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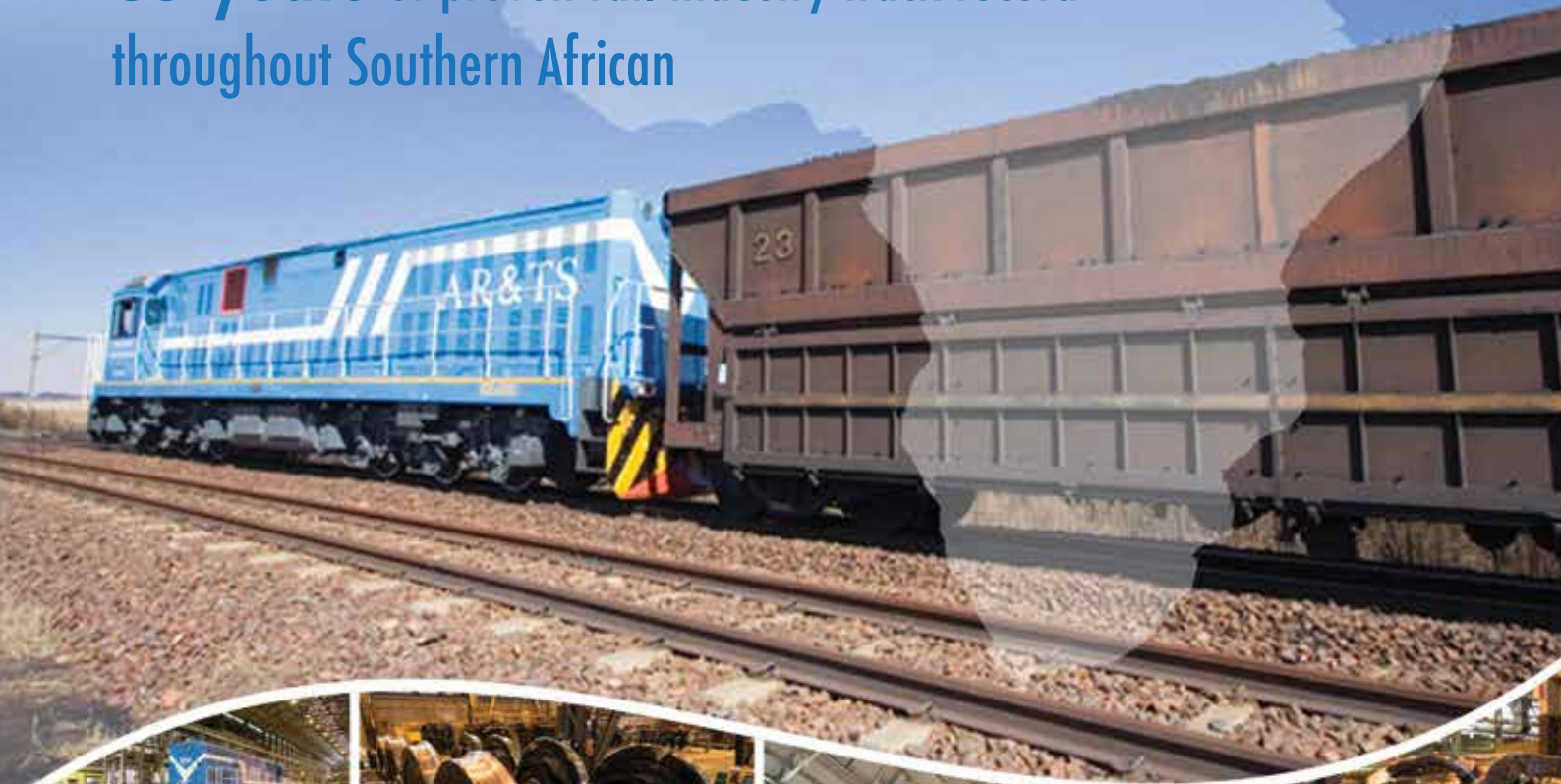
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Conferences Galore

Representatives of railway management who attended the many conventions, seminars and other rail-related get-togethers during May and June 2015 may have had difficulty finding time to actually run trains. Kicking off, two days were taken up at the first annual Integrated Transport Systems Conference, held early in May at the Indaba Hotel in Fourways, Johannesburg. The event was organised by the Intelligence Transfer Centre, which was also responsible for the Coal Transportation Africa Summit at the same venue on 19 and 20 May.

This overlapped with the Transport Ticketing Africa conference (at the Hyatt Regency) on 20-21 May. Next in line, the Southern African Railways Association (Sara) held its annual conference and exhibition from 26-28 May at the Emperor's Palace, Kempton Park.

Almost a month's breathing space followed, then lastly - unless we've missed something - the Africa Rail 2015 conference and exhibition began on 30 June, continuing on 1 July at the Sandton Convention Centre.

We said lastly, but that's not strictly right. There was still the Annual Transport Convention - at the CSIR conference centre in Pretoria - to come. The very first of those took place in 1981. Grandly titled "International Transport Exhibition and Conference" (ITEC), it was organised by the Chartered Institute of Transport whose Southern Africa Division vice-chairman, James McBurnie, was editor of *Railways Africa* - then known simply as *Railways* - at the time. (The redoubtable Dusty Durrant was to succeed James as editor the following year).

Invited to be guest of honour at the first Annual Transport Convention, Astronaut James Lovell enthralled delegates with an absorbing presentation. Treated to a Blue Train ride afterwards, he travelled safely all the way to Cape Town - not exactly reliving his epic, nail-biting Apollo 13 return to earth.

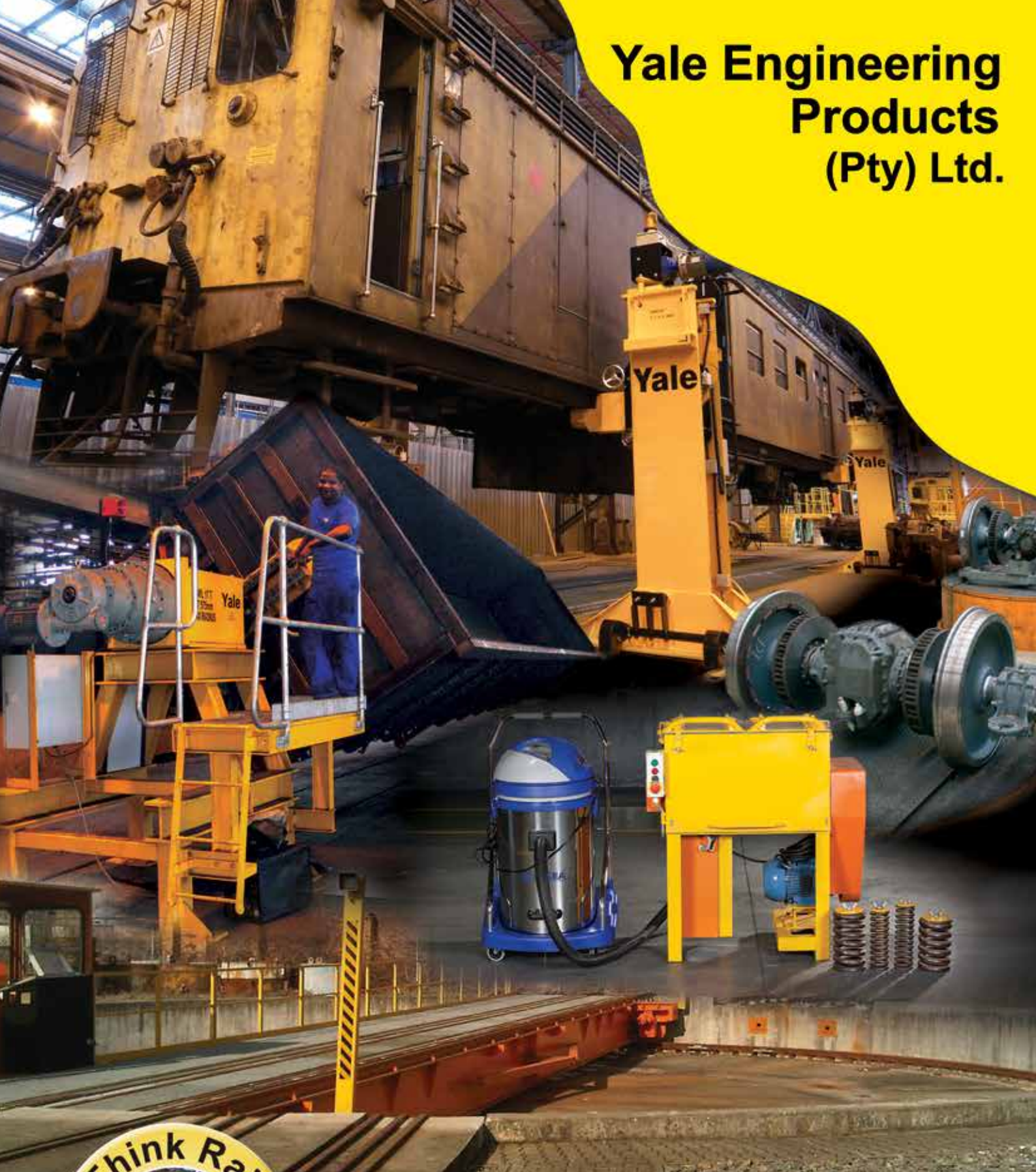
So much for the past: now let's have a look at what the immediate future holds. In October - on 15 and 16 to be exact - in Johannesburg, we have the Rail Expansion and Technology Congress Africa. Less than three weeks later, from 3 to 4 November, Project East Africa takes place in Nairobi, covering activities in Rwanda, Uganda, Burundi, Tanzania, South Sudan and Kenya. And on 12 November, *Railways Africa* publisher Phillippa Dean will be speaking at Africa on Track, an initiative of the Johannesburg Chamber of Commerce and Industry.

- Rollo Dickson



Astronaut James Lovell at South Africa's first Annual Transport Convention with the Chartered Institute's Cape Town section chairman. Now who could that have been?

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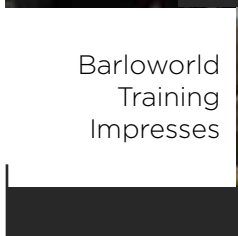
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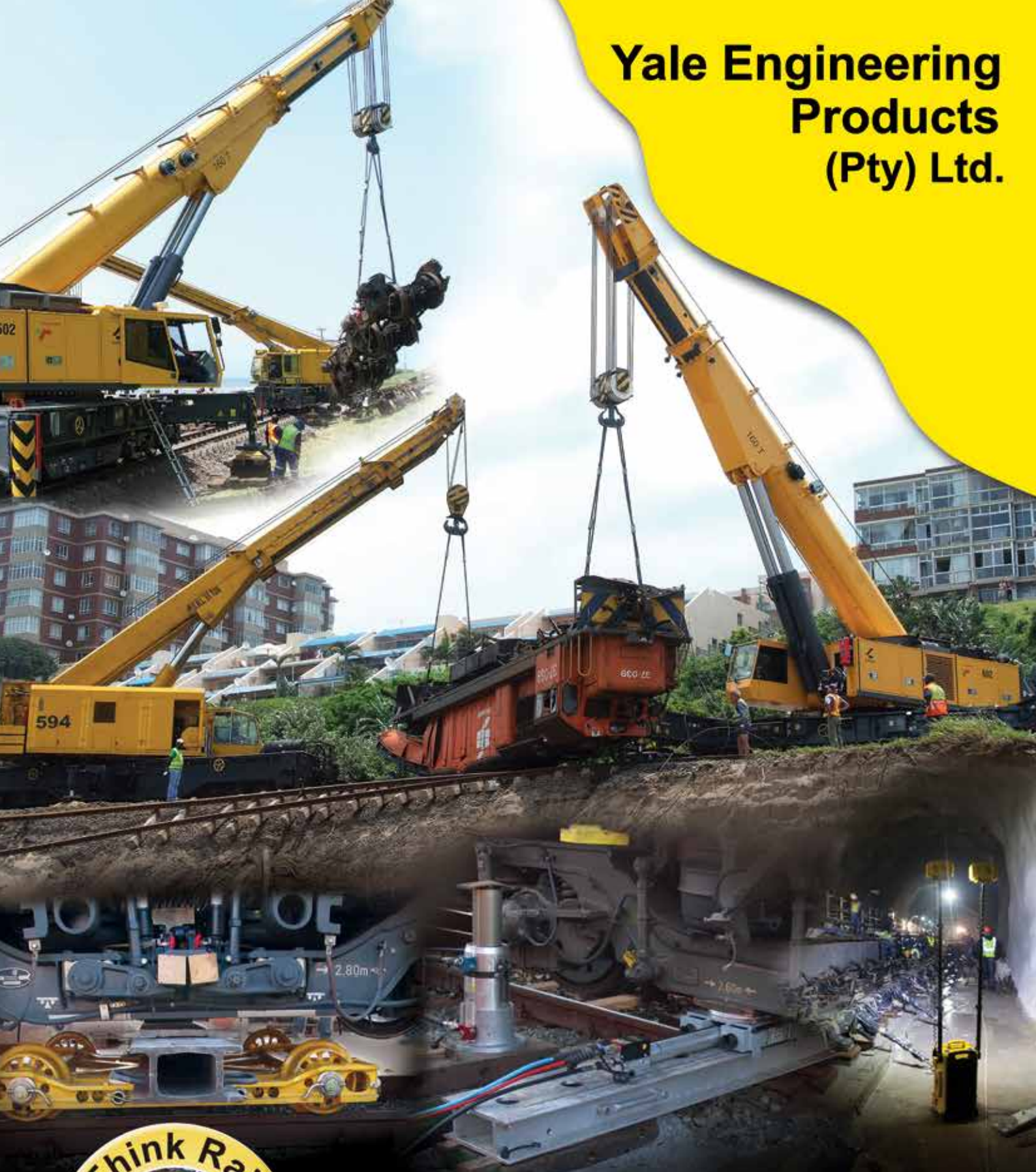
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Africa Update



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LOUIS BERGER & ACP DEVELOPMENT

Louis Berger, a \$1 billion global professional services corporation, has been hired to support the development of the transport sector in the African, Caribbean and Pacific (ACP) group of states, with a focus on sub-Saharan Africa. This €2.3 million project aims to promote inclusive political, economic and social development through enhanced regional integration by strengthening African countries' ability to regulate, organise and finance better inter-regional and continental transport infrastructure through safe trans-boundary transport corridors and integrated transport policies. The project will support progress toward the millennium development goals in ACP countries.

The consortium will help the African Union Commission's Department of Infrastructure and Energy improve its sector management capacity as well as support the implementation of the Programme for Infrastructure Development in Africa (PIDA) priority action plan projects. In addition, the consortium will strengthen the transport pillar of the 2014-2017 Infrastructure Agenda of the Joint Africa-European Union Strategy, an initiative that outlines a long-term shared vision of the future of Africa-European Union relations in a globalised world, and will promote the start-up of smart corridor activities. "Taken together, these efforts will lower overall transport costs and create safer, more affordable transport facilities that will result in greater market access, socio-economic development, welfare and regional stability," deputy general manager of operations (western and eastern Africa) Pascal Houdeau explains.

ACP is an organisation created by the Georgetown Agreement in 1975. Apart from Cuba, it includes 79 African, Caribbean and Pacific state signatories to the Cotonou Agreement, also known as the "ACP-European Community Partnership Agreement," that binds them to the European Union. PIDA promotes socio-economic development and poverty reduction in Africa through improved access to integrated regional and continental infrastructure networks and services.

ALGERIA

CORADIA POLYVALENT BI-MODE MU SETS

Société Nationale des Transports Ferroviaires (SNTF - the national railway of Algeria) has confirmed an order placed with Alstom for 17 six-coach Coradia Polyvalent bi-mode (diesel and 25kV AC electric) 160km/h multiple-unit sets. The deal is reportedly worth €200 million, with delivery commencing in January 2018. The 110-metre, 265-passenger, air-conditioned trains - specially suited to desert conditions - are to be used in intercity service from Algiers to Oran, Annaba, Constantine and Bechar. Alstom's Reichshoffen plant in eastern France is to be responsible for design, assembly and testing.



Alstom Coradia Polyvalent trainset

AFRICA RAIL INNOVATION

Africa Intelligence reports that Thierry Ballard has set up his own firm entitled Africa Rail Innovation. Ballard is well known as head of the rail division of Bolloré.

BOTSWANA

BOTSWANA COAL TO RICHARDS BAY

Transnet Freight Rail (TFR) currently carries coal from the Waterberg on existing, conventional trackage. This links into the heavy-haul coal line to Richards Bay. In terms of an ambitious five-phase project, the entire route - which begins at Lephalale in the north-west of Limpopo Province - is to be upgraded to

heavy-haul standards. This will involve the building of entirely new sections to bypass busy points like Pyramid, north of Pretoria, and Ogies, near Witbank.

TFR is currently studying a proposed extension of the route westwards from Lephalale into Botswana's Mmamabula area near

Mahalapye, where "massive" coal deposits occur. A feasibility report on this envisaged line is due for completion soon. Eventually the line from the Botswana coalfields is to be heavy-haul continuously to Richards Bay, with a connection via Swaziland to Maputo in Mozambique.

TRANS-KALAHARI DOUBTS

Namibia and Botswana signed an agreement in 2014 for the construction of a 1,500km railway across the Kalahari Desert to Walvis Bay. The main purpose would be to transport coal mined near Mahalapye, for export to India and China. Since the signing, world coal prices have dropped significantly. Detailed studies done recently see little

prospect of viability for the project unless prices for the commodity increase considerably.

Permanent secretary in Botswana's ministry of minerals energy and water resources Kgomotso Abi told the parliamentary public accounts committee recently that the project as it stands is not viable. In discussion, an estimate of \$US20 billion was mentioned, with no indication of how a sum of this magnitude could be funded. In the present circumstances, no investor would be enthusiastic.

Namibian High Commissioner to Botswana Mbapeua Muvangua was quoted recently saying "I am very confident the project is on track," explaining that the Botswana government had told him that it remains committed to the construction of the Trans-Kalahari railway. Reportedly he conceded: "there are a few things that need ironing out such as the funding by both governments."



EGYPT

NEW METRO ROLLING STOCK FOR CAIRO

Rolling stock for the Cairo metro system is the responsibility of the Egyptian National Authority for Tunnels. An application for a loan of €175 million - to augment the fleet - has been lodged with the European Bank for Reconstruction and Development. It is planned to call for tenders later in 2015, in respect of both supply and maintenance.



A consortium of MC, the Kinki Sharyo co and Toshiba Corporation delivered 88 Cairo metro cars.

DJIBOUTI

LINKING DJIBOUTI & WEST AFRICA

Djibouti, the smallest state in the Horn of Africa, is embarking on large infrastructure projects, building six new ports and two airports in the hope of becoming the commercial hub of East Africa.

"Infrastructure is coming very late to Africa," says Abubaker Hadi, chairman of Djibouti's Port Authority. "It is impossible for a truck to cross the continent. To transport goods from the east coast to the west coast of Africa, it is necessary to circle the continent

by boat," Hadi said, pointing out that such a sea voyage can take more than three weeks.

A trans-Africa railway is feasible "in seven or eight years," he said, as long as conflicts in South Sudan and the Central African Republic come to an end.

Liu Xiaoyan, commercial director of the China Civil Engineering Construction Corporation, responsible for building the new Djibouti-Addis Ababa line, says his company "is ready to continue the work."

ETHIOPIA

RAIL A CONTINUING PRIORITY

According to the Ethiopian Railway Corporation, railway expansion is to continue as a priority during the country's second five-year growth and transformation plan (GTP) period, which began in mid-July.

Two projects whose construction was launched in the current fiscal year will connect the northern and north-eastern parts of Ethiopia with the port of Tadjourah in Djibouti. These schemes are the 370km Awash-Weldia-Hara Gebeya line and the 220km Mekele-Woldia-Hara Gebeya-Semera-Tadjourah railway.

DJIBOUTI-ADDIS ABABA CAPACITY UP 7 TIMES

According to Abubaker Hadi, chairman of Djibouti's Port Authority, the first scheduled train is expected on the newly completed 1,435mm gauge railway to Addis Ababa in Ethiopia (780km) during October. It is hoped that journeys between the two capitals will take less than 10 hours. By comparison, heavy goods vehicles (as many as 1,500 every day) currently take two days using the mountain road.

At 3,500 tonnes, the capacity of the new line is seven times that of the old 1,917 metre-gauge system it has replaced.

Hadi sees the new railway as a step towards a trans-continental line ultimately connecting Djibouti to the Gulf of Guinea in West Africa. The route he foresees traverses South Sudan, the Central African Republic (CAR) and Cameroon, thereby connecting the Red Sea to the Atlantic Ocean.

SEBETA LINE PROGRESS

At the eighth meeting of the Ethio-Djibouti joint ministerial council held in Addis Ababa on 23 July, transport minister Workineh Gebeyehu reported progress on the 752km Ethio-Djibouti railway from Sebeta in Ethiopia to Doraleh in Djibouti. The line, he said, is 81% complete from Addis Ababa to Mieso, 93% from Mieso to Dawanle, and 84% from Dawanle to Doraleh. The projects are contracted to two Chinese companies - RCEC and CCECC.

GHANA

GHANA, CENTRE OF THE WORLD, NEEDS MONORAILS



Yaw Nkunim, described on Ghana Web as sculptor, writer, concept developer and CPP member, suggests that if the country is to remain the centre of the world, "once it has enumerated the policy harmonisation strategy for the currency in part one", it must now focus inter alia on transportation systems.

"A well-developed monorail system can change overnight the structure of various metropolitan lifestyles across the continent under the same harmonisation programme. While saving time with its traffic-free network, the monorail will substantially decongest our metropolitan roads as a bulk comfortable transporter. Monorail has interestingly been largely accident-free since its development. Above all, it is ultimately cheaper than road transport."

KENYA

RAILWAY CEMENT FROM CHINA

China Rail & Bridge Corporation is building the \$3.8 billion, 1,435mm gauge railway from Mombasa to Nairobi - said to be the country's largest infrastructure project since independence from Britain. A key point in the project agreement was an undertaking by the contractor that all material (except rails) would be sourced locally. Kenyan firms, notably two large cement producers, were looking forward to substantial orders - said projections would require a million tonnes of cement. The revelation that 7,000 metric tonnes of cement have been imported for the railway already has caused consternation, and explanations are being demanded. The two Kenya cement producers are complaining they spent "huge" sums enhancing their facilities, to be able to supply the grade of cement the contractors require. According to press reports, Kenyan cement costs more than imports do - and the railway enjoys duty-free benefits.

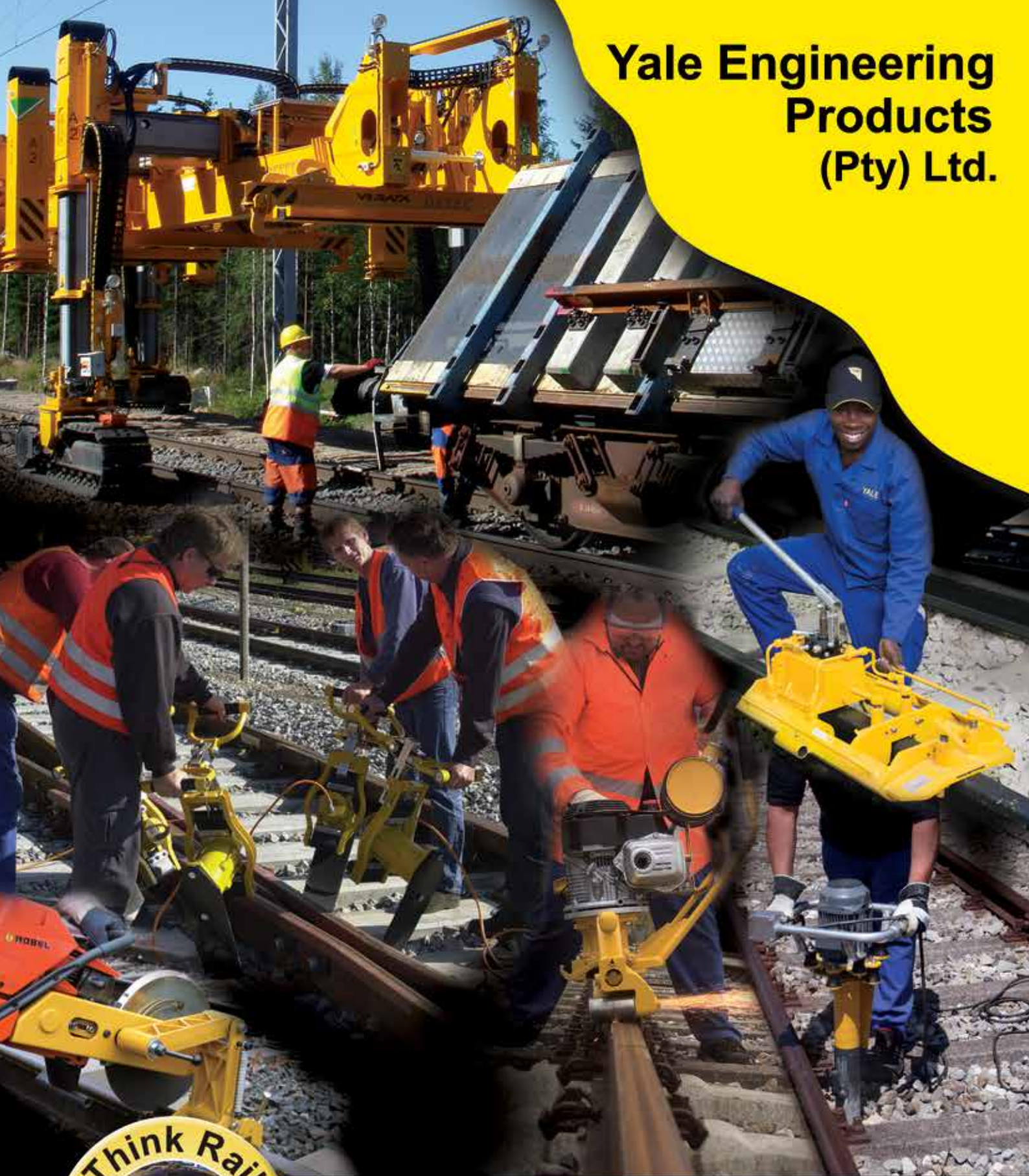
No explanations were forthcoming at the time of writing.

Once again we have a wide choice of distance figures. Mombasa-Nairobi: Bloomberg says 609km. Rift Valley Railways, 530km. Other offers: 470km and 441. Take your pick.

NEW LINE TO RUN THROUGH NATIONAL PARK

According to The Star, published in Nairobi, the Kenya Railways Corporation, Wildlife Service and National Land Commission have reached an agreement on a proposed rerouting of the planned new 1,435mm gauge railway from Mombasa, which would now take the line through the Nairobi National Park. The proposed alignment would save the government paying out substantial compensation to industries and houses that were to be displaced in terms of the originally envisaged route. Conservation bodies are firmly opposed to the idea but it has been emphasised that the agreement reached was in principle only and that no detailed "deal" has been finalised. Substantial bridging, notably in the Athi River area, would be needed to sustain wildlife movement.

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RAIL TRAINING CENTRE

The China Road and Bridge Corporation (CRBC), which is constructing the new 1,435mm gauge railway from Mombasa to Nairobi, has inaugurated a training centre for Kenyan employees, located in the town of Voi, 155km west of the coast. The CRBC Technology Transfer Training Centre aims to provide training for unskilled workers, and pass on new skills to those working on the rail project. The curriculum spans railway construction, operation and management and the first phase of the training programme occupies three months. It is expected to turn out more than 200 Kenyan engineers, technicians and artisans. The company has employed some 12,000 Kenyan staff. This number is expected to reach 30,000 as the project proceeds.



Guests unveil the name plate of the Technology Transfer Training Centre. Isabella Khaemba [right] works with Chinese engineer Ren Zhichao.

USA-KENYA TRANSPORT ACCORD

During USA President Barack Obama's July visit to Kenya, a memorandum of understanding was signed. According to cabinet secretary for foreign affairs and international trade Amina Mohamed, it includes "the development of a transport corridor connecting a new port at Lamu, to Ethiopia and Southern Sudan". The 200 metre-wide Lapsset corridor runs from Lamu (on the coast north of Mombasa) to Juba in South Sudan (1,700km). The key projects of the Lapsset corridor programme will require substantial funding. The project includes the construction of railways, a pipeline, roads and an airport.



The China Communications Construction Company (CCCC) won a tender worth \$488.7 million for the construction of three berths at the new Lamu Port.

COMPENSATING FOR RAIL LAND

Kenya Railways Corporation (KRC) says it will pay compensation totalling \$45 million for land expropriated for the construction of the new 1,435mm gauge railway being built from Mombasa to Nairobi. The \$13.8 billion project, part of a package of deals signed between Kenya and China in 2013, is intended eventually to connect with Uganda, Rwanda and South Sudan. According to Kenya's National Land Commission head Muhammad Swazuri, up to 1,500 local land owners along the route of the new line are to receive compensation for having to vacate their properties.

MAURITANIA & WESTERN SAHARA

MAURITANIA RAILWAY

Hanno Resources, a mineral exploration company focused on north-west Africa, completed a four-year technical cooperation agreement (TCA) with the government of Western Sahara in June 2011, evaluating the country's mineral potential and earning first right to license up to 20,000km² of ground. "The results of the TCA have given Hanno significant first-mover

advantage in this highly prospective but very sparsely unexplored area," according to Wikipedia. Africa Intelligence reported in July that Hanno is in talks with the authorities at the Mauritanian capital Nouakchott, with a view to exporting ore, and with Bolloré Africa Logistics, to allow Hanno to use the rail corridor in that country "which the French group operates."



The 704km Mauritania Railway connects mines at Zouerate to the port of Nouadhibou, immediately south of the border with Western Sahara. The line runs for about 5km inside Western Sahara at Choum.

MOROCCO

AFRICA'S 1ST HIGH-SPEED TRAIN

Office National des Chemins de fer (ONCF - the national railway of Morocco) has taken delivery of the first Alstom Duplex high-speed, double-deck trainsets for use on the Tanger-Casablanca line (320km). This includes the 183km high-speed (up to 320km/h) section under construction between Tanger and Kénitra. From Kénitra to Casablanca, a conventional line is to be used, upgraded for speeds up to 220km/h.

The rolling stock (12 sets), worth almost €400m, is based on double-deck TGV trains used in France, adapted for operating conditions in Morocco. It is hoped to reduce current journey times between Tanger and Casablanca from 4h 45 min to 2h 10 min, once the service begins in 2017.



Africa's first high-speed train arrives in Morocco.

Maintenance is to be in the hands of Société Marocaine de Maintenance des Rames à Grande Vitesse, a 60:40 joint venture between ONCF and Société Nationale des Chemins de fer Français (SNCF - the French national railway), in terms of a 15-year contract worth €175m.

MOZAMBIQUE

TETE EXPORT COAL THROUGH NACALA

From August, coal mined at Moatize in the Mozambiquan province of Tete is to be exported through the port of Nacala. The newly completed Nacala-a-Velha coal terminal marks the end of a 900km rail corridor, including a newly-built link through Malawi - the result of a partnership between the Vale group of Brazil and Caminhos de ferro do Moçambique (CFM - the state railway). According to Sociedade Corredor Logístico Integrado de Nacala (SCLIN) director José Ottoni, it is hoped to export 18 mta, rising to 22mta by 2017, using 89 locomotives and 1,862 wagons.



NAMIBIA

TRANSNAMIB NOT RETRENCHING

TransNamib, the national railway of Namibia, has refuted allegations suggesting it intends retrenching about 1,000 employees, explaining it has encouraged staff to accept voluntary part-company packages. The move, says spokesman Struggle Ihuhua, was unavoidable, with a wage bill "exerting tremendous pressure on the company's resources."

RIGHTSIZING TRANSNAMIB

State-run enterprises, notorious for overstaffing, face realities the hard way when the inevitable crunch comes. TransNamib, the national railway of Namibia, had virtually reached rock-bottom when former investment banker Johan Piek (one-time professor of Commercial Law) was brought in as executive turnaround project manager. He had little difficulty pinpointing shortcomings; putting them right has been another matter. On a macro scale, Piek identified three freight categories with potential - bulk commodities, containers and "big" cargo. Anything else, in his view, makes no economic sense on rail and can be left to road hauliers, with whom "TransNamib cannot hope to compete". Unavoidably, his diagnosis was read with alarm in labour circles. TransNamib was seen as threatening the livelihood of much of its staff and has been at pains in recent months, trying to allay workers' fears.

Piek's first priority was to increase the dwindling locomotive strength. With the help of Transnet Engineering, a great deal has been achieved in this area. Essentially, GE U20C units over 40 years old are being reconditioned. They have proved outstanding locomotives. Newly overhauled, they are performing excellently - as well as can be expected on elderly track, much of it in need of replacement.

Although a team of technicians from China was in Namibia recently to look at the 21 diesels imported since 2004 (which reportedly gave endless trouble and have been sidelined), nothing seems to have come of it. Obtaining spare parts, TransNamib chief executive Hippy Tjivikua explains, was the main challenge. Looking across the border into Angola, perhaps he is wondering how long their new Chinese-built diesels are going to run trouble-free.



TransNamib freight train behind former South African class 33 (GE U20C) locos, dating from the late 1960s. Photo Harald Süpflé.



NIGERIA

NRC TRIALS SYSTEM CONTROL

The Nigerian Railway Corporation (NRC) is currently testing its new control system at its headquarters in Ebute-Metta, Lagos. The equipment was supplied by a consortium comprising Ansaldo, the South African Gear Group, and A3 & O Ltd. Speaking at the commencement of the trials, NRC managing director Adeseyi Sijuwade explained that complementary on-board computers would be installed in all locomotives and diesel multiple units (DMU). The new system, working in conjunction with a satellite link, enables the control centre to supervise the entire NRC rail network, communicate with every driver and monitor the speed of trains. The facility enhances operational efficiency and at the same time improves safety.

RWANDA

TRIPARTITE AGREEMENT SIGNED

In August 2013, Kenya, Uganda and Rwanda signed a tripartite agreement to “fast-track” the building of a 1,435mm gauge railway from Mombasa through Nairobi to Kampala and on to Kigali. In June 2014, Rwanda and Uganda signed an \$8.6 million contract with German consulting firm Gauff Ingenieure Consultancy Services for the design of a line running southwards

from its capital Kampala to Kigali. Recently Uganda indicated that it “remains committed” to this project, but intends to prioritise the funding of a line running northwards instead, due to its “big commercial interest” in South Sudan.

Rwanda, Burundi and Tanzania are currently looking for investors to participate in building a new 1,661 km standard

gauge railway from Dar es Salaam, expected to cost about \$7.6 billion. The Rwanda Transport Development Agency (RTDA) has invited expressions of interest for the financing, design, construction, operation and maintaining of such a line, in terms of a public-private partnership.

According to RTDA director general Guy Kalisa, firms expressing

interest will be evaluated to shortlist potential private partners, prior to issuing the request for proposal documents for the project. The new line is to be constructed from Dar es Salaam to Isaka in northern Tanzania and Kigali in Rwanda with a link from Keza to Musongati in Burundi. CPCS Transcom International Ltd is the transaction adviser for the railway.





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SENEGAL

DAKAR ELECTRIFICATION

The government of Senegal has invited interested firms to prequalify for various rail-related contracts. The western section of the Dakar-Diourbel metre-gauge line is to be upgraded and electrified, and a branch constructed to the new Blaise Diagne International Airport (AIBD) near Ndiass. The project will be two-phased, 36km to Diamniado, and 19km to the airport.

SENEGAL - NEW RAILWAY PROPOSED

Senegal President Macky Sall has announced plans to construct a new railway to serve the country's south-eastern region of Casamance. A feasibility study has been completed, he says, with the cost of the project being estimated at \$500 million. Roads in the area are poor, creating problems for the transport of freight to and from Casamance, said to be one of the most fertile parts of Senegal.

The new line will start at Tambacounda, some 460km from the capital Dakar on the existing metre-gauge railway to neighbouring Mali. To cope with the curious geography of the region, it will run around rather than through the Gambia.



SUDAN

CHINESE TRAINS FOR SUDAN

International embargoes against Sudan do not seem to perturb the government. Reportedly these can be bypassed by looking to China. According to transport, roads and bridges minister Makawi Mohammed Al-Awad, quoted by the Sudan News Agency in Khartoum, equipping the Sudan Railways Corporation (SRC) as current refurbishing continues, can be achieved by sourcing modern trains from China.

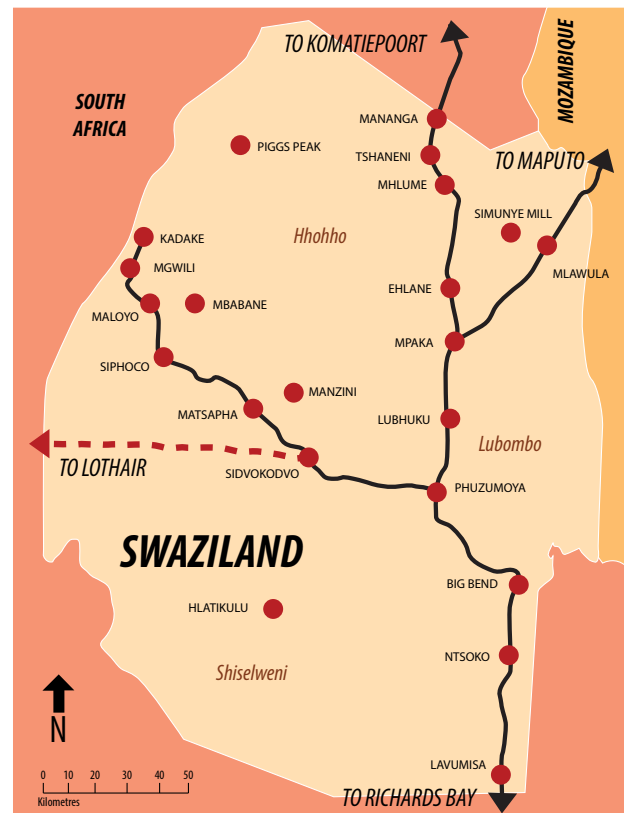
SWAZILAND

€150M FOR SWAZILAND RAIL LINK

Speaking during the Southern African Railways Association (Sara) board meeting held at the Royal Swazi Hotel in Mbabane, minister of public works and transport Lindiwe Dlamini recalled that the Swaziland Railway was established in 1964, which means it celebrated its fiftieth birthday last year. The system was created to serve the mine at Ngwenya, which exported 12 million tonnes of iron ore over 17 years to Japan via Goba - where it connects with the Mozambique railways - and the port of Maputo. "As a country," she said, "we are glad to be hosting the Sara board this year."

So far, Swaziland has injected €150 million into the multibillion proposed rail link spearheaded by Swaziland Railway and Transnet Freight Rail (TFR). Speaking in an interview after the opening session of the Sara board meeting, Swaziland Railway CEO Stephenson Ngubane (President of Sara) said this amount, amongst other things included an environmental impact assessment. Since talks of the proposed line started, he said, much work had been done on the ground. The project had seen both pre-feasibility and feasibility studies being undertaken.

About €10 billion would be raised by Swaziland to undertake the rail link, and they were grateful to both the Swaziland and South African governments for their support in this endeavour. In the construction phase of the line, about 2,500 jobs would be created. He said constructing the line from Lothair to Sidvokodvo would take about two and a half years.



TAZARA

TAZARA SERVICES RESUME

In mid-July, the Tanzania-Zambia Railway Authority (Tazara) announced that scheduled services had been resumed, following its suspension when unionised staff in Zambia embarked on an illegal strike. This was due to salaries being four months in arrears. The Friday passenger train from Zambia turns round as before at Nakonde on the Saturday, and the train from Dar es Salaam turns round at Mbeya. Through passengers are required to walk between the two stations.

NEW APPOINTMENT

The Tanzania-Zambia Railway Authority (Tazara) Board of Directors has announced the appointment of Dr Betram Kiswaga as deputy managing director, replacing Saidi Sauko who acted in the position - for administrative convenience - since 2013. Dr Kiswaga holds a master's degree and a PhD in mechanical engineering. Since 2008 he has

been a lecturer and acting deputy director of planning, finance and administration at the National Institute of Transport of Tanzania.

Dr Kiswaga joins Tazara at a time when the authority faces daunting operational and financial challenges. He is expected to take a lead in bringing the desired positive

transformation in the operations of the authority.

In February 2015, the President of Tanzania, Dr Jakaya Mrisho Kikwete, and his counterpart from Zambia, Mr Edgar Chagwa Lungu, directed the Tazara Board of Directors to recruit executives on the basis of competence, qualifications and experience.



TANZANIA

TENDERS FOR NEW LINE

On 29 May, Tanzanian transport minister Samuel Sitta reportedly told parliament that contracts worth about \$9 billion had been awarded to Chinese firms for the construction of new railways. One of these would be a new 2,561km, standard gauge line connecting Dar es Salaam to Rwanda and Burundi at a cost of \$7.6 billion.

Late in July however, it was reported that the governments of Burundi, Rwanda and Tanzania have issued a request for "expressions of interest from suitable qualified and experienced firms which have the capacity to finance, design, construct, operate and maintain the proposed 1,661km Dar es Salaam-Isaka-Kigali/Keza-Musongati railway project as a public-private partnership (PPP)."



According to the statement, "the new standard-gauge project consists of upgrading the existing 970km narrow-gauge railway from Dar es Salaam to Isaka, and constructing a new 494km extension to Kigali and a 197km branch from Keza (in northwest Tanzania) to Musongati in Burundi. The line will be built primarily for freight trains with a 32.4 tonne axle load, though some passenger services will be available."

The statement makes no reference to the contract said to have been awarded earlier to Chinese firms, nor to the assignment reportedly entrusted to Rothschilds in sourcing funding.

A 2014 study by Canarail and Gibb Africa updated a 2009 study by DB International and BNSF. It expected the line to carry 10 million tonnes of freight annually (mta) by 2020, 13mta by 2030, and 19mta by 2050.

LEVY TO FINANCE TANZANIAN RAIL

Tanzania recently approved the construction of a 2,561km standard gauge railway from Dar es Salaam to Kigali in Rwanda and Bujumbura in Burundi at an expected cost of \$7.6 billion. It also approved a new 1,000km line from mining endeavours in southern Tanzania to the port of Mtwara for an estimated \$1.4 billion. As a first step towards raising the necessary funding, the government has announced the imposition of a 1.5% infrastructure development levy on imports. Global financial group Rothschild has been appointed as the railway projects' financial advisor.

INDIAN HELP FOR DAR METRO?

When Tanzanian President Jakaya Kikwete met Indian Prime Minister Narendra Modi in New Delhi recently, he made an official request for help with funding a metro rail system being planned for Dar es Salaam. The city - said to be one of the fastest growing in Africa - already has a population in excess of four million and experiences "crippling" traffic congestion. The president's office said in a statement that India's Infrastructure Leasing & Financial Services Ltd (IL&FS) has expressed interest in investing in the metro project. The expected cost has not been mentioned.

In 2007, Tanzania contracted Rail India Technical Economic Services (Rites) to manage Tanzania Railways Limited (TRL) for 25 years. The deal was revoked in March 2010 because the government was dissatisfied with the Indian company's performance. It had expected a much faster turning around of the badly dilapidated system.



UGANDA

UGANDA-RWANDA RAILWAY

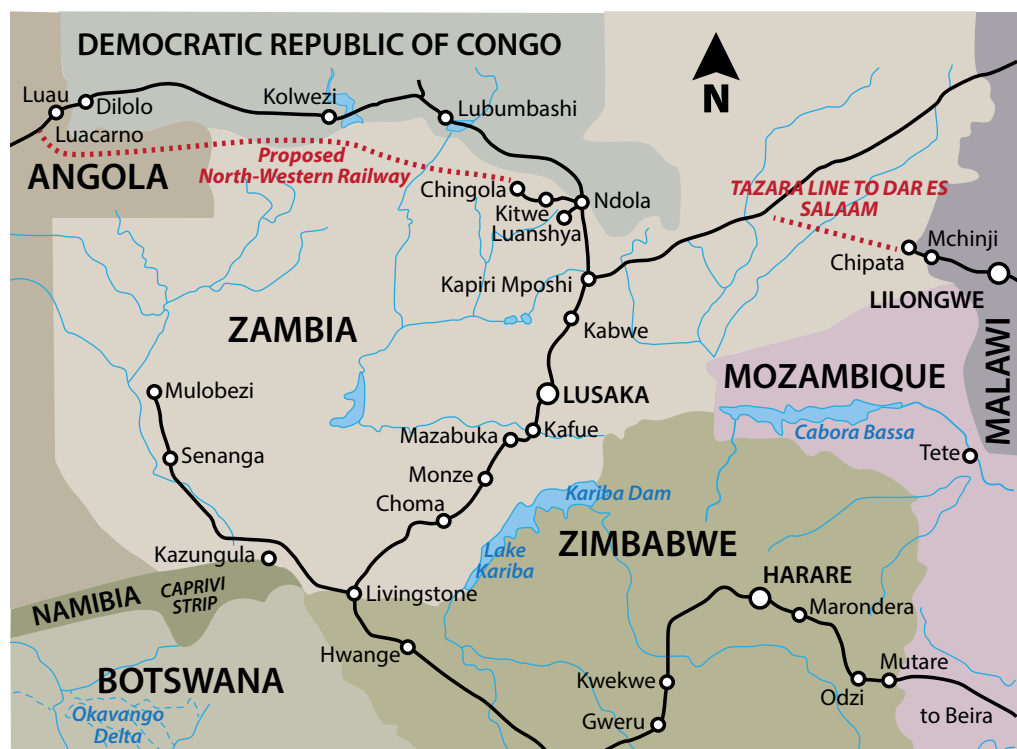
According to a report on JOC.com, "The Uganda government said it would not prioritise the building of a railway between Kampala and the Rwandan capital of Kigali." The proposed line forms part of the planned 1,435mm gauge railway from Mombasa through Kenya and Uganda to Rwanda. The first section, as far as Nairobi, is currently under construction, financed largely (90%) by the Chinese Exim Bank. Funding for building beyond Nairobi has not been sourced yet.



ZAMBIA

LINKING CHIPATA TO TAZARA

During a state banquet hosted in his honour by Malawian President Peter Mutharika at Blantyre, Zambian President Edgar Lungu announced that the railway currently terminating at Chipata is to be extended to link with the Tanzania-Zambia line. The effect will be to provide Malawi with rail connection to Tanzania, as well as a route from northern Zambia through Malawi to the port of Nacala in Mozambique.



ZRL WANTS CHIRWA BACK

On 31 May 2015, Professor Muyenga Atanga resigned as Zambia Railways Limited (ZRL) chief executive officer. According to transport and communication minister Yamfwa Mukanga, the ZRL board terminated Atanga's contract in a letter dated 29 May. Atanga took over as ZRL CEO from Professor Clive Chirwa in 2013, following Chirwa's being "retired in the national interest". He was under suspension at the time and certain court cases against him were pending.

Knox Karima, Chirwa's predecessor at ZRL, was also "retired in the national interest"; he was given one month's notice. It is understood that ZRL is negotiating with Chirwa, undertaking that the charges against him will be dropped if he agrees to return.



Professor Clive Chirwa

FUNDING ZAMBIA'S NORTH-WEST RAILWAY

It is hoped to begin construction on the first phase of Zambia's new north-west railway before the end of 2015. It will run 590km westwards from the present railhead at Chingola to mines at Kansanshi, Lumwana and Kalumbila. The company has reportedly secured funding of \$500 million. According to Northwest Rail's chairman Enoch

Kavindele, South Africa's Grindrod and other shareholders are putting up the equity (30%), and several banks would provide the debt portion (70%). Grindrod has been contracted to build, operate and maintain the railway.

Eventually, in the project's second phase, the line is to be extended

further west, crossing into Angola near Jimbe and connecting with Caminhos de ferro de Benguela (CFB) at Luacarno. The completed route will restore Zambian rail access to the Atlantic and provide the facility to export copper and import oil.



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Swaziland Rail Link Construction “Imminent”

With the start of the construction of the Swaziland rail link imminent, Railways Africa spoke to Transnet Programme Director Wilson Mogoba about this milestone project.

“What for me is quite exciting is that the new Swaziland rail initiative is one of the first of many projects on the continent that will be building the missing links that will promote intra-African trade. It is vital that African countries trade with each other as well as the rest of the world. We believe that this project is going to be the precursor of several similar projects that will be happening in Africa.

“At the recent African Union conference, intra-African trade was highlighted as a priority,” says Mogoba.

The idea of the Swaziland rail link is not new as it was proposed as long ago as 1864. Since then, a number of studies were undertaken at various times.

However, the concept in its current iteration had its beginnings in 2011. On 2 August 2012, the governments of Swaziland and South Africa signed a memorandum of understanding (MOU) to embark on a feasibility study. Subsequently, Transnet and Swaziland Railways also signed an MOU that cemented the collaboration at the business and technical levels.

The pre-feasibility was completed in March 2013, the outcome of which proved positive. At the beginning of the study, the task team had four route options under consideration. The 146km Lothair-to-Sidvokodvo route that was chosen is now subject to a further feasibility study.

AVOIDING THE MOUNTAINS

The question arises as to why the new link line bypasses Mbabane, and links to the existing Swaziland line from Matsapha to Phuzumoya at Sidvokodvo some 45km to the south-east of the Swazi capital. Mogoba explains that a major consideration during the pre-feasibility was, naturally, the cost of building the line and the factors

affecting this such as route length, the topography and the effect the line would have on communities along the route.

“The team looked at, and rejected, Matsapha and Mpaka as other options for the easterly junction,” explains Mogoba.

The topography was a major issue as this has the most direct impact on costs. In spite of Swaziland being mountainous, the present route has avoided the need for any tunnels. However, some major bridges will be needed at river crossings.

“Incidentally, the line will be traversing one of the most beautiful parts of Southern Africa,” he points out.

In terms of sourcing finance, this is a joint project and one of the deliverables of the study is how the project is going to be financed. At present, the assumption is that both railways will jointly source funding for the project.

CONSTRUCTION TO START “SOON”

As to the precise starting date for construction, Mogoba would not be drawn. “We are nearly at the end of the feasibility study, which we will then submit for assessment and review by the various authorities. When the authorities are satisfied, then we are ‘good to go’,” says Mogoba. Construction could take between three and four years.

While the proportionately shared revenues from the line will be significant for South Africa, it will have a much greater impact on the rail revenue of Swaziland Railways. Currently, about six million tonnes a year moves on Swaziland Rail. The link will bring a further 16 million tonnes to the Swazi rail system which will over time grow to 35 to 40 million tonnes. Former CEO of Swaziland Rail Gideon Mahlalela said in an earlier interview that “the project should not be a mere railway line but a development corridor”.

“What for me is quite exciting is that the new Swaziland rail initiative is one of the first of many projects on the continent that will be building the missing links that will promote intra-African trade.”



The new link will promote Swaziland into being a more significant player in the southern African rail space, says Mogoba.

In the pre-feasibility study, one of the recommendations was that the link would form part of a heavy-haul corridor built on 60kg/m rail to carry 26-ton axle loads. However, the entire corridor, which includes the new link, starts in Davel and ends at Richards Bay. Initially, rather than upgrade the entire corridor, it is planned to build the new link to 20-ton axle load, general-freight standard.

Ultimately, this corridor will be connected to Maputo.

MORE COAL CAPACITY

The intention is to move the general freight that uses the Ermelo to Richards Bay line on to the Swazi route. This will allow the existing Richards Bay line to be dedicated almost exclusively to the transport of coal. This will make it possible for Transnet to raise coal tonnages by

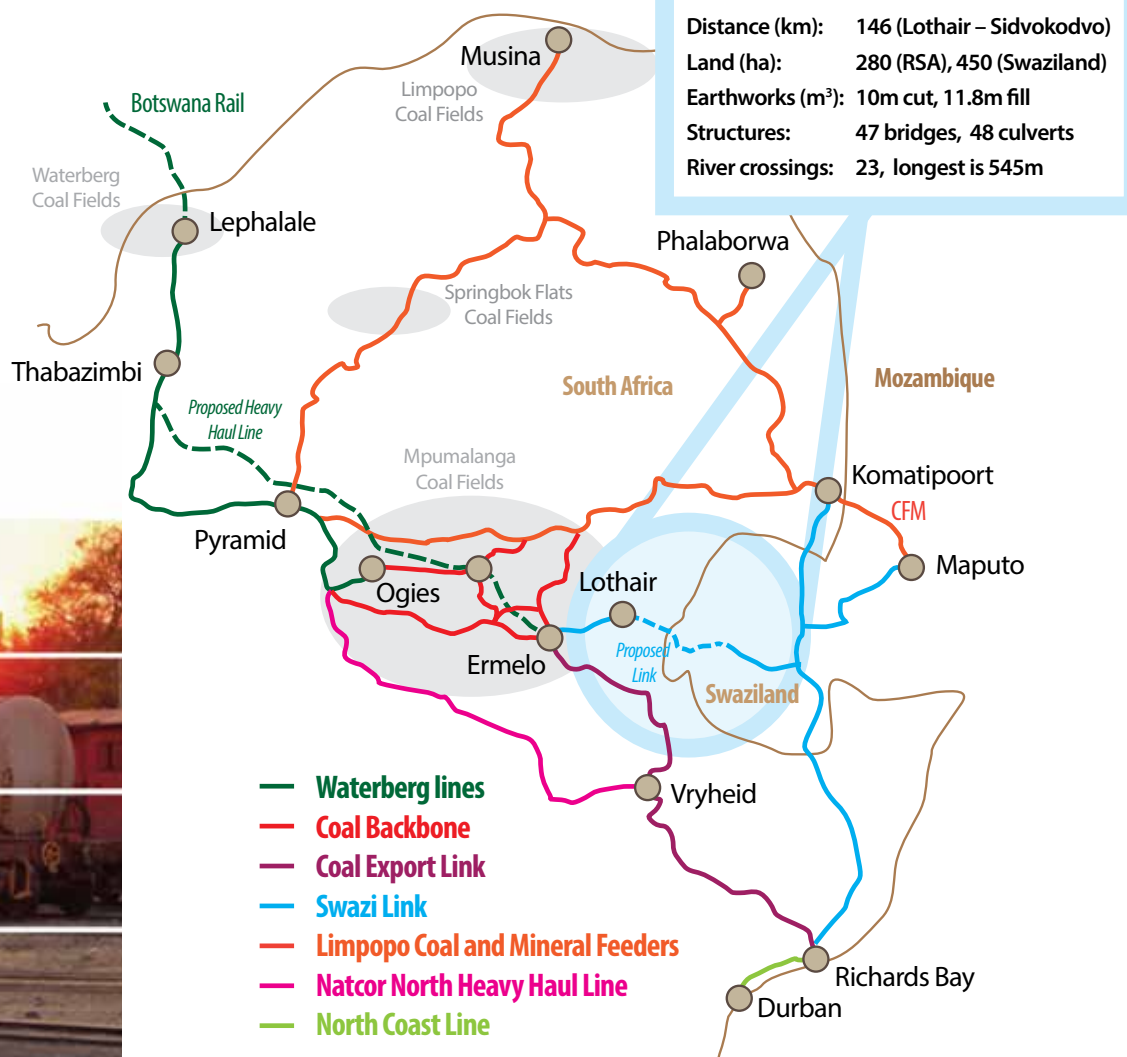
about 30% to more than 100 million tonnes, since the transfer of general freight to the Swaziland link will open up 12 new train slots a day on the coal line. In the long term, the costs of logistics will be reduced

However, much coal will also go to Richards Bay via the new link. Additionally, should there be a stoppage on the Ermelo to Richards Bay line, the Swaziland line could serve as an alternative.

“One of the major requirements for us is that we use the construction of the line to drive meaningful socio-economic change in the communities along this new route. As we construct the line, job opportunities and business opportunities will be created, an economic stimulus that will extend beyond the construction phase into operations, to benefit generations to come,” concludes Mogoba.



The Intelligent Choice





“An efficient railway will serve not only Kenya, but the landlocked countries of South Sudan, Uganda, Rwanda and Burundi. It could also connect to the eastern part of the Democratic Republic of the Congo (DRC), which because of its distance from Africa’s eastern seaboard, is effectively landlocked.”

Kenya Railways Corporation Infrastructure Engineer Jonathan Kilelo

Kenya’s Standard Gauge Railway

East Africa is presently the centre of railway activity in Africa. In both Kenya and Tanzania major new railway lines are either being planned or, in the case of Kenya, built.

Railways Africa spoke to Kenya Railways Corporation Infrastructure Engineer Jonathan Kilelo, about progress on the construction of the Mombasa to Nairobi Standard Gauge Railway (SGR).

“An efficient railway will serve not only Kenya, but the landlocked countries of South Sudan, Uganda, Rwanda and Burundi. It could also connect to the eastern part of the Democratic Republic of the Congo (DRC), which because of its distance from Africa’s eastern seaboard is effectively landlocked,” explains Kilelo.

RECTIFYING INEFFICIENCY

Currently, in Kenya, about 94% of all freight travels by road and only 5% by rail. A driving factor in the development of the SGR is that freight tonnages through the port of Mombasa are expected to increase from 22 mta to more than 30 million tons by 2030. The cost of logistics in the Kenyan corridor are on average about 30% more expensive than comparable systems elsewhere in the world, a situation that the SGR is intended to rectify.

At present, the volume of trucks on Kenya’s roads is causing rapid deterioration of the country’s highway network. Pressure on local road hauliers has resulted in unsafe practices and an unacceptable rate of road injuries and fatalities.

In terms of East African growth, the African Development Bank, in its May 2014 report, predicts rapid growth. The report states that countries such as Rwanda, Tanzania, Uganda and Ethiopia will most probably achieve growth of between 6.5 and 7.5% in 2014/2015. The development of rail infrastructure is set to play a key role in sustaining this economic growth.

BREAKING GROUND

The project is divided into two phases. The first phase, which will be built by China Road and Bridge Corporation (CRBC) between Mombasa and Nairobi, will have a price tag of \$3.8 billion. Phase 2 will see the line being extended to Kampala, Kigali, Bujumbura and Juba. President Uhuru Kenyatta presided at a groundbreaking ceremony for the Kenya Standard Gauge Railway in November 2013 and actual construction of Phase 1 of the project started in January 2015.



Phase I

- Commenced January 2015
- Freight 80 kph
- Passenger 120 kph
- Completion 2018

Phase II

- Preliminary design

Opportunities

- Financing, Design and Construction works.
- Opportunity for operators on SGR:
 - Freight: container wagons, closed wagons, tank wagons, etc.
 - Passenger: Long distance.
- Supply of locomotives and rolling stock, train control and communication solutions to rail transport operators.



Kilelo explains that Phase 1, which is due for completion in 2018, will allow freight to travel at 80km/h and passenger trains at 120km/h. It is reported that traffic on the dilapidated metre-gauge line is able to travel on average at little more than 10km/h due to speed restrictions. The Kenyan President is quoted saying that the new link will cut freight ton/kilometre costs from 20 US cents to eight.

On 3 July this year, Kenya Railways held a sensitisation workshop in Mombasa to enlist potential suppliers to the Standard Gauge Railway project. The government sees the SGR as a key enabler in achieving Kenya's Vision 2030 goals. Vision 2030 is a development programme covering the period 2008 to 2030. It was launched on 10 June 2008 by President Mwai Kibaki. Its aim is to help transform Kenya into a "newly industrialising, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment".

The government's requirement that the local component of the SGR be about 40% of the project value will see, apart from new rolling stock, a wide range of goods and services being sourced from Kenyan suppliers.

KENYAN LOCALISATION

The social benefits realised during the construction and operation of the railway will be considerable. It is estimated that at least 60 new direct jobs per kilometre of track will be created during the construction phase.

Local industries will also benefit as large quantities of local inputs such as steel, cement, aggregates, electricity generation and electricity transmission pylons and cables, roofing materials, glass, etc. will be required. This will have the potential to create at least 10,000 jobs.

The need for ancillary services such as food and accommodation will also create and sustain employment.

Kenya Railways estimate that some 15,000 people will be able to acquire skills suitable for self-employment after the construction period. Typically these would be people with skills as masons, carpenters, mechanics, electricians, etc. In terms of skills transfer, some 400 engineers and technicians with advanced technological skills will be trained during construction and will be available for local and regional railway development.

"In Kenya, it is seen as a great opportunity to make the best use of the country and its neighbours' resources to boost both the national and the regional economy," says Kilelo.

MORE LINES FOR DEVELOPMENT

According to Kilelo, Kenya may well be embarking on a number of other railway projects. There are plans for urban commuter rail systems in Nairobi, Mombasa and Kisumu.

In addition, as part of the SGR project, there is the LAPSSET project. This line will start at Lamu, 250km to the north of Mombasa, and will run through the north of Kenya to Archers Post. From here one line will connect to Ethiopia and another will run north-west to the border with South Sudan and on to the capital Juba. The plan for the corridor combines many elements: the development of a new port at Lamu; an oil pipeline from Lamu to South Sudan; and road and railway links to the west and possibly to southern Ethiopia. There are also plans for a new international airport and so-called "resort cities" along the line of the railway. According to the Rift Valley Institute, the completion of any one of these elements would have a significant impact; in combination they could transform the region.



Spotlight SOUTH AFRICA

METRORAIL FARES

Announced increases in Metrorail fares, which came into effect on 1 July, are predictably proving unpopular. Press reports suggest a general perception that service shortcomings should have been put right first.

Western Cape regional manager Richard Walker says the increase is unavoidable. Major costs like electricity and "safety-critical components", he explained, have increased far beyond the rate of inflation. He assures commuters that the adjustments were made with "sensitivity to prevailing social-economic factors in the region."

With regard to service problems, Walker says rolling stock and other assets are "well beyond design life", and based on outdated technology. The extensive "open" rail system is suffering from persisting vandalism, land invasions, service protests and vagrancy.

Single ticket prices went up between 50c and R1, weekly tickets between R1 and R2 and monthlies between R2 and R38, depending on travel zone and class.

TRANSNET'S HEAVY-HAUL MANGANESE LINE

Transnet's heavy-haul rail network is to be increased from the present 2,103km route length to 4,438km by 2030. Doubled capacity – or nearly doubled – is forecast, from 155 million tonnes annually to 307 million. Projects currently at the planning stage include upgrading the 1,200km Hotazel-Kimberley-De Aar-Coega line to heavy-haul standards, to convey export manganese. In the course of a three-phase implementation process, axle loads are to be increased to 26 tonnes and train lengths will grow to 225 wagons.

This project is at an advanced planning stage, and capital expenditure has been committed, Transnet executive manager Brian Monakali told delegates at the recent International Heavy Haul Association's 2015 conference in Perth.

MANGANESE LINE SHUTDOWN

Transnet's "manganese line" - from Sishen in the Northern Cape to Port Elizabeth - was shut down between 11th and 20th of August for concentrated maintenance.

Major activities undertaken included:

- 54,500 sleepers replaced
- 204 new rails installed

- 64km of ballast screened
- 16 turnouts replaced
- Important culvert and bridge rehabilitation
- Overhead track equipment, traction, substations and signalling installations overhauled
- Optical fibre and train radio networks attended to.



PRASA TO SPEND R172BN ON SIGNALS ETC

In the aftermath of the 17 July rear-end collision between the Booyens and Crown stations, immediately south of the Johannesburg CBD, and in reaction to concerns expressed by the Railway Safety Regulator (RSR), the Passenger Rail Agency of South Africa (Prasa) says it will be spending R172 billion on upgrading Metrorail in the next three years, including the “70-years-old” signalling, “thought to be behind recent accidents”. Gauteng, the Western Cape and KZN are “on the priority list with a R6bn cash injection”.

Unfortunately, new signals will work no better than those 70 years old if they are wired incorrectly. Investigations by the RSR after the Booyens collision - in which 239 people were reported hurt - put the blame on a signal that had been wrongly wired. Train 9934 was stationary at a red signal (CRN69) when train 9404 ran into it. Train 9404 had been given a “proceed” indication at the preceding signal (BOY80), which failed to detect train 9934 in the section. Investigation disclosed that signal BOY80 had received technical attention for a fault during April but there had been no follow-up nor other checks. On detailed examination late in July, the RSR determined that the signal had been incorrectly wired.

The fatal head-on collision at Peelton near Kingwilliamstown on 20 May occurred in unsignalled, open country.

Following the fatal rear-end collision at Denver on 28 April, the RSR - finding no fault in the signalling - put the blame on the driver of train 1602, for running through a red light correctly displayed by signal DN2, protecting train 0600 in the section.

Thus none of these serious accidents were related in any way to the age of signals.



PRASA'S LOCOS: MEDIA DEMO

On 13 July, the Passenger Rail Agency of South Africa (Prasa) hosted the media on a problem-free special run from Pretoria to Akasia, about 20km to the north-west. The trip was arranged to demonstrate that the new Vossloh España locomotives operate safely on existing South African infrastructure, contrary to impressions given in press reports. Interviewed by radio's Stephen Grootes, former CEO Lucky Montana (who emphasised that the units are “fully compliant”) drew the analogy of a motor car being blamed for shortcomings when potholes in the road are actually to blame.

The special comprised Premier Classe coaching stock. The line to Akasia is electrified at 3kV DC.



Facebook Video
<https://www.facebook.com/railwaysafrica/videos>

GIBELA REVERSES TRAIN MANUFACTURING “WILDERNESS”

Gibela is well on track reversing South Africa's 40-year train manufacturing “wilderness”, the consortium says in an official statement released on 1 July 2015. Currently it is gearing up to start construction of its R1 billion, 85,000m² factory complex at Dunnottar in Ekurhuleni, Gauteng. Work on the site is scheduled to begin in the third quarter of 2015.

When the factory is completed and comes into production, building trains at a peak rate of 62 trainsets a year, “South Africa will have taken a very visible and significant leap into the world of high-tech train manufacturing. The huge

project is in pursuance of the mandate of the Passenger Rail Agency of South Africa (Prasa), to restore the viability of the country's commuter rail system.

“Gibela's R51 billion contract to supply Prasa with 600 new trains over 10 years is only one part of the whole. South Africa will benefit from a contract that seamlessly incorporates skills and technology transfer from Gibela's French parent company, Alstom, with local sourcing of a range of specialised components that will combine to contribute to South Africa's industrial renaissance. In a contract this size and duration, transparency lies at

the heart of all Gibela's business interactions. Gibela CEO Marc Granger insists that ‘this is non-negotiable for the company - suppliers, and indeed all stakeholders, need to gauge demand and capacity before committing to playing their part in restoring South Africa's rail industry. Developing a sustainable industry takes time and Gibela knows that facing challenges head-on and openly is critical to the project.’

“Trains are built by people. That is the mantra of Gibela and Alstom. When it is up and running, the Dunnottar facility will provide employment for at least 1,500 people, the majority of whom will

be skilled artisans. The recruitment process is at an advanced planning stage for permanent positions, with clear career paths for those selected. There are likely to be many more applicants than positions available, and the selection process will be demanding. Preference will be given to those who have academic qualifications as well as artisanal skills. Most of those recruited will be drawn from the areas adjacent to the manufacturing facility but in consideration of the scarcity of the required skills the net will be cast wider across provincial confines. It is,

Continues Page 34

GIBELA SUPPLIER WORKSHOP

Of the 600 six-coach electric multiple-unit trainsets to be supplied by the Gibela consortium, 580 are to be assembled at a R1 billion new factory at Dunnottar, south of Springs. On 4 August, some 450 would-be contractors and suppliers came together at a workshop in advance of the facility being set up. The workshop aimed to leave prospective contractors with a full understanding of what would be required of them and the type of infrastructure that Gibela was required to develop. According to CEO Marc Granger: "This workshop provides our company with an opportunity to interact with local contractors to explain the scope and magnitude of the construction works, processes and requirements in terms of both the technical aspects, as well as transformational imperatives that relate to preferential procurement and employment creation."



Gibela's new R1 billion plant to be built at Dunnottar.

PRASA'S MTIMKULU RESIGNS

The Passenger Rail Agency of South Africa (Prasa) confirmed late in July that head of engineering services Daniel Mtimkulu had resigned. This followed his being charged with fraud after claiming to hold a degree in engineering from the University of the Witwatersrand and a doctorate allegedly awarded in Munich. The Engineering Council of South Africa reportedly refused his application for registration some years ago, because he lacked the necessary academic qualifications.

Former Prasa CEO Lucky Montana introduced Mtimkulu to the press recently as the designer of the controversial Vossloh Africa 4000 locomotive. Media officer Moffet Mofokeng claimed Mtimkulu had been "headhunted all over the world".

Mtimkulu appeared in the Johannesburg magistrate's court on 30 July. He was remanded on bail of R20,000.

PRASA LOCO PRICE FIASCO

It is not clear how the Passenger Rail Agency of South Africa (Prasa) arrived at a total of 88 locomotives – the figure reported as constituting the originally intended order to be placed with Vossloh España. We are told the 88 were later reduced to 70 (20 diesel-electric and 50 electro-diesel), apparently due to selling price fluctuation. Business Day reports now that the original all-in price of R3.5 billion for 70 locos currently stands at R4.8 billion. The increase is attributed to Prasa's tardiness in finalising the deal.

KUMBA NOSEDIVES

Kumba Iron Ore has been hit hard by the plummeting global price for the commodity and will not be declaring an interim dividend to shareholders. Headline earnings declared were 61% lower at R2.5 billion, sharply down from R6.5 billion in the corresponding six months of 2014. Drastic action is being taken to reduce costs and contain the situation. The group's Thabazimbi mine has been closed and other mines are being restructured. Exactly what this means to Transnet – Kumba being one of its main moneyspinners – is yet to become apparent. The Sishen-Saldanha railway is being upgraded to increase capacity, with Transnet confident the downturn in iron ore pricing is only temporary and will be corrected in due course.



COAL LINE EXTENSION

Construction of the proposed extension from the existing Transnet Freight Rail (TFR) railhead at Lephalale to Mmamabula near Mahalapye in south-eastern Botswana will ultimately create a 560km heavy-haul railway via South Africa's Waterberg coalfield to Lothair, near Ermelo, where it will connect with the planned 146km Swaziland rail link. From here both coal traffic and general freight will be routed to either Richards Bay in KwaZulu-Natal or Maputo in Mozambique. As much as 100 tonnes of coal could move across the Botswana border annually. Extractable reserves at Mmamabula are estimated at 1.5 billion tonnes.



Class 18E locos head a Rovos Rail express at Salbar – southern portal of the 13km Hexton tunnel. Photo: Joyce van der Vyver.



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PROVEN TECHNOLOGY ON TRACKS

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BOMBARDIER IN 2015



Online Interview

<https://youtu.be/C4K1ZcYLgdk>



According to Bombardier managing director Aubrey Lekwane, Bombardier is busy, with current focus on two main priorities. The first of these is the delivery of 240 electric locomotives to Transnet, in accordance with the R13 billion contract

signed in March. The second concerns exploratory discussions with the Gauteng Provisional Government, with regard to the company's immediate phase two expansion plans.

In addition, Bombardier is currently establishing its propulsion manufacturing plant, affording an important opportunity to localise Bombardier's footprint in Africa.

When asked about their local content strategy, Lekwane admitted that operating in 60 different countries, each with its own specific requirements, is a challenge. However, Bombardier is committed to fulfilling South Africa's own localisation requirements.

Looking into the future, Bombardier envisions expanding the rail infrastructure from Gauteng to the sea.

But with regards to the immediate future of Gauteng, Aubrey Lekwane stated that they are looking at more innovative ways to move people. And are currently exploring opportunities in airport connectivity to Lanseria and throughout the major metropolitan areas.

ABERDARE'S NEW RAIL SECTOR PRODUCTION

Early in July, Aberdare Cables launched a new production line within its existing plant in Pietermaritzburg, KwaZulu-Natal. Supported by the South African Department of Trade and Industry's (DTI) designation programme, it is specifically designed to manufacture locomotive cables for the Passenger Rail Agency of SA (Prasa) and Transnet.

DTI chief director: advanced manufacturing Nomfuneko Majaja commented at the launch function: "We welcome Aberdare Cable's investment in bolstering South Africa's manufacturing economy. This is especially significant because it supports the National Development Plan's (NDP) priorities in two ways; job creation and a clear focus on creating locally made products that support the revitalisation and upgrading of South Africa's critical rail infrastructure and services."

These national locomotive and rails projects will, in their entirety, equate to a value of around R100 billion over a 10-year period. Currently, South Africa has one of the largest wholesale renewal and general overhaul rail programmes in Africa, and serves as a strong manufacturing hub for rolling stock.

"Aberdare Cables has invested R20 million in expanding its plants in Pietermaritzburg and Gauteng, to enhance production, create additional jobs and drive skills development within this crucial economic sector," CEO Keith Edmond explains. "We are committed to partnering with all stakeholders, public and private, to ensure that South Africa remains self-sufficient in the manufacturing of electric cables, so essential to the maintenance, development and expansion of critical transport infrastructures."



THREE NEW PRASA TRAINSETS COMPLETE

Three of the 20 six-coach multiple-unit electric trainsets being built for the Passenger Rail Agency of South Africa (Prasa) at Alstom's Lapa plant in Sao Paulo, Brazil, are complete and undergoing static testing. Together with the remaining 17 trains, they are to be shipped to South Africa before the end of 2015. Test running is expected to proceed until about June 2016.

AUDITOR-GENERAL TO VET PRASA

Minister of Transport Dipuo Peters has asked the auditor-general to probe the Passenger Rail Agency of South Africa (Prasa) for alleged financial and tender irregularities. Her request was based on recent revelations around corporate governance at the agency and allegations of wrong doing against senior staff.



LOOTSBERG PASS TEST TRAIN

The last scheduled train over the Lootsberg Pass between Graaff-Reinet and Rosmead ran 22 years ago, on 31 May 1993. Recently the line has been extensively overhauled, to provide an alternative route to the Port Elizabeth main-line during upgrading work. On 28 July 2015, the P E-Gauteng car-carrier operation ran as a test train over the pass. It comprised a Dyno test car and 32 SCL wagons hauled by three class 34 diesel-electric locomotives. The consist was timed to leave New Brighton yard late on 27 July. Crew changes were scheduled at Graaff-Reinet, Rosmead, Springfontein, Bloemfontein, Kroonstad and Leeuhof.

According to Transnet Freight Rail (TFR), the line is to be used as an alternative route for through traffic, notably while the main-line undergoes intensive maintenance, including a short period when it is shut down. The facility will be useful when increased manganese traffic places capacity demands on the railway to the coast.

The 28 July test train.

1. At Adendorp
2. At Kendrew
3. At Kendrew
4. At Graff-Reinet

SAICCOR: END OF STEAM

Sappi's Saiccor plant at Umkomaas, 39km south of Durban, was the last industry in South Africa to use steam for shunting. Sunday Times travel editor Paul Ash spent two days at Saiccor, interviewing crews of the country's last steam locos in daily revenue service. An official "farewell to steam" event took place in the exchange yards on 5 August.

The Robert Stephenson Locomotive Preservation Society in England is believed to be interested in acquiring one of the three class 19D steam locos.

Paul writes: "Visiting the mill and speaking to the people has been a very satisfying and quite moving experience."

Sappi Saiccor class 19D locos: the last steam in South African industrial service.

Photos: Paul Ash



PRASA ENGINEERING RESEARCH CHAIR

The Passenger Rail Agency of South Africa (Prasa) approached Stellenbosch University's Department of Industrial Engineering in 2009, with a request for assistance in solving recurring problems with daily maintenance and engineering. Because the root causes of the problems were seen to be of a much more complex nature, the department's Professor Neels Fourie and Prasa's Dr Daniel Mtimkulu conceptualised the creation of an academic chair. From the outset, it was visualised that this chair would assist and support Prasa/Metrarail in their quest for solutions to engineering problems. After many discussions and planning sessions, an agreement was signed for the establishment of the Prasa Engineering Research Chair in the Industrial Engineering Department, with Professor Fourie as incumbent. A senior as well as two junior research engineers have been appointed subsequently, to carry out research and assist with the implementation of projects.

The primary goal of the Chair, which also administers bursaries funded by Prasa, is to initiate and execute research into aspects of maintenance management and applicable engineering principles best suited to the needs of Prasa/Metrarail. In due course research results are implemented as projects with the assistance of Prasa, resulting in the transfer of technology. Outcomes are monitored and utilised to ensure continuous and sustainable improvements. It is envisaged that the following will be covered in the course of the Chair's activities:

- Modern maintenance systems
- Business process modelling
- Application of Lean Thinking at Prasa
- Continuous process improvement strategies
- Reliability improvement in maintenance
- Scientific-based engineering solutions
- Sustainable training programme at Prasa

GERMAN BANK LOAN FOR TRANSNET

Germany's KfW Development Bank is to advance Transnet a R2.8 billion loan to help finance the purchase of 240 dual-voltage (3kV DC and 25kV AC) electric locomotives from Bombardier. This order forms part of Transnet Freight Rail's current R40 billion, 1,064 loco acquisition programme. The KfW loan matures in 15 years.

The remaining R6.99bn purchase price is to be met from the proceeds of two other loans agreed in March – R5.24bn from Export Development Canada and R1.75bn from Investec Bank.

AFRO4000 LOCOS IN SERVICE

Transnet Freight Rail (TFR) authorised the use of Spanish-built Afro4000 locomotives under test conditions on the Bloemfontein-East London line on 15 July. On this date, Shosholozza Meyl train 74013 ran to East London behind one of these locos, returning as train 47013 from East London on 17 July. Afro4000 locos are also cleared to work trains 37011 and 73012 between Bloemfontein and Port Elizabeth.

It is understood that TFR is still busy confirming overhead clearances along these routes, in view of the Afro4000 exceeding height limitations laid down in the official loading gauge.

TFR has not authorised the use of Afro4000 locos on the Kimberley-Fourteen Streams section of the Cape Town-Johannesburg main-line. Shosholozza Meyl's Johannesburg-Mafikeng-Kimberley service has been instructed to use electric haulage here.

Vossloh Afro4000 loco at Cape Town. Photo: Col Andre Kritzinger.



PRASA STATION UPGRADES

The Passenger Rail Agency of South Africa (Prasa) has advertised for "a single multi-disciplinary team of consultants to design and manage the construction delivery of 17 stations in the Pretoria area – Barracks, Pretoria, Rebecca, Electro, Kalafong, Saulsville, Mears St, Devenish St, Walker St, Loftus, Rissik, Hartbeesspruit, Koedoespoort, Silverton, Eersterus, Waltloo and Denneboom.

Prasa has invited tenders separately to upgrade and renovate administration and ticket offices, ablation facilities, platforms and boundary walls at four Gauteng stations - Florida, Jeppe, Springs and Kaalfontein.

DEPOTS NOT READY FOR NEW TRAINS

Some R5 billion has been budgeted for the provision and upgrading of depots where 600 new trainsets on order for the Passenger Rail Agency of South Africa (Prasa) will be tested, stabled and maintained. With the first delivery scheduled for late 2015, there is concern that the new facilities are a long way behind schedule. According to an internal report seen by Business Day, Braamfontein is to be "the priority depot, where the new trains will be tested", but the R2.4 billion project is less than 10% complete. The main testing depot is reportedly to be that at Wolmerton, north of Pretoria, but tenders for this are apparently not yet evaluated.

APPROPRIATIONS COMMITTEE VISITS PRASA

Parliament's standing committee on appropriations recently conducted an oversight visit to the Passenger Rail Agency of South Africa (Prasa) depot at Braamfontein where it inspected the new Spanish-built locomotives. Reporting on the visit, the committee (chaired by Paul Mashatile) noted Prasa chairman Popo Molefe's indication that Prasa remains a viable and capable state agency and that funds allocated to the agency will be directed to service delivery programmes as contained in its long-term plan.

The committee raised concerns about the state of rail safety in the current commuter rail network. In addition, it queried the safety of the newly acquired AFRO 4000 locos, in particular their height specifications. The Rail Safety Regulator (RSR) informed the committee that maintenance of signal equipment remains a significant challenge to safety in commuter rail transport. According to Prasa, the new locomotives do meet regulated safety specifications, although the overhead power lines in some areas may be lower than the required standard height due to maintenance backlogs, thus posing safety concerns.

Prasa is in ongoing discussions with the RSR, it reported, in ensuring that the safety of commuters will not be compromised in the new fleet rolling stock. The committee emphasised that the rolling stock replacement programme should be comprehensive and that issues of safety and sustainability should be catered for adequately.

The visit to the Braamfontein depot formed part of the committee's mandate of ensuring that government funding adheres to the principles of efficiency and effectiveness in providing passenger rail services. The 2015 budget framework priority focus areas include investment in rail infrastructure and rolling stock to improve the reliability of commuter transport services.

The committee engaged with officials from Prasa on its rolling stock fleet renewal programme. Prasa's capital expenditure is financed from government grants and external borrowings. The agency spent R6.2bn on capital investment during the 13/14 financial year, compared with R6.3bn in the previous year.

Continues Page 32

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The committee noted that the first new trainset is scheduled for delivery from Brazil on 30 November 2015. In terms of testing and commissioning the new trains, the Wolmerton Test Facility will be ready by November 2015, as will the test track for dynamic tests and the 120km/h tests section. Prasa said it will be ready to deploy the 20 new trains for commuter use by July 2016.

The committee stressed it as critical that planning and implementation of Prasa's modernisation strategy should include detailed projections of revenue estimates, and that issues of sustainability should be fully considered. This entails fleet growth projections in line with South Africa's economic growth projections. Furthermore, Prasa should ensure that cost breakdowns of its capital projections are provided for in its budget plans. The committee welcomed Prasa's assurance that its current contract for 600 new trains being delivered over 10 years will have no hedging exposure.

The committee believes that long-term procurement is a key lever for the state in driving industrialisation and localisation. The committee applauds Prasa's aims to attain an average percentage share of 75% of local manufacturing content in the new fleet. It welcomed Prasa's submission that the black economic empowerment partner in the manufacture and supply of the 600 new trains will consist mainly of micro and medium enterprises.

The committee raised concerns at finalisation of the local manufacturing factory in Dunnottar Park in Ekurhuleni, where 580 trainsets are to be manufactured, as the selected site is still undeveloped. The Gibela Consortium, Prasa explained, will be responsible for building the factory, which will be retained by Prasa (including all tools and equipment) at the end of the programme. Prasa assured the committee that the factory will be operational by July 2016. The committee impressed upon Prasa that it intends to closely monitor development of the Dunnottar Park manufacturing facility. The committee subsequently visited Prasa's signalling control "nerve centres" in Gauteng.

GAUTRAIN TENDER

The Gautrain Management Agency (GMA) intends inviting tenders for the supply of 12 additional trainsets. These are needed to alleviate problems officially termed "capacity constraints", more specifically overcrowding on peak hour trains in the section south of Centurion. This problem is likely to worsen considerably by March 2018, when it is envisaged the new coaches would be available.

GMA CEO Jack van der Merwe expects the rolling stock to cost between R2.5 and R4 billion. Funding for the acquisition, he says, has been secured through the Gauteng provincial government and the Development Bank of Southern Africa. Bidders will be required to quote for the provision of a 20-year maintenance contract. It is probable that depot accommodation would need augmenting.

PRASA'S NEW LOCOS: FACTS & FIGURES

Contrary to the impression created in some reports, there has been no change in Transnet Freight Rail's (TFR) official rolling stock loading gauge. The figure for overall height of vehicles (other than for electric pantographs) remains at 3.985 metres. Controversy surrounding the Vossloh España diesel locomotives imported by the Passenger Rail Agency of South Africa (Prasa) seems to have arisen because their roofline measures 4.14 metres above the rail. While we have not seen details of the specification on which the tender was based, it is understood that the manufacturers were unable to reduce overall height below this figure. (The loco is a modification of the firm's standard 1,435mm gauge locomotive). Prasa has gone to some length with assurances that safety is in no way compromised. Specifically, it has allayed concerns that the Spanish locos risk coming into contact with high-voltage overhead traction wires.

The agency explains that the locos are intended for use mainly on non-electrified lines and under 25kV AC catenary, whose wiring is at a minimum 4.5m above the rail. With respect to lines electrified at 3kV DC (some of the older sections have wiring lower than 4.5m above rail), Prasa gives the assurance that there will always be a minimum 150mm clear, between loco roof and wire.

Sub-standard height for 3kV DC overhead traction-wire has been unavoidable beneath certain overbridges (and possibly some tunnels) which were constructed prior to electrification many decades ago. Examples exist a short distance east of Johannesburg's Park station at Jeppe and Denver - the latter reportedly measuring only 4.15m above the rail. Fortunately Prasa's envisaged routes for use of the Spanish diesels do not include this section.



Afro4000 loco: roofline in doubt. Photo: Col Andre Kritzingner.

TEST RUNNING TO CERES

Transnet Freight Rail planned to begin test running on the long-closed but recently reinstated 20km Wolseley-Ceres line in the first week of August. The first test train, consisting of 35 SMLJ flat wagons, was to carry loaded containers from Ceres to Table Bay docks.

Wolseley lies 137km from Cape Town on the main-line to Worcester (and ultimately Johannesburg).



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EXTENDING GAUTRAIN'S AIRPORT STATION

A curious feature of the Gautrain system from the outset, the airport station platforms are only long enough to accommodate two coaches, while the trains are all four-coach sets. This strange discrepancy, the cause of much passenger confusion, is about to be corrected. Gauteng MEC for roads and transport Dr Ismail Vadi has announced officially that the airport station platforms are to be lengthened to take four coaches: "The extension is being implemented to make provision for future capacity options."



Gautrain airport station platforms: long enough for only two coaches

FUNDING GAUTRAIN

Speaking at the Southern Africa Transport Conference early in July, Gautrain Management Agency (GMA) chief operating officer William Dachs foresaw government lacking the resources to finance further heavy expenditure on transport infrastructure in the near future and that other means of funding needs to be sought. This applies, for instance, to the proposed Gautrain system expansion, currently the subject of feasibility studies.

Dachs pointed to business interests near Gautrain stations as obvious sources to tap, citing many successful examples overseas. In Hong Kong, for example, the metro transport agency is itself a property developer.

Gautrain, said Dachs, "is adding R2 billion a year to the provincial economy. About 250,000 jobs were created as a result of R20 billion's worth of property developments around the system's stations." There are examples, he said, of commercial rentals near stations almost doubling.

GAUTRAIN CELLULAR COVER EXTENDED

With effect from 3 July 2015, data and voice coverage for Vodacom and MTN cellphone subscribers has been extended to include the Sandton, Rosebank and Park underground stations. According to Gauteng MEC for Roads and Transport Dr Ismail Vadi, many passengers would have been able to use the facility before this date while it was in the testing phase. Work on improving voice and data coverage in the tunnels and along the entire route is continuing, he explains, in conjunction with the mobile network operators. This forms part of a "much broader engineering project which will see the installation of additional technical infrastructure across the system.

Continued From Page 25

however, worthy to note that opportunities exist in the Gibela contract for the training, of those who are not qualified, in various rail-related skills for possible jobs in the rail industry.

"At the outset, artisans possessing a range of skills, including leadership, will be selected for intensive training at Alstom's Brazilian facility where the first 20 trains are currently being manufactured in a move calculated to enable such training, ahead of the start of the South African manufacturing programme. It is training that will not only hone the artisans' own skills but that will also provide them with the ability to pass on their skills to their colleagues back in South Africa on their return.

"More than 20 Gibela employees, the majority of whom are engineers, are already in France, Italy, Belgium and Brazil where they are receiving a cross-section of advanced skills that will be critical in supporting a manufacturing rate that will, according to Granger, 'test the abilities of the most experienced and large original equipment manufacturer at its best manufacturing unit.' This group, too, will be returning to South Africa, ready to pass on the skills they have acquired to their colleagues as Gibela ramps up from the current staff complement of 112 to 350 by the end of the company's March 2016 financial year.

"Local sourcing is not simply a question of buying local products off the shelf. Parts and components needed to build the trains will themselves be state-of-the-art. This means a

special relationship with new and established South African suppliers – not only those who will occupy premises at the Dunnottar factory site but also others further afield. A robust, sustainable local supplier base needs to be developed to achieve the company's 65% local content obligations.

"The foundations towards the strengthening of ties with local suppliers are being established – Gibela's supplier development team has been interacting with local suppliers to leverage the company's expertise and that of Alstom to equip them with capabilities to be competitive and to manufacture at the required rate and quality. It is through these relationships and the transparent exchange of information that challenges such as lack of industrialisation and industrial capacity shortages can be overcome and the supply of long-lead items (on time, on budget and in the right quantities) assured.

"Several successes have already been recorded and critical to these is capacity-building, which is resulting in win-win solutions for Gibela and its suppliers and most importantly, their access to export markets.

"The Brazilian manufacturing programme for the first 20 trains has advanced to the extent where the first six-coach trainset is in the testing phase and well on course for shipment to South Africa in September 2015, ahead of on-shore delivery in November. All six cars of train number two are in the fitting phase and the production flow for the rest is on track."



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BELLVILLE-AIRPORT RAILWAY

In terms of a memorandum of action (MOA) signed between the city of Cape Town and the Passenger Rail Agency of South Africa (Prasa), it is planned to build a 4km line linking into the existing Metrorail network, making it possible to run trains between Bellville and the airport. It has been emphasised that this is a completely new project, not an adaptation of previous plans to link the airport into the Cape Town CBD by rail. Councillor Herron is not enthusiastic about that scheme, apparently, because it would take passengers away from the municipality's city-airport bus service. Herron's concerns are understandable. The airport bus is running at a substantial loss due to very low

levels of patronage. In light of this, likely support for a public transport link between Bellville and the airport seems questionable. Service would need to be frequent, to suit air passengers. It would be prudent to try running a bus first, to test patronage, before spending millions on a rail line.

Though Herron is quoted saying a route has not been finalised, 4km is exactly the same distance as that mentioned in the earlier proposal for a rail link to the Cape Town CBD. In both cases the new branch would join the nearest existing railway, ie that running from Cape Town via Langa to Bellville - which is approached by very roundabout routing.



The Cape Town-Langa-Bellville route forms part of Metrorail's "Central Line" complex, plagued by daily service delays variously attributed to infrastructure failure, cable theft and an alarming extent of vandalism. The line enters Bellville from the north-east (the airport being to the south-west).

NEW LINES: CAPE TOWN

The proposed Bellville-airport link has been identified as one of many infrastructure investment projects for Cape Town. A new line from Nolongile in Khayelitsha through Blue Downs to Kuils River on the Somerset West line is the main priority, scheduled to be completed by 2020.

STATION UPGRADING

The Passenger Rail Agency of South Africa (Prasa) has reintroduced passenger service 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 stations listed are: Magaliesburg, Koster, Swaruggens, Zeerust, Slurry and Mafikeng.

GAUTRAIN FARE SYSTEM ENHANCEMENT

According to Gauteng MEC for roads and transport Dr Ismail Vadi, the Gautrain fare collection system is to be upgraded to comply with national interoperable ticketing regulations. At the same time, "additional functionalities" will be provided. The project will be implemented in phases, beginning with a pilot of the airport line, and is scheduled to be complete by 2017. The main objective is to achieve "One Province - One Ticket," an integrated fare system in Gauteng, common to all public transport modes.

"Once the upgrading has been completed Gautrain passengers with a contactless Gold Card will have the choice of topping up their

cards on-line or using a mobile smartphone," Vadi explains. They will be able to access Gautrain services using local or international bank-issued contactless credit and debit cards that are compliant with the Europay/MasterCard and Visa standard. The upgrade will cover the entire Gautrain network, including stations, buses and parking. Following "an open and fair tender process", a contract has been awarded to Thales South Africa Systems.

Eventually it is intended that most of the recently implemented Bus Rapid Transit ticketing systems in Gauteng will be accepted by Gautrain.



NATCOR SHUTDOWN

The annual shutdown of the "Natcor" Durban-Rietvlei (Gauteng) main-line took place from 14 to 23 July 2015, to enable major infrastructure maintenance to be undertaken. There was a total shutdown from 18:00 on 18 July until the same time on 21 July. During this period, no trains ran. A reduced service operated after 21 July.

Maintenance activities included all aspects of rail infrastructure such as:

- Replacement of more than 40,000 sleepers
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Fares to pay for new Gautrain trains

This November, the Bombela Concession Company intends issuing a request for proposals (RFP) for 12 new four-coach trainsets to augment the 24 currently in service. The aim is to have the first of the new trains running by March 2018.

Gautrain Management Agency (GMA) CEO Jack van der Merwe, speaking at the Gauteng Infrastructure Investment Conference in Midrand, confirmed that the cost of the new trains and ancillary infrastructure such as depot, signalling and trackwork would be between R2.5 and R4 billion.

Wherever they might be, commuter mass transport systems face the problem that their services are at maximum demand during rush hours, slowing to a trickle for the rest of the day. Railways Africa spoke to GMA's chief operating officer William Dachs about this perennial problem of peak time under-capacity.

Asked at what point the Gautrain Management Agency (GMA) saw peak hour over-demand as a problem, Dachs explains that the GMA "has been keeping an eye on the situation for a few years.

"We started the planning for this procurement more than a year ago," says Dachs, adding that "it is quite a process". Currently, there is a concession agreement between the province and the concession company Bombela. This means that the GMA is obliged to act through the concessionaire, which, in turn, means that Bombela will be the procurer in this instance, not the province.

The GMA had to carry out extensive business planning, most of it in close consultation with Bombela. "We needed to make sure that this procurement would not affect Bombela operations negatively in any way," says Dachs, emphasising that the process to date has been far more than simply issuing an RFP.

Speaking in March 2014 about the need for an extended rapid rail system, Gauteng Roads and Transport MEC Dr Ismail Vadi stated that the cost of failing to develop a more effective public transport system would be prohibitive in the longer term, a position with which Dachs agrees.

"Globally public transport is not profitable and should not be," explains Dachs, elucidating that the social benefits have to be taken into

account. He adds that the business case for the new train purchase shows this can be done without another capital grant from the province.

While it has been reported that funding for the acquisition has been secured through the Gauteng provincial government and the Development Bank of Southern Africa, Dachs explains that this deal could well be self-financing.

"The economics of this round of rolling stock procurement are fairly simple," he says. The peak hour demand will increase over time, so if Gautrain makes more rolling stock available to balance demand optimally, more people will use Gautrain and the additional revenue that will accrue in the remaining 15 years of the concession term will pay back the investment in this additional rolling stock.

"This is a game changer in public transport in this country as we do not have to go cap-in-hand to the treasury asking for the finance," continues Dachs.

A further advantage is that the revenue will continue to grow, he explains. "We will then be able to offer different services for example the much talked about short service



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between Centurion and Sandton, our peak demand stations, now becomes possible.”

“If we couple that with additional parking at Centurion, I think that we can grow ridership quite dramatically,” he continues.

Dachs confirms that the new rolling stock will not necessarily be bought from Bombardier as this is will be an open tender. In terms of the specifications, the RFP lays down that potential suppliers need to meet current European commuter train standards. So while the new rolling stock will operate alongside the existing trains, auto-coupling is not a requirement at this stage.

Buying rolling stock other than the Electrostar unit will mean that Bombela will need a new maintenance team trained to service the new trains. Dachs explains that there is space within the existing depot to set up another maintenance facility.

“This (round of procurement) will not be our last acquisition. Now, we will be able to have competition between maintainers.” The other advantage that Gautrain is weighing up is to procure a maintenance contract that goes beyond the end of the current concession period.

“So we will have a single operator which will remain the Bombela operating company, but with trains coming out of two separate maintenance yards,” he continues. This puts Gautrain in the position where it will no longer be reliant on a single maintainer.

“Taking a long term view, it is good to have competition,” Dachs asserts.

Regarding the local content of the latest order, Dachs expects that the various potential suppliers will put forward differing proposals as to how they will meet the quota. The RFP will specify that local content

must include life-cycle maintenance and specified components, potentially including the depot and signalling equipment.

In order to make this round of procurement as open as possible, local content has been extended to include maintenance of the rolling stock. “Whatever the outcome, Gautrain remains committed to meeting the Department of Trade and Industry’s 65% localisation requirement,” he concludes.





Transnet Freight Rail - University of Pretoria collaboration comes of age

It has been 21 years since the University of Pretoria (UP) set up a formal collaboration with Transnet, which resulted in the founding of a Chair in Railway Engineering at the Department of Civil Engineering.

At the introduction for the first course for 2015, Professor Hannes Gräbe hosted an opportunity for industry, academia and those involved in the railway field to discuss ways in which to grow the reservoir of knowledge on railway engineering. "Later this year", he says, "we are planning a formal

function to celebrate what has been a highly successful collaboration."

The event, entitled "An introduction to multi-disciplinary concepts in railway engineering", gave those attending the course an opportunity to network with industry experts, liaise with course presenters and share ideas with both.

Explaining the need for railway-specific training that goes beyond the conventional engineering degree, Professor Gräbe says the bare BSc provides a foundation on

which to build further knowledge and the required experience needed by industry.

"A lot of experience comes from working in the rail environment and then there are the supplementary courses where we at UP 'fill the gaps' that would not be covered by an undergraduate degree," he continues.

Asked whether one has to be a graduate to attend the courses at UP, Professor Gräbe says there are both honours and masters programmes for graduates: "Here, there are specific fields that people interested in railway engineering can focus on."

In terms of another initiative, UP offers an honours course for BTech graduates from universities of technology. The BSc Applied Science Honours provides the student with the platform to



Well-equipped laboratory facilities allow for a range of testing and research.

The work carried out by the Pretoria University team is practical with real-life applications. Here Railways Engineering carries out on-site tests on the coal line.

The University has facilities for practical experimentation and research. For example, there is a "strong floor" where accelerated testing is carried out. There are actuators and load frames and a small heavy-haul test track on the university's experimental farm.



"We see ourselves playing an important role in sharpening the competitive edge that rail has over other means of transport."

continue to study for an MEng in Applied Science.

Run separately, there are short courses that suitable candidates from the railway industry can attend. Here a university qualification is not a prerequisite.

More than 850 people a year attend the three to five-day courses, each invariably fully booked. "There is also a significant interest from railway companies in the private sector. The short course duration is popular as employers do not have to release staff for longer periods," the professor says.

In deciding on course content, Professor Gräbe and his colleagues work very closely with Transnet in determining the curriculum. "From time-to-time, we have

meetings to discuss possible new courses and a couple are under development at the moment," he says. This has seen the number of courses increasing from an initial three to the nine offered today. Some of these are repeated through the year, resulting in 12 to 14 courses being presented annually.

"We have a group of about 50 lecturers presenting short courses, about half of whom work for Transnet. This helps us to stay in touch with cutting-edge industry developments," he continues.

Research is an important aspect of the work by UP's railway engineering team. This draws in a number of specialists from other engineering disciplines. Much of the research is conducted

by masters and doctoral engineering students.

In the past, South Africa was renowned for its developmental work in the railway field. One thinks of the Scheffel bogie and the country's impressive expertise in heavy-haul. However, training took something of a back seat in the late 80s and through the 90s. Today, UP's three-pronged thrust in graduate training, continuing education (short courses) and railway research is putting things right.

"We see ourselves playing an important role in sharpening the competitive edge that rail has over other means of transport," the professor concludes.

Professor Hannes Gräbe

Southern Africa Transport Conference

- calls for intra-African trade boost



Minister Peters: vital to overcome the interconnectivity challenge.

Opening the 34th annual Southern African Transport Conference at the CSIR International Convention Centre in Pretoria, Minister of Transport Dipuo Peters called for increased intra-African trade.

"With more than a billion people - 54 countries - it is time that Africa made its presence felt on the map of world trade, and the transport and logistics industry as well," she said. It stands to reason that there needs to be very high connectivity between the different countries if Africa is to move towards intra-African trade and industrialisation.

Only 11% of Africa's trade is with other African trading partners at present, compared to 80% among the countries of the European Union.

"It is important that as member states of the African Union, we should start looking at ourselves as a market. If you look at the result of studies that have been done, our biggest challenge is interconnectivity."

She asked how it would be possible to make it easier for people of the continent of Africa to reach each other. The answer lies in transport, but there are many challenges facing Africa's network. Its poor and inadequate state hampers effective competition in the global market. Transport networks are a key component in an investment climate, providing people with good access to markets and reducing the cost of new investments.

President Zuma is on record saying "we need to make sure we make the doing of business easier and cheaper". This can only be done by reducing the cost of transport.

Intra-African trade stands at less than 11% of all African GDP and Africa's share of world trade is only 2%. Africa struggles not only with lack of investment and infrastructure, but also the distances between the hinterland and the ports. Efficiency of ports and logistics is particularly important for Africa's landlocked countries, which have average transport costs nearly 60% higher than coastal economies.

Poor linkages between transport modes in Africa cause long delays and raise the cost of moving international commodities. Minister Peters singled out Beitbridge as a border crossing where cross-border movement needs substantial streamlining to unlock its potential.

Lack of capacity and skills in the freight handling sector, underinvestment in ports, rail and pipelines on the continent, poor port infrastructure, old equipment, poor ICT technical and management skills and lack of proper and advanced learning, all need to be overcome.

"We are conscious of the skills flight in which Africa lost many of the skills to the developed countries," continued Peters. She stressed the importance of retaining Africa's skills rather than having people working outside the continent. "It is important that we reverse this trend and bring our people back, so that we can develop this continent," she said.

Intra-African trade stands at less than 11% of all African GDP and Africa's share of world trade is only 2%. Africa struggles not only with lack of investment and infrastructure, but also the distances between the hinterland and the ports. Efficiency of ports and logistics is particularly important for Africa's landlocked countries, which have average transport costs nearly 60% higher than coastal economies.



PROACTIVE PUBLIC TRANSPORT PLANNING NEEDED

In welcoming those attending the Southern African Transport Conference (SATC) in Pretoria during July, event chairman Kenny Kistan commented that at the 25th African Union Summit held in Sandton during June, speaker after speaker confirmed that the resolution taken to promote intra-African trade put Africa on a new path of development and growth – one that would enable the continent to take its rightful place, particularly with South Africa leading and driving the agenda.

The AU chair made an impassioned plea for greater regional integration and trade, through the launch of a continental free trade area that would forge stronger ties between South Africa and other African economies.

“At the SATC we believe that the transport sector can make a positive contribution to making this a reality,” said Kistan. This can only be achieved by working together to create an enabling environment through effective transport planning, efficient road infrastructure and efficient network corridors.

The National Development Plan (NDP) is an overarching vision aimed at realising the ideals of a national, inclusive democratic South Africa. In this plan, key targets have been identified and steps set out for implementation. “The NDP accepts and adopts a strategic view of the challenges and opportunities before us and it is clear that the plan was based on extensive consultation with almost all sectors of our society,” he pointed out.

Kistan quoted Minister Peters saying: “The commitment we make as a department is to implement the NDP’s key priorities in the maintenance of road infrastructure, upgrading rail services as well as building and operating our public transport.”

He explained that the Department of Transport’s contribution to the NDP will be underpinned by the National Transport Master Plan – NATMAP 2050 – which is aimed at delivering a dynamic long-term sustainable transport framework, providing a coordinated transport agenda for the whole country.

The SATC endorses this view, seeing it as a way to combat the triple challenges of poverty, inequality and unemployment.

Land transport in South Africa hinges on the implementation of the National Land Transport Act. Transitioning to a full implementation of the 2009 NLTA needs to be accelerated.

The SATC has said repeatedly that public transport is not an end in itself. Public transport planning should not be reactive only but rather proactive, positively influencing where people live in relation to their places of work, their schooling, and recreation.

Over the last ten to 15 years, there has been a huge drive by all sectors of government to improve public transport in South Africa.

For public transport to work properly other services must also work, and here one thinks very specifically of Eskom and the provision of uninterrupted power – a factor critical to bodies such as the Passenger Rail Agency of South Africa (Prasa) and Gautrain.



Kenny Kistan: proactive public transport planning essential.

Public transport is not an end in itself. Public transport planning should not be reactive only but rather proactive, positively influencing where people live in relation to their places of work, their schooling, and recreation.



William Dachs: property value-add an overlooked source of public transport project investment.

2012 SADC Regional Infrastructure Development Master Plan reports that US\$500 billion is needed for all economic infrastructure projects in the region in the period 2012 to 2017

PUBLIC TRANSPORT - FINDING THE FINANCE

Around the world, mass public transport is seldom financially self-sustaining. In his presentation, Gautrain Management Agency chief operating officer William Dachs, focused on issues such as current funding sources in Southern Africa, what can be done to find more, and which could reasonably be expected to be worth accessing. It is common knowledge that the funding backlog for public transport is “massive”, and cannot be made up by governments, or users, on their own.

The 2012 SADC Regional Infrastructure Development Master Plan reports that \$500 billion is needed for all economic infrastructure projects in the region in the period 2012 to 2017. Of this, transport projects would need about R1.25 trillion, which is beyond the means of SADC governments.

Addressing the issue of current funding sources, Dachs pointed to South Africa’s independent power producers (IPPs) as an example of how financing for major public transport projects might be secured. He explained that South Africa has moved from complete dependence on Eskom to having 5,200MW of generation capacity coming from IPPs. Not one cent of this R169 billion in investment came from the fiscus or was backed by a guarantee.

He explained that the Department of Energy’s IPP unit had the experience and expertise in public-private partnerships and was trusted by both public and private stakeholders. Consequently, the IPP unit was able to implement a quality programme.

To access more public transport capital, Dachs explains that certain well-known criteria need to be met.

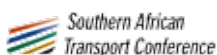
These include:

- Sound project identification and planning
- Good project management
- Talented and experienced people on the team
- Sensible and believable business planning with cost and revenue projections that allow for good funding decisions
- Smart market identification and management
- Careful and honest procurement.

Dachs adds that stop-start programmes seriously undermine the possibility of project success, and that conversely, strong political leadership provides an enormous boost. Finally, strategic partnerships are essential.

Turning to the issue of where and how to find public transport project finance, Dachs made the point that one source that was overlooked with the Gautrain project was possible revenue from property owners along the Johannesburg-Pretoria route. He cited three instances where property developers paid to develop on top of or near Gautrain stations. However, none of this was captured for investment into the project, leaving the imposition of costs on users and the fiscus.

Dachs cited a number of prominent examples of projects in other parts of the world where value-add to property is being turned into available finance for projects.



Presentations at the SATC are based on research papers, strictly reviewed and selected by the SATC Technical Committee.

The annual and longest running transport conference on the continent, SATC sponsors the continuous contribution to research in the transport field through the provision of bursaries. More information: <http://www.satc.org.za/index.php/satc-bursaries-scheme>



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From sound dampening and vibration control, to hoses, bellows and other mission-critical components on locomotives and carriages, the use of rubber components is vital to the functioning of our railways.

A wide variety of products are available, including vestibule diaphragms, bumper bolsters, gaskets, anchor bolts, railway springs, draw-gear rubbers, joint rings, hosing, pipes, rubber manhole covers, hotbox sensor covers and mini gummies, as well as custom-made products.

Over the coming months, Tega Industries will be upgrading and modernising their manufacturing facility, located in Brakpan, to accommodate injection moulding and specialised cutting apparatus, as well as other technologically advanced equipment to ensure

that the highest standard of quality is obtained during the rubber-to-metal bonding process.

The modernisation programme will ensure that the company will more than meet the quality and standards required for the supply of rubberised rail components - key to Tega's focus on providing quality products and services.

Rail operators such as Transnet in South Africa have strict controls in place to ensure that only suitable rubber products can be used. Tega Industries' products undergo exhaustive testing in order to meet the strict requirements necessary to be certified by relevant railway and standards authorities for quality and safety.

Tega Industries facility is ISO-certified with an onsite-advanced laboratory and testing facility to ensure the integrity of every product produced in the factory.

Tega Industries, which manufactures all products locally, employs 150 people in fields as diverse as polymer science, engineering, manufacturing and market development, in addition to sales and support staff.

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Online Video Interview


<https://youtu.be/K2h7-1nZWgs>

LOCAL CONTENT IS THE KEY AT BOMBARDIER'S NEW PROPULSION MANUFACTURING PLANT

Speaking with Logan Naicker, head of site and operations for Bombardier South Africa, at Africa Rail 2015 recently, the discussion turned to the company's new propulsion manufacturing plant.

After a lengthy tender process, Bombardier won a bid to provide part of the Transnet contract for 1,064 new locomotives. In terms of important stipulations in the deal, a high percentage of local content was required, as well as a local presence, local supply and a local manufacturing site.

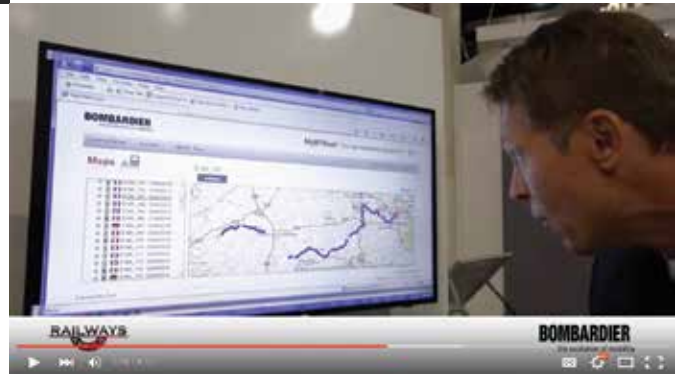
Bombardier chose to locate in Isando, Gauteng, in close proximity to their local suppliers.

This 6,000m² factory, which is 100% South African-managed, employs about 150 people. Equipped with high-powered cable crimping and harnessing systems, it boasts a range of electro-mechanical products, such as insulated-gate bipolar transistor converters and several electrical cubicles.

The factory has its own procurement, manufacturing and methods department, and will be equipped with high-voltage test equipment for simulating the same conditions when the traction converter is operated in the finished locomotive.

Asked about Bombardier's approach to developing a skilled workforce for the facility - and job opportunities - Naicker explained that having Gauteng as a location provides a strong skills base, and Bombardier has been aggressive in its recruitment strategy. It is intended to establish an accredited training centre, to train and develop the local community.

Apart from the involvement with Gautrain, Naicker believes this to be Bombardier's first real attempt at local manufacturing, stressing the company's commitment to local content, supplier development and building the local economy. In terms of future orders, he believes they will be well placed and competitive in bidding for these upcoming projects.



Online Video Interview


<https://youtu.be/-IDMeLHzHqM>

PIERRE CICION SPEAKS TO THE EFFECTIVENESS OF BOMBARDIER'S MYBTFLEET

In a recent interview with Railways Africa, Pierre Cicion, Bombardier BT Services Business Leader, Africa, discussed the features of their online web-based fleet data toolbox - MyBTFleet.

This toolbox, which allows users to track the status of their fleets in real-time while at Bombardier, was designed to communicate and integrate all the different data and applications. The system, accessible via the internet, allows users to monitor fleets during their operational, maintenance and engineering functionalities.

During the operational functionalities users can locate the actual position of a vehicle and run an itinerary; access the planned maintenance activities for the fleet; and record all requests and related on-going and/or planned service operations provided by Bombardier.

Maintenance functionalities include a report of intervention, a catalogue and an archive. A detailed report is displayed of maintenance operations performed on vehicles; documents and technical information of all components and spare parts of rolling stock and drawings; and documents and rolling stock specifications.

Additionally, the engineering functionalities provide for real-time access to the internal diagnostics of vehicles; constant data recording of the vehicle in operation (speed, temperature, traction power, etc); as well as an interface with Bombardier Fleet Management Centres.

According to Cicion, this is a "permanent exchange of information". Further, he adds, with regard to Transnet, this tool allows Bombardier to utilise the system during the warranty in a way that benefits both. In essence, this system introduces a new era in rail technology interaction, and rings true to Bombardier's slogan "the evolution of mobility".



Applauds GE and Transnet partnership and its role in localisation, skills and SME development

Credits the partnership for sustaining and creating jobs on both sides of the Atlantic

Affirms the USA's commitment to partnering with SA in broadening the innovation play with world-class rail technology.



US TRANSPORT SECRETARY TOURS TRANSNET ENGINEERING

US Secretary for Transportation Anthony Foxx, who was on a trade mission visit to South Africa, Mozambique and Kenya, recently toured the Transnet locomotive assembly in Koedoespoort. He was accompanied by business leaders including acting Transnet CEO Siyabonga Gama, GE transportation President Russell Stokes, and Transnet Engineering CEO Thami Jiyane.

He visited the various assembly units for the GE AC30ci locomotive, which is currently in final production, and forms part of the contracts for the last 203 locomotives being supplied by GE to Transnet. In the course of his tour through the plant, he went through the various stages of production, in particular those that are part of the 35% localisation commitment of the contract. These include the production of bogies and frames.

Speaking before the tour, Secretary Foxx applauded

GE and Transnet for a partnership that is changing the South African rail landscape and putting South Africa on the map as a locomotive manufacturing hub. He said this partnership must be credited for the enabling role it has played in creating and sustaining jobs in South Africa and in the USA. "The USA is committed to partnering with South Africa in broadening the innovation play in the transportation sector by providing world-class technology, such as the technology delivered by GE and Transnet," he said.

His words were echoed by Transnet acting group CEO Siyabonga Gama who described the partnership between Transnet and GE as one that has delivered on time, every time and for the broader benefit of South Africa. He added, "Together with GE, we have delivered a world-class product to market and have ensured that we take other key players in the value chain, such as SMEs and employees, on

this journey with us. We have ensured that our people at both Transnet and GE are equipped with the necessary skills and training.

"We are supporting small and medium enterprises and have integrated them into the value chain as our contribution towards delivering on the industrialisation priorities of the country as outlined in the National Development Plan. Lastly, we are happy to say that with all that we are doing with GE, we are contributing to creating a better South Africa for all."

In closing Russell Stokes, President and CEO of GE Transportation globally, said GE is humbled to be a partner with Transnet. "This partnership is one of our best case studies at GE. We remain committed to growing it by delivering best-class technology, increased local content from 35% to 55% going forward, and more investment in people and SME development."

NEW INTERMODAL TERMINAL TO ASSIST ROAD-TO-RAIL FREIGHT MIGRATION

The previous edition of Railways Africa featured an analysis of the current initiative to move freight off road and onto rail. With the singular characteristics of the rail industry, it is tempting to see it in isolation, somewhat apart from other supply chain sectors.

However, the opening of the Grindrod Intermodal Terminal in Denver, Johannesburg, on 25 June 2015 emphasised the crucial importance of integrating the various aspects of supply chain and logistics operations.

The new 13,000m² facility represents a R200 million investment by Grindrod. It is a hub, its supply chain "spokes" connecting distant markets such as Zambia, Malawi, Zimbabwe and Botswana with the ports of Maputo, Richards Bay and Durban. Providing employment for more than 100 people, the new terminal will handle a million tonnes of containerised cargo annually, this being in excess of 100,000 containers.



A step forward for intermodal logistics in Southern Africa.

The facility has a covered warehouse, mineral handling and storage yards, separate areas to stack (and maintain) empty and full containers, and a 15,000m² transport facility.

The terminal will offer the following consolidated services:

- Rail and road transport
- Warehousing and distribution of various general and bonded commodities
- Packing/unpacking of containers
- Storage, handling and packing of mined minerals
- Full container handling and storage
- Refrigerated container depot with maintenance and repair services.

The development has a rail link capable of accommodating block trains. This will provide opportunities to convert container volumes from road to rail, while at the same time reducing costs in the logistics supply chain.

Speaking at the opening, Department of Trade and Industry deputy director-general (industrial development division) Garth Strachan explained that an important factor in the re-industrialisation of South Africa was the mutually beneficial relationship between business and government. The constraint posed by South Africa's road, rail and ports freight logistics cannot be solved by the public sector alone.

"This investment," Strachan pointed out, "will increase efficiencies, unlock bottlenecks in the system, increase competition and ultimately open important opportunities for the economy as a whole."

Grindrod divisional chief executive Kees van Welie explained that the new terminal would simplify the supply chain, "For our customers, this will take costs out their systems, and help them grow their businesses."

GIBB EXPERT TO HEAD PORT OF NGQURA RAIL EXPANSION PROJECT

Over the next four years, Transnet has committed to investing R26 billion in a 16 million tonnes per annum (Mtpa) manganese export expansion project. This is as a result of the local mining industry's intention to capitalise on the global growth in the manganese industry which requires South Africa's logistics network capacity to be substantially increased to meet projected demand.

Transnet have appointed a joint venture consortium comprising leading consulting engineering

firm GIBB, Fluor and AECOM as engineering, procurement and construction management (EPCM) consultants. Heading up GIBB's rail engineering expertise is Fana Marutla who is responsible for the Front End Loading three and four (FEL3b and FEL4) phases of the rail expansion project.

Marutla will lead a GIBB team comprising 39 engineers and technical staff for the design of rail systems at the port. The consortium will provide the professional

services required for the further development and execution of the project, as it progresses through the project life-cycle process execution phase (FEL4), through to handover and close-out.

A professional engineer and recently appointed to GIBB, Marutla brings 17 years of valuable railway engineering experience from previous employer Transnet, where he worked on a wide variety of engineering projects and logistics within the group including the Swaziland rail link project.

In his new role, he will be managing this and other significant rail projects for the firm, contributing to its already impressive knowledge and expertise in railway infrastructure.

"I am honoured to be entrusted with a project of this stature and magnitude as the Port of Ngqura is of strategic importance in promoting South Africa as a regional transshipment hub," Marutla says.

Newly constructed, the Port of Ngqura is capable of handling container, dry

STELOY CASTINGS - ULTIMATE PARTNER TO THE RAIL INDUSTRY

Steloy Castings recently marked a significant milestone with the announcement of their IRIS (International Railway Industry Standard), accreditation. Operating since 1985, Steloy Castings is constantly placing tremendous effort in ensuring their efforts are compliant with the highest industry standards. An initiative promoted by UNIFE and supported by operators, system integrators and equipment manufacturers, IRIS is pivotal in complementing the internationally recognised ISO 9001 quality standard with a key focus on highlighting rail-specific requirements.

At Steloy, meeting industry needs go far beyond simple supply and demand. The company is geared towards supplying an innovative, sustainable high-quality product aimed at exceeding expectations in line with industry standards.

Steloy currently boasts the following accreditations:

- ISO 9001:2008 Quality Management System, reaffirming the company's commitment to ensuring that highest quality products are produced at their foundries.
- Steloy was the first South African foundry to be awarded European Pressure Equipment Directive (PED) 97/23/EC accreditation, ratified by

TÜV Rheinland. This means that Steloy is accredited to produce castings in materials that include carbon, low-alloy steels and stainless steels to manufacturers of pressure vessels for sale into the European common market.

- ISO 1800 Occupational Health and Safety Management System.
- ISO 1400 Environmental Management System.

The more recent IRIS accreditation is positioned as one of the ultimate accreditations to operate in the rail industry. Not only does it place Steloy in a keen position to work alongside key players and projects in the rail industry, it creates a mutually beneficial environment for all major stakeholders. In addition, it fosters a need to ensure quality is above the norm while creating platforms to allow positive engagement with the market.

Steloy Castings is extremely proud of this achievement. According to CEO Danie Slabbert, "the IRIS certification is a substantial stride in our ongoing efforts to ensure we are functioning at our peak to meet the needs of the rail industry and industry in general through high-quality, sustainable and innovative products. This certification reiterates our ongoing commitment to be at the forefront of the foundry industry".

TRANSNET REPORTS SOUND PERFORMANCE

In spite of poor global coal and iron ore prices, Transnet showed a strong set of results for the 2015 fiscal year. The parastatal is in year four of its seven year market demand strategy (MDS), an ambitious plan involving the spending of R336 billion on upgrading South Africa's rail, port and pipeline infrastructure. However, the positive results indicate that the MDS is having the desired effect. Acting CEO Siyabonga Gama pointed out that the 8% increase in revenue to R61.2 billion was driven by volume growth and not increased tariffs. Cash generated from operations after working capital charges increased by 21.1% to R30.6 billion.

Capital expenditure on Transnet infrastructure reached a record R33.6 billion, taking total expenditure over the past three years to R92.8 billion. Of this, 74% was spent on rail. Regarding capacity, the group invested R14.5 billion on growth and R19.1 billion on maintenance.

Solid operational performance from all the group's businesses saw earnings before interest, taxation, depreciation and amortisation (EBITDA) growing to R25.6 billion from last year's R23.6 billion, an improvement of 8.2%. Stringent focus on cost control yielded savings of R1.3 billion.

Transnet Freight Rail (TRF) volumes increased by 7.7% to 226.6 million tonnes (mt) in the year ended 2015, strong

Continues Page 54

and liquid bulk vessels. It is protected by the main eastern and secondary western breakwaters, which are 2.7km and 1.125km in length.

Developed as an integrated rail and port solution the project will include the upgrade and expansion of the rail network between Hotazel in the Northern Cape and Port Elizabeth, and provide a new bulk minerals export terminal at the Port of Ngqura as well as the commissioning of the two existing berths.

Rail overview

Rail infrastructure comprises the provision of new compilation yards in Mamathwane and Coega (near the port of Ngqura), new crossing loops and lengthening of existing crossing loops en-route (to accommodate 200-wagon trains), maintenance and operational facilities and monitoring equipment.

Port overview

Terminal infrastructure at the port will comprise new bulk materials handling equipment such as stockyard, stackers,

reclaimers and surge bins, roads, infrastructure services, buildings and a train marshalling yard with unloading system (tippler). The two existing berths in the port will be equipped with twin shiploaders to handle the manganese exports.

"We expect the completion of the FEL3b stage of the Ngqura project by November 2015. Thereafter the project will move into the construction phase (FEL4), where we will supervise the construction until October 2018."

Continued from Page 53

performances coming from both the iron-ore and coal export lines. Export coal was up 11.9% to 76.3mt while the export of iron ore and manganese increased by 10.7% to 69.6mt. For Transnet, the “take or pay” agreements signed with mining companies last year are providing cover against the effects of depressed iron ore and coal prices and possible reduced raiting in the year to come.

During the year, both the iron-ore and coal line carried record tonnages of 1.7mt and 1.4mt respectively. This was made possible by improved cycle times - the coal line from 67 hours to 60 and 86 hours to 78 for iron ore - as well as improved adherence to schedules. In both instances, there was increased product availability from key coal and iron ore producers.

Both the coal and manganese lines are having their capacity increased, the “manganese” line to 16mt a year by 2019 and the coal line to 81mt.

The results revealed that the government’s policy of moving freight off road onto rail is having an effect, as the container and automotive sector volume rose by 6.7%. Increases in general freight volumes were partially offset by the slow local and global economy, a slow recovery from industrial action and continued power outages.

Transnet Engineering (TE) contributed to revenues through increased penetration of the African market. Increased sales to customers other than TFR rose by 6.3% to R1.7 billion, mainly driven by sales of locomotives and wagons to the rest of the continent. TE manufactured 2,700 wagons for TFR.

In terms of rolling stock, 147 new locomotives were put into general freight service, and nine more are scheduled for delivery at the end of July this year. In addition, 61 new locos were supplied to the coal line during the past financial year, 39 more being due for delivery before the end of 2015.

CABLES FOR SA’S NEW ROLLING STOCK

Transnet and the Passenger Rail Agency of South Africa (Prasa) will jointly be investing R100 billion in their ten-year fleet renewal programmes. When Prasa’s R50 billion fleet renewal programme was launched, international cable manufacturer Aberdare Cables invested R20 million in a new plant and began developing the types of cable needed for use in the new coaches.

Railways Africa spoke to Aberdare’s CEO Keith Edmond and Executive Director (manufacturing) Andre Smith about this recent expansion.

At present, Aberdare has the Prasa contract and is talking to Transnet about supplying cable for the 1,064 locomotives currently on order.

The cable requirements for either a locomotive or a motor coach are quite complex with about 25 different cable types needed, ranging in size from one square millimetre to 120 square millimetre.

“Aberdare Cables has been manufacturing cables for Transnet for

decades,” explains Edmond. However, cables for Prasa have different specifications. “While we spent R20 million on the new plant, we probably spent another R5 million in developing the Prasa product range,” he explains.

Before the new plant was set up in Pietermaritzburg, Prasa conducted rigorous audits of Aberdare’s plants and the company’s research and development capability. It then placed a trial order, the success of which won a full-scale order for substantial quantities of cable.

Smith explains that Prasa was well satisfied with the product, the result being that Aberdare is currently busy with a third order.

With accelerated demand from the railways, capacity was an issue. One solution would have been to order a complete plant from Europe. However, Aberdare was keen to support South Africa’s National Development Plan and its focus on job creation. It was thus decided to support local industry, using as many

ANSYS- REAPING THE REWARDS OF INNOVATION



Group CEO Teddy Daka

Ansys Limited, the AltX listed engineering company, stands out in the South African rail industry as one of the few companies carrying out original research from which it develops new products. During the 2014/15 financial year, Ansys delivered on its turnaround strategy by showing record revenue growth. From R65 million at year-end 2014, the company has nearly quadrupled revenue to R251 million. The group is profitable for the first time in two years, from a net loss position of R7 million in 2014, to R10 million net profit at year-end 2015.

Group CEO Teddy Daka points out: “Both the telecommunications and rail businesses did well during the year under review, with the telecommunications segment growing significantly.”

Rail revenue grew from R37 million in 2014 to R94 million in 2015. Daka says, “This is largely due to our 2014 development projects entering production during the current year. Most of this is coming from trackside and locomotive on-board systems developed for industry-specific applications.”

One of the products born out of research is the Ansys vehicle identification system which employs an RF tag reader. Railways Africa spoke to Ansys chief operations officer Dave Howie about Ansys products and their success. “The identification system picks up all the train and driver

off-the-shelf parts as possible. In terms of jobs, the plant requires 20 new operators to run the line on a three-shift basis.

In addition, Aberdare wanted a modern, power-efficient plant. With its energy efficient pumps and drives inside Aberdare it is known as the "green" line. Compared to similar existing plants, the new line is up to 60% more energy-efficient. With the addition of a recycling unit, molten plastic bleeding from the extruder gets fed back into the line so there is no waste.

The plant is fast, producing the smaller cable size at speeds of 140 metres a minute. This is a best practice production requirement, as one order from Prasa was for 900 kilometres of cable in one size and there are up to 25 different designs and sizes in one train set.

Among the cables required is a braided product. At present, this screened cable has the inner part made in Johannesburg and then it is sent to Aberdare's Pietermaritzburg

plant for braiding. Part of its most recent investment is in a highly specialised cable braiding machine, that had to be sourced from Europe.

Aberdare's research and development capability played an important role in securing the Prasa orders. One requirement - that the heavy current cable feeding power to the traction motors pass a diesel-immersion test - this was met through Aberdare developing its own insulation material.

In terms of Transnet's requirements in respect of its 1,064 locomotive deal, the four successful bidders have to buy cable locally, Edmond explains. South Africa's Cable Association succeeded in having the local cable industry proclaimed as "designated" in January 2013. This means that State-Owned Enterprises have to buy from local companies even if the contracts are done on a turnkey basis

Currently Aberdare has three plants, one in Pietermaritzburg, one in PE and another in Elandsfontein, Johannesburg. Apart from the cable

used in coaches and locomotives, Aberdare supplies the overhead aluminium supports that feed power to the catenary wire from which train pantographs draw power.

"Currently, we can satisfy the demand for every type of cable that the industry might need," Smith says. "The increasing needs of the railways will doubtless see us installing more plants in the future, particularly if Transnet makes full use of the local manufacturing capacity.

"From a technical perspective, we have satisfied the requirements of Prasa. Whatever the South African rail industry needs in terms of cable, we can develop and produce it in a very short time and to the most rigorous world standards," Smith adds. Aberdare at present is ISO 9001, ISO 14001 and ISO 18001 compliant and is BASEC (British Approvals Service for Electric Cables) certified.



Ansys systems engineer: rail Johan Malan and chief technical officer: engineering Arno Sakkers with an example of an integrated system display developed by Ansys.

information as the locomotive goes past. It has wheel sensors that detect all the wagons," Howie explains. With this information, it builds up a "picture" of the consist, which is then communicated back to a central office.

An operator using this system knows in real time which consists are going into a yard and which are leaving,

making it easy to keep track of its assets. The system is well suited to border control, with rolling stock entering or leaving a country.

Apart from South Africa, Botswana is using Ansys' trackside information equipment, too.

The company is looking to market new rail asset management systems, to Transnet and other African rail operators. Ansys' system will be GSM-based, enabling operators to use a country's cellphone network as the operating platform. Ansys' other technological innovation is its integrated system display (ISD), which Transnet will soon be fitting into locomotive driver's cabs.

These displays are to be installed in new as well as existing locomotives. So far Ansys has manufactured 990 of the 2,700 units on order.

Ansys' equipment offers paths to increased efficiency and will doubtless play a pivotal role in achieving Transnet's aims of achieving record freight volumes. "What is more, as we can monitor exactly how a train is being driven, our systems will also play a key role in both safety and maintenance scheduling in the future," says Howie.

BARLOWORLD TRAINING IMPRESSES

With parts of Africa undergoing a “rail renaissance”, interest in supplying the continent is keen. During 18-26 June, the US Secretary of Transportation Anthony Foxx led a delegation of 14 American companies on a multi-sector trade mission to sub-Saharan Africa. The focus was on Mozambique, South Africa, and Kenya - countries where major rail developments are taking place.

Assistant Secretary of Commerce for Global Markets Arun Kumar co-led the trade mission. “In visiting these three countries, we are focusing on infrastructure, transportation and energy. We are looking to see an increase in trade between the US and South Africa, and, in fact all of Africa,” Kumar explained.

He took the opportunity to visit the Barloworld Equipment Technical Training Centre in Isando. “While we were here, we wanted to see this outstanding example of long-standing collaboration between Caterpillar and Barloworld. And to see the benefits that are accruing from the tremendous training that is happening here, and the hundreds of South Africans that are benefiting from this collaboration,” Kumar continued.

The training facility, which was officially opened in October 2009, represents a very considerable

commitment by Caterpillar and Barloworld to servicing their Southern African customer base. At the centre, apprentices are trained up to South African National Qualifications (NQF) Level 3, qualifying as earthmoving artisans. Training is provided for Barloworld and customer personnel.



Luis Quintino, Senior Training Instructor with Barloworld Equipment, presents a course to technicians from various South African mines.

The courses given at the centre are at the leading edge of technology. For example, maintenance is highly computerised explains operations manager (industrial, rail and rental Southern Africa) Theo Jooste. Earthmoving technicians of today need to have a wider range of skills than their predecessors. Apart from pure mechanical skills, they need to be experts in hydraulic, electronic and pneumatic technology and also have good IT diagnostic skills.

“You can’t work on a modern Caterpillar machine without a laptop in your toolkit,” says

Jooste. However, the benefits that computerisation have brought to the world of heavy equipment operation – and maintenance – are huge.

“By accessing the computer records for a particular machine, it is possible to establish exactly how that piece of equipment has been operated and maintained,” continues Jooste. With the use of GPS-enabled remote condition monitoring, Caterpillar can keep watch over machines in the field, and warn operators of impending problems long before they develop into more serious issues.

In the 90s, technical training by South Africa’s large parastatals was either cut back dramatically or phased out altogether. The Barloworld training centre plays a key role in making up this shortfall and supplying newly qualified people into South Africa’s skills pool.

Caterpillar has a strong presence in Africa through its subsidiary Progress Rail which it bought nine years ago, explains Caterpillar’s Chuck Wills who was part of the delegation. “This was Caterpillar’s first major investment into the railway space and, since then, we have had a total of about \$2.25 billion investment in the railway business,” Wills adds.



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Pushing Performance

Later Caterpillar, through Progress Rail purchased loco engine manufacturers ElectroMotiveDiesel (EMD). The EMD brand name has a lot of equity around the world, as there are more EMD powered locomotives in the world than any other. "We intend to keep that brand out there," says Wills.

Caterpillar's commitment to the rail industry is huge and is very important for us. It is seen as a business that is complementary to the rest of our businesses. "It is a business where a customer buys an asset that has an exceptionally long life, and relies on a structured product support requirement and Caterpillar's ability to supply parts and services," says Wills.

Asked whether he saw South Africa as a hub or springboard from which to service Caterpillar/EMD powered locos operating in the rest of Africa, Wills explains that this is one of the roles of the company's South African office in Pretoria.



At the Barloworld training facility. (left to right) Operations manager: industrial, rail and rental Southern Africa: Barloworld Power, Theo Jooste, (back row left) Regional Director Sub Saharan Africa: US Commercial Service, Johannesburg, Donald Nay (back row right) Training Team Leader, Training, Barloworld Equipment, Johan van Dam, Chief of Staff, US Department of Commerce: Vinay Singh, Assistant Secretary of Commerce for Global Markets US Department of Commerce Arun Kumar, Vice President, International Market Development, Caterpillar, Chuck Wills and Commercial Specialist for the US Department of Commerce, Sanjay Harryparshad.

SIEMENS ADDING TO RAIL SKILLS POOL



Signals technician Charlotte Disang (centre) receives her certificate from (left) Oupa Mopaki, CEO of the MICT SETA and Siemens executive director Clifford Klaas (right).

"The responsibility for education, together with skills development, does not only fall on the shoulders of government. The private sector has to play an integral role in terms of the development of people in South Africa."

- Siemens executive director Clifford Klaas

Siemens commenced work on a project for the Passenger Rail Agency of South Africa (Prasa) in 2011. Due to the shortage of young people with the skills that are needed, Siemens opted to work with Prasa and the Media, Information and Communication Technologies Sector Education and Training Authority (MICTseta) to launch this training venture. This first phase needed an investment of R1.2 million. The Seta also played a key role in monitoring the quality of the training.

The execution entailed taking on ten young people and putting them through a one-year practical and theoretical course which laid the foundation for them to become rail signalling technicians.

This training has greater importance in that the signalling systems that Siemens, Bombardier and Thales will be introducing in South Africa are technologically very different from that currently in place in South Africa.

"The responsibility for education, together with skills development, does not only fall on the shoulders of government. The private sector has to play an integral role in terms of the development of people in South Africa," Siemens executive director Clifford Klaas explains.

In the next three years, Siemens' section of the project will be handed over to Prasa. However, Siemens will continue support for upgrades and during the maintenance of the signalling equipment, for the life of the system. This internship is crucial as these skilled people will not only help Siemens complete the project but will be able to maintain the operational system, typically as service technicians.

This internship will serve as the first rung of a sound technical career for the eight people who passed the final tests. Siemens has approached the Seta with a letter of intent and is looking to training another ten students in the next couple of months. However, if these graduates decide they want to pursue careers outside the railway industry, their training will allow them to work in other technical fields, such as automation and IT.



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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.

INDIA FLOODS DERAIL TRAINS

Late on 4 August, the Kamayani Express from Mumbai to Varanasi derailed 12 coaches near Harda in Madhya Pradesh. At about the same time, the Janata Express - travelling in the opposite direction - derailed six coaches. Several coaches of the Kamayani Express landed in a river, complicating rescue efforts. Early reports put the death toll at 21, but many more were taken to hospital. Railway minister Suresh Prabhu blamed flash floods caused by monsoon rains for the accident.

CANADIAN PACIFIC COAL TRAIN DERAILS

On 1 August, a Canadian Pacific coal train derailed 18 wagons near Sparwood, British Columbia. The crew were uninjured.

Emergency personnel attended but due to track damage it was not possible to estimate when the line would reopen.

DERAILMENT AT GODMERSHAM

At approximately 21:40 on 26 July, the 20:10 train from Charing Cross to Ramsgate, travelling at approximately 110 km/h, struck a number of cows that had gained access to the railway at Godmersham, between Wye and Chilham. Both bogies of the leading vehicle of the eight-car train derailed, and the vehicle then struck the parapet of a rail over river bridge. The train stopped with the leading vehicle listing at about 20 degrees.



Derailed train at Godmersham

Although there were no injuries, the driver and some of the passengers were reported to have suffered shock. All passengers were taken off the train by 23:40 to the village hall at Godmersham, from where onward road transport was arranged.

The train was re-railed by approximately 22:30 on 27 July and repairs to the damaged track and signalling were put in hand. This included some 400 metres of conductor rail.

JAMAICA SIDE-SWIPE

Afternoon peak-hour service was suspended on 17 July following a side-swipe collision at the busy Jamaica junction in New York. Preliminary findings suggested that the driver of a Huntingdon-bound train ran past a stop signal and collided side-on with a double-decker trainset. Nobody was hurt in the accident.

GANG TERRORISES CAPE TOWN TRAIN

A gang of about six, armed with knives, boarded a train at Retreat and proceeded to rob everyone in the coach. This happened at about 19:00 on 22 July, on a southbound service. Apparently there were no security staff on the train.

25,006 INDIAN RAIL FATALITIES IN 2014

The majority of railway accidents (61.6%) were due to falls from trains or trains hitting people on the tracks (17,480 out of 28,360 cases). Altogether, rail accidents claimed 25,006 lives in 2014. The National Crime Records Bureau (NCRB) report said 28,360 cases of "railway accidents" were reported during the year - a decrease of 9.2% compared with 2013 (31,236 cases).

REAR-ENDER AT BOOYSENS

On Friday evening 17 July, Metrorail commuter train 9404 ran into the rear of train 9934 waiting at a red signal (CRN69) on the Up Slow track between Booyens and Crown stations on the Rand Mineral Line, immediately south of the Johannesburg CBD. As invariably happens following an incident of this sort, press estimates for injury numbers varied widely - between 100 and more than 400 in this case. Official statements (which suggested an injury tally of 239) put the blame for what happened on a reportedly defective signal (BOY80). Specifically, it was stated that the signal - which should have protected the stationary train - was displaying a yellow aspect, permitting the second train to enter the occupied section. Investigation by the Railway Safety Regulator (RSR) disclosed that signal BOY80 had received technical attention for a fault during April but there had been no follow-up or other checks. On detailed examination late in July, the RSR determined that the signal had been incorrectly wired.



Rear-ender at Booyens

COAL TRAIN DERAILS NEAR DALLAS

A train of more than 130 wagons derailed 26 near Dallas, Texas, on 26 July. The crew were not hurt and the accident affected nobody as it occurred away from any houses. A quantity of coal was spilled.



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B TRAIN SUICIDE, NEW YORK

Allegedly caught cheating on common core testing at Teachers College Community School, Jeanene Worrell-Breeden, 49, jumped in front of a B train at 135th Street station in New York City on 17 April. She was pulled out from underneath the train and admitted to hospital but died a week later. Worrell-Breeden was founder of Teachers College Community School.

22 TANKCARS DERAIL: RESIDENTS EVACUATED

On 16 July near Culbertson, Montana, 22 tankcars out of 106 derailed in a Burlington Northern Santa Fe Railway (BNSF) train bound for Anacortes, Washington state, from Trenton, North Dakota. An estimated 35,000 gallons (132,489 litres) of crude oil spilled. A power line was knocked over in the accident, resulting in the evacuation of residents from nearby homes as a precaution in case a fire broke out. A hazardous-materials team contained the spill with earth dams and no waterways were affected.

HORRIFIC ACCIDENT: KIWIRAIL PLEADS GUILTY

On 17 June 2014, Paul Anderson (37) was working an excavator on a New Zealand rail line. He had been told that a passing train was the only one that day - but then he was hit by another. He suffered severe head injury, though the rest of his body was unhurt. Due to bad weather, he could not be flown to hospital and reportedly his brain was deprived of oxygen during the journey by road. To date he has been in hospital for a year, movement confined virtually to his eyes and eyebrows, unable to speak or eat. He is fed through a stomach tube. His partner and two daughters visit when they can, but home is 90 minutes away.

It is believed KiwiRail, the national railway of New Zealand, pleaded guilty to two charges arising from the incident and was to be sentenced in August. It is understood that several changes have been effected in procedures affecting infrastructure workers.

LANGWORTH DERAILMENT

Train 6E54 was the 10:39 from Kingsbury Oil Terminal to Humber Oil Refinery, consisting of a class 60 locomotive and 22 empty, diesel fuel, tank wagons. The train was travelling at approximately 77 km/h approaching 101B facing points, when the driver reported seeing a kink in the left-hand rail. Shortly afterwards, the train's brakes automatically applied, bringing it to a stand. Wagons 11 and 12 from the leading end had derailed, each by one bogie, and wagon 13 by both bogies. They had remained upright. The train had then separated at the trailing end of wagon 13 and there was a gap of about 250 metres to the rest of the train. The following six tank wagons, ie wagons 14 to 19, left the track completely and some rolled over. Wagon 20 was derailed by the leading bogie and wagons 21 and 22 remained on the track. The separation of the train had caused the continuous brake pipe to part, applying the brakes to the whole train.



Derailment at Langworth

There were no injuries, however, substantial damage was caused to the infrastructure, including the points and signalling equipment. There were no reports of leakage of diesel fuel residue from the tanks. CCTV images of the site appear to show a track buckle forming close to the 101B facing points.

TRAIN PASSENGERS DIE AT CZECH CROSSING

On 22 July, three passengers died in a fast passenger train travelling from Bohumin to Frantiskovy Lazne when it collided with a truck on a crossing at Studenka, in the east of the Czech Republic. Eighteen were reported hurt, three badly. The truck driver managed to exit his vehicle before the collision and was not injured - but he was arrested. The accident closed the main-line from Prague to the east of the country for some time.

CTA ELEVATED TRAIN DERAILS

On 5 August, a four-coach train derailed on the Chicago Transit Authority's elevated Green Line. There were no injuries. The municipal fire department evacuated 78 passengers, including two in wheelchairs. Normal service was restored soon afterwards.



Train on the Chicago elevated railway.

RUNAWAY WAGON COLLIDES WITH MUSEUM LOCOMOTIVE

The New York, Susquehanna and Western Railway operates more than 640km of track in three states. On 21 July, one of its wagons, carrying plastic pellets, inexplicably "ran away" down Schuyler Street in Utica, ending up colliding with a museum locomotive at Union station. The loco moved, causing considerable damage to the building, which is used by Amtrak, the Adirondack Scenic Railroad and also bus lines. The railway is endeavouring to discover exactly what happened and the police are investigating too.

TORONTO PASSENGER SERVICES DISRUPTED

The derailling of seven flatcars carrying containers on a bridge near Bowmanville, 63km north-east of Toronto, on 18 July, disrupted passenger train service between Toronto and Ottawa, as well as Toronto and Montreal. The Canadian National Railway freight train was westbound but services in both directions were blocked. Via Rail, which operates passenger trains in Canada, said it arranged alternative transport for people actually travelling at the time, but all other trains were cancelled.

VAN HITS TRAIN: 1 DEAD

A front-seat van passenger died when it ran into the side of a train in Middletown, Ohio, on 29 July. Nine children were admitted to hospital. The crossing gate was down and the lights were flashing. The police suspect the 62-year-old driver – who also went to hospital – was “somehow distracted”.



Van into side of train.

REAR-ENDER IN VIRGINIA

On 14 July, a westbound Norfolk Southern freight train consisting of three locomotives and 54 wagons

had its last five vehicles (fortunately all empty) derailed when hit from behind by another train. The locomotive of the second train also came off the track and two crew members were hospitalised. Some diesel fuel was spilled. The collision occurred near Dublin, a small town in Western Virginia. The derailed wagons landed in a resident's yard, crushing his scooter.

GERMISTON: R30M FIRE DAMAGE

The Passenger Rail Agency of South Africa (Prasa) estimates the cost of damage caused by the fire at Germiston station on 14 July at R30 million. Apparently there had been delays to the service and furious commuters set four coaches in a train ablaze. The flames spread to the station infrastructure and electric cables. Services were badly disrupted as the affected trainset was supposed to operate several successive trips.

TRANSNAMIB ACID TRAIN DERAILS

On 13 July, a 20-wagon TransNamib train hauled by two locomotives derailed a vehicle conveying sulphuric acid near Dune 7 between Walvis Bay and Swakopmund. Emergency workers from the Rössing mine at Arandis (where the cargo was headed) assisted TransNamib personnel in cleaning up the spill, which was reportedly not serious, and rerailling the wagon. Rail services on the line were delayed until the scene was cleared.

TRAIN DERAILS HITTING SEMITRAILER

The driver of a semitrailer in Sandusky, Ohio, trying to reverse the rig onto an access road on 9 July, became stuck in mud with the cab on a rail line. The inevitable happened: a train arrived. The truck driver baled out in a hurry, watching the cab section being carried almost a kilometre, at which point the locomotive derailed.

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MASS EVACUATION FOLLOWS ACCIDENT

On 2 July, in Maryville, Tennessee, a 57-wagon CSX freight train en route from Cincinnati to Waycross in Georgia derailed one vehicle in the consist that was carrying acrylonitrile. Fire ensued. The US Environmental Protection Agency (EPA) was notified and local authorities evacuated everyone in a 2km radius around the derailment, affecting some 5,000 residents. On-scene coordinators along with an EPA emergency response contractor carried out air monitoring and water quality, due to the site's close proximity to Culton Creek. Twelve people were admitted to hospital with exposure symptoms, and all impacted soil was excavated. Train operations only resumed on 6 July.

TRAIN IN CANAL - 19 DEAD

On 3 July, four coaches of a special train from Pano Aqil in Sindh, Pakistan, en route to Kharian in Punjab with more than 200 passengers - mostly army men - on board fell into a canal near Gujranwala due to a bridge collapsing. Initially 14 people were listed as fatalities but subsequently five more bodies were located in the water. Investigations suggested that a defective locomotive wheel caused a derailment while the train was on the bridge. Sabotage was ruled out as a possible reason for the accident.



Indian train in canal.

DERAILMENT IN SOUTH-EAST LONDON

On 3 June a train comprising 22 empty wagons hauled by a class 66 diesel locomotive derailed at low speed on a curved section of the single line linking sidings to

the North Kent line at Angerstein Junction, south-east London. According to the UK Rail Accidents Investigation Branch (RAIB), the leading wheelset of the 11th wagon derailed as it was passing over a set of trap points 50 metres before the junction with the North Kent Line; these points had been correctly set to allow the passage of the train.

The derailment occurred after the front of the train had run onto the North Kent Line and was braking on the approach to a stop signal. The driver was not immediately aware of the derailment and restarted his train from this signal when it cleared. The remaining wheels of the 11th wagon, and all wheels on the 10th and 12th wagons, were then pulled off the track as they continued over Angerstein Junction onto the Down North Kent line and over part of a crossover between the Up and Down North Kent lines.

The train continued along the Down line until it was stopped, having travelled about 160 metres after the initial derailment, by an automatic brake application caused when a brake pipe broke between two of the derailed wagons. Although routed onto the Down North Kent line, the derailed wagons stopped in a position where they were foul of the adjacent Up line.

There was no train on this part of the Up line when the derailment occurred. The derailment caused damage to wagons, cabling and signal equipment, and track. Train services on the North Kent line suffered disruption until 5 June.

The accident occurred at a place where a similar train derailed on 2 April 2014. RAIB investigations are continuing.

ILLINOIS: 8 OUT OF 105 WAGONS DERAIL

Amtrak was forced to cancel four trains near Pontiac, Illinois, on 7 July, following the derailing of eight wagons in a 105-vehicle, three-loco, Union Pacific freight. No injuries were reported but the driver of a van parked near the track had a narrow escape, jumping out seconds before it was crushed.

SECOND DERAILMENT IN TENNESSEE

Less than a week after a CSX wagon carrying acrylonitrile derailed in Maryville, Tennessee and caught fire, four CSX vehicles carrying mixed freight derailed and flipped over in Berry Hill, South Nashville, Tennessee, on 6 July. Three of the four derailed wagons were carrying polypropylene beads used for packaging, the other sheet steel. No injuries were reported.

TECHNICAL PROBLEM DELAYS GAUTRAIN

Gautrain services on the north-south line ran 30 minutes behind schedule in the morning peak hour on 1 July, reportedly due to a technical problem at Pretoria.

It was originally planned to have trains from Johannesburg running beneath the Pretoria Metrorail station, in a continuous operation as far as Hatfield. As built, the Gautrain station is a dead-end terminal in which trains reverse direction. This involves the setting of points which could account for technical problems.

TRAIN OVERRIDES PLATFORM END

On 12 July, an empty commuter train overran the end of the dead-end platform 10 line at Kolkata's Sealdah station, and two coaches derailed. It is suspected that the



Sealdah station in Kolkata.

shunter driving the set dozed off and failed to apply brakes in time. Neither he nor anyone else sustained injury but the leading coaches were badly damaged, with the roofs collapsing. Another set was arranged to take over the 12 July scheduled departure to Laxmikantpur.

TRAIN COLLIDES WITH SLEEPER

Train 5J61, comprising two class 170, three-car diesel multiple-units, was the 04:20 empty coaching stock scheduled from Norwich Crown Point Depot to Lowestoft on 18 June 2015. It was travelling at about 56 km/h when just after passing through Somerleyton station, at around 05:50, the driver reported that his train had struck something. He applied brakes and brought the train to a stand.

Leaving his cab, he found a wooden sleeper wedged underneath the front of the train, which he removed. He found another two sleepers nearby; one lying in the middle of the track under the train and one lying close to the track, a short distance behind the train. There were no injuries, and there was only minor damage to the train.

Train 5J61 was the first train to pass through Somerleyton following engineering work the night before.

Work had taken place to collect bundles of scrap wooden sleepers alongside the railway between Somerleyton and Oulton Broad North (towards Lowestoft), using a road rail vehicle with front and rear trailers. During this work, three sleepers fell onto the railway.

Investigation by the Rail Accidents Investigation Branch (RAIB) will examine the sequence of events leading up to and during the collision, the engineering work that took place earlier that night to collect scrap wooden sleepers including its planning and the method of work, and any relevant management issues.



The road rail vehicle and trailers used to collect scrap sleepers. Photo: Network Rail.

BOMB DERAILS TRAIN

The locomotive and three coaches in India's Palamu Express to Patna derailed following the detonation of a bomb in Jharkhand's Latehar district. According to the driver, he braked immediately on hearing the explosion but could not stop before derailling on the damaged track. Maoist rebels were suspected as being responsible. Security forces were rushed to the scene but fortunately no injuries were reported.

TRAIN DRIVER SEVERELY SHOCKED

The British Rail Accident Investigation Branch (RAIB) recently released its report on an incident at Sutton Weaver in Cheshire in which a train driver received a severe electric shock. Apparently one of the overhead wires had broken, was hanging down and remained electrically live. Two previous trains had come into contact with this, tripping



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the supply circuit breakers. These were duly reset by the control operators. The driver of the third train observed the broken wire, stopped and left his cab to obtain information pinpointing the location. In some way he came into contact with the broken wire and was severely shocked.

TRANSNET VEHICLES TORCHED

Transnet opened a case of arson with the police at Ermelo in Mpumalanga following the torching of two minibuses, a truck and a van one night recently. It is suspected that the incidents were linked to a number of 10-day contracts given out during the line-shutdown maintenance period. The temporary workers apparently indicated dissatisfaction with the short-term provisions, demanding long-term contracts.

LOCAL INTO MUMBAI BUFFERS

Press reports spoke of commuter "panic" on 28 June when a Mumbai local electric multiple-unit set crashed into and partially

overrode the buffers on the dead-end platform 3 track at Mumbai's Churchgate terminus. One press report said a woman was seriously hurt. The leading motor coach was slightly damaged and an overhead catenary wire broke and hit a woman as she was alighting. Fortunately it was not live. One passenger who was examined at hospital for minor injuries had been involved in two previous railway accidents, in one of which a hand was fractured. The driver was taken for medical examination, to determine whether health matters had anything to do with his approaching the end of the line too fast, or if he failed to apply brakes timeously.

Reportedly eight people were hurt in a similar incident at the same station in 2011.

TUNIS COLLISION KILLS 17, 70 HURT

On 17 June, an express passenger train heading to Gaâfour from Tunis (120km to the north-east) derailed when it collided with a truck at an open, unprotected crossing about 60km into its journey. "At least" 17 people – mostly train passengers

– were reported dead, and some 70 injured. Transport Minister Mahmoud Ben Romdhane was quoted saying that Tunisia has 1,150 level crossings, only 400 being equipped with signal equipment.

GAUTRAIN 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.



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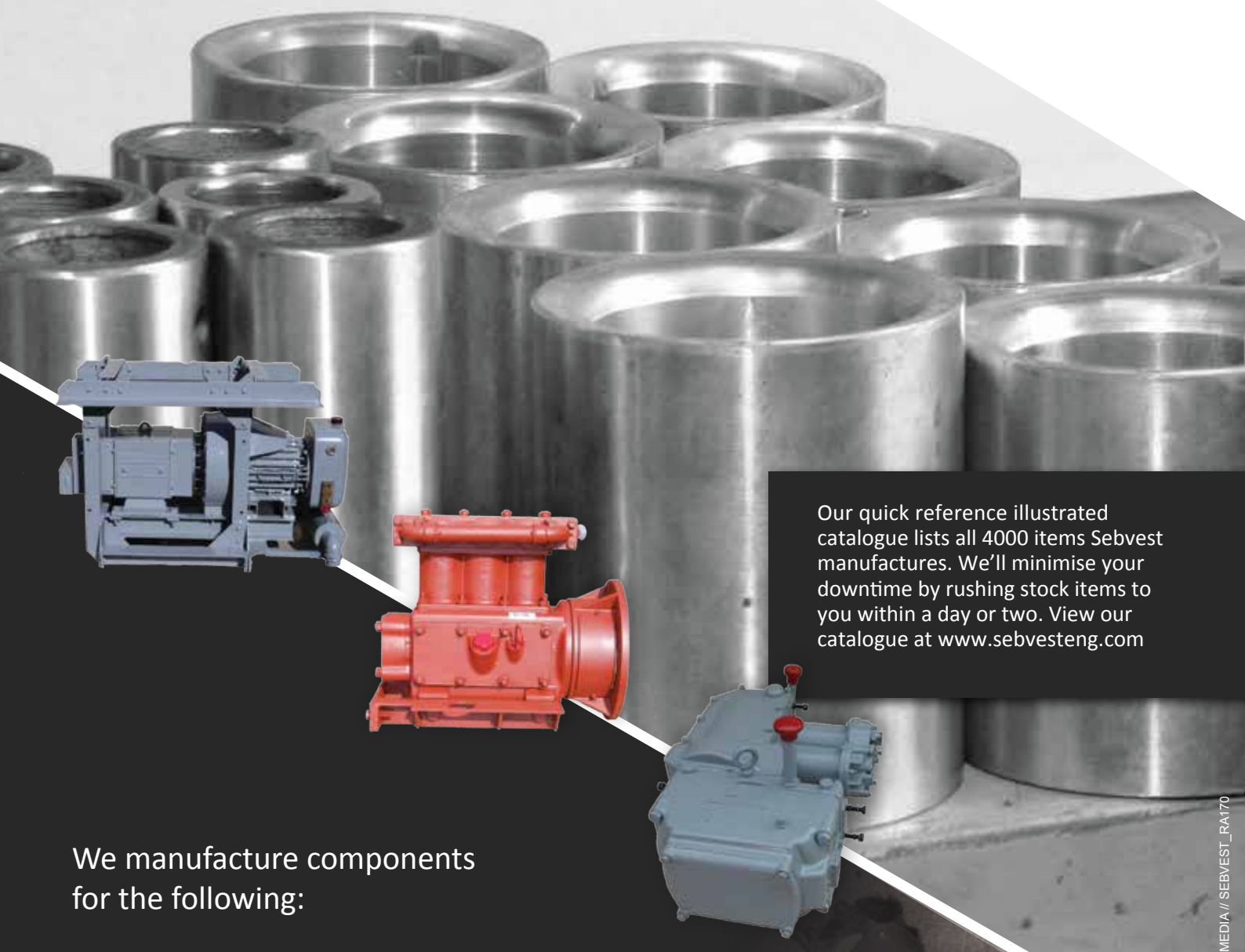


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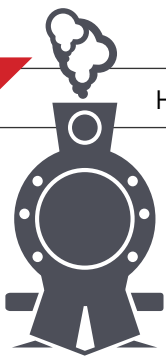


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ON THE WIRE MEDIA // SEBVEST_RA170



Railway Preservation

By John Batwell

Apple Express Port Elizabeth

On 28 March 2015, no 91-001 – the class 91 blue-liveried diesel locomotive that hauled the Port Elizabeth-Avontuur narrow gauge line centenary train in December 2003 – was placed inside her new home at the Outeniqua Transport Museum in George.

At the museum, 91-001 – the first diesel locomotive to be put on display – has been placed in front of NG15 no 122.

During her working career, 91-001 worked out of the Transnet Humerail Diesel Depot as well as at the Alfred County Railway on the South Coast of KwaZulu-Natal, where she was involved in an unfortunate accident with 91-009. After rebuilding, she was painted Spoornet Blue, the only narrow gauge diesel locomotive to carry this livery.



Class 91 diesel no 91.001, 610mm gauge, on display in the museum in George.
Photo: A Auxier

Atlantic Rail, Cape Town

Atlantic Rail had to suspend its steam train service to Simon's Town due to the poor state of the track south of Fish Hoek. Not deterred by this setback, a steam train to Stellenbosch has been the order of the day, with passengers delighting in the Spier Estate and surrounds. The operator's class 16DA Pacific no 879 works this service.



Atlantic Rail's class 16DA Pacific no 879 on a Stellenbosch working. Photo: P Rogers

Reefsteamers, Germiston

In late July this club held a very successful and well-attended Open Day. Patrons were conveyed by steam train from Park Station in Johannesburg, owing to very limited parking facilities for vehicles at the Germiston site.



Reefsteamers' class 15F 4-8-2 no 3046. Photo: D Benn

South African locos in New Zealand relocating

Mainline Steam Trust is moving its former South African-acquired locomotives out of its Parnell site (where the land is required) to the KiwiRail Yard by the Port at Quay Street. This will be a temporary stop until they can be relocated to NZ Steel at Glenbrook, which have generously agreed to store the locos until Mainline Steam Trust can develop a new facility.

The locos involved are two class 25NC 4-8-4s – nos 3432 and 3508 – and GMAM 4-8-2 + 2-8-4 no 4083.

Friends of the Rail, Pretoria

In mid-June, this club made its class 19D 4-8-2 no 2650 available for the usual winter photographers' session in Pretoria and Cullinan; and Rovos Rail's vintage class 6A no 439 was steamed up in Pretoria. Both locos were in steam again during the first weekend in July, when a public open day was arranged embracing old steam locomotives and cars.

Thieves have been on a pillaging spree again at Zonkolol on the heritage line between Pretoria and Cullinan, systematically cutting and stealing track

despite Transnet Freight Rail's efforts. According to Transnet trackmaster Willie Zowitsky, this has to be the result of organised crime as one metre weighs about 40kg - and the thieves take 20 metres at a time. "They would need cutters, manpower and transport to get the steel out, so obviously it can't be petty criminals," he says.

"We have been trying to make it more difficult for them to steal parts but the thieves are persistent," Zowitsky says. He thinks these tracks are probably targeted because people think the line is no longer in use.

Nathan Berelowitz, chairman of the Friends of the Rail, says they are frustrated by the constant theft of track, "It's like as soon as they are replaced then the people come back and take more."

"We manage a steam train on occasional weekends for holiday-makers and it's very upsetting when this happens. It's becoming more frequent and we've no idea how to stop them."

Rovos Rail's class 6A no 439 Tiffany made her appearance at a public day at Hermanstad. Photo: J Attwell



Umgeni Steam Railway, KwaZulu Natal

In recent months, boiler tubes were on order for this club's North British class 3BR locomotive no 1486. Class 19D no 2685 has been the solitary stalwart in the group's fund-raising operations this year.



Steam runs on Fathers' Day in Zimbabwe

In June the National Railways of Zimbabwe ran a public train from Harare to Ruwa on the Mutare section in the Eastern Region. Class 15 4-6-4 + 4-6-4 Garratt no 395 was relocated from Bulawayo shed to the capital to run this train.

NRZ class 15 4-6-4 + 4-6-4 Garratt no 395 on the Fathers' Day run from the capital to Ruwa. This loco had just returned from industrial usage at Hwange prior to working this public train. Photo: A J Buckley

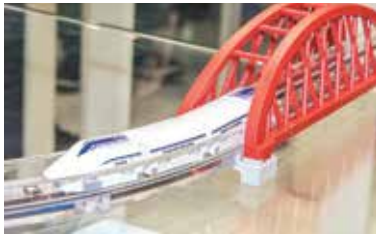
TRAIN KILLS PHOTOSHOOTER

A California photographer doing a photoshoot used a southbound train as a backdrop to his female model. He appears to have forgotten where he was standing, but a northbound train quickly put him right. Right out of the picture, in fact. Unhurt, his model is alive and well and living in Fresno.



HORNBY DREAM

Older readers who grew up with Hornby trains, progressed to Lionel and ended up with LGB, have a new toy to look forward to – a model that isn't clockwork, or two-rail electric or even controlled by radio. The Takara Tomy "LinearLiner" Shinkansen model, planned to be in the shops by September, is a miniature of the new magnetic levitation high-speed express currently being tested by the Central Japan Railway Company.



The LinearLiner operates on the same principle as the real thing, It floats by magnetic energy, 2mm above the rail, achieving an impressive 6 to 7km per hour, equivalent to 500km/h in scale terms. The new toy comes at a price, of course. It will set you back somewhat more than the

smallest Hornby set - at seven-shillings-and-sixpence in 1938. In fact, it doesn't sound all that unreasonable at \$315.00.

TICKETS PLEASE

In assessing the world of the railway,
Zimbabwe comes low on the list.
In fact, south of the Tropic of Cancer,
There's a lot that wouldn't be missed.

Tradition impugns the colonialists -
The nerds who laid narrow gauge rails
The legacies left to this continent
Make hugely unpalatable tales.

True, they make for
convenient excuses

To explain away why our trains fail,
Because of the state of the trackage
Or whatever gives cause to derail.

If it isn't the Pandrol clips stolen
By entrepreneurs in the night,
It's dealers in signal wire copper
Whose trade is the cause of our plight.

The truth of the tale is apparent -
In Africa, anything goes,
Like a handful of motionless railways
And broken down engines in rows.

~ LRD



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