



# road ahead

1st Edition of 2019  
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## Counting the cost

War on truck drivers



### In focus

Tyre innovation

### Electric Vehicles

Can they go the distance in SA?

# TWO DECADES OF GROWTH AND INNOVATION



There was a time when trucking and wellness were two ideas that were not normally associated with one another.

If truth be told, the trucking industry has over very many years been known to be, for the most part, susceptible to poor health and, in particular, to HIV/AIDS.

Every so often the incidence of sexually transmitted infections among truck drivers is high. The prevalence of HIV/AIDS among sex workers places truckers at high risk of exposure to the virus. This unfortunately has far reaching repercussions which not only impact truckers and their families but communities at large and more specifically the economy.

As the devastating effects of HIV/AIDS loomed larger, urgent action was no longer an option. The action we embarked upon gave rise to a more coordinated approach and focussed effort to increase awareness and education about HIV/AIDS.

In 1999, the National Bargaining Council for Road Freight and Logistics Industry launched Trucking Against Aids. It was subsequently relaunched as the Trucking Wellness Programme (TWP). The TWP is a primary healthcare provision programme dedicated to the wellness of people employed in the road freight and logistics industry. The major aim of the initiative has always been to create awareness on HIV/AIDS and sexually transmitted infections among long distance truck drivers, spouses and commercial sex workers.

In the past 20 years, the capacity of the TWP has grown into a sustainable model of primary healthcare delivery to the road freight and logistics industry through 21 fixed roadside wellness centres on major trucking routes spanning South Africa. The roadside wellness centres are complemented by a fleet of 7 mobile units.

All the wellness centres are situated along the country's major routes with high volumes of trucks. These include the N4 from Zeerust to Komatipoort, the N3 between Johannesburg and Durban, the full length of the N1 from Cape Town to the Beit Bridge border with Zimbabwe, and the N2 between Durban and Port Elizabeth, providing wellness centres to connect with long distance drivers, women at risk, and communities in each area.

The fixed and mobile clinics are manned by professional nurses and counsellors, who offer general healthcare testing such as blood pressure, glucose and cholesterol testing, measurement of body mass index, screening for tuberculosis and sexually transmitted infections, as well as HIV testing, counselling, condom distribution, education and training.



## A SMALL STEP IN THE RIGHT DIRECTION

In 2000, the first Roadside Wellness Centre was established in Beaufort West in the Western Cape. It broke ground in the provision of health and wellness services to long distance drivers who spent an average of 12 hours behind the wheel of a truck.

An old shipping container was converted into a state of the art clinic allowing for an innovative, unique, proactive and successful approach in the testing, counselling and prevention HIV/AIDS in South Africa. The clinics which are known as Roadside Wellness Centres are now spread throughout South Africa's major road networks, providing the highest standard of care that is convenient and easily accessible.

"The first Roadside Wellness Centre was a catalyst in providing access to healthcare services for drivers, as they were unable to do so without extensive effort previously. It gave us an opportunity to prevent and treat HIV through education, counselling and testing of drivers. The work of the TWP is underpinned by addressing underlying issues through educational support. We inform and educate industry members on the importance of practicing and maintaining a healthy lifestyle at all times," explains Tertius Wessels, project manager of TWP.

With the services offered by TWP proving to be important to the industry, expansion was inevitable and a very necessary requirement.

In 2001, two more Roadside Wellness Centres were established in Harrismith in the Free State and Musina in Limpopo.

In 2002, three more Roadside Wellness Centres were established in Ventersburg in the Free State, Tugela in KwaZulu-Natal and Port Elizabeth in the Eastern Cape, bringing the total to six clinics.

In 2003, a further two Roadside Wellness Centres were set up in Hanover in the Northern Cape and Komatipoort in Mpumalanga. This made the TWP's services to be accessible on the N1, N2 and the N4. Another milestone for the TWP was the introduction of the first Mobile Wellness Centre in the form of a Mercedes Benz Sprinter. This made it possible for the TWP to visit companies and provide onsite health screening.

2003 also witnessed the launch of the logistics industry's Wellness Fund whose purpose was to create a tailor-made health plan that provides broader support to increase the health and wellness of industry members.

The year 2004 saw another Roadside Wellness Centre opened in Mooi River in KwaZulu-Natal leading to better service along the N3 corridor between Johannesburg and Durban.

In 2005, the TWP opened two more Roadside Wellness Centres, in Zeerust in the North West, and East London in the Eastern Cape.

*"In 2006, through forming strategic partnerships the NBCRFI was able to expand the TWP's footprint thus positioning it at the forefront of pioneering unique and innovative services. One of these much-admired services was the National Mobile HIV Counselling and Testing (HCT) service, which made it easier for industry members to get tested and learn more about HIV/AIDS. The HIV counselling offered at our Mobile HCT is rooted in providing emotional and psychological support."*

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In 2006 two more Mobile Wellness Centres were launched, bringing the total to three vehicles. Another Roadside Wellness Centre was established in Kokstad in KwaZulu-Natal.

In 2008, a Roadside Wellness Centre was established in Marianhill in KwaZulu-Natal. This brought the number of Roadside Wellness Centres located across South Africa to 14.

A fourth vehicle was added to our Mobile Wellness fleet. Another milestone was when the TWP attended the World AIDS conference in Mexico where they showcased their concept on the international stage.

In 2009 the TWP continued to expand with the introduction of two more Roadside Wellness Centres in Mthatha in the Eastern Cape and Colesburg in the Northern Cape.

Another two Roadside Wellness Centres established in Villiers in the Free State and Epping in the Western Cape in 2010. This was followed by the handover and management of three Roadside Wellness Centres in Gauteng.

2010 also saw the ground-breaking step of providing comprehensive HIV treatment and Anti-retroviral therapy (ART) to HIV positive road freight and logistics members as well as their spouses. Over 10 000 members have been enrolled since the inception of the program. With consistently higher than 90% adherence rates, the HIV Treatment Programme has ensured that HIV Positive industry members are able to remain well and active at work.

In addition to the two wellness centres that were opened in Warden in the Free State and Roodekop in Gauteng in 2011, ten more vehicles were purchased for the mobile wellness unit. In pursuit of improving our service offerings we improved and realigned our HIV policy to be industry-specific. Two test pilot projects were created for this purpose. An electronic health management system was introduced in six of the Roadside Wellness Centres. A new project was also launched in six provinces which enabled HIV positive patients to receive their CD4 count.

The TWP had an opportunity to showcase its work at the 26th IUSTI (International Union Against Sexually Transmitted Infection (IUSTI) Europe Conference on STIs & HIV/AIDS and the 10th BADV Congress which was held on September 8-10, 2011 in Riga, Latvia.

In 2012, the TWP expanded its services to include assisting companies in managing and mitigating the impact of the HIV/AIDS epidemic through a variety of governance, assessment, surveillance, planning and monitoring strategies. More educational material was created to ensure industry members were informed on HIV/AIDS, STI and TB. Part of the educational also focussed how industry players could incorporate implementable strategies in their healthy lifestyle programmes.

In 2013, TWP conducted tailor made workshops that dealt with the scourge of human trafficking, through tailor made workshops. These workshops assisted healthcare staff of the TWP to educate and inform the industry about the prevalence of sex-trafficking and methods on how to combat human trafficking.

The TWP was also a prominent attendee at the 6th SA AIDS Conference, where it showcased and shared its successes... and more importantly, lessons learned.

Tertius Wessels explains, "The beginning of the decade brought great success which has compelled us to continue providing industry members with new and innovative methods. The work done by the TWP was also being showcased across the globe, which brought many accolades and positive responses from other organisations fighting against HIV/AIDS. This exposure gave us an opportunity to share ideas on what the next step should be and what the future holds in the war against HIV/AIDS."

In 2014, the Fleet Owner Workplace Wellness Programme was launched in association with Mercedes Benz South Africa and the National Bargaining Council for the Road Freight and Logistics Industry. As part of employers' commitment towards health and wellness, the programme ensures that industry members have access to health, wellness, behavioural change, disease prevention and information.

In 2015, the four Roadside Wellness Centres in Musina, Colesburg, Hanover and Epping were revamped. This was done in order to enable both the staff and visitors to enjoy the benefits of improved facilities and better service. A major partnership was also formed with the Southern African Clothing and Textile Workers' Union (SACTWU) Worker Health Program to enhance the work done by TWP.

The fleet of Mobile Wellness Centres were increased with the addition of five Ford Rangers and two Mercedes Benz Vitos.

In 2016, the renovation of Roadside Wellness Centres continued with the revamping of Marianhill, Warden, Villiers, Kokstad, Port Elizabeth, East London and Roodekop.

Education was a key component of our work in 2017, with five nurses attending a dispensing course. A cloud-based data capturing system was also introduced to all Mobile Wellness Centres. Also in 2017, phase one of the IT system was put into operation in our mobile unit by CODE systems whose software was sponsored by The Foundation for Professional Development.

In 2018, the TWP had another opportunity once again to showcase at the International AIDS conference in Amsterdam, Netherlands.

The TWP applied for all nurses in its service to obtain dispensing licenses from the South African National Department of Health, thus enabling improved and effective service delivery.

"I'm really proud of the TWP and its partners, for what they have achieved. Having worked in the logistics industry for many years, I have witnessed the importance of the TWP and how it turned the tide against HIV/AIDS. Today it is widely respected for all the work it is doing, for the industry as a whole. Our commitment remains unshaken in terms of meeting and exceeding our obligations, not only for our members but in ensuring that we set the benchmark for HIV/AIDS prevention, testing, treatment and care internationally," said Themba Mthombeni, TWP's operations manager.

Mthombeni further adds, "The TWP has expanded and gradually included all people associated with the road freight and logistics industry. We ensure that the industry as a whole benefits from the TWP. Our services have always included communities surrounding the areas we serve as well as sex workers. Health information and education is the cornerstone of our success. Sharing knowledge and information is important for the success and sustainability of the TWP."

The success of TWP does not only hinge on the work done by those in its employ, but also on the commitment and support of our sponsors. Without the sponsors' encouragement and backing the TWP would have only achieved a fraction of its success.

Mrs Famida Rahman, NBCRFLI's Funds and Wellness Administration General Manager concurred, "It's a trifecta effect. We have the TWP, the industry members and sponsors. Without these three uniting we wouldn't have the environment to achieve this kind of success. Our sponsors are our biggest champions because they push us to set higher standards and define new paths for other industries to follow. We pay homage to our sponsors because the TWP wouldn't be what it is today without them encouraging us and providing the resources they do.

We truly appreciate all sponsors of the Trucking Wellness Programme, both in the past and present, for the support and commitment to the programme and we welcome future sponsorships."

Mr Musa Ndlovu, NBCRFLI's National Secretary sums it up well when he says, "As the TWP celebrates 20 years, we are reminded of the wonder in providing a world-class service and pushing the health and wellness of the logistics industry forward. The TWP has had an incredible impact not only on the industry but communities throughout South Africa; not only in the fight against HIV and AIDS, but all devastating lifestyle ailments like Diabetes and Hypertension. Our services are comprehensive and holistic. We ensure that our industry members are confident that we provide the world class service that is expected. For us, the TWP is about building trust with the industry members, families, surrounding communities and sex workers. If they trust us, they will visit us and receive the information they require to build a better future not only for themselves but the industry as well."

The journey of the past 20 years has firmly placed us on the path of innovation. The lessons of the past have clearly spelled out for us that the future of the TWP will continue to be driven by innovation, growth and improved quality of service informed by the ever changing needs of its clients. This exciting journey forward will remain focussed on the prevention, treatment and care of HIV, STI's and other lifestyle diseases.

SPONSORS: Sida - 2006 – 2012; Regent 2012-2014; MBSA (Mercedes Benz South Africa) -2010 – Present; Engen – 2012-2015; Imperial – 2004 – Present; Unitrans – 2018; N3Tc – 2012 – Present

Reef Tankers - 2011 – Present; SACTWU – 2016-2018; TNT – 2006 – 2008; PARTNERS: RFA; NEASA; Department of Health – 2002 – Present; SATAWU; MTWU; TAWUSA; PTAWU; Department of Transport; TB Reach; SABCOHA (South African Business Coalition on Health and Aids)



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1st Edition of 2019

Transport on the move

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The Chartered Institute of  
 Logistics & Transport  
 South Africa





# road ahead

Transport on the move  
1st Edition of 2019

## Foreword

## Reshaping the African rail industry

**The ability of Africa's rail industry to unlock billions of dollars of investments from private investors and create a more vibrant and competitive industry through increased freight volumes, could lie in adopting a ground-breaking new global treaty that provides a central registry of ownership of railway assets.**

A major stumbling block for private investors looking to invest in Africa has always been the need to manage the risks inherent in cross-border operations, where there is limited legal infrastructure, and no common system for tracking assets and identifying railway equipment. Cross-border operations are essential to a thriving African rail industry, but operators need to know their rights are protected.

Unlike the aviation industry there is currently no single global system relating to the ownership and identification of railway equipment. The Luxembourg Protocol to the Cape Town Convention will change that through a worldwide legal framework to recognise and regulate the security interests of lenders, lessors and vendors of mobile railway assets.

A central registry, in Luxembourg, will issue unique identification numbers for all rolling stock globally at a negligible cost, ensuring that every creditor and operator can identify and track rolling stock wherever it is.

The Swiss based Rail Working Group is already engaged in discussions with African rail operators and African governments with a view to ensuring the Protocol is embraced by every country with rail operations. The ultimate goal is to have the Protocol and the central registry recognised in local legislation.

By recognising the Luxembourg Protocol, African countries with rail operations will provide certainty of ownership for potential investors, thereby reducing both creditor and operator risk – and once risks are lowered, we'll see a greater pool of capital finance available for investment, which will lower the



barriers to entry for smaller operators and ultimately result in a more competitive and dynamic African rail industry.

A study commissioned by the Rail Working Group this year, by economic consultancy Oxera, suggests that implementing the Protocol in South Africa would save the country up to R20bn in microeconomic benefits, including the reduced cost of finance and the knock-on effects of the investment in new rolling stock.

Reducing finance charges for rolling stock ultimately translates into a reduction of freight charges for customers. This means the rail industry can become more competitive. It really is one of those steps that will allow Africa to advance - and there is absolutely no downside to it.

*James Holley, Chief Executive of private locomotive and rail operator Traxion Group*



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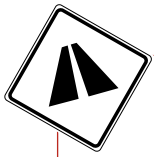
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# Road ahead

Transport on the move  
1st Edition of 2019

## Ed's letter

## Road freight industry at crossroads

**Welcome to another edition of Road Ahead magazine. We continue to grapple with challenging times in the road freight industry, an economic downturn plaguing many sectors and brutal attacks on vehicles and foreign drivers.**

The attacks on foreign drivers in South Africa (SA) have once again put a spotlight on the disgruntled sections of the workforce's inability to communicate effectively, in a non-violent manner. Brutality appears to be the only language of the day, with reportedly over 200 foreign drivers being killed in petrol bombing attacks over the last 16 months.

Police investigations appear to be ineffective in curbing this alarming trend, and slow in bringing the perpetrators to justice.

The problem and the solution are simple. Too many South Africans have a sense of job entitlement, which is fostered by populist politicians and their empty promises. Instead of understanding that you need to work harder to protect your job in a competitive environment, some local drivers and associations reportedly prefer to resort to mafia style violence to eliminate the competition.

The main reason companies employ foreign nationals is that they often work harder, and are not tied down by over-zealous unions. You could argue that companies can pay them less too, and in the case of illegal immigrants, are not covered by employment laws.

By disrupting the important N3 supply chain; these thugs are ultimately shrinking the employment pool for everybody. I've never been able to understand the thought process behind using violence as an economic negotiating tool, especially as SA's economy teeters on the brink of wholesale disaster, held together by the thread of integrity that our president offers to the international community.

On the positive side, it was heartening to see medium duty truck sales improve over the second quarter of the year, while



passenger car and heavy duty truck sales took a hiding.

With the spate of truck torching it is little wonder that companies are putting the brakes on new truck orders, with a wait and see approach, for now. It was hoped that the peaceful elections in May would bring a positive economic upswing, but sadly, political horseplay always slows the beat of business, which is bad for everybody.

Not to mention the damage that xenophobic attacks are having on our reputation north of border, and our ability to remain a premier gateway. If SA continues to be a difficult place to do import/export business, the main ports of Namibia and Mozambique will gladly take the customers away.

It is time that we all worked together and don't re-make many of the mistakes of the past. Give the economy some breathing room to flourish. Sadly, too many leaders put their own personal gain ahead of sustainability and true nation building.

*Gregory Simpson*



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# TRUCKING INDUSTRY FIRING ON ALL CYCLINDERS?

The limping South African economy has impacted the transport sector for the first time in many months. In a year-to-date comparison at the end of May, growth in the total commercial vehicle has shrunk to 2.3%, to reach a total of 10 252 units.





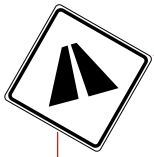
**Negative growth was experienced in especially the Heavy and Extra Heavy Commercial Vehicle segments, with new vehicle sales declining from April to May 2019 by 6.3% and 15.9% respectively.**

However, there are still some sprigs of growth to be found. Compared to the first five months of 2018, sales in the Medium Commercial Vehicle segment increased by 11.5% to 3 248 units. On a year-to-date basis, the growth rate in the HCV segment slowed down to 2.9%

(1 984 units), while EHCV sales declined by 2.5% to 4 693 units.

Bus sales continued to decline, by 11.6%, to 327 units — according to the latest combined year-to-date results released by the National Association of Automobile Manufacturers of South Africa (Naamsa), Associated Motor Holdings (AMH) and Amalgamated Automobile Distributors (AAD).

“The drop in South Africa’s GDP by 3.2% during the first quarter of the year has now eroded some of the positive growth seen in the transport industry so far



this year,” said Gert Swanepoel, managing director of UD Trucks Southern Africa. “The performance of the local economy during the next two quarters will be critical for our industry.”

Another factor that is having a negative impact on the industry is the ongoing violence and attacks on trucks, especially along the N3 highway.

“It is of vital importance that the government and police address and prevent these attacks on trucks and its drivers. Trucks form a crucial part of the economy and drivers’ safety is of utmost importance,” emphasised Swanepoel.

“We are now moving into a very interesting sales period,” said Swanepoel. “In spite of the fact that many of the major economic indicators are tracking negatively, the truck market has remained very resilient and just keeps on recording growth month after month.”

Swanepoel explained that UD Trucks believes that the basics, like fleet replacements, are still happening, although the industries in which sales are still happening have moved away from the traditional segments like construction, mining and manufacturing.

“We have seen a lot of growth in the logistics industry, especially with the increase in sub-segments like online shopping, local hub deliveries, and distribution,” said Swanepoel.

Meanwhile, UD has added two new truck ranges to its local product line-up. This

includes eight New Quester derivatives in the extra heavy truck segment, as well as Kuzer — a light heavy commercial truck.

### **New Quester range**

The New Quester range will be assembled from Completely Knocked Down (CKD) kits at its local plant in Rosslyn, Pretoria. Kuzer will initially be available as Completely Built-Up (CBU) units but will be moved to local CKD assembly at a later stage.

With a history of more than 57 years in South Africa, UD Trucks has built a proud legacy of providing customers with the right truck at the right time.

“We have an unrelenting passion to provide the trucks the world needs today, and into the future. This commitment has driven the company’s industry-leading innovations for over 80 years worldwide,” explained Gert Swanepoel, managing director of UD Trucks Southern Africa.

“UD Trucks utilises and adapts global technology, knowledge and resources to provide trucks and services that meet the fast-changing requirements of today’s transport industry. Globally, our innovation efforts are focussed on autonomous driving, electromobility and connectivity — the three innovation pillars that will shape the future of smart logistics.”

The company’s innovations and advancements, as is the case with New Quester and Kuzer, are built on the principles of driveability, fuel efficiency,

safety, productivity and uptime — all essentials in any transport business.

“We are passionate about solving the challenges customers are facing in the local transport environment. From versatile and durable trucks, to service and parts, and on-site support, driver training and integrated telematics, it is about a complete solution that customers can rely on to keep their trucks running,” said Swanepoel.

UD Trucks’ versatile range of heavy and extra heavy trucks are engineered, developed and rigorously tested to meet the challenging local operating conditions.

Kuzer addresses fleet owners’ requirements for an efficient, safe and dependable commercial truck. Following the vision of UD Trucks’ founder, Kenzo Adachi, Kuzer has been developed and built with robust design, modern solutions and a powerful engine.

The Kuzer is aimed specifically at fleets that are looking for flexibility to operate in the urban logistics environment, but which can just as easily serve as mini-compactors, roll-backs and tippers or as robust delivery vehicles for bakeries in rural areas for example.

The name “Kuzer” itself is inspired by the Japanese onomatopoeic sound of wind, taking on the meaning ‘to run as if flying swiftly against the wind’. Kuzer is all about manoeuvrability with a short turning radius to quickly move in and out of docking bays and tight parking spots. With a large and comfortable cab, Kuzer also provides a better working environment for operators and their crews who use their truck as a mobile office, stopping and off-loading cargo multiple times a day.

The New Quester additions takes UD Trucks’ Quester offering to eighteen models, enabling fleet owners to tackle critical industry challenges and boost their bottom line through smart logistics.

“Quester is on the forefront of UD Trucks’ global aspirations of being a modern smart truck supplier, which excels on the essentials while retaining its inherent Japanese heritage,” said Swanepoel. “It is sold on four continents and there are more than 15 000 Questers currently on the road. There is a solid growth demand for Quester and with customers continuing to face new



challenges in today's economy, it was time for the range to evolve."

The versatile New Quester is targeted at a variety of fleet operators; from long-haul transport to mining, inter-regional and construction.

New Quester also introduces key new features such as ESCOT automated manual transmission, air-suspended cabs, higher powered engines, a retarder, electrical cab tilt and user-friendly telematics. With smart, connected technology bringing fleet owners closer to their fleets, it will ultimately lead to greater productivity, fuel-efficiency, uptime, driver efficiency and safety.

"Ultimately, New Quester addresses the top concerns every fleet owner may have, namely fuel consumption, durability, productivity and maintenance, in a smart modern fashion," said Swanepoel. "New Quester will take UD customers that extra mile every time."

"We believe the introduction of Kuzer and New Quester will change the way African fleet owners think about trucks," said Swanepoel. UD Trucks Southern Africa has 38 accredited dealers in South Africa, and another 11 dealers in the emerging markets region.

### Isuzu bakkie sales in Zimbabwe bullish

In other news, on the back of an excellent year of Isuzu bakkie sales in Zimbabwe, the Zimbabwean Minister of Industry and Commerce visited Isuzu's production facility in Port Elizabeth, South Africa.

Minister of Industry and Commerce Honourable Nqobizitha Mangaliso Ndhlovu is the first Zimbabwean dignitary to visit Isuzu Motors South Africa's production facility in Struandale since it's opening last year.

As the second biggest export market of Isuzu Motors South Africa, Zimbabwe accounts for approximately 27% of all African exports, said Isuzu Motors South Africa Executive: Corporate Affairs, Business Strategy and Legal, Denise van Huyssteen.

"We welcome the Minister's visit and the opportunity to showcase Isuzu's capabilities in truck and light commercial vehicle production. Isuzu is an established brand in Zimbabwe and as the country embarks on infrastructure development, we are able

to offer innovative solutions to meet their needs," said Van Huyssteen.

Isuzu has been a consistent strong brand in Zimbabwe, achieving a 25% overall market share in 2018. Isuzu held a 35% share of the pick-up (bakkie) segment and was the best seller in the Double Cab and Extended Cab segments in 2018.

"Isuzu has had a presence in Zimbabwe for more than 30 years — selling bakkies, SUV's, trucks and buses in the market. We value our relationships with all our Zimbabwean customers and see ourselves as a brand that can offer products and services that will meet their needs throughout their life-time," said Van Huyssteen.

A big part of the entrenched presence of Isuzu in Zimbabwe is due to the success story of Isuzu's authorised dealership, Autoworld.

"Autoworld has been Isuzu's number one export dealer for more than 10 years and has facilities in both Harare and Bulawayo employing more than 150 people. They are involved in various community projects and sponsors one of Zimbabwe's top rugby clubs," said Van Huyssteen.

### Brand joins BRICS Institute's Advisory Board

Len Brand, CEO of TATA Africa Holdings, has accepted an invitation to take up a position on the BRICS Institute's Advisory Board.

Brand brings significant experience to the table with a proven track record of delivering operating efficiencies in challenging environments in developing markets and most recently has been responsible for turning the TATA business around in Africa.

In accepting this auspicious position, Brand notes that he is committed to the development and success of the BRICS Institute's short- and long-term goals whose purpose is to create a better world that is economically balanced, politically just and environmentally sustainable.

The BRICS Institute is an independent institute, directed by an advisory board comprising leaders from business and government, and academics from all five-member countries of the BRICS alliance. The Institute is governed by 20 members who form the Advisory Board, which



*Len Brand, CEO of TATA Africa Holdings, has accepted an invitation to take up a position on the BRICS Institute's Advisory*

comprises several sub committees who focus on research, knowledge development and innovation.

Brand says that during his tenure on the advisory board he will serve on, he will endeavor to guide the board with his own professional expertise to help discover opportunities, and define benchmarks for its continued success and growth.

Brand is passionate about agriculture, job creation, education and skills development, especially in the areas of youth employment and community and social upliftment. TATA Africa Holdings believes in providing quality to its consumers and at the same time improving the quality of life of the people it serves.

"We are committed to a vision of building and sustaining relationships with cooperation and trust, creating employment opportunities, and making a contribution to the social development of local communities. These values are closely linked to the vision of the BRICS Institute," says Brand.

"It is indeed an honour to join the BRICS Advisory Board and I look forward to making a valuable contribution. I am certain that my specific expertise and industry knowledge will be of benefit to the BRICS Institute and any of its sub committees," Brand concludes.

*Simba Samola*

# BPW Aftermarket: From OE to PE



BPW Genuine Parts - You always travel better with the originals



## **Our mission at BPW, is to provide customers with the best possible support for their business.**

The first priority therefore entails addressing their needs. We listen to our customers and pledge our support in every situation. This collaborative approach is reflected in our slogan: **We think transport.**

BPW sets the benchmark world-wide for no-compromise top quality products, which meet the highest demands for quality and reliability. BPW original spare parts are brand products sourced directly from the manufacturer. This is why they demonstrate the same levels of quality and performance that our new parts do: the same part used in BPW's world-wide production lines are the same parts that we sell for spares... no compromise!

Even after more than 120 years, BPW original parts are continually being developed further and offer you the security of knowing they are built to match your running gear system precisely thereby guaranteeing maximum performance.

Just some of the advantages that transporters experience when using BPW original parts include:

1. A long life expectancy and, most importantly, safety through perfectly synchronised individual components that are 100% compatible and match precisely
2. High service lives and shorter repair times
3. Long-term cost-effectiveness and
4. Product liability and a smooth claim's handling process in cases that are covered by guarantee

## **PE: Best in Spare Parts**

At BPW we recognise that even when commercial vehicles are out of warranty, they must lead a productive "second life".

While we'll always advocate the use of BPW original parts, we're aware that some fleet operators pursue a repair policy that matches the costs to the vehicle's current value.

Through its subsidiary PE Automotive which was acquired in 2016 in line with BPW's "thinking transport" philosophy, BPW is now in a position to offer their customers top-quality original spare parts, as well as, high-quality PE-branded spare parts that represent a genuine alternative for operators of older vehicles.

PE Automotive founded in 1947,

offers an extensive range of in-house developed quality spare parts for European commercial vehicles. Furthermore, its international registered trademark, PE, is one of the leading providers to the independent parts aftermarket.

As an independent company within the BPW Group, PE also benefits from BPW's global set-up as a mobility and system partner, and through the wide range of competitively priced quality products it offers, PE adds additional value to transporters.

With approximately 21 000 different PE products available worldwide, a high-level of trust has been created, even in the most demanding of independent and affiliated workshops.

PE's workshop-focused product solutions make it an attractive range to all workshops and the international, efficient network of PE trading partners guarantee extensive availability of PE quality spare parts.

PE quality spare parts, are offered in Southern Africa with a 2 years warranty for truck and a 1 year warranty for trailer, making the transporters transition from OE to PE, trusted one.

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we think transport





# In focus: Tyre innovation

Tyre innovation has remained relatively the same over the last few decades, with only a few significant technological advancements cropping up every few years, along with some blue-sky concepts. However, of late there are several environmental, technological and market demands that are forcing the tyre industry to sit up and take note.

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**Tyre innovation has remained relatively the same over the last few decades, with only a few significant technological advancements cropping up every few years, along with some blue-sky concepts. However, of late there are several environmental, technological and market demands that are forcing the tyre industry to sit up and take note.**

From an environmental perspective, climate change is a phrase that features all the more frequently and it is important to note the impact this has on the consumer buying decision. This can specifically be seen with Millennials and Generation Z as they have been deemed the most environmentally conscious generations. They are more likely to be the consumer that asks the question of what environmental impact the products they buy have on the world. As they are also at the helm of becoming the world's largest buying power, tyre manufacturers cannot afford to ignore the fact that a focus on sustainability is now more important than ever.

As tyres account for a large percentage of solid waste on landfills, not only do they pose a threat when burned due to emitting dangerous gases and contributing to CO2 emissions, they also harbour a breeding ground for pests, insects and diseases. It takes an estimated 50 to 80 years for a tyre to naturally decompose, which has even farther-reaching consequences than burning the tyre.

So how does the tyre industry become more sustainable and how do tyre companies or tyre brands get the message across that they care about the environment?

For one, the recycling industry needs questioning and specifically in South Africa where REDISA has left more question marks than answers. While the organisation has recently been cleared of the corruption charges laid against its

members, it is to be seen whether the industry will see change and whether positive and sustainable recycling initiatives might come from the operation reviving itself.

Rubber recycling can be very profitable and can contribute to job creation if done right and with good intention and a sound plan as to where and how the recycled rubber can be used.

In saying that, the market for recycled rubber must also first exist or in the very least be created. When looking at South Africa, it is safe to say the full scope of opportunities are not fully being explored. Places like California use recycled rubber as an additive when laying roads. Not only does this count as recycling, but also ensures a more durable surface that has seen a decrease in road noise levels and requires less maintenance. South Africa could benefit greatly from such an initiative, especially with the poor quality and degrading road conditions faced by motorists daily.

European countries alike are using recycled rubber for outdoor playground flooring and Yellowstone Park in America, has recently gone as far as using old tyres to make an eco-friendly pavement that has been reported to reduce erosion and not disrupt the parks water cycle, as water is able to pass through the material. One could imagine endless opportunities for new public spaces, housing and corporate developments across the world.

While it cannot be argued that it is difficult to break down a tyre for recycling, as it is made up of carbon black, steel, rubber and other additives, it is being done in other countries and there is no reason why that should be the excuse to not recycle in South Africa.

Sustainability is also not limited to recycling tyres as they exist today, but also looking to new manufacturing technologies where new tyres can be made from recycled rubber and furthermore developing more sustainable and possibly biodegradable materials to





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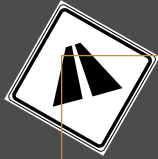
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make tyres with, which fortunately for future generations, many legacy brands are already exploring.

As far as technology is concerned, it is changing the way we live, work and interact with each other on a daily basis. And as vehicles become more advanced, the greater the demand becomes on the tyres that are fitted to those vehicles.

Run-flat technology was introduced to South Africa as far back as 2006 or so, but for the average consumer in the South African market, it was previously only seen as an option for the wealthy as it was fitted to premium brand cars. Today, however, with wider availability of tyre brands at highly competitive pricing, the consumer demand for run-flat tyres is steadily growing.

Fast forward to today, the electric vehicle is making headlines all over the world with the likes of Tesla and BMW producing the near perfected technology. Relative to our economy, South Africa is still far behind the curve of the electric vehicle trend, but nevertheless, the rest of the world is looking to tyre manufacturers to meet the operational demands of the electric vehicle. As it stands electric vehicles are quicker on off-take and with the increased torque require tyres that match the performance needs. One could almost say that tyres need to be re-engineered specifically for electric vehicles to meet the extra load capacity, higher performance and increased driving comfort that the new technology requires.

With automation also comes the challenge of driverless vehicles. Driverless may be the latest buzzword, but caution would also need to be exercised to believe that this technology has been perfected yet. Driverless vehicles mean that the tyres fitted require standard safety systems to be developed and installed as a crucial element of measuring tyre pressure and road conditions, where the human factor is removed from the equation. If a tyre was hypothetically to experience a

puncture of some significance, the vehicle would have to know to stop driving and alert the passenger or controller. If you took this into the context of having such a vehicle in South Africa, the vehicle would also need to know where it would be safest to stop to avoid you becoming a victim of opportunistic roadside crime.

Further to the advance in vehicle technology, 3D technology is a hot topic these days with 3D printing becoming more and more accessible to the masses. 3D printing offers possibilities where current manufacturing limitations are stripped away and one could imagine having a blank canvas to work with, as far as creative and technological aspects are concerned. The only parameter that would remain is that the tyre needs to be round.

In recent years we have seen concepts of 3D printed tyres produced by the likes of the Michelin Vision, which while considered visually interesting and highly advanced is also a concept that isn't going to be fitted to a consumer's vehicle any time soon.

One concept that was actually put into production and has been around for years is the Polaris ATV airless tyre that was designed for military use. The inner tube was replaced with a honeycomb structure that eliminated the need for air. While it was designed to effectively carry the load of the vehicle and to be puncture proof, the open honeycomb structure also meant that mud, snow and other road debris could get trapped, causing imbalance and a lack of driving stability, not to mention dangerous heat build-up. So while it could take an award for innovation, practically the airless design needs further refinement if it is ever to be fitted to regular vehicles. On the upside, the airless design is currently being used for recreational vehicles like golf carts, ATV's and mowers.

As far as the increasing demands from the market go, tyre manufacturers will undoubtedly find themselves being pushed beyond their comfort zones to compete in the new technological age, where things like adaptive artificial intelligence and Nanotechnology are no longer just concepts for Sci-Fi movies but will become the standard jargon used to market and sell tyres.

While innovating new concepts or disrupting the market may be the most effective ways to get ahead and get noticed, companies with limited resources could at least look at adapting to new sales and marketing technology as a step towards the future of business. The digital age is nothing short of amazing where almost anyone has access to a plethora of information or is able to buy almost anything on a mobile phone. If companies' sales models and platforms are not adapting, and more so not doing so fast enough, businesses are going to find themselves falling far behind very quickly.

*Sharon Styger*





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# Can Electric Vehicles go the distance in South Africa?

The ever-increasing fuel price is one of many factors making electric vehicles an attractive option. Another one is their ever-growing availability, as more car manufacturers produce their own version of the economic, green vehicles.

**However, with less than 900 electric vehicles sold in South Africa since they were introduced to the market five years ago, current local uptake and interest doesn't bode too well for the viability of electric cars on home soil.**

## **Slow going**

Lack of infrastructure, and an unrefined policy around the technology, could be the reason for the slow adoption. Electric vehicles form part of a complex ecosystem which includes infrastructure like charging stations, practical considerations such as charge time, and having the right policies in place to both drive uptake and ensure sustainability. Even things such as battery waste needs to be taken into account.

A few shopping malls and office buildings have made efforts to provide charge stations for electric vehicles on their premises, however, charge stations are not yet readily available. While the dependency on fuel-driven and hybrid vehicles is still so high, chances are that implementing charge stations nationally is likely to take at least ten years.

The outlook isn't all bad, though. The South African National Energy Development Institute (SANEDI), together with the Electric Vehicle Industry Association (EVIA) and the South African Smart Grid Initiative (SASGIA) are working on proposals and strategies to prioritise the development of public, private and commercial charging networks in South Africa.

Legislation and standards will help to drive uptake. Currently, there is little basis around which to build a charge station, as the charge points and vehicle charging times are not standardised and vary between manufacturers. Legislation around vehicle standards, emissions taxes and possible rebates for electric vehicle owners will definitely promote increased electric vehicle uptake as well as infrastructure provision.

## **Vehicle manufacturers get involved**

Electric vehicle manufacturers are playing an active role in creating practical solutions for customers, encouraging their buy in. While the infrastructure may not be wholly in place yet, manufacturers are looking for ways to

make electric vehicle more attractive. For example, BMW's i3 and i8 allows drivers to sync their car with their GPS and calendar to calculate the nearest charge points based on where they will be during the day.

Manufacturers are also working in tandem with battery manufacturers to develop longer running, lower charge batteries. In the meantime, hybrid cars offer the best of both worlds, allowing for fuel engine use while the car's batteries charge. However, the possibility remains that while hybrid cars are available, they may also delay the urgency for a fully electric vehicle grid support system.

## **New market potential**

The advent of an electric vehicle world may well herald the end of fuel-based driving and with it, the slow shutting down of a highly profitable market sector. However, there is scope for new markets to open up, thereby closing the fuel engine gap.

The private sector will play a role in driving the building of infrastructure as private companies build their own charge stations, with the potential to make



these publicly available for a fee. Energy providers may emerge to work hand-in-hand with Eskom to supply alternative energy as the demand for charge stations increases.

From a car servicing and battery perspective, the industry will surge as options for recycling batteries and 'drive-thru' type service stations arise. I believe we will start seeing entire new industries emerging, as quick thinkers and early adopters cotton on to the electric vehicle trend — a trend which is likely to become a lifestyle.

**The future?**

There is no doubt the move to electric vehicles will change the South African motor industry in its entirety, despite the long-predicted timelines. Three major shifts are likely to occur.

Firstly, parts departments and component suppliers are likely to feel the pinch in the initial phase of electric vehicle uptake, as fuel-based vehicles become less popular. We will, however, see a co-existence of fuel and electric ecosystems for a long period of time, making this a very slow process.

Secondly, South Africa's entire road infrastructure landscape could be changed in as little as fifty years. There are roads in the United States that are being built with wireless charge capabilities for electric vehicles. It's a matter of time before we explore similar technologies and work them into our still-developing road infrastructure build phases.

Lastly, we will see a growth in new technologies geared towards electric vehicles. For example, we are seeing Formula E vehicles now capable of completing an entire race on a single charge. This is only one of many predicted advancements which will fuel the electric vehicle market.

While we consider electric vehicles as the way forward, we may ask the question: are they the future, or a precursor to a more advanced type of vehicle?

MySpace was originally considered the future of social media but was quickly overtaken by Facebook. Electric vehicles may look like the future now, however, electricity is still largely dependent on fossil fuels with finite availability. There are many advancements being made in

the likes of hydrogen and even nuclear fuelled vehicles, however there are still many questions around sustainability, safety and the impact on global markets that form the backbone of most countries. It will be interesting to see whether electric vehicles go the distance, or simply be the first of many iterations in alternatively fuelled cars.

*Kobus van Staden - Account Manager: Automotive Industry at T-Systems South Africa*





# The Engine Killers

I have a colleague who believes that engines don't just simply die, they are murdered. A rather dramatic sentiment, I know, but then we take the death of an engine quite seriously.

**Being an avid consumer of forensics crime drama television series like CSI (Crime Scene Investigation) I feel that I can confidently explain the procedure that takes place once a murder victim has come to the attention of the authorities.**

Firstly, the crime scene is cordoned off. A forensic team (all of whom moonlight as fashion models) examines the evidence, the cause of death is determined (usually in record time) and a murder case is opened based on the strength of the evidence collected (which is usually bizarre in nature and requires the expertise of a socially awkward forensic pathologist).

Similarly, when reviewing oil analysis data, a forensic approach is also required that incorporates a combination of science, experience and gut instinct. There is an explanation for every oil analysis result obtained, but that explanation is not always apparent and requires the abilities of a very special kind of pathologist Steven Lara-Lee Lumley — technical manager, WearCheck — a mechanical pathologist also known as a diagnostician.

In this technical bulletin we will take you on a journey through the eyes of a mechanical pathologist tasked with identifying the modus operandi of some of the most lethal engine oil contaminants known to cause premature or even sudden engine failure.

One of the main functions of oil analysis is to monitor levels of contaminants in the lubricating oil. Contaminants can be classed as being either internal or external. Internal contaminants are generated within the mechanical system such as wear debris or combustion

by-products that accumulate in engine oils as a result of burning diesel.

External contaminants are substances that exist in the environment that should not be in the oil, like airborne dust or water contamination. Contaminants can be directly damaging to the mechanical system that is being lubricated. For example, dust is abrasive and can cause components to wear abnormally, but contaminants can also be indirectly damaging as they can cause the lubricating oil to degrade, which in turn may have an adverse effect on a mechanical system being lubricated.

When it comes to the analysis of used engine oils for condition monitoring purposes, certain contaminants are vitally important to monitor as they are often the root causes of premature oil degradation and engine failure. After lengthy interrogations with several suspected engine oil contaminants we have compiled forensic profiles on what we believe to be the most brutal killers known to the diesel engine.

Let us begin our journey into the mechanically macabre with our first engine killer — fuel dilution AKA “the volatile killer”. This engine killer was responsible for 21% of all engine related problems detected by WearCheck in the last year. When unburned fuel leaks directly into the sump, the problems caused are twofold - there is a physical and a chemical effect. Let's examine these modes of attack in more detail.

## **Physical effect**

The kinematic viscosity of a fluid is defined as a fluid's resistance to flow under the force of gravity at a particular temperature. Viscosity is considered one of



the most important physical properties of a lubricating oil as it determines the thickness of the oil film that prevents contact between metal surfaces.

For a mental comparison think of water as having a low viscosity (flows easily) and honey as having a high viscosity (does not flow as easily). The typical kinematic viscosity of diesel is between 2 to 5 cSt @ 40 °C (think water) and the typical viscosity of a common diesel engine oil, say a SAE 15w/40 is about 100 cSt at 40°C (think honey) so as a result of this difference in viscosities between diesel and engine oil, only a small amount of fuel is required to significantly reduce the viscosity of the engine oil. Moderate (+/-4%) to large (+/- 8%) amounts of fuel

dilution can drop the viscosity of an engine oil by several 3 grades which can collapse critical oil film thickness. This reduction in viscosity will eventually lead to a reduction in the load-bearing capabilities of the oil and abnormal bearing wear will eventually occur. Chemical effect Diesel engine oils are blended with additives that have specific functions to perform e.g. anti-wear, anti-oxidant, dispersant and detergent-type additives, to name a few.

When large amounts of fuel are present in an engine oil, these additives become physically diluted which reduces their effectiveness. Diesel also contains unsaturated aromatic molecules which facilitate oxidation of the engine oil, resulting in a loss of the much-needed detergent additive responsible for neutralising acids generated in the engine oil as a result of the combustion process, extended oil use or high operating temperatures. The loss of this detergency in the oil results in increased corrosion of internal metal surfaces.

To make matters worse, diesel is also made of heavier hydrocarbons that can turn to wax when ambient temperatures drop. If a fuel tank contains summer-grade diesel and temperatures drop significantly, wax crystals can form, causing a blockage in the fuel filter. Similarly, diesel fuel dilution in cold operating temperatures can cause waxing of the engine oil which could result in low oil pressures and oil starvation in severe cases.

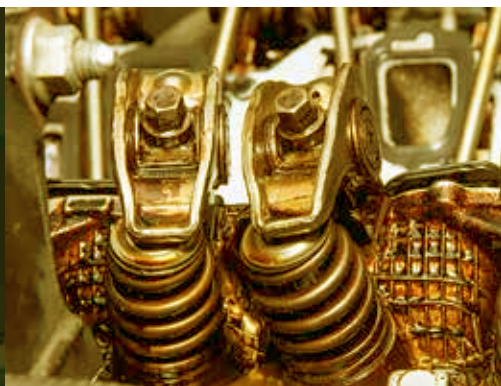
Final note in forensic profile: This killer has been known to cause wash-down of oil on cylinder liners, accelerated top end wear, as well as high blow-by condition and increased oil consumption. The dirty killer The second killer in our forensic profile is dust entry, AKA the "the dirty killer". This engine killer was responsible for 15% of all engine-related problems detected by WearCheck in the last year. The dire consequences of dust entry are perfectly summed up by Jim Fitch of Noria Corporation, who maintains that the cost of excluding one gram of dirt is only about 10% of

what it will cost you once you let it enter the oil.

The earth's crust is made of different types of rocks, (igneous, metamorphic etc.), that contain large amounts of silicon and aluminium oxides which contribute to the composition of natural soil and dust. It is for this reason that silicon and aluminium are used as the main elemental indicators of dust entry in oil analysis. Due to the large volumes of air that engines take in through the induction system they are at high risk of dust entry and the resultant accelerated wear that takes place due to abrasion.

Interestingly enough, it is the particle that has its smallest dimension of a similar size to the clearance involved that does the most damage. A particle smaller than the clearance will pass straight through doing little harm and a particle larger than the clearance will be unable to enter and do any damage. Dust does the most damage at the point of entry, so when an engine has a dust entry problem, the type of wear that takes place is often related to the manner in which the dust enters. For example, an oil sample showing evidence of dust entry and an increase in bottom-end wear indicates that dust is entering the engine oil directly and not passing the pistons and rings. Any dust which is in the oil will usually be pumped through the oil filter before entering the bearings. However, engine dust ingress takes place predominantly through the air intake.

Efficient air filtration removes most 4 of the dust ingested but the remaining dust that is not removed by the filters or cleaners consists of very small abrasive particles that could be 10 micron to sub-micron in size. As a result of the small clearances between piston ring and liner bore, it is these small airborne dust particles that pose the biggest threat when leaks occur in the induction system. These dust particles will pass between piston, ring and cylinder and eventually become suspended in the oil. If that was not bad enough there is also the issue of load distribution.



The thin oil film that separates working surfaces prevents direct contact between the surfaces, reducing the amount of friction and the rate of wear. This oil film also absorbs shock loads and helps distribute load over the whole surface. When a dust particle is introduced between the two surfaces it changes the loading of the surfaces from one of even distribution to a point load concentrated on the particle with tremendous pressure.

**The dark killer**

The third killer in our forensic profile is soot, AKA the “the dark killer”. This engine killer was responsible for 6% of all engine-related problems detected by WearCheck in the last year. Let’s face it, burning fossil fuel is a dirty business and due to the inherent impurities and inefficient engine combustion cycles it is not possible to burn fossil fuel with 100% efficiency. One of the major

combustion by-products of burning diesel is soot. Soot is impure carbon particles resulting from the incomplete combustion of diesel. When formed in an engine the soot particles are vanishingly small in size (+/- 0.03 microns), but with progressive fuel usage large quantities of these particles are deposited in the oil and eventually agglomerate to form larger soot particles.

Soot enters the engine oil with exhaust gas in the form of blow-by, or is deposited on the cylinder walls and is then scraped off by the rings and deposited in the sump. Combustion efficiency as well as the sulphur content of the diesel being used is directly related to the soot generation rate. Poor ignition timing, restricted air filter and excessive

**One of the main functions of oil analysis is to monitor levels of contaminants in the lubricating oil**

ring clearances cause high soot load.

Engine design, fuel quality and operational environment are also factors that contribute to the rate of soot deposited in the oil. All engine oils contain detergent and dispersant-type additives which control the effects of soot. The detergent additive keeps metal surfaces free of deposits while

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neutralising compounds that can form sludge and varnish. The dispersant additive works by keeping insoluble contaminants (like soot) dispersed in the lubricant and prevent them from coating metal surfaces.

However, these additives, like all oil additives, are sacrificial in nature and once used up they will not be able to protect the oil from degradation and continued soot accumulation or agglomeration. The most dramatic effect of excessive soot is the viscosity increase which results in higher operating temperatures and accelerated wear. The oil might still be able to flow and provide sufficient lubrication at operating temperatures of 90 °C but when it cools down to 10°C during the night the oil can solidify. Under these adverse conditions, when the engine is started, the oil pump will not be able to pump this solid mass leading to oil starvation. But wait, it gets worse!

The water acts as the heat transfer medium while the glycol component of the coolant raises the boiling point and lowers the freezing point of the water it is mixed with. The additive portion of the coolant is there to protect metals in the cooling system from corrosion, cavitations, scale formation etc. Internal coolant leaks can sometimes be confusing as there is often no physical water present in the oil. This is due to the operating temperatures and pressures in the engine, which ensure that the water evaporates off.

However, the additives in the coolant will contribute to elemental concentrations of sodium, boron, potassium and silicon in the oil and it is this elemental family from the coolant additive system that serves as a marker to confirm coolant contamination of the oil. Coolant can leak into engine oil in a variety of ways e.g. from a defective seal, blown head gasket, damaged or corroded cooler core,

or water pump seal failure, but one of the most common causes of an internal coolant leak is liner perforation. Liner perforation occurs when the liners vibrate to the rhythm of the piston movement during the compression and combustion stroke. This movement causes pressure waves to form negative pressure regions that nucleate vapour bubbles.

As the combustion chamber fires, these vapour bubbles implode and can literally blast small holes in the liner wall. The introduction of coolant into lubricating oil can expose your machine to a dangerous mixture of chemicals that can progress to engine failure in a short period of time. Below are just some of the known modes of attack this engine killer has displayed in past murder cases. Viscosity change Glycol contamination of engine oil can increase the oil's viscosity, and this can lead to insufficient flow of the oil to critical metal surfaces.

Added to this, glycol and its reaction by-products can also aggressively promote oxidation of the base oil which will further thicken the oil. Remember - if it's too thick...it can't flow...if it can't flow...it can't cool — so any dramatic increase in the oil's viscosity will have an adverse effect on the oil's cooling ability. Oil filter plugging the acids and water that form in engine oil as a result of coolant contamination can disrupt soot dispersancy. A prominent oil filter manufacturer claims that 75% of filter plugging complaints in engine oil filters involve coolant in the crankcase, and that just 0.4% coolant in engine oil is enough to coagulate soot and cause dump-out, leading to sludge, deposits, oil flow restriction and filter blockage of soot production as the device channels the emissions back to the combustion

chamber, creating a multi-pass opportunity for soot to deposit in the oil.

Final note in forensic profile: This killer has been known to cause plugging of oil filters and galleries, additive mortality, increased operating temperatures and bearing seizure due to oil starvation.

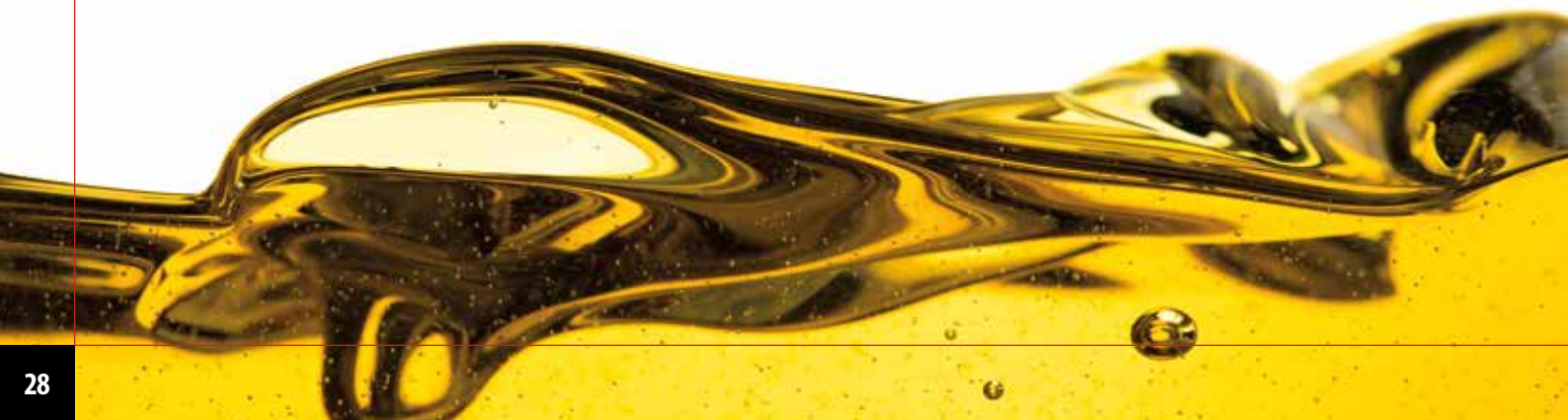
### **The cool killer**

Finally, the pièce de résistance of engine killers - the internal coolant leak, AKA "the cool killer".

This engine killer was responsible for 13% of all engine related problems detected by WearCheck in the last year. This is the most brutal engine killer of them all, and a testament to this is the fact that major diesel engine manufacturers estimate that 53% of all catastrophic engine failures are due to cooling system problems. So, what is the modus operandi of this coolest of engine killers you might ask? Well, the answer lies in a Hannibal Lecter quote "Of each particular thing, ask what it is in itself? What is its nature?"

Abnormal wear Glycol oxidises into corrosive acids which can cause a rapid drop in the oil's alkalinity (Total Base Number), resulting in an unprotected corrosive environment which can increase corrosive wear of engine bearings and other internal metal surfaces. Additive precipitation Glycol can react with oil additives causing precipitation. ZDDP (Zinc dialkyldithiophosphate) is an important anti-wear and anti-oxidant additive found in almost all diesel engine oils. When the engine oil is contaminated with glycol, ZDDP will form reaction products and this leads to a loss of anti-wear and anti-oxidant performance.

Oil balls are abrasive spherical



contaminants that form from the reaction of the detergent additives in the oil and glycol contamination. Oil balls are a known cause of damage to crankcase bearings and other frictional metal surfaces in the engine.

### Forensic profile close-out

The time taken for engine failure progression can vary significantly for the contaminants profiled in this technical bulletin. There are also several aggravating factors that can drastically shorten the failure development period, such as deficient maintenance practices, oil quality and filtration. Sudden-death engine failures from moderate concentrations of contaminants are usually accompanied by one or more of these aggravating factors, whereas high concentration of contaminants in an engine oil can result in sudden-death failure irrespective of any

aggravating circumstances.

What is most commonly seen, however, is when the moderate scenario is unattended to by the engine operator and escalates over time until engine failure eventually occurs. Unfortunately, many engine operators are unaware of the danger engine oil contaminants create and what inevitable fate they can lead to in terms of equipment availability and lifecycle. Protecting your engines and ultimately your equipment from the harmful effects of contamination and lubricant degradation begins with a proactive mind-set.

An efficiently-run oil analysis programme can generate benefits in two distinct modes — namely the predictive maintenance and proactive maintenance modes. In the predictive mode an oil analysis programme can reduce the

failure severity, maintenance costs and allow the user to plan maintenance activities. In the proactive mode an oil analysis programme can be utilised to identify the root cause of failure as well as reduce the failure rate. The value of proactive maintenance lies in its ability to extend component life by controlling the root cause that can lead to engine failure. Hopefully from this technical bulletin it can be seen that the cumulative effect of oil contamination on engine reliability, fuel economy, exhaust emissions and maintenance cost can be considerable, proactive maintenance techniques such as oil analysis are vital to mitigate the risk of engine failure

*Steven Lara-Lee Lumley – technical manager, WearCheck*



## PRODUCT TRAINING

WABCO constantly strive to improve our product support to the end user. We see the key to this support as having a solid technical knowledge base and network, throughout the country to competently and efficiently service our products.

One avenue to achieve this is through our well-established multi-faceted training courses. These courses are offered at all levels from OE manufacturers to distributors and service centres through to the end-user, the fleet.

Training Courses are held in WABCO's own training facilities in Durban, Johannesburg and Cape Town. Our training is also available on-site throughout South Africa and in our neighbouring countries if required.

Our 2019 Training Courses and dates are available on our website or you can give us a call.

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SOLUTIONS**



# PreciCONTROL = PreciSION + CONTROL



**Alfons Haar**

In SA, Alfons Haar (AH) have historically been somewhat incorrectly labelled as “component only suppliers” to the fuel tanker industry. Known as quality component suppliers of road tanker manlids, overfill sensors, line valves and bottom emergency valves to mention only a few, AH have secured the name and brand in this field for over 40 years.

**However, the time has come to set some facts straight about the misconception of being “component only” suppliers. Many are unaware that AH are even better (OK experts) at providing complete system solutions in the energy liquids sector, on a worldwide scale. Founded by Mr Alfons Haar in Hamburg Germany in 1949, the company has developed into a solutions driven, value add entity, focused on offering unique product features, which are proven to put profits back into the pockets of our customers when being compared with competitor products.**

Liquid fuels transfer and measuring systems are the forte of AH products, which are tested across five continents, often in the harshest climatic and operating conditions in places such as Russia, Saudi Arabia, the Australian outback and, of course, Africa.

Offering a broad range of positive displacement vane pumps, AH can transfer your fuel at rates from 4 000 L/min to as low as 50 L/min. All AH pumps are ATEX approved. But, the real benefit in our pumps is the efficiency. This efficiency translates into faster off-loading times and phenomenal fuel savings in truck idling times.

A range of aluminium hose reels — superbly finished — will make the job of handling and storing hoses an almost effortless task for the operator. A choice of rewind mechanisms, manually, hydraulically or by harnessing your trucks air with our AirSTAR power rewind, adds efficiency.

Our range of flow meters will tick every box; turbine, vane and venturi solutions are available for different applications and to suit variable conditions.

Now! By combining the above mentioned areas of pneumatic actuated tank components, pumps, meters and hose reels, AH have developed a solution to integrate, automate and control all these facets into one envelope. This is done in a precise and controlled manner, which resulted in us coining the phrase — PreciCONTROL.

PreciCONTROL was developed as a leading edge technology and is the basis of all AH system-based products. It provides the same interactive platform environment whether your application is aviation, automotive or liquid petroleum gas (LPG) fuels based.

PreciCONTROL is a scalable solution and gives the customer freedom and flexibility to choose the level of control they would like from the relevant AH system they are using (described in

more detail below). PreciCONTROL provides a level of automation by sending andreceiving signals to and from key components across the tanker/vehicle, which simplifies operations and limits or even prevents possible operator errors.

Applying state of the art electrical bus technology, PreciCONTROL is intrinsically safe and requires no electrical junction boxes or complex wiring configurations. This makes it so easy to maintain and install that you don't need highly skilled personnel to take care of it. Built with rough road conditions in mind, components are “potted” and sealed to deal with vibrations, dust and moisture. In the event of possible failures in the field, most repairs can be done on site without the need to re-route the vehicle back to a workshop environment.

The main controller, called the X-Master, allows for the open and closing of air actuated valves and receives feedback electrical signals to confirm that valves are in fact open or closed. It is also possible to control certain aspects of the truck from the outside while in front of the X-Master, such as the start/stop engine, start/stop power takeoff (PTO), applying the park brake and more...Back office reporting, for example, delivery detail, security detail and system event



reporting can be interfaced with other existing vehicle telemetry systems.

**Key system solutions when applying PreciCONTROL**

*Turbine metering systems.* PreciPURE is a pre-assembled measuring system, consisting of a single TURBINE meter, that dispenses all the product until completely dry. The significance of this is that only one meter is needed to deliver multiple product types and grades without any contamination. All other “wet” meter systems carry residual product, a recipe for contamination if not controlled properly. PreciPURE includes a hydraulically driven vane pump as part of the assembled system, making pumped or gravity deliveries possible via the single turbine meter. This we consider our “mainstay” and signature product in fuel delivery systems, with over 100 installations in the field since 2013.

*Vane meter systems.* Vane meter systems are “wet” meter systems. Branded as PreciMA they can be applied to gravity or pumped delivery applications, depending on size or function. The AH vane meters offer the advantage of less space and weight compared to competitor meters as well as the features of automation control. Air/gas extraction is uniquely expelled via the product manifold system, therefore eliminating the need for conventional bulky and inefficient air extraction units.

*PreciGAS, a venturi based LPG meter system.* Measuring and working with LPG is a nerve wracking and challenging task for any provider of such equipment. Not only is LPG a volatile product, but it also lends itself to be unpredictable and unstable in the wrong conditions or hands. Different from other fuels, changes in density, temperature and pressure can cause havoc in delivery conditions. Therefore, AH have taken a different approach when

handling and measuring LPG. Using the venturi principle the AH LPG meter has no mechanical moving parts. Believe it or not it has no physical air eliminator either. The accuracy of this meter far exceeds the tolerances of any other competitor system. With no moving parts, typically dirty product has no wear effect on this meter and as a result is maintenance free. As an optional feature, product density measuring can be included. With an installation base of 60 units in operation since 2017, this meter is fast being accepted as the LPG meter of choice in the industry.

*WiPIT remote control, the cherry on the cake!* Perhaps a bit new for acceptance in the SA market but perhaps not? WiPIT is a hands-free remote system to control PreciCONTROL meter systems and rewind hose reels from a distance. In the bigger scheme of things, it provides comfort and control for the truck/system operator, which should tick all the right SHEQ boxes. This also equates to efficiency and time savings, placing profits back into the customers pockets. The unit is worn on the arm of the operator. They can execute the start and stop of meter deliveries, print delivery tickets, and rewind the hose reel from a distance, which saves time as you do not have to walk back and forth to the vehicle. The built-in safety feature of motion control ensures that the operator is awake and active while operating, failing which an EMERGENCY STOP is performed on the entire system after a period of motionless detection.

Next time you are deciding on how to solve your liquid transfer problem give AH a call, you may just be pleasantly surprised.

*Bernard Burgess, Managing Director, Alfons Haar South Africa*

*Tel 021 945 1191  
www.info@alfonshaarsa.co.za*





# Creating shared value downstream

The lack of local beneficiation in South African industry has a direct impact on the economic development of South Africa, and if adopted appropriately could add significant value in terms of sustainability within affected communities, says Gerick Mouton, vice president and executive head: Capital Projects for Ivanplats

“Once everybody had visited the mine site they realised and saw the importance of the social dynamics”

**Downstream value addition has the potential to contribute towards education, employment, enterprise and supplier development, local economic development and bulk infrastructure. To date, the downstream beneficiation debate has been mainly a broad socio-economic one.**

Mouton, a mechanical engineer by profession, has extensive knowledge in

strategic project development and executing capital projects in challenging social environments. He has completed various capital projects in Botswana, Ghana, Madagascar and the Democratic Republic of the Congo (DRC), and has over 20 years experience on the African continent.

In addition to his degree in engineering, Mouton recently completed his Masters in Philosophy, giving him a broader understanding of some of the social issues that have plagued mining companies and communities, who are often left in vulnerable situations during the life of the mine, and especially post closure. Mining interviews Mouton about his views on mining in South Africa:

**You often talk about the importance of collaboration when approaching new mines, how you change mindsets to look beyond the engineering aspect, into the social side of things?**

It has been tough, but I must congratulate the team of engineers and designers we've had, especially those from DRA Global. Once everybody had visited the mine site they realised and saw the importance of the social dynamics and I'm glad to say today that if you meet any of those, it doesn't matter if it's a mechanical engineer or electrical engineer they will tell you (if you talk Platreef projects) that they learnt something in terms of social upliftment during those studies, which is great.

**When doing business in Africa, what is the biggest lesson you learnt?**

Collaboration with government is vital, and as I said earlier they tend not to listen, the mining companies, but once you sit down and reach a compromise the collaboration can start and it will go a lot easier. There are always two sides – the mining companies and governments – so it is important to listen and understand what the company is there for, what they're going to do and what benefits they're going to bring to the local area and community and so forth. You need support to make sure you can get the mine up and running.

**The Internet of Things is a big talking point at the moment, how much further can we automise in the future?**

Our ore body lends itself to highly mechanised mining and we're going to use remote control machines underground, especially in our drills and so forth, so that's already part of our planning. You need a different operator, and the mindset to apply those methods, but that's in our favour, because we're developing the mine, and we're training those people. We're bringing those technologies to the table and we will make sure the people who are going to operate it will be trained accordingly, but that is the future. However, it conflicts with the fact that we're not going to employ so many people

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# SABOA

Southern African Bus Operators Association

*voice of the bus & coach industry*



on the mine, so then you have to come up with a different strategy as to what to do about employment opportunities, indirect employment and so forth.

**In terms of mine closure what are some of the innovative ways you look at for post-use?**

Even though we're in development we're already looking at mine closure. We have a massive ore body so you can probably mine there for 100 years or longer. Our ore body, again because it's so thick and flat and we're mining it with a long-hole stoping mining method, when we back-fill it, we take the tailings and we add a binder and we put it into a stope. It equates to about 60% of the tailings that would have gone to the TSF (Tailings Storage Facility) now going back underground. So during operations we already rehabilitate the mine in a certain sense. And the fact that we're underground obviously reduces the social environmental impact on top of surface, and the fact that we have the ore body 360 degrees around the shaft infrastructure means less waste. At the end of the day the ore body tells you what to do, and in our case we're obviously lucky that we have an ore body that we can actually maximise and optimise.

**What are your key development points in Africa for the business?**

Yes, our other projects in the DRC are ongoing, Kamao-Kakula on the copper

side, and then you have Kipushi Zinc which will probably be a development point if everything goes well. We're refurbishing that mine as we speak. We've dewatered it and we're trying to get the mine into operation as soon as possible. If you look at the commodities that Ivanhoe has got, it's the three commodities that everybody needs so we're really blessed with all the commodities in the projects we do have.

**Where are the key demands for platinum in the motor industry after 'Diesel Gate'?**

The diesel saga obviously took a knock on the platinum side but it has recovered. People think diesel is ugly and dirty, but as long you apply the catalyst you shouldn't have any issues like that. Seventy five percent of the Platinum Groups metals (PGM's) go towards catalysts. There's big talk about electric vehicles and so forth, in my opinion we are probably going to see a hybrid solution within the next 20 to 25 years before we go full electric. There will still be applications for PGM's and I'm not even touching on the jewellery side, which is about 30% of the ounces.

**Platinum demand in Asia took a bit of knock in 2017/2018, are we likely to see an uptick from there in China?**

Last year was a bit tough for the jewellery industry in China, the Platinum Guild



*Gerick Mouton, vice president and executive head: Capital Projects for Ivanplats*

International are doing massive work in terms of marketing in China. They're focusing on the tier 2 and tier 3 cities now, which are smaller cities, and to roll out jewellery marketing strategies in those cities.

**Finally, water security is often a problem in remote, dry areas. How do you mitigate that risk?**

We have more than enough water in the Congo but in South Africa the Platreef Project is a water scarce area so obviously we need to make sure that we have a bulk water source that won't dry up. We're in discussions with certain parties around that, and we've done a total optimisation study in terms of recoveries to maximise water recycling as part of the operation, so yes, it's going well.

*Greg Simpson*



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# Ctrack Iris a game changer in video monitoring and telematics

Leading vehicle telematics and tracking services provider, Ctrack, has introduced Ctrack Iris, a high-quality, customisable video monitoring solution ideal for rental vehicles, light deliveries, fleet vehicles, heavy commercial's, general machinery and buses.



**With Ctrack Iris, fleet owners can reduce the number of insurance claims they submit and settle the claims they do submit much faster. Iris can also be used to lower fuel consumption and improve vehicle maintenance through better driving, while also reducing diesel and goods-in-transit theft.**

By monitoring crew activities, it is possible to improve and enforce company processes and procedures and reduce theft, pilferage and stock damage. Furthermore, the new video solution from Ctrack combined with a tracking device can improve vehicle route optimisation, increase load frequency and hasten turnaround times. The number of side or back cameras (IP69) used can be specified by individual

customers. Video footage can be recorded in eight quality settings, from CIF to 1080p. Live, real-time video streaming can be viewed on mobile devices.

Apart from the cameras, the solution is further equipped with rear door triggers, a lockable video device, two-way

communication system, fatigue and ADAS monitoring and an onboard/reverse screen. GPS, Wi-Fi, 3G and accelerometer modules can also be included.

Ctrack Iris is supported by web-based, desktop software and a password protected mobile application. These platforms provide Geofence/Point-of-Interest information, live tracking and video and dashboard event management.

“Ctrack supplies monitoring equipment that is made with high quality components. It's video unit models are best in class, which results in minimum downtime and system maintenance. Ultimately, Ctrack Iris is a sustainable, long-term video tracking solution of the highest order”, Hein Jordt MD of Ctrack stated.



For more info contact  
Ctrack - [www.ctrack.co.za](http://www.ctrack.co.za)



## Benefits of Ctrack Iris camera system

- Improve visibility on driver actions.
- Reduce fuel and cargo theft.
- Reduce insurance cost and claims.
- Support safety by improving driver skills.
- Improve fleet efficiencies.
- Increase security levels on your fleet.





# Taking on the new *Wildtrak*

The new Ford Ranger continues to hold strong as one of South Africa's premium and best selling bakkies in the competitive Light Commercial segment, and their latest Wildtrak offering is no different.

**It builds on the pedigree that the brand has built up over the last five years, going head-to-head with the much vaunted Toyota Hilux for top sales figures in the hotly contested pickup market, which is the cornerstone of any operations' light commercial fleet.**

The new, top of range, Wildtrak was the particular model that I tested and the bakkie continues to impress, after a few minor upgrades that keep it cutting edge. The build quality is definitely superior to earlier models and includes more

comfortable seats, the latest LCD sat-nav and tech, with an exceptional sound system to boot.

Powered by the new 2 litre Ford bi-turbo diesel engine, which pumps out a respectable 150kw and plenty of low down grunt, the pickup has more than enough power and makes overtaking on the highway a treat. Fuel consumption is frugal at under 10l/100km, and does not really change that much if you drive spiritedly. With 3.5 tonnes of towing power it's no lightweight.

Handling on the Wildtrak is noticeably more planted through the corners than the more off-road bias Fx4 and XLT

model. The Wildtrak's suspension is a touch stiffer as a result, but still provides a comfortable albeit more sporty ride.

Due to its healthy 237mm clearance it has a running board below the doors to make climbing into the cabin easier. If you are planning on tackling difficult off-road tracks it is recommended to remove the running boards to avoid damage, creating extra clearance when attempting tricky axle twisters.

The Wildtrak boasts the Ranger's solid low-range gearbox and diff-lock, so it's got all the off-road ability that you'd need to reach the most remote mines in Africa, or



Safari destinations for your holidays.

I took it down to Honingklip Farm near Botrivier to test off-road ability, and with the tyres down to 1.6 bars it sailed over most of the obstacles, from soft sand to rocky river crossings. There was one heavily rutted section that I decided to avoid, but with the running boards off it would have been able to complete even the most difficult sections of the grade 3-4 4x4 track.

One of the few downsides of the old model was that they got rid of the lockable sliding cover over rear tray. Ford replaced it

with a more traditional synthetic material covering that took a lot longer to open and close, and is less secure.

Both covers let in a lot of dust, but that's easily fixed by plugging all the holes that are designed to let water out of the back of the bakkie, if you leave your car out in the rain without a canopy. If you have a proper covering, you don't need those drainage points and can reduce dust intake, which is vital when travelling on long gravel roads with lots of luggage.

Priced at just over 650k the new 10-speed automatic model is the one

to go for boasting Ford's excellent auto gearbox, which provides seamless gear changes. It is still well priced considering the amount of vehicle you are getting, and drives just as well as the more expensive German offerings like the Amarok and new Mercedes X-Class V6 bakkie.

Overall, the Wildtrak is still one hell of a package, and sure to be on the top of any fleet manager's company car wish list for some time to come.

*Gregory Simpson*



# Delivering innovation and technology to meet local truck and bus radial needs

In a highly competitive and “always on” trucking industry, stakeholders are under pressure to meet challenging delivery targets, navigate traffic and challenging road conditions while ensuring on the road safety of vehicles at all times

**Manufacturer of the iconic Dunlop, Sumitomo and Falken Tyre brands, Sumitomo Rubber South Africa (Pty) Ltd (SRSA) recognises these challenges and constantly seeks to address them in the manufacture of high quality, durable and technologically advanced truck and bus radial tyres.**

SRSA CEO, Riaz Haffejee says that the history of innovation and proven pedigree that the iconic Dunlop brand holds in the tyre business, together with the latest Japanese technological and engineering insights from its parent company, Sumitomo Rubber Industries, make for a formidable combination in the Truck Bus and Radial tyre industry.

The state-of-the-art purpose-built 180 000m<sup>2</sup> Truck Bus and Radial (TBR) factory in Ladysmith, KZN was the second phase of an investment of R970 million, which has enabled SRSA to meet the needs of the truck and bus tyre markets in both South Africa and on the African continent — bringing the total investment into the Ladysmith facility since 2014 to more than R2.1 billion. Following extensive market research into the needs of the truck and bus industry, this investment showcases the commitment SRSA has to the TBR business.

The locally produced TBR range brings innovation, durability and high performances to the market, with products specifically designed to meet the challenges of African road conditions. A determination to constantly seek out

improved solutions for the truck and bus market, with a strong focus on safety, underpins the company’s ongoing research and development activities. SRSA employs a number of systems – both human and machine driven - that assist in the compilation of data to effectively assist customers in correct tyre application and with improved outcomes in safety, Cost Per Kilometre (CPK) and life span.

Developed by SRI, the Dunlop Energy Control Technologies (DECTES) bring next generation performance to the market. The combination of design innovation and compounding technologies that DECTES takes to the road has shown results such as an up to 30% reduction in tyre rolling resistance, reduced frequency of tyre maintenance and rotation and enhanced re-treadability. These enhancements deliver significant CPK savings and result in improved fuel consumption, enhanced abrasion resistance and improved contact patch resulting in a slow, even wear rate and to prolong tyre life offering truck and bus fleet owners a significant impact to their bottom line.

Recognising that human intelligence has great value to customers in assisting with fleet management, SRSA has an In-field Technical Services (ITS) team based in all regions, and into Africa, to advise customers on tyre-application and performance and analyse monitoring and scrap analysis data. “Our infield technical services division become an extension of our customers’ business, offering a value-added service and assisting with business growth and staff development, ensuring on the road safety,” says Haffejee.

The local production of the TBR range will ensure that customers, both in South Africa and on the African continent, have the right tyre for the country specific application.

“Our robust manufacturing processes have led to a range that has exceeded expectations. These tyres are designed using advanced Japanese technology, tested in Africa and manufactured in South Africa. The local TBR products are tested to meet global standards, ensuring that customers, both in South Africa and on the African continent, have the right tyre for the country’s specific application in quality, standard and safety,” says Haffejee.

SRSA is owned by Japanese listed company Sumitomo Rubber Industries Ltd (SRI), situated in Kobe, Japan, and is ranked the world’s fifth-largest producer of automotive tyres and industrial rubber products and has tyre manufacturing plants in Japan, China, Indonesia, Thailand, Brazil, Turkey, USA and South Africa. The existing South African plant in Ladysmith (founded in 1973) currently produces passenger car, sport utility vehicle, light truck and truck and bus radial tyres only, which are sold in South Africa and exported across Africa and other countries.

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