

RAILWAYS

AFRICA

ROLLING STOCK | PERWAY | INFRASTRUCTURE | SIGNALLING | OPERATORS | COMMENT

ISSUE 3// 2015



From depot through to on-track equipment.

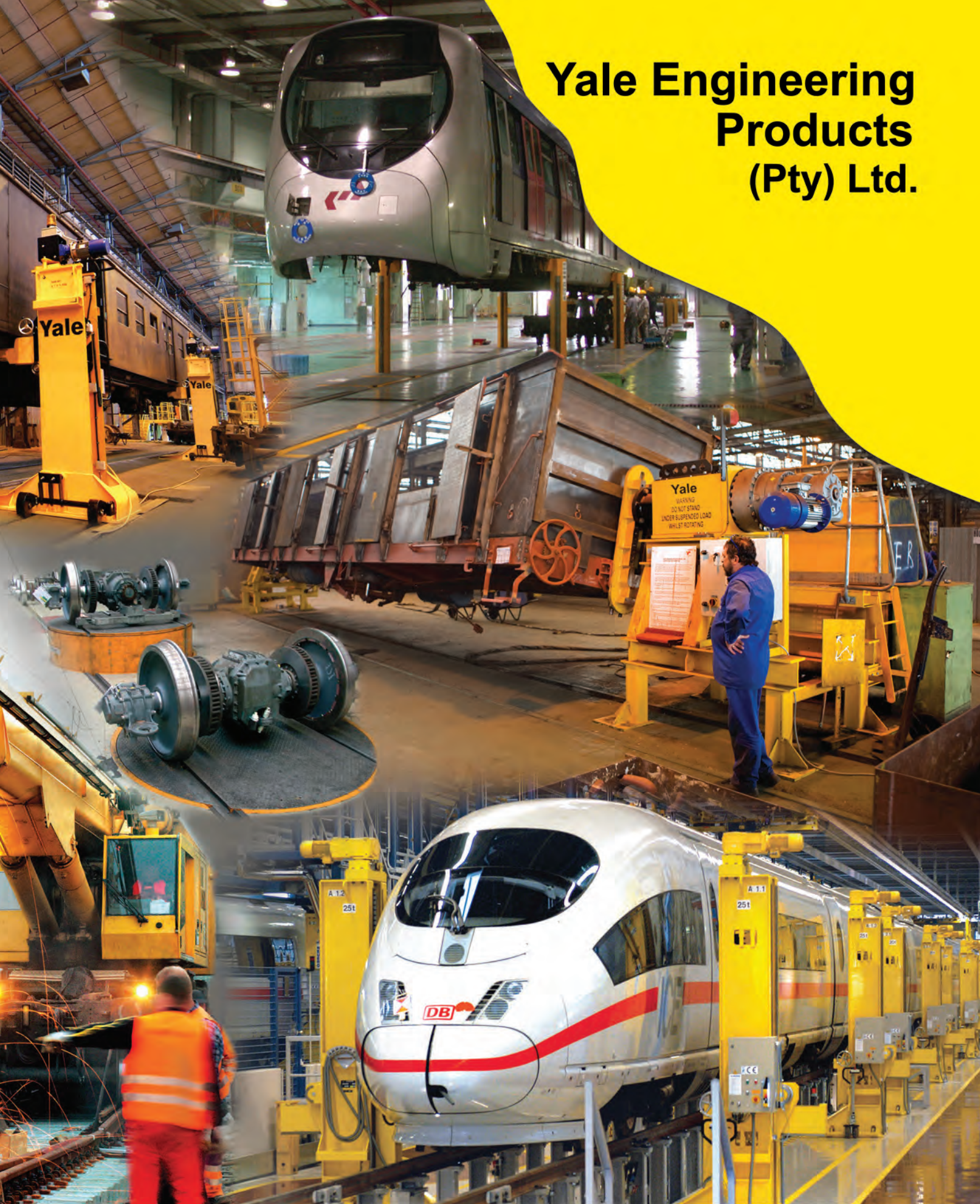
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Topping the agenda in June

Africa Rail - high note on the continent's transport calendar - tops management agendas once again this June. Prominent key speakers head the programme, followed by leading names in railway circles, representative of countries throughout Africa.

Though there is nothing to beat word-of-mouth, or person-to-person sharing of know-how, it is the written word that spreads the message afterwards, putting down the essentials for everyone to read. We'll be doing exactly that - after all, Railways Africa has been covering the field for very nearly sixty years.

In a recent issue we touched on noteworthy events and developments during the past three decades. In the context of Africa Rail and the industry's important people brought together, hopefully a little repetition will not be out of place.

For much of that time (we wrote) rail on the continent didn't seem to be getting very far. "But ten years into the new century, striking changes altered everything. Suddenly, ambitious new lines were being built in north, west, east and southern Africa. They included just about everything in the catalogue - like the 320km/h high-speed line coming on stream in Morocco, 3,000km of route rebuilt in Nigeria (likewise Angola) and new off-the-shelf light rail in Addis Ababa, not to mention lengthy stretches of standard gauge begun in Nigeria and Kenya, with Uganda, Rwanda, Burundi and Tanzania to follow.

"In South Africa itself, where things had really got behindhand, new orders by Transnet and Prasa for locomotives and rolling stock - the largest ever placed - made world news."

All this makes great copy, as they say in the publishing world, but make no mistake, railways in Africa have a long way still to go. We look forward to reporting on further achievements this decade - and telling it like it is.

- Rollo Dickson



Suddenly trams are in fashion again. We need to climb on the bandwagon.

In the Pictures



Microelettrica Scientifica South Africa (MSSA) officially cut the ribbon across the doors of its new premises in Honeydew on 21 May 2015, making this a milestone day for the company.

See page: 62



Secretary General Alain Flausch of the UITP addressing the media at the 61st UITP World Congress held in Milan.

The congress aimed to address public transport challenges of: the arrival of new mobility services; infrastructure needs in smart and growing cities; the impact on cities of new vehicle and IT technologies and focusing on customer service.



Whilst in Milan for the UITP 2015 World Congress Railways Africa was given a tour of the Alstom Sesto San Giovanni manufacturing facility.

See page: 49



During the UITP 2015 event Henri Poupart-Lafarge, President of Transport Sector and Executive Vice-President of Alstom, launched Attractis and SRS as new product offerings.

See page: 46



22nd of June at 3:30am during the brunt of a highveld winter Railways Africa rode Gautrain's sweeper train before the day's operations.



Following up on President Obama's initiatives at the Africa Summit last August, the US Commerce Department recently organised a visit with key US companies to help promote future participation in the region's economic growth. This particular trade mission included Mozambique, South Africa and Kenya. The organisers asked participating firms for examples of American companies contributing to communities where the USA conducts business in Africa. Barloworld's training initiatives, proposed by Caterpillar/Progress Rail, were selected among proposals made.

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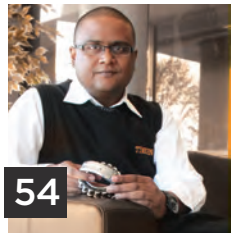
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In this issue

Africa Update	6
Spotlight: South Africa	24
Road to Rail	34
Barloworld to assemble in SA	42
Thermitrex: celebrating 120 years	44
Alstom launches Attractis	46
Site Tour: Sesto San Giovanni	48
Alstom launches SRS	50
Think Rail, Think Yale	52
Inspired by Timken, made in SA	54
Remanufacturing diesel locomotive engine components	56
Free State Round Up	60
Microelettrica localisation drive	62
Mishaps	64
Bakara Engineering	72
Schools benefit from railway fibre optics	74
Railway Preservation	76
End of the line	78

Inspired by Timken, made in SA



54

Road to Rail

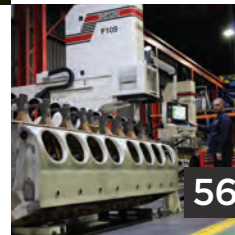


34



62

Microelettrica localisation drive



56

Remanufacturing diesel locomotive engine components

Site Tour: Sesto San Giovanni



48

Alstom launches Attractis



46



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Africa Update



CAPE to CAIRO RAILWAY

WHAT MAGLEV COULD ACHIEVE IN AFRICA

The UK *Guardian*, speculating following Japan's recent 603km/h rail speed record, suggests magnetic levitation (maglev) trains could link Cape Town with Cairo in 17-and-a-half hours. The paper talks of a "dream 10,441km journey" through South Africa, Zimbabwe, Zambia, Tanzania, Kenya, Ethiopia, Sudan and Egypt, though one wonders how much one would see and take in at 600km/h. According to the *Guardian* writer, who seems to have been playing with Google maps, one can do the trip by car in 156 hours – about a week. Road conditions, it is conceded, might not be all that good "from Cape Point to the pyramids."

The article speculates about reducing trans-Siberian journeys from a week to 15 hours and the three-day Perth to Sydney train ride to seven hours.

There is another aspect to consider. The planned Tokyo-Nagoya maglev line, for example, will be 80% in tunnel.

CHINA & PAN-AFRICA HIGH-SPEED RAIL

In Addis Ababa on 7 May, African Union Commission chair Dr Nkosazana Dlamini Zuma congratulated the People's Republic of China - represented by Chinese Vice Foreign Minister Zhang Ming - on the opening of a dedicated mission to the African Union. Specific areas of cooperation between Africa and China discussed at the Union headquarters included a Memorandum of Understanding signed in 2014, according priority to railway and industrial development, and in particular "taking forward the Pan-African High Speed Rail Project."

Also on the agenda was Africa's position "on the need for the United Nations Security Council to democratise and reflect the current realities of the world."



The station at Addis Ababa. Photo: S Johnson



ON-BOARD COMPUTERS FOR 1,300 LOCOS IN AFRICA

According to Alta Rail Technology (ART) of Brazil, the company is supplying on-board computer equipment for fitting to 1,300 locomotives on the African continent. "With two years of existence, ART is the result of a spin-off carried out by ALL Logística with its formerly controlled company, ALL Rail Technology. Since it became independent, 70% of ART's income has been linked to exports.

In recent months, ART consolidated its presence on the African continent and established an office in Johannesburg, South Africa. Currently, it is completing the establishment of a subsidiary in the Australian city of Sydney, where three major railways already use its on-board technology in solutions for global partners."

Of about 3,000 locomotives in operation in Brazil, approximately 1,900 have on-board technology by ART.



WEST AFRICA: RAIL CHALLENGE FOR ECOWAS

Ghana's Forum for National Equity, a civil society organisation, has challenged the Economic Community of West African States (Ecowas) to exert the political will needed to build a railway linking the member states. According to Forum president Prince Bagnaba Mba, speaking to the Ghana News Agency on 8 June, "the whole essence of the 40-year-old Ecowas is about integration and one of the fastest means to achieve this is through the provision of transport infrastructure such as rail, which is cost-effective and superior to other forms of transport." Good examples of rail lines linking countries in West Africa, he said, were Abidjan-Ouagadougou and Bamako -Dakar, both as he put it "colonial relics".

There is an urgent need, he continued, for a railway linking Lagos-Cotonou-Lome-Accra-Abidjan. It is all a question of political will, Bagnaba Mba asserted. With the necessary political will, there would be no need for regional leaders to wait for investors and technologies from Europe or China (for instance); Public-Private-Partnership and other stakeholder interests could facilitate the process.

Regional leaders, he said should deem such a project a high priority venture. The railway could be realised through the initiatives of individual member states. Such a line should be up and running by the time Ecowas celebrates its 50th anniversary - "as part of the anniversary story of integration". It would mean taking a cue from Europe, where one could travel from Berlin to Paris without hindrance.

"Until we get transport right the whole essence of trade integration will be meaningless. Ecowas should not be a jamboree, where leaders wine and dine but, an Ecowas of the people - not an Ecowas of technocrats."

SOUTHERN AFRICA

SARA PLEADS FOR RAIL REVIVAL



Following its recent conference held in Johannesburg, the Southern African Railways Association (Sara) has called for urgent measures to resuscitate the railway sector in the region. Acting executive director Victor Kaluila says performance of the railway sector has fallen drastically over the years and requires urgent steps to get it back on track, in order to steer economic development in the region. The market share of rail transport in Southern Africa has dropped, he points out, from about 80% in the 1970s to as low as 12% currently. Speaking during a regional stakeholders' meeting in Livingstone, attended by officials from Zambia, Zimbabwe, Mozambique, South Africa and Botswana, Kaluila attributed the loss of business in the railway sector to the poor state of the network, old wagons and delays at border points during clearing of cargo.

Sara has conducted a survey with various stakeholders and passengers to determine the root cause of the problem, with the aim of devising an action plan for addressing the issue.

Zambia Railways Limited (ZRL) acting chief executive officer Chris Musonda said Zambia has utilised the \$US120 million Eurobond which was injected into the company by government, 30% on purchasing new wagons and the rest on track rehabilitation. This work is continuing. Once it is completed, it will help increase track speed. Both freight and passenger trains are benefiting from this already. However, he said, the level of vandalism is a serious problem.

ALGERIA

ALGERIAN ELECTRIFICATION

Approximately 4,000km of lines owned by Société Nationale des Transports Ferroviaires (SNTF - the state railway of Algeria) have been electrified to date. It is intended to increase this figure to 6,000 by 2017. The ultimate aim is to have 12,500km under wires in terms of the current modernisation programme, according to minister of transport Amar Ghoul. He was speaking while inspecting the completion of the Ramdane tunnel drilling in Oued Djer (West of Blida), an important component in the electrification of the 56km Blida-Ain Defla line. In the short term, passenger train speeds are to be raised to 220km/h. Eventually, with the introduction of high-speed trains, the target is 350km/h, Ghoul says.

ALSTOM TRAM BUILDING PLANT

Created in 2011 to assemble and maintain Alstom Citadis trams for Algerian cities, CITAL is a joint venture comprising Alstom, Entreprise du metro d'Alger (EMA) and Ferrovial. About 200 people are employed altogether, approximately 90 at the plant at Annaba, the others based in the cities of Algiers, Oran and Constantine, to maintain Citadis trams already in service. The present capacity at Annaba permits the assembling of five trams per month.



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Alstom Citadis tram in Algiers. Photo: CITAL



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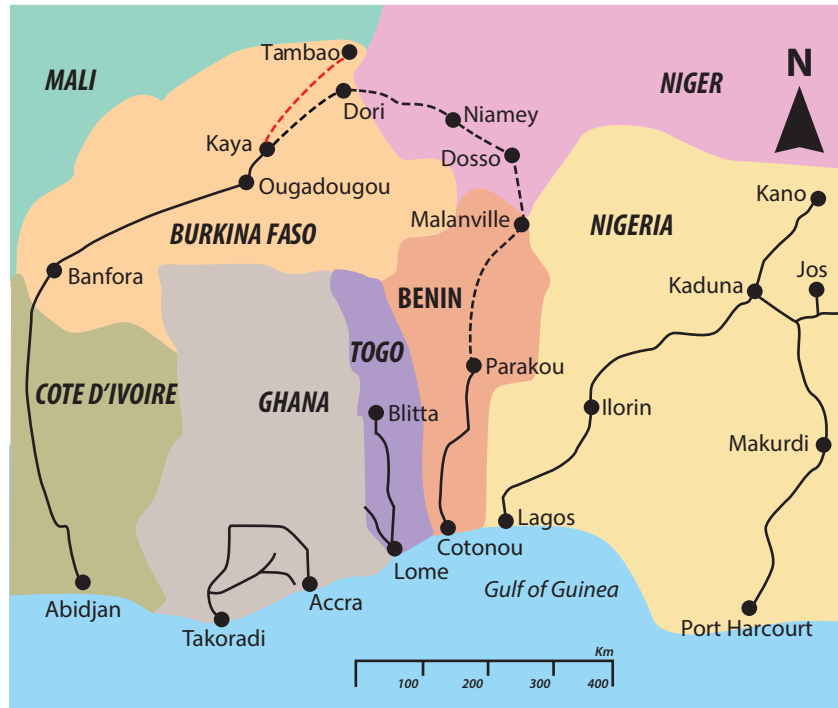
BURKINA FASO

MANGANESE MINING TRAFFIC

The manganese mine at Tambao in Burkina Faso has estimated reserves of around 100 million tonnes of ore, but its remote location in the north of the country, near the border with Mali and Niger, results in considerable difficulty with transporting the mineral to the coast. According to a 2014 announcement, Pan-African Minerals (PAM) agreed to build a 210km railway to Tambao from the current railhead at Kaya, about 100km north of the capital Ouagadougou, as part of the development of the manganese deposit.

From here the existing metre-gauge line of Société Ivoirienne de gestion du Patrimoine Ferroviaire (SIPF - the state railway of Côte d'Ivoire) runs 11,145km to the Atlantic coast at Abidjan. It is managed by Sitarail in terms of a concession granted in 1995 for 15 years, later extended to 30.

However, Burkina Faso's present transitional government is reviewing mining contracts awarded during the tenancy of former President Blaise Compaore, whose 27-year rule ended with his ousting in October 2014. The new government has asked that production stop while it examines how the permit held by PAM, a unit of the Timis Mining Corporation, was awarded.



CAMEROON

GRINDROD LOCOS FOR CAMEROON

Formed in 1999, Camrail holds a 20-year concession to operate the metre-gauge national railway of Cameroon. The company, which runs both passenger and freight trains, is a subsidiary of French investment group Bolloré. The government of Cameroon owns the track while the rolling stock is owned by Camrail.

Pretoria locomotive manufacturer Grindrod recently delivered two new diesel-electric locomotives

to Camrail. A further two were expected at the port of Douala in May and four more before the end of 2015. The purchasing from South Africa is a new development at Camrail, which formerly contracted the Chinese company CSR Nanjing Pulszen to supply rolling stock.

According to a report by the World Bank in 2011, Camrail ranked relatively high amongst African countries for productivity indicators and was considered a regional leader in terms of implementing a concession to a non-state operator. - Wikipedia



Bobo-Dioulasso station in Burkina Faso, which has 622km of metre-gauge railway. Sitarail operates a passenger train three times a week from the capital Ouagadougou to Abidjan in Côte d'Ivoire. Photo: La Serviette - Wikipedia.

NEW LINES

In September 2010, Australia-based Sundance Resources Limited signed an MOU with China Harbour Engineering Co Ltd (CHEC) for construction of a new port near the southern border of Cameroon, able to handle 35 million tonnes of iron ore per year for 25 years. Late in 2014, the government of Cameroon granted Sundance extended time for finalising funding for its iron ore mining project at Mbalam, in the east of the country. Some years previously, Mota-Engils Africa had been named contractor to build a 510km railway to the proposed new port at Lolabe, as well as a 70km spur to the Nabeba mine in the adjoining Republic of Congo-Brazzaville. Reportedly, contracts for construction of the port, railway and mine were signed in June 2014.



Train on Cameroon's metre-gauge railway. Photo: Z Ngnogue

In terms of Cameroon's national railway master plan, a railway of about 120km is to be built to Lolabe from Edea, about 60km east of Douala on the Cameroon Railway main-line to Yaounde. On 6 May 2015, transport minister Robert Nkili signed an agreement with CHEC general manager for Central Africa, Edward Xu for the undertaking of technical and financial feasibility studies. The proposed line, to run via Kribi where deepwater harbour facilities have been completed, will facilitate bauxite transport from Mini Martap and Ngaoundal in the Adamawa region.

ETHIOPIA

AWASH WOLDIA/HARA GEBEYA RAILWAY

The Ethiopian Railway Corporation (ERC) is investing \$US1.7 billion in the Awash Woldia/Hara Gebeya railway construction project. Scheduled for completion by December 2015, the new line - which will carry both freight and passengers - will connect northern Ethiopia with the central region. The new 389km railway runs northwards from Awash, which is situated on the main Addis Adaba-Djibouti line. The route to Woldia passes through Kombolcha to reach Woldia. The line, which is to be electrified, is being built by the Turkish group Yapi Merkezi.

ADDIS LIGHT RAIL HICCUPS

The new 39-station light rail network in Addis Ababa, budgeted at \$US475 million, has run into snags. One of these concerns the Awash International Bank, whose new 10-storey building in the capital - under construction at the same time as the railway - was significantly affected. According to the newspaper Addis Fortune, the light rail builders "attached an 11m railway bridge to the fourth floor without prior warning. The bridge is supposed to give access to passengers to reach the railway which crosses over 50 metres above ground. The bank and its contractor found out about the construction of the bridge "after the building's structural work was finished and erecting columns of the first floor had already begun."

Options considered included building the bridge without attaching it to the bank, but this was not feasible "because the stairs and escalators would rest on the walkway, creating inconvenience for pedestrians." As the bridge jutted into the building, the report continues, it had to be redesigned so that "the strong room, which was to be 64m², had to be reduced in size to 42m²." The 12 offices planned for the fourth floor had to be moved to the fifth floor, with the fourth becoming open space that will be rented out. A bank spokesperson is quoted saying they accept the situation positively, despite the increased cost, as additional customers may be attracted, with the building connected to the line.



ETHIOPIA'S SEBETA-DJIBOUTI PROJECT 73% COMPLETE

The new 554km, double-track, standard gauge railway under construction from Sebeta in the north of Ethiopia to the port of Djibouti is 73% complete, according to the Ethiopian Railway Corporation (ERC). The line passes through Meiso and Dewele, on the Ethiopian-Djibouti border. Completion is scheduled by the end of the country's five-year Growth and Transformation Plan period, during which some 2,300km of new railway are being constructed.

Interior of new Chinese-built tram in Addis Ababa

ADDIS-BEDELE PROJECT BEGINS

On 13 May, Ethiopian prime minister Hailemariam Desalegn laid a foundation stone marking the start of construction on a new 491km railway to link Addis Ababa with Bedele in Oromia state.

Ultimately it is intended to extend the line, which is to have 25 stations initially, into South Sudan. Stations being provided include Ijaji, Jimma, Guraferda and Dima.

KENYA

STANDARD GAUGE ON TARGET

The China Road and Bridge Corporation (CRBC) has cleared 385km along the path of the new 472km standard gauge railway it is building from Mombasa to Nairobi. Extensive road building has been undertaken to provide access to the work sites – 443km to date. Construction work on 266 slab culverts and two frame culverts has begun. Activity began in December 2014 and the line is scheduled to be complete in three-and-a-half years. It is envisaged that passenger trains running at 120km/h will connect Mombasa and Nairobi in journeys taking only four-and-a-half hours. Two factories are in operation with the capacity to manufacture 1,000 concrete sleepers daily. Already the output has totalled 105,250 sleepers and 148 T-beams. About 10,000 people make up the current workforce and the figure may treble in time, CRBC says. The workers are 65% from local countries and more than 20% are women. As part of their benefits, CRBC provides housing and transport allowances and wages are higher than average in Kenya's construction industry.

RVR FOCUSING ON TURNAROUND

Qalaa Holdings of Egypt, formerly known as Citadel, is the principal in Rift Valley Railways (RVR), concessionaire of the metre-gauge Mombasa-Kampala line serving Kenya and Uganda. Qalaa holds 85%, the balance being in the hands of Uganda's Bomi Holdings.

Qalaa explains it has been selling off non-core assets to concentrate on its current main interests, these being RVR and "pre-operational greenfield investments in the Egyptian Refining Company." The latter together with "ongoing operational turnaround at RVR" are Qalaa's main focuses in 2015.



Passenger train on viaduct en route to Kisumu on the existing metre-gauge line. Photo: Hamndham A340.

RIFT VALLEY PROGRESS

According to Rift Valley Railways (RVR) group CEO Darlan De David, freight transit time between Nairobi and Mombasa has been sped up by six hours, following the completion of 73km of track rehabilitation between the two cities, coupled with the rebuilding of bridges near Jinja. These improvements enabled the company to lift speed restrictions.

Meanwhile Vivo Energy Kenya, distributor of Shell branded fuels and lubricants, which currently transports 4 million tonnes of oil to Nairobi and Uganda, says it hopes to double these volumes through moving transport from road tankers to rail. This has been facilitated by rehabilitation of the railway siding into Vivo Energy's Nairobi depot. At the same time, RVR is carrying out "a massive rehabilitation programme" at the company's workshops in Nairobi, Mombasa and Kampala, to return 255 out-of-service tankcars to service.



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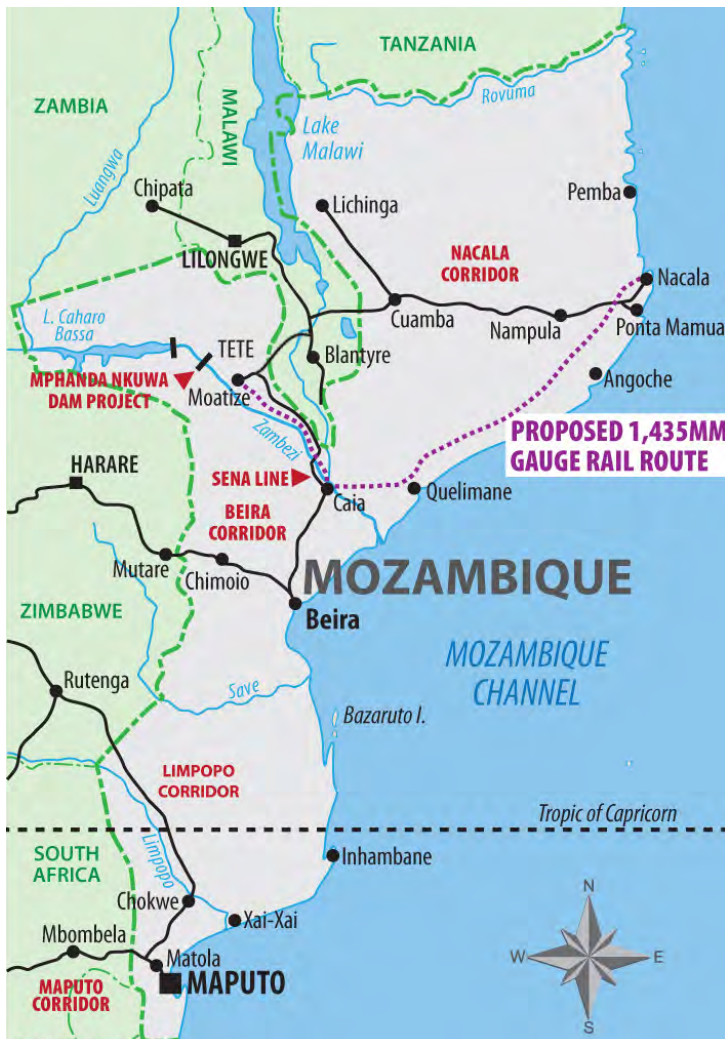
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MOZAMBIQUE

MAPUTO CORRIDOR SUCCESS



Station scene on Mozambique's Nacala line. Photo: Roderick Smith.

An African Development Bank report entitled "African Economic Outlook - 2015," highlights the Maputo Development Corridor (MDC) as "the most successful regional interconnection initiative in sub-Saharan Africa". In the years following the 1876-1992 civil war, the authorities sought to transform traditional corridors - mainly focused on existing transport infrastructure created during the colonial era - into spatial development initiatives (SDI).

The MDC is based on a rail and road link between Maputo and the provinces of Mpumalanga and Gauteng in South Africa, also providing Swaziland with an alternative to the port of Durban in South Africa. Its main "anchor", the ADB points out, was aluminium smelter Modal, a project deployed on the outskirts of Maputo at the turn of the new millennium. Representing an investment of about \$US1 billion, it was the first major industrial project in Mozambique.

To date the MDC has received investments of about \$US2.8 billion, accounting for 42% of the country's entire export revenue. A number of other companies have established premises in close proximity.

In developing its road, railway, port and gas pipeline facilities, the MDC involved several Public-Private Partnerships, driven by the Maputo Corridor Logistic Initiative, which brings together several institutional partners from Mozambique, South Africa and Swaziland.

The Beira corridor in the central region of Mozambique is another well executed SDI, the ADB says. It began by linking Zimbabwe to the port of Beira by road and rail, extended later to the "coal province" of Tete. Its road links have since been extended to Malawi, Zambia and the Democratic Republic of Congo (DRC).

Other "outstanding projects" include Nacala, which "is rapidly developing"; Libombo which the Maputo corridor connects to the coastal areas of South Africa; the Limpopo corridor linking Maputo to Zimbabwe by rail; and Mueda/Lichinga, in the north, connecting Lake Niassa to the port of Pemba and Tanzania.

The corridors of Maputo, Beira and Limpopo, the ADB explains, are supported by regional spatial development initiatives (RSDIs), within the legal framework of the Southern African Development Community (SADC). There is no country in sub-Saharan Africa, in fact, with more RSDIs than Mozambique

Since the middle of the last decade, Mozambique has spent about 10% of its gross domestic product (GDP) each year on investments in infrastructure, the ADB notes.

NAMIBIA

D&M RAIL

D&M Rail Construction (Pty) Ltd, established in 1944, is a leading Namibian railway construction and maintenance company, providing a range of services including construction, relaying of track, maintenance, manufacturing of concrete panels for ballastless track, loading, securing and offloading bulk rail equipment, railway engineering consulting, and the supply of material and rolling stock. It is participating in the

current upgrade of the national railway network to an 18.5 tonne axle-load capacity. The company recently commissioned 4most Systems (Pty) Ltd to upgrade its in-house administration and to streamline processes. A single, automated and integrated platform has become indispensable. Activities on remote sites created specific challenges, with work often taking place between 200km and 300km from home base.

GERMAN SUPPORT FOR NAMIBIAN RAIL HERITAGE

Germany, as part of its federal foreign office cultural preservation programme, supports the preservation of cultural heritage in countries around the world – an activity that began in 1981. Some N\$10 million has been made available to Namibia for this purpose since 1985. A current project involves a narrow-gauge steam engine, tender, two freight wagons and a passenger coach which have been restored by students. Dating from the early twentieth century, they are said to symbolise the beginning of the railway age in Namibia and are seen as having considerable cultural significance.

INADEQUATE RAILWAY FUNDING



Namibian country station – 683km from De Aar. Photo: Pierre de Wet.

The government of Namibia has allocated TransNamib, the state railway system, N\$98 million (about \$US8 million) for infrastructure maintenance during the 2015/16 financial year. Unfortunately this will not go far in a situation where some N\$9 billion (about \$US755 million) is needed to overhaul everything. Since 2012, over N\$393 million

(about \$US33 million) was spent by the state on railway rehabilitation and maintenance across the country, but made little impression as the infrastructure is old and should be replaced. An unnamed official told the press: “We have an operational funding shortfall, lack of technical skills, rolling stock shortage, lack of reliable locomotives and wagons, as well as aging handling equipment and rails.”

In October 2014, the company launched a 180-day turnaround strategy but the outcome is not yet known.

NIGERIA

LAGOS RED LINE METRO

The metro system planned for Lagos follows two routes- the Blue Line running east-west from Okokomaiko to Marina, which is under construction, and the Red, running north-south from Ogun State into Lagos. Financial close on the Red Line is expected within a few months, after which construction is to start at an estimated cost of N456 billion (about \$US2.4 billion). Late in May, Lagos State received the right of way for the line from the federal government. Essentially this lies along the route of the Nigerian Railway Corporation (NRC) line in the Iddo-Agbado corridor.



Map courtesy Railway Gazette International

CCECC TO BUILD OGUN INTERCITY LINE

According to the Chinese news agency Xinhua, China Civil Engineering Construction Corporation (CCECC) is to construct an intercity railway in Nigeria's Ogun state in terms of a contract worth \$US3.5 billion. CCECC is a subsidiary of China Railway Construction Corporation Limited (CRCC), whose chairman Meng Fengchao says the deal is a significant step in advancing global Chinese railway building involvement.

TRAINS & THE NEW GOVERNMENT

Passengers interviewed on a Lagos-Ogun train by the News Agency of Nigeria (NAN) appealed to president-elect Muhammadu Buhari to prioritise transformation in the country's rail transport. In particular, passengers interviewed deplored overcrowding on the trains, with people hanging on the outside of coaches and even the locomotives. Timekeeping, it was alleged, is poor.



Nigerian Railways diesel multiple-unit (DMU) set.

Quoted by the agency, Oshodi banker Gloria Chukwuma criticised the introduction of diesel multiple-unit (DMU) sets which "not only do not fit into Nigeria's railway system but are expensive. Most times, the DMU are run almost empty because it costs N750 (\$US3.75) per passenger per trip."

LEVEL CROSSING CONCERNS

The reappearance of trains on railways in Nigeria, following many years with none running at all, is catching people unawares at level crossings. Many near misses are being reported and there have been many appeals to the authorities for better warning arrangements. In every case, it is alleged that locomotive horn warnings were not heard, which seems strange, given their loudness. Two policemen had a narrow escape after their car collided with a train and was dragged some distance.



CALABAR MONORAIL

Rolling stock has arrived in Calabar, in Nigeria's Cross River state, to be used on the new monorail system which is virtually complete. State governor Liyel Imoke said he expects the trains to be running in the near future, linking Summit Hills and Tinapa, "bringing the business and leisure resort closer to Calabar metropolis". The monorail route crosses an artificial lake separating the two facilities. It is expected to be a popular tourist attraction. An agreement signed with "technical partners" will ensure that local technicians are trained to maintain the equipment.

NRI TECHNICIANS: 295 GRADUATE

At a ceremony in Lagos during June, 295 trainee technicians graduated at the Nigerian Railway Institute. Representing Nigerian Railway Corporation (NRC) managing director Adeseyi Sijuwade, the corporation's administration and human resources director Alhaji Aminu Gusua encouraged the qualified students to use the skills they had acquired in furthering growth in the nation's economy.

SUDAN

PROPOSED RAILWAYS

A recent report at <http://graphic.com.gh/features/features/44098-sudan-africa-s-emerging-trade-hub.html> says Sudan's government is "currently engaged in upgrading rail transport, and has signalled its interest in attracting multiple donors to join these projects." It adds: "a 2013-2017 proposed railway strategy foresees feasibility studies for further rail construction in order to reach underserved areas in the country, as well as the continued privatisation of rail firms to ensure competition and lower costs."

Oddly the report does not distinguish between North Sudan and South Sudan, which are now separate sovereign countries. It says "other transport projects are being put forward, including the rehabilitation of the Babanusa-Wau railway, which was damaged in civil strife" and "authorities also hope to construct rail links to Kosti and Port Sudan."

Babanusa is in North Sudan and Wau in South Sudan, so this is now an international line, whose rehabilitation may complicate funding arrangements. Since Kosti and Port Sudan lie on long-established mainlines in North Sudan, the stated intention to provide them with rail links is not clear. Thirdly, according to the report, Sudan has a total of 5,978km of railway.

Wikipedia says 4,375km.

Janes World Railways says 4,578km. Take your pick.



Diesel-electric locos at Kosti, North Sudan. Photo Bertramz.



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TANZANIA

CHINESE FIRMS TO BUILD NEW RAILWAY

Tanzania hopes construction will start soon on the new 2,561km, 1,435mm gauge railway from Dar es Salaam to Burundi and Rwanda. A contract worth some \$US7.6 billion has been signed with a Chinese consortium led by China Railway Materials (CRM), transport minister Samuel Sitta told parliament in Dodoma on 30 May. The consortium will finance 10% of the project's cost "while financial adviser Rothschilds is finalising procedures for overall financing through commercial banks", Sitta explained. With regard to the southern part of the country, the minister reported, a "framework agreement" has been signed with China Railway no.2 Engineering Group Company Limited, which is to build a line to serve facilities mining coal and iron ore. Costing an estimated \$US1.4 billion, this railway will run to the port of Mtwara.



TAZARA

MONEY SOUGHT FROM CHINA

The governments of Zambia and Tanzania are reportedly seeking loan funding of about \$US80 million from China with which to finance rehabilitation of the 1,860km Tazara railway that runs from the port of Dar es Salaam to Kapiri Mposhi in Zambia. Jointly owned by the two countries, the line has deteriorated badly over the years through lack of maintenance. It is carrying only about 400,000 tonnes annually at present but it is hoped to increase this figure to at least 2 million tonnes within two years, according to Zambian transport minister Yamfwa Mukanga. The line was originally built by China during the 1970s which advanced the cost in the form of an interest-free loan.



Derailed wagons abandoned along the Tazara line. Photo: D Brossard.

TAZARA MAY SEE INCREASED CARGO

The capacity of Tazara - the Tanzania-Zambia Railway Authority - is supposed to be at least five million metric tonnes of cargo per annum. Due to poor infrastructure, inadequate maintenance and much inoperable rolling stock, it is managing to move only about 400,000 metric tonnes at present. Immediate hopes of increasing traffic and thereby revenue have received impetus from proposals by the DSM Corridor Group. CEO Erik Kok told the Daily News about a dry port being built at Kisarawe, to relieve congestion in the harbour at Dar es Salaam. The group he said hopes to arrange with Tazara that the railway carry cargo from Kisarawe to the DRC, Zambia and Malawi at a cost considerably less than road transport. The company has acquired 80,000m² of land on which to construct an inland bulk handling terminal which will be linked to the Tazara line.

TUNISIA

LIGHT RAIL IN TUNIS

Public transport in Tunisia is overseen by the ministry of transport. Railways are the responsibility of Société Nationale des Chemins de Fer Tunisiens (SNCFT), comprising both 1,435mm and 1,000mm gauge networks. By 1992 there were five light rail lines in operation under Société des Transports de Tunis (Transtu). A Siemens-led consortium won the original contract to create the 1,435mm, overhead supply surface network. Line 1, Tunis Marine to Ben Arous in the south, opened in 1985. Most tram routes have reserved alignments. The Siemens-led consortium supplied 134 bi-directional Düwag 30m units delivered in three batches, in 1985-1998. Running singly or in pairs, these vehicles operate throughout the network.



Citadis light rail in Tunis. Photo: Alstom.

In June 2004 an order was placed with Alstom for 30 Citadis type 302 five-unit low-floor sets, the first entering revenue service in September 2007. Sixteen more trams were ordered from Alstom in July 2010. The uni-directional units run coupled back-to-back, creating ten-unit formations with a capacity of 668. The vehicles are modified for local conditions with added dust protection, heat-resistant roof panels, air-conditioning and special window coatings.

Facilities at tram stops do not compare with European standards, but service frequency is high. The Citadis vehicles offer much improved on-board information (in Arabic and French), compared with the older vehicles.

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UGANDA

KAMPALA SUBURBAN RAIL SERVICE

Uganda's Kampala capital city authority (KCCA) executive director Jennifer Musisi remains optimistic about the planned re-introduction of commuter rail service in the city. The amenity was lost some 20 years ago. Musisi was impressed by the Rift Valley Railways (RVR) urban operation in Nairobi which she visited in February together with Ugandan High Commissioner to Kenya Angelina Wapakhabulo. Earlier she had been on a trial run out of Kampala in company with officials from KCCA, the ministry of finance, RVR, and journalists along 12km of line from the main railway station in the central business district to Namanve, to the east of the city. Initially it is intended to operate two trips in the morning from Namanve to Kampala and two back in the evening. It is likely there will be stops at Namboole in Bweyogerere, Kireka and Nakawa. These are between two and three kilometres apart.

Coaches for the proposed service are available and the only obstacle appears to be a delay in obtaining government agreement for the scheme. The current concession in terms of which RVR operates in Uganda provides only for freight trains, not those carrying passengers.



ENCOURAGING UGANDANS TO USE RAIL

Ugandan business people who lost confidence in the railway during its 20-year deterioration are being encouraged to look again at this option for moving their goods. Rift Valley Railways (RVR), which has extensively revamped infrastructure and rolling stock, has reduced freight transit times between Mombasa and Kampala from two weeks to six days. The Uganda Export Promotion Board (UEPB) has been telling firms that the railway is a cheaper means of moving goods. According to RVR chief executive officer Darlan De David, his charge of \$US2,200 for carrying a 40-foot container is 10% less than the cost of road haulage. Goods are safer on the train, both from the point of view of theft risk and damage due to poor road conditions. Current rail capacity is seriously under-utilised, De David says.

PRIVATE SECTOR TRAINS WELCOME

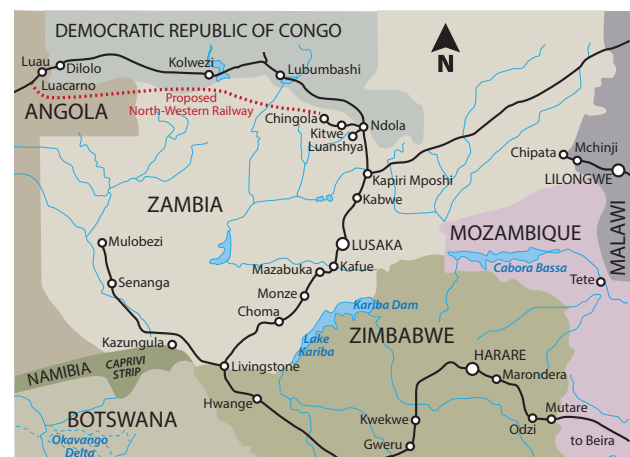
Replying to a question raised in the Zimbabwe Parliament, transport and infrastructural minister Dr Obert Mpofu said entities with the means to run their own trains are welcome to do so. The Beitbridge-Bulawayo Railway, he pointed out, demonstrates that the concept is already functioning.



ZAMBIA

MINES SHOULD USE RAILWAY

Bwengwa constituency member of Zambia's parliament Highvie Hamududu, following an inspection of Zambia's Railways Limited (ZRL) projects being implemented using money from the Euro Bond, said he hoped the mines were going to use the rehabilitated railway. The Times of Zambia quoted him saying: "This is going to be a mark of good corporate citizenship. As you know, maintenance of roads is costly and we don't have the money." The mines should see to it, he said, that heavy cargo was taken off the roads and moved to ZRL. However, if this were not done voluntarily, appropriate legislation would have to be introduced. The government spends "colossal sums," he pointed out, on maintaining roads and the mines should help preserve them.



ZIMBABWE

NRZ & DBSA

According to the Zimbabwe Financial Gazette, controversy surrounds the loan being negotiated from the Development Bank of Southern Africa (DBSA) which transport and infrastructural development minister Dr Obert Mpofu appears to view as the answer to crippling financial problems at the National Railways of Zimbabwe (NRZ). Apparently, according to the Gazette, only a small portion of the total envisaged amount (reportedly about \$500 million) would go directly to NRZ. In some way, the paper says, Transnet Freight Rail is involved in the deal, "as the agreed development partners." DBSA declined to answer questions put to it by the Gazette, referring it to NRZ.

The Gazette reminds readers that the estimated cost of putting the troubled NRZ to rights amounts to \$1.9 billion - a great deal more than the envisaged DBSA loan.



NRZ class DE9A at left and DE10A at Mutare in February 2015. Photo: G Cooke



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NRZ MAY SELL FOREIGN ASSETS TO RAISE CASH

According to the state-owned Herald newspaper in Zimbabwe, quoting transport and infrastructural minister Dr Obert Mpofu, the national railway possesses foreign assets that could be sold to raise much needed funds. Mpofu reportedly explained: "In South Africa we (the National Railways of Zimbabwe) have mining claims running into millions if not billions of dollars under a company called Pan-African Minerals Development Company, which is partly owned by Zambia through the then Federation of Rhodesia and Nyasaland, and also by South Africa since the resources are on her land. The mining claims are for minerals ranging from diamonds, gold and manganese."

Pan-African Minerals Development Company (Pamdc), a joint venture owned by the governments of South Africa, Zambia and Zimbabwe, was created in 2007 to take over diamondiferous concessions in South Africa following dissolution of the previous owner Ziza Ltd, a group jointly owned by the railways of Zambia and Zimbabwe.

ZIMBABWE RAILWAY TROUBLES

Speaking to the press after opening the recent Africa Transportation Technology Transfer Conference in Bulawayo, Zimbabwean transport and infrastructural development minister Dr Obert Mpofu explained that "the ultimate solution [for the National Railways of Zimbabwe] lies with getting an investor to capitalise and rehabilitate NRZ, which is what government is working on now." The Herald newspaper quoted Mpofu saying: "We have been engaging a number of serious investors that are interested such as Chinese companies and the Development Bank of Southern Africa (DBSA), but this is a process. We can't get an investor today and things start moving tomorrow. I want to assure the NRZ employees that government is doing everything it can to address these challenges. It's not only NRZ (that needs attention) but actually the entire Bulawayo economy itself. As I've always said, the Bulawayo economy is influenced by how the NRZ performs because of its employment force of over 20,000 workers. It's unfortunate that it will take a bit of time for the NRZ to be back on its feet."

Answering a question in parliament late in June, minister Mpofu explained that "The current state at National Railways of Zimbabwe is due to a decline in business and also because of vandalism of infrastructure." NRZ staff had not gone completely unpaid as the lowest paid workers were getting 75% of their salaries, while the top brass received 50%.

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RAILWAYS CRITICAL FOR ECONOMIC GROWTH

A panel of transport ministers from African countries agreed at the recent Southern Africa Railways Association (Sara) conference in Johannesburg that railways are a great deal more than a transporter of goods and passengers. Railways contribute meaningfully to their parent country's economic growth, but there is an important proviso - they have to be efficiently managed. The ministers, who came from Swaziland, Zambia, Tanzania, Mozambique and Botswana, emphasised the importance of governments investing in rail. Initial cost might be high, but the dividends pay off in the long run.

CHINESE LOAN FOR TRANSNET

The China Development Corporation is to lend Transnet \$US2.5 billion to help fund its current orders for new locomotives, acting CEO Siyabonga Gama said in Cape Town on 4 June. The loan will be payable over 15 years, with a first tranche of \$1.5 billion to be drawn over the first four years. The funding will cover about 60% of the amount needed to build 1,064 locos, he explained. "Including this agreement, Transnet has secured 92% of the required funding," Gama said.

THREE-YEAR TRANSNET WAGE DEAL

On 2 June, a three-year wage agreement was signed between Transnet and two labour unions - the South African Transport and Allied Workers' Union (Satawu) and the United National Transport Union (Untu). Backdated to 1 April 2015, employees are to be given increases of 7%, 7.5% and 8.25% in respect of the years 2015, 2016 and 2017. In addition there are to be adjustments in nightshift and standby allowances, also those for housing and medical aid. Transnet has given an assurance that there will be no "forced retrenchment for operational reasons" during the currency of the agreement.

In terms of a separate agreement, "first-line managers, specialists and technicians" are to receive increases equivalent to 75% of the negotiated yearly increase, with the remainder subject to each employee's performance.

PRASA'S MONTANA STEPPING DOWN



Passenger Rail Agency of South Africa (Prasa) group chief executive Tshepo Lucky Montana, who does not intend renewing his contract in 2016.

Group chief executive Tshepo Lucky Montana does not intend renewing his contract with the Passenger Rail Agency of South Africa (Prasa) when it runs out at the end of March 2016. He has held the position since October 2010. It is understood that the parastatal has commenced efforts to find a successor. Montana was previously a deputy director-general at the Department of Transport in Pretoria. He holds degrees from the University of Cape Town in social sciences and industrial sociology (social research methods), and completed a course at The Hague for South African Economic Policy-makers, as well as a construction management programme at Stellenbosch University. In a statement, Prasa chairman Dr Popo Molefe applauded Montana for his outstanding achievements at the agency in modernising the fleet, its infrastructure and operations.

STATION UPGRADING

It is understood that the Passenger Rail Agency of South Africa (Prasa) intends reintroducing passenger trains on the routes Johannesburg-Mafikeng and Mafikeng-Kimberley. It has called for tenders "to project manage the construction, improvement and general upgrade of six projects." The six stations listed are: Magaliesburg, Koster, Swartruggens, Zeerust, Slurry and Mafikeng.



Magaliesburg station. Photo: Reefsteamers

PRASA VISITS AdMAS



AdMaS Centre at the Brno University of Technology

A delegation from the Passenger Rail Agency of South Africa (Prasa) recently visited the AdMaS Advanced Materials, Structures and Technologies Centre, part of the faculty of civil engineering at the Brno University of Technology in the Czech Republic. According to AdMaS, the centre had never previously had visitors from so far away. "Keen interest and numerous inquiries testified that the guests were impressed by the centre".

According to its website, "AdMaS focuses on research and development in the area of advanced construction materials, structures and technologies, and their real-world application in not only the construction industry, but also transportation systems and the infrastructures of cities and municipalities."

GAUTRAIN FARES UP

Fares on the Gautrain system are adjusted annually. Most rose between 4% and 6% from 1 June 2015. The airport branch continues to charge premium rates with that from Sandton rising from R135 to R142 per single trip. One-way journeys from Johannesburg's Park Station to Pretoria went up from R64 to R68 (peak) and R58 to R61 (between peaks). Off-peak bus fares remained unchanged, but peak charges increased by R1.00, as did the R18 parking charge at Gautrain stations.

According to provincial transport MEC Ismail Vadi, average weekday train patronage currently exceeds 56,000 passengers, with buses at 22,000. It is intended to reduce the intervals between peak-hour trains from 12 to 10 minutes.

CAPE TOWN'S TRANSPORT DEVELOPMENT INDEX



Metrorail commuter trains at Cape Town's Woltemade flyover: the city would like to see fares halved.

Cape Town's recently released Transport Development Index (TDI) - claimed as the first developed in Africa - divided the city into 18 transport analysis zones and measured the access priorities or concerns of four user groups: public transport, private car, non-motorised transport and freight.

According to the findings, the city's lower income commuters spend as much as 60% of their monthly household income on transport, and 95% of public transport users fall into this income category, with the majority living in Mitchells Plain and Khayelitsha. These commuters are particularly hard hit as they tend to live at considerable distances from economic hubs, and often have to use more than one mode of transport.

The low income group, the TDI found, spends an average of R45 of every R100 of their monthly household income on transport. Most travel between 45km and 70km each day to get to work.

These figures are highlighted as key concerns, with the city saying it is committed to halving the cost of travel, as well as the costs to other user groups, within the next 15 years.

It is not clear how Cape Town plans to achieve a halving in rail commuting costs. ie fares, as these are set by authorities in Pretoria over which the city has no control. As matters stand currently, rail commuter fares represent only about a third of the cost of providing the service. To halve the cost of these fares implies astronomic increases in the existing high level of subsidy, which municipal ratepayers could not possibly be expected to meet.

CAPE TOWN TO SHIFT ROAD FREIGHT TO RAIL

The City of Cape Town is drafting a strategy for freight transport, aimed at alleviating “some of the massive costs” this sector incurs annually on the city’s roads. Mayoral committee member for transport Brett Herron explains the idea as shifting as much freight as possible from the roads to the rail network in the metropolitan area.

According to the city’s recently compiled Transport Development Index (TDI), the direct transport cost for the freight user group identified by the study is R1.7 billion annually, made up in the cost of fuel, salaries and toll fees. The index divided freight users into four categories: local deliveries, then medium, heavy and long-distance freight. Traffic congestion, Herron says, adds 10% to the direct costs – some R121 million each year.

The impact on residents in terms of accidents is costed at R930 million annually. Wear and tear on infrastructure caused by freight transport is estimated at about R713m a year in terms of capital expenditure and maintenance.

These calculations should have been made four decades ago – before all the private sidings along the commuter lines were lifted, and the suburban goods yards closed. Those at Rondebosch and Wynberg, to take two examples, were sold to developers who lost no time erecting flat blocks and commercial buildings. The lines themselves have been sold to the Passenger Rail Agency, which does not operate freight trains and possesses none of the necessary facilities. What exactly does Councillor Herron have in mind?



Cape Town suburban goods yard at Rondebosch in 1990, since sold to developers who erected office blocks and flats.



The former goods yard at Wynberg, now the site of commercial development. All trackwork to the right of the train, which is on the Up line, has been lifted.

FIRST NEW PRASA COACHES COMPLETED IN BRAZIL



First of the new coaches for Prasa - Photo: GIBELA

The first two of a contract to supply 3,600 commuter coaches to the Passenger Rail Agency of South Africa (Prasa) were completed late in May at Alstom’s plant in Lapa, Brazil. Currently they are undergoing static testing. A further 16 vehicles are to be built here, while training South African technicians. The first complete trainset is scheduled to be shipped to South Africa in November. Following intensive testing, it is expected to enter revenue service by mid-2016. Delivery of the rest of the order is unlikely to begin for some time after that, as construction is to be undertaken at a new factory, whose building has not yet begun, in Dunnottar, Gauteng. Traction motors are to be manufactured at Alstom’s Sesto plant in Italy. Bogies will be made at Le Creusot, in France.



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GIBELA CONFIDENT IT WILL MEET TARGET

Gibela consortium managing director Marc Granger, and Passenger Rail Agency of South Africa (Prasa) CEO Lucky Montana, both dismiss media speculation suggesting that the rolling stock programme is behind schedule and that problems with suppliers may cause delays. According to Granger, seven of the 20 coach body shells which are to come from Brazil have been completed at the Alstom factory in Sao Paulo. Materials such as stainless steel and electric cabling are being sourced from South Africa. As far as construction of the R1 billion proposed manufacturing and training facility is concerned, only receipt of the environmental record of decision is still needed; this should be finalised soon, after which construction of the plant can begin.

With regard to component suppliers, "about 30" firms have been contracted to date. Some 500 local concerns have registered as participants interested in the supplier localisation programme.

The Gibela consortium is a joint venture between Alstom Southern Africa, New Africa Rail and Ubumbano.

TRANSPORT WATCHDOG FOR SOUTH AFRICA

Briefing the media prior to delivering her department's budget vote in parliament, transport minister Dipuo Peters said: "We are in the process of establishing the Single Transport Economic Regulator (STER) in order to address the regulatory shortcomings across the transport sector."



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FIRST GAUTRAIN IN SERVICE: 8 JUNE 2010

Exactly five years ago, on 8 June 2010, the first Gautrain set in revenue service left Sandton bound for the airport. Today the airport line is carrying around 6,000 passengers every weekday. The complete service - Hatfield-Pretoria-Centurion-Sandton-Park station, together with the airport line, - sees about 60,000 train passengers and about 23,000 on the buses, on a typical weekday. According to Gautrain Management Agency CEO Jack van der Merwe, train availability during the five years has been 99%, with punctuality scoring 98%. From June 2010 to April 2015, about 300,000 train and 1.5 million bus trips have been made.

EASTERN MINERAL AREA SHUTDOWN



Boulder and portion of rack railway at Waterval Boven. Photo: Boon Boonzaaier.

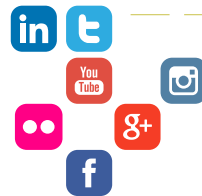
Transnet Freight Rail (TFR) embarked on a 10-day line shutdown from 16 June in the main Mineral Mining & Chrome (MMC) area of operation. The affected region described in the official announcement was “Waterval Boven, Acornhoek and Mtubatuba lines with flows originating from Phalaborwa and Witbank to the ports of Richards Bay and Maputo.”

An impressive list of tasks to be undertaken included the laying of new rails, installation of new sleepers, ballast screening and tamping, overhead electrical adjustments, sub-station overhaul, transformer and circuit-breaker repairs, attention to signalling and work on the optical fibre communications network. The strategy in terms of which designated portions of important lines are shut down for concentrated maintenance on an annual basis has been working well, notably on the heavy-haul iron ore and coal lines.

No trains ran during the shutdown. Every effort was made to minimise disruption, with rerouting taking place where possible.

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BUDGET SPEECH - S A TRANSPORT MINISTER

Condensation of South African transport minister Dipuo Peters' budget speech media briefing:

“Twenty-one years ago we began a new journey to eradicate the oppressive legacy of colonialism and apartheid. Our journey continues. As sector transport, we have ensured that we implement radical socio-economic transformation to meaningfully

address poverty, unemployment and inequality. More than ever before, through our modes of transportation, we must work together to promote nation building, unity and social solidarity as we free the economy from the shackles of the past.

“Transport as a mover of people, goods and services, it is the heartbeat of the economy and the fabric of our socio-economic development agenda. Transport continues to be a powerful catalyst for South Africa's economic connectivity and growth.

“Through this budget that we will be tabling today, we are investing R53.7 billion in the current year, which is a 6% increase in real terms compared to the 2014/15 financial year. The ANC-led government has made an unprecedented commitment to high levels of funding over the next MTEF period with the budget expected to increase to R59.3 billion or 11% by 2017/18.

“The Department of Transport's contribution to the NDP is underpinned by the National Transport Master Plan (NATMAP) 2050 vision. The NATMAP is therefore aimed at delivering a dynamic, long-term and sustainable transportation system framework which is demand-responsive and that provides a coordinated transport agenda for the whole country.

“In response to the NDP call, in 2014, the ANC government further made a commitment that new jobs will be created and skills developed by manufacturing and assembling, amongst others, locomotives and trains in South Africa.

“Our determination to transport economic goods through rail will also ensure that we reduce the number of road crashes and fatalities on our roads. This move will equally unlock more economic potential and job creation in the rail sector. It will also help to decrease congestion caused by freight transporting dangerous and heavy

goods. The durability of our roads will also be guaranteed.

“The ANC-led government increased transport funding to record levels - with R25 billion over the last five years alone and R5 billion in the 2014/15 financial year.

“Amongst other achievements, by 2016 we expect Gautrain and the South African National Taxi Council (Santaco) to commence with the roll-out of the card system in their operations. We

expect at least five million cards to be in use in the next five years.

“The taxi industry remains the most important part of our public transport system and according to the 2013 National Household Survey conducted by Statistics

“Transport as a mover of people, goods and services, it is the heartbeat of the economy and the fabric of our socio-economic development agenda. Transport continues to be a powerful catalyst for South Africa’s economic connectivity and growth.

South Africa; taxis are the preferred type of road transport. The taxis move 68% of the 5.4 million on a daily basis and contribute immensely to our economy. Serious interventions will be announced in the budget speech. The department will be reviewing the taxi

recapitalisation model to improve its effectiveness and affordability.”

While it may be true that 68% of commuters in the whole of South Africa use minibus-taxis, it would be dangerous to plan on the assumption that this proportion holds true for every individual area. In Cape Town, for instance, the proportion is nearer 30%. Secondly, the percentage represents the actual passenger count, not necessarily (to quote the minister) what the users prefer. Taxi-user misgivings recorded in the survey suggest that many might prefer other modes of transport, if these were perceived as giving better and safer service. – editor, Railways Africa.

COAL OF AFRICA’S MAKHADO PROJECT

Coal of Africa has been allocated mining rights by the South African Department of Mineral Resources in respect of its Makhado Project. In terms of the group’s definitive feasibility study in 2013, it will be developing mining facilities capable of producing 2.3 million tonnes of hard coking coal annually and 3.2 million tonnes of thermal coal, over an estimated mine life of 16 years. The proximity of good rail connections at the site will facilitate transport both within the country and for export.

S A INTERCITY TRAIN CHANGES

A combined tourist & Premier Classe train is being introduced between Johannesburg and Durban. The departure in the down direction is on Thursday evenings. The return journey begins late on Sundays, arriving back in Johannesburg early on Monday.

Intercity passenger fares in South Africa increased with effect from 1 July.

TRANSNET’S “TAKE OR PAY” HITS ESKOM

In essence, Transnet instituted its eminently practical “take or pay” coal traffic scheme to ensure that costly infrastructure is not underutilised and that the heavy cost of investment is recovered from revenue. Most producers have signed up, the parastatal reports, and the principle appears to be working well. Whether everyone in

the coal business is happy seems less certain, notably as far as those downstream in the supply line are concerned. It was of course inevitable that the charges would be “passed on”. Exxaro for instance signed up Eskom on a “take or pay” basis in respect of coal destined for the new Medupi power station. Unfortunately, the building of

Medupi is running several years behind schedule. According to press reports, this means Eskom is paying for the supply of coal to Medupi which it does not need currently and is unable to use. To recover this outlay, no doubt it will want to charge its own customers more.

Customers such as Transnet, for example?

REVAMPING FALSE BAY STATION

The Passenger Rail Agency of South Africa (Prasa) station improvement programme focuses on enhancing commuter experience as well as the look and feel of each station, corporate regional manager (real estate solutions) Lindelo Matya explains. Work on revamping False Bay station, 1.6km north of Muizenberg on the Cape Town-Simon’s Town line, came to a halt recently due to dissatisfaction with the contractor’s performance.

A new firm has now been appointed and construction is going ahead. The waiting rooms, platforms and shelters are being upgraded but commuters will have to make do with temporary toilets for some time. The renovations to the toilets are expected to take four to six months, Matya says, with other construction taking three to six months.

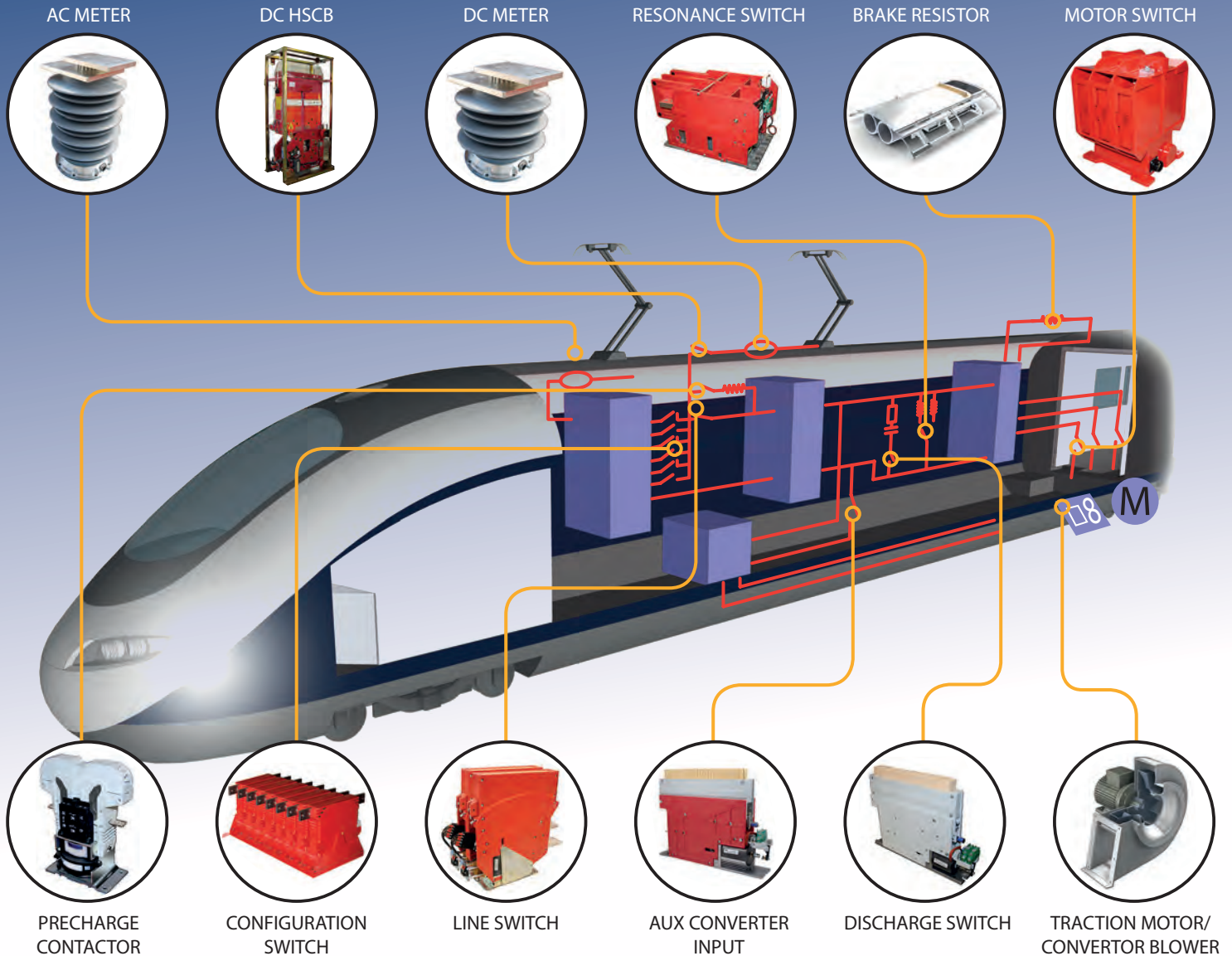


False Bay station (that’s the one before Muizenberg), with unusually shaped shelters.



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FALLING CEMENT DEMAND - FEWER CLINKER TRAINS

For some time, Peter Bagshawe observes, the only regular traffic at the southern end of the KwaZulu-Natal South Coast line has been clinker conveyed daily from Simuma, northbound to Mount Vernon (for Natal Portland Cement - NPC) and coal brought south weekly for Simuma. "The clinker trains normally comprise 40 type DJ wagons hauled by three class 37 locos."

On 20 May, Bagshawe writes, he was surprised to see "the southbound clinker empties made up of 40 type CMR low sided wagons hauled by only two class 37 locos."

Commenting, Ashley Peter says he has heard that the demand for cement has dropped drastically, "in fact to such an extent that the clinker trains, which used to run daily (often including weekends and occasionally even twice per day) have now been reduced to only a couple of trains a week." The change in wagon type, he surmises, is in line with a proposed switch to airbraking on the clinker trains.

POST OFFICE TUNNEL TO PARK STATION

Construction workers busy with a new minibus-taxi facility in central Johannesburg recently encountered the old tunnel running from Park station to the site of what was the main post office in Jeppe Street. It is still accessible from platform 13 on the station. Though the National Heritage Resources Act of 1999 protects structures older than 60 years, the National Heritage Council was apparently unaware of the tunnel. Retired Transnet Museum curator Eric Conradie, who researched the history of the complex many years ago, explains that speed was the essence of the system as the trains went direct to and from the docks at Cape Town, and mailships could not be delayed. The conveyor belt facility installed was said to be a feat of engineering at the time it was set up in 1935.

DBSA & TRANSNET IN BIG PSP DEAL

Increasing private sector participation (PSP) in the country's infrastructure investment programme is part of the Development Bank of Southern Africa's (DBSA) mandate as a development finance institution. Once a project is ready to go to market, DBSA will be eligible to compete as one of the funders.

Transnet, it is announced, is partnering with the DBSA in a drive to accelerate PSP in its multi-billion rand infrastructure investment programme. The initiative, agreed by Transnet acting group chief executive Siyabonga Gama and his DBSA counterpart Patrick Dlamini, is to see the DBSA providing funding and expertise for PSP preparation work including transaction advisory services. In terms of the agreement, DBSA will share in project preparation funding, contribute financial and project management skills and capacity, provide indicative terms and amounts to expedite funding of PSP project execution and provide strategic support in implementing Transnet's PSP programme.

"Finding innovative funding solutions is a key element of Transnet's market demand strategy (MDS)", Gama explains.

"Partnerships with the private sector will not only broaden our sources of funding for capital investments, but will give us access to private sector skills and expertise.

"At the same time, they will help us manage risk and provide alternative procurement tools for large infrastructure projects. In addition, PSPs provide entities like Transnet with mechanisms to ensure black participation in large-scale projects."

"This partnership speaks to one of our core objectives of supporting economic growth through investing in economic infrastructure - transport being one of the four key focus sectors to achieve this," Dlamini elaborates.

Transnet's MDS is pillared on a rolling seven-year R336 billion infrastructure investment programme. The projects in the PSP portfolio include the manganese common user loading facility in Northern Cape, the Grootvlei coal loading facility in Mpumalanga, the Tambo Springs inland container terminal to be built in Ekurhuleni and the container terminal at the new Durban Dig-Out Port, where construction is to begin soon.

TRANSNET'S CLASS 22E LOCOS

According to the Xinhua news agency, the South African orders for 359 class 22E and 100 class 21E dual voltage electric locomotives represent the largest ever export contract for Chinese transport equipment. The first class 22E unit was completed and displayed at a function on 10 April by the Zhuzhou Locomotive subsidiary of China South Rail (CSR). Like the earlier class 20E and 21E locomotives, the 22E operates on either 3kV DC or 25kV AC power supply.



Chinese-built class 20E electric locos crossing the Swartkops River at Port Elizabeth with a manganese consist. Photo: Richard Gillatt.

BLUE TRAIN & ROVOS ON THE SOUTH COAST

With the Blue Train, Rovos Rail and Premier Classe trains all in Durban for the annual Tourism Indaba in the second weekend in May, the opportunity was taken to run special trips down the South Coast. On Friday 8 May, the Blue Train, headed by its new class 20E locos, ran a "dinner trip" to Scottburgh at 18:00, arriving there at 19:30, and leaving again at 21:00 for return to Durban at 22:30.

The Rovos Rail set was due out on Saturday, Sunday and Monday at 19:45, arriving at Umkomaas at 21:00, departing there at 21:20, and reaching Durban again at 22:30.

- (News from Ashley Peter).



Class 20E locos heading the Blue Train near Bloemhof, 331km south-west of Johannesburg, in mid-June. Photo: Jacque Wepener.

TFR AUCTIONS

Peter Bagshawe reports:

Transnet Freight Rail auction 112 took place on 18 March. Altogether the sale included 20 locomotives, four coaches/cabooses, and 53 wagons. All were sold at prices ranging from R766/t (one wagon at Phalaborwa) to R2,839/t (two locos, class 34 and 36 at Koedoespoort), an average of R1,738/t. The seven 8Es at Umbilo raised the second highest price, R2,470/t, while the ten 9Es at Salkor raised R1,624/t, and the 8E at Lime Acres R1,414/t. All bogies and components on sale were sold (Lots 51-57/61-76).

At Auction 113 on 18 March, all the loco and rolling stock lots were sold except for a coach at Port Elizabeth (Lot 5 - 3rd class 25743 - no bogies), and four derailed wagons sans wheels at Komatipoort (Lot 6), as the reserve price in both cases was not realised.

- The two 6E1 locos at Koedoespoort (Lot 1) fetched R230,000 (R3,159/ton). These were E1151 (with bogies) & E1294 (without bogies & components).
- The 38 class at Sentrarrand (38 045 - sold without bogies - Lot 2) only managed R60,500 (R1,662/ton).
- The six coaches at Bloemfontein (Lot 3) did well at R285,000 (R2,608/t). (Coaches 4415/25756/25852 were sold complete with bogies, 23198/25049/39010 without; 4415 was a burned out frame, 23198 was marked 2nd class and the rest were 3rd.)
- The eight wagons at Leeuhof (Lot 4) managed R1,579/t.
- The four derailed wagons sans bogies at Newcastle (Lot 7) fetched R2,194/t.

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Road to Rail – questions and answers

Getting freight – and passengers – off the road and back to rail has been a priority objective in many countries in recent years. A number of African countries, Zambia, Kenya and Nigeria for instance, view the measure as the only way to combat uncontrollable road deterioration and spiralling accident rates. In South Africa, for similar and several other reasons, the concept has been official policy for some time; it is high on the priority list at Transnet Freight Rail (TFR).

While effecting the desired shift may be a national imperative, how feasible is it - and to what extent is it likely to succeed? The issue was debated at a recent Transport Forum special interest group session, by prominent speakers from various industry sectors.

TFR executive manager (strategy and planning) Elvin Harris stood in for acting chief executive Ravi Nair, who was unable to attend as scheduled.

Barloworld Logistics' marketing executive Kate Stubbs provided a logistics industry perspective. Andre Botha, chairman of the Southern Africa Shippers Transport and Logistics Council (SASTaLC), discussed the issue of goods that "actually belong on rail". The CSIR's Dr Paul Nordengren shed light on the current state of road freight in South Africa.



TFR executive manager (strategy and planning) Elvin Harris

“Our key objective is to enhance South Africa’s competitiveness by reducing the cost of logistics.”

“A lot has been going on over the last seven to eight years but [Transnet] is a big ship to turn around,” Harris explained. Some 35 years ago, with regulated freight transport, there was a modal imbalance in favour of rail. Today the pendulum has swung too far the other way.”

Following a kick-start from its Market Demand Strategy (MDS), Transnet has started to turn the corner “very aggressively”, Harris said. Before the MDS was launched, Transnet was providing capacity and services according to what it could afford, determined by available capital.

As the market for freight on rail is currently viewed as healthy, Transnet sees strong incentive for investing very substantially, enabling it to offer levels of efficiency that will draw customers back and also win new business.

Only some freight

Transnet has no desire to move every ton of cargo in the queue. The main priority is to get back several hundred tons that most obviously belong on rail, i.e, goods that can be termed “rail-friendly”. The next step is to build the necessary collaboration and partnerships in order to secure additional traffic, using a mix of technologies, infrastructure and services.

“If we can draw this freight back onto rail then we will have done both our country and the region a huge service. And done what we are supposed to do,” Harris asserted.

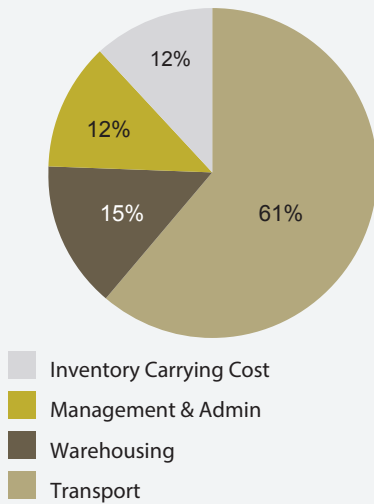
“Our key objective is to enhance South Africa’s competitiveness by reducing the cost of logistics.” In the CSIR’s ninth Annual state of logistics survey (2012), it explained that South Africa’s total logistics cost was 12.8% of gross domestic product.

Contribute to South African Competitiveness by Reducing the Cost of Logistics

Total logistics cost (2012)* = 12.8% of GDP

Transport costs are high - driven by high fuel prices. Rail contributes only ~11% to the transport costs.

*9th Annual State of Logistics Survey



Harris pointed out that 61% of this cost is due to transport, to which rail contributes only some 11%. These figures are due to the high price of fuel.

In order to attract shippers back to rail, he went on, Transnet is improving the efficiency of its operations. TFR wants to improve modal collaboration and foster intermodalism. The aim is to see a “networked economy” in South Africa, rather than one mining-based.

A further aim is to attain global competitiveness for local shippers, as well as “downstream industries”.

Meanwhile, discussions between Transnet and the Department of Trade and Industry have centred on the placing of building blocks to contribute towards industry’s ability to beneficiate its products. An efficient supply chain would be indispensable here. To achieve this, Transnet needs to provide capacity while balancing development with long-term investment returns.

In the past, Transnet struggled to reach annual traffic volumes of 200 million tonnes, but it has done so consistently over the past five years. “TFR moved from transporting 212 million tonnes last year to more than 235 million tonnes this year,” Harris reported.

Legitimately winning market share

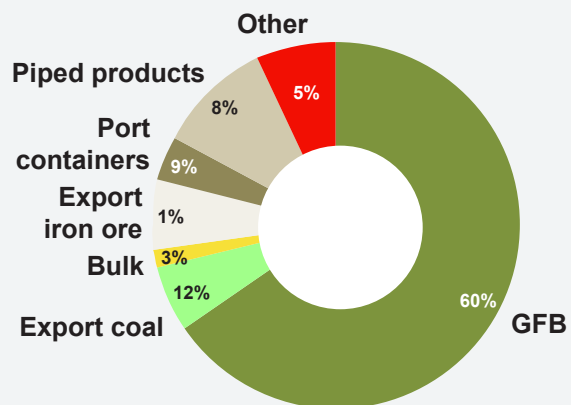
“We have to build up the right kind of structure so that we can legitimately win back market share,” Harris continued.

The initiative to move freight back to rail stands on two pillars, operational efficiency and capital investment. To achieve operational efficiency, TFR will be improving its operations and train planning. It will be looking to make use of bi-modal technology and standardising systems. When it comes to TFR’s people, the company is striving to entrench operational discipline and adherence to operating procedures. Finally, it needs to develop rail operational skills.

Capital investment is needed to maintain current systems and build new capacity. This will entail detailed capacity planning for both rolling stock and the network. New rail technologies and the adding of new locos to the fleet will assist with maintaining and building capacity. Where possible, TFR will expand strategically while developing engineering and project management skills.

Over the past five years, in realising these aims, Transnet has spent more than R100 billion. Of this, some 60% has been investment in upgrading general freight services. Of this 60% in turn, 57% has been for replacement and 43% has been for expansion.

Capital Investment by Commodity



The locomotive modernisation programme is part of this drive for efficiency. Recent increases in the reliability of the locomotive fleet has resulted in steadily improving cycle times, an important factor in regaining market share. While most of the newest locomotives are being used to move bulk minerals, the 1,064 new units on order are mostly earmarked for general freight services.

Non-compliance a problem of road



The CSIR's Dr Paul Nordengren (built environment research group leader: network asset management systems)

There are many critics of the railway, but the road transport industry has serious problems of its own. One of the major problems, Dr Paul Nordengren explained, is the pervasive culture of non-compliance.

Overloading of all types of vehicles is common, but this is only one example of regulations being widely disregarded. Enforcement of road traffic law is lax and open to corruption. Compounding this, maintenance has lagged far behind the rate at which roads have deteriorated.

Nevertheless, despite the many problems experienced by those despatching by road, freight-by-truck remains the preferred mode for the major proportion of South Africa's non-mineral goods consigners. This contributes to South Africa's high cost of logistics and lessens the country's global competitiveness.



Andre Botha, chairman of the Southern Africa Shippers Transport and Logistics Council (SASTaLC),

SASTaLC's Andre Botha explained some of the reasons behind the migrating of huge amounts of freight from rail to road in recent years. When road freight was deregulated in 1988, customers were enabled to exploit the speed and security that road transport offered. Truck couriers were able to offer efficient, on-time delivery in contrast to rail, which was slow, not nearly as secure and much less flexible. For shippers of high value cargo, road was the obvious choice.

This situation continues to prevail today, Botha pointed out. Rail service levels will need to improve significantly before freight will return to rail in meaningful volumes.

Rail-friendly cargo?

Botha discussed freight that is suited to rail transport. For example, transporting vast volumes of export coal and iron ore would be totally impractical by road. Conversely, perishable goods can't spend a week or two on a train. For a cargo to be termed "rail-friendly", Botha explained, there have to be large volumes of homogeneous freight. Palletised cargo and containerised goods meet these criteria. Ideally there has to be a steady flow of cargo to the loading point and similar flows at the offloading point or terminal.

Invariably too, rail-friendly goods mean items that travel considerable distances. Small-size consignments that have to be sent by road to a station, conveyed a short distance by rail and then fetched by road for delivery at the other end, are obviously not a proposition.

Ideally, rail-friendly cargo needs to be ensured over a period of some years, if the required investment in rail infrastructure is to be justified.

In the course of road-to-rail migration, Botha conceded, initiatives such as the National Development Plan and Transnet's Market Demand Strategy are steps in the right direction.

According to Barloworld Logistics' Kate Stubbs, rail had a "shockingly" poor public image in 2005; road transport did not fare much better.



Barloworld Logistics' marketing executive Kate Stubbs

The Frost and Sullivan 2009 Supply chain foresight survey revealed that industry wanted to engage with government about the state of rail, in particular, the development of general freight lines. Also in 2009, the public started to become aware of Transnet plans to improve the railway. In spite of the ensuing recession, there was a drive for public-private collaboration which was seen as vital. "However, there was very little confidence in Transnet, in government, and in its rail initiatives," Stubbs maintained.

"Public-private sector engagement is key. We don't have the answers for this, but together, we could work out how to do it more effectively."



The Transport Forum's
Harry van Huyssteen

A must for transport and logistics practitioners

Anyone involved in supply chain management or logistics in South Africa is no doubt aware of the Transport Forum and its special interest group meetings that happen once a month.

In January 2010, T-Systems South Africa acquired the state-owned enterprise arivia.kom. At T-Systems the Transport Forum continues to play a critical role in understanding the challenges faced by the transport industry. Under the leadership of Harry van Huyssteen, the Forum offers relevant and stimulating presentations from transport industry leaders.

For more information:
www.transportsig.com



The survey showed that 79% of those reviewed moved only 10% of their goods on rail. When asked whether they would use rail more extensively, if there were adequate rail capacity, 46% said they would move up to 20% of their goods by rail.

Poor perceptions

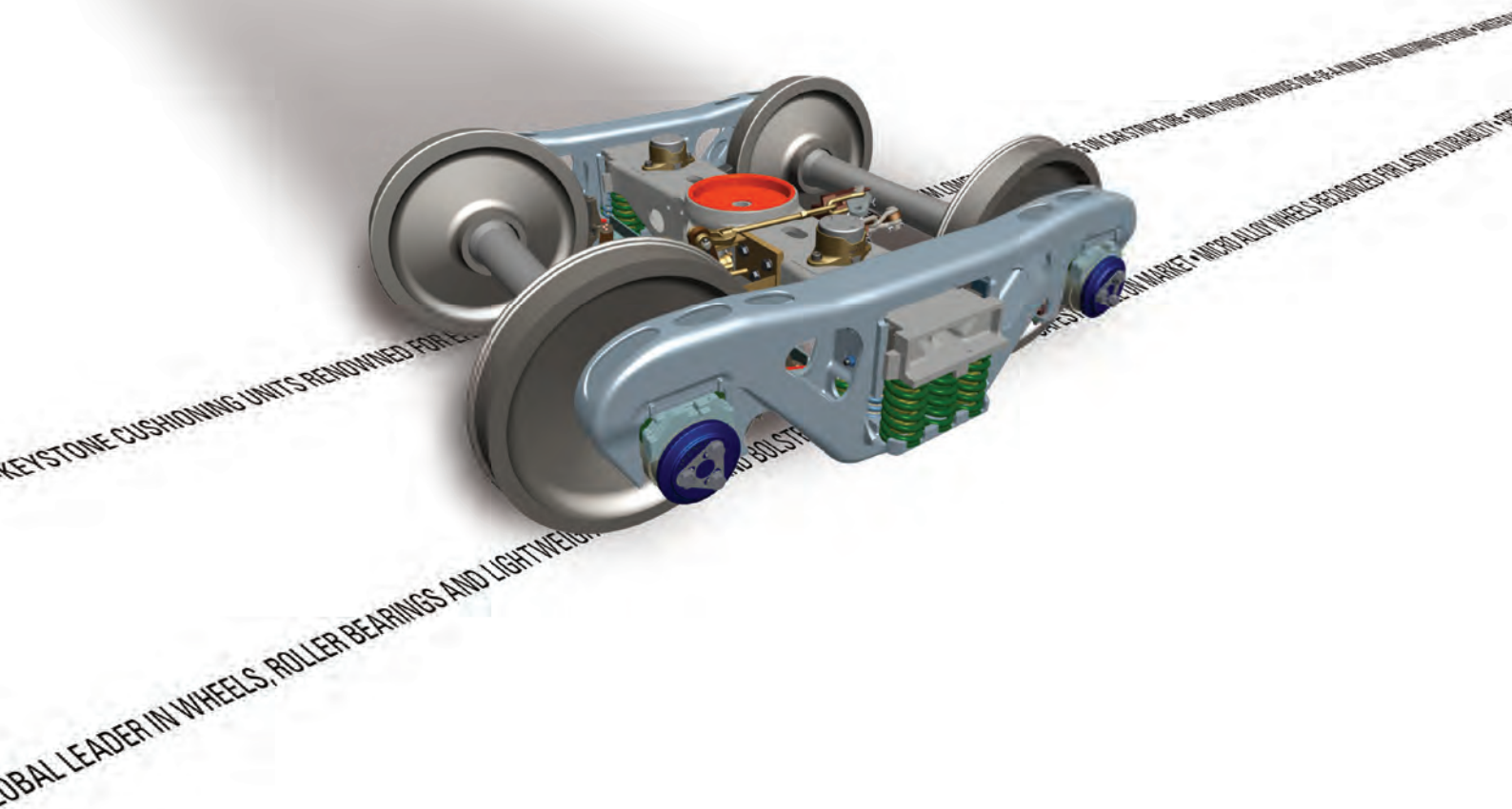
Both the rail and road transport industries are under great pressure and perceptions of both remain poor. Road's image is beset by concerns about safety, governance and road behaviour; its customers worry about safety, risk and cost issues. Lack of capacity, accessibility and reliability on the other hand are the main concerns of rail customers.

However, there are positive developments. "Lots of partnerships are happening. We've formed a partnership with Transnet - we've signed an MOU and it's starting to reap rewards and the dialogue and engagement have been fabulous," Stubbs said.

"Public-private sector engagement is key. We don't have the answers for this, but together, we could work out how to do it more effectively." She explained that perceptions of both industries are changing, but too slowly.

"I'd like to see clarification of the South African transport strategy," Stubbs continued. This would include defining the roles and responsibilities of various government departments, and transparency about ownership and accountability.

"There is an opportunity for all of us to create competitive strategies - now and for the future - for our country and for our businesses," she concluded.



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A significant milestone is reached as a 550kVA Cat C15 diesel generator set is assembled at Barloworld Power's Boksburg facility.

Barloworld Power to assemble Cat generators in South Africa

Caterpillar and Barloworld Power have launched a combined initiative to assemble Cat electric power generators in South Africa to meet rising demand, reduce unit cost and promote localisation.

As the first Cat equipment assembly unit to be established in South Africa, the new facility marks a significant milestone in the partnership between Caterpillar and Barloworld Power, its Southern African dealer for energy and transport.

The generators are supplied in kit form and assembled locally from scratch, contributing to the drive for localisation and enabling the transfer of new and valuable skills to South African employees. This enables the Cat units to compete on a more even footing with locally manufactured equivalents.

“The assembly facility is a major step forward in Barloworld Power and Caterpillar’s growth aspirations across Southern Africa,” says Mark Mencil, executive director of Barloworld Power Southern Africa.

“Cat branded generators are now being assembled at Barloworld Power’s Boksburg (Gauteng) premises that have the same highest

quality standards for which Caterpillar is renowned worldwide. Barloworld Power now offers truly competitive Cat products while aligning with government objectives in local employment and development.

“This initiative between Barloworld and Caterpillar promotes localisation and leverages our excellent capabilities to provide a local solution for South Africa,” adds Chris Monge, Caterpillar area manager. “This represents a significant investment in the local economy to support our growth strategy in the power business.”

“This initiative between Barloworld and Caterpillar promotes localisation and leverages our excellent capabilities to provide a local solution for South Africa.”

The assembly unit was set up with the assistance of experts from Caterpillar’s power systems assembly factory in India and is being managed and staffed by Barloworld Power. Initially the facility will assemble the Cat i6 and 400 series generator sets, ranging from 400kVA to 1,000kVA and suited to the provision of

standby power for medium to large industries. Barloworld plans to produce about 500 units a year, expanding according to market demand.

Barloworld Power assembly manager at the new facility Imraan Amod says this initiative will give Barloworld Power and Caterpillar greater access to the Southern African market.

The first two pilot 550kVA generator kits, supplied by Caterpillar in China, were sold before they arrived in South Africa. They were assembled and delivered by Barloworld Power in the last week of February 2015.

The team operating the assembly line has been supplied by the Barloworld Power Customised Solution Centre in Boksburg and received specialised training from Caterpillar’s international experts to assemble Cat generator sets.

Thermitrex: celebrating 120 years



Thermitrex (Pty) Ltd was established in 1971 in South Africa and is a member of Goldschmidt Thermit Group GmbH. Goldschmidt Thermit Group is a family-owned group with 23 subsidiaries worldwide.

Goldschmidt was founded in 1847 by Theodor Goldschmidt. In 1895, Prof. Hans Goldschmidt developed the Aluminothermic process – the basis for the Thermit® process for the continuous welding of railway tracks. In 1899, Goldschmidt was awarded the first patent in the area of track welding with patent DRP 116400 for Aluminothermic butt welding and this enabled the first tramway tracks to be welded using Thermit®.

In 1928 the process became the standard at the Deutsche Reichsbahn and a short time later nearly all railway companies around the world started to introduce the technology. Thanks to constant further development the Thermit® process is today suitable for the continuous welding of many different profiles and grades. It can be applied without any significant disruption to rail traffic. The patented Thermit® processes

meet the highest quality and safety requirements, and are approved in more than 80 countries. They are certified by prominent railway operators throughout the world. Up to the present, more than 50 million Thermit® portions have been manufactured in first-class quality.

Thermitrex is accredited with ISO-9001:2008 quality management systems by Det Norske Veritas and its products are compatible with all rail profiles and rail steel chemistries/metallurgies. A foundry established in 1995 exports ferro-manganese globally to the Goldschmidt group.

Thermitrex is dominant in Southern African markets, where it has supplied Thermit® welding consumables and equipment for the past forty years. It offers a wide product range of tools and machines for various applications like Thermit® welding, track

construction and maintenance. This product range is being extended currently to include measurement devices and hydraulic power units. The power units are used to drive hydraulic equipment and machines, and have numerous other industrial applications.

Thermitrex has completed large contracts with Transnet Freight Rail and the Metrorail division of Prasa (the Passenger Rail Agency of South Africa), as well as various mining companies and contractors within the entire Southern Africa region. The company's footprint is evident in other SADC (Southern Africa Development Community) countries such as Namibia, Botswana, Zimbabwe, Kenya, Zambia, Ghana, Mozambique, the Congo and Tanzania. Thermitrex is determined to further expand its growth and territories into the entire sub-Saharan African market.

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Lennings started business in the 1960s. Our journey with Caterpillar started in 1982 with the arrival of grinding machines which were fitted with Cat 3408 engines. This has resulted in an extremely successful relationship with Barloworld Power.

For more information on Barloworld Power, visit us at www.barloworldpower.com or call 0860 898 000

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Alstom launches **Attractis**

At the recent 61st UITP (International Association of Public Transport) World Congress in Milan, Italy, attended by more than 2,200 delegates and 280 exhibitors, Alstom showcased its remarkable “Attractis” innovation.

When one looks at the growth of our cities and the need for infrastructure solutions now - not in ten years' time - the Attractis makes a great deal of sense (and cents).

The impact that Gautrain has enjoyed, just connecting Pretoria to Johannesburg, is proof that we need more public transport infrastructure in South Africa and a mix of it, preferably sooner than later. Public transport should be integrated, from high-speed rail through to tramways, bus and taxis, aiming for a service as close as possible to door-to-door - it is always the last mile that becomes an issue.

Imagine the impact of a tramway replacing for example one of the longer current Gautrain bus routes, to enhance the feeder network.

What exactly is Attractis?

“Attractis is a fully integrated tramway system available in record time”. A complete urban transport solution, developed to address every environmental and social issue involved in providing urban mobility.

When one watches the striking promotional video and pages through the impressive documentation, one is reminded of Apple and the simplicity of having everything one needs in a single, simple, attractive package. Indeed it's the “packaging” that infallibly draws one to Attractis - as something well worth considering.

Attractis comprises an innovative, integrated tramway system for growing cities - simple to operate and cost-effective. Thanks to optimised project management and construction methods, an Attractis system can be completed in the record time of 30 months from the design phase. Devised to minimise total cost, savings up to 20% in investment can be realised when compared to a traditional tramway system.

The whole package

Attractis is essentially a concentrate of Alstom's proven know-how and expertise, designed for growing cities with high population density but not currently possessing a tramway. It includes Alstom's Citadis2 rolling stock and all associated infrastructure: track, power supply, passenger stations, ticketing, communication and information system, line operation, supervision and control - even maintenance. In partnership with a civil works company, Alstom builds the infrastructure and undertakes testing and commissioning of an entire line, working together with the operator.

Attractis enables cities to introduce a tramway system rapidly, meaningfully lessening road traffic congestion and pollution. Carrying capacity up to 14,000 passengers per hour can be achieved per direction, easily adjustable to the actual level of ridership demand at any time. The ground area footprint of a two-way Attractis line is comparable to that of Bus Rapid Transit (BRT) - approximately seven metres' width.

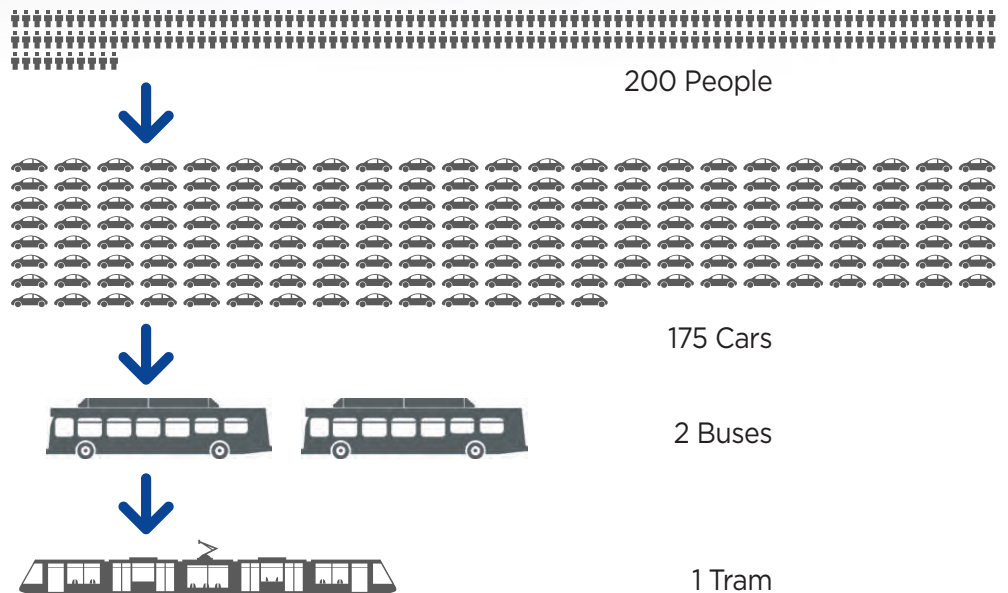
When one looks at the growth of our cities and the need for infrastructure solutions now - not in ten years' time - the Attractis makes a great deal of sense (and cents).



Tramways are a small footprint on the cityscape

“Attractis allows cities, especially those experiencing rapid growth, to acquire a tramway system enabling them to rapidly reduce congestion and pollution, while offering city-dwellers a clean, safe and comfortable mode of transport.”

- Eric Marie, Vice President for systems, Alstom Transport.



To ensure that Attractis infrastructure is completed in record time, Alstom has developed optimised construction methodology involving intelligent section-by-section scheduling of civil and electro-mechanical works, all of which combine to minimise construction time, environmental disturbance and cost. The Attractis package includes a three-dimensional driving simulator, by means of which drivers can be trained simultaneously with construction of the line, further accelerating overall completion timing.

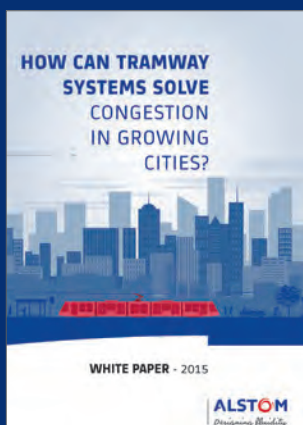
Attractis was the first rail system to adopt ITxPT (Information Technology for Public Transport), “an open IT architecture designed to improve interoperability between IT systems and decrease costs related to multiple equipment.”

In terms of this, the integration of multimodal urban transport systems (tram, bus, electric car sharing services etc) is synchronised, allowing transport authorities to offer passengers innovative information solutions, journey planners and e-ticketing systems.

Alstom masters every stage in the provision of a tramway, from design to complete validation and commissioning in the urban environment.

Alstom specialises too in all aspects of tramway system maintenance. In addition, it offers project financing support to customers, and assistance in the setting up and implementing of Public Private Partnership schemes.

To date, Alstom has been awarded 16 integrated urban tramway projects, positioning the group as the world no. 1 in this field. Currently, it is managing the construction of eight tramways including Cuenca (Ecuador), Rio (Brazil), Sydney (Australia), Nottingham (UK), Lusail (Qatar) and also projects in Algeria.



www.alstom.com/innovations-UITP2015

Alstom Sesto San Giovanni Site Tour

In Italy, Alstom has four sites, 21 depots and 705 employees. Recently, Railways Africa had the privilege of seeing the Alstom Sesto San Giovanni Site at first-hand.

In short, it is a state-of-the-art, multi-specialist facility that encompasses design, development, engineering, manufacturing, assembly, monitoring and maintenance. The Sesto San Giovanni site is a centre of excellence, supplying complete traction systems for trains, tramways and metros, as well as regional and high-speed trains, to customers throughout the world. Because assembly lines are multi-purpose and multi-project, the use of tablets is to be seen throughout the plant. Assembly diagrams, parts lists and inventory control are just some of the advancements being integrated on the shop floor.



Below we see a traction unit for one of the new Prasa coaches, prior to being exported to the coach assembly plant in Lapa, Brazil.





The control room is equipped with TrainTracer, an Alstom solution specialising in preventative and corrective maintenance procedures. Railsys is an important feature here - software that facilitates the repair and maintenance process by monitoring component wear, then scheduling replacements, spares and repairs as well as support for all the group's maintenance depots in Italy.



Throughout the facility, employees are provided with digital information displays, constantly updated with company news, project progress and operational information.

To the right we see such a display where the project to build 3,600 coaches for Prasa is highlighted.



Key characteristics of Sesto San Giovanni:

- 360 employees
- 45 500sqm of which 21500 sqm is covered
- Manage approximately 20 projects per annum
- Export 80% of the product



Alstom launches SRS and extends APS to road transport

Autonomy and energy efficiency are essential criteria in city transport. To enable trams to blend in with the urban environment and ensure maximum integration, Alstom has been developing catenary-free solutions for electric tramways in the course of some 15 years. Especially appropriate in historic city centres, the ground-level power supply system is known as APS (Alimentation par le Sol). During the recent UITP (International Association of Public Transport) event held in Milan, Italy, the group announced the extension of APS to an application suitable for electrically powered or hybrid road trucks.

At the same event, Alstom launched an innovative ground-based static charging system for both trams and electrically driven road vehicles. Known as SRS (Stationary Recharge Stations), it is based on the technology and safety principles of the proven Alstom APS solution used by Citadis trams. Whereas APS supplies power to the tram while it is still running, SRS charges the

tram when stopped at stations, in less than 20 seconds.

Electrical power is derived from compact power supply cabinets. These are smoothly and easily integrated into stations. Collector shoes (contact blocks), fitted under the tram, make contact with the conductor rail, providing electric traction power. Supercapacitors installed on the roof of the vehicle store energy via a ground-based conductive rail, which provides traction power to the vehicle through the collector shoes.

Between two stations, the tram runs autonomously in normal and degraded modes without the use of catenary. Energy is recovered during braking phases.

Alstom is currently the only manufacturer offering the broadest and most reliable range of catenary-free solutions - APS, on-board batteries, supercapacitors and SRS - together ensuring that architectural and environmental integrity is maintained in city centres.

For improved efficiency, these different technologies can be combined, as will be the case for the Citadis tramway system Rio 2 (in Brazil) which is to run 80% on APS and 20% on supercapacitor. Of the total distance covered by trams operating without catenary in the world, Alstom's vehicles account for over 99%.

SRS for electric buses

By supplying power through ground-based charging slots at stations, the SRS system is suitable for use by a large range of electrically-driven buses.



Electrically driven road trucks

Currently Alstom is extending the applicability of its APS solution to hybrid road trucks. Developed as a collaborative project between Alstom and Volvo, the concept is called "Electrical Road Systems". The research conducted by the two companies involves a method based on two power lines built into the surface of the road. These supply electricity to moving trucks via a current collector located on each vehicle. The technology has been undergoing tests since 2012. These are to continue until the end of the programme, scheduled for the end of 2015.





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ONE STEP AHEAD.

Think Rail, think Yale!

Think Rail, Think Yale - a campaign slogan introduced by Yale Engineering Products (Pty) Ltd a few years ago - has become entrenched, for good reason.



The company's service offered to the rail sector is fully comprehensive, all the way from the depot environment, right through to on-track.

Railway manufacturing and the servicing of depots require reliable and safe maintenance. High on the list of essentials are jacking and lifting equipment for use in the manufacturing, refurbishing and servicing of rolling stock including locomotives, wagons and coaches. Yale provides all this and more.

Yale's range

Yale's range of jacking and synchronised lifting systems, turntables, axle/bogie drop-tables and overhead cranes suits all applications. Wagon, chassis rotators and inverters in a variety of capacities and lengths are available, with power lifting and full rotation capability.

Wheel and bogie drop systems allow the safe removal and replacement of bogies or wheelsets, even from coupled rail vehicles. As in the case of the bogie-drop system, the railway remains safe for use by other traffic when it is not in use. Yale's wheel-drop system is available as a simple tabletop facility or with pit continuation for full access beneath the bogie and rail vehicle.

Adjustable bogie jacks are included, to provide support during removal of a wheelset - and appropriate adapters can be used for module removal or replacement.

Yale also offers custom-designed depot equipment, tailored specifically to suit unique situations and/or to meet the particular requirements of any customer.

Track maintenance equipment

If you need to bend it, drill it, cut it, grind it, weld it or lay it - Yale has a solution for you.

Tracklaying

Yale supplies internationally acclaimed hand-held tools such as Robel as well as its own, locally manufactured Yale brand, right through to the high-tech Desec mechanised tracklaying machine.



The Desec tracklayer is the ideal solution when transporting and laying turnout track panels. Being totally versatile in manoeuvrability and flexibility, the Desec provides a swift means of replacing turnouts.

Re-railing and recovery

Yale offers both a manual re-railing system as well as a mechanical one with traversing bed. This equipment can be used to lift, traverse and re-rail all types and varieties of derailed rail vehicles safely and reliably, within a millimetre of precision.

Railway cranes

The Kirow range of railway cranes is aptly named "MultiTasker" as these are real multi-purpose devices. Truly exceptional machines, they answer every need in the field of rail vehicle accidents and recovery, as well as in track and bridge construction, notably in the placing of turnouts.

The MultiTasker

The MultiTasker is manufactured in eight sizes, each with special characteristics depending on





load-bearing capacity. Powered by Cummins engines, the cranes can either travel self-powered to a site or be towed over lengthy distances behind a locomotive, at speeds of up to 100km/h.

Expert technical team

Yale's expert technical team is available to provide wide-ranging technical and maintenance support, to suit every eventuality. Equipped with a comprehensive range of spares, it is able to ensure that customers' activities and operations continue without interruption.



So, when you think rail - think Yale.
www.yalejhb.co.za





Rewarding extra effort

An excellent example of Timken's policies is Rail Sales Representative Sydney Mokoko for whom studying is a way of life. He had a Diploma in Agriculture when he joined Timken in 1995 as a driver.

During the five years as courier, he continued studying. When Timken opened a new warehouse, Sydney was transferred there. He added qualifications in warehouse management and later, another in stock control. Looking ahead, Sydney then added a National Diploma in Marketing to his list of qualifications.

In 2009, he was promoted to being a customer service representative. However, Sydney continued to study, graduating with a B Tech in Business Management in 2013.

Currently, he is in his second year studying for an MBA. A personal initiative which Sydney has undertaken is the mentoring of younger Timken employees. "I explain that if you show Timken that you are prepared to put in some extra effort, the company will assist with bursaries and subsequent promotion," he points out.



Localisation is important to Timken South Africa, which insisted that the bearings for the new locos be manufactured with maximum local content, thus sustaining and creating employment.

Inspired by **Timken**, made by **South Africa**

Timken South Africa cares not only about the quality of its products, but also the quality of the lives of people who either work for the company or are associated in some way. General Manager: Mobile Industries: Viv Muthan explains that Timken has been empowering its employees, particularly those less advantaged, "since way back when".

"At Timken South Africa, we go a long way beyond the bare observance of the law. Rather, we have wholeheartedly embraced the new South Africa and continue to be committed to transformation," Muthan says. He considers himself a product of Timken's forward thinking and fresh perspective with regard to organisational development and learning, having become its youngest executive manager and one of the youngest in the industry. A key Timken philosophy was, is and always will be "getting the right people on the bus and in the right seat, putting our best people on our biggest opportunities".

Timken has actively lived its philanthropic philosophy since its founding in South Africa in 1932 and has always supported the development of people, especially youth and women, "long before it became fashionable."

Even in the "dark times" during the 70s and 80s, Timken was sending black South Africans overseas for training. New sales and technical people are still sent to the USA for six months on full pay by the company to study and train in order to maintain its team's position as the leading and most proficient in the industry.

Long before 1994, the company sent junior employees who showed initiative

on apprentice training. Another aspect of Timken's mentoring philosophy is to partner with smaller South African companies and work with them to raise their product quality and develop them into world-class manufacturers and exporters.

Timken's Corporate Social Investment (CSI) drive is not driven purely from the local office in Benoni. The Timken Family Foundation lends financial support to CSI programmes run by Timken's worldwide facilities including South Africa.

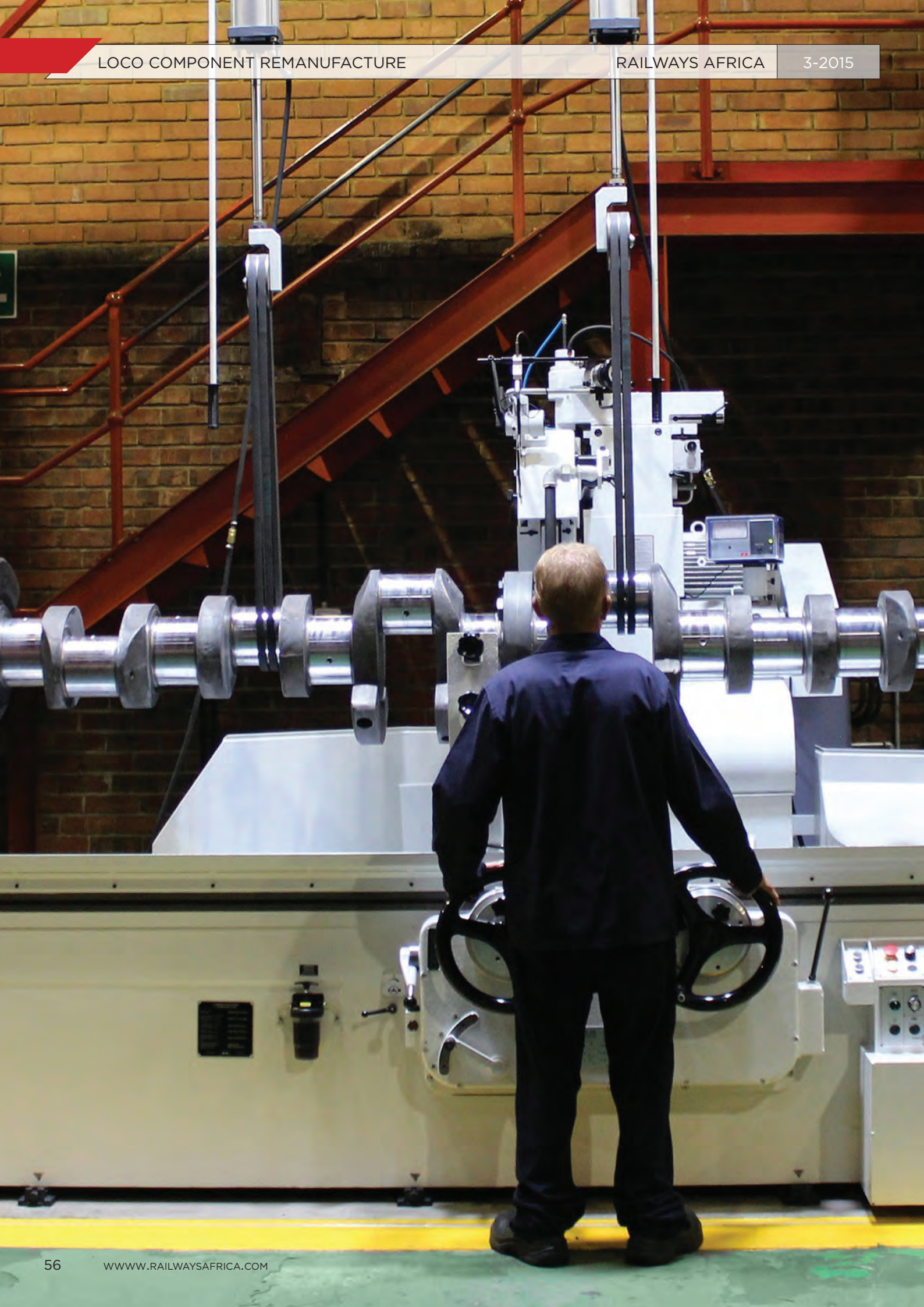
In respect of the 1,064 new locomotives currently being manufactured for Transnet, Timken has won contracts to supply bearings to all four OEMs involved. "While we're very proud to be the exclusive supplier, we insisted on delivering local value since this is a momentous acquisition for our country. We could easily have supplied bearings from any of our affiliates," Muthan explains.

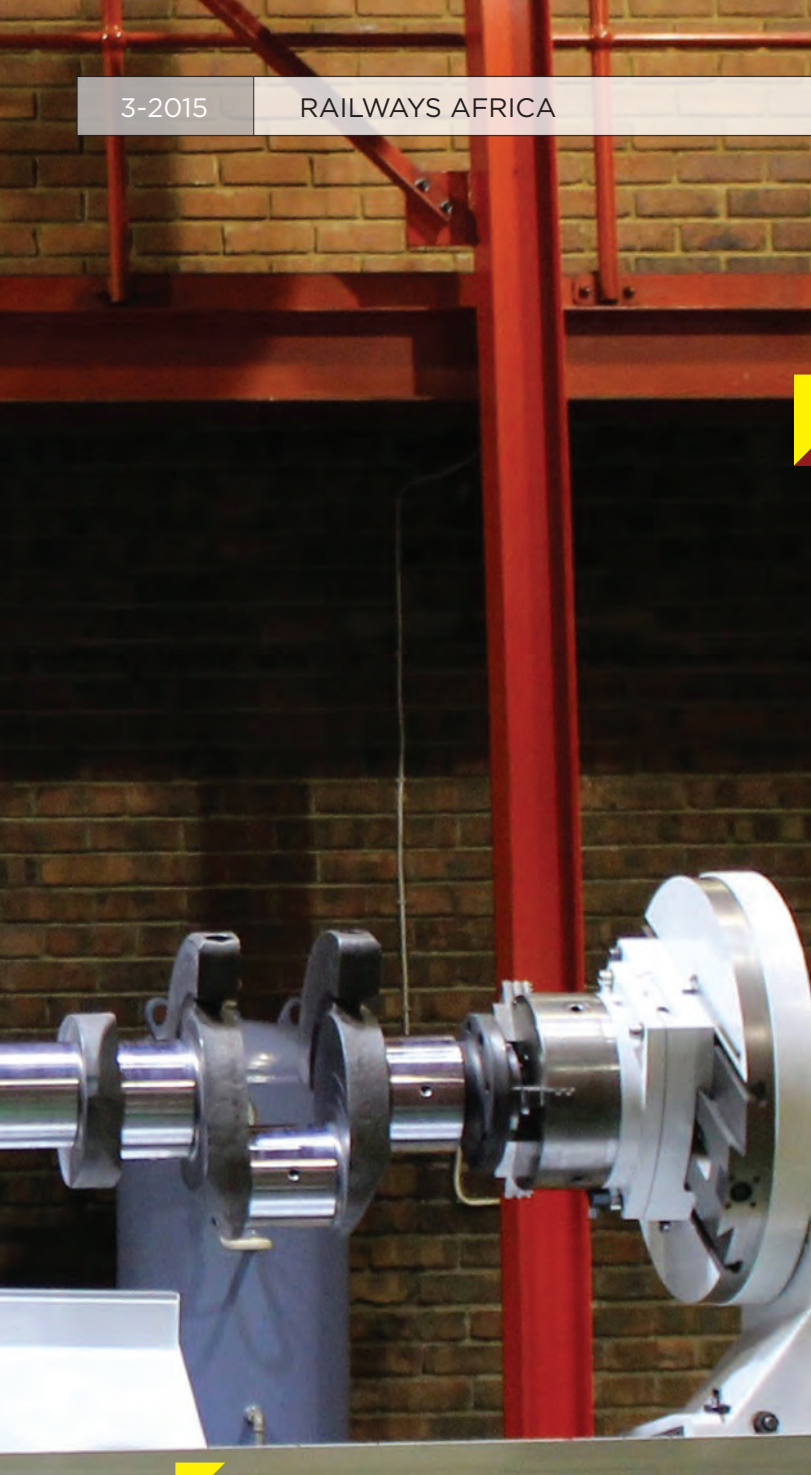
Localisation is important to Timken South Africa, which insisted that the bearings for the new locos be manufactured with maximum local content, thus sustaining and creating employment. "It took two years of negotiation to gain this commitment."

"Working at Timken is much like working at Google. We continuously search for innovation, and value-adding ways and deliver them with customer-centricity. A commitment to making the world a better place through our products and actions is a key part of our core values. I think that Google would consider itself the Timken company of the information industry," Muthan concludes with pride.

Telephone: +27 11 741 3800

www.timken.com





Metric Automotive Engineering is well positioned to cater for large diesel locomotive engine component remanufacturing. With over 45 years' experience in the engine component remanufacturing sector and an extensive customer base, the company's success is based on a combination of its modern, well-equipped facilities, its testing capabilities and the acumen and resident knowledge of its technical team.

Remanufacturing diesel locomotive engine components

Metric Automotive Engineering has invested in a crankshaft grinder that can handle lengths up to 4.7 metres and weights up to 5 tonnes.

Metric Automotive Engineering has always remained abreast of new technology and has an operating philosophy of upgrading its equipment suite to ensure that latest technology is implemented. "This ensures that we are able to meet or exceed OEM specification on remanufacturing dimensions. This is important as it influences the overall quality of the work undertaken and can affect the operational life of the component and the engine itself," says Andrew Yorke, operations director of Metric Automotive Engineering.

The investment in new technology and larger capacity machines has positioned the company to expand its service offering to cater for the large diesel engines that power locomotives. This includes the remanufacture and repair of crankshafts, camshafts, connecting rods, cylinder heads and cylinder blocks as well as ancillary bushings and housings. The loco engine

component weights and lengths require specialised equipment to remanufacture accurately. This has resulted in a strategic investment in equipment that fulfills these requirements.

Investment in technology

The acquisition of one of the largest crankshaft grinders in service in Africa allows the company to service the growing trend towards larger diesel engines. Capable of grinding shafts up to 4.7 metres in length, with weights up to 5 tonnes, this unit enables grinding of crankshafts from industrial compressors right through to the V16 locomotive diesel engine.

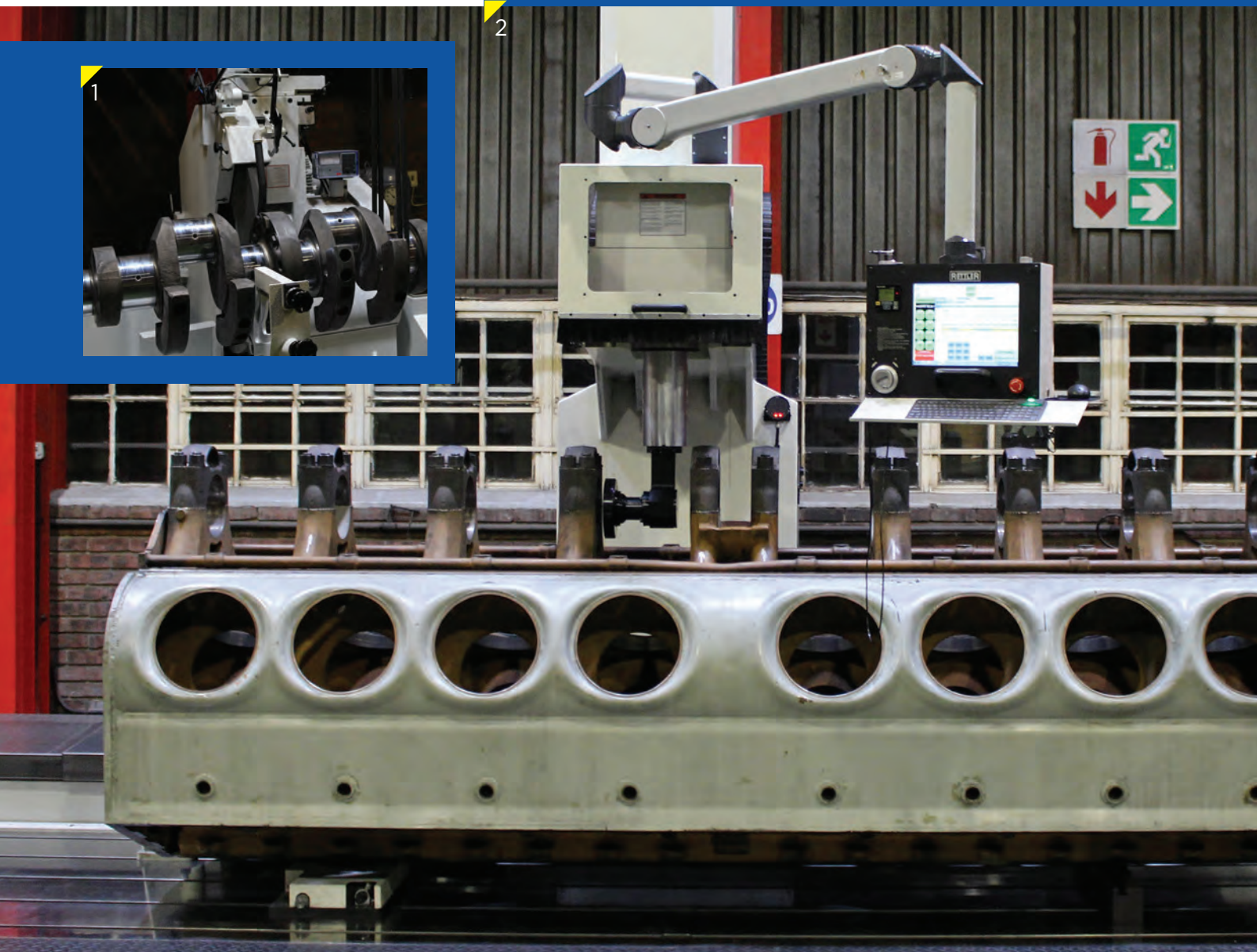
Significantly, this machine is paired with a set of compensators which dramatically improves the grinding tolerances achieved, by helping to eliminate ovality and taper.

"There has not been a new machine of comparable size in the country for over 35 years. In addition to

the crankshaft grinder which is now in service, a unique custom-built crankshaft polisher, with a shaft capacity of eight metres, is to be commissioned during the third quarter of 2015. This custom-built machine will offer a quicker turnaround time on crankshaft polishing as well as an improvement on journal surface finishes," says Yorke.

The company recently commissioned a new-generation, three-axis CNC machining centre. The only machine of its kind in Africa, it is capable of line-boring, surfacing and blue-printing blocks over six metres in length.

Offering one of the most comprehensive ISO 9000:2000 accredited remanufacturing capabilities in Africa, the company is currently midway with the expansion of its facility. This will allow it to accommodate the increased demand for its services.



1 A close up view of the crankshaft grinding head.

2 The new CNC machining centre is capable of line-boring, surfacing and blue-printing blocks over six metres in length.

3 A close-up view of main bearing housing.

4 Ongoing technician training at Metric Automotive Engineering allows the company to stay abreast of the latest developments in the sector.

“We are positioned as a world-class refurbishment centre with facilities comparable to others anywhere in the world. We are able to refurbish large diesel engine components and offer services such as cylinder head remanufacture, cylinder block line-boring, milling, honing and boring, camshaft grinding, crankshaft grinding, engine assembly and dynamometer testing,” Yorke points out.

In addition to standard remanufacturing processes, which are undertaken by a core of experienced personnel, using the latest technology to produce a high quality remanufactured end-product, the company has the ability to salvage major components that would otherwise be rendered unserviceable.

Metric Automotive Engineering’s in-house repair processes have been tried and tested over the past 40 years and ongoing technician

not usually visible to the naked eye. These tests are conducted on a custom-built machine which is capable of testing both large and long crankshafts with ease.

Prior to the decision being made to refurbish a crankshaft, it undergoes a full inspection process. This includes checking journal hardness, radius size, journal diameter and width. All data is recorded, to facilitate an informed decision on the repair process.

All cylinder heads are pressure-tested using heated immersion technology to detect coolant passage leaks. The cylinder heads are also crack-tested using magnetic particle testing to detect any cracks on the combustion surface face.

All engines rebuilt by Metric Automotive Engineering are dyna tested on one of the company’s three in-house dynas. The company



training allows the company to stay abreast of the latest developments in the sector. “We believe that our service levels are directly influenced by the capabilities and technical expertise of our team and as such we subject our employees to the latest trends in the market to provide our customers with best practice in terms of remanufacturing,” Yorke explains.

Testing for success

All repairs and remanufacturing are complemented by an extensive testing programme that includes non-destructive crack testing, which is carried out on crankshafts to detect flaws and cracks that are

also undertakes dyna testing for outside customers.

“Metric Automotive Engineering, a family-owned and-run company, has invested the resources and commitment of three generations over a period to become South Africa’s most comprehensively equipped diesel engine and component re-manufacturer. Leveraging our experience in similar markets has allowed us to gear up and provide an uncompromisingly high-quality remanufacturing service to the diesel railway locomotive sector,” Yorke concludes.

FREE STATE ROUND-UP

recent photos by Jacque Wepener



Class 34 diesels between Holfontein and Geneva, heading to Kroonstad.



Latest style Transnet Freight Rail station nameboard at Odendaalsrus.



Free State main-line panorama (near the Sand River bridge at Virginia).

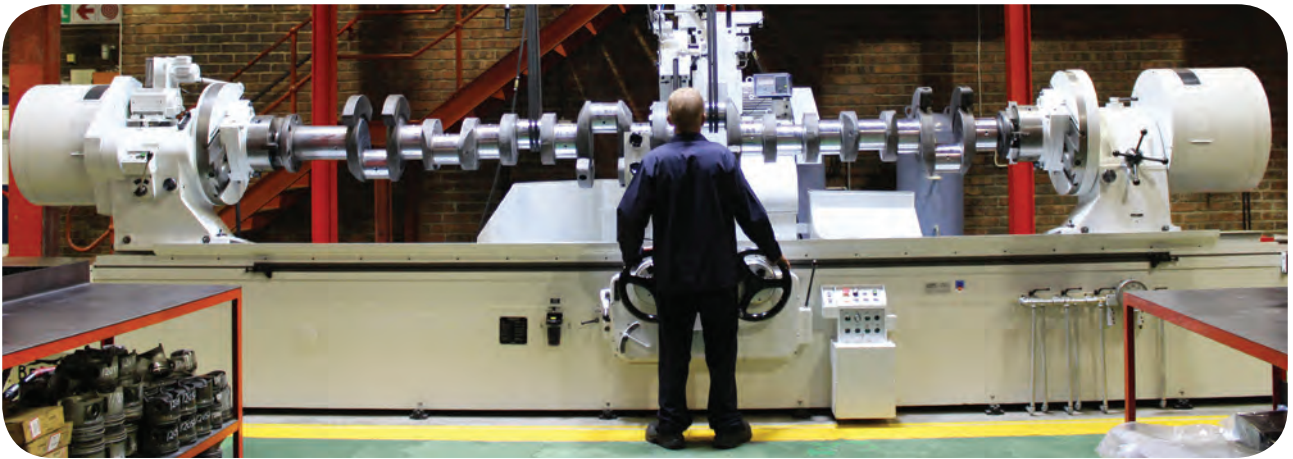


Panorama again - this time with a container train.



Harmony Gold Mine Company Limited at Welkom: loco no 3 is a GE UM10B, new in 1986.





Grinding of crankshafts with lengths of up to 4.7 metres and weights of up to 5 ton

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Microelettrica SA in R6M localisation drive

Microelettrica Scientifica South Africa (MSSA) officially cut the ribbon across the doors of its new premises in Honeydew on 21 May 2015, making this a milestone day for the company. It marked a R6 million upgrade to not only its infrastructure, but – in the form of new equipment and process reorganisation – to its capability as well.

This upgrade is strategic as MSSA is going to be a key supplier in the locomotive and coach renewal programmes of both Transnet Freight Rail and the Passenger Rail Agency of South Africa (Prasa).

Since its founding in 1953 in Milan, Italy, Microelettrica Scientifica has built an enviable reputation for autonomously designing and manufacturing contactors, high-speed circuit-breakers, resistors, fans, protection relays and metering equipment. A major proportion of these products have distinguished themselves in service of the world's rail industries, a sector which demands high levels of reliability despite often harsh operating environments.

Microelettrica founded its South African subsidiary in 2002 to take its presence beyond that of an agency. It began supplying electronic and electro-mechanical components to the local rail industry. However, a major milestone was achieved when Transnet needed to upgrade its aging class 6E locomotives, the remanufactured product being known as the 18E.

Subsequently, MSSA acquired a specialist power electronics company and also set up its BBBEE subsidiary.

Having worked for both Transnet and Prasa, MSSA managing director Senny van den Oever appreciates the need for localisation. Based on his previous experience, he explains that operators such as Transnet

and Prasa experience difficulty in dealing with original equipment manufacturers (OEMs) that are not represented or have only a sales office in South Africa, as the essential back-up is not swiftly or readily forthcoming.

“As a result, we decided that we needed real technical expertise here – engineers and technicians, to design and manufacture with our customers very much in mind. For example, we design and produce custom-built resistors for South Africa's locomotive fleet,” he explains.

At the same time, the South African subsidiary is able to look to its Italian parent for world-leading technical innovation and solutions.

In terms of the new test equipment, this acquisition has been undertaken in collaboration with five OEMs. “They have come to audit us on a number of occasions. Again, the product integrity and quality has to be what they are accustomed to overseas. Those audits have been really welcome because, in each of those instances, we learned much and have been able to adopt the standards that they apply elsewhere in the world.

Now, in terms of Transnet and Prasa's new build programmes, MSSA is not directly involved with the rail operators, but rather with the various OEMs to which those contracts were awarded. In the case of Transnet, this means CSR, CNR, GE and Bombardier and with Prasa, Alstom and Gibela.

A factor that sets MSSA apart is its exceptionally aggressive localisation policy. Since 2002, MSSA has sought black-owned companies with whom to partner, companies that will be able to supply the highly technical componentry – importantly with the requisite levels of quality and pricing.



“Regarding localisation, we are able to supply the various OEMs with components that range in local content from 60 to 90%.”



“Regarding localisation, we are able to supply the various OEMs with components that range in local content from 60 to 90%.”

Van den Oever explains that the localisation strategy will create more jobs while increasing the local skills reservoir. “Combine this with the improved lead times from local procurement and improved response times in the after-sales cycle, and we successfully contribute to solving South Africa’s challenges and transformational imperatives,” he says.

At present, he points out, a finite pool of skills is available. “Those skills are simply moving between different companies and that is not useful. So we all have to train new entrants to feed those skills pools with suitably qualified people.”

“In addition, we are proud that MSSA holds a Level 2 broad-based black economic empowerment (BBBEE) status,” van den Oever continues. He adds that MSSA’s shareholders are people that work for the company as well as a single external BBBEE shareholder.

“We took the stance that we needed to skill our people and develop them, realising that in the process the company would benefit as well. The company has always endeavoured to maximise advantage both for itself and its people in everything it undertakes and for which it tenders.

At this point in MSSA’s development, van den Oever believes it has consolidated its position sufficiently and can now look to doing business with the rest of sub-Saharan Africa. “Africa is a very rich continent and the infrastructure that is required here is huge. I believe that South Africa can play a major role in constructing those regional corridors and urban rail networks,” he asserts.

“In ten years time, we would like to treble our turnover. Although this is a huge ask, we see 20% of this expanded turnover coming from Africa,” he concludes.



Online Interview



<https://youtu.be/dmdFOGvOVA>



Mishaps

One objective of our regular feature reporting and commenting on rail mishaps is to provide information and object lessons from Africa and abroad, in the hope that - in some cases at least - this might help avoid recurrences.

COLLISION AT DENVER

Shortly after 07:00 on 28 April, Metrorail train 0600 from Pretoria to Johannesburg made an unscheduled stop at Denver, 6km east of Park station, because the driver had difficulty ascertaining the aspect of platform starting signal DN11. Reports mention a "power failure" in the area (specifically at the George Goch signal cabin, the next station beyond Denver), which appears to have affected communications and possibly signal DN11. Reportedly the driver was unable to establish normal communication with the George Goch TCO (train control officer) and the radio trunking was not working.



At approximately 07:12, train 1602 - the Business Express from Pretoria to Johannesburg - ran into the rear of stationary train 0600. It is stated that the collision took place at a speed of 61km/h, according to recording instruments. The guard of train 0600 died instantly and the driver of train 1602 was seriously hurt. A large number of passengers were taken to hospital, though (amazingly) less than 10 were detained longer than three days.



SO WHAT WENT WRONG AT DENVER?

Preliminary reports state that the driver of train 1602 - holder of a ten-year safe driving award - passed signal DN2 (the Denver Up home) at danger. However - unless evidence to the contrary is produced (e.g. eyewitness assertions that the signal was red) - it seems that this statement must have been an assumption. In terms of the automatic colour light system, certainly the signal should have been red, since the line ahead was occupied by train 0600. And reportedly, 12 preceding trains had passed through without incident.

On the other hand, it seems that the next signal, platform starter DN11, was not operating correctly at 07:10, according to the driver of train 0600. This suggests other possibilities, for instance that home signal DN2 might have been showing no aspect. Perhaps the 1062 driver tried to contact the TCO, but finding the radio not working, was looking for her cellphone, to try getting him on that. On the curve approaching Denver, perhaps she misread the signals (as there are two parallel Up lines, there would have been a green light alongside hers, applying to the other track).

She might have fallen asleep, like the MetroNorth driver who took a curve too fast north of New York on 1 December 2013, flinging coaches off the line and almost into the river. (Subsequently it was discovered he had a previously undiagnosed, serious sleep-related disorder).

Maybe she was texting on her cellphone, like the passenger train driver who ran a red light north of Los Angeles in September 2008 and collided head-on with a freight train. That collision resulted in legislation requiring the fitting of Positive Train Control (PTC) in the

USA by 2016, ensuring automatic brake application if a red signal is passed.

In other words, there are many things that could have happened at Denver - and could happen again. PTC in one form or another is going to be the only way of preventing them.

When assuming that signals display one aspect or another, don't let us forget the R50 million's worth of damage in the October 2005 collision at Deelfontein. That was when a northbound Trans-Karoo express was routed past the Down home signal ("impossibly" showing green) into the loop - already occupied by the Blue Train.

PEELTON COLLISION

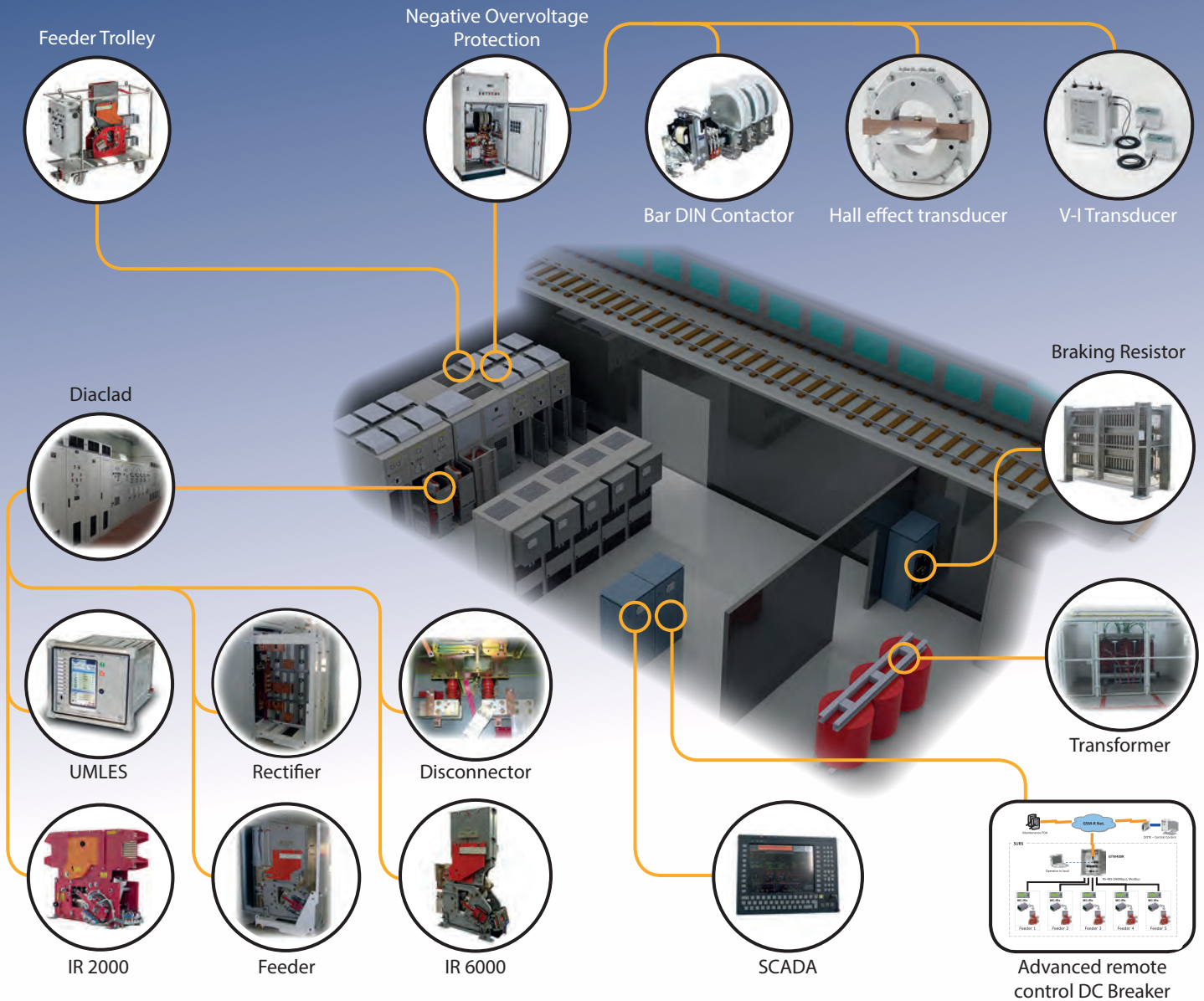
Speculation continues over the 20 May head-on collision near Peelton, some 50km from East London on South Africa's Eastern Cape main-line. According to official Transnet Freight Rail (TFR) documentation, freight train 4213 conveying cement from Queenstown to Cambridge, East London, collided head-on at approximately 11:20 with northbound intercity passenger train 47014. One of the two class 34 diesels hauling the goods train appears from photos as having been overridden by both the class 7E electrics heading the passenger express. The body of the leading 7E seems to have landed some distance away from the track, with the second 7E ending up above one of the diesels' wheelsets. The leading van of the express apparently jack-knifed with the first passenger coach, though the rest of the train remained on the rails.

A media statement issued by the Passenger Rail Agency of South Africa (Prasa) says "the passenger train was en route to Johannesburg from East London. The accident resulted in two fatalities, and nine people were admitted in the surrounding hospitals in Bhisho and East London. The two fatally injured were MLPS' [Main-Line Passenger



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Services] on-board services staff while the five injured are staff from Transnet (3) and Shosholozha Meyl (2) and the rest (4) were passengers. All the injured were reported to be in a stable condition at the hospitals. The rest of the passengers were transported by buses to their various destinations."

Train control over the single-track section [Blaney-Amabele] is by means of Track Warrant, according to the TFR document. This is a computer-based system which is supposed to be virtually fool-proof.

At the time of writing, nobody (well, none in official circles) had suggested an explanation for two trains being on the same line, and colliding head-on in broad daylight in open country. With at least three locomotives seemingly damaged beyond repair, the cost implications run into millions. The routine use of two locomotives - presumably in case one fails (one 7E being more than sufficient for the load) - is proving an expensive practice.

DEADLIEST USA TRAIN CRASH IN 6 YEARS

Once again, a really serious passenger train derailment in the United States appears to have the experts flummoxed. Windows on three trains, including the one that derailed, were hit by missiles of some sort in the area at about the same time. However this does not explain how or why Amtrak North-East Regional's 188 from Washington DC to New York, with 238 people and five crew aboard, suddenly accelerated to 170km/h moments before entering a 80km/h restricted curve at Frankford Junction in Philadelphia on 12 May. The seven coaches were thrown off and away from the track, landing on their sides. One vehicle sustained especially serious damage, caused by collision with an electrification gantry structure. Eight people were killed and some 200 injured, at least eight critically.

Driver Brandon Bostian, reportedly an experienced and conscientious rail enthusiast-college-graduate, came out of his ACS-64 electric locomotive relatively unscathed. He told investigators he remembers nothing of what happened. Recording instruments showed that emergency braking was applied at the last moment, too late to have had any effect.



Shortly before the accident, the driver of another train running on a nearby parallel track made an emergency stop after an unidentified missile shattered his windscreen. Investigators confirm that train 188's locomotive windscreen, too, showed unexplained signs of penetration, apparently seconds before the derailment. Further deepening the mystery, police boarded a southbound Amtrak train at Philadelphia's 30th Street station to investigate a shattered coach window, sustained at about the same time in the same area.

Comprehensive investigations by the National Transportation Safety Board (NTSB) continue, while uncertainty persists over what actually happened.



Derailement of Amtrak train 188 at Frankford junction, 12 May 2013. Photos: NTSB.

SEVEN COACHES BURNED AT UMLAZI

On the evening of 6 May, a Metrorail train with an estimated 2,000 people on board stopped between stations on the line to Umlazi south of Durban due to the preceding train breaking down. Impatient occupants of the second train, furious at the lengthy delay, set

fire to the rolling stock, destroying seven coaches and overhead line equipment, though no injuries were reported. Metrorail's Zama Nomnganga said services were badly disrupted. Trains were running again on 7 May, but only one of the two lines was usable.

GAUTRAIN HALTED BY POINTS FAILURE

Failure of a key set of points between Sandton and Rosebank on 17 June seriously disrupted Gautrain service. News24 quoted Bombela contracts executive Ian Findlay saying that technicians were unable to rectify the defect in situ and that a new set of points would have to be brought in by works train and installed. There is only a single line, in a single-width tunnel, south of Sandton, which means that trains could not operate in either direction. Working space is limited.

As many buses as possible were brought in to run a shuttle between Sandton and Rosebank - a time-consuming process for passengers, who had to take one train from Park station to Rosebank and another from Sandton northwards. Findlay was unable to estimate when normal service might resume.

POLICEMAN PUSHED INTO TRAIN'S PATH

Earlier this year, a 28-year-old Spanish police officer died in hospital after being pushed off the platform and hit by a train at Embajadores station in the centre of Madrid. His assailant, thought to be an illegal immigrant from the Ivory Coast who had been asked for identity papers, also fell but survived the accident with head injuries. The incident was filmed in detail by a passenger waiting on the platform.

ROCKS PILED ON TRACK DELAYS AMTRAK

In a malicious incident on 24 May, someone piled rocks on the track near Coeur d'Alene in Idaho. Amtrak's Empire Builder express, which connects Seattle with Chicago, was able to stop short of the obstruction, averting possible derailment. A police detective with

the Burlington Northern Santa Fe Railway, owner of the line, found used beer cans in the vicinity but those responsible were not traced. The train reportedly sustained "cosmetic damage" estimated at \$5,000.

Coeur d'Alene is the second largest metropolitan area in the state of Idaho. It had a population of 46,402 in 2013. - Wikipedia

EXPLOSION DERAILS INDIAN EXPRESS

Nearly 70 metres of track were damaged in the explosion of a remotely controlled bomb near Bhattai Town in Jacobabad on 6 June. Four coaches in the Jaffar Express (Quetta-Rawalpindi) came off the line. Ten people were taken to hospital. All traffic came to a standstill until work crews restored the rails.

DRIVER STOPS TRAIN – BODY ON THE LINE

According to an Indian press report, there are nine deaths every day on local suburban lines. Mumtaz Kazi Khathawala – described as the first woman to drive trains in the country – applied brakes when she saw a body on the line between the Ghatkopar and Vidyavihar stations. She climbed down to make sure he was dead but had to call passengers to help clear him off the track. "Kazi joined the railways as an assistant driver in 1991 and is trained to drive both diesel and electric locomotives," the Daily News reported.

SPAD HALTS UK STEAM TRAINS

On 7 March 2015, a steam-hauled passenger train operated by the West Coast Railway Company (WCRC) – which is said to run 90% of charter trains in Britain – overshot a red signal and only came to a halt in the middle of Wootton Bassett

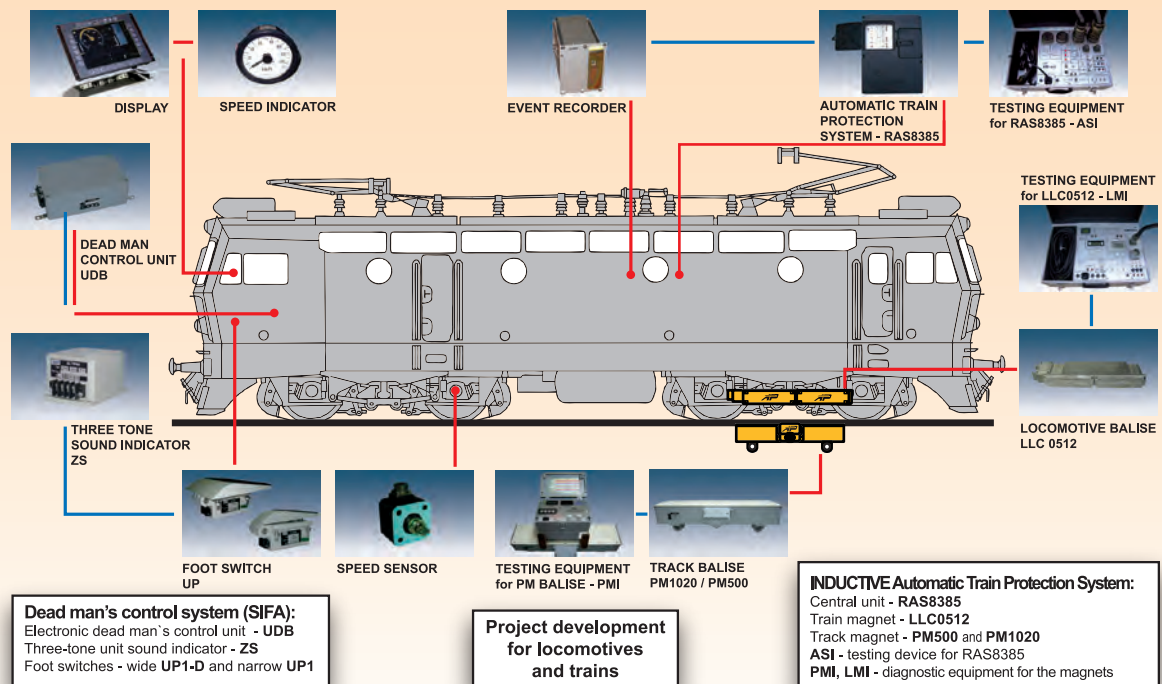


Loco 34067 Tangmere was involved in the Wootton Bassett incident. Photographed at Reading by Martin Stone.

junction. The signal protected a Swansea-London train which had fortunately cleared the junction, so there was no collision. The authorities nevertheless regarded the incident as extremely serious ("the worst SPAD in five years") and banned WCRC from running anywhere on the network. This was the first time a train operating company had been banned in the UK and resulted in 18 charters being cancelled and 11 postponed. Eventually, after WCRC was considered to have taken sufficient remedial steps, the ban was lifted.



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BELLE PLAINE DERAILMENT: 23 OFF

On Friday night 22 May, 23 of the 125 wagons in a freight train from Nebraska to Illinois derailed in the town of Belle Plaine, Minnesota. Crews worked hard through the weekend and into Monday to repair the track - a busy Union Pacific line which sees between 60 and 120 trains every day. Had the accident occurred a few blocks further into the town it would have been a major catastrophe, the mayor said.

Belle Plaine is a city in Scott County, Minnesota, United States. The population was 6,661 at the 2010 census. - Wikipedia

ROLLER-COASTER COLLISION

Wikipedia describes the Alton Towers Resort in Staffordshire, UK, as "the flagship attraction of Merlin Entertainments in the United Kingdom." It is a theme park, water park, and hotel complex.

In a catastrophic accident on the elaborate "Smiler" roller coaster in the first week of June, 16 young people were injured, four very badly. A 17-year-old had a leg amputated above the knee; her boyfriend suffered two broken knees. The owners, who have accepted full responsibility, are expected to face claims running into many millions.

Apparently the car in which the injuries were caused collided with an empty vehicle. It took four hours to rescue all the victims, who were trapped some seven metres above ground. The exact causes of the accident are under investigation.



The elaborate "Smiler" roller-coaster at Alton Towers in Staffordshire, scene of a horrific accident on 3 June. Photo: Wikipedia.

CABLE THEFT HITS NY TRANSIT

Late in May 2015, middle-of-the-night thieves brazenly stole 150 metres of copper cable from the A Line subway system in the New York borough of Queens, closing down the line and disrupting travel for 100,000 commuters. The "soaring" world price of copper is blamed for an increasing incidence of similar thefts.

One of the measures that has been suggested is to force scrap dealers to only accept payment by cheque or other traceable means, ie banning cash deals.

AMTRAK HITS FLATBED NEAR LOUISIANA

The lead locomotive of an Amtrak passenger train sustained "significant" damage when it hit a flatbed truck at a crossing in Amite City, Louisiana, 122km from New Orleans, on 10 May.

Two of the 171 people on the train required medical attention; the driver of the truck was killed. Passengers were taken to a nearby church and then conveyed further in buses.

Amite City in Louisiana had a population of 4,110 in the 2000 census - (Wikipedia).

CABLE THEFT KIMBERLEY

Copper signal cable has been targeted by thieves in a number of incidents recently in the Barkly West area near Kimberley. Between 19 and 20 May, in two separate thefts, some 85 metres of cable were stolen, significantly disrupting the running of trains on the line to Sishen. In one case the culprits were caught not far from the line where they were burning off the insulation. Cable recovered had an estimated value of R8,700.00.

FATAL DERAILMENT IN UTTAR PRADESH

Eight coaches of the Jammu-Tata Nagar Muri express derailed in Uttar Pradesh on 25 May. One woman died in the accident. The accident occurred some 170km from Lucknow, between Sirathu and Atsarai in the Kaushambi district.

One report said more than 100 people were hurt; another report said six.

97-YEAR-OLD HURT IN TRAIN ACCIDENT

Eight people were hurt in a 14 May accident reported in Nashville, Tennessee, their ages ranging from 74 to 97. Apparently a 21-year-old entrepreneur was giving rides at a "senior living facility" using a "fairground" type tractor with trailers. The hauler was a Husqvarna lawn mower modified with fibreglass shell to look vaguely like a steam engine and the trailers were also fibreglass. It seems the driver lost control when he tried to brake going downhill and two trailers tipped over. The authorities are investigating the incident.

METRORAIL TRAINS: 1,331 DELAYED IN A WEEK

Cape Chamber of Commerce President Janine Myburgh, commenting on Metrorail troubles, told the Cape Times, "We are spiralling downward. It will impact negatively on all sectors of the economy. People don't know when they are getting to work and employers don't know whether their staff are coming in."



A handful of these 8M sets in the Cape Town Metrorail fleet were acquired new, 25 years ago. The rest are 5M2As, at least a decade older (many more than that), though 11 8-car sets were rebodied as 10M3 some 12 years ago. Photo: Andre Kritzing.

Of 4,103 trains scheduled in the previous seven days, Metrorail's Riana Scott told the paper on 22 May, 1,331 were delayed, some for periods as long as two hours. There were many reasons. On 21 May, a motor coach pantograph tangled in the catenary, halting all service between Ottery and Heathfield for five hours. The following morning there was a suicide at Mandalay, delaying trains up to 30 minutes for some four hours. Cable theft continues to be a "huge" problem. Meanwhile, rolling stock and infrastructure are ageing, causing breakdowns.

KIDS DIE TIED TO PRETORIA LINE

Following a heated domestic argument in mid-May, Pretoria resident Elsie Maluleke took her children aged 3, 7 and 9, tied them to the rails on a line nearby and waited with them until a train ran them down. According to Passenger Rail Agency of South Africa (Prasa) spokeswoman Lillian Mofokeng, there were six suicides on railways in the Pretoria area in the financial year to 31 March 2015. In the present instance, the train driver involved was severely traumatised and booked off work.

TRAIN DERAILS ON BRIDGE

A fallen tree on the track is believed to have been the cause of a derailment on India's North-East Frontier Railway on 23 May. The locomotive and five coaches of the Guwahati-Siphung express left the track on a bridge near

Salakati in Kokrajhar District, injuring 10 including the driver who was admitted to hospital. It was fortunate there were not more injuries, as one coach was left dangling off the side of the steel girder bridge.

55 HURT IN N CAROLINA CROSSING DERAILMENT

In yet another serious crossing collision and derailment in America, 55 train passengers were injured on 9 March at Halifax, North Carolina. A 50-metre combination tractor and trailer carrying a complete

electrical installation building became wedged on the line while trying to turn onto a highway. It could not back up due to other vehicles immediately behind. While manoeuvring, the lights began flashing and the gates came down on the trailer. Amtrak's northbound Carolinian express (Charlotte, North Carolina, to New York City) derailed its locomotive and two coaches when it hit the "oversize" truck.

Dramatic scenes of the actual collision were filmed by a motorist waiting at the crossing who said she could see what was going to happen. Altogether some 46 train passengers were taken to hospital, 21 by ambulance. Buses shuttled 179 people who were not hurt for further transport to their destinations.

The accident could have been prevented. Amtrak was not notified beforehand of the abnormal vehicle move and a state trooper escorting it evidently took no steps to do so.



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TRAIN RAMMED BY TEEN DRIVER

Two 15-year-old boys from Cleveland, Ohio, stole a minivan parked outside a suburban house. The owner called the police who located the vehicle and set off in pursuit. The chase continued on Route 84 at speeds exceeding 100km/h into downtown Willoughby, where the van collided with a slow-moving CSX freight train. The teenagers were taken to hospital.

SIX TFR EMPLOYEES KILLED BY LIGHTNING

In mid-March, six employees of Transnet Freight Rail (TFR) died from a lightning strike while waiting for a bus in Bloemfontein. Two others survived and were hospitalised. TFR general manager (safety) Patrick Dada issued a statement aimed at informing staff about this unfortunate incident and warning them of the potential danger.



“What is lightning? Cloud-to-ground lightning bolts are a common phenomenon. Each bolt can contain up to one billion volts of electricity. This enormous electrical discharge is caused by an imbalance between positive and negative charges. During a storm; colliding particles of rain, ice or snow increase this imbalance and often negatively charge the lower storm clouds. Steeples, trees, objects on the ground and the earth itself become positively charged - creating an imbalance that nature seeks to remedy by passing current between the two charges. Lightning will usually go from the clouds to the earth through the highest object.”

“Lightning is extremely hot - a flash can heat the air around it to temperatures five times hotter than the sun’s surface. This heat causes surrounding air to rapidly expand and vibrate, which creates the pealing thunder we hear a short time after seeing a lightning flash. About 2,000 people are killed worldwide by lightning each year. Hundreds survive strikes but suffer from a variety of lasting symptoms, including memory loss, dizziness, weakness, numbness, and other life-altering ailments.”

“South Africa has about 260 deaths and thousands of injuries from lightning strikes each year.”

KOLKATA TRAIN BOMB

Eighteen people were reported hurt on 12 May, five seriously, when bombs exploded at 04:00 aboard a Sealdah-Krishnanagar local train as it entered Barrackpore station, about 25km north of Kolkata. Rival political groups were suspected of being involved.

TWO DIE IN GERMAN CROSSING COLLISION

Two people aboard a passenger train were killed on 16 May when it hit a truck and trailer apparently stuck fast on a crossing near Ibbenbueren, about 23km west of Osnabruck in Germany. About 20 people were reportedly injured, some badly, though the tractor driver was not hurt. The front end of the train sustained serious damage.

FLOOD CARRIES AWAY 40KM OF LINE IN CHILE

The future of a 155km railway in Chile hangs in the balance after torrential rain in the Andean foothills carried away 40km of track during March. The line runs from a copper smelter at Potrerillos, 2,880m above sea level, to the coast at Barquito. It would cost more than \$US50 million to repair and take many months. Part of the infrastructure is government-owned and the rest is in private hands. Those involved are unable to agree on responsibility for meeting the cost.



Crude oil train explodes after derailing in Virginia; 100 local residents evacuated. Photo: U S Coastguard.

DERAILED OIL TRAIN EXPLODES IN WEST VIRGINIA

During a heavy snowfall on 16 February, 29 tankcars carrying crude oil to Yorktown, Virginia, derailed on CSX tracks near Pratt, about 50km south of the state capital Charleston. Two went into the Kanawha River and 19 ignited, creating a massive explosion and fireballs that sent flames high into the sky. Most of the more than 100 residents from Adena Village and Mount Carbon who were evacuated to nearby hotels were finally allowed back to their homes five days later, but one house had burned down. The 80 unaffected, loaded tankcars were still parked at the scene, coupled to two idling locomotives. Officials said they would remain there until released by the Federal Railroad Administration. Meanwhile the line remained blocked and unusable.

Some 1.2 million barrels of crude oil are extracted through hydraulic fracturing of shale rock in North Dakota every day. More than 60% reaches refineries by rail, usually in 100-wagon trains.

DERAILMENT FATALITY: LATE MEDICAL ATTENTION

The report on an incident in India a year ago highlights the importance of fast rescue action following an accident. On 20 March 2014, five coaches in a local train from Mumbai’s Chhatrapati Shivaji Terminus (CST) to Kasara derailed between the Titwala and Ambivali stations, injuring 13 passengers. One, an 18-year-old student, was declared dead on arrival at hospital.

Apparently the first ambulance on the scene arrived 45 minutes after the derailment but the student was not aboard. “Two crucial hours”

reportedly elapsed before the second ambulance got him to the Rukmani Bai Hospital. A doctor here said the dead man's life could have been saved, had he been attended to sooner. According to the post-mortem report, he succumbed to head injuries.

According to the accident enquiry, the Shafu coupler was found to be damaged. The Commissioner of Railway Safety recommended that the Central Railway not use "over-age" coaches. He added: "They should conduct periodic overhauling regularly."

OIL TRAIN DERAILS & EXPLODES IN NORTH DAKOTA

North America is increasingly perturbed at the incidence of oil train derailments, accompanied - invariably - by explosions and huge fires. Though most recent accidents have been in remote areas, with few local residents threatened, everyone is concerned that an incident in an urban area might have devastating consequences - like those in Quebec two years ago, when the centre of a town was virtually wiped

out. The latest accident occurred at Heimdal, about halfway between Minot and Grand Forks in North Dakota, on the Burlington Northern Santa Fe main-line, on 6 May. A train of 109 wagons was involved, 107 carrying crude oil and two, serving as "buffers", loaded with sand. Ten tankcars left the line, accompanied by explosions and fire, necessitating evacuation of the village residents. Fortunately no injuries were reported.

AUSTRALIAN DERAILMENT OF 19 WAGONS

It took a week to restore rail service at Kankool between Murrurundi and Willow Tree in the New South Wales Upper Hunter after 19 empty coal



wagons came off the track on 16 February. Export coal traffic from the Gunnedah Basin was disrupted and buses replaced passenger trains between Muswell Brook and Werris Creek.

INDIAN DERAILMENT KILLS 58

On 20 March 2015, the locomotive and two coaches of the Janata Express from Dehradun to the Hindu holy city of Varanasi crashed through buffers and derailed at Bachhrawan, about 35km from Lucknow in Uttar Pradesh. Reportedly the driver radioed that his brakes had failed, so that he could not make the scheduled stop at Bachhrawan. Apparently the signalman diverted the train into a dead-end siding. Altogether 58 people died and 150 sustained injury. Cutting equipment had to be used to free people and bodies from the wreckage. Train operations between Lucknow and Varanasi were suspended until the line was cleared.

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Bakara Engineering (Pty) Ltd

Bakara is a young, dynamic engineering company operating in a difficult and yet exciting arena of the South African economy, the rail industry. The company was founded in 2010 by Ms Nozipho Sangweni and Reg Taylor, both mechanical engineers. Ms Sangweni is the majority shareholder and managing director of Bakara Engineering, making it a black-woman-owned-and-run company.

Its ability to identify a range of technical needs for its main client, the Passenger Rail Agency of South Africa (Prasa) and being able to respond with appropriate solutions gave the company an edge in the market, resulting in rapid growth.

Services and products included the provision of on-site maintenance and repair teams comprising qualified technicians to support Prasa's own maintenance plans as well as the design and manufacture of rolling-stock components. These addressed the problems of outdated parts as well as those from single-source suppliers (monopolies), in the interests of creating healthy competition.

Two products have been commercialised by Bakara and two more are prototypes, the first being a shaft encoder for motor coaches. This device transmits two square waves, 90 degrees apart, to the traction-motor controller, confirming that all four axles on the vehicle are revolving in the same direction at the same speed. This allows the controller to cut power in the event of wheel-slip or mechanical failure on one of the axles. The second device is a bracket designed to mount an odometer onto the bolt-heads of the bearing cap without any form of machining (drilling, cutting or grinding). The odometer records the distance travelled by the bogies.

The company's rapid growth was further fuelled when, in 2011, Bakara was approached by Bombardier Transportation's Rail Control Solutions. It was invited to join a consortium with other South African companies bidding on tenders for upgrading Prasa's rail infrastructure.

The Bombardier Africa Alliance consortium was awarded the R1.3 billion (incl. Vat) Durban signalling contract in March 2013. Bakara's scope, which was about 11% of the total bid, included site establishment and management, document control, occupation management, site security, the supply of signal equipment rooms

and rail telecommunications (the largest component). This gave Bakara the opportunity to expand into telecommunications through taking on experienced individuals in the field, and thereby establishing a brand-new department in the company.

Since then, Bakara has been invited to join two listed companies in bidding on Prasa tenders for modernising rolling stock maintenance depots.

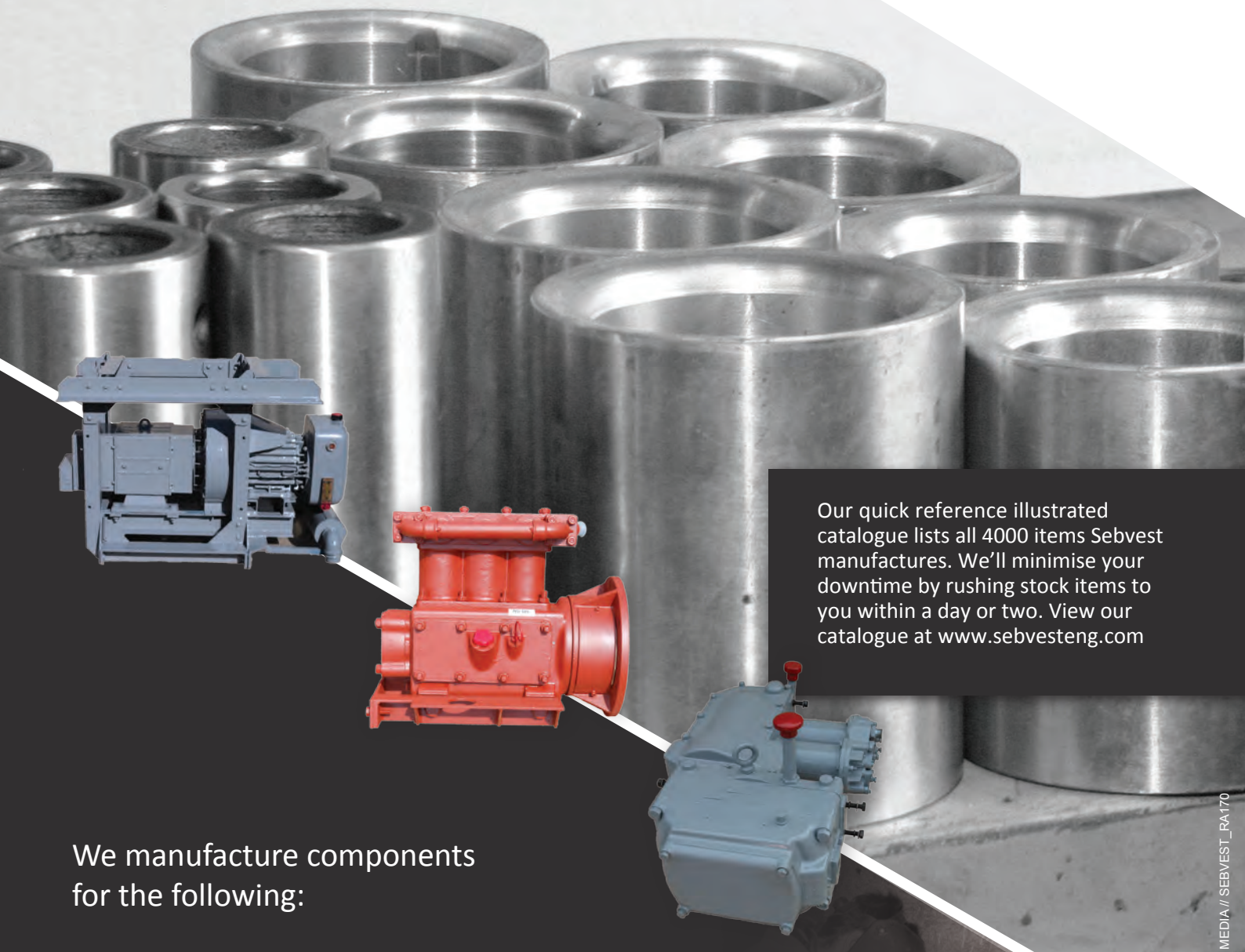
Bakara has been appointed by Prasa to undertake conversion of a 5M2A motor coach, as prototype for a new state-of-the-art propulsion system. The current fleet of 5M2A motor coaches depend on outdated drive technology, using line switches and resistors. The new propulsion unit is a modern state-of-the-art traction converter designed by a Benoni-based engineering company, Tsakane DJC. The traction converter's DC chopper drive incorporates IGBT (Insulated-gate bipolar transistor) technology and possesses built-in capability for adaptation to AC traction by the replacement of a single module in the drive.

Though Prasa has embarked on the purchase of new rolling stock, the current fleet needs to continue in service for a further 15 years. The traction converter project is one of several being commissioned by Prasa in modernising the fleet to increase reliability and reduce maintenance costs. This is a pilot project and is being used to define the scope, procedures and standards to enable a proper roll-out of the actual upgrade to as many Prasa engineering contractors as possible.

Bakara has enrolled in Prasa's Women-in-Rail development programme, as well as Transnet and Gibela's supplier development programmes. This will guide the company into yet more fields of endeavour.



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ON THE WIRE MEDIA // SEBVEST_RA170

IP Solutions is playing a major role in assisting Prasa with an ambitious and exciting project to share its network connectivity with the community.

The Passenger Rail Agency of South Africa (Prasa) has an extensive fibre optic network, extending over a distance of some 1,200km, permitting constant and consistent communication between its stations, signal cabins, divisional offices and headquarters. Acknowledging that wider exploitation of this facility could benefit a number of entities in proximity to the railway, Prasa has embarked on an ambitious and exciting project to share its connectivity with the community.

Railway Cellular CEO Haim Derazon explains that the fundamentals were already in place, thus expansion was a natural extension of the fibre optic capacities and capabilities. Railway Cellular has worked closely with Prasa over the past two years, planning and devising appropriate adaptation of the existing installation. In terms of an extensive corporate social investment (CSI) initiative, the network is to be made available to a preselected number of schools and clinics located close to the railway.

To date, 22 schools (11 in Soweto and nine in KwaZulu-Natal), including a number for the hearing impaired, are benefiting from the free connectivity Prasa is providing. Ultimately, Derazon explains, the project - focused on education - will see 269 schools across the country plugging into Prasa's communication network. The Department of Education is responsible for explaining the initiative to the affected schools and partnerships, with Intel and Compaq ensuring the delivery of special communication systems and tablets.

Railway Cellular consulted IP Solutions managing director Noah Mashaba, whose expertise in best practice technology proved invaluable in assessing the project's hardware needs.

To equip the first nine schools under the project umbrella, IP Solutions selected a number of products from wireless IP convergence company MiRO. These included nine Ubiquiti Rocket M5 5GHz titanium outdoor wireless radios, nine Ubiquiti 30Dbi dual polarised dishes, 18 Ubiquiti Nano Station M2 2.4GHz outdoor Wi-Fi access points and one MikroTik Cloud Core Router.

Schools benefit from railway fibre optics

The network is very stable, producing a high throughput of 30 mbps. "We are thrilled with the performance of the pilot systems, which are allowing the schools to participate in live video streaming sessions on Skype and conference calls without any connectivity or interference issues," Derazon says.

Based on the satisfaction expressed by both Railway Cellular and Prasa, phase 2 - which is again being undertaken by IP Solutions using MiRO hardware, commenced in late April.

"The educational network will facilitate extended e-learning, a facility that is especially attractive to the large number of children receiving remote rural schooling, who often lack connection to any form of telecommunication service. In addition, POP sites can be set up at schools and connectivity can be sold to members of the community. This would allow schools to benefit financially from the service. In this way, the initiative will not just move the economy, but more importantly it will enhance it," Derazon enthuses.



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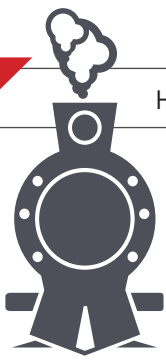
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Railway Preservation

By John Batwell

Sandstone Heritage Trust, Eastern Free State

*Sandstone director of operations
Dave Richardson reports:*

April 2-12 in the Eastern Free State reverberated to the sound of steam locomotives at the Stars of Sandstone 2015 heritage event, attended by over 3,000 visitors. While Sandstone is well known for its 610mm gauge railway, the festival also showcased vintage tractors, traction engines, agricultural machinery and classic vehicles, as well as the South African Armour Museum collection of military vehicles and vintage aircraft.



Sandstone Trust's latest locomotive in operation in April 2015 was Orenstein & Koppel (O & K) no 12691. Photo: J A Dulez

The railway has a route length of some 25.6km. The fearsome mountain section to the north of the rail headquarters at Hoekfontein faces steep gradients up to 1:22 profile. Twenty-one different locomotives were steamed during the April gala, with a total of 101 different trains operated. On the 11 April public open day alone, 24 trains ran in a six-hour period.

The centre point of railway operation is Hoekfontein Station, adjoining the main farm complex. With a full programme of non-rail activities throughout the 10 days, most train operations were confined to the Hoekfontein-Mooihoek and Hoekfontein-Grootdraai sections. Passenger trains were run from 08:00 until lunchtime. At 15:30 each day, The Mountain Wanderer, hauled by double-headed ex SAR

class NGG16 Garratts, traversed the entire system - a two-hour journey. On selected evenings, a "Stargazer" train left after dinner at 20:00 for Grootdraai.

Freight trains were run too, with differing consists to exhibit Sandstone's collection of goods wagons. For variety, a few mixed trains were scheduled. For the benefit of photographers, a number of special trains were run at sunrise, employing various consists and locomotives.

Sandstone's vintage 1955 ex-Welkom Municipality Bristol bus accompanied these specials, to move photographers between locations. Added props were provided by Sandstone on request such as tractors and traction engines, as well as classic and military vehicles. Dramatic backgrounds were provided by vintage aircraft.

This year, crews were brought in from both Europe and Australia to work the steam locos. All were certified at Sandstone by a registered South African assessor and authorised to work in this country. A number of trains were crewed entirely by Australian or Belgian visitors. In view of the limited appearance of South African crews this year, Sandstone is considering the introduction of a crew training programme ahead of the 2017 festival, taking account of the safety critical grades defined by the Railway Safety Regulator.

In line with tradition, Sandstone launched a new locomotive at the Stars event. This year it was O&K 0-6-0WT no 12691, rescued in derelict condition from the now defunct Sanrasm site and restored at Sandstone's Bloemfontein facility by Lukas Nel and his team. Built in 1936 for the New Machavie Gold Mining Company Ltd near Klerksdorp, the locomotive, now resplendent in blue livery, was displayed hauling a suitable mine hopper. It was named Montana after one of Sandstone director Wilfred Mole's granddaughters. The locomotive was joined later by the three other O&K locomotives based at Sandstone for a quadruple-header to Grootdraai.

Each morning, different locomotives from the Sandstone stable hauled passenger trains. The afternoon double-header used two of three NGG16 locomotives, nos 153, 113 and 88, with a Garratt kept in steam at all times.

NG15 no 17 saw good service but is restricted to the section to Vailima Siding as its long boiler is prone to priming on the steep mountain section and its long wheelbase is unsuited to the sharp curves. No Sandstone event is complete without an appearance by the gem of the fleet, Lawley 4-4-0 ex Beira Railway no BR7, which ran a photographic special as well as a number of passenger turns. All the depot's operational ex-industrial locomotives were run during the period but special mention should



NGG 16 Garratt no 88 enters Hoekfontein during Sandstone's recent festival. Photo: J Attwell.

be given to Sezela no 3 which was turned out specially to mark the Sezela mill centenary in 2015. Illovo Sugar's general manager was present at the event.

The programme on 11 April, the public Open Day, included the military parade by SA Armour, aircraft flypasts and two military-style trains, one hauled by "Feldbahn" no 498 (ex-Sena Sugar) and a lengthier consist hauled by NGG16 no 88.

On the final day, O&K no 12691 was teamed with Avonside no 1624 Xanthe, also ex Sanrasm, as a tribute to master engine restorer, Lukas Nel.

There is to be no Stars of Sandstone event in 2016. A number of infrastructure changes are to be made to cater for a larger number of visitors. The 2017 festival is to feature the oldest surviving Garratt locomotive in South Africa, class NGG11 no 52. Acquired in extremely poor condition, it is currently under restoration with Lukas Nel in Bloemfontein. No 52 will be joined by the last of the two ex-Angolan sugar estate locomotives which came to Sandstone in 2003, O&K nos 11112 and 12140.

Stars of Sandstone 2017 is to take place from 30 March to 7 April 2017, with an additional public Open Day on 8 April.

Class 14R no 1745 to be scrapped

Sandstone Heritage Trust has advised the intention to scrap its class 14R locomotive no 1745, currently stored in Germiston, following extensive consultation with fellow preservationists. While with previous owner Natal Cambrian Collieries, the middle two driving wheelsets had their flanges removed, a modification that disqualifies its running on Transnet lines.

"In fact it cannot be moved by rail from Germiston at all without two new wheelsets. In addition it is devoid of all nonferrous fittings and is badly rusted. The tender would need replacing and extensive work - on the boiler for example - would be required, were it to be put back to working order." To do

so would cost at least R5 million, according to estimates, and there are in fact two examples of the class in private preservation in KwaZulu-Natal. The Trust considers that R5 million would be better spent preserving and rebuilding other more important locomotives.

Although Sandstone's emphasis is primarily on 610mm gauge, it does own a number of 1,067mm gauge locomotives. Of these, class GMAM Garratt no 4079 - the first locomotive ever acquired by Sandstone - is at Germiston in the care of Reefsteamers, in working order bar a requirement that all wheelsets be reprofiled before it may operate on the national rail network. There are many examples, particularly in the UK, where one locomotive's sacrifice has enabled another to be reborn. The funds raised by the scrapping of no 1745 could assist in the return of no 4079 to main-line operation.



Class 19D no 3322 Sarah-Jane - named after Ian Pretorius' daughter - is a likely candidate for use on the 26km Wolseley-Ceres-Prince Alfred Hamlet line. Photo: J Batwell.

Atlantic Rail, Cape Town

In line with its appointment by the new Ceres Railway Company to operate the scenic 26km Wolseley-Ceres-Prince Alfred Hamlet line, Atlantic Rail is looking to move class 19Ds and a class 19B to Cape Town from Voorbaai.



Class 14R 4-8-2 no 1745 at Millsite depot, Krugersdorp, in 1981. Photo: J Batwell collection

Rovos Rail, Pretoria

Class 6A 4-6-0 no 439 is regularly lit up at Rovos Rail's Pretoria depot for use on shunts, for steam pictures on the front of a trainset, as well as for charters in the Pretoria environs.

Enthusiasts visit Botswana for steam

Bamangwato Concessions Ltd (BCL) played host during May to a party of enthusiasts keen to photograph the 19Ds - one of the last bastions of industrial steam on the continent. Meanwhile the dumped ex-Zimbabwe class 14A Garratts serve as a reminder of the mine's temporary venture into Garratt traction.



Enthusiasts visiting Bamangwato Concessions Ltd (BCL) in Botswana during May 2015 saw class 19D 4-8-2 locos 807 and 813. Photo: A McCarthy.

Photographic tour to Zimbabwe

During May, the National Railways of Zimbabwe (NRZ) scheduled two Garratts - class 15 4-6-4 + 4-6-4 no 414 and class 14A 2-6-2 + 2-6-2 no 519 - for the British-based tour operator Geoff's Trains. On this occasion, Bulawayo's steam depot was not able to provide a class 16A Garratt, to represent a third type of motive power.



Geoff's Trains May 2015 tour: National Railways of Zimbabwe class 14A 2-6-2 + 2-6-2 no 519. Photo: G E Cooke

MONORAIL FOR CAPE TOWN

In a recent Cape Town paper -
 by Aziz Hartley. "Metrorail commuters can finally kiss late trains and poor service goodbye and start looking forward to modern hi-tech trains like those used in major cities such as New York, Copenhagen and Boston.



"Construction of elevated monorails are to begin as early as next month. This was revealed after senior executives of Metrorail's parent company, Passenger Rail Agency of South Africa (Prasa), were summoned to a cabinet meeting to explain why the national Transport Department had not been kept

abreast of the ambitious plan. 'We'd rather not talk about that right now, but we can say that the work will be tackled with great speed. We'd like to see commuters plug in their laptops or watch movies on onboard screens in our coaches by year-end,' said Prasa executive Ndela Nde.

"Trains on the monorail will be fitted with fast-food dispensers, laptop points and free wi-fi. Stations will be located at major transport hubs. The rail, built with locally sourced materials, will initially run along the N2, split at the R300 and branch out to Bellville, Khayelitsha and Mitchells Plain. Engineers have ruled out routes along False Bay and the Atlantic Seaboard, and explained that the sea air would corrode the elevated tracks. Cable theft will be a thing of the past because the system will function via microwave and satellite."

(The story was datelined 1 April)

"COACH TRAIN DERAILS BUT NO CRASH"

An AIA report posted on 15 June:
 "Six people were injured when a coach train derailed in Braamfontein on Monday, the City of Johannesburg Emergency Management Services said. 'It is not a train crash. A coach train derailed between Doornfontein and Park Station,' EMS spokeswoman Nana Radebe said, 'There were no fatalities and six people were treated on the scene with minor injuries.'"

News24 ran the headline "Two trains derail" but reported a 12-coach Metrorail train from Pretoria derailing two coaches.



BALLAD OF THE BRANCH LINES

We're going to concession the branch lines.
 Can't think why we didn't before.
 True, small fry were way too much bother -
 The Big Time excites us much more.

We're going to concession the branch lines,
 Seeing private endeavour run free.
 Let initiative top the agenda -
 Initiative - and BBEE.

We're going to concession the branch lines,
 Though one can't see the rails for the trees.
 Look - reviving rural endeavour
 Will stimulate SMMEs.

We're going to concession the branch lines,
 Though what's left is a pitiful sight,
 With the jungle reclaiming its birthright
 And thieves who lift rails in the night.

~ LRD

Closing Shot

Inside the Gautrain Operation Control Centre (OCC). All that's missing is a "twitter-wall" and the parliament channel. Photo: Craig Dean



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