.

"Plastic moulding can be prone to damage, and shaping of the bodywork can just eat into valuable load space. In addition, until a few years ago, few considered that aerodynamics would play such a huge role on a vehicle which is 44 times heavier than its passenger-carrying counterpart."

According to the company, in the UK a standard 13.66m long, 4.2m high trailer has 78m^3 cubic capacity, compared to a 13.66m Teardrop trailer at 86m^3 – adding that there is no effect on load footprint. It says a standard 13.660m Teardrop trailer will accommodate 26 UK pallets.

The impact on CO_2 emissions is directly proportional to fuel consumed (2.63kg CO_2 per litre diesel), and one combination travelling 60 000 miles per annum at 8.5 miles per gallon will consume 32 080 litres of diesel and generate 84.37 tonnes of CO_2. A 10% reduction in fuel use will cut CO_2 emissions by 8.4 tonnes.

The initial Teardrop vehicles provided 10% extra volume and fuel savings averaging 11.3%. Don-Bur has provided a number of case studies that can be accessed via its website.

Later last year, Wincanton Lafarge and Don-Bur worked closely to design and manufacture the first 15.65-metre teardrop pillarless tri-axle unit in anticipation of the specialised vehicle orders. The new 2.05m longer trailer was reported to have benefited from an average 15% additional load capacity, or four extra pallets – a feature that was expected to increase efficiency and reduce fuel consumption and CO_2 emissions further. Officials of the UK Department for Transport approved the controlled trials of the so-called high-volume trailers (HVTs) in November last year.

One of the reason Lafarge SA is the first fleet operator to go for the concept is that its French-based parent company was entered into the global Dow Jones Sustainability Index in 2010 in recognition of its sustainable development actions. The organisation had a target of 20% reduction of CO_2 per tonne between 1990 and 2010, and surpassed this target by achieving a 21.7% reduction.

The organisation has now gone one step further in enhancing its sustainability initiatives by embarking on a massive CO_2 reduction plan targeted around its distribution, including that in Africa. This plan is now being implemented by Lafarge Gypsum South Africa in partnership with Don-Bur, SA Truck Bodies and MAN Truck & Bus.

The local subsidiary says technical developments have embraced creativity to meet the business' core objectives of introducing one of the safest vehicles operating on South African roads; designing a vehicle specification that would inherently reduce the company's carbon footprint; and increasing payloads to enable fewer trips.

Jean-Paul Croze, managing director of Lafarge Gypsum South Africa, announced that he intends to create a sustainable environmental inheritance in South Africa through the implementation of the most advanced technology available in the world. According to him, the new vehicle specifications for Lafarge Gypsum South Africa will become the benchmark for logistics across Africa.

"Aerodynamics, rolling resistance, inertia, gravity as well as drive-line losses are the four major fuel-consuming culprits of transportation. While the Teardrop concept of Lafarge mimics the perfect aerodynamic properties of a natural teardrop, its attention is on lowering turbulence and drag. Less drag results in lower fuel consumption," he added.

Controlled trial results in Europe of Lafarge Teardrop trailers have shown fuel savings of 8.5% at a "negligible" increase in capital cost, no effect on residual values, no reported operational issues, and an increase in payload by reducing the vehicle's tare weight by 1.5 tonnes.

Lafarge said that the second generation of Lafarge Teardrop trailers that followed were further advanced by the pillarless design; further use of lighter materials, which reduced the net tare weight by a further 1.2 tonnes; buckleless curtains; and side skirts (a potential area for storage); and further fuel savings of 1.5%.

"From the learnings gained within Lafarge Europe, the Teardrop concept is now being introduced into South Africa in three variations (Super-link, tri-axle articulated vehicle and a 15-tonne Rigid). Formal trials are being conducted to quantify the fuel saving benefits, but these are forecast to be around 9% to 13%," it added.

"Payloads of all three vehicle types will increase significantly and will set the benchmark for what is legally achievable on South African roads."

Udo Rypstra

Pillars of road safety

Programme launched to ensure safer roads

The recent opening of the new Scania Service Centre in Cape Town exhibited the long history that the manufacturer has had in the vehicle industry and its long-standing commitment to advance road safety through knowledge, skills and attitude. This is exemplified by the core values of the company: expanded service capacity, higher efficiency and greater flexibility.

But, despite the festive atmosphere that prevailed at the opening, the 2011 holiday period has once again proven that the safeguarding of roads – in particular those of South Africa – can never be undertaken in a vacuum.

Mounting deaths and violent injuries meant that this past festive season was anything but festive for many unfortunate South Africans. Why is it that we have more road deaths in one month than other countries have in an entire year?

Any form of training places emphasis on the acquisition of knowledge, skills and attitude. Which one of these are we failing to acquire?

In 2011, the United Nations launched its Decade of Action for Road Safety. This followed the highly successful First Global Ministerial Conference on Road Safety hosted by the Government of the Russian Federation in November 2009. A Decade of Action for Road Safety 2011–2020 was officially proclaimed by the UN General Assembly in March 2010.

The impetus behind this programme is the fact that road traffic crashes take the lives of nearly 1.3 million people every year, and injure between 20 million and 50 million more. Road traffic injuries have become the leading cause of death for people aged 15 to 29 years, and over 90% of road traffic deaths and injuries occur in low- and middle-income countries, which have only 48% of the world's registered vehicles.

To address these issues, the following five-pillar approach has been formulated:

Pillar 1: Road safety management

This is to encourage the creation of multi-sectoral partnerships and to designate lead agencies with the capacity to develop and lead the delivery of national road safety strategies, plans and targets, underpinned by the data collection and evidential research to assess and monitor the implementation and effectiveness of these programmes.

Much effort is being expended in the Western Cape to ensure an effective functioning of structures takes place and the necessary partnerships are in place to enhance road safety.

Besides Scania, which is supplying vehicles for use in the upcoming International Driver of the Year competition (which will be hosted in South Africa), South African Breweries is active in combating drunken driving. It is sponsoring the creation of Alcohol Evidence Centres (Safely Home Anti-Drunk Driving Operational War Rooms – SHADOW centres) in the Western Cape. SAB has pledged a million rand to each centre, of which two have already been established (excluding Worcester, mentioned below).

Despite the perceived setback regarding the use of evidentiary breath-testing machines based on the judgement in the case of State vs Hendricks, a great deal of work is being done to ensure the points as highlighted are being addressed.

The Western Cape Provincial Department of Transport and Public Works has established a Safely Home programme and is managing a number of projects in support of these pillars.

These projects include the Average Speed Over Distance initiative on the R61 between Aberdeen and Beaufort West, which is intended as a traffic calming and speed reduction measure, as well as the further rollout of SHADOW centres, with the next one soon to be launched in Worcester.

Another project was the December launch of the Safely Home website (*http://safelyhome.westerncape.gov.za*) with crash witness footage, which has proven to be very successful, albeit somewhat contentious.

The proper collation and analysis of crash statistics is ongoing.

Pillar 2: Safer roads

This is meant to raise the inherent safety and protective quality of road networks for the benefit of all road users, particularly the most vulnerable (pedestrians, cyclists and motorcyclists). This will be achieved through the implementation of road infrastructure assessment and improved, safety-conscious planning, design, construction and operation of roads.

Pillar 3: Safer vehicles

This pillar aims to encourage the universal deployment of improved vehicle safety technologies for both passive and active safety, through a harmonisation of relevant global standards, consumer information schemes and incentives to accelerate the uptake of new technologies.

Vehicle manufacturers such as Scania are vying for top honours to ensure they have the premium brand on the market.

Pillar 4: Safer road users

This is meant to develop comprehensive programmes to improve road user behaviour. Sustained or increased enforcement of laws and standards, combined with public awareness and education to increase seat belt- and helmet-wearing rates, as well as to reduce drunk driving, speed and other risk factors.

Specific support in this regard is provided by Scania and many others, in the form of in-house driver training. This training covers everything from pre-trip inspections to advanced driving techniques pertaining to gradients, auxiliary braking systems, and green band driving.

It even includes shut-down and preparation procedures in its curriculum.

Pillar 5: Post-trauma care

This must improve the post-crash responsiveness of emergency services and improve the ability of health services to provide appropriate emergency treatment and long-term rehabilitation to crash victims.

The aims of these programmes are interlinked. Therefore, no role-player can function independently from the others, and any activity must be undertaken in conjunction with all others.

David V. Frost
Programme manager
Safely Home

Freightliner still a popular choice for long haul fleets

The Detroit Diesel 60 engine – a powerhouse for long haul trucking

Running smart gives owners of long distance transport fleets the edge in an increasingly competitive market and the Freightliner brand of trucks lives up to its promise to provide customers with exactly this advantage.

Freightliner, a division of Mercedes-Benz South Africa (MBSA), has made inroads in capturing the long haul truck segment since its introduction into the country in 1995, due to its range of heavy duty options.

The two models of this American truck brand available in South Africa (Argosy and Columbia) run smart on Freightliner innovation and technology, offering top performance by maximising the payload while also lowering overall cost per kilometre due to exceptional fuel economy, ease of maintenance and long-term reliability.

MBSA divisional manager for Freightliner, Ian Riley, explains that having a choice of the engine that powers the truck is a major drawcard for owners. "The Freightliner is available with either a Detroit Diesel or Cummings engine," he says. "Truckers are very brand loyal, preferring to stick to products with a tried and tested track record. By providing this choice of engine, we are able to keep our clients happy."

The Detroit Diesel Series 60 engine offers enhanced performance and less maintenance. In addition to this, all Freightliner Argosy trucks sport alloy wheels and Michelin tyres as standard equipment. Two versions of the Freightliner Argosy Detroit Diesel are on offer. The DDC 12.9l-1 650 produces 500hp and 2 237Nm (1 650 lbs/ft) of torque, with a larger version equipped with a 14-litre Detroit Diesel engine, also with 500hp producing 2 500Nm (1 850 lb/ft) for applications where high performance is required.

The Cummins-powered offering is the Cummins ISX500 and ISX530, fitted with a double-bunk as standard equipment.

All Argosy units are equipped with a 725kg capacity front axle, which allows up to 800kg extra payload when pulling a tri-axle trailer.

The Columbia 112-34 truck tractor continues to be a popular choice in fleets hauling tankers, because of the outstanding fuel economy and low tare mass which allows payload to be maximised.

The conventional bonneted profile of the Columbia enables it to slip through air more efficiently than the cab-over trucks, which contributes significantly to its excellent performance when hauling three-axle tanker trailers.

Customised solutions keep the Freightliner on the road

Freightliner product manager, Duncan Prince says: "In 2009, MBSA made the decision to offer in-house support for the Detroit Diesel engine, a move that has seen us being able to increase the availability of parts in our dealer network." This has a knock-on benefit for Freightliner owners, cutting down-time to a minimum.

Freightliner is also one of the few trucks offering its own in-house finance, insurance and maintenance contracts. This one-stop-shop mentality does not end there, however. "Customised driver training offered by MBSA's team of experts gives clients yet another dimension to increase their chances of success, allowing them to get the best out of their trucks no matter the circumstances they encounter", says Prince.

Exciting times lie ahead for loyal supporters of the Freightliner in 2012, with the introduction of new models, making it even easier for the trucking industry in South Africa to run smart.

The Detroit Diesel 60 engine – a powerhouse for long haul trucking.

MBSA divisional manager for Freightliner, Ian Riley backs the Freightliner as a truck for the future

Walk, says WHO

Transport and energy trends

The deadly combination of transport-related urban air pollution and traffic injuries kills some 2.6 million people every year, mostly in low- and middle-income countries; and the knock-on effects of our modern urban lifestyles produce a wide range of ailments and maladies. According to Dr Carlos Dora from the World Health Organization (WHO), we could remediate many of these ills – and do our embattled climate a big favour – by going back to the basics and reclaiming the benefits of the old-fashioned village lifestyle.

Speaking at a side event at the 17th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 17) on "Health and Development in Climate Change Mitigation and Adaptation" – convened by the WHO in collaboration with the South African, United Kingdom and Northern Ireland governments – Dr Dora told an appreciative audience that safe cycling and walking are vital components of the transport systems of the future: good for health, and good for the climate as well.

A new WHO report, officially released at the 6 December event, places great emphasis on the positive environmental and health benefits that can arise from a combination of collective rapid transit and dedicated walking or cycling systems.

A recent Intergovernmental Panel on Climate Change study of several Latin American cities demonstrated that improved bus rapid transit (BRT) systems, combined with pedestrian upgrades and cycleways, had a significant greenhouse gas mitigation potential, at relatively low cost.

Alongside the cost-effective reduction of carbon emissions, such systems have the added benefits of promoting healthy physical activity, reducing the risks of health-harming air pollution and noise stress, and lowering traffic injury rates among transit users, pedestrians and cyclists.

These benefits may be further enhanced by a "proximity planning" approach to urban design, which intermingles commercial and residential areas so that commuters and students can walk or cycle to work, school or college; users can easily access recreational and service facilities; and children, the elderly and the disabled can move around safely and easily. In this way, greater health equity is achieved while carbon emissions are simultaneously reduced.

"It's a win-win situation," said Dr Dora – and his co-panellist Jeremy Cronin, who is not only our deputy minister of Transport, but also a good communist, an acclaimed poet and a lover of the outdoor life, could not have agreed more. The latter reminded the audience that 15 000 people are killed on South African roads every year, of whom 40% are pedestrians.

Walkers of the world, unite!

Don't ride alone

Electric cars are a big talking point in transport circles these days, but a November 2011 position paper from the International

Association of Public Transport cautions against "individual electromobility" as a carbon reduction strategy, arguing that "future urban mobility cannot be sustainable if it relies solely on electric cars". Rather, energy-efficient collective transport will be the answer to regulating consumption and emission in the cities of the future.

As the report points out: "a green traffic jam is still a traffic jam". Individual electromobility does not solve congestion. It does not improve urban traffic efficiency, either. Other solutions are needed, and these will rely as much on changes in urban design and human collective behaviour as the development of new fuel technologies.

The cities of the future are likely to see greater urban density along major transport corridors, with car-sharing, bike-sharing and car pooling, alongside conventional public transport, as the norm.

Simultaneously, urban design will strive to ensure residents can enjoy "convenient and reliable lifestyle services" within walking distance from home, work and recreational areas.

In Europe, up to 50% of public transport (commuter railways, metro, light rail, trams and trolleybuses) is already powered by electricity, conveying some 90 million passengers daily – and these figures will increase dramatically in coming decades.

The report argues that public transport, which consumes roughly half as much energy per passenger-kilometre as private vehicles, is likely to maintain its competitive edge in terms of energy consumption.

As the report points out, electricity is not green by nature, and the primary energy source – whether fossil fuel combustion, nuclear plant or renewables – has to be taken into consideration in assessing the carbon footprints of the various transport modes. If the primary source is counted in, the greenhouse gas emissions of electric cars are not significantly different from today's diesel or gasoline cars.

A much more significant variable is vehicle space occupancy. More passengers per vehicle automatically generates improvements in carbon performance.

The report calls for a "decarbonisation of transport", in terms of which the use of electrified public transport – combined with walking, cycling and private vehicle sharing – is seen as the best route to a low-carbon future.

A "modal shift" to rail

Railroads are among the most romantic modes of transport, as the words of many a country ballad attest. But they are being increasingly touted as the most carbon-efficient way to get from point A to B.

The International Union of Railways (UIC) hosted a side event at COP 17, entitled: "Are roads the only option? Public transport in emerging economies", which highlighted emerging economies such as Turkey, Morocco, Vietnam and Ethiopia, where rail projects are seen as a low-carbon transport solution for the future.

Transport experts at the event argued for a combination of factors in reducing carbon dioxide emissions: using more energy-efficient technologies; reducing the need to travel; and recognising that which scientists are calling "a modal shift" in our approach to transport.

Modal shifts occur when one mode of doing something develops a comparative advantage over, and ultimately replaces, others in the same sector. Moving from inertia through a shift phase to a new equilibrium, modal shifts represent seismic movements from one dominant paradigm to another. We are currently moving beyond the situation of inertia that has held the transport sector in its grip for decades as the unsustainability of carbon dependence becomes increasingly apparent.

According to Alexander Veitch, head of UIC's sustainable development unit: "Transport is already the biggest user of fossil fuels worldwide, and investment in energy-efficient rail systems can help countries to provide affordable public transport while reducing their carbon emissions."

According to the International Energy Agency, transportation accounts for more than half of the world's liquid fuel consumption; and under a business-as-usual scenario, this could increase to 60% by 2035. Within this alarming picture, rail currently accounts for only 2% of emissions.

A recent European Commission Transport White Paper shows that existing infrastructure alone could accommodate a 30% to 40% growth in train kilometres by 2020, with increases in rail freight traffic of 83% and passenger transport by 23%.

The report suggests that, by 2050, rail could be the dominant mode for long-distance transport in Europe, with an accompanying greenhouse gas reduction of 238 Mtonne of CO_2 equivalent per annum, or 21% of total transport emissions. While this would require heavy investment in rail infrastructure – between €1 300bn (R16 020bn) and €2 000bn (R24 634bn) – full internalisation of external and infrastructure costs could contribute significantly to the funding of such a project.

Compiled by Andy Mason
Cartoon by ND Mazin

Tough times ahead for Ndebele

Road toll nightmare looms

Minister of Transport Sibusiso Ndebele faces a number of tough challenges this year, in providing a proper playing field for those engaged in land-based freight and passenger transportation. While solving the toll road issue is the most urgent in order to prevent a national strike in February, it is merely one of a multitude of challenges.

The transport sector is a key demand-driven input sector that has been identified by all economic policy trajectories as one of the drivers of economic growth. The sector has important spillover effects that affect the entire economy. An improvement in transport decreases the input costs of industry, which in turn improves production costs and reduces inflationary pressures.

Overdue now is a transformation within the land-based freight transportation sector. Until the early 1990s, road freight played second fiddle to the railways, which had become the preferred freight transport mode through the notorious permit system.

Some road freight companies became big, simply by acquiring companies or small transport enterprises that had been granted permits; and they became even bigger during the long deregulation process, through achieving better economies of scale and higher profit margins.

They mushroomed also as a result of the closure of railway branch lines, lack of maintenance of the remaining rail infrastructure and rolling stock since the '80s, and the deterioration of service levels.

It is common cause that this led to an improper balance of more than 80% of general freight being transported by road, which is more expensive; and the rest by rail, which should be a cheaper alternative .

Major transport companies now dominate the industry with tariffs that pose a barrier to new entrepreneurs – or small, medium and micro enterprises (SMMEs) – entering the road freight transport industry. Many still try to do so with unsustainable tariffs, vehicles that are unroadworthy, and drivers who are unskilled, reckless and probably underpaid.

The Department of Transport (DoT) therefore faces four major challenges with regard to the road freight transport industry:

The first challenge is to seek a balance on the so-called road versus rail issue, with the implementation of the National Freight Logistics Strategy that seeks to put freight – which traditionally should not be carried by road – back on rail; and the National Transport Master Plan 2050 strategy, which is "to create capacity ahead of demand through developing a dynamic, long-term land use or multimodal transportation systems framework for the development of network infrastructure facilities, interchange termini facilities, and service delivery".

It is further expected to affect regional integrated transport plans such as the one being drawn up for Gauteng.

From a railway point of view, this is going to be a time-consuming and costly exercise for Transnet Freight Rail (TFR) as it tries to recapture the freight it has lost to the road freight industry. In this regard, TFR has offered its branch lines to be operated in public-private partnerships with stakeholders in the supply chain industry in the hope that many of these unprofitable lines can be used in a bimodal setup that should help reduce the cost of logistics.

The second challenge is to empower those already in the industry through the Transport Sector Broad-Based Black Economic Empowerment Charter, by providing them with a greater equity share in the industry, accompanied by increased skills transfer so that the imbalances of the past can gradually be removed. Here we also look at the removal of the tariff barrier that prevents new entrepreneurs from entering in this sector.

The solution would be by way of subcontracting SMMEs and owner drivers, through job creation and mapping out a proper

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career path for school-leavers. The latter should make the industry more attractive to new entrants than it is at present.

The third challenge is to provide and maintain a national and secondary road infrastructure to facilitate both public and road freight transport while containing the cost per kilometre of moving people and goods.

As with rail infrastructure, the government has committed itself to spending billions of rands on new or improved national road and freeway infrastructure such as that for the Gauteng Freeway Improvement Project (GFIP), the Cape Winelands and Wild Coast Routes; as well as for a shorter and safer alternative to the crash-prone Van Reenen's Pass on the main export/import corridor between Durban and Gauteng.

It is a worldwide trend to fund costly improvements and extensions to national road infrastructure via the "user pay" principle, which means the tolling of certain road sections.

The Road Freight Association (RFA) has indicated that it does not object to the implementation of that principle per se, but to the "severity" of the e-tag tariffs to be charged. Along with other business organisations, it has requested the establishment of a separate fuel levy and a ring-fenced fund to finance toll road improvements and extensions.

Following strong objections from other organisations – including labour unions – for the complete abolishment of tolling, and these new road modifications and extensions, Ndebele has requested the incoming board of directors (1 December 2011) of the South African National Roads Agency Limited to prioritise the resolution of the financing model regarding the cost of GFIP Phase 1, amounting to R20bn.

This will be complementing other processes on the matter under way i.e. the Ministerial Task Team appointed by Cabinet and the planned public consultative processes, during 2011/2012, which will seek to come up with viable funding options for the improvement of road infrastructure in the future and the servicing of the debt with regard to GFIP Phase 1.

Meanwhile, all the other projects, including GFIP Phase 2, have been put on hold.

It is imperative that all parties concerned, including the RFA, take advantage of the planned consultative processes and share with the government their views on how South Africa could fund better road infrastructure without increasing the cost of logistics and hurting the pocket of the consumer.

The government is now well aware of the fact that the country's secondary road network has been decaying over many years due to a severe lack of maintenance. To this end, the DoT extended the S'hamba Sonke Roads Programme, which Ndebele initiated as a former KwaZulu-Natal MEC for Transport.

S'hamba Sonke is the result of the DoT's plea to President Jacob Zuma for dedicated funding for road maintenance. It started for the first time on 1 April 2011 with an amount of R6.4bn, R7.5bn for the 2012 financial year and R8.2bn by 2014 – totalling over R22bn by 2014. This amount is a conditional grant dedicated to road maintenance, and the DoT has to report on a quarterly basis to National Treasury on the performance of this grant.

The fourth challenge is the matter of road safety, which has reached national crisis proportions.

Ndebele has been chosen as the Southern African Development Community (SADC) Regional Road Safety Champion. Ministers launched the SADC Decade of Action for Road Safety in support of the United Nations Decade of Action for Road Safety 2011–2020, and approved the Draft SADC Road Safety Awareness Campaign Strategy and Action Plan 2011–2014.

With more than 1 200 people having died in road accidents in South Africa over December 2011, it can be expected that law enforcement will further increase, particularly with Easter coming up.

As the taxi industry, the road freight industry has an appalling track record as far as road crashes are concerned. These crashes are due to a variety of factors including bad driving skills, long driver hours, overloading, and badly maintained vehicles.

Implementation of the full Road Transport Quality System, which was a prerequisite for deregulation anyway, as well as the points demerit system, may well be Ndebele's next step to combat the slaughter.

Another positive step is that, in conjunction with the Department of Basic Education, road safety education is now being introduced at schools as part of the lifeskills curriculum, to help Grade 11 pupils acquire learner's licences and Grade 12 pupils their driving licences.

This could be the first step toward a career in the road transport industry as well, if the road freight industry were to take steps to improve professional driver training and make the profession more attractive to school-leavers. After all, the DoT, together with the South African National Taxi Council, launched the Transport Training Academy in the Free State in October last year to improve the skills and capacity of taxi operators, drivers and general staff within the industry, and thereby provide an excellent service to all customers.

The DoT and the road freight industry should further explore the academy route, as the latter's dependence on driver training service providers is obviously not producing the desired result.

Among other important challenges are the need for smoother bidirectional trade and traffic flows between South Africa and neighbouring countries through one-stop border posts, and lower cross-border permit fees that have seen extraordinary increases .

There are many other road freight issues that have to be addressed. In this regard, when he addressed the 2011 RFA Convention last year, Deputy Minister of Transport Jeremy Cronin expressed the need for regular monthly meetings between senior DoT and RFA officials. It is hoped the latter will take up that challenge and, in the process, become even more representative and therefore speak with one voice for the entire industry as we drive into a better future for all.

Andy Cole

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REPUBLIC OF SOUTH AFRICA

Merger strengthens ZF's service offering

ZF Services South Africa (Pty) Ltd and the aftermarket department of ZF Sachs South Africa (Pty) Ltd merge as of 1 January 2012

ZF is one of the world's leading automotive supply corporations in the powertrain and suspension technology sectors, with around 60,000 employees at 125 production companies in 26 countries.

The ZF Group ranks among the 10 largest automotive suppliers in the world.

ZF Friedrichshafen AG, our parent company, has realigned its business activities globally with the objective of providing an international ZF standard of sales and service to the aftermarket in the automotive industry.

The integration of ZF Sachs South Africa (Pty) Ltd aftermarket division into ZF Services South Africa (Pty) Ltd, effective as of 1 January 2012. Strengthening our aftermarket part sales and providing excellent customer service to the automotive market is our number 1 priority. The extension of the aftermarket sales business with products and services include the following product brands: Sachs, Lemförder, Boge, and ZF Parts.

ZF Services SA will continue to offer the services of repairs, part sales and technical support of transmissions, steering's and axles to the automotive market. We are pleased to add the ZF Sachs Aftermarket product range to our current part sales portfolio. In time the Lemförder and Boge parts will be added to our product portfolio.

ZF Sachs SA's distributors will continue to supply their current product i.e. clutches and shocks, however they will not supply ZF Services SA parts i.e. transmission, steering or axle parts.

ZF Services SA's distributors continue to supply transmission, steering and axle parts, however they will not supply the ZF Sachs SA's parts i.e. clutches, shocks, Lemförder, Boge parts.

Please note the ZF Services SA (Tel : +27 11 457 0000) contact persons responsible for the different functions in the company is as follows:

Managing Director – FX Laubscher
OE Applications and Sales - Derik Fourie
Technical Support and Workshop Activities - Pierre van Zyl
Aftermarket Sales – Colin Campbell
Operations - Graham Daly
Finance – Kenneth Brummer
Human Resources – Sibusiso Mngomezulu
Marketing – Pieter Potgieter
Cape Town Branch Manager – Derrick Geary

ZF Sachs SA will continue to offer Original Equipment Supply (OES) clutches to the vehicle manufacturers via their Alrode plant.

For further information regarding ZF Services South Africa (Pty) Ltd or to give feedback email our marketing department at marketing.grm@zf.com

Press contact:
Pieter Potgieter, Marketing Services Co-ordinator
Tel. +27 11 457 0000, Fax: +27 11 453 8597, E-mail: marketing.grm@zf.com

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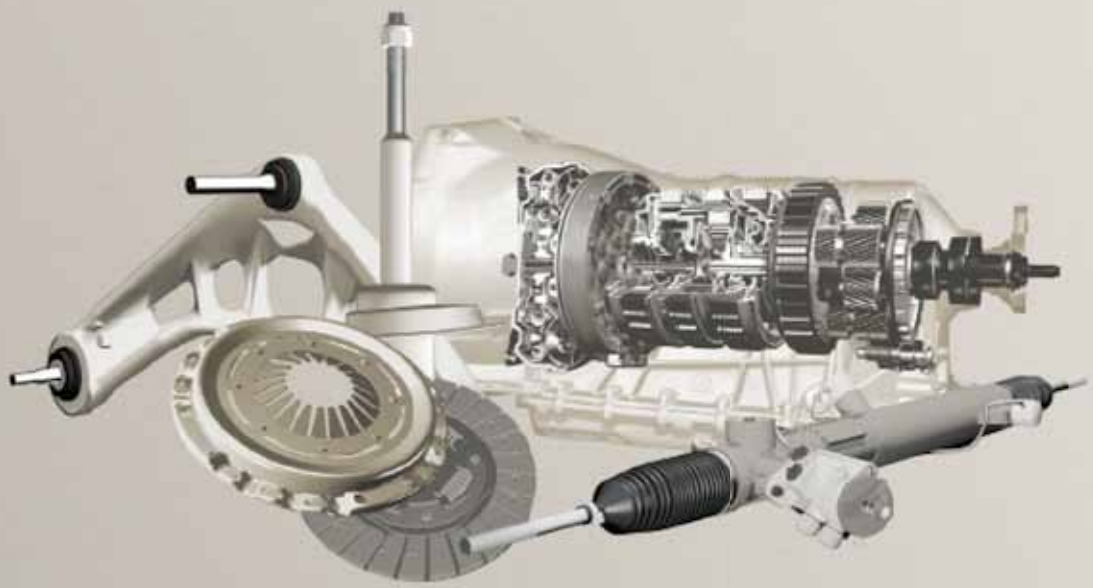

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Driveline and Chassis Technology

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Rustenburg Rapid Transport on the fast track

Public transport integral to sustainable growth

Rustenburg, South Africa's fastest growing city, has a sustainable growth plan in which public transport plays an integral role. According to Rustenburg Local Municipality's MMC for Transport Councillor Happy Serongoane, "The City of Rustenburg aims at being a partner in local government's commitment to taking action against climate change, and we support the Sustainable Cities programme to develop strategies for the sustainable use of finite resources. We would like to see Rustenburg become a model of best practice for environmental sustainability in a developing country."

To further this end, the Rustenburg Rapid Transport (RRT) project team members went to last year's 17th Conference of the Parties of the United Nations Framework Convention for Climate Change (COP 17) and helped organise a "Bridging the Gap" event promoting sustainable transport as a means to cut carbon dioxide emissions.

In attendance were the Transport ministries of South Africa, Columbia, Indonesia and Germany and representatives of multilateral development organisations such as the Asian and Inter-American Development Banks. On the agenda were low-carbon transport strategies and the use of nationally appropriate mitigation actions to fund such strategies.

Road Ahead spoke to Pauline Froschauer, RRT project manager.

What, for you, were the most important take-home points from COP 17?

Not being involved in the actual negotiations, for me personally, COP 17 was largely about networking and advocacy: meeting up with international colleagues one has not seen for a while, meeting new people from the transport community around the world, and discussing the latest ideas with regard to implementing low-carbon transport.

The event, which we organised in conjunction with the "Bridging the Gap" coalition under the auspices of the South African Department of Transport, is an example of the type of advocacy work one tries to do at events such as COP – bringing together Transport ministries and multilateral development organisations to find common ground and hopefully funding for sustainable transport projects.

And the vegetarian pizza and home-brewed beer in the food court were pretty good, too!

What does "Bridging the Gap" mean for Rustenburg currently and in the future?

"Bridging the Gap" is an international coalition of organisations – the German Technical Co-operation Agency/GIZ, Veolia Transdev, Institute for Transportation and Development Policy, International Association of Public Transport and Transport Research Laboratory United Kingdom – that have joined forces to encourage international action to slow down the growth in carbon emissions in the land transport sector.

I think the concept of 'bridging the gap' between the different role-players in the transport arena in South Africa is the key to successfully implementing our transport policies. This applies within a city such as Rustenburg, between Rustenburg and other cities, between spheres of government and between operators and government.

We have embarked on a transformational public transport path in South Africa and we need to work toward a common vision for our future cities and the role of public transport within them.

Could you describe the project's past and future milestones?

After determining that the project was feasible, the first milestone was putting together the right project team. I am confident we have some of the best people in their fields working on the RRT project.

Developing good working relations with local public transport operators was a key milestone, and we look forward to entering the formal negotiation process with them this year.

Much of 2011 was spent in detailed planning and preliminary design work.

We look forward to putting out construction tenders for fast-track sections of the bus rapid transit busway and for the Transport Management Centre (TMC) in the next few months.

Other milestones will be the final design of the stations, the establishment of a new operating company or companies for the future public transport system, the branding and naming of this system, the specification and ordering of new buses, and the establishment of a Rustenburg Transport Agency that will manage the future system.

What are the time- and budget constraints?

The RRT project is funded by a conditional grant from National Treasury, called the Public Transport Infrastructure and Systems

Back left to right: Johan Bosman, Tshiamo Sedumedi, Fabrisio Gonazelez *Front left to right: Pauline Froschauer, Sara Butchart, Leonie Van Wyk*

Grant (PTISG). It also funds similar projects in up to 12 cities around South Africa – projects such as Rea Vaya in Joburg and MyCiTi in Cape Town.

Each year, National Treasury and the Department of Transport jointly consider grant applications from each city, together with the progress that has been achieved in the previous year. So apart from the fact that the total PTISG cake is limited, the annual budget allocated to Rustenburg depends on how strongly we motivate our case and how strongly we perform.

We have set ourselves a deadline of 2015 for the new public transport system to start operating and we feel that this is a feasible deadline if we all work together.

What is working in your favour, and what is proving to be a challenge as far as your stakeholders are concerned?

I do not think we look at stakeholder engagement as what does or does not work in our favour. The RRT project aims to bring a quality public transport system to the people of Rustenburg. Clearly, different stakeholders approach the project from different viewpoints, with different needs and concerns. That is why the stakeholder engagement process is so crucial, and why Rustenburg encourages everyone to become a part of the project in some way.

The most challenging aspect is probably ensuring the message gets out to all communities including the peri-urban and rural ones, and that the nature and envisaged outcomes of the project are clearly understood. People can only make meaningful input if they are given all the information they need in a clear and timely manner.

How will RRT mesh with current or future Rustenburg initiatives?

The RRT project needs to be seen within the context of Rustenburg city development as a whole, so it meshes with all projects that involve spatial development and movement, and the myriad factors that influence these.

Rustenburg is currently reviewing its development strategies and plans to ensure the programmes and projects contained in them are consistent with the municipal vision for 2025.

What is the localisation component for the manufacture of the RRT's hardware?

The hard components of the RRT project incorporate infrastructure such as dedicated roadways, bus stations, and depots; the TMC and specialised information technology equipment and software required to manage and monitor the service; the automated fare collection system; and vehicles that will be purchased for the new system.

The localisation component will differ between these elements and between city, regional and national suppliers. For instance, we know that in December last year, buses were designated

Back left to right: Sara Butchart, Pauline Froschauer, Leonie Van Wyk
Front left to right: Dr Johan Bosman, Tshiamo Sedumedi, Nick Pretorius, Fabrisio Gonazelez

by the Department of Trade and Industry as one of the targets for local procurement in terms of the Preferential Procurement Policy Framework Act (PPPFA). However, the minimum level of local content has still to be stipulated. So the localisation component will need to be determined by Rustenburg on a tender by tender basis, with the aim of maximising local content wherever possible.

What jobs and skills is the RRT likely to add to the economy directly and indirectly?

It has been estimated that the RRT project will generate approximately 5 500 jobs during the design and construction phase, and provide sustained employment for more than 2 100 workers in the operation and management of the integrated public transport network once it is launched in 2015. The jobs range from construction and manufacturing, vehicle drivers and mechanics, to jobs in fare collection, maintenance and security.

Rustenburg's policy is to maximise local procurement, to encourage the transfer of new skills into the local economy, and to promote the establishment of new businesses.

Have you learnt anything new about project management since the inception of this project?

On a project like this, one learns something new almost every day!

The project management is particularly challenging because apart from budgets and timelines and the more commonly understood aspects of project management, this project spans disciplines from public transport planning and operations to engineering, architecture and urban design, business and financial models, and marketing and communications. And, probably most importantly, it involves the transformation of the way public transport is provided in South Africa.

So the project management role becomes one of both strategic and technical co-ordination between the different project work streams to ensure we are all heading in the same direction. We are trying to take the road less travelled!

What other projects in South Africa and beyond excite you?

Obviously, we are monitoring the progress of the Rea Vaya and MyCiTi projects with much interest, as well as similar urban transport projects around the world.

What really excites me is the prospect of seeing the extent to which we can use public transport projects such as the RRT as leverage in our cities to address the inefficient spatial development patterns of the past, but also the spatial and logistical realities of rapid urbanisation and informal settlements that face us now and in the future.

It has been five years since Cabinet adopted the 2007 Public Transport Strategy and Action Plan. Much has happened in those five years, but I believe the next five years – from 2012 to 2016 – must see the accelerated implementation of transport projects that positively transform movement, space and connectedness in our cities.

Greg Penfold

CITY OF TSHWANE
"we are the same"

TITIIC 2012

South Africa TSHWANE
Experience it!

TSHWANE INTERNATIONAL TRADE AND INFRASTRUCTURE INVESTMENT CONFERENCE

As part of its annual Business Month activities, the City of Tshwane's Economic Development Department will host the fourth Tshwane International Trade and Infrastructure Investment Conference (TITIIC) at the CSIR International Convention Centre from 23 to 25 May 2012.

The three-day event is aimed at attracting domestic and foreign investment, facilitating strategic economic development partnerships resulting in growth, competitiveness and job creation, and highlighting the inherent potential of Tshwane to export local niche products and services. TITIIC 2012 is envisaged to cement the achievements of the preceding conferences, enhancing the favourable investment profile of Tshwane and attracting large-scale, long-term investments.

OBJECTIVES OF TITIIC

The objectives of the conference are to –

- increase the rand value of exports from Tshwane;
- highlight development opportunities of economically important sectors in Tshwane;
- inform potential investors and/or business communities of incentives in Tshwane for business retention and expansion, and attract new investments;
- sell bankable projects and strategic land parcels in the city to attract new investments;
- facilitate business-to-business linkages; and
- showcase Tshwane's value-added goods and services.

BENEFITS OF PARTICIPATING IN THE CONFERENCE

In addition to being able to network with various stakeholders, conference participants will enjoy the following benefits:

- Access to information on investment and funding opportunities;
- Access to a database of local producers, service providers and small enterprises that operate in the city; and
- Exposure and access to Tshwane tourism facilities and related opportunities.

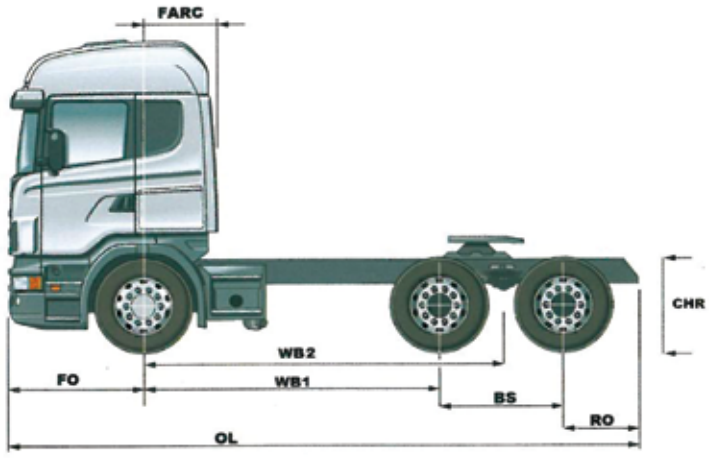
For information on the programme, sponsorship opportunities, and conference and exhibition fees, visit www.titiic.co.za or please direct your enquiries to:

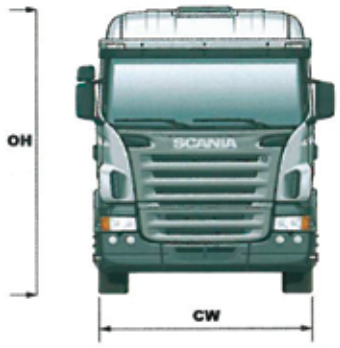
Mr Dylan James
Conference Director, Tshwane International Trade and Infrastructure Investment Conference
087 150 3003
titiic@tshwane.gov.za

Ms Tanitha Jolly
Head of Stakeholder Relations, Tshwane International Trade and Infrastructure Investment Conference
087 150 3003
titiic@tshwane.gov.za

R620 LA 6x4 MSZ Superlux

Dimensions and Performance



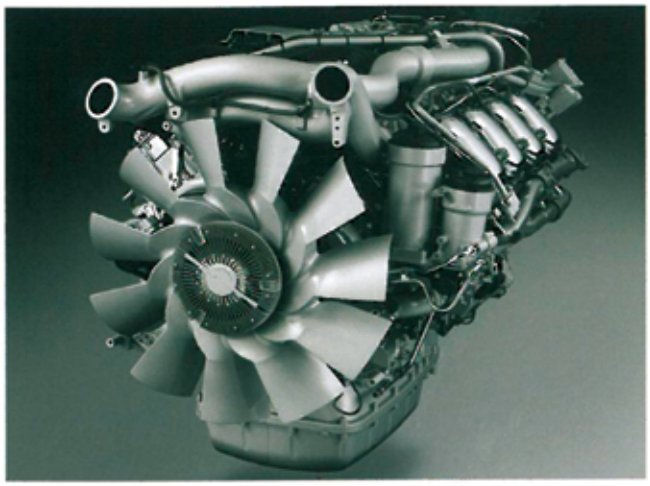


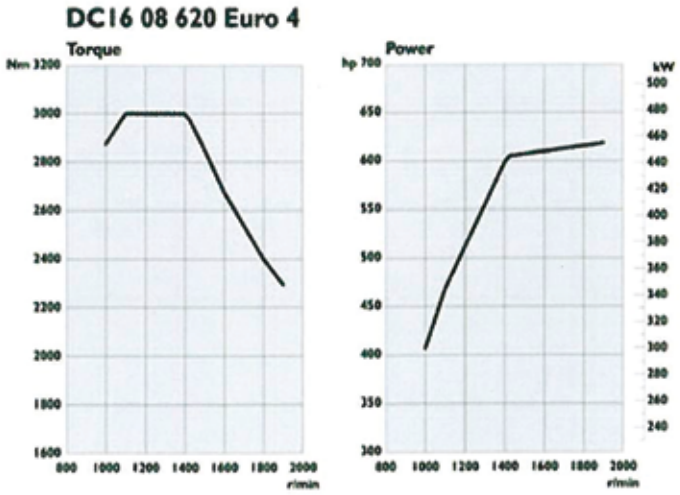
Dimensions (in mm)

OL	Overall Length	6 708	
CW	Chassis Width	2 600	
OH	Overall Height	3 570	
OH	With air deflector	4 130	
FO	Front Overhang	1 458	
RO	Rear Overhang	780	
WB	Wheelbase	3 100	(European)
WB	Wheelbase	3 775	(South Africa)
BS	Bogie Spread	1 350	
FARC	Front axle to back of cab	858	
FWH	Front wheel height	986	
CHR	Chassis height rear	1 011	

Mass Data (in kg)

GVM	Manufacturers Gross vehicle rating	27 000
GCM	Manufacturers Gross combination rating	78 000
GA	Manufacturers Front axle rating	8 000
GA/GAU	Manufacturers Rear axle rating	19 000
V	Permissible Maximum vehicle rating	25 700
AF	Permissible Maximum front axle rating	7 700
AR	Permissible Maximum rear axle rating	18 000
UF	Unladen Front axle mass	5 790
UR	Unladen Rear axle mass	3 550
UT	Unladen Total mass	9 340
DT	Permissible Maximum drawing vehicle mass	56 000





The Scania R620 haulage vehicle is equipped with the latest technological advanced Scania V8 powertrain. It comes with a 16 litre 4-stroke direct injection euro 4 diesel engine that is turbo charged with an air to air intercooler and the latest SCR (selective catalytic reduction) AdBlue technology. The V8 powertrain is placed at a 90 degree angle for optimum performance and superior fuel efficiency.

Maximum power	620hp (456kW) @ 1900rpm
Maximum torque	3000Nm @ 1100-1400rpm
Swept volume	15607cm
Bore and stroke	127 x 154mm
Valves per cylinder	4
Cylinder heads	8
Compression ratio	1:18
Emission level	Euro 4

Specifications and Equipment

Specifications

COOLING SYSTEM

The cooling system circulates 100L of coolant through an alluminium radiator with expansion tank. This is managed through intelligent cooling fan for greater cooling and fuel efficiency.

AIR CLEANER AND EXHAUST

The air cleaner system comes standard with dual filters, outer -&- inner safety filter. The air intake is positioned behind the grill on the right hand side. Exhaust system is a side mounted with a right hand exit.

GEARBOX

The Scania GRSO905R is a 14-Speed range change splitter. The syncromesh gearbox has two crawler gears and a top gear ratio of 0;8 and a built in retarder with an oil cooler and oil filter.

OPTICRUISE

The Scania fully automated gearbox is fitted with world leading software ensuring you get quick efficient gearchanges in all driving conditions. Whether city, highway or hilly driving. The system uses an inclinomitar that pre selects the correct starting gear irrespective of the weight of the vehicle.

RETARDER

The Scania integrated auxillary brake is an addition to the vehicle's brakes. This integrated feature ensures the retarder is used in all braking applications before the actual vehicle brakes are needed, thus extending the service life of the foundation brakes. It has a 5-Stage lever on the steering column.

Stage 1 has a brake force of 500Nm
Stage 2 = 1000Nm
Stage 3 = 1500Nm
Stage 4 = 2000Nm
Stage 5 = 3000Nm (Combined with exhaust brake)

CLUTCH

The Scania clutch has a 430mm single dry plate diaphragm pull type with overload warning and wear protection.

- clutch overload warning and wear protection.

CENTRAL GEAR

Scania RB662/ R660
Spiral bevel single reduction hypoid type 3,80:1 rear axle ratio with differential and interaxle locks.

FRONT AXLE AND SUSPENSION

Scania 8000kg front axle with 3x29 parabolic spring suspension with double acting shock absorbers.

REAR AXLE AND SUSPENSION

2 x Scania pressed steel axles with oil filters on both axles, with magnetic drain plugs and double acting shock absorbers with a bogie capacity of 19 000kg, plus 2 x 38 + 2 x 45 Progressive Parabolic springs that offer higher comfort for all driving conditions especially while unladen.

BRAKES AND PARKING BRAKE

Fitted with direct acting full air-drum brakes with ABS and comes with independent front, rear and parking brake circuits. It has asbestos free linings with auto slack adjusters. Diaphragm/spring on front axle brake chamber and leading rear axle.

COMPRESSOR

Gear driven 2 cylinder water cooled 600cc compressor with integrated intelligent air dryer. Thus leading to a saving in fuel consumption due to decrease of compressor operation.

CHASSIS FRAME

Scania 9,5mm single member chassis with excellent strength and a yield limit of 500Nm/mm (MPa).

STEERING

Right-hand drive hydraulic power steering with a ratio of 18,6:1. In the event of a frontal collision the adjustable steering wheel automatically adjusts to a 32° angle, minimizing injuries.
Turning Radius:
Kerb = 7 370mm (Diameter = x2)
Wall to wall = 7 970mm (Diameter = x2)

WHEELS AND TYRES

Front has 2 x 385/80 x 22.5 (steering pattern).
Rear and spare with 9 x 315/80 x 22.5 (traction pattern) - all steel belt tubeless radial, mounted on 11.75 x 22.5 aluminium rims front and 9.0 x 22.5 rear and spare.

ELECTRICS

Full 24 volt system with 180Ah batteries and a 100A alternator with built-in rectifier. Master switch single pole chassis mounted.

CAB

The cab is manufactured of hot dipped galvanised steel. It is standard in Scania white and has a 4-Point air suspension. The R620 is assembled with a CR-19H (Highline) cab and double sleeper bunk with a modern and pleasing design, manufactured to rigid European safety regulations. Standard on the cab now is the remote access with central locking, light test and approach lights for safety.

INSTRUMENTS

The instrument panel is laid out in a ergonomic wrap around interface. One day tachograph tachometer with gauges for air pressure circuits, coolant temperature, voltmeter and oil pressure. Warning lights for direction indicators, differential locks.

FUEL TANK

1 x 470 litre aluminium fuel tank fitted to the left side.
1 x 300 litre aluminium fuel tank fitted to the right side.
1 x 75 litre AdBlue tank fitted to the right side.

Integrated Driver Station with Superior Comfort and Space

Pure premium in every detail and always with the driver in focus. The new dash not only looks good, but feels good and works well. More dynamic styling with articulated shapes. The new dashboard is made of a soft-touch material. A Scania is seen as the ultimate drivers truck, and this reputation is based on the ergonomics of the driver station. A redesigned lower storage unit eliminates distraction whilst driving. The new door storage takes two 2Lt bottles that are easy for the driver to reach. The new leather steering wheel has ergonomically designed switches that assists with immediate feedback to your fingertips so the driver can keep his eyes on the road at all times.

The Scania retarder is completely integrated with the cruise control, as well as with the service brakes and exhaust brakes when cruising, a vehicle with Scania retarder provides automatic speed control up and down the hills. Retarder braking is either initiated with a dab of the brake pedal or controlled manually with the lever on the steering column. The gap between cruising speed and downhill speed can be set in small steps using a button on the steering wheel.

The Ecocruise is a special development of the cruise control designed to save as much fuel as possible. The system works together with the Opticruise and Retarder. It works optimally in hilly terrain. The system applies full throttle for climbing until the hill starts to level out. The system is accordingly programmed to avoid acceleration until the vehicle reaches the brow of the hill, provided that the speed has not decreased by more than 20 km/h during the ascent. Down the hill the vehicle accelerates up to the speed set on the retarder. At the end of the hill, the system strives to use the kinetic energy and maintain the speed by applying the throttle for a short time. In hilly terrain this means that the vehicle starts the next hill with a slightly higher speed which saves time and fuel.

SCANIA

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** Specifications are subject to change without prior notice and may vary due to South African regulation. Images are for illustration purposes only and do not reflect the exact vehicle.

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