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African shipwreck?



No, just a break-up.

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Nuclear, good engineering and corruption

By Andrew Kenny

IF you take the West Coast road from Cape Town to Saldanha Bay, you might be slowed down by a huge trailer carrying a massive cylindrical thing 20 metres long and weighing 380 tons. This is a steam generator for the Koeberg Nuclear Power Station. It is an excellent piece of engineering that will give Koeberg at least 20 years' more clean, safe, cheap, and reliable operation. It is unfortunately mired in controversy and corruption.

Koeberg uses PWRs (Pressurised Water Reactors), by far the most widely used around the world, with an excellent record of safety and reliability. The reactor is immersed in water at high pressure (150 bar). It heats the water to about 320°C. The hot water is pumped to three heat exchangers, known as steam generators (SGs), where incoming feedwater is turned into steam. The steam drives the turbine, which turns the generator, which makes electricity. The steam from Koeberg is at low temperature (about 280°C) compared with the steam in coal stations (about 550°C). This gives Koeberg lower thermal efficiency but longer life.

Steam generators, which provide an extra radiation barrier, were in the early days regarded as the achilles heel of PWRs. This is because some developed stress-corrosion cracking at the tube sheets, which caused leaking. With better materials, modern SGs avoid this. Worldwide, there was a programme to replace the old SGs with new ones. Koeberg's SGs have performed remarkably well and don't need replacing for a long time. But to meet best practice, it was decided to replace them anyway.

Major operation

SG replacement is a major operation but a routine one. It may be compared with a hip replacement operation. Koeberg has two units, each with three SGs. Replacing all six would cost about R5 billion. In 2010, Eskom put out tenders to Westinghouse and Areva. Westinghouse is the US company that pioneered PWRs from the start of the nuclear era. In recent decades, however, Westinghouse has much reduced its operations and is now Japanese-owned. Areva is a French company, formerly called Framatome. It modified Westinghouse designs, and built a series of suc-



cessful nuclear stations in France, which today provide 75% of French electricity. It also built Koeberg, which has run successfully since 1984. However, there was a long pause in reactor building, during which Areva lost experience and expertise. The building of its new EPR reactors in Finland and France has gone badly.

Westinghouse and Areva submitted their tenders in 2010. Eskom technical committees examined them and found Westinghouse better in every way: cheaper, technically superior and offering better support to Koeberg. It was unanimous: Westinghouse would get most of the bid. In April 2011, Eskom signed the contract. Celebrations began at Westinghouse. Then, suddenly, Malusi Gigaba, Minister of Public Enterprises, refused to sign off administrative approval, regarded as a formality. He gave no good reason. The deal was off.

Then followed years of controversy and court action. Eskom went out to tender again, and Westinghouse looked best, but Areva won the bid. There was an appeal by Westinghouse, rejected by the lower court, upheld by the Supreme Court, and finally suspended by the Constitutional Court on the ridiculous grounds that the appeal came from Westinghouse Belgium rather than Westinghouse USA.

Made hurriedly and badly

Eventually Areva won the contract to replace the SGs and immediately proved its incompetence to do so. Its SGs were to be assembled in China, using some French forgings. The forgings were made hurriedly and badly, and then flown from France to China, where they failed quality control

and had to be scrapped. This gave rise to the phrase 'the most expensive transport of scrap metal in the history of humankind'. They were made instead by the excellent Japanese Steel Works. Finally, ten years later, the new SGs are being delivered to Koeberg for installation next year. They have been rigorously tested and are good – at last.

What a horrible expensive mess! The whole affair stinks of corruption, although nobody is quite sure who has bribed whom. Areva's reputation has been badly damaged. Gigaba has been implicated in corrupt acts in other places and has been before the Zondo Commission. At the time, Eskom was in the thick of state capture, with characters like Matshila Koko, Zola Tsotsi and Collin Matjila holding powerful offices. I wonder why none of the SG scandal has been heard by the Zondo Commission.

Opponents of nuclear power are delighted to link nuclear and corruption. In this instance, they have a point. But the ANC is innately corrupt, and has looted and wrecked nearly every undertaking of the state, including electricity, railways, airways, hospitals and municipalities.

Actually, nuclear is more difficult to corrupt than coal or other means of generating electricity. This is because only proven reactor designs are allowed, and because international regulation imposes discipline upon all nuclear operations. But I'm afraid there are still some opportunities for nuclear corruption, which Zuma probably sought and which the SG conspirators probably found.

The article first appeared in The Daily Friend October 11, 2020.

R700 000 donation brings relief



LtR: Paul Delpont, Engen Lubricants Distributor Sales Manager, Andrea Campher, AgriSA Disaster Risk Manager with Jason Rathbone, Engen Lubricants Key Account Manager.

IN response to severe drought across vast tracts of South Africa and the associated hardships experienced by many farmers, Engen partnered with AgriSA earlier this year to help support the agricultural sector by driving contributions to their Drought Aid Fund.

Over a six-month period, Engen contributed R1 to the Fund for every litre of participating Engen lubricant sold nationwide, raising R700 000 from April to September.

AgriSA's Drought Aid Fund is aimed at ensuring that farms remain in production and that jobs and food security are protected.

The official handover of the money occurred in Menlyn in Pretoria on 8 October.

Khalid Latiff, Engen's General Manager: Lubricants says that Engen is proud to play a part in an initiative that helps alleviate the adversity of thousands of farmers and farm workers given the company's close ties to the agricultural sector.

"As a leading supplier of high-quality fuels and lubricants to the agricultural sector in South Africa we have witnessed first-hand the impact that the ongoing drought has had on farming communities. We sincerely hope that our partnership with AgriSA will help ensure the sustainability of this crucial sector."

Andrea Campher, Disaster Risk Manager of AgriSA, thanked Engen for their support as drought is still prevalent in many provinces.

"The contribution of Engen will go a long way to assist farmers, farm workers and farming communities who are still suffering from this long-lasting drought. We will work closely with our provincial affiliates to ensure the aid reaches those who need it the most," says Campher.



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Chamber survey raises doubts about network stability

AMID rising complaints from its members regarding the stability of digital platforms during its virtual gatherings, the Cape Chamber of Commerce and Industry took a survey of 136 members to measure opinion of its extent.

"While the problem was not as widespread as feared, the results question the ability of the local network to handle increasing traffic as businesses switch to virtual offices, working from home, and expanding their digital communication," according to Ms Janine Myburgh, President of the Cape Chamber of Commerce and Industry.

"While we have not polled enough users to reach definitive opinions, it is clear that signal-dropping can cause disaffection with the new method of working -- and in some cases spoils the experience for all participants, even when only one person is cut off or cannot be seen or heard -- especially if that person is the customer or key-

note speaker.

"As far as we know, our survey is the first of its kind across many service providers, to measure how each is performing against the rest in the sample.

"The results are not an indication of a national problem, nor is it a definitive judgement of network performance in Cape Town. A national survey with a far larger sample is needed to provide that.

"What we do have is evidence that the system is taking strain. "If we are to present Cape Town as a modern city on a par with the likes of Chicago, London, Paris or Shanghai and Hong Kong, the quality of digital services that the City offers will have to match the international norm," Ms Myburgh said.

"We will be sharing user comments and other data in our survey with service providers," she said. The raw data is available to members of the Chamber and by request to keith@capechamber.co.za

Stor-Age and Equites healthy

TWO of Cape Town's biggest property specialists, Stor-Age and Equites, have seen their respective niches in storage and warehousing immunise profits from the ravages of the Covid-19 pandemic.

In a recent trading update Stor-Age said its property portfolio delivered a robust operating performance over the last six months with group occupancy increasing by 10 000m² since March 2020.

Stor-Age said an intense operational focus and discipline at a property level - supported by a specialised digital marketing platform - enabled it to extract occupancy and revenue growth in a particularly difficult trading environment.

CEO Gavin Lucas said: "Our hands-on management approach across both the SA and UK markets remains critical to delivering superior performance."

In SA, year-on-year occupancy grew by 11 500m² (8 800m² on a like-for-like basis).

Lucas argued that the high levels of demand experienced, together with the growth in occupied space, continued to support the self-storage investment theme of resilience and the ability of the sector to outperform during an economic downturn relative (to the broader property market).

He indicated that the closing rental rate was up approximately 5.5% year-on-year in SA. The bulk of Stor-Age's portfolio is still held in Cape Town with 16 sites - stretching from Brackenfell to Gardens and Bellville to Sea Point.

Lucas said that to increase customer retention and retain occupancy, Stor-Age suspended rental rate increases to customers in April 2020 - but recommenced with the customer rate increase programme in August 2020.

He noted that in SA

the company selectively increased promotions offered to new customers moving in during the period to drive occupancy growth. "For the second half of the 2021 financial year, we expect promotions to be in line with pre-crisis levels."

Lucas said Stor-Age immediately saw a significant reduction in enquiries and overall activity (both move-ins and

move-outs) as soon as the lockdowns commenced. This caused a decrease in occupancy in April and May. "As lockdown restrictions were eased, our primary focus was improving enquiry generation and driving move-in activity with a view to increasing occupancy."

By the end of May, Lucas said enquiry levels returned to pre-Covid-19 levels.

"Despite the severely curtailed economic activity in the six-month period to end September 2020, enquiries achieved in SA and the UK were 14% and 19% ahead respectively of the prior comparable period on a same store basis."

In the six-month period ending September 2020, Stor-Age collected 96% and 98% of rental due in SA and the UK respectively.

Lucas stressed that the collection of rentals and recovery of debt remained a key focus area. "Given the elevated risk levels in this area, we have committed additional resources to the task of cash collections, and we continue to refine and improve our internal processes..."

In SA, Stor-Age also offered settlement discounts and concessions to customers of approximately R2 million to improve cash collections.

In terms of new developments, after the easing of lockdown restrictions construction work recommenced at Tygervalley as well as the kicking off of the first



phase of construction at Sunningdale in early June.

The Sunningdale development on Cape Town's western seaboard - is being developed in a joint venture with Garden Cities. When completed, Stor-Age will earn ongoing property management fees from managing the property.

As at the end of September, Stor-Age's secured development pipeline comprised approximately R740 million of new properties - which will add an estimated 53 000m² of gross lettable area.

The best news for Stor-Age shareholders is that the company intends its interim distributable earnings to be around R220 million for the six months ending September 2020 - up 3% from the prior year's interim period.

Equites, which is the only specialist logistics REIT (real estate investment trust) on the JSE and boasts a market value of R11 billion based on 63, also pulled through the Covid-19 impasse with aplomb.

For the six months to end August, Equites - which built much of its early fortunes on properties in the Airport Industria node - reported an enviable average collection rate above 99.0%.

More importantly, Equites sits with cash and un-drawn facilities

Food for thought at the Waterfront

THE V&A Waterfront will be opening its new Makers Landing - a R63 million, 4 348m² development - in early December.

Makers Landing is a new-concept curated food destination where visitors can experience a 'farm to fork' concept - with a distinct South African flavour.

The development will consist of farmers and fishermen supplying daily fresh produce to a market area with 35 stands as well as distillers, bakers, cheese makers and butchers.

There will also be five large anchor restaurants and eight small co-op eateries as well as an interactive 'demo' kitchen.

in excess of R1 billion - which means it is comfortably able to execute on its development pipeline.

Equites Andrea Taverna-Turisan said Covid-19 had accelerated e-commerce penetration globally and fuelled demand for prime modern logistics space.

"As COVID has shifted the e-commerce growth curve forward by a few years, we expect strong occupier demand for new A-grade logistics facilities in the short-to medium-term." This is strongly benefiting Equites' sprawling UK operations.

But in SA, the economy has been marred by a number of structural weaknesses. Taverna-Turisan said that

although e-commerce penetration in SA was relatively low in 2019 at 1.4%, research suggested that online retail sales could be more than 5% of total retail sales in SA during 2020. This would, in part, be attributable to Covid-19.

"While e-commerce adoption has been credited with robust growth, we expect the strongest driver of occupier demand in the SA logistics market to stem from supply chain optimisation, as there is a clear trend of large retailers having a renewed focus on investing in digital transformation and their online platforms, which is typically supported by additional warehouse space."

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DGB gets well fortified

DGB, the Wellington-based liquor group, has found new owner and instituted a new leadership structure aimed at pursuing new growth opportunities in a post Covid-19 environment. Last month investment company Brait – which has retail tycoon Christo Wiese as a major shareholder – sold its controlling stake in DGB to private equity firm Capitalworks and outgoing (and long serving) CEO Tim Hutchinson.

The size of the transaction was not disclosed by DGB. But Brait's latest investment reports suggest a figure of R470 million.

Transactions of this size in the liquor industry are fairly rare these days. The last 'big deal' saw Hosken Consolidated Investments selling its controlling stake in Paarl-based KVV to billionaire Viv Imerman for R1.15 billion 2016.

DGB is the owner and producer of leading wine brands like Boschendal, Brampton, Franschoek

Cellars, Bellingham, Douglas Green, Tall Horse and The Old Road Wine Co.

The company also owns spirit brands like Strawberry Lips cream, Zappa Sambuca, PO 10 C, Tang Sour Apple, Tant' Sannie Melktert cream and Butlers liqueurs. DGB also distributes well known international brands like Jägermeister, Bacardi, Patron, Grey Goose, Bombay Sapphire, Bavaria, Fever Tree, San Pellegrino and Acqua Panna as well as iconic local wine brands Kanonkop, Graham Beck, Steenberg and Vergelegen.

The deal coincides with Hutchinson stepping down as CEO after an astounding 30 years at the helm. Hutchinson will hand over to Ricardo Ferreira, the current CEO of DGB South Africa.

Hutchinson – who spearheaded a management buyout from late mining magnate and wine industry doyen Graham Beck in 1999 – will become executive chairman.

Hutchinson's tenure at DGB was most fruitful. Since his appointment as CEO of DGB in 1990, he led the company through a growth phase that included developing an international wine business in over 70 countries as well as establishing a major production, winery, bulk-storage and bottling facility in Wellington. In 2005 DGB acquired the iconic Boschendal wine estate, and then bought Franschoek Cellars in 2009 and Brampton in 2012.

Hutchinson reckoned Capitalworks was an ideal partner for DGB due to their energetic pursuit of investment opportunities and the ability to unlock value for investors. "Capitalworks also has a very solid understanding of DGB's business."

He pointed out that Chad Smart, the founder of Capitalworks, had served on the DGB board of directors for eight years. "Having Capitalworks invested

alongside us, I am positive that we can really grow the business in the future, in a rapidly-changing and exciting environment."

Hutchinson added that Ferreira was the ideal person to take over as group CEO – especially in steering the company through the damaging outcomes caused by the abrupt shut down of the South African liquor industry as a result of the Covid-19 lockdown.

"Ricardo is my logical successor as he has been running our South African business very successfully since joining DGB in 2014 from SA Breweries."

Interestingly, Ferreira's promotion means that two of the biggest liquor groups in the Western Cape are headed by former SA Breweries executives – with Distell headed by Richard Rushton, who also served in a very senior capacity in the beer giant.

Garth Willis, a partner at Capitalworks, said that the



investment company focussed on partnering with exceptional management teams in businesses that offered the opportunity for significant growth. "We are extremely excited about investing alongside Tim, Ricardo and the rest of the DGB management team, who have grown the brand portfolio over the years and demonstrated an ability to guide the company through recent chal-

lenges."

Hutchinson believed the new energy at DGB would serve the company well at a time that the South African landscape for liquor companies had changed.

"I don't think I need to tell anyone how much the liquor industry has suffered during the protracted shutdown. DGB was certainly no exception. However, we went ahead with the transac-

tion as we are investing for the long-term."

He said much potential lay in the premium sector of DGB's wine brands, where there were excellent growth prospects both internationally and in the local market.

"One of the strengths of our business is that over 60% of our wine sales are in the international markets, to which we could continue exporting during the local lockdown."

Plastic stronger than wood

THE local industrial sector has been an uncompromising grind – even before the onset of Covid-19 – and only the fittest will thrive... or even survive.

Two of Cape Town's stalwart niche industrial plays – plastics manufacturer Bowler Metcalf and timber group KayDav – look suitably lean and mean to see out a prolonged grind as the SA economy tries to find traction.

Ottery-based Bowler posted an overall turnover improvement of 3% and a much more impressive 28% gain in bottom line earnings in the year to end June.

CEO Friedel Sass admitted the performance was boosted in the main by some fortuitous procurement windfalls from materials and a beneficial product mix in the packaging business.

Looking ahead, Sass reckoned the immediate trading proposition for Bowler's core plastics packaging business

appeared stable.

But he cautioned: "The business is sensitive to consumer's disposable income. The distressed state of the market, exorbitant energy cost hikes despite unreliable supply, incommensurate human capital cost increases and increasing societal disruptions impact the business directly.

Sass stressed management was stepping up to a next level of intense focus on operational efficiencies and agile performances.

Specifically, he referred to further expansions of the moulding capacity in the closures plant, various technology driven upgrades for both Bowler's Rigids and Tubes businesses would likely be in the region of R25 million to R35 million in the new financial year.

Sass pointed out that the lockdown impacted a lower than budgeted capital expenditure in

Bowler Packaging at R13.4 million.

He said planning for the R61 million of costs for upgrades and expansions in the Bowler Properties portfolio of the Western Cape had commenced late due to delays caused by the Covid-19 pandemic. Sass indicated these developments were now well on track. "It is envisaged that these upgrades and expansions will be completed by 2021, providing employment to some additional 200 workers in the building industry."

KayDav, which comprises a group of businesses involved in the distribution of wood-based panels and packaging consumables, endured a tougher time.

In the year to end June group revenue decreased by 13% to R417 million with turnover lost during level 4 and level 5 of the Covid-19 national lockdown in April and May.

In total KayDav lost revenue of R100 million – but was able to control

costs well with operating expenses decreasing to R96 million compared to the R115 million for the previous interim period.

This resulted in operating profit coming in only R2m lower at R14 million.

Looking ahead CEO Gary Davidson said low business confidence levels, consumer caution and pressure on disposable income would continue to constrain year-on-year growth in the general economy.

But he said it was pleasing KayDav had traded above prior-year levels during first few weeks after the close of the interim period. "But this is tempered by knowing that uncertainty still exists."

He said the group would remain focused on factors within its control – including improvement of its service and product offering to customers, containment of costs and strong capital management.

Caxton sheds fibre

PRINTING, publishing and packaging giant Caxton & CTP has offloaded a large portion of its Western Cape-based technology investments.

Last month Caxton sold its interests in network provider RSAWeb and fibre-to-home-network business Octotel for a whopping R493 million.

The two businesses were considered core to Caxton building a technology offering over and above core and traditional interests in printing, publishing and packaging.

Caxton has already steered some of its technology investments towards listed subsidiary Cognition – most notably its commanding stake in Cape Town-based real estate portal Private Property.

Caxton's initial investment in RSAWeb in 2013 was primarily intended to strengthen Caxton's relationship

with its network provider, and to provide RSAWeb with access to capital for expansion. In 2016 Caxton invested in Octotel and provided the fledgling business with capital to enable it to become one of the largest fibre-to-home operators in the Western Cape. Although both businesses have grown beyond expectations, Caxton received an offer from investment firm Neoma Africa Fund (which is managed by the renowned Actis Group).

Ultimately, Caxton felt RSAWeb and Octotel were both non-core investments, and needed "focused shareholder investors to take them to the next level".

It had earlier appeared Caxton had reined in its funding lines for Octotel. In the 2019 annual report Caxton had already reported that funding provided to Octotel

was not repeated in the current year. The company noted "The growth in this business was funded through third party sources and good progress has been made in building this exciting business."

At that point Octotel had fitted out over 100 000 homes, making it the largest fibre network in the Western Cape. Caxton added that with the ever-increasing connection rate of customers, the business is generating significant cash flows and has already accessed a third round of funding to continue the roll-out.

Aside from the R493 million purchase price, Caxton's loan account of R60 million will also be re-paid.

The proceeds will add to Caxton's already large cash pile of R1.7 billion. The company said it had not decided how to utilise the proceeds from the RSAWeb and Octotel sale.

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THE BEE IN MY BONNET COLUMN

The editor laments...

Theft with impunity

LIVING in South Africa, like every other place on earth, with the possible exception of Beirut, has its pros and cons.

Certainly for many fortunate Cape dwellers one would be hard pressed to find a more idyllic landscape of sun, sea and mountain vistas particularly now that the flowers are in bloom.

Against this sublime calm however is the reality of the Zondo Commission examining the theft of +/-R500 billion of taxpayers' money and

the ridiculous excuses of those called to account of where they obtained the money for a R3-million Aston Martin with a salary of just R143 000 pa. Or not noticing when R2,5-million is deposited into ones bank account...

It seems that Joe Public are regarded as fair game for theft and extortion not just by corrupt politicians and their cronies but also from the so called captains of industry. Quick to follow this example has created a trend of being able to

steal ones assets with apparent impunity, trickling down to Joe Public itself.

I am sure I'm not the only one that has entrusted pension monies with so called reputable pension administrators only to find that the returns promised in the bold type have not been realised on maturity. "Ah, but we are just the administrators" they say and shrug their shoulders after receiving 'administration fees' for decades.

Other souls are fighting for their pen-

sions from companies intent on renegeing on pension commitments after decades of contributions.

Those who have chosen to invest hard earned cash into properties that they rent out as their form of pension, also take on a huge risk where inept, perhaps corrupt officials allow unscrupulous tenants to effectively steal essential income.

In a typical scenario, a prospective tenant meets the credit bureaux criteria of being able to meet the

monthly rent, levy and utilities commitments. The property agents obtain a standard lease signed by both parties, and a deposit which is supposed to cover damages caused during the tenancy.

Tenant moves in and all goes well for a couple of months until the payments cease.

Letters of demand fly backwards and forwards until eventually the lessor has to employ an attorney to cancel the lease but the tenant stays put enjoying occupation, free board and lodg-

ing, water and electricity (unless it's on a prepaid meter).

Eviction proceedings I'm reliably informed can take anything from six months to five years! What a payment holiday!

Also, in a recent case in a secure estate where a tenant was conducting criminal activities - with video evidence from a concerned neighbour - the police took months to react and finally when they applied to a judge for a search warrant it has so far yet to be issued after two months!

I was told of a possible short circuit though.

It involves 'hiring' a couple of muscular gentlemen from a well-known West African state with a dubious reputation, to jointly occupy the premises after the tenant have received notice to quit.

Imagine coming home to find two large obnoxious strangers making themselves at home on your couch and waving a new lease! Better get out quick!

Eish.

Outlook for the agricultural sector into 2021

By Paul Makube,
Senior Agricultural
Economist at FNB

AGAINST the backdrop of a contracting overall economy with South Africa's gross domestic product (GDP) for 2020 forecast to decline by over 8% year-on-year (y/y), there is a silver lining in the agricultural sector outcomes for the next season. Following two consecutive quarters of stellar performance by the agriculture sector with 28.6% and 15% quarter-on-quarter (q/q) seasonally adjusted annualised growth, we expect a similar feat in the remaining quarters of 2020 due to a combination of a good crop harvest, strong agriculture exports and the unseasonably high commodity prices.

Broad summary of the agriculture outlook

- Agriculture growth momentum will continue into 2021, contributing positively to overall SA GDP outcomes
- Favourable production conditions on the back of a La Nina weather pattern will spur farmers to plant more area under summer crops and improve grazing for livestock.
- Supplies of grain, oilseeds and horticulture crops will be adequate for the year ahead.
- Surplus production of agriculture commodities will tame food inflation and contribute towards a benign overall consumer inflation in 2021.
- The implications are

for interest rates to remain at record lows for a bit longer, benefiting consumers.

- Strong export drive to continue due to the increased availability of product and high international demand.
- Positive feed input cost outlook for the livestock sector as higher grain and oilseed output will eventually limit further upside for raw inputs.
- Consumer consumption trends are expected to continue to change with more emphasis on safety, reliability of quality and supply, and ethics in food production systems.
- Pressure on disposable incomes will lift grain consumption which forms part of basic products and staple food.

Identity fraud costs SA over R1 billion during Covid-19

ACCORDING to a recent local press article, over R1 billion has been claimed from TERS (Temporary Employee/Employer Relief Scheme) through fraudulent or corrupt applications that could've been eradicated with the correct ID authentication.

According to the CSIS (Centre for Strategic and International Studies); the World Bank and United Nations foresee individuals across the globe having a digital identity by 2030. This deadline may appear a long way off for a country that has been forced by its Auditor General to take both the TERS and UIF systems offline and withhold payments, while a direct engagement took place with the Department of Home Affairs to validate the authenticity of millions of

ID documents.

Gur Geva, co-CEO of iiDENTIFii, a player in the biometric identity sector, says "For a country, already in economic dire straits and marred by accusations of corrupt COVID-19 tender contracts implicating government officials, the need for key decision makers across both the public and private sectors to protect themselves against identity fraud is crucial."

According to the Global Economic Crime and Fraud Survey, South Africa ranks the 3rd highest in the world for reported economic crime with bribery and corruption making up 42% of the type of economic crime after customer crime which stands at 47% for 2019. The level of economic crime in South Africa remains significantly high at 60% com-

pared to the world average of 47%.

"These numbers are staggering - even more so when the technology exists to eradicate the level of fraudulent activity occurring due to identity theft," says Geva.

"As the level of readily available data increases, so does the proficiency to be able to hack it which means that a significantly larger effort needs to be made at government and executive levels to protect personal information from fraudsters."

Geva's company, iiDENTIFii has developed biometric facial recognition technology that interfaces with the Department of Home Affairs and can onboard an individual within 30 seconds that references each facial image with a live selfie of the person and the identity documentation itself.

"The urgency for which the public and private sectors need to address identity fraud becomes obviously transparent when you see (according to the local press article) that R30 million of the TERS relief fund was paid to people with invalid identity numbers; R696 million to immigrants who have not made UIF contributions in the past year; 'double dipping' payments of up to R140 million in state grants; children under the age of 15 receiving payments and a ridiculous R440 000 of these funds being paid out to dead people," concludes Geva.

To run an audit on your own remote biometric identity authentication, or to find out how secure your client onboarding process is or to investigate further, book a demo or contact : www.iiDENTIFii.com

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NEW PHASE OF EXPANSION FOR PAARL BASED FABRICATOR

The 'heartbeats' faster.



The twenty-seven year old manufacturing solutions company, Fabrinox, has embarked on the latest phase of its development journey with its consolidation from two manufacturing facilities into one.

Moving its manufacturing division from its original Jan van Riebeeck Drive home, to a company owned and expanded site on the corner of Drie Bergen and Drommedaris Street, Paarl, which previously concentrated on projects management and installations, took place during October and was not without its challenges.

"The original consolidation date was 1 August 2020, which was delayed by 3 months due to the COVID-19 pandemic and the nationwide lockdown" explained Group Sales and Marketing manager Pieter King.

"As might be imagined, moving a 27 year old facility into similar sized factory in just one month, while maintaining production schedules was going to be challenging – a bit like trying to squeeze a quart into a pint pot – but there was method in the madness!" he said.

He described the initial experience as the first phase of a three phase expansion project. The first involved the move consolidating the company's manufacturing division – which concentrates of components and sub-assemblies – with its projects management and installations operations.

"Phase 2 is scheduled for 2021 and involves the construction of additional under roof space, while the planned third phase involves a further 2 500 m² of factory space, despatch areas and parking bays on recently acquired land, adjacent to the original Drie Bergen premises" said King.

This planned expansion is the cornerstone of the company's future growth strategy, building on its success as a world class fabrications specialist offering services of sheet metal and tube fabrication solutions, which includes custom tailored project management, global installation, procurement, technical advice along with manufacturing design and documentation, within an ISO 9001, ISO 3834 & EN 15085 environment.

Flexibility and customer centric

CEO Andre Visser explained: "Our reputation for quality and expert work is built upon the experience and skills of our team and has earned us the Approved Supplier Status with customers such as General Electric, ABB, Heat and Control, DeLaval, (a 25 year relationship), Orica, Howden, Gibela/Alstom, Wabtec & SABMiller. Our mantra has always been to invest in our people through ongoing high calibre training programmes for our skilled workforce, the latest manufacturing techniques and service solutions, all of which has enabled Fabrinox to deliver on each customer's precise and specific fabrication needs."

By securing long term contracts with these high profile manufacturers has enabled Fabrinox to organise its factory space into dedicated yet flexible bays, almost like having a factory within a factory yet having the flexibility to quickly meet the customer's requirements, as the need arises.

"A major differentiator with our competitors both locally and internationally, is speed of delivery of high quality components, sub-assemblies, projects and installations – the four 'heartbeats' of the Fabrinox operations. Being able to offer customers 'express delivery' – at a premium price – is part of our strategy and has influenced the way we have planned our factory space, dedicating bays to particular customer's products" commented King.

The company's forward thinking has taken into account the move to automation in the manufacturing processes and its investment in latest technology laser, fibre and bending machines allows it to compete on the world stage.

The forecast expansion in manufacturing capacity particularly with state of the art machines means a highly skilled and motivated workforce, which currently stands at around 150 to 200.



A South African success story

Fabrinox is a South African success story providing custom manufacturing, project management, procurement, technical advice, drawing office services and documentation of manufactured metal products to OEM multinational companies across six continents.

The manufacturing arm of Fabrinox produces high quality, high accuracy components from sheet and metal sections using bending, tube laser cutting and surface finishing. These components are delivered to OEM's or assembled into added value sub-assemblies using processes such as precision welding, cold forming and bead blasting.

The projects and installation business undertakes under licence manufacturing, project management, commissioning and spare parts to OEM's and the division's six global installation teams get deployed to literally every corner of the globe including China, Russia, Poland, the rest of Europe and to North and South America.

Andre Visser explains: "Our manufacturing landscape is comprehensive – we serve industries as diverse as agriculture with milk harvesting equipment, food and beverages dispensers, components and assemblies for water treatment installations and transportation with specialized railway rolling stock." The latest water treatment plant will be delivered to a customer in Amsterdam within the next few weeks and commissioned before Christmas.

Internationally recognised quality management systems

Its decision to commit to internationally recognised quality management systems really opened the door to global markets and Fabrinox manufacturing and assembly procedures comply with:

- ISO 9001:2015 QMS certification.
- ISO 3834-2 welding.
- EN 15085-2 welding certification for railway vehicles and components.
- SAIW Pressure Vessels certification (SANS 347:2012 Appendix C).

First certified “EU equivalent” ship breaking facility in Africa, mooted

AS demand for compliant ship breaking facilities increases, updates to legislation will open several opportunities for compliant facilities outside of the European Union.

According to the *Basel Ban Amendment*, the exportation of hazardous waste, including *end-of-life vessels* from OECD (Organization of Economic Cooperation and Development) or “developed” countries to Non-OECD or “developing” countries is prohibited. This ban currently prohibits ship recycling facilities located in non-OECD countries from being included on the European List of ship recycling facilities (the “EU List”). The EU List records certified and compliant ship recycling facilities that have been approved by the European Ship Recycling Regulation (EU SRR). The EU SRR incorporates parts of the Hong Kong Convention (HKC) and includes additional



safety and environmental requirements, specifically to reduce the negative impacts of recycling ships flying the flag of EU Member States.

The EU Commission has indicated the possibility of including facilities from non-OECD countries on its list if these facilities can demonstrate compliance to the EU standards. If a facility located in a non-OECD country should be approved on the EU list, the exportation

of EU-flagged *end-of-life vessels* to that non-OECD country will be permitted. However, this situation has not been covered by the Basel Ban. Confirmation of its feasibility is currently being investigated as a matter of urgency and should be resolved within the next two years.

A planned ship recycling facility located along the West Coast of South Africa intends to meet all the requirements stipulated by the

EU commission. Once approved, this facility known as **34South**, will serve as the **first Green, Compliant Ship Recycling Facility in Africa, making South Africa amongst the first non-OECD countries that are able to accept these end-of-life vessels.**

As more regions like the EU are moving towards more stringent regulations to curb poor recycling practices, the 34South facility will serve as an “EU equivalent” ship recycling facility at the Southern tip of Africa. As the EU SRR requires all large commercial seagoing vessels flying an EU member state flag to be recycled in an approved facility, the 34South facility will be able to accommodate EU flagged and EU owned *end-of-life vessels.*

The 34South facility is supported by the Industrial Development Corporation (IDC) of South Africa, as its largest shareholder.

High-Speed counting and packing solution designed- a first in South Africa

THE packing of seed in packets with precision and accuracy has always been a challenge. Instead of hand counting these seeds and manually placing them in an envelope, seed companies rely on machines to get the job done.

Micron Milling (Pty) Ltd, known for their high-quality advanced machines reached out to Omron South Africa to assist on a new project. This project was the first of its kind in the world, requiring more investment as well as the latest automation technology and added state of the art control systems to make it work. Supplying insufficient or over seed packets was a quality problem that was eating into the profitability of the company.

A challenging project from the start

“In laymen terms,” Etienne van Wyk, Micron Milling’s Design Engineer explains, “you need to count the seeds before dropping them into each packet. Each of the 32 variety of seeds differs in size and shape. Seed packs can differ in seed count as well as the packet size, tailored to customer preference.”

This machine had to be able to pack almost any width, height, any seed and seed count in -little packets, close the packet to be a neat flat envelope, containing the seeds ready for distribution and planting. Counting the seeds before dispensing them in the packs at high speed was one of the major challenges Micron Milling faced, overcome by the use of Omron’s fibre heads and amplifiers to accurately count the seeds before dispensing them.

The Micron Seed Packer needed to pack 350 000 seed packs per

day to meet the demand. That is 15 packets per second considering film changes, set up times and changeover. The only way to accomplish this was to make the packets inline before filling them, fill them in a continuous film and to then cut the film at the pre-printed markers.

“We overcame this by using Omron’s motion technology, and that enabled us to achieve the desired speed and accuracy for the cutting of the seed packs using a rotary knife timed to make a perfect and accurate cut,” Evert Janse van Vuuren, product manager at Omron explained

“Without the Sysmac Automation platform there was no possibility of doing this project,” noted Etienne. The required speed to count the seed into 15 packets per second demands the 1ms communication speed of the Sysmac system. The 1ms response on the super-high-speed EtherCAT communication coupled with the E3NW Ethercat Fibre communications unit, allowed Micron Milling to detect and count seed of fewer than 250 microns at 750 seeds per second, with 16 fibre amplifiers and 32 amplifier heads running simultaneously.

Without the unique instantaneous switching from position to torque feedback mode on the 1S Servo, cutting of the film would not have been possible.

Sysmac to the rescue

Testing and optimizing is still needed, as with any new system or machine, but it happens so much quicker and with less hassle when using Sysmac. The rapid development platform of the NA touchscreen clears the way for an integrator or OEM to

match the feel and control to the rest of the machine. The complete electrical and automation system requires less time and can be done without hassles.

Rising above the rest

“The high-speed counting of seeds on this scale is something I have never seen done before. The technology that allowed us to count at this speed and the accuracy that we have reached is state-of-the-art and I do not believe this would have been possible 3-4years back. Although the cutting programming-code, and how we update the cutting position is kept under guard, the 1S Servo together with this coding principle is the state-of-the-art technology. We can update cutting position every 2ms even if the sensor misses the mark,” states Etienne. This is not possible with normal servo motors. The key criteria on which Micron Milling judged the success of this project was plain and simple - perfection. Zero waste was also a key point in terms of zero wasted product for the end user. “We achieved our goal,” Etienne said.

For a better future

The Micron Seed Packer benefits society in a big way in the sense that seed almost always ends up in community hands, in most cases without paying for it directly or indirectly. “Imagine 350 000 packets of tomato seeds end up in the community’s hands and let’s assume only 10% of these packs will be planted. If each plant brings up only 1 kilogram of tomatoes in its lifetime, that means that the Micron Seed Packer delivered 35 tons of food per day to the community,” Etienne concludes.



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New manufacturing plant in Atlantis will create 200 job opportunities

CHINESE consumer electronics company Hisense is scheduled to open a new electronics factory in Atlantis north of Cape Town, boosting its technology footprint in Africa, and boosting job prospects within the community.

This initiative follows the 2013 opening of a R350-million plant in Atlantis manufacturing flat-screen TVs and fridges.

The new plant, which will employ more than 200 people, will

manufacture washing machines, with the opening planned for 2021. Since launching washing machines in the country three years ago, Hisense has achieved a 12% market share in that segment.

Currently Hisense employs more than 800 people locally, and its training and social upliftment projects, contribute to the wellbeing of around 3 000 people in the community.

Hisense has a nationwide presence with distribution to more than

3 000 chain stores and 500 home appliance stores. In 2019, one in four TVs or fridges sold in South Africa was a Hisense, while during the year, the brand manufactured more than 530 000 TVs, and 331 000 fridges.

Hisense has also made significant inroads in Africa, with products also being exported to 13 other African countries, including Namibia, Mozambique, Zimbabwe, Malawi, Zambia, Botswana and Lesotho.

R1,4 billion invested in B-BEE

“INVESTING in and empowering of communities where we do business at Nestlé is part of our purpose. We believe that our company can only be successful in the long term by creating sustainable value both for our shareholders and for society”, said Bruno Olierhoek, Chairman and Managing Director of Nestlé East and Southern Africa Region (ESAR) on the occasion that Nestlé South Africa received its Level 3 Broad-Based Black Economic Empowerment (B-BBEE) certification.

The score is a two-

level upward improvement from a previous Level 5 to Level 3. Research indicates that most multinationals operating in South Africa struggle to either comply or even attain higher levels when it comes to transformational initiatives around B-BBEE.

“To demonstrate our commitments, in 2019 we invested over R1,4 billion towards the B-BBEE procurement spend by empowering black suppliers and in turn, creating jobs through various Enterprise Development initiatives. This figure included investments of R52 million to sup-

port emerging black farmers through our dairy projects in the Eastern and Western Cape as well as incremental spend of R100 million on black rural development projects across the country” added Olierhoek.

“A business thrives when it has a healthy, diverse and engaged workforce that reflects society. We will continue driving youth and women empowerment programmes, upskilling initiatives and strengthening relationships we have built with our suppliers and partners; not only in South Africa but across our region” he said.

SU strengthens support for students



of not graduating or moving on to their next year of study.

The grant will bolster academic support to ensure that every student stays on course, despite the challenges that they may experience. “We are grateful to the Michael & Susan Dell Foundation, whose support strengthens our interventions to help our students succeed,” De Villiers said.

STELLENBOSCH University (SU) is providing additional support to undergraduate students to stay on track with their studies and better adapt within the changed context of virtual learning as South Africa continues to grapple with the COVID-19 pandemic.

“The COVID-19 pandemic has brought with it many new challenges and risks that the University has been working hard to mitigate. When on-campus activities were suspended towards the end of March, we rapidly switched to online learning. Classes resumed online on 20 April, thanks to the tireless efforts of teaching and support staff,” SU Rector and Vice-Chancellor Prof Wim de Villiers said.

“We remain acutely aware of the challenges that our students face in adapting to this new and largely unfamiliar mode of learning during the lockdown period. So, we are doing everything we can to ensure that all of our students – and especially those who are vulnerable – can successfully complete the academic year.”

Laptops have been made available on a loan basis to socio-economically disadvantaged students and data bundles have been procured for all students to access the internet.

Staff training to provide engaging content has also been a key priority. Furthermore, the capacity of SUNLearn, the University’s study management system, has been boosted to handle the increased demand now that most activities are taking place online. Systems have been streamlined to make it easier for students to access the necessary resources and information.

In addition, the University’s Centre for Student Counselling and Development is now providing online and telephonic services to those who need academic, emotional or emergency assistance during these times.

A grant provided by the Michael & Susan Dell Foundation, a US-based philanthropic non-profit organisation, will go towards tailored academic and psychosocial support for students who are vulnerable and at risk

Researchers solve 100-year-old metallurgy puzzle

By Anne M Stark, Lawrence Livermore National Laboratory

TO understand exactly how metals respond to high-rate compression in molecular dynamics simulations, LLNL scientists use novel methods of in silico microscopy to reveal defects in the crystal lattice (green and red line objects and grey surface objects at the top) while removing all the atoms (yellow balls at the bottom) for clarity. Credit: Lawrence Livermore National Laboratory

To solve a 100-year puzzle in metallurgy about why single crystals show staged hardening while others don’t, Lawrence Livermore National Laboratory (LLNL) scientists took it down to the atomistic level.

The research appears in the Oct. 5 edition of Nature Materials.

For millennia, humans have exploited the natural property of metals to become stronger or harder when mechanically deformed. Ultimately rooted in the motion of dislocations, mechanisms of metal hardening have remained in the crosshairs of physical metallurgists for more than a century.

The team headed by LLNL materials scientist Vasily Bulatov performed atomistic simulations at the limits of supercomputing that are sufficiently large to be statistically representative of macroscopic crystal plasticity events fully resolved to examine the origins of metal hardening at its most fundamental level of atomic motion. The simulations were per-

formed on the Vulcan and Lassen supercomputers at Livermore and Mira supercomputer at Argonne Laboratory Computational Facility.

The root causes of metal hardening remained unknown until 86 years ago, when dislocations—curvilinear crystal defects made by lattice disorder—were proposed to be responsible for crystal plasticity. Despite direct causal connection between dislocations and crystal plasticity being firmly established, no team has observed what dislocations do in situ—during straining—in the bulk material.

“We relied on a supercomputer to clarify what causes metal hardening,” Bulatov said. “Instead of trying to derive hardening from the underlying mechanisms of disloca-

tion behaviour, which has been the aspiration of dislocation theory for decades, we performed ultra-large-scale computer simulations at a still more basic level—the motion of atoms that the crystal is made of.”

The team demonstrated that the notorious staged (inflection) hardening of metals is a direct consequence of crystal rotation under uni-axial straining. At odds with widely divergent and contradictory views in the literature, researchers found that the basic mechanisms of dislocation behaviour are the same across all stages of metal hardening.

“In our simulations we saw exactly how the motion of individual atoms translates into the motion of dislocations that combine to produce metal hardening,” Bulatov said.

Water tariff explanations will not impress ratepayers

By Geoff Jacobs, President of the Cape Chamber of Commerce & Industry.

THE 800 000 Cape Town ratepayers, who pay for 27 000 municipal servants’ wages, salaries, and perks, are not likely to be convinced by the official reasons for water tariffs remaining so high when the dams are so full.

Some think maintaining high water tariffs imposed during the drought are an affront to common sense. It certainly seemed like it during an interview on the subject with a senior City official on Cape Talk radio.

The main reason, said the official, was “to ensure a fixed and stable income from service” (sic).

So, the price demanded for water was determined entirely by the City’s need for more money. It was why the water tariffs went up during the drought. It had nothing to do with empty dams, despite what we were told at the time.

The drought was merely a useful excuse to wrench more regular cash out of the hands of the ratepayers and into the municipal coffers.

The next excuse for keeping water tariffs at drought levels was based on the same

premise.

The City lost revenue because Capetonians, in response to frequent appeals, saved so much water during the drought. To thank them for their sacrifices, a water levy was imposed and water charges were increased.

Since Capetonians continue to save water, even though the drought has ended, the City simply has to keep the water charges high to continue to make up for the loss of income.

In other words, unelected City officials figure out how much money they want and then adjust the various rates and tariffs on water (and elec-

tricity) to produce it. Budgeting made easy, one might say.

The idea of cost cutting when compiling a budget never seems to occur to the municipality. Unlike budgeting in the private sector, it seems to take scant account of its customers’ financial circumstances. Instead, the overriding concern appears to be to carry on as usual regardless of economic realities facing the ratepayers who employ them.

One can be forgiven for thinking the City officials have lost touch with reality and have turned from being the servants of ratepayers into being their masters.

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Is the planet telling us something?

By Allen Cockfield,
CEO of Artic Driers

HAS mankind just pushed our habitat a step too far? I believe so! COVID-19 has smashed all the “normalities” that we knew – the ability to travel, to have friends and families at our houses, among many others. Not even mentioning the inability to cross our provincial borders, we have been deprived the privilege to share a glass of wine or beer with our loved ones in the comfort of our houses or at our local taverns.

COVID-19 has undoubtedly turned our world on its head; it has killed thousands of people and wrecked many companies, large and small. It has all but annihilated the airline and travel industry at large. It has pushed up air freight rates for any importer through the roof.

Before lockdown we had started a conversation with an organisation called “Stop Rhino Poaching”. The staff and I had come to the opinion that the company, with the help of our clients, could make a positive contribution to reduce rhino poaching in South Africa.



COVID-19 pretty much placed a very large spanner in the works as my staff and I had to turn our attentions to keeping the company functional, and at the same time launch a whole range of dryers that were / are ideal for breathing air use in clinics and hospitals.

We will be taking a 2% slice of all air dryer sales values and donating it to the “Stop Rhino Poaching” organisation for a trial period of six months, effective 1 September 2020. Each time a client makes a dryer purchase we will make a 2% of (pre Vat) donation on behalf of the client to the “Stop Rhino Poaching”

organisation. A payment receipt will be forwarded to the client. Our objective is that the process must be as transparent as possible. The payment will be made back to back with the client’s payment to us, and the receipt process will be confirmed within 24 hours of the incoming payment to Artic. At any time the client may call on us to verify the donation transfer, and Artic Driers International will comply.

Surely, as a business we have to make profit to survive and also have to pay our staff and our creditors, but there has to be a point at which we also take a stance and actively participate in

protecting our unique heritage for now and for the future benefit of our children.

We have to do this now, not tomorrow or next year, but now! We have to make a positive contribution to our planet’s future. The “Stop Rhino Poaching” campaign is just one of many genuine organisations that can help us protect our heritage. I challenge other companies in the compressed air world, and any other business for that matter, to get involved in any organisation that can make any positive change in our world. Come, join us in this small step to protecting a species and our environment.

Turning plastic waste into hydrogen gas and carbon nanotubes



Photo by John Cameron on Unsplash

By Bob Yirka,
Phys.org

A team of researchers from the U.K., China, and Saudi Arabia has developed a process for converting plastic waste into hydrogen gas and carbon nanotubes. In their paper published in the journal *Nature Catalysis*, the group describes their process and how well it worked

when tested.

Over the past several decades, plastics have been found to be a major form of pollution—in addition to the billions of tons of plastic in landfills around the world, large amounts of it has made its way into the environment, where weather and other factors break it down—the resulting microplastics have been found in lakes,

rivers and streams and all of the world’s oceans, harming plants and wildlife. One of the major factors driving plastic pollution is the lack of a way to recycle it. Instead, it is simply discarded. In this new effort, the researchers have found a way to recycle ordinary consumer plastics into a useable energy source and a useable carbon nanotube source.

The process involved pulverizing the plastic samples—this was done using microwaves with aluminium oxide and iron oxide serving as catalysts. Microwaves allowed for heating the catalysts—instead, the plastics were heated incidentally by the catalysts. This approach prevented unwanted side reactions, which made the process more

efficient.

The researchers report that the conversion process lasted just 30 to 90 seconds, and resulted in recovery of 97% of the hydrogen in the plastic. In addition, the carbon nanotubes produced were of sufficient quality for use in other applications. They note that there are currently other large-scale applications that involve the use of microwaves in commercial venues, suggesting that such use for recycling plastics might be possible. They acknowledge that they have not yet tested their approach to recycling plastics at a larger scale. They suggest the magnitude of the disaster that lies in the world’s future if plastic pollution is not brought under control will drive efforts like theirs to succeed.

HD-1500 mobile robot with 1 500 kg payload capacity

Industry-leading HD-1500 expands the possibilities for autonomous material transport

OMRON has announced the launch of the HD-1500, the strongest and latest addition to the company’s series of mobile robots. The new HD-1500 boasts a heavy payload capacity of up to 1 500 kg. It is ideal for modern factories, where autonomous material handling solutions need to manage more demanding industrial automation tasks, along with implementing new social distancing requirements due to the Covid-19 pandemic.

The 1 500 kg payload capacity of the HD-1500 enables transportation of large automotive components such as car chassis and voluminous pallet size payloads - items that would have traditionally been moved using forklifts. With the release of the HD-1500, OMRON’s mobile robots, including the LD-60/90 and LD-250, form a seamless line-up of models that can transport a wide variety of items – from components to WIP (work in progress), finished products, and heavy material.

Ensuring efficient material handling in factories, OMRON’s industry-first Fleet Manager can control up to 100 mobile robots with different sizes, configurations and payload capacities under one system to automate complex material transport and logistics applications.

The robots can automatically calculate the best route, while collaborating safely with people and navigating around obstacles, without the use of magnetic floor tapes nor other guides. The HD-1500 battery charges in just

36 minutes and can handle a full shift on a full load, reducing downtime.

“Onsite logistics, the movement of products and material within the factory and warehouse, is becoming a real bottleneck for many companies due to the frequency and tediousness of the job, compounded by the need to meet social distancing protocols. Fast-paced manufacturing environments require speed and flexibility. OMRON’s HD-1500 mobile robot can help companies solve this issue because it can work 24 hours a day tirelessly, punctually, and safely side-by-side with people.” said Tom Mathias, President, and CEO of OMRON Robotics and Safety Technologies, Inc.

Highlights of the HD-1500 include:

Higher Payload and Sturdier Structure:

The HD-1500 can move pallet size payloads in manufacturing facilities and reduces the need for a forklift. Built with sturdy metal skins, the HD-1500 is robust and able to withstand heavy unintended external impacts.

Faster ROI: The HD-1500 offers a solution to automate complex and dangerous tasks. Organizations can now reduce the use of forklifts and safely transport large pallets containing finished goods, voluminous materials in the food and commodities industry, and automotive frames. Workers can now focus their attention on more vital tasks; allowing customers to load more,

making fewer trips with heavier batches, and increasing the return on investment. With the HD-1500, customers can do more with less equipment.

Customizable fleet: Mobile fleets can become more diverse, but is still controlled through the same system. OMRON’s Fleet Manager allows a diverse mobile fleet of up to 100 mobile robots, including the HD-1500, to be controlled with the same system while achieving high performance. As a result of the optimized traffic and battery management, and routing of vehicles, customers can add the HD-1500 to their fleets without worrying about safety, compatibility, or performance.

Additional features include:

- Battery charges in 36 minutes to realize greater efficiency and less downtime.
- 360° safety scanning lasers used for simultaneous localization and safety functionality.
- Superior navigation using adaptive safety zones from LiDAR technology.
- Improved CAPS technology allows for better accuracy and repeatability for docking.
- With the Fleet Simulator feature you can also simulate up to 10 robots, in up to three separate fleets.

For more information contact Omron Electronics (Pty) Ltd Tel: 011 579 2600 Direct Email: info_sa@omron.com Website: www.industrial.omron.co.za

Pipelines fuel theft – arrests made

JOINT security efforts between Transnet Pipelines (TPL) and law enforcement authorities continue to yield positive results with more fuel thefts arrests reported. Three suspects were arrested in the Mpumalanga province recently after being caught with R1.4 million worth of diesel.

Transnet has collaborated with Directorate for Priority Crime Investigation (“Hawks”), National Crime Intelligence and SAPS to deal with the scourge of fuel theft in

the country.

The arrests come after two theft incidents took place on the Transnet multi-product pipeline, between Ladysmith and Van Reenen in KwaZulu-Natal and between Alrode and Langlaagte in Gauteng.

The incident in KwaZulu-Natal resulted in an extensive diesel spillage, the quantum of which is currently being determined. Transnet has deployed team to focus on containing the spillage and to repair the pipeline.

Transnet continues to urge all petroleum retailers and members of the public to refrain from buying fuel from unregistered traders, to curb the demand for illegal petroleum products.

Transnet also calls on all its stakeholders to join in on the fight against petroleum theft by reporting any suspicious bakkies, tankers or activity near the company’s infrastructure by calling the TPL toll free number 0800 203 843 or report the matter to your nearest police station.

ADVERTORIAL

Selecting the correct sealant or adhesive is as critical to the success of the job as the preparation and application process.



Sealant or adhesive?

The main difference between adhesives and sealants is that adhesives are primarily used to bond materials together.

Sealants are made from flexible material (silicone, polyurethane, acrylic) which makes them ideal for areas where expansion and contraction are of concern.

The main objective of a sealant is to seal assemblies and joints or gaps. They need to have sufficient adhesion to the substrates and resistance to environmental conditions to remain bonded over the life of the assembly.

When sealants are used between substrates or surfaces having different thermal coefficients of expansion or differing elongation under stress, they need adequate flexibility and elongation (movement capability). They generally contain inert filler material and are usually formulated with an elastomeric to give the required flexibility and elongation.

Sealants have a paste consistency to allow filling of gaps between substrates. These sealant pastes normally cure to form a durable and tough rubbery seal. Low shrinkage after application is required, as is durability, good weather resistance and UV and ozone resistance.

The adhesive's main purpose is to bind one surface to another, not to seal the space in between the objects.

Den Braven Sealants South Africa have been in the business of supplying adhesives and sealants to various industries for 40 years and are considered leaders in this field. Their range of sealants and adhesives, foams and technical aerosols are used in diverse markets, including construction, glass, glazing, aluminium, automotive, industrial and DIY. Den Braven know what products to use for the job at hand and, importantly, how to correctly apply foam, sealant or adhesive. It is sometimes difficult to define the product most suitable for a specific job, but a call to their technical sales consultants for advice, and to discuss requirements, is just one of the services setting them apart from others.

There are five steps critical to the success of a job:

- Assessment of the job at hand (contact Den Braven if unsure)
- Selection of the correct sealant – suitability and test compatibility
- Preparation of the surface prior to application
- Correct application
- Curing time

Den Braven's HOW TO videos on YouTube and their website demonstrate correct application techniques with lots of handy tips. The Technical Bulletin of Joint Dimensions and technical specifications can also be found on the website.

Building sustainably

The sustainability of a building should be non-negotiable. From planning to construction, to use and renovations and eventual demolition, the aim is to minimise any possible damage to the natural environment, the efficiency of resource use such as energy, water and materials while contributing to the health and productivity of the occupants. Any material used in building work has to be selected carefully. Den Braven is a member of Green Building Council South Africa and Fire Protection Association of South Africa, amongst others. Their hybrid technology sealants and adhesives tick all the sustainability boxes, as does their Fire Protect® fire retardant range.

A guide to specific hybrid sealants and adhesives in the range

Den Braven Hybriflex-540 is ideal for use in dilation joints and joints in both interior and exterior pedestrian walkways.

This sealant delivers all the benefits of elastic bonding, such as very high resistance to UV degradation and weathering, as well as excellent adhesion to a wide range of substrates with minimum surface preparation. Den Braven Poly Foam Backing Cord can be used as a bond breaker in joints with these sealants.

Den Braven Hybriflex-540 is particularly hard wearing and ideal in helping prevent the edges of mechanically loaded industrial flooring, concrete and tiled edges from cracking. It has a very high tear resistance as it is impervious to oil, grease and water.

Den Braven Fix-O-Chem is a two-component resin chemical anchoring system. It is used for very fast secure fixing of bolts, threaded rods, steel bars, prop base and screws into masonry, concrete, rock and stone, and is perfect for fixing balustrades and safety barriers. Fix-O-Chem is suitable for indoor and outdoor use and has a high bond strength allowing it to be used for industrial fixing. With its thixotropic state it can be used for vertical and horizontal fixing applications.

Fix-O-Chem can be used instead of plugs or expansion anchors to offer longer lasting secure fixings. As it does not have any pressure build up, it is suitable for the edge of substrates, unlike expansion anchors.

Den Braven Silicone NO and Structural Glazing Silicones are internationally renowned sealants used for connecting and bonding curtain wall modules and in shop glazing.

Silicone NO is also used as a weather/perimeter sealant around glazing joints to prevent moisture getting into glazing panels. It has a neutral formulation, low odour and fungicidal resistance properties and is low in VOCs so ideal for application in confined areas such as hotel bathrooms. The anti-fungicidal properties mean the seals will not develop black mould. It is also suitable for use in various sanitary applications, especially in contained spaces

Instant grip Den Braven High Tack is a strong adhesive which can be used on flat or vertical surfaces, without mechanical support and without tape to hold it in place, for weights of up to 20kg. It is suitable for panels, natural stone, bricks and coated metals, wood, skirting boards, windowsills, bathroom or kitchen fittings. In addition, it can be used on aluminium strips for stair nosings, finishing of corner tiles, tile cornices and vertical tiling and loose tiles. Few adhesives compare to High Tack's instant high grip capability.

Den Braven Acryl-W is a top quality paintable sealant designed for sealing and filling fine cracks in walls and for sealing cornices to ceilings and walls. It expands and contracts, giving it a ±12% movement capability. Acryl-W has very good adhesion to many materials and is paintable with emulsion paints, freeze resistant and not corrosive towards metals.

Den Braven Mirrorfix-MS is a unique, high strength one component adhesive and the only one specifically formulated for use on mirrors. It is used to bond mirrors onto surfaces such as ceramic tile, concrete, plaster, metals and painted surfaces and does not affect the silvering of mirrors. In most cases extra support is not required as Mirrorfix-MS has instant high grip strength.

Den Braven supply their range of products throughout South Africa from offices in Cape Town, Durban and Johannesburg. They also export to and service sub-Saharan Africa, Mauritius and the Indian Ocean regions.

Den Braven Sealants www.denbraven.co.za | t: 021 552 9674 | e: sales@denbraven.co.za

The Den Braven Difference

Den Braven products have unique attributes with continuous research and laboratory testing used to formulate the range. With the correct sealing, jointing, filling and adhesive applications, Den Braven will demonstrate why their products offer quality and lasting solutions.

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Partnership improves concrete floor quality

TRADITIONAL concrete floor specifications will require a standard 30MPa mix supplied daily by a ready-mix plant without any specific effort to address shrinkage. This method is limited to 4,5 m x 4,5 saw cuts or 30 x 30 m (900m²) Steel Fibre Reinforced jointless panels. Depending on the load requirements (e 75 KN/bt 150 KN), a slab of 180 mm could be constructed. If shrinkage is not addressed, 100 m of joints begin to open within months of casting and begin to curl, eventually leaving severe joint damage. Clients begin to carry huge maintenance costs to repair the 100s of joints and damaged equipment while making an effort to manage the hazard this becomes in the workplace. Armed with the knowledge that traditional concrete cracks and curling were a result of the drying due

to shrinkage, the partnership between PPC and CHC-SA PrimX Jointless Flooring optimises the concrete mix for improved shrinkage characteristics presenting a real focus on quality to the South African market.

“Seeking out partners who are invested in the innovation of the sector has been an integral part of our business. Having invested 128 years into the research and development of our materials, the science behind the development and innovation of our materials has been developed to position us as a catalyst that strengthens the capabilities of the sector,” explains Dave Miles, Business Unit Head, PPC Materials.

As a customer-focused business, PPC continues to create a team that is empowered to pioneer new ways of doing business. This includes understanding and facilitating the out-



comes and ambitions of the contractor who is determined to be competitive through the inclusion of world-class technology into the construction process. With South Africa's construction environment being about 30 years behind global developments, the partnership between PPC and CHC-SA PrimX Jointless Flooring propels South Africa's

construction environment forward.

“PrimX provides high-performance SFR concrete with a focus in reducing shrinkage through the addition of special additives, careful mix optimization and quality control throughout the whole production process to ensure a predictable standard for PrimX. Finding a partner who is able to obtain a

quality washed crushed sand as well as washed natural river sand filler was key for our success in South Africa and on the African continent,” explains Brett Meadway, PrimX Technical Sales Manager. “We are uncompromising on the quality, strength and density of the concrete we must receive throughout the project. With testing taking place from supply to

final product, we have created an ecosystem that is driven by a commitment to ensuring our product guarantee is achieved.”

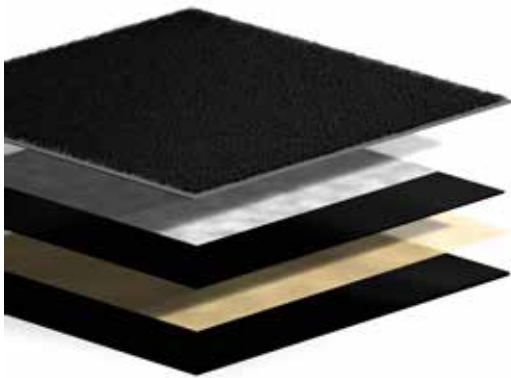
“Limited only by day joints, our solution saves 100s of meters of joint damage, allowing for a load requirement of 75 kN btb 150 kN on a 90mm lab. With no additional reinforcement with mesh, construction time for the same size of a slab is approximately 30% shorter. This gives a project manager about a month extra in construction projects while saving clients' money due to the no curling and controlled shrinkage PrimX floors when cast flat, stays flat for its lifetime,” continues Meadway.

At the forefront of this partnership is a labour force of young South Africans who are provided with training that is on par with their international counterparts who work

on similar projects. Jabulani Moeketsi, who has been working on the project since the start, describes his contribution to the project, “I have seen what the future of my job will be here in South Africa. Here we are saving time while removing curling and shrinkage in our jointless flooring. Working with my hands and asking questions daily, I have become someone trusted by Brett. I learn and share my knowledge with my team as we watch how what we make, and the quality control measures we put in place give us something we can be proud of.”

With the backup support from a concrete engineering team in PrimX' lab, the ongoing support of PPC and its scientists, a predictable consistent quality in PrimX jointless flooring has been made available in South Africa.

New sustainability milestone in flooring



Interface has developed a new carpet tile backing with “the lowest carbon footprint ever”, according to the company.

INTERFACE, major global modular flooring producer and a world leader in sustainable flooring, has developed a new carpet tile backing with “the lowest carbon footprint ever”. The new CQuestBio backing contains no petrochemicals (virgin oil) and features the highest level of bio-based content at the start of its lifecycle, coupled with 100% recyclability at the end of service.

Interface products are manufactured in the Netherlands and are distributed and installed in South Africa by KBAC Flooring.

Ton van Kerken, Senior Vice President of the Interface Supply Chain based at

the company's European headquarters at Scherpenzeel, said the process to create the CQuestBio backing involved adding new non-bitumen, bio-based materials and more recycled fillers to carpet tile production.

“The new material content - measured on a stand-alone basis - is net carbon negative and reduces the total product's carbon footprint.

This revolutionary backing is another important step towards helping customers achieve their own sustainability goals. Interface is already planning a more advanced backing - with even more carbon-negative materials - for 2021 as we

work towards becoming a carbon negative enterprise by 2040.”

Van Kerken said Interface had, since 1996, reduced the embodied carbon footprint of its carpet tile product by 74%.

“This was achieved by modified design and the use of recycled materials, dematerialisation and improved manufacturing efficiencies. Then, through our Carbon Neutral Floors programme, Interface compensated for unavoidable carbon offsets from renewable energy, fuel switching and reforestation projects,” he added.

In 2003, Interface started offering carbon neutral flooring by offsetting the full life cycle of greenhouse gas emissions for carpet tiles and, in 2018, included luxury vinyl tile production and a year later, also rubber flooring. The Carbon Neutral Floors programme forms parts of Interface's Climate Take Back initiative which commits itself to production that reverses global warming.

Interface has now sold more than 379 million square metres of carbon neutral flooring globally, and has reduced over 5.3 million metric tons of carbon emissions.

Safe, lightweight walkways for mine rescue drill

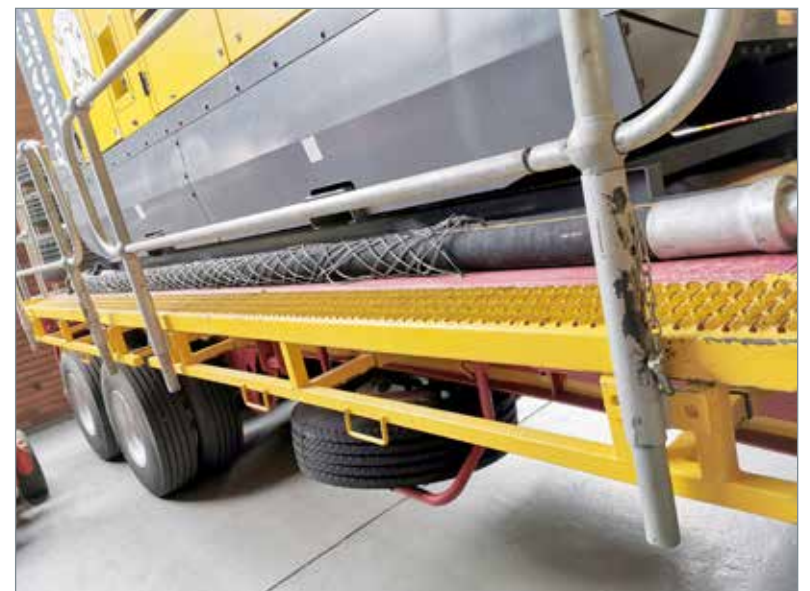
MENTIS Africa supplied positive-grip, pressed-section planks and walkways from its well-known Die-Line range for the Chamber of Mines rescue drilling unit based at Colliery Training College (CTC) at eMalahleni in Mpumalanga.

The walkway's non-slip features, combined with its high strength to weight ratio, made it ideal for the vehicle-mounted drilling unit, according to Rene Lombard, external sales representative at Mentis Africa.

The walkways and planks have been installed all around the drill vehicle to facilitate easy movement of personnel.

“Its positive serration ensures good traction even in muddy and wet conditions, enhancing the safety and efficiency of people working on the drill during a mine rescue mission,” says Lombard. “Significantly, Mentis Die-Line walkways are lightweight so while being very strong, adds little extra weight to the vehicle.”

The rescue drill is on 24-hour standby to be deployed, with the assistance of CTC staff, in the case of mine accidents. It can drill a 150 mm diameter hole into the under-



Mentis Die-Line walkways will enhance the safety and efficiency of people working on the drill during a mine rescue mission.

ground area where an accident has occurred. This allows the area to be assessed by camera, and for food and water to be supplied. It is also capable of drilling a large-diameter hole of 635 mm in diameter, down which a capsule is lowered to bring trapped miners to surface.

“The Mentis Die-Line products are simple to install, requiring no specialised tools and minimal welding or clipping to supports,” Lombard says. “All the necessary bolts, nuts, washers, fishplates, jointing channels, saddle clamps, splice plates and mesh clips are

provided.”

Lombard notes that the Mentis Die-Line walkway sections – plants with 2 mm thickness and walkways sections with a 2,5 mm thickness, can be provided in either 500 mm or 750 mm widths at a standard length of 2.4 m.

“Where the walkway or panel is subject to a corrosive environment – like harsh chemicals or saltwater – the mild steel construction can be bitumen-dipped or galvanised,” she says. “This allows these versatile products to be used in a wide variety of applications.”

We value your input

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Advanced hoist and crane technology

“KONECRANES recently installed their C Series electric chain hoist at a local rail company’s brake and motor assembly line. The C Series chain hoist will be utilised in conjunction with a jib crane at the assembly workshop and was required to give a lifting capacity of 320 kg. The C Series was only recently launched in South Africa, so we are particularly delighted to see it in action on a production floor so quickly. Konecranes, through the advanced features of the C Series, now offers customers a state-of-the-art electric chain hoist

that will make a major difference at customer’s lifting facilities” said Emil Berning, Managing Director, Konecranes, South Africa.

The local rail company had been looking for a new electric chain hoist that could offer greater safety features, more production reliability and uptime while keeping maintenance stoppages to a minimum and being cost efficient. The hoist boasts a redesigned motor cooling system, offers up to a 50% longer runtime and a brake built for over a million operations. Improved safety



Exploded view of C series hoist.

features comprise an operating limit switch and safety clutch that has been enhanced for a safer and better performance and reliability.

The C-series has

been ‘built smart’ with the precision and reliability of the company’s Core of Lifting components. It is the most advanced electric chain hoist available, offering a lifting capa-

bility of up to 5 000 kg. The C-series brings more control and mobility to working areas due to its more compact hoist shape.

In another coup for Konecranes, Italian-based InoxPlus, who assemble and handle stainless steel and electromechanical components for the construction and machinery industries, recently took possession of a Konecranes S Series overhead crane with a newly designed Compact Box. The S Series crane includes Konecranes’ unique synthetic wire rope hoist. The synthetic wire rope hoist gives a barb-

free operation, safer handling and easier load carrying as well as reduced maintenance costs.

The S Series with the Compact Box offers benefits such as outside welds for ease of inspection, a sliding connection for smooth movement on runways. The synthetic rope suits InoxPlus’ applications by giving a gentler handling of steel sheets and a cleaner operation. Compared to conventional ropes, the synthetic rope has a superior resistance and lifespan. The Konecranes Compact Box is a new main girder type with a modular struc-

ture making transportation far easier. Precision and the rope angle features were other elements of the S Series overhead crane that impressed InoxPlus.

Berning said “Our synthetic rope hoist is now the benchmark in the industry. Through a major re-design, our S-series gives a stepless hoisting movement and the synthetic wire rope makes lifting more precise with enhanced control”.

Further information is available from: Emil Berning – email: New-Technology.za@Konecranes.com



New rough terrain crane

IN September, Babcock delivered the first TADANO GR-700EX-4 Rough Terrain Crane to a long-standing mining customer. The 70-ton hydraulic rough terrain crane is the first one to arrive in South Africa, and one of the first to be sold world-wide.

The fourth-generation TADANO GR-700EX is well suited for plant maintenance in mining and construction applications where maneuverability and access to narrow spaces is essential.

Sales representative

for TADANO at Babcock, Claude Delpont, says that the TADANO brand is well established in South Africa owing to the quality and longevity of the products, availability of spare parts, and excellent resale value.

Of the GR-700EX-4 Delpont says repairs are easy to carry out and servicing is economical, making the TADANO range of rough terrain cranes a cost-effective long-term solution for any customer.

Some of the new fea-

tures that set it apart from its predecessors include:

- An upgraded cab with digital displays and touch screens
- Automatic speed reduction and slow stop function on boom elevation and slewing
- A 20° tilt cab for improved operator comfort and visibility
- A TADANO Automatic Moment Limiter (AML-E2) system that monitors outrigger extended lengths

and automatically programmes the corresponding rated lifting capacities table.

“The Tadano AML-E2 system with the outrigger monitoring feature and smart chart system is a particularly useful tool as it automatically calculates the machine’s lifting capacity and stability even if the four outriggers are extended at different lengths. This ensures that the lifting capacity is increased in safer areas and adjusted accordingly in more

confined spaces,” Delpont explained.

Delpont says that the range TADANO cranes are popular across the continent, with some customers operating the same machines for over 35 years. “Our customers are extremely happy with the quality and longevity, as well as the long-term investment opportunities the machines afford.”

The new rough terrain cranes are available in models with lifting capabilities from 13 to 145 tons, while TADANO’S all-terrain cranes have lifting capabilities ranging from 40 to 400 tons.

Additionally, there is a range of telescopic crawler cranes combining innovative technology with measurable results for heavy duty requirements on tough work sites; and a selection of TADANO truck-mounted cranes combining outstanding mobility with flexibility and ease-of-use, ideal for small, medium and large construction or industrial project needs.

Babcock has been the exclusive distributor of TADANO products in South Africa since 2009 and provides support and sales to customers across southern Africa.

The key to higher handling rates: revolutionary product design.

For generations the Demag name has been synonymous with quality, performance and reliability. Precise, fast, long service life – the Demag V-type crane revolutionises load handling. Its innovative design featuring tapered diaphragm joints improves oscillation characteristics by 30%, cuts its weight by an average of 17% and doubles its service life to as many as 500,000 changes of load. Our new girder design offers significantly improved efficiency for handling loads and higher handling rates than conventional box-section girders.

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Challenges faced in mine illumination

COAL mining operations present some of the harshest working conditions in the world. With a complete lack of space, severely confined spaces, the presence of dangerous machinery and concentrations of methane produced from the mining process, their requirements for hardware, particularly where lighting is concerned, are very specific. Here we will discuss some of these dangers, and how they are met by high-quality LED lighting for mines.

don't reflect light very well.

Implications of poor-quality lighting in mines

The above challenges pose a number of implications if not correctly addressed. Productivity will definitely

be affected wherever there is an absence of illumination, but this stands to reason.

Personal safety is a major concern, however, for a number of reasons. 19% of all non-fatal (but operation halting) accidents occur as a result of slips, falls and trips due

to inadequate lighting. Furthermore, the build-up of methane in mines is a concern where lighting is needed, as lighting solutions need to be intrinsically safe to ensure that when they come into contact with methane pockets, that there are no explosions

or ignitions from these heat sources.

Meeting challenges with LED lights for mines

LED lighting for mines meet these challenges amicably. They are designed to produce little to no heat, making

them explosion proof.

They produce light from the lower spectrum of ambient lighting which provides workers with better visibility in confined spaces; resulting in fewer accidents as a consequence of obscured vision.

Furthermore, they

are remarkably energy efficient, meeting the challenge of keeping lights consistently powered when they need to be.

For more information contact Nordland Lighting Tel: +27 (0) 442 2809 or email: sales@nordland.co.za

“LED lighting for mines meet these challenges amicably. They are designed to produce little to no heat, making them explosion proof.”

Challenges presented by the environment

The environment in which coal mining takes place presents a number of challenges that need to be circumvented with the implementation of the correct lighting.

These challenges can be catalogued as follows:

A dynamic environment

The nature of the terrain underground makes for a dangerous environment. With sudden changes and tripping, falling and slipping hazards, there is a need for a lighting solution that allows workers to navigate the underground terrain safely and effectively.

Vision obscuring dust

Mining operations typically produce a lot of dust in subterranean working environments. This can present a number of challenges, particularly with regards to how it obscures the vision of mine workers.

Confined spaces

Confined spaces make it difficult to implement certain lighting solutions in mines, since there is not enough space for them. These confined spaces also equate to less light entering the mine, which often results in total and complete darkness.

Unreflective surfaces

Not all lighting solutions are practical for use in mines, where lighting from the lower spectrum is required for ambient illumination. This can be difficult to get right, however, as mining surfaces generally

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Accumin lubricators ensure optimal performance for Warman slurry pumps.

Accumin™ lubricators optimise pump performance

WEIR Minerals has announced the global launch of its Accumin™ lubricators, a superior-quality grease lubrication system which promises optimal performance for equipment such as Warman® slurry pumps.

Since 2014 and across more than 100 sites, the Accumin™ lubrication system has proven itself as an efficient way of preventing expensive bearing assembly failures. It reduces maintenance downtime and promotes safety by

decreasing the amount of manual interface to keep equipment performing.

“Between dust, over-flow and gland seal leaks, lubrication is a vital tool in the constant battle to keep machinery going,”

Michael Roinich, Accumin™ Specialist at Weir Minerals, says.

Having an Accumin™ lubrication system fitted prevents over and under greasing, protects equipment from bearing failures and frees up man hours for more critical tasks.”

“When we offer Weir Minerals equipment with an Accumin™ lubrication system installed, what we’re really doing is giving that equipment its best shot at a long and productive working life,” he says.

“Between dust, over-flow and gland seal leaks, lubrication is a vital tool in the constant battle to keep machinery going...”

Made in Germany, Accumin™ canisters are produced in 125cm³ gas driven, 120cm³, 250cm³ and 500cm³ electro-mechanically driven configurations and can be deployed up to five metres away from the lubrication point, allowing easy and efficient access to the mount. The electro-mechanical driven lubricator dispenses a consistent dosage of lubricant, regardless of ambient temperature. The system delivers 6 bar of operating pressure and can be easily monitored via an LCD display, flashing LED alert system and a transparent grease cartridge.

“Designed to meet the arduous demands of the mining industry, Accumin™ single-point lubricators set the global standard for lubricating Warman® pumps and other grease-lubricated, mission-critical mining equipment supplied by Weir Minerals. We’re excited to share our market-leading, best-practice system with mines around the world who are embracing new technologies to simplify their operations,” Roinich says.

Making the move to Accumin™ lubricators helped an Australian iron ore mine to save almost AU\$120 000 each year in downtime reduction, pump rebuilds and bearing assembly replacements.

Accumin™ lubricators are now available worldwide on new pumps, through Weir Minerals’ aftermarket spare parts supply channels and via its service centre network.

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Trash pumps ideal for dirty water with large solids



Trash pumps can typically handle solids up to 76 mm in size with flow rates of up to 110 l/s at maximum head of 32 m.

DEWATERING activities on large construction and infrastructure project sites is not always a simple task. In fact, pumping dirty water containing large amounts of debris calls for a 'trash pump', according to Henru Strydom, operations manager at Integrated Pump Rental.

"Contractors often find themselves having to pump water that contains hard and soft solids such as trash, gravel, stones, leaves and twigs," Strydom says. "In many instances, the construction site needs dewatering to be done at a consistent rate and needs to reduce the chance of a pump clogging with this kind of material. This is why a trash pump is a popular and reliable option, and it offers versatility

in terms of its configuration."

Integrated Pump Rental, with its capacity to design and assemble pump sets in-house, can customise these for the user's specific site conditions.

"Our comprehensive pump rental fleet has included trash pumps for some time, and more recently we have been tailoring trash pump sets for customers on request," Strydom says. "By configuring the pump set to end-user's specifications we can ensure the pump dewatering solution is fit-for-purpose."

The trash pump sets provided by the company are usually trailer-mounted with a diesel engine for optimal mobility, but Strydom says these can also be static units driven by electric motors.

Ensuring proper pump selection means understanding basic requirements like the head height to be pumped, the quantity and flow rate required, and the distance over which the water will be transferred.

"Our self-priming, tried-and-tested trash pumps are often considered as the real workhorses of the construction pump market," Strydom notes. "Apart from dewatering sites, these can also be easily moved into place where large pipelines have to be temporarily bypassed, for instance, moving large volumes of water quickly and dependably."

Contractors even use multiple units in remote sites where access is difficult, allowing them to avoid the use of cranes to move and place large single pumping units.

Strydom highlights that Integrated Pump Rental's in-house experience in designing and assembling trash pump sets also allows it to offer customised service level agreements, based on customers' preferences and specific conditions. The company's expertise and service capability mean units can be constantly supported with maintenance, repairs and replacement parts.

Variable pump controllers

TRADITIONAL pumps either run full-throttle or not at all. But this creates staggering inefficiencies, adds significantly to costs, and contributes to environmental damage. Whether you have old yet reliable AC-motor pumps or newer equipment, Hydrovar claims to enhance nearly any pump with smart technology to run better, react to conditions, and avoid damage.

The Hydrovar family of smart variable speed pump controllers have evolved to provide intelligent features to AC-motor pumps, combined with easy installation and commissioning, as well as many other features. Hydrovar can reduce pump energy usage by as much as 70%. It's being used in the world's tallest building, the Burj Khalifa, by the Thames Water Authority, and in the Gotthard road tunnel - at 16,9 kilometres.

Easy to install and retrofit

Hydrovar system consists of a variable

speed drive (VSD), a control card, sensors, EMC filters and motor/system protection. There's no need for an external control panel when using Hydrovar, and each unit can support up to eight pumps. Hydrovar can be installed on top of the pump or be wall-mounted in tighter spaces.

The system works with most pumps and can be connected to any AC motor. It supports the RS485 interface, BACnet, Modbus, analog and digital I/O, direct motor control function, and offers an optional Wi-Fi card.

Such compatibility ensures that Hydrovar can be retrofitted to older pumps. It is one of the fastest and easiest pump controllers to install and commission. Quick startup guides and logic menu systems make the Hydrovar straightforward to set up and operate. It's also flexible: advanced programming features can optimise Hydrovar for almost any duty condition.

Enable active maintenance and damage prevention

The system can safely and quickly stop pumps at zero demand. Hydrovar offers thermal protection of the motor via its software, dry run protection, and specific motor protections such as over temperature, overcurrent and undervoltage monitoring.

It generates time-stamped error logs and can extend the pump lifetime. One unit can manage up to eight pumps - since every Hydrovar acts as a master unit, the system offers extensive redundancy.

The smart controller that gives your pumps brains

A motor running at 80% of its maximum speed uses 48% less energy. With energy savings of up to 70% on partial loads alone, the typical investment payback period is less than two years depending on energy costs and pump operating times.

New stainless steel valves

VALTORC International has introduced into the marketplace its high performance all stainless steel flanged ends ANSI class 150# solenoid valves. Normally closed design with zero differential pressure to operate.

The Series 800 Valtorc USA all stainless steel design for corrosive media applications and the flanged ends

design will fit in most piping applications.

The Series 800 comes with different seat configurations, epdm, buna, viton and teflon seats, for different corrosive media applications. Standard with normally closed design, and optional normally open configuration.

The Valtorc USA series 800 solenoid valves are available from 12



mm sizes to 100 mm all stainless steel material.

For more information visit www.valtorc.com

Shutdown battery option added to the IQ range

ROTORK has launched the IQT Shutdown Battery to provide further operational flexibility to the IQT3 range of part-turn 1-phase, 3-phase and DC electric actuators with the addition of a new integral battery option that provides fail-to-position in explosion proof applications. This pre-programmed

movement of the valve on loss of power or communications means our customers retain important control over their operations during a power outage or Emergency Shut-Down (ESD). This is the first time that the IQT3 has been offered with a shutdown battery option in an explosionproof design. A lithium-ion



battery supplies the potentially vital backup power from within the actuator enclosure.

The integral battery pack provides a compact, explosion proof shutdown solution.

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New repair and refurbishment facility reduces downtime

GROUP Companies Hytec South Africa and Hytec Engineering offer comprehensive hydraulic repair services for the Group's entire hydraulics range.

These repairs are undertaken in a new world class facility situated in Kempton Park.

Repair services for hydraulic pumps, motors, gearboxes and valves falls within the scope of Hytec South Africa, while Hytec Engineering, as Group specialist in hydraulic cylinders, repairs and refurbishes all OEM cylinders distributed by Bosch Rexroth South Africa.

"Our hydraulic repair services are all ISO-accredited and cater to any application," points out Ian Kidson, Repairs Manager, Hytec South Africa.

In addition to ISO compliance, Hytec South Africa and Hytec Engineering are Bosch

Rexroth-Certified Service Centres of Competence. This certification, renewable every four years, certifies that these two Group companies have the processes, infrastructure, qualification and management abilities to perform service work to quality standards specified by the worldwide Bosch Rexroth Service Centre grades. These two companies, along with Group Company Tectra Automation, are the only Bosch Rexroth-Certified Service Centres of Competence in Africa.

Repair capabilities

All parts are inspected for wear and damage, with affected components replaced new and all seals, bearings and bolts are a mandatory replacement. The hydraulic equipment receives OEM replacement parts, manufac-



All hydraulic equipment undergoing repair or refurbishment is subjected to calibration, analysis and fault-finding.

tured by Bosch Rexroth Germany. Exchange units for all of these applications, barring hydraulic valves, are on-hand for qualifying customers – significantly decreasing their downtime caused by faulty equipment.

The gearbox repairs facility carries out repairs to all Bosch

Rexroth gearboxes and other mobile shovel gearboxes like ZF, O&K, Stibel, Siebenaar and Zollern brands.

Hytec Engineering retains an extensive and comprehensive stockholding of refurbished cylinders, which facilitates its cylinder exchange programme.

Hydraulic cylinder test benches

Hytec Engineering has three hydraulic cylinder test benches, ensuring its cylinder repair and refurbishment capacity and capabilities cater to the requirements of numerous cylinder types and sizes. The smallest of

the three test benches is for high flow and low pressure testing, capable of 102 l/min at a maximum pressure of 10 MPa, after which high pressure testing up to 55 MPa can be achieved and mid-stroke testing occurs.

Comprehensive hydraulic pump and motor testing

Four pump and motor test stations, from 90 kW to 600 kW, are used on the pumps and motors. Each test station is connected to data recording stations, including CADASYs, a Bosch Rexroth data acquisition system, to which Bosch Rexroth South Africa has access. All results are saved to the Bosch Rexroth server for easy retrieval worldwide. Two valve test stations are used, one for standard valves and the other to test proportional and servo

valves. The proportional and servo test station is also connected to a Bosch Rexroth data acquisition system where test reports are acquired and stored.

Developed and implemented by Group Company Hytec Services Africa (HSA), containerised hose workshops provide a comprehensive mine site hose and fittings service to Bosch Rexroth's mining customers across Africa. Its focus goes beyond hydraulic hose and fittings, it acts as an onsite branch which helps facilitate onsite hydraulic repairs at mine sites too," Kidson elaborates. Workshop services include the hydraulic cylinder service exchange programme and the supply of new pumps, filtration systems, drives, valves, piston motors and hydraulic maintenance tools, or providing services for them.



New "ready to use" hose pumps

SHOWCASED during the Electra Mining Connect Week (7-11 September), the new iDura range provides plug-and-play, "ready to use" options of the existing Verderflex Dura hose pumps (ranges 5 to 35) – complete with a fully wired-up single- or three-phase Verder IP66 inverter and integral

hose burst sensor.

"The Verderflex Dura peristaltic hose pumps are already a proven first choice for mines around the world, offering unrivalled performance in even the toughest industrial processing environments. With the launch of the iDura range, Verder has brought valuable enhancements to

a firm favourite in the market," says Darryl Macdougall, Managing Director, Verder Pumps South Africa.

Verderflex pumps are manufactured in the European Union within ISO 9001, ISO 14001 and ISO 18001 accredited facilities and these positive displacement pumps are used with a

large variety of fluids. As the liquid is totally contained within a flexible hose or tube fitted inside the pump casing, the hose or tube is the pump's only consumable part. This makes the Verderflex range of pumps the ideal solution for "difficult to pump" liquids or demanding applications, such as

pumping dense, solids laden, mining thickener slurries and highly abrasive, viscous or corrosive liquids.

Building on the innovative technology that underpins the Verderflex pumps, the iDura dramatically simplifies on site installations to four steps, including, plumb the pump into the existing piping, connecting it to the power supply, programme the set flow using the inverter's potentiometer, and pump the desired liquid.

Every iDura has built in flow rate flexibility as, while every unit is pre-programmed to a standardised (normal) flow rate, this can be easily changed using the inverter's potentiometer to increase or decrease the flow rate, which is visible on the electronic display, to accommodate production variations. Additionally, the pre-wired, integral hose burst sensor (for detection and protection) uses the same electronic display to show when it has automatically stopped the pump – eliminating additional controls and wiring.

"The vision for the expanded range was to offer end users pumping solutions that are easy to install and use and – as the pumps are packaged for maximum flexibility these solutions bode long-term operational and cost efficiency benefits. And this has certainly been achieved with the iDura range," concludes Macdougall.

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All new high-performance centrifugal pump series

TAPFLO has introduced the CTX, a completely new, premium series of high-performance centrifugal pumps which are characterized by their robust design and superior operational reliability and application flexibility.

The series can be adapted to a multitude of applications and process conditions providing greater flexibility with quick and easy upgrade options providing interchangeability of the parts between pump types and sizes, improving maintainability.

A central feature of the Tapflo CTX design is the multi-facet open impeller which can be optimized to suit each medium and application whilst maintaining the ability to transfer viscous products and particularly those with an increased solids content. Another key feature is the option of a double mechanical seal. The seal is specified when hostile media conditions occur i.e. high viscosity content of solids, liquid is gaseous or hazardous. The seal is installed in a back-to-back arrangement in a separate chamber.

"We started work on the CTX pump design because end users were lacking a premium range centrifugal pump that features high efficiency and



robust construction with an excellent quality-price ratio. To meet that demand, we have developed the CTX high-performance pump. The pump features low noise and vibration, easy maintenance, and robust construction.

The last two factors combined with market leading performance were our main design principles when developing the pump. The CTX is "engineered beyond" to be even more robust than expected for its normal operation. From our point of view, endurance and performance in premium range products are critical. We want to earn on reliability, not spares", explains Mikołaj Laguna-Horodniczy, Global Marketing Manager at Tapflo Group.

Tapflo's CTX pumps are available in Hygienic (CTX H) and Industrial execu-

tions (CTX I). The pumps are optimized for highly efficient performance over a wide range of operating conditions for several industries. The Tapflo CTX is said to be an excellent solution for typical dairy applications like milk and yogurt transfer. The CTX is also an option for demanding chemical and pharmaceutical applications like the transport of chemicals and ready-made products from storage tanks, containers, and baths. Another application where the CTX fits well is the transfer of various ingredients and products like edible oil, flavour, and juice, as well as many auxiliary operations like the transfer of cleaning liquids, and water.

For more information contact Tel: 031 701 5255 or E-mail sales@tapflo.co.za - Website www.tapflo.co.za

Making sure all pumps are efficient

WITH difficult economic conditions only getting worse during the Covid-19 pandemic, pump users need to make the most of their operational inventory, even pumps that may be considered redundant.

Pump expert Lee Vine, managing director of Integrated Pump Technology and Integrated Pump Rental, says all industries can benefit from improved pump efficiencies.

"In our daily contact with pump users, we ensure not only that the pumps we sell, and rent are looked after," Vine says. "We also repair and refurbish other brands that customers have on their work sites."

Their depth of technical capability is based on combined experience within the companies of some six decades in the pump business. While Integrated Pump Technology specialises in Grindex and Fagiolati slurry pumps



and Leyboldt vacuum pumps, the Integrated Pump Rental business focuses on its locally produced SlurrySucker dredging system, Sykes diesel driven pump sets and the Grindex submersible range.

"To support our product ranges – and keep our own rental fleet in optimal condition – we invest continuously in our quality-accredited workshop facilities," Vine says. "This includes extensive testing capability, with a test tank that can accommodate motors up to 150 kW in

power."

Workshop manager Fred Slabbert, a master electrician and millwright, highlights the value of optimising assets.

"With our experience of various pump brands, we make sure that all work is done to original equipment manufacturer (OEM) standards," he says. "This gives customers peace of mind, and allows us to give a six-month warranty on repairs and refurbishment."

Slabbert says pump reliability is now more

important than ever, as mining and industrial operations must optimise uptime to remain profitable in these challenging economic times.

"We conduct professional assessments on any pumping equipment – even redundant units – for customers," he says. "On the basis of a detailed condition report from us, along with a competitive quotation, companies can assess the refurbishment option – which usually makes good business sense all round."

Heating jacket for thermal maintenance



SULZER CPE heating jacket

SULZER'S CPE pump is designed to meet the process requirements of a variety of industrial applications. Many of these applications require a specific liquid temperature to enable smooth pumping. The new heating jacket ensures uniform heat transfer to the pump for the purposes of thermal maintenance, heat-up/melt-out, or cooling.

Heating/cooling is typically accomplished with steam or water. The correct tempera-

ture of the pumped liquid prevents undesired sedimentation, crystal growth, or solidification of the fluid handled.

The design consists of a heating jacket and a jacketed case cover. The heating jacket covers all wetted parts of the pump and is bolted onto it. The jacketed case cover keeps the desired temperature in the sealing chamber, minimizing the risk of seal failures. The steam or water that regulates the temperature

is circulated in heating channels to heat up or cool down the wetted parts and the sealing chamber of the pump.

Sulzer's heating jacket is a cost-competitive, smart and safe solution. It provides evenly-distributed heating across the entire pump. The installation is quick and easy, and so is the removal if the pump needs service.

The CPE pump range is now also available in ductile iron ASTM A395 Grade 60-40-18 (5H).

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Metal seats prevent steam leaks

Case Study

IN North America, a leading OEM was undertaking construction of a power plant when leaks were identified in seventy globe valves. These were located in high-pressure, high-temperature severe service applications. Specifically, the OEM was faced with the following concerns:

- Safety - The OEM made initial attempts to fix the gland packing leaks of the originally installed globe valves by replacing the packing and re-torquing the gland packing

bolts. Despite their determined efforts, this caused not only a concern of visibility, but as the environmental ambient temperature conditions dropped, the leaking steam would freeze, elevating the level of concern. While the OEM had several requirements, safety was their top priority. Before, the plant could be handed over to the end-user, the OEM knew they had to resolve these serious issues.

- Efficiency - In addition to the globes' visible leakage,

the hidden leakage leaking past the downstream seat became a major issue. Globe valves are permitted to leak, even when brand new going into the systems as they are only tested to Class IV, V or VI. In order for OEMs/EPCs to keep to their contractual efficiency promises, it is imperative that steam is kept in the systems. The effects of steam loss results in significant efficiency losses.

- Back charges/LDs - The OEM was soon to be exposed to

hefty late delivery penalties and back charges due to the inability of not being able to meet their pressing deadlines. Solution The OEM was sceptical about cutting out the globe valves and replacing them in-kind. By doing so, they would continue to face the previously identified challenges. The warranty team decided, instead, to replace them with ValvTechnologies' zero-leakage metal-seated ball valves. Once the decision was made, timing became crit-

ical and ValvTechnologies quickly implemented a resolution plan. The plan involved scouring their warehouses and distribution network to locate the valves necessary to not only resolve the leakage issues, but to get the valves expedited to site to meet the OEM's deadline.

The team's collaboration allowed ValvTechnologies to deliver 70 ball valves in a variety of sizes, pressure classes, materials, etc. required (1" - 3", 900# - 4500# in carbon steel, F22 and

F91). All valves arrived in time and were installed within the remaining five weeks prior to the OEM's liquidated damages (LDs) kicking in.

In addition to helping the OEM overcome their immediate problem, ValvTechnologies assisted in addressing their safety concerns that also eliminated massive LDs and performance back charge penalties. The OEM's Optimization Team performed tests to determine the final outcome relating to performance and efficiency of this site. To the delight of the OEM and its customer, the

reported outcome stated that after the steam leakages were fixed and valves were adjusted to capture more steam along with a variety of other maintenance procedures performed, the corrected steam turbine gross power was increased approximately by 10.3 MW. These actions not only increased the overall plant output by roughly 10 MW but also decreased the plant heat rate by 64 Btu/kWh.

For more information contact local distributor: Highveld Technical Services E-mail: sales@hts.za.com

Ceramic sliding disc valve

THE SDL sliding disc valve from SAMSON CERA SYSTEM is a gate valve with a ceramic interior. Ceramic valves are used for highly abrasive and / or corrosive media.

Ceramic discs

The operation of this valve is based on three floating ceramic discs that seal against each other. The middle disc - the closing part - moves between the two outer static discs. Opening and closing is done by the vertical movement of the middle disc.



Long service life

The valve is designed for extreme process conditions, abrasive and/or erosive medium, whereby

the ceramic interior ensures a long service life. The connections are standard with internal thread. Other connection variants are possible.

Product features

- Valve dimensions: DN 15 to DN 32
- Pressure: PN 40
- Temperature range: -10 ° to + 250 ° C
- The internal parts are resistant to wear and cavitation
- Gas-tight seal in both flow directions (leakage class VI)
- Small face-face dimensions (56mm)

For more information E-mail: samson@samsongroup.com

Setting up your valves for success

MOST valve damage is caused by installation and related issues, says JP Thyse, Senior Technician at Allmech, South African manufacturer of boilers and supplier of water treatment components. This includes: water damage to motor and electrical components, damage caused by power spikes, debris (sand, grit or stones) or other damage caused by high water turbidity and damage due to over-tightening of the valves and fittings.

"These problems are often caused by poor setup," he says. "For example, we see internal damage because no water analysis has been done on the main raw water supply, or there's no pre-filtration system to remove large particles. We also see water damage occurring from installations outside, with no protection from the natural elements."

"Remember that the manufacturer's conditions for feed water supply must be met, or your warranty will be voided,"

Thyse says. "Before installing your valve, inspect the system and all the connection fittings carefully, making sure nothing is damaged during shipping. If any part is cracked or broken, please do not proceed with the installation."

Expert setup advice

Thyse's top advice for valve setup includes ditching the thread tape (most control valves come with O-rings, making it easier to seal the fittings used - no tape necessary), and to avoid overtightening fittings, which can crack the valve body.

"When using copper pipe, do all the soldering before connecting pipes to the valve," he advises. "Torch heat will damage plastic parts. When using galvanized pipe onto plastic fittings, take care not to cross-thread. The brine tube and drain pipeline should not be bent or plugged, and it's important to ensure your water pressure is within the operating recommendations. Also, change the injector fittings depending on the flows and vessel sizes, and ensure the valve has 24-hour power and water supply. I also recommend that softening/filtration plants are installed inside a building or under a roof to avoid weather damage."

Finally, Thyse advises ensuring that the valve is connected correctly so that no hot water can flow back into the softener (install a non-return valve if necessary), and using a bypass valve so that the valve can be isolated if maintenance or repairs are required.

For more information, visit www.allmech.co.za

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Powerful partnership brings water to millions

TWO million people now have life-saving water access thanks to a unique partnership between two of the world's leading organizations. In 2015, Grundfos, the world's largest water pump manufacturer, and World Vision -- the largest nongovernmental provider of clean water in the developing world -- announced their goal to jointly provide clean water to 2 million people in sub-Saharan Africa over the next five years.

Despite a global pandemic and significant challenges, the two organizations are celebrating the achievement of this ambitious milestone -- more than 2.4 million people who now have access to water. And they're aiming even higher -- planning to reach 4 million additional people by 2024.

While it is World

Vision's expertise, network and specialized knowledge of local conditions and needs that have defined the approach taken, when bringing water to the societies benefitting from the partnership, it is the sustainability, longevity and robustness of the Grundfos water solutions and services together with the company's geographical reach, that have ensured that water would continue to flow to the people, after the water points were set up.

The water systems they are using are not just resilient in the face of the current crisis, but environmentally sound for the future. World Vision installed more than 1 000 Grundfos solar-powered pumps in sub-Saharan African villages in order to provide a sustained water supply.

Telescopic gland seal guards safeguard operators from rotating parts

A new patented guard make pump maintenance safer and can be retrofitted without pump disassembly.

Weir Minerals announce the global availability of new telescopic gland seal guards that further protect maintenance personnel performing gland seal adjustments on its Warman® slurry pump range.

The guards never need to be removed in order to adjust the gland seal followers, making this routine task far safer. The telescopic design, which can be retrofitted into existing Warman® pumps without disassembly, ensures secure fitment no matter how the pump is set up.

"At Weir Minerals, we always put the safety of our customers

and employees first. That's why I'm proud to announce these innovative gland seal guards, which provide miners with an elegant solution to a long-standing safety concern -- how to safely adjust the gland seal of a slurry pump while it's operating," says Marcus Lane, Global Product Manager, Centrifugal Pumps.

"We need to adjust the glands whilst the pump is in operation. Historically this meant removing the guard and exposing personnel to rotating parts. The new guards never need to be removed during pump operation and address a number of safety concerns our service teams frequently observe on site, such as the possibility for the rotating elements to



Warman® telescopic gland seal guards are available worldwide.

forcefully eject the tool being used to adjust the gland follower. Another common concern is the tendency for operators to lay cloth over the seal area during adjustment to block the water spray. These fabrics can become entangled around the rotating shaft whilst also ensnaring the tool, fingers, hand or arm of

the maintenance personnel," he continues.

"Warman telescopic gland seal guards fully protect maintenance personnel from potentially dangerous situations arising from an exposed shaft."

The guards, which comply with global standards including ISO 14120, ISO 13857, AS4024.1601 and

AS4024.1801 are available for the majority of Warman® pumps including MCR, WBH and AH, and additional designs will be engineered upon request.

Manufactured from stainless steel to prevent corrosion, guards are painted golden yellow to be quickly identifiable as a safety feature.

3 Ways Mines are creating sustainable water management

IN EY's (Ernst & Young) latest edition of top business risks facing the sector, 'License to Operate' risks leapt from 7th in 2018 to the top of the list. This risk relates to pressures from modernisation, global politics and rising nationalism -which mines meet through sustainable practices, better stakeholder relations, and shared value outcomes. Such responses require innovation and adopting new technologies, which is why 'digital effectiveness' is second on EY's list.

It mirrors the view held by water-technology provider, Xylem, said Chetan Mistry, Strategy and Marketing Manager for Xylem Africa: "Mines have to do more with less if they want to survive. A significant amount of those choices related to sustainability, which includes environmental and regulatory concerns, but also efficiency and maintenance. When mines can reduce waste, reuse wastewater, and cost-effectively maintain infrastructure, they create sustainability for operations as well as the environment.

"Mining has an opportunity, through digital technologies, to attain all those benchmarks, specifically because these technologies hadn't existed before or weren't nearly as affordable as they are now."

To illustrate the point, Mistry offers several project examples from Xylem that help mines manage their water

resources more sustainably:

Wastewater harvesting:

Mining wastewater contains numerous minerals that can be extracted as an alternative revenue stream. South Africa is home to a Nickel Purification Plant that does exactly this: using a design that incorporates a variety of dif-

ferent pumps handling high temperatures and corrosive chemicals, the site extracts high-quality nickel from the wastewater stream of a nearby platinum mine, that otherwise could have become an environmental challenge.

Remote monitoring:

Equipment that requires less operator oversight will

improve efficiency and better overall use of resources. A copper mine in Peru tackled its dewatering challenges using surface-based mobile pumps to draw water from a depth of 365 metres. These pumps are integrated with the mine's SCADA system for remote start and stop, and staff can check the pumps' metrics and performance within

seconds, even though they are located on different sites across the mine.

Innovative inspection:

Inspection of infrastructure is vital for both efficiency and environmental compliance but finding a small leak in a lot of pipes was often pointlessly expensive and ineffective. But new innova-

tions are changing this, such as the Smartball acoustic detector that rolls inside a pipe and can detect pinhole leaks. A Colorado-based mine used this system to inspect two parallel HDPE lines that move hazardous water across an ecology-sensitive area. 63% of mines are concerned about the growing cost of water and sustainable water manage-

ment, according to a Xylem survey. But this is also an opportunity: modern technologies and best practices offer more ways for mines to manage water while saving money and meeting compliance.

This golden triangle is helping mines become much more sustainable and in harmony with their surrounding communities and the environment.

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The LNG picture post-Covid-19

By Andries Krijgsman,
LNG Sector Director at
Royal HaskoningDHV

“BEFORE Covid-19, the price of LNG was already low due to increasing LNG supply from shale gas in the USA, and as a result from oil price wars between Saudi Arabia and Russia; LNG prices are somewhat “linked” to the price of oil. When Covid-19 hit us, this lowered demand for LNG too, putting further pressure on LNG prices.

This has led to several LNG liquefaction/export projects being put on hold or being cancelled.

On the LNG import side, the picture is not entirely bleak, as low LNG prices are beneficial for low cost power production from gas for example. That said, with international travel being next to impossible, and project development and construction very difficult, some import projects are also facing delays.

In the mid-term there

is substantial room in the market to import LNG. In countries like Vietnam, for example, they are really in need of more power. They’ve also done very well in containing their COVID-19 outbreak, so we could see LNG projects continuing there. This is especially the case as globally, countries are beginning to see power production from coal as unwanted for both environmental and climatological reasons.

There are also projects that are still at the desk stage – with feasibility and other assessments being conducted – and which perhaps weren’t planned to begin for another year or two.

LNG is the cleanest hydrocarbon fuel and is a great intermediary in our society’s energy transition – after all, we aren’t going to be able to move to 100% clean, renewable energy overnight. We can already see success in the ways it is being used.

The traditional reason to convert natural gas to LNG (by liquefaction



– cooling to -160°C and reducing volume by a factor of 600) was to avoid building a pipeline from source to destination. LNG also adds flexibility: a pipeline goes from A to B; an LNG carrier ship by comparison can go almost anywhere.

LNG carriers were always large and gas use was only in large scale power production. More recently, other ‘small scale’ LNG uses have been developed: the small-scale transport ship fleet is growing, LNG is now also being used as shipping fuel, and LNG is also gaining ground as truck fuel.

In China for example, around 150 000 trucks are currently running on LNG: China is making

serious commitments to fighting air pollution.

The lower operating cost also applies to running power generators on LNG instead of diesel. In many developing countries with unreliable power production, many communities out of necessity have diesel (back-up) power generation.

LNG can also be transported in ISO Containers (not just bulk ships). These containers have the same dimensions as regular containers and can be transported on regular container trucks. This opens the door to remote, small scale clean power generation. A single 12 m LNG ISO container firing a regular generator, can produce

5 MW of electric power per day. This is quite a lot of electricity, especially in areas which previously had no or only unreliable electric power. The trick then becomes to set up a reliable logistics chain to provide a continuous supply of LNG containers to the generator.

The industry would benefit from higher subsidies on conversion to LNG (as that can be quite costly) or taxes on other fuels in order to reduce its comparative cost. **But with 20-25% less CO₂ emissions than diesel/heavy fuel oil (HFO), and essentially no soot, sulphur oxide (SO_x) and nitrogen oxide (NO_x) emissions, there’s no doubting LNG has a place in our fuel future.**

As many countries take a phased approach to moving away from fossil fuels, LNG, as the cleanest of the bunch, can be the perfect go-between in that process. The transition seems to be moving to large scale use of hydrogen, but the technology for that and for its large-scale use is still many years – if not decades – away. The focus for now though is on weathering the storm. If we can do that, there are definitely opportunities to be found.”

Transporting LNG will always require ships, irrespective of ship type: in bulk in large or small LNG carriers, or when transported on container ships in LNG ISO containers. Obviously, ships need ports and port facilities. As the global market leader in port and harbour development, Royal Haskoning-DHV has a vital role to play here.”

Ed:

Regular CBN readers will recall that considerable space has been given to the use of LNG in power

generation, especially the potential of converting our aging and maintenance prone coal fired stations to LNG via the existing 865 km ROMPCO pipeline.

The versatility of LNG or rather its transportation from point of extraction to point of use is undeniable – whether by pipeline or via carrier ship – in bulk or in ISO containers – make LNG use as a fuel a no brainer, especially coupled with its lower cost and its environmental credentials compared with coal and diesel in power generation.

The use of power ships, as discussed on the back page of our current issue “The other side of the Coin” presents another viable option to overcome our current energy deficiency but alas, it seems that the opening of any door to LNG would be too much for well healed coal interests to bear, so we continue to be burdened with a chaotic state of affairs perpetuated by corrupt, inept politicians who ‘see’ the Emperor’s new clothes and self-interest, so look the other way.



Portable gas cylinders simplify bump testing

What is a bump test?

BUMP testing is the only way to ensure proper sensor and alarm functionality. A bump test is defined as the process of briefly exposing sensors in a gas detector to an expected concentration of gas that is greater than

the alarm set points. The purpose of the bump test is to check for sensor and alarm functionality. However, it does not check for accuracy. It is important to note that accuracy is ensured through calibration,

which is a completely different process than bump testing. Think of bump testing a gas detector like using a flashlight. What’s the first thing everyone does when they pick up a flashlight? They try turning it on to see if it works!

If the flashlight does not turn on, you know that you either need a new bulb, a new battery, or a new flashlight, because the one you have cannot help you. Gas detectors are no different. The first thing you should

do before using your gas detector is to make sure it works. Without a bump test, how do you know that the gas detector you have can perform the way you need it to? Applying gas to the sensors in a detector is just like checking to see if your flashlight works. If the bump test fails, you know that troubleshooting or further maintenance is required.

COMTEST - local representative of Industrial Scientific- has on offer Bump-N-Go™ portable gas cylinders, designed to simplify bump testing for mobile workers or those who do not have access to a docking station. The miniature cylinders are only 97 mm tall and provide up to 250 bump tests when using the corresponding pushbutton regulator. The cylinders have a one-year shelf life and are available for single-gas CO and H₂S instruments as well as standard 4-gas (CO, H₂S, O₂, LEL) instruments. Bump-N-Go cylinders can be purchased individually or in a 6-pack.

“We are pleased to offer this highly portable bump testing solution,” said Michelle Hammons, product manager, instrumentation at Industrial Scientific. “Now people don’t need to choose between transporting large bottles of gas or not bump testing at all”.

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Sasol ease its debt burden in \$2bn deal

LYONDELLBASELL and Sasol have announced they have entered into a definitive agreement to form a 50/50 joint venture (JV) through which LyondellBasell will acquire 50 percent of Sasol's 1.5 MM ton ethane cracker, 0.9 MM ton low and linear-low density polyethylene plants and associated infrastructure for a total consideration of US\$2 Billion. The agreement includes customary rights for each partner regarding the potential future sale of its ownership interest. The JV will operate under the name Louisiana Integrated PolyEthylene JV LLC.

"This investment represents a unique opportunity to bring together the best of both compa-

nies and create deep, long-term value while immediately realizing the many benefits of new, strategically-located, world-scale assets," said Bob Patel, CEO of LyondellBasell. "This approach is consistent with our strategy of investing in high quality assets that meet our threshold for value creation, while also maintaining our investment grade rating and commitment to our dividend. The transaction is expected to be accretive to both cash flow and EPS within one year with significant upside as market conditions continue to improve."

"We are very pleased to have LyondellBasell join us as a key partner in our U.S. Base Chemicals Business in Lake

Charles. LyondellBasell is the ideal partner to ensure the success of these world-class assets with its deep expertise in commodity chemicals," said Fleetwood Grobler, President and CEO, of Sasol. "This milestone coincides with our 70-year anniversary and represents a significant step in creating Future Sasol, which will be a more sustainable and resilient business for the long-term. We're excited about this joint venture and look forward to building a mutually beneficial and successful partnership with LyondellBasell."

Strategic and financial benefits

The JV's newly constructed assets are

strategically located on the U.S. Gulf Coast, with access to low-cost feedstock, storage and logistics infrastructure.

LyondellBasell's investment in the JV allows the company to expand in a core area of its business and leverages the company's operational and commercial strengths. Additionally, by investing in these assets, the company will realize immediate returns and eliminate customary construction risks associated with new project execution.

This transaction represents a significant step for Sasol in achieving its financial and strategic objectives by reducing net debt and rapidly shift-



Sasol's Lake Charles troubled petrochemical facility.

ing the company's portfolio towards specialty chemicals. Sasol undertook a process to determine the opti-

mal partnership construct for its U.S. Base Chemicals Business. The LyondellBasell proposal offered the

best combination of upfront and long-term value, consistent with Sasol's long-term strategic priorities.

Oil and gas giants take a beating

EVEN before the coronavirus pandemic, the oil and gas industry was faced with slumping prices. However, with a record collapse in oil demand amid the coronavirus lockdown, the COVID-19 crisis has further shaken the market, causing massive revenue and market cap drops for even the largest oil and gas companies.

According to data presented by StockApps.com, the top five oil and gas companies in the United States lost over \$307bn in market capitalization year-over-year, a 45% plunge amid the COVID-19 crisis.

Market cap still below March levels

Global macroeconomic concerns such as the US-China trade war and the oil overproduction set significant price drops even before the coronavirus outbreak. A standoff between Russia and Saudi Arabia in the first months of 2020 sent prices even lower.

After global oil demand plunged in March, Saudi Arabia proposed a cut in oil production, but Russia refused to cooperate. Saudi Arabia responded by increasing production and cutting prices. Shortly Russia followed

by doing the same, causing an over 60% drop in crude oil prices at the beginning of 2020. Although OPEC and Russia agreed to cut oil production levels to stabilize prices a few weeks later, the COVID-19 crisis already hit. Statistics show that oil prices dropped over 40% since the beginning of 2020 and are hovering around \$40 a barrel.

Such a sharp fall in oil price triggered a growing wave of oil and gas bankruptcies in the United States and caused a substantial financial hit to the largest gas producers.

In September 2019, the combined market

capitalization of the five largest oil and gas producers in the United States amounted to \$674.2bn, revealed the Yahoo Finance data. After the Black Monday crash in March, this figure plunged by 45% to \$373bn. The following months brought a slight recovery, with the combined market capitalization of the top five US gas producers rising to over \$461bn in June.

However, the fourth quarter of the year witnessed a negative trend, with the combined value of their shares falling to \$367bn at the beginning of this week, \$6.2bn below March levels.

Exxon Mobil's market cap halved in 2020, almost \$155bn lost YOY

In August, Exxon Mobil Corporation, once the largest publicly traded company globally, was dropped from the Dow Jones industrial average after 92 years. As the largest oil and gas producer in the United States, the company has suffered the most significant market cap drop in 2020.

Statistics indicate the combined value of Exxon Mobil's shares plunged by 52% year-over-year, falling from almost \$300bn in September 2019 to \$144bn

at the beginning of this week.

Phillips 66, the fourth largest gas producer in the United States by market capitalization, witnessed the second-largest drop in 2020. Statistics show the company's market cap dipped by 49.6% year-over-year, landing at \$22.9bn this week.

The Yahoo Finance data revealed that EOG Resources lost over \$21bn in market cap since September 2019, the third-largest drop among the top five US gas producers.

Conoco Phillips witnessed a 42% drop in market capitalization

amid the COVID-19 crisis, with the combined value of shares plunging by almost \$30bn year-over-year.

Statistics show Chevron witnessed the smallest market cap drop among the top five companies. At the beginning of this week, the combined value of shares of the second-largest US gas producer stood at \$141.5bn, a 36.9% plunge year-over-year.

The full story can be read here: <https://stockapps.com/five-largest-us-oil-and-gas-companies-lost-307bn-in-market-cap-yoy-a-45-plunge-amid-covid-19-crisis/>

Petrochemicals set to be the largest driver of world oil demand

PETROCHEMICALS – components derived from oil and gas that are used in all sorts of daily products such as plastics, fertilisers, packaging, clothing, digital devices, medical equipment, detergents and tyres – are becoming the largest drivers of global oil demand, in front of cars, planes and trucks, according to a major study by the International Energy Agency.

Petrochemicals are set to account for more than a third of the growth in world oil demand to 2030, and nearly half the growth to 2050, adding nearly 7 million barrels of oil a day by then. They are also poised to consume an additional 56 billion cubic metres (bcm) of natural gas by 2030, and 83 bcm by 2050. The Future of Petrochemicals is part of a new IEA series shining a light on "blind spots" of

the global energy system – issues that are critical to the evolution of the energy sector but that receive less attention than they deserve.

The report is among the most comprehensive reviews of the global petrochemicals sector, and follows other reports in the series, including the impact of air conditioners on electricity demand, the impact of trucking on oil demand, or the role of modern bioenergy in the renewables sector.

Petrochemicals are particularly important given how prevalent they are in everyday products. They are also required to manufacture many parts of the modern energy system, including solar panels, wind turbines, batteries, thermal insulation and electric vehicles. "Our economies

are heavily dependent on petrochemicals, but the sector receives far less attention than it deserves," said Dr Fatih Birol, the IEA's Executive Director. "Petrochemicals are one of the key blind spots in the global energy debate, especially given the influence they will exert on future energy trends. In fact, our analysis shows they will have a greater influence on the future of oil demand than cars, trucks and aviation."

Demand for plastics – the key driver for petrochemicals from an energy perspective – has outpaced all other bulk materials (such as steel, aluminium, or cement), nearly doubling since 2000. Advanced economies currently use up to 20 times more plastic and up to 10 times more fertiliser than



developing economies on a per capita basis, underscoring the huge potential for global growth. The dynamism of the petrochemical

industry is also driving new trends around the world. After decades of stagnation and decline, the United States has re-emerged as a

low-cost location for chemicals production thanks to the shale gas revolution, and is now home to around 40% of the global ethane-

based petrochemical production capacity.

Article abridged. Reprinted from bicmagazine.com

Conference for SA automotive industry

THE global automotive industry, of which South Africa is an integral part as a manufacturing and distribution base, is going through a challenging period due to the crippling effects of the COVID-19 pandemic and as it wrestles with the biggest technological changes in history. The industry was already facing a persistent decline in new vehicle sales in the country pre COVID-19 and was engaging with its social partners to find innovative solutions to stimulate demand for new vehicles in the country.

In the light of all these developments, it is ideal timing for a top-level virtual conference that will consider many of these challenges facing automotive manufacturing, logistics, retailing and aftermarket services.

Hypermobility, organised by Messe Frankfurt South Africa in conjunction with NAAMSA and powered by SA's motor-ing marketplace, Auto-Trader, will be a fully virtual engagement session from 08h00 to 17h00 on

Wednesday November 18, 2020. The theme is "Navigating the turbulence together towards mobility 4.0", which will be tackled by unpacking the impact of the current operating environment on the motor industry.

Pricing (excluding VAT):

Early Bird: R425 per person (before 30 October).
Group discount: R350 per person (group of five or more delegates).
Standard booking: R500 per person (after 30 October).

Bookings:

HyperMobility Conference at <https://hypermobility.co.za/>
Website: <https://hypermobility.co.za/>
Linkedin: HyperMobility
Facebook: <https://www.facebook.com/HyperMobilityConference/>

The energy efficiency of vane technology

THANKS to their high volumetric efficiency, mechanical efficiency and low rotation speed, Mattei rotary vane compressors are able to compress air in a more efficient and environmentally friendly manner than other air compressors.

On average, compressed air is responsible for 10% of industry's electricity consumption, with peaks of up to 20%.

More efficient air compression technologies, together with the correct sizing of the system, can therefore considerably limit the energy consumption of companies and contribute to the containment of CO2 emissions related to the use of fossil fuels.

Moreover, the energy efficiency of the compressor is key to reducing its Life Cycle Cost, a parameter that assesses the entire cost of ownership of capital goods. It should not be forgotten that electricity accounts for about 80% of the total cost of a compressor's life cycle.

Mattei air compressors incorporating exclusive rotary vane technology enable efficient production of compressed air, reduction of energy costs, CO2 emissions and machine operating costs.

The importance of design

Rotary vane compressors are based on a

design that provides important benefits:

- the process of air compression is volumetrically very efficient thanks to the elimination of air leaks during the compression phase. Unlike rotary screw compressors, where the small clearances between the moving mechanical parts allow for air leaks, the absence of leaks in vane compressors is due to the particular rotary vane design consisting only of a rotor, stator and vanes;
- the blades compress the air, never coming into direct contact with the

internal surface of the stator, driven by centrifugal force during rotation, obtaining a perfect seal thanks to the presence of a film of oil;

- moreover, the structure of the machine allows minimal the mechanical losses, thus achieving 90% of mechanical efficiency with much lower consumption of energy.

The high volumetric efficiency, the mechanical efficiency and the low speed of rotation determine energy savings of more than 15% compared to other rotary compressors.

Traxtion commits to R1,5 billion rail investment

TRAXTION Group, a provider of rail services and solutions across the African continent has announced its intention to embark on a significant investment programme within South Africa's rail sector.

This follows the Economic Recovery Plan presented by President Cyril Ramaphosa at the Joint Sitting of Parliament on 15 October where he announced that the State will be granting third-party access to the core rail network within the next 12 months.

Under this new policy private freight rail operators will be allowed to operate on the state-owned rail infrastructure alongside and complementary to Transnet.

In response to this policy change, Traxtion has announced an initial locomotive and wagon build programme of R1.5 billion upon conclusion of the appropriate access rights with Transnet.

Traxtion plans to invest a further R14-17 billion in locomotives and wagons over the next 5 years as part of carefully scaled rolling procurement programme.

The initial investment has the support of Traxtion's shareholders, including Harith General Part-



ners, the leading Pan-African fund manager for infrastructure development across the continent, and Principle Capital, a London-based investment company.

Traxtion Chief Executive Officer (CEO) James Holley, who has for some time advocated the advantages of open access to the core network for private rail operators, notes that: "Traxtion is excited by the immense potential that the South African rail sector represents. Transnet has made significant capital investments in the sector and is one of the world's largest rail companies. South Africa has a vast rail track infrastructure base and it is the excess network capacity that will enable Government to realise a rare number of wins with this policy shift".

"First, it is a win for Transnet as they will be able to earn a new revenue stream through "track access fees".

"Second, it is a win for the rail industry as companies like Traxtion will be able to enter the market and grow the rail customer base."

"Third and most importantly, it is a win for South Africa's ambition of stimulating general economic growth by leveraging off the benefits of expanded access to rail services."

"We have a long track record in the sector, having run trains for the last 33 years in South Africa and Africa. We have invested significantly over the years in skills,

capacity, rolling stock and our Rosslyn Rail Services Hub. In addition, we are the only ISO 9001:2015 accredited operator in SA, and our rail school is TETA and QCTO accredited."

Whilst open access is an exciting policy change, the big story is not necessarily the investment that will be made by Traxtion, but the positive impact that greater access to railway infrastructure will have on the broader economy. This includes the development of new businesses, mines and farms and the expansion of existing businesses that now will have access to rail services.

"When we invest in a train set to service a mine for example, we will employ 40-50 people to run that service, but that mine could employ 5000 people. That's the real story, and that is why this is such an exciting policy shift," Holley said.

Holley explained that the rolling stock investment programme will see Traxtion partner with a blue-chip OEM supplier for locomotives to be assembled in the local market. For the wagons, Traxtion will partner with domestic manufacturers.

Traxtion will target the movement of general freight in South Africa converting road movements to rail. Traxtion plans to partner with established freight logistic businesses and does not intend to invest in warehousing facilities or freight consolidation hubs.

Maxima – Range of Compressors

The MAXIMA Series offers exceptional performance and energy efficiency for facilities with higher air demand levels.

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COMPRESSOR SALES

IPD launches its own water pump for CAT 3500 engine

IPD has introduced its water pump for the CAT 3500 engine series – this is the first of a number of water and oil pumps due for release by IPD this year. This is the first water pump engineered, manufactured and tested by IPD, and is a result of the demand for a reliable quality part with the market having long experienced many mediocre and sub-standard water pumps that either leaked or otherwise failed. The IPD product is a significant improvement on the water pump #4160610 – previously model #2128177.

To achieve this benchmark, IPD set its in-house engineering team to work on a new design. It used the most advanced three-dimensional scanning and coordinate measurement machine (CMM) technologies to create this precision water pump. The unit includes only the highest quality materials and components, with precision-machined cast-iron housings and impellers, as well as steel shafts and bronze thrust washers. Ceramic, spring-loaded water seals are used, with Teflon lip-type hydrodynamic oil seals.

IPD, which is committed to being the quality leader in engine pumps, ensures that every pump

is carefully inspected and tested for leakage, pressure and flow by the company's dedicated quality assurance team.

Innovative packaging ensures these new pumps arrive in perfect condition. Recyclable

plastic caps protect the bearings during shipping and prevent debris from getting inside the pumps. Rather than using the typical shredded cardboard to pack the units, IPD has rigid, custom-fit foam inserts

to provide total protection.

IPD also plans to launch water pumps for CAT engines in the C15/C18, 3300, C27/C37 and C15 series, as well as an auxiliary water pump for the G3300 engine.



IPD has introduced its water pump for the CAT 3500 engine series.



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Drive belts last longer

AUTOBAX has extended its range of Gates automotive components, specifically-designed belts for high-mileage cars.

“RoadMAX™ by Gates accessory belts have been developed by the Gates technical and engineering teams, in line with DIN standards, to meet growing demand for replacement components for high-mileage vehicles,” explains John Black, managing director, Autobax automotive after-market specialists. “RoadMAX belts, which offer optimal performance in older vehicles, compliment the premium Gates range of light and heavy-duty belts.”

Priced-by-performance RoadMAX belts feature optimised dimensions; good belt flexibility and stability, as well as smooth-running operation.

Autobax is the preferred Gates service provider locally and the sole distributor of Gates automotive timing components in South Africa.

Professional body pledges to fight corruption

SOUTHERN Africa's Professional Body for Supply Chain Management, SAPICS, has affirmed its support of an industry-wide pledge to fight corruption within the supply chain sector.

"SAPICS is steadfastly committed to maintaining the highest standards of professionalism in the supply chain and procurement profession..."

"As the president of SAPICS, and in my capacity as the group chief procurement officer of PRASA, and as a passionate supply chain professional, I pledge to take a firm stand against corruption in all its forms within the supply chain fraternity," said SAPICS president Keabetswe Mpane.

She said that SAPICS is proud to support and endorse a petition launched by AWISCA (African Women in Supply Chain Association) that urges all stakeholders to root out corruption. Among other demands, this petition calls for "the robust public prosecution of

those found guilty of any form of corruption".

The supply chain profession's stand follows a growing public outcry over the corruption taking place in the procurement of PPE (personal protective equipment), with President Cyril Ramaphosa describing those involved in this corruption as "hyenas and scavengers".

"SAPICS is steadfastly committed to maintaining the highest standards of professionalism in the supply chain and procurement profession. We are uncompromising in our drive to ensure that individuals and organisations in the supply chain field have the skills and support that they need to operate with integrity and uphold the highest moral and professional standards," Mpane said.

Ethical leadership and the scourge of corruption will be addressed in one of the powerful presentations planned for the annual SAPICS Conference next month. Human capital and strategy expert Buyani Zwane is one of the speakers who will be addressing supply

chain professionals at this year's online event. He asserts that Africa's future growth and prosperity hangs in the balance, as corruption erodes the basic fibre of economies, organisations and communities.

What is needed most, Zwane says, is ethical leadership. "This is the foundation on which we must build the path to attaining inclusive and sustainable economic growth for the SADC region and African continent undeterred by pandemics."

Hosted annually by SAPICS, The Professional Body for Supply Chain Management in Southern Africa, the SAPICS Conference is Africa's leading knowledge sharing and networking event for supply chain professionals. This year, as a result of the Covid-19 pandemic, the event takes the form of a virtual conference on 23 and 24 November.

For further information or to register for SAPICS 2020, call 011 023 6701 or email info@sapics.org.za. Up-to-the-minute information is also posted on the SAPICS website: www.sapics.org.za

From deviation to remedy – how data lakes are key to removing friction points in the supply chain

By Andrew Dawson,
MD of Cognizance

THE supply chain in the Fast-Moving Consumer Goods (FMCG) space has traditionally been highly siloed, characterised by a lack of visibility across the different areas. This has resulted in minimal line of sight from the manufacturer down to the retailer, which limits insight and leads to numerous points of friction, and resultingly higher costs.

"The ultimate goal is to understand what is happening in the supply chain and in the minds and wallets of consumers in real-time..."

The ability to leverage interactive data sharing throughout the supply chain and mine data in real-time across touch points has, up until recently, been considered an unattainable goal. However, the evolution of data lakes and advancements in Artificial Intelligence (AI) has the potential to change this, removing



the points of friction, optimising the supply chain and ultimately enabling the holy grail of Just in Time (JIT) manufacturing.

Real-time analytics, real insights

A typical supply chain environment consists of multiple modules, ERP platforms and third-party applications. Each of these is a silo of information, which limits insight and line of sight across the chain. Data lakes are a simple term to describe a complex ecosystem that finally pools these disparate data sources into integrated pipelines. This enables the data to be mined intelligently, as a holistic entity, and then visualised in a way that makes sense to the end user. This in turn delivers vital

visibility across the different verticals, from warehousing to logistics, manufacturing to delivery, order generation to sales, returns and beyond.

The advantage is in the details

Business Intelligence has always revolved around reporting and manually forecasting based on insights of static, historical data. The AI and machine learning elements behind data lakes, however, enable mining and tracking of historical patterns and extrapolating this data to more accurately predict future patterns of behaviour.

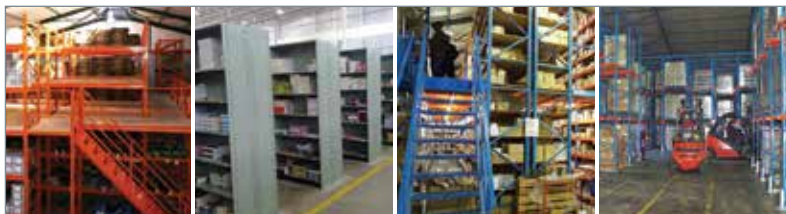
The advantage is in the details, but the key lies in the ability to bring all these seemingly disparate data flows into a central

repository. This is the crux of the ability to deliver that all important single version of the truth.

From deviation to remedy to JIT

Understanding trends is critical to success in FMCG, as without this it is impossible to gauge demand and facilitate supply. With accurate forecasting, it is possible to gain a much more accurate picture of both supply and demand. Where there are deviations above or below predicted trend lines, this can be remedied fast to ensure minimal supply chain disruption.

The ultimate goal is to understand what is happening in the supply chain and in the minds and wallets of consumers in real-time. Real-time analytics ensures manufacturers are able to deliver the right products to the right shelves at the right time and at the right price. By identifying friction points in the supply chain and smoothing them, it is possible to ensure the ideal blend of cost-effective delivery to meet customer expectations – the nirvana of JIT.



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Adapting to the collapse of the aircraft parts logistics supply chain

SINCE the beginning of the COVID-19 pandemic, the number of daily flights across all sectors of the industry has significantly decreased and with that, like any other business in the industry, Jet Maintenance Solutions has had to adapt to the new normal.

In the pre-crisis market, some of the aircraft parts cargo that was meant of aircraft serviced by Jet MS was flown in on regular passenger jets, but as the pandemic swept across the industry, this option vanished rather quickly. To mitigate the risk of a parts shortage, the logistics department at the company began searching for alternatives that could provide Jet MS with reliable and high-quality services. Even



though shipping costs rose due to limited capacity and record-high demand, having chosen an experienced freight-only carrier allowed the company to continue operations.

Previously, the market allowed for the privilege of ordering and receiving parts in just 24 hours. Today, aircraft spare parts suppliers such as OEMs have experienced slowed activity due to reduced capacities across the sector, and the downsizing of the personnel that

operates and coordinates deliveries. This has negatively affected the logistics of the sector and allowed the market to experience operational inefficiencies such as an increasing number of errors and mistakes in providing adequate documentation and precise time quotations.

All teams in Jet Maintenance Solutions were prompted to improve their operational effectiveness while working in a different-from-normal schedule as the prob-

ability and outcome of disruptions and delays arose.

It is clearer now that COVID-19 not only affected passenger services but also had a profound effect on international air cargo deliveries. While some of Jet MS's aircraft parts came from air cargo airlines and couriers, a percentage share of those deliveries shifted to ground transport means, which has proved to be less time efficient, and brought in new challenges to overcome.

Making biodiesel from dirty old cooking oil just got way easier

By RMIT University (formerly known as Royal Melbourne Institute of Technology and Melbourne Technical College)

SPONGE-like catalysts could transform biodiesel production and chemical manufacturing.

Researchers have developed a powerful, low-cost method for recycling used cooking oil and agricultural waste into biodiesel, and turning food scraps and plastic rubbish into high-value products.

The method harnesses a new type of ultra-efficient catalyst that can make low-carbon biodiesel and other valuable complex molecules out of diverse, impure raw materials.

Waste cooking oil currently has to

go through an energy-intensive cleaning process to be used in biodiesel, because commercial production methods can only handle pure feedstocks with 1-2% contaminants.

The new catalyst is so tough it can make biodiesel from low-grade ingredients, known as feedstock, containing up to 50% contaminants.

It is so efficient it could double the productivity of manufacturing processes for transforming rubbish like food scraps, microplastics and old tyres into high-value chemical precursors used to make anything from medicines and fertilisers to biodegradable packaging.

The catalyst design is reported in a new study from an international collaboration led by RMIT University, published in Nature Catalysis.



The decline and fall - one in five municipalities in a state of collapse

By Jordan Griffiths

First published by *The Daily Maverick* on 06 October 2020

THE collapse of a local municipality is easy to spot. The first warning signs always come from the finance departments. It begins with decreasing revenue collections. Then streets begin crumbling as they are not maintained, waste collection is disrupted, parks are not maintained, illegal dumping increases and the water supply becomes compromised.

There is a gradual crisis taking place in South Africa and it relates to the impending collapse of local government under the African National Congress. Media reporting on local municipalities often does not make the mainstream headlines as generally there is more interest in national news unless it pertains to one of the large metropolises. As a result, there has not been much analysis on the state of local government across the country. While readers may follow the news about the area in which they live, they may not have a holistic picture of the state of local government nationally.

“As the money dries up, the municipalities stop paying Eskom.

Despite billing residents for electricity and collecting these funds, they do not pass them on to Eskom, incurring millions in debt.”

For example, on 5 October 2020, Eyewitness News reported that the provincial government in North West intends to place 12 municipalities under administration. These include Bojanala, Lekwa Teemane, Mahikeng and Madibeng. This is done through a Section 139 intervention as provided by the Constitution. In order to invoke this legislative provision, the provincial government must have identified clear governance failures, what the Constitution terms “executive obligations” that are no longer being delivered on. In the case of most municipalities that are placed under administration, there are usually multiple obligations that are no longer functioning. There are two options available to the provincial government when they embark on invoking section 139 of the Constitution.

The first instance is known as a 139(1)b intervention whereby the ANC-led provincial government appoints an administrator who will then make all the executive decisions in the municipality. The municipal council will not

be dissolved and elected councillors will stay in their roles. In this approach, the provincial government exercises control over the functioning of the municipality through their appointed administrator. The law states that the provincial government should take responsibility only for relevant obligations that are not being delivered upon. However, generally, they take full control and centralise all power through the administrator.

In the second instance, known as a 139(1)c intervention, the provincial government will appoint a head administrator and dissolve the entire municipal council. This will remove all the councillors from their elected positions. It also triggers a by-election in the municipality which must be held within 90 days of the head administrator being appointed. This is what was used in the City of Tshwane by the provincial government where the Democratic Alliance was in government. It is a decision that the Gauteng North High Court has ruled was illegal and one which is expected to be affirmed by the Constitutional Court as it deliberates on the appeal by the Gauteng provincial government.

The ANC generally avoids dissolving municipal councils when it invokes Section 139 because in 99% of all cases it is placing municipalities under administration that it itself governs; ANC provincial governments are placing ANC-run municipalities under administration.

It avoids dissolving municipal councils for two reasons. The first is because removing their own ANC councillors from office would leave them unemployed, which causes its own internal political problems. Second, it would result in a municipal-wide by-election which costs money to contest and requires internal political organisation. It would also probably lead to the election of the very same people who had led the municipality to collapse in the first place. In choosing not to dissolve the municipal council, the provincial government can leave the administrator in place for months on end. This has happened in municipalities around the country where in some cases administrators have been in place for well over a year.

In July, in a briefing to Parliament, Deputy Cooperative Governance and Traditional Affairs Minister Parks Tau indicated that there were 46 municipalities countrywide where provincial governments had been required to intervene in terms of section 139. Out of these 46, 22 are in the North West and 10 are in KwaZulu-Natal.

There are about 278 municipalities in South Africa, thus about 16% are in a state of collapse. If we add the additional

12, based on the EWN report, this would mean that 21% of municipalities in the country are under administration or facing potential section 139 interventions. That is one in five. Of those 278 municipalities, about eight are metropolises and 44 are district municipalities, leaving 226 local municipalities. The majority of interventions focus on local municipalities. When you focus on this subgroup the state of decline becomes particularly startling.

As the money dries up, the municipalities stop paying Eskom. Despite billing residents for electricity and collecting these funds, they do not pass them on to Eskom, incurring millions in debt. Pravin Gordhan recently indicated that municipalities owe Eskom R43.9-billion as of June 2020. Eskom, in turn, begins load shedding these municipalities or instituting debt recovery which results in municipal assets being seized, as happened in Emfuleni.

The inability to manage billing and safeguard revenue is indicative of a failed chief financial officer (CFO) and incompetent city manager. The next area to fall is the supply chain as processes regarding procurement are either subverted or ignored to facilitate the flow of funds out of the municipality to unscrupulous service providers.

This collapse becomes physically visible to residents. Streets start crumbling as they are not maintained, waste collection is disrupted, parks are not maintained, illegal dumping increases and the water supply often becomes compromised. Generally, all proactive maintenance budgeting is eroded which means that these failed municipalities operate in a permanent crisis mode in merely responding to outages and infrastructure failures as they occur.

This situation creates immense fragility in the functioning of these local municipalities such that minor failings can cause catastrophic disruptions. For example, when electrical faults go unattended resulting in substations which collapse, or cracks and leaks in water pipes go unattended causing massive pipe bursts. Once a total systemic collapse has set in that cannot be ignored, then the ANC provincial government steps in.

The challenge is that it is happening more and more frequently across the country. Never before have so many municipalities been placed under administration. While this article has focused only on rural municipalities formally placed under administration, many others are on the brink of collapse with ANC provincial governments merely watching from the sidelines as they fall into ruin.

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- Maritime & Harbour Services
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Cape Business News is always on the lookout for stories of companies that are shaping the Cape business landscape. If your company has a story to share, in these, or any other business sector, send your story to editor@cbn.co.za for consideration.

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Government for the people of Mzansi

“Ah so,” greeted Luke the Dude, “so what’s new with our political masters in the Central Command?”

“With apologies to the animal rights activists, one could say that leopards don’t change their spots,” ventured Jon the Joker. “So, the answer is: nothing.”

“Nothing to say?” incredulated Big Ben. “Well, that is new!”

“Nothing’s new, Boyo,” explained Colin the Golfer. “Not that I share that cop-out opinion.”

“What?” blinked The Prof from his cloud of pipe smoke in his favourite chair under the No Smoking sign.

“Useless!” declared Jon the Joker.

The confederation of convivial conversationalists was in session at the local Pub & Grill, seeking solutions to the pressing affairs of the day under the cheerful inspiration of Charles Glass.

“What I mean,” exasperated Luke the Dude, “is, what have our favourite Cabinet ministers been up to!”

“As you all know, my favourite (Not!) is Minister of Surprise Lindiwe Zulu,” smiled Miss Lily. “More people are speaking up on the ANC actually trying to stop the DA feeding hungry children in our province – imagine a thing like that!”

“They call it ubuntu,” interrupted Jon the Joker.

“That one,” grimaced Jean-Jay, our Gaul of the soil, “keeping their promise of a better life for all. Ha! Kill the farmer, have a starving life for all!”

“I do not agree,” frowned Big Ben, who doubles as our local ANC councillor. We like him anyway.

“Lenin had a name for future victims who were fighting on his side,” lectured Stevie the Poet, “he called them useful idiots.”

“All present company excluded of course,” rescued The Prof. He continued in engage-and-prevent mode because Big Ben still looked alarmingly offended: “Pray tell us, dear Benjamin, why you don’t agree. Surely you don’t want to see children, or anybody for that matter, go hungry? To the point of starvation in too many instances, to be honest?”

“Of course not!” snarled Big Ben, “that’s not what I am saying. You’re all getting worked about things you know nothing about. You were not there. You pretend to know, but you haven’t seen anything yourselves,” he twisted in impressively improvised Trump style while continuing with another Trumpish trick, deflection: “Just look around you. We are sitting here in good company having a cold beer and a pleasant chat, well... mostly. This is how our lives are in South Africa and the ANC is making it all happen!”

“Useless!” opined Jon the Joker. “That’s what happens when everybody is entitled to an opinion.”

No, he did not mean it, he was simply exasperating Ben.

“I am going to join the scrum here,” announced Luke the Dude. “You chauvinist fascists shamelessly interrupted Miss Lily ...”

“Chivalrous knight in armour to the rescue!” chirped Jon the Joker.

With a tilt of the head and a raising of the brow, Luke continued, “I don’t know about you lot, but I want to know what Miss Lily was talking about. Which people are speaking up? Please tell, Lily, I am sure these good gentlemen will now yield the floor.”

Just like good people, we all did.

“I thought you’d never ask,” beamed Miss Lily at Luke, “in fact, and this could also be a response to Big Ben’s thesis, I am referring to none less eminent than the High Court of South Africa. Judge Jansen van Nieuwenhuizen found that Minister Lindiwe Zulu had failed to do her duty as demanded by the law of the land as well as by the Constitution. She is a law-breaker and a Constitutional delinquent.

“In reaction, the DA’s Alexandra Abrahams explained that the Constitution demands that every child, please note, every child has the right to basic nutrition. The right!”

“Correct,” informed Advocate Stevie the Poet, “section 28. The ANC was indeed guilty of denying vulnerable people their Constitutional rights.”

“Their duty is to implement those rights,” Miss Lily fulminated forth. “But while Lindiwe Zulu was pampering her impressively colourful head of hair with or without Tresemme, children were going hungry. And when she did feel like doing her job, she did her damndest to keep them hungry!”

“The same scathing finding was made against eight of the nine provincial MECs responsible for social development. Largely because of Zulu’s uncaring incompetence,

they were all withholding subsidies from Early Childhood Development Centers. These centers provide food for children!”

“It’s not a word I like to use,” ruminated The Prof with a cough, causing Irene the Queen to grab her mask, “but this is without doubt shocking. It is government at its worst.”

“To be fair,” spoke Irene through her mask, causing Jon the Joker some mirth but not enough to share it, “here in the one province not included in the judgment, we have a caring and successful government. The Western Cape has another party in power, of course; we have to give credit where it is due. From Premier Alan Winde to our teachers and the staff of those development centers, the DA has insured that the Covid-19 pandemic is treated with intelligent planning and action.

“Alexandra Abrahams at Social Development, Debbie Schäfer at Education, in fact, all of them stood up to ANC oppression and did the right thing.”

Miss Lily took over, not being done yet: “And then President Ramaphosa goes and lies like Trump by claiming Government is ‘supporting’ more than 100 000 early childhood development practitioners! Abrahams notes that, despite their desperate pleas, the only support they got was some

OPINION

ON THE CONTRARY



Pieter Schoombie

personal protection gear – only once and to only a few!

“And the only result the ANC achieved was to make sure the poor stays poor. Wait, I have it here. The judge found, ‘This predicament seems to have either escaped the MECs or they simply do not care for the plight of poor, young, vulnerable children in their communities.’ Enough said.”

Bob the Book had the last word: “Government of the people, by the people, for the people, said Abraham Lincoln at Gettysburg in 1863. In Mzansi a century and a half later, what do we have? Government against the people.”

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What’s so wrong with floating power stations?



WITH the country trying to re-start the economy after the devastation wrought by the reaction to the Covid-19 threat, and with Eskom, the sole supplier of electricity to almost every business in the private sector, unable to meet the existing low requirements, let alone that demanded by a recovering economy, regular power supply is obviously crucial.

Government and Eskom know this. Consequently they have called for help from anyone in the private sector that can bring more power as quickly as possible to the national power grid.

As usual, the private sector has responded. However, the prospect of being able to anchor a Turkish power ship in one or more of our harbours – a move that almost instantly could plug the electrical power gap, and end load shedding at a stroke—has seen the dead hand of, not bureaucracy for once, but the equally-stultifying soft embrace of stakeholders and

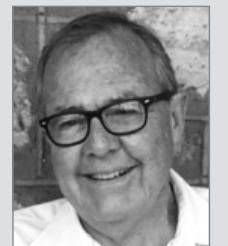
other pressure groups intent on strangling the idea.

Often the opposition has nothing to do with present realities. Of course, basic safety precautions are necessary, but the precautionary principle, so called, is often used to stop any and every industrial activity.

So, instead of facilitating a solution already proven to be effective in 13 countries, notably Lebanon which has three power ships feeding it power, there is so much form-filling demanded, so many pressure groups (read: often competitors) to mollify, that it could take years to install them in South African waters, even if everything were to go smoothly.

That is not a cynical expectation. There are cases of other strategic projects that come to mind that have been delayed by 11 years, despite the clear need for them. The liquefied petroleum gas (LPG) terminals in Saldanha Bay took more than eight years to move from the drawing board to

THE OTHER SIDE OF THE COIN



Keith Bryer

construction stage, thanks to the stranglehold of the consultation process.

What the power ships can each offer is a rapid deployment of 2 000MW of electricity, almost as easily as a plug-and-play app works on a computer. Put one ship in each of our major harbours and every coastal city in the country could have a secure electricity supply for however long it takes for Eskom to get its house in order, and meanwhile leave it to handle the needs of everyone else.

Power ships have the benefit of running generators on LNG gas, not the diesel or heavy fuel oil used by Eskom’s existing emergency generator. They are very much cheaper as well.

The State of Disaster enables the Department of Minerals and Energy Resources (DMER) to cut red tape. If ever there was a good case for doing so, installing power ships is it.

Environmental concerns cannot be allowed to halt the process. No one is suggesting power ships will be used forever, nor are they equivalent to the ineffectual border fence at Beit Bridge which got a free ride exemption from normal purchasing regulations. But rejecting the idea of power ships out of hand seems foolish when regular electrical power is so critical to an economic revival.

Whilst in no way an endorsement, readers can find more information about power ships by visiting www.modec.com