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It is time to change the calendar and face the new year

This is the time when everyone says, “I can’t believe it is December already, or, the year has flown by so quickly, or there is still so much to do.” Your post boxes and in-boxes are brimming with holiday destinations, gadgets you simply must have, gift packages, specials offers, recipes, and hundreds of other ways in which to spend hard earned cash.

Before you can pack away your laptop and load the car, however, you need to finish quarterly or year-end reports, ship orders, and take a moment to reflect. The end of a year is always a good time to regroup, re-examine and revisit your strategies and tactics - both from a business and from a personal perspective.

In this issue of Wood SA the industry has done exactly that. We cover the past and present challenges of skills development in the sector, and celebrate the achievements of individuals and organisations that are changing the future. The industry organisations, Forestry SA and Sawmilling SA, are working hard to drive developments in training and education and to ensure that their members stay informed.

Without a doubt, 2017 will see further developments in renewable energy and the green economy. This month we are expanding on MTO’s George Sawmill and its innovative use of biomass, steam allocation to neighbouring industries and its new power generating capacity.

Wood SA staff and its publisher, Malnor, thank all the advertisers and contributors to the magazine for your support and guidance during this tough year.

Finally, with all the unrest and intolerance in the world, we hope you and your friends and family find peace and have a safe, healthy and happy holiday season—however you choose to celebrate. Let’s all prepare for 2017, a new year filled with a new set of challenges and opportunities.
Log. On.

**HT Excavator Shovel Yarder**
Turn your Excavator into a versatile uphill and downhill Skyline Yarder. Approved conversions in SA for 10 years.

- **Working Range:** 300m
- **Load:** 3.0 ton

**HT 2.3A Logger**
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Optional closed AC cabin available.
Powered by German Deutz - 912 or 914.

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Log. On.
Tried and tested toughness
with proven fuel efficiency

Independent forestry crews conducting in-field tests of the new STIHL MS 382 chainsaw are saying their initial rave reviews were in fact an understatement. Not only does the machine deliver in terms of professional-grade performance day after day, it also has even better fuel efficiency after being run in.

The fuel consumption of the STIHL MS 382 seems to improve over time. Jonathan Rencken, forestry manager for Tree Fall Harvesters, says “We find we are saving a tank of petrol a day per machine, which is a significant saving.”
The operators are not the only ones who are impressed by the in-field performance of the MS 382. Duncan Fryer, STIHL business development manager for forestry says it’s not often that a product, including one designed specifically for the exacting demands of a specialist professional market, beats the advertising claims made about it.

From the start, the MS 382, an enhanced version of the country’s best-selling Stihl chainsaw, the MS 381, got enthusiastic reviews. Jonathan Rencken, forestry manager for Tree Fall Harvesters, whose team used the MS 382 for a few months as part of an in-field test by Stihl, says “This is a hassle-free machine that offers better fuel economy. We find we are saving a tank of petrol a day per machine, which is a significant saving.”

The machine also gets the thumbs up for its ergonomic and lightweight design. Fryer says that at 6.2kg it has an excellent power-to-weight ratio that does not compromise on its performance, just improves user comfort, and reduces fatigue.

Andre Barnardo, procurement and harvesting manager for Treated Timber Products, agrees, saying “The MS 382 has a lot of power yet is lighter than the MS 381, which makes my team happy.”

Fast forward a few months, and the reviewers of the MS 382 are still raving – just a bit louder. Now that the machines have been run in for a few very tough and challenging months, it seems as if the fuel performance is even better than anticipated.

“The machine was delivered to us on 18 May and was put to task immediately. It’s worked a full day, six days a week from day one, averaging 27.8 tons of timber every day, and using on average 3.8 litres of fuel a day. It is leaps and bounds ahead of our other machines, which use about 5.5 to 6 litres of fuel a day with the same tonnage and identical working conditions,” says Barnardo.

“With us doing full-time production harvesting, we’ve also used the MS 382 for destumping, which is very hard on any machine, especially a smaller one such as this, and it’s given us the same fuel consumption. We’ve worked out that it cuts 7.3 tons per litre. It’s a fantastic machine. It sets the trend and is the one to beat.”

Fryer says he is pleased with the MS 382 and the way it is performing in the field. “The fuel consumption seems to get even better the longer the machines run. Plus, the service costs are negligible in my opinion, based on the amount of work they have done and especially under the tough drought conditions and dusty winter we have had.

“Another major advantage of the MS 382 is that it is very easy to service as there are no electronics to take care of. The MS 382 gives you the benefits and delivery of a state of the art, modern chainsaw, with the ease of maintenance of a conventional chainsaw.”
Forestry training indaba says “Yakhani – we are building”

By Pamela Naidoo, Capacity development manager of SAFCA

The South African Forestry Contractors Association (SAFCA), and the Forestry and Related Industries Training Providers Association (FITPA) jointly hosted the sixth forestry training indaba in November 2016 in Piet Retief.

The indaba was well attended by industry representatives from grower companies, training providers, forestry contractors and educational institutions.

Brian Phiri from Philasipihile Contractors was the programme director for the event. There were many presentations that were aligned to the theme “We are growing”.

It was very interesting to be informed on the status of the following forestry training programmes through some of the presentations:

- Progress made by the Quality Council for Trades and Occupations (QCTO) in the development of artisan trades within the forestry sector
- Fort Cox community forestry programme
- The articulation of the veld and fire management qualification with the other natural resources management qualifications

The question: “Are we training fire fighters or are we training pipe holders?” was raised. The need for more advanced bulk vehicle training for fire tender drivers and the need to review the curriculum and course contents for veld and forestry fire management skills programmes was highlighted. Importantly, support staff (not close to the fire) also need to be trained.

Nicky Gwende from Thuthugani Contractors shared an approach to training and development in forestry contracting where mechanisation, productivity, safety, health, and environmental sustainability are integrated. The right people are trained on the right training programmes using the right machines resulting in right planning, right risk management and right performance management.

The final session was a motivational talk on the art of personal mastery by Dr Riaan Steenberg from Regenesys Business School. The group and individual exercises with the delegates “awakened our potential.” It left us on a journey of self-awareness, thinking about our purpose, values, and how to uncover conscious and shadow beliefs, and replace these with supportive beliefs. Delegates heard about the importance of intelligence quotient (IQ), emotional quotient (EQ) and the concept, of spiritual quotient (SQ) and how understanding these concepts leads to personal mastery.

The lucky draws and cocktail evening brought an end to a very full and productive day. Comments made by the delegates included:

- “This indaba was my first, and it was on par with my expectations. I enjoyed learning and understanding the diversity from which we all come from, and knowing that we are all heading in the same direction. Well done team!”

Dr Jaap Steenkamp, CEO of SAFCA brings the indaba to a close with a vote of thanks.
“I suggest we include a practical or outdoor activity relating to the theme about half way in the day – almost like a bit of team building, like the exercise we did with the motivational speaker.”

“A very good day I really enjoyed it. Very positive and hopefully very productive going forward. Well done to the organizers.”

SAFCA and FITPA would like to thank the following sponsors for their generous contributions towards the forestry training indaba for 2016:

- Stihl
- Fibre Processing and Manufacturing Sectoral Educational and Training Authority (FP&MSeta)
- Forestry South Africa
- Sappi Limited
- Mondi Group Limited
- Husqvarna
- NCT Forestry Co-operative Limited

Logging plant operator qualification in its final stages

The qualification, curriculum and assessment specifications for the Logging Plant Operator have been scrutinised by all forestry stakeholders and will be submitted to the Fibre Processing and Manufacturing Sector Training Authority (FP&MSeta) and then to the Quality Council for Trades and Occupations (QCTO) as soon as all the inputs have been captured.

The forestry industry has completed the final review of the Logging Plant Operator qualification, with special attention to the structure, credit value and NQF levels of the qualification; and the relevance of the curriculum content.

Jaap Steenkamp, CEO of the South African Forestry Contractors Association (SAFCA) thanks all the community of expert practitioners (CEP) members, training providers and additional subject matter experts that were called on to support the completion of this curriculum.
First Announcement

7th Forest Science Symposium

Research Underpinning the Sustainability of a Diverse Forestry Sector

Hosted by:
the Institute for Commercial Forestry Research (ICFR)
&
the International Union of Forest Research Organizations (IUFRO)

in collaboration with
the Department of Agriculture, Forestry & Fisheries and
our research partners (FABI, NMMU, SUN and others)

18-20 July 2017

One Life Church, Alexandra Road, Pietermaritzburg

A IUFRO Special Programme for Developing Capacities (SPDC) training workshop will be held prior to the Symposium.
For details please contact Dr Michael Kleine (kleine@iufro.org)

Please diarise this important 2017 forestry event
showcasing the depth and breadth of forestry research across southern Africa, and
the role of research in providing innovation, knowledge and
technology to advance operational and management objectives, and
influence policy and strategic decision-making

All are welcome to attend

Registration details and a first call for abstracts for paper and poster submissions will follow shortly

For more information contact:

Symposium organizer
Sally Uptold
Sally.upfold@icfr.ukzn.ac.za
+27 33 386 2314 or
+27 82 570 0651
New Staff at the ICFR

The Institute for Commercial Forestry Research (ICFR) have two new team members: Dr Benice Sivparsad and Richard Burgdorf.

Benice Sivparsad is a senior research scientist in Forest Protection research, and is working on existing forest protection projects with a specific focus on eucalyptus pests and pathogens. She completed her PhD in plant pathology at the University of KwaZulu-Natal in Pietermaritzburg. Prior to starting at the ICFR, Sivparsad conducted post-doctoral research and development of biocontrol agents against major pathogenic fungi.

Asked about her new role at the ICFR, she said “I am excited and enthusiastic to be involved in dynamic research that finds solutions to those factors that threaten the forestry industry”. She is interested in developing integrated pest management strategies aimed at minimising risk to tree plantations from pests and pathogens.

Richard Burgdorf joined the ICFR in November, as senior laboratory technician. His previous position was at the University of KwaZulu-Natal as the senior technician for plant pathology. Prior to that, Richard spent several years working in the United Kingdom and in Thailand before returning to South Africa to further his studies.

He has a BSc degree in microbiology and biochemistry from Rhodes University and a BSc Honours degree in microbiology from the University of KwaZulu-Natal. (UKZN) He is currently completing his doctorate in microbiology at UKZN on DNA analysis of fungal endophytes and on the symbioses between plants and microbes.

Richard has a strong interest in near infra-red analysis and related technology, and the huge potential that this has for a wide range of research areas.
Precision Forestry Symposium 2017

Precision Forestry – Producing More from Less. Towards optimising value in the bio-economy from data driven decisions.

Stellenbosch University, South Africa

Call for abstract submissions

Date: 28 February to 2 March, 2017

Precision Forestry (PF) 2017 will be the fourth of a series of international symposia aligned to the theme of Precision Forestry and presented by Stellenbosch University in cooperation with the International Union of Forest Research Organisations (IUFRO). This meeting will review continuing developments in the rapidly advancing field of Precision Forestry. New technology for data collection, automation, robotics and ICT, make it possible to manage forest operations and to control the supply chain, from growing through to and including processing, with ever-increasing levels of precision. PF 2017 aims to connect the research within the relevant disciplines on an international level.

Symposium objectives
To bring decision-makers, practitioners, academics, managers and researchers; who are interested in PF together in one forum to share and review information, developments, concepts and ideas within the broad listed topics. This interaction will facilitate networking to development joint projects and activities that will address priority issues.

Symposium Format
The symposium is planned over three days at the Wallenberg Research Centre, Stellenbosch (www.sun.ac.za/stias). This will include two days of presentations and a one-day field trip. The programme will consist of key note addresses and a number of invited speakers who will address new PF technologies and scientific developments. There is however adequate provision for voluntary contributions by other researchers, academics and practitioners from both South Africa and abroad.

Themes
1. Precision measurements and modelling of quality and yield
2. Utilising precision data for efficient forest management and operations
3. Optimised logistics – from seed to product
4. Value and costs throughout the value chain
5. Operations Research - optimisation, heuristics and simulation
6. Delivering new values to the bio-economy

Visit the Precision Forestry website for more information and registration:

Deadlines
Abstract submission: 12 September 2016
Feedback from technical committee: 1 November 2016
Early registration deadline: 1 December 2016
Late registration deadline: 15 January 2017
Registration cancellation deadline: 31 January 2017
Sirex research in SA and Japan in the spotlight

A mini-symposium in November highlighted the diversity of research on the woodwasp Sirex noctilio conducted at the Forestry and Agricultural Biotechnology Institute (Fabi) by postgraduate students, staff, and collaborators from Japan.

Drawing on the resources and capacity available at Fabi, the symposium highlighted the need for a comprehensive approach in the control and management of the invasive woodwasp. The research focused on, but was not limited to, the complex interaction between the woodwasp, its fungal symbiont Amylostereum areolatum and the nematode Deladenus siricidicola as a biological control agent.

Prof Bernard Slippers opened the meeting by giving an overview of the sirex woodwasp in South Africa and the research that emanated from it. Prof Masanobu Tabata and Prof Natsumi Kanzaki from the Forestry and Forest Products Research Institute in Japan, presented an update on their Sirex research.

The speakers and topics were:

- Alisa Postma: Amylostereum-Deladenus-Sirex genomics: Opportunities arising from the genomes of a tripartite symbiotic system
- MSc student Bianca Jardim: Characterising sex determination genes of Sirex noctilio (Hymenoptera: Siricidae)
- PhD student Josephine Queffelec: Sirex noctilio: Influence of reproductive biology on invasive species
- PhD student Katrin Fitza: The diversity and specificity in the Deladenus-Sirex-Amylostereum complex
- PhD student Osmond Mlonyeni: Genotypic and phenotypic diversity in non-native populations of Sirex-Amylostereum-Deladenus
- Dr Marc Bouwer: Potential semio-chemicals for Sirex noctilio and Ibalia leucospoides
- PhD student Quentin Guignard: Chemical and visual influences on insect behaviour: Opportunities to study applied biology of Sirex noctilio
- Dr Brett Hurley: Sirex-Deladenus-Environment interactions: Lessons from tens of thousands of dissections
- Prof. Masanobu Tabata: Siricidae and Xiphydriidae woodwasps and their fungal symbionts in Japan
- Prof. Natsumi Kanzaki: Introduction to entomophilic nematodes with some remarks on Deladenus nitobei n.sp., a potential biocontrol agent
Wildfire risk management – science in action

The Mediterranean region of Europe is a high fire-risk region, where fires cause significant damage and economic losses every year.

Wildfire management capacity in the Mediterranean increased in the last years, thanks to new technologies and experience. However, according to Paolo Fiorucci of the Italian International Centre for Environmental Monitoring (CIMA) Research Foundation, it is evident that fire management must be integrated with fire prevention and fuel management.

Fiorucci was an international guest speaker at the fire symposium recently held in the Kruger Park. He says that currently, the fire management capacity in Mediterranean Europe is limited and mainly focused on fire exclusion and suppression. Fire management strategies should be expanded to include prevention measures particularly since fire risk, contrary to other natural hazards like an earthquake, are largely predictable.

The ability to forecast the risk of fire allows relocation of resources on a national and hypothetically transnational scale, from low risk areas to high-risk areas, thus reducing the response time and optimizing the scarce resources available. Fires in the region are mainly caused by humans and efficient patrolling, monitoring and communication activities in higher danger areas can prevent fire ignition or, in the worst case, reduce the time of intervention with the most suitable fire attack strategy.

Fiorucci says it is now accepted that weather-induced fire alarms are the key to developing adequate fire management strategies.

Since 2000, the Liguria Region, and the Italian Civil Protection Agency carried out independent research programs that led to the development of the Risico fire danger rating system adapted to the vegetation cover of the Mediterranean. Risico integrates meteorological observations and forecasts with vegetation cover and topography.

The system can forecast how a wildfire will behave in different fuel types taking into consideration the topography and weather conditions.

In Liguria, Risico is used at a regional level to issue a daily fire danger bulletin and to organize patrol and monitoring activities by the local volunteers. The continuous feedback between research activities and operational wildfire risk managers has, in the last ten years, resulted in a drastic reduction of the number of fires and burned areas, both at national and regional scale.

Fiorucci believes science in action is needed to move theory into practice. Research needs to address practical ways in which to manage land cover and the resources required to prevent and manage fires.
Please don’t decolonise the colonies!

Edited extract from the December issue of the SAIF newsletter. Rob Thompson writes:

In the news recently we have heard calls for the decolonisation of science and education. In the light of this, it is perhaps opportune that I introduce you to some special colonies worthy of being embraced, studied, and celebrated.

For many years I had a fascination with ants and would collect colonies to study in homemade formicaria at home. This hobby waned gradually as career, sport and other social interests gained the upper hand. Earlier this year however, whilst visiting the EMBRAPA forestry research station in Curitiba, Brazil, my interest was re-awakened when I encountered the most magnificent and quite enormous formicarium being used to study an Atta cephalotes colony. This is one of the approximately 47 leaf cutter ant species which are found extensively across the Americas.

Leaf cutters are fascinating creatures, particularly given their predilection to harvest, segment and gather green leaves, then transport these leaf segments (weighing many times their own body weight) in their jaws, often over long distances, back to the nest, where specialised workers chip the leaves into “mulch” piles upon which fungus gardens are established and nurtured as food for the colony. One cannot help but compare this chain of activities to a fully inclusive forestry pulpwood supply chain (harvesting, cross cutting, stacking, transport, processing) all in the interests of making a living and sustaining communities.

We were told that a single colony in the wild can exceed four hectares in extent, and are a threat to newly planted plantations, given the sought after young fresh leaf resources available. As foresters, we can relate to community pressure on our areas of operation and the ‘illegal’ acquisition of our resources. It appears as if the insect world experiences the same, albeit on a micro level!

Ants comprise 20 to 25% of the world’s terrestrial biomass. They occur on all of the continents, except “Ant”arctica, and are social animals reliant on the strength of community and individual specialisations for survival. Just like humans, their spread across the earth’s surface has resulted in ants having had to adapt to ecological niches. Weaver ants, for instance, build highly engineered arboreal nests to keep out of reach of their enemies. Army ants and driver ants, on the other hand, have adopted a nomadic lifestyle constantly embarking on raiding forays and owning in temporary bivouacs comprising their own intertwined bodies!

Some species in the warmer climes can regulate the interior temperature and moisture levels of their nests, thereby ensuring optimum interior conditions throughout the year. Modern foresters have tended to move away from hard copy maps stored in their bakkies, in favour of GPS devices to navigate. Lose your device or allow the battery to fade and you’re in trouble. Some ant navigators are one up on us and have built-in navigation devices. They have specialised cells in their eyes able to detect polarised light from the sun and they use this to find their direction. Yet others can detect the earth’s magnetic field for directional application.

Talking of bakkies, Wikipedia describes many locomotive traits employed by ants. Walking is the most common method however some adventurous species have developed the art of raft building upon which they float down rivers and colonise islands enroute. Most fascinating are the gliding ants able to control the direction of their descent when leaping from their arboreal nests. Others have become super athletes with the ability to leap considerable distances to conserve energy and time.

Any popular ant-edited newspaper, if that were possible, would be filled with stories of intrigue and often horror! Ant trafficking for instance, is often encountered, with specialised raiders stealing the pupae from neighbouring nests and raising them as their own. Suicide special force detachments are sometimes deployed outside of the sealed nest to defend against attack at all cost.

Labour abuse is rife. Selected young worker ants are forced to become what are known as “repletes” and force-fed until their gasters (abdomens) are huge and distended. These repletes feed other workers as they go about their business. A sort of a “mulch” piles upon which fungus gardens are established and nurtured as food for the colony. One cannot help but compare this chain of activities to a fully inclusive forestry pulpwood supply chain (harvesting, cross cutting, stacking, transport, processing) all in the interests of making a living and sustaining communities.

As foresters, we have a keen interest in biodiversity but often this is a mere numbers game. How many species are found in an area? Ant colonies, comprising millions of parts, are each a massive single social organism. The complexity of that organism demands that the colony not be regarded as a mere number. It has a function, it has texture and it has many lessons there for the taking.

Next time you are out in the forests and plantations, pay your respects to an organism that, whilst tiny, is anything but frail. It is a powerhouse from which we can, and ought to, learn so much more. Well, I’m off to work on my new formicarium!
The UD Quester can handle any obstacles in its path – including tricky turns.

**UD adds to its successful Quester range**

UD Trucks Southern Africa is launching three new additions to its Quester product range: a rigid 4x2, a rigid 6x2, and a 6x4 dedicated compactor chassis with Allison transmission fitted as standard. These new models will all be available for sale from December.

“We are continuing to follow the Japanese manufacturing philosophy of continuous improvements by incorporating the feedback and exacting requirements of our local customers,” says Gert Swanepoel, acting vice president of UD Trucks Southern Africa.

The Quester range is a modern and smart extra heavy truck platform aimed at a wide range of applications including forestry, mining, construction, and regional distribution. In addition, Quester is a robust, dependable, and efficient truck range that combines the best of global technology, Japanese craftsmanship and local industry knowledge.

The trucks were recently launched in Ethiopia, and will be introduced in several markets within the southern and eastern Africa region within the next year. UD Trucks southern Africa is the largest market for the brand outside of Japan, and is therefore of strategic importance to the company.

“We have a team and dealer network that literally live and breathe UD, and who are passionate about the success of our customers. With the support from the parent company we are excited about the future of UD Trucks,” Swanepoel says.

The extra heavy range has specifically been designed and developed for growing markets like southern and east Africa. “Quester has undergone long hours of local research, testing and customising ahead of its launch to ensure the best local performance and durability,” explains Swanepoel.

Its strength not only lies in the wide product offering, including an 8x4 model, but it is an exceptionally robust vehicle made to withstand the harshest of forestry and timber-related environments.

“We believe our local customers will profit from the modern and smart transport solutions which the Quester range offers, from its positioning in the market to the technology and quality of the vehicles, right through to the new scope of support offered by our regional dealer network,” says Swanepoel.

The latest advancements include an all-new telematics system that comes standard with the new Quester models. “UD Trucks’ passion is to make fleet owners’ working day simpler and more productive. Quester is expected to be UD’s most cost-efficient truck ever,” he said. “The new range will cut fuel costs and maximise uptime, giving fleet owners quick dependable payback that will help them succeed in their business.”

Swanepoel says the company is committed to support fleet owners wherever they operate throughout the region. “UD Trucks has a proud after-sales care record in southern Africa because of our concerted efforts to provide our customers with the best possible vehicle availability and utilisation.

“As part of the world’s largest commercial vehicle manufacturer, with its multitude of resources and technologies, the efficient and timely supply of quality UD Trucks parts remains one of our main priorities.”

The company is also continuously investing in the enhancement and expansion of the UD Trucks dealer network across the region.

Swanepoel comments that with 62 franchised dealers already present along the major routes and trade corridors in southern and east Africa, fleet owners can get complete support from UD Trucks, no matter where they operate in the region.
Enjoy a payment holiday every December with interest rates from Prime -1.5%*

We have great prices in our Quester range. Go to our dealer locator on www.udtrucks.co.za, or call +27 12 564 9500 to locate your nearest UD Trucks Dealer, who will structure a deal to suit your budget, giving you enjoyable December vacations with extra cash flow.

*during your contract period

Call our 24-Hour Roadside Assistance 0800 008 800 (in breakdown situations)

This offer is exclusive to UD Financial Services. If you qualify and are granted finance by our preferred financier, WesBank, then WesBank credit criteria will apply. UD Trucks Financial Services, a product of WesBank, a division of FirstRand Bank Limited, an authorized financial services and registered credit provider in terms of the National Credit Act, registration number NCRP20.
Alfred Ngilo is a world class truck driver

Forklift driver turned trucker, Alfred Ngilo, beat 20 other UD Quester drivers in the South African leg of the Extra Mile Challenge and represented South Africa in the finals of the second annual UD Extra Mile Challenge in Japan.

Ngilo, who works for Clover and is a father of three proud children, has a winning record of accomplishment. He won the Department of Transport’s competitions in KwaZulu-Natal in 2009, Limpopo in 2011 and again in KwaZulu-Natal in 2014.

Comparing other driving competitions to the UD Extra Mile Challenge, Ngilo says the challenges were useful in real life, thanks to the combination of vehicle checks, driving skills and cargo management. “All other driving competitions that I’m aware of, just test your skills to move the truck into tight spaces, but UD challenges you to know your Quester like it is a part of you.”

The toughest part of the local eliminations was the tight mountain track at the Gerotek Test Center in Pretoria West. “That was as bad as any alley dock down a narrow lane in congested Jo’burg,” Ngilo said. But on the day, he collected the most points, while second place went to Pinki Chuduku, driving for Vital Distribution and Khumalo Vusumusi, driving for Shoprite.

On the eve of his first trip out of South Africa, Ngilo said excitement was running high in his family, and he had no idea what to expect when he arrived for the global leg of the competition at UD Truck’s headquarters in Ageo, Japan. Fortunately, UD Trucks Southern Africa (UDTSA) manager of fleet sales, Ann Pienaar and UD driver trainer, Dereck Moima, were on hand to settle his nerves.

Moima says friendliness and patience are two traits that set Ngilo apart, both on the road and in the yard. Ngilo says that having started at the back of the truck, loading with a forklift, he understands delays at the depot. “Not getting impatient during loading makes me take it easy on the road too.”

Local UD fleet driver named most skilful at finals in Japan

UD fleet driver, Alfred Ngilo from Clover in KwaZulu-Natal, was named the Best Skilled Driver at the UD Extra Mile Challenge driver competition, which was held at the UD Experience Centre in Ageo, Japan.

Although Ngilo didn’t win the overall title, he did South Africa proud in this prestigious competition that ultimately helps fleet customers to get the most out of their UD products and services. The competition is aimed at improving driving skills and reducing both costs and downtime and is based on three key elements; pre-inspection, fuel efficiency and safety, and drivability.

During the competition, drivers using the same UD Quester model, had to compete in a simulated transport delivery cycle, and subsequently the winning team from Malaysia delivered the highest profitability statistics.

Kishi Nobuhiko, UD Trucks senior vice president of brand and product, commented that, “the Extra Mile Challenge is not just a driving competition, it also provides a great opportunity for drivers to test and hone their skills, refine their strengths and ‘go the extra mile’.”

“Through this competition, we aim to help enhance driver capability and reinforce confidence in their own abilities and in the UD Trucks products they drive every day,” said Gert Swanepoel, acting vice president of UD Trucks South Africa. “We are very proud of Alfred’s fantastic performance – he certainly is a great ambassador for his company and the country!”
Meyer, in his early 30s, works long hours and clocks up many miles, while quietly making his mark as a sawmiller who knows how to add value to everything he does.

“My business model is simple: identify the need, develop the product, deliver it and recommend a preferred installer to complete the cycle,” says Meyer. His list of clients reads like a who’s who of the wine lands and includes estates such as Fairview, Spier, Boschendal, Val de Vie, and the unique five-star Babylonstoren farm hotel and restaurant.

Meyer says he has always loved working with wood. He started off with a bakkie and a log splitter and began delivering wood to several pizza outlets in Cape Town.

Market demand grows for Cape Eco Trusses & Sawmills’ products

With the constant need to grow his business, Hennie Meyer moved from farming into the manufacturing of a variety of solid wood products such as, trusses, beams, rafters, flooring and decking, all while giving back to the communities he works in.

Company owner Hennie Meyer (left) and Francois Els of Austro with the manual LumberPro HD36 in the log yard at Cape Eco Trusses & Sawmills
After five or six years of growing the business, he became restless and, encouraged by requests for planks from his clients and a need to move on, he researched various ways in which he could do things differently.

He and his father developed a sawmill with a swivelling circular saw blade design to produce planks and solid beams on a limited scale. As his reputation and client base grew, the demand for value-added products, such as tongue and groove ceiling and floor planks, led him to invest in a range of second-hand and new woodworking machines.

The company’s clients are mainly architects and people wanting custom-designed and specialised solid wood or laminated beams and joinery. While some of the wood is imported through African Lumber, the chief source of supply is invasive species like poplar, eucalyptus, and pine.

“I knew that I did not want to compete with the bigger players in the market and decided that the best way to offer a specialised service would be to become a “bush”

sawmill. My first purchase was the manual loading Norwood LumberPro HD36 stationary sawmill, from Austro. The market’s reaction to the large beams and the quality of the work produced, soon resulted in the need for a second sawmill and a crane mounted truck,” Meyer explains.

This time Meyer added the hydraulic log loader, longer working bed and trailer package to the LumberPro HD36. Norwood mills are modular and additional mechanisms can be added at any time. The trailer pack makes this saw
Sawmilling

highly versatile and it is used at the Blackheath operation or infield.

Cape Eco Trusses & Sawmill has a number of harvesting teams that work as far afield as Middelpos - and beyond - in the Karoo. Karoo poplar is particularly sought after as it is a much denser wood than poplar grown in the wetter areas of the Cape. The modular design of the Norwood mill allows him to join the two saws, to cut poplar and eucalyptus logs into beams that are 11m long and 300mm square.

"I chose the Norwood mill because of their versatility and robustness. The saw head is easy to raise and lower and automatically locks in place. This eliminates the need for the operator to lock and unlock the saw head for every cut. Our sawing cycle times are faster and the output is greater," comments Meyer.

Francois Els of Austro Cape explains that Norwood Industries has been designing and manufacturing sawmills and related equipment for over 15 years. "Norwood offers multiple models designed to suit the varied needs of its customers. The LumberPro’s appetite for massive logs up to 900mm in diameter, combined with a throat-opening of 700mm..."
Sawmilling

Market demand grows for Cape Eco Trusses & Sawmills’ products

gives users the power to mill virtually any hard or soft wood tree into valuable lumber,” says Els.

He explains that all parts in the Lumber Pro HD36 are built in Canada and the USA. The LumberPro’s four-post carriage frame makes the saw head stable and strong, enhancing straight cuts. The single action multi-function operator’s control lets the operator simultaneously throttle up the engine, turn on the blade lubrication and engage the centrifugal clutch. These time-saving automated functions boost efficiency and production outcomes.

Karoo poplar is harvested and cut into solid beams and planks that meet all legal specifications.
A brief history of sawmilling training 1992 – 1999

By Don Priest

For many years, the Forestry Council was the national authority of the wood processing industry, and every sector and wood processing company paid a levy to the council. A part of the levy was used to build two forestry training centres, one in Sabie, Mpumalanga and the other in Baynesfield, KwaZulu-Natal.

From these two centre the Timber Industry Manpower Services (Tims) provided the industry with all aspects of forestry training. Later the Sabie centre included sawmilling training.

In 1992 Tims ceased to exist and the South African Lumber Millers Association (Salma) took over the Sabie centre, and renamed it the Saw Milling Training Centre (SMTC). It offered a range of training countrywide and in neighbouring countries. In 1997-98, for example, SMTC presented 84 courses to a total of 652 trainees in 3531 days and expert consultants presented 872 of those days.

Salma sawmilling certificate

For various reasons, a considerable number of employees in sawmilling did not have an opportunity to obtain a qualification, usually from the University of Stellenbosch or the Saasveld College in George.

The SMTC covered a wide range of subjects, and when several of these higher-level courses were grouped together, they constituted good, broad training for staff with potential to perform at lower and middle management levels in any department in the sawmill. The certificate scheme was employer release and funded.

The SMTC higher-level course offered:

- Labour relations for managers
- Productivity and work-study
- Board grading for supervisors
- Pole grading for supervisors (Specs 753, 754, 457) - optional
- Saw maintenance – advanced level
- Planing and moulding for managers
- Safety in sawmilling for managers
- Kiln operator
- Drying manager – optional
- Finger jointing and glulam for managers - optional
- Maintenance management - optional
- Middle management in sawmilling - optional
- Basic forestry - optional
- Timber marketing - optional
- Physical and mechanical properties of timber - optional
- CCA treating appreciation for managers – optional

The duration of the courses was two to ten days. Seven courses were compulsory and five optional from a choice of nine courses. Feedback reports to the SMTC were compulsory, describing how newly gained knowledge was used on the job to improve process efficiency. Each student had an in-company mentor to assist with the reports.

The following is a list of some of the successful candidates who received their certificates at the Salma annual general meetings, held mostly at the Wanderers club in Johannesburg.

- Karl-Heinz Niemand – Safcol Wemmershoek
- Gary Iveson – Lentz Forest Products
- Johan Lamprecht – Mondi
- John Nzima – Mondi Peak
- Johnny Bekker – Hans Merensky Singisi
- Patta Pieters – Hans Merensky Weza
- Hemmington Zokufa – Hans Merensky Singisi
- Churchill Ntanjana – Hans Merensky Singisi
- Ben Moreku – Hans Merensky Tweefontein
- Gert Strydom – Densa
- Gilbert Rambuwani – Mondi Timbadola
- Mark Williams – Pine Valley
- Billy van Zyl – Densa

Don Priest
A brief history of sawmilling training 1992 – 1999

Presentation of TAFE Australian Saw Doctor Certificates.
SALBA AGM, August 1990.

Back (l to r): Aages Solfoil, Kelvin Iland, Hugh Duckrooth, Ian Welsh, Patta Peters, Robert Welsh
Front (l to r): John Nicora, Jimmy Deat, John Henry, Gavel Rathven, Piet Rayneke, Ian Terblanche, Dor Priest

A photographic history of Tafe accredited saw doctors.
Education associations

The technical director of Salma in those years was Dr Apies du Toit. He organised one-day workshops, usually twice a year, at a convenient sawmill venue in Limpopo, Mpumalanga, KwaZulu-Natal, Eastern Cape, and the Western Cape.

The workshop presentations covered several subjects, but over time it was realised that the two most important and relevant fields in sawmilling were saw doctoring and drying. This was the birth of the SA education associations for saw doctoring (Sasdea) and drying (Saldea), which continue today almost 20 years later.

In 2007 a large gathering in Port Edward celebrated the tenth anniversary and AGM of Sasdea. It was here, during the morning session, that sadly Dr Apies du Toit died of a heart attack.

Sawdoctor apprenticeships

In the early 80s Tims started assistant and senior saw doctor courses in a dedicated workshop at the Sabie centre. Abel Banda of Tims, Sam Boucher of Sandvik and Don Priest of the National Timber Research Institute of the CSIR presented the courses. When Salma took over the centre Apies du Toit decided an apprenticeship scheme for saw doctors was the only way to ensure continuity of saw doctoring skills.

The objective was to identify skilled senior saw doctors, accredit them as recognised artisans and allow them to train other saw doctors, mostly in-company up to accreditation. Although intended to include all the neighbouring countries, only Zimbabwe and South Africa had viable training facilities for saw doctoring.

To drive this project, the Institute of Technical and Further Education (Tafe) in Mount Gambier, Australia was contracted. Two instructors, Peter Mikelson and Alan Sandeman were to alternate three month periods in Africa for about two years.

They commenced the project at the Forest Industry Training Centre (FITC) in Mutare, Zimbabwe, and then moved to the SMTC in Sabie. All the trainees enrolled into the project first had to attend a Train the Trainer course to qualify them to train up to accreditation levels.

In August 1997, 14 trainees were presented with their Tafe certificates at the Salma AGM, and the following year 11 trainees received their certificates.

Despite the existence of the industry training authority, all this effort and expense was wasted because formal in-company training up to accreditation level was never continued.
Uncertified laminated structural timber beams are illegal

Few people know how to use structural laminated beams properly, and in some instances, they are used in structural applications for their aesthetic appeal without thought of their load-bearing ability or capacity.

Random tests conducted on laminated timber beams at the University of Pretoria by Prof Walter Burdzik reveals that a large percentage of laminated timber beams in South Africa do not comply with legal requirements. The main areas of concern are the bending strength (MOR) and modulus of elasticity (MOE) requirements for stress grade 5 laminated timber beams as published in SANS 10163, parts 1 and 2, which govern both the allowable stress design and limit-states design of the structural use of timber.

Abe Stears, managing director of the South Africa Technical Auditing Services (SATAS) says it is important to note that all timber used for structural purposes in South Africa must meet legal requirements. “The strength requirements for stress grade 5 is a specified minimum, which means that any timber, including laminated timber units, that does not meet the relevant grade requirements is not appropriate or safe for use as structural timber,” says Stears.

SATAS and the South African Bureau of Standards (SABS) are the only two bodies accredited by the South African National Accreditation Systems (SANAS) to carry out certification on structural laminated timber. These organisations, says Stears, have certified only a few local manufacturers of laminated beams to the requirements of SANS 1460 for laminated timber.

What is structural laminated timber?

A laminated timber or “glulam” beam is an engineered product made up of layers of wood (usually Pine or Eucalyptus) that have been glued together with an
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approved adhesive specifically designed for structural applications. The various components that go into making a laminated timber beam must meet certain requirements prior to assembly.

Firstly, proper drying, selection – also known as grading - and machining of the timber to be used are essential considerations. The finger joints in boards to be used in laminated beams must comply with the requirements set out in SANS 10096, which governs the manufacture of finger-joints in structural timber.

The adhesive used to bind the wood together must be selected for the appropriate application class for which the laminated timber beam will be used. Adhesive systems are specially designed for use in these specific application classes, which range from exposed exterior to interior dry.

“A structural beam manufactured with adhesive designed for interior dry use will not last long if used in an exterior application. Proper manufacturing process control is vital,” says Stears, adding that, “Additional factors and conditions, such as timber moisture content and adhesive manufacturer requirements, like press time, pot life and spread rate, are important to ensure a quality product.”

Once the manufacturing process is complete, grade compliance needs to be established or verified. This is achieved by means of a proof load test that records the relevant data to determine compliance with the grade requirements on strength and MOE. Once this has been completed, adhesive bond integrity tests are performed on small samples to determine compliance in the total manufacturing process.

Certification of structural laminated timber

Stears says that certified laminated timber beams are manufactured under controlled conditions and processes, and must be marked with information, such as the stress grade, certification mark of the certifying body, trade name of the manufacturer and interior or exterior application class.

"The manufacture of structural laminated beams in compliance with SANS 1460 is a costly process, which is why some unscrupulous contractors may make use of inferior products that do not meet the required standards for strength or quality for structural applications. The knock-on effects of this are potentially devastating," he warns.

“If a cheaper alternative product is used, failures could result. But these would more than likely only occur a few years after construction, and in most instances responsibility of repair and related costs would fall on the unsuspecting owner.”

“Laminated timber is a viable resource and an intelligent choice for structural construction applications, but the use thereof without traceability and product certification is a recipe for disaster. While the informed homeowner or project developer can aid in the demand for legitimate product, it is ultimately the responsibility of architects, designers, and engineers to insist on certified laminated timber beams for use in structural applications.”
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RSB builds successful business relationships

RSB, formerly known as Randfontein Saligna Beams, has come a long way since it was established in 1980 with only laminated Saligna beams in its product range. Today, RSB is one of the biggest manufacturers and suppliers of structural timber components and products in South Africa.

Laminated Saligna beams were introduced in 1986, and in 1993 the company invested in a moulder and began producing profiled timber. In 2003 RSB expanded and moved premises from Randfontein to Chamdor with 18 000 square meters of factory space of which 8 000 meters is covered with processing machinery.

RSB is divided into several departments, each operating independently, but forming an indivisible unity. It is known for its laminated Saligna beams (gluelam) and laminated Pine beams (lamstock), which is complimented by its range of mouldings, planed all round (PAR) products, decking, skirting, specialised flooring, and a large variety of architectural mouldings.

It also supplies the market with various types of exotic timbers and a recent value adding addition is a line of custom doors, frames, window frames, and timber I-Joists.

RSB believes that service is extremely important and it strives to nurture good relationships with its workforce, trade contacts, customers and suppliers. It constantly strives to:

The RSB beams at Ilha de Mocambique add the finishing touche to the restaurant.
“RSB believes service is extremely important, and it strives to nurture good relationships with its workforce, trade contacts and customers and suppliers.”

- Manufacturer and distribute high quality timber products at competitive prices
- Provide customers with professional advice and continued service
- Radiate pride, passion and commitment in the company
- Establish successful relationships with its customers and suppliers, and
- Strive to do business in an ethical way
- Both gluelam and lamstock beams are SATAS approved for health and safety purposes. SATAS monitors the process strictly from beginning to end, making sure that RSB conforms to consistent procedures. All phases of manufacture are strictly controlled.

RSB delivers daily to the Gauteng area with weekly trips made to the Free State, North West Province, Northern Cape and KwaZulu Natal.

Business as also expanded out of South Africa to countries such as Botswana and Swaziland.

The company does not supply to the public directly but supplies all major building and DIY stores in South Africa. It also works with architects to produce finished installations of high quality and innovation. Their website offers important timber care tips for its customers and clients.
**Pinus pinea.** Family: Pinaceae  
Common name: stone pine, umbrella pine, pinea.

A very distinct pine and the only species in subsection *Pineae*. Although the needles are similar to *P. pinaster*, the cones differ distinctly. The biggest specimen is in Italy and is 35 m tall with a dbh of 204 cm. *Pinus pinea* is also not a long-lived tree and rarely exceeds 150 years. Historically records indicate it as the first pine used and cultivated by man for its edible seeds.

**Native:** as the nuts were used in historic times for trading (archaeophyte), the natural distribution of the species is still unknown. However, the specimens growing in the Iberian Peninsula, is considered natural as it is found away from ancient trade routes. In general, *P. pinea* is considered native to coastal areas of Mediterranean Europe (Portugal, Spain, France, Italy, Albania, and Greece) and the Near East (Turkey, Cyprus, and Lebanon).

**Growing conditions:** the species thrives in coastal sandy areas with moist but well-drained soils and little temperature variation (0 to 600 m a.s.l.). However, it is sensitive to environmental disturbance and difficult to regenerate. It is usually an emergent tree in open forests, but can also occur with *P. halepensis* and *Quercus ilex* in maquis-woodland. *Pinus pinea* prefers sandy loam to loam soil (pH 5.5 to 6.5) and full sunlight. It is drought and fire tolerant but susceptible to sea spray.

**Allergies:** no pollen allergies (pollen grains too big), but sawdust can cause skin allergic reaction and asthma.

**Growth rate:** it can grow up to 10 m tall at a medium rate.

**Wood colour:** timber is of poor quality being coarse and resinous, but is used locally in carpentry and furniture-making.

**Wood odour:** a distinct *Pineus* smell.

**Uses:** it has been cultivated in Europe for almost 2,000 years sources of food (pine nuts), ornamental, medicinal and resin. As the cones take a full three years to mature, the production of ‘pine nuts’ is a lengthy process. When the seeds are harvested they are kept in the cones to ensure they are fresh when the time comes for eating or roasting them.

**General:** it has an umbrella-like appearance and mature trees have thick, fire-resistant bark with large cones. Seeds are eaten and dispersed by humans, birds and rodents. Resin contains turpentine which is used as an antiseptic, remedy for kidney and bladder problems, skin treatments, varnished, waterproofing, ballet shoes and waxing violin bows. Empty cones are used as decorative items in flower arrangements and good hot-burning fuel for bakeries. A green tan or dye is also manufactured from the needles. As it is easily propagated from seed, it is valued as an ornamental across the parts of Europe with mild winters.
MTO turns waste into biomass and unlocks its energy

In just two years MTO has successfully implemented downstream energy solutions that makes it a leading example of how sawmills can become carbon neutral and contribute to relieving pressure on non-renewable energy resources.

The latest development is the commissioning of MTO’s new biomass power generating plant at the George Sawmill. It is already running at full capacity, producing one megawatt of electricity a day. MTO and the George Municipality are preparing for March 2017 when the plant will be able to supply its surplus of about 1.5 million kilowatt hours of electricity to the municipality.

Karl-Heinz Niemand, general manager of MTO Solutions, says the biomass solution motivation started as early as May 2010. “We realised we had reached the tipping point and had to stop thinking of saw dust, off cuts and wood chips as waste, but rather as an untapped resource” says Niemand.

The Global Environment Fund (GEF)-Africa Sustainable Forestry Fund (ASFF) became a majority shareholder in MTO in 2010, and the GEF’s experience and internationally diverse portfolio of companies changed the dynamics in MTO, focusing on a broader more integrated business including possible opportunities downstream of the mill, especially focused on unlocking the value of “waste”.

In the south of the country, MTO has two sawmills: George Sawmill in the southern Cape and Longmore Sawmill in the Eastern Cape, near Port Elizabeth. Both mills had markets for a large proportion of their sawmill waste and both experienced setbacks when their customers closed: Sonae Novobord in George and the biomass pellet plant at the Coega industrial development zone, east of Port Elizabeth.

The MTO board and management re-focused the strategy to include a bullish approach to position itself as an energy supply company to add value to its fibre resources. Steam projects were approved and the initiatives undertaken during 2014/2015 were establishing the woodlands dairy steam project, the tradelinks steam offtake and the george steam turbine project.

Phase one

Niemand explains that the first phase in 2014 was to identify sustainable markets for the biomass at both sawmills, and MTO identified partnerships with Tradelink Textiles in George and Woodlands Dairy near Humansdorp as possible solutions.

The George wetmill was upgraded by replacing the existing kilns with new larger kilns, and the old boilers, dating back to 1935, by modern, more efficient boilers. The dry mill was upgraded for efficient de-stacking of the kilns, computerised
MTO turns waste into biomass and unlocks its energy

automated sorting and grading of the dried timber and the value adding plant increased its finger jointing capacity and planing equipment.

This increase in capacity lets the mill process two-thirds of the rural Longmore sawmill’s output and uses up 50% of the surplus biomass generated at the George sawmill in the heart of the town’s industrial area.

In October, MTO approached its neighbour, Tradelink Textiles and offered it a solution that would reduce Tradelink’s energy expenses. The company consumed 600 tonnes of HFO to generate the steam it needs to run 24 hours a day. Tradelink now buys 100% of its steam requirement from George.

The 210m overhead pipeline connecting Tradelink with MTO’s boilers delivers 8000 tonnes of steam per annum. In addition, 90% of the condensate is returned to the sawmill by a separate pipeline, thereby also saving water. This venture has proved to be very successful, with financial benefits for both partners.

A rural solution was needed for Longmore. “We approached Woodlands Dairy near Humansdorp and suggested that we install a biomass boiler at the dairy. Woodlands is the biggest single point of intake of milk in southern Africa and consumes 30 truckloads, each carrying 30 000 litres of milk, each day. They were using electricity and HFO to generate steam and we promised them savings of between 15 and 20 % on their energy cost.

MTO provided the capex for the plant and equipment and signed a 15-year supply pay back agreement with the dairy. Longmore will supply about 35,000 tonnes of sawdust and woodchips to Woodlands, and possible expansion will push this up to about 45,000 tonnes. Woodlands is responsible for transporting the sawdust and wood chips from Longmore as part of its logistics company to their dairy on a 24/7 basis.

Phase two

The second phase of the project was for the George mill to generate its own power. The MTO board approved the project at the end of 2015, and in less than 12 months the new one megawatt low pressure Triveni steam turbine was designed, installed, and commissioned by TF Design at the George sawmill.

Niemand says the hungry steam boiler will be burning about 45,000 tons of sawdust and woodchips and 3,000 tons of crushed dry blocks. Plans are well underway to sell the surplus electricity of about 1,5-million kilowatt hours during times of low production to the George Municipality.

“Biomass is carbon neutral and complies with the emissions act. By using our biomass, we have increased our overall recovery from 40% to 100%, which is presently unique in this country,” comments Niemand.

“The message to other sawmills is to find a solution for their biomass as close as possible to the sawmill. This reduces the cost of transport and their carbon footprint. We are trying to convince all industries with coal and HFO burning plants to switch to biomass, but the wheel is turning slowly.”
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TFD biomass power plant a First for South Africa

In a revolutionary development for Africa’s green economy, TF Design Engineering (TFD) has successfully designed, installed, and commissioned the first new biomass-fuelled power generating plant in the country at MTO’s George Sawmill.

Gideon Venter of TFD says the Stellenbosch-based company has once again demonstrated its ability to tackle innovative turnkey projects. In December 2015, TFD was contracted by MTO Forestry to install a one megawatt steam turbine at its George Sawmill. The plant was completed in record breaking time, more than six weeks ahead of schedule.

The power plant provides approximately 75% - 80% of MTO’s total electrical consumption. During normal operation, the sawmill will still draw some electricity from the George municipality. However, over weekends and during selected periods on weekdays, excess capacity of between 300 and 600 kilowatt electric (kWe) will be available for export to the George municipal grid.

Venter explains that TFD was responsible for the design, layout, project management and the turnkey installation. The main hardware components included in the scope of the project were:

- 1 Megawatt full-condensing turbine set with gearbox and alternator
- Surface condenser to condense exhaust steam at 0.08bar (abs)
- Steam ejector evacuation system to maintain condenser at 0.08bar (abs)
- Vertical condensate extraction pumps
- Cooling tower and pump installation (7MW cooling capacity)
- Electrical control panels and control room to control all auxiliary equipment and turbine set (PLC based)

Specifications for the reverse osmosis plant to treat boiler feed water
- New steam line from boiler to turbine set
- All site pipe work i.e. cooling water, oil, steam, condensate etc.

“Our fully automated PLC-based control system, with real-time supervisory control and data acquisition (SCADA), is on par with that of much larger power generation plants in the 10 – 30 MWe range.” The comprehensive turbine and generator condition monitoring systems continuously monitor:

- 8 Alternator bearing and winding temperatures.
- 2 Alternator vibration magnitudes
- 4 Gearbox bearing temperatures
- 8 Gearbox vibration magnitudes
- 4 Turbine journal and thrust bearing temperatures
- 6 Turbine vibration magnitudes
Numerous other process parameters are monitored and controlled. TFD has ensured that all critical systems such as the oil circulation system, condensate and cooling water pumps and turbine over-speed monitoring devices, have double or triple redundancy to ensure reliable operation and maximum power availability.

“This plant lets MTO extract the maximum value from its available biomass, and we are proud that our partnership contributes to sustainable green power production, which benefits the environment and the local community,” says Venter.

Permissions and agreements for electricity export are to be finalised with the municipality during the first half of 2017. This agreement will enable MTO to utilise the turbine’s capacity to the full and provide the municipality with the opportunity to purchase electricity at favourable rates and to stabilise the local grid with additional capacity.

“The conditions for power generation by sawmills are ideal.

A sawmill already has the equipment, operational skills, and biomass fuel to generate steam, and it is a logical next step to generate power for its own and community use,” Venter explains. MTO had spare steam generating capacity and biomass available on site and there was therefore no need for a new boiler installation. TFD added a reverse osmosis plant to treat the boiler feed water so that the generated steam complies with the turbine manufacturer’s steam purity specifications.”

Venter hopes the project will stimulate renewed thinking in the timber industry. “It is essential for South Africa’s future that we optimise the interdependency between available biomass, steam allocation to kilns and possible power generation capabilities.

“We compliment MTO for taking the initiative to extract maximum value from it biomass and thank the company for giving us the opportunity to demonstrate our expertise and competencies to provide engineering solutions and turnkey installations for all biomass steam and power generation plants.”
Sharpening and repairing carbide circular saw blades

All woodworkers use portable or static machines with circular saw blades. The challenge is to decide when to sharpen the saw blades.

In some companies the practice seems to be “let’s carry on using it until the quality of the cut is so bad that we need to throw it away,” and in others there is a maintenance programme that is not effectively enforced.

There is no hard and fast rule for determining exactly when to sharpen a saw blade, however the rule of thumb, according to most saw blade suppliers, is: do not wait until the blade is blunt or damaged before sending it for sharpening.

Last month we featured an edited excerpt from Vollmer’s technical newsletter that introduced the basics of working with grinding wheels and what to look out for when grinding wheels are imbalanced. This month the focus is on sharpening and repairing carbide-tipped circular saw blades.

Vollmer is a family-owned German manufacturer of advanced grinding, eroding and machine tools for rotary tools, circular saws and band saws in the wood and metal working industries. The Nukor Group is Vollmer’s long-standing local agent for the company’s products.

The key question is: When does a carbide, circular saw blade need to be sharpened? The basic answer is that it is necessary to properly repair carbide-tipped circular saw blades to ensure perfect cutting results and increased profitability. But, because there is no universal rule for correctly determining the exact time, Vollmer recommends that the factors affecting the “wear chamfer” should always be considered.

The rounding of the cutting edge, the so-called wear chamfer (Figure 1), is significant. The wear process at the cutting edges is complex, and influenced by many factors, including friction, abrasion, corrosion, electro-chemical and thermal wear.

What are the important things to consider when re-sharpening?

As a rule, the wear chamfer must be completely removed to achieve an ideal cutting quality and maximum tool service life. However, since wear chamfers are not always identical, the saw must always be visually inspected before sharpening.

This should take place with at least 10 times magnification. Measuring magnifiers have proven to be extremely practical for this purpose in sharpening shops. This makes it possible to determine whether the wear chamfer only extends over one third (Figure 3) or the entire cutting length (Figure 4), for example. The correct infeed amounts for re-sharpening can be selected accordingly.

Wear chamfers can be determined even more accurately using digital cameras- or to give them their scientific name, charged-coupled device (CCD) cameras - with up to 140 times magnification (Figure 7). Post-sharpening quality control including picture documentation can be carried out using these cameras.

It is important that cutting surfaces and clearance angles are sharpened regularly and within the correct ratio. For example, if only the chip cutting surface was sharpened, a great deal of material would have to be removed to remove the entire wear chamfer.

Vollmer concludes with the important message that if you wait too long before deciding to send the blade for repairs, fewer re-sharpening operations are possible, and the saw blade capacity of the saw blade decreases, and the cutting quality worsens, resulting in additional waste. The cutting pressure increases, which increases the noise level when sawing. The amount of drive power required for the machine also increases, and more power is consumed.

The repair costs go up, particularly if the wear chamfer is too large, and cracks or breakouts occur at the tooth. At the same time, the efficiency and service life of the circular saw itself are reduced. In extreme cases, excessive wear can destroy the tool.

What happens if the optimum re-sharpening point is exceeded?

To start with, the wear chamfer increases exponentially (Figure 2). As the wear chamfer increases, the cutting
will have an extremely short service life (Figure 5). On the other hand, if re-sharpening is carried out regularly, it is quite possible to sharpen a blade 15 times (Figure 6).

Circular saws should only be repaired by sawdoctors with expert knowledge and experience. It is important that the tool complies with the applicable national and international standards after repair.

Figure 2: If sharpening is not carried out early enough, the wear chamfer increases rapidly and the tool service life is highly reduced
Sharpening and repairing carbide circular saw blades

Figure 1: The macro photograph clearly shows the rounding of the cutting edge.

Figure 3: The wear chamfer that occurs when cutting and finishing chipboard.

Figure 4: The wear chamfer during the machining of timber in a sawmill.

Figure 5: Sharpening the chip cutting surface only involves removing a large amount of material, and therefore means a shorter saw service life. It is best to sharpen both the chip cutting surface and the clearance angle.

Figure 6: Sharpening the chip cutting surface and the clearance angle requires less material removal and allows sharpening to be carried out more frequently.

Figure 7: Measurement of a tooth with CCD camera at 40x magnification.
High potential for wood products in SA, Mozambique, and Tanzania

South Africa currently produces a much higher percentage of total output of value-added forestry products, notably pulp and paper and Forest Stewardship Certified (FSC) wood, than either Tanzania or Mozambique, however this could change within the next 20 years.

It is predicted that over the next two decades the region will be a significant site of pulp production. Mozambique could be the leading producer until Tanzania changes its land access system to facilitate more plantation development. The natural gas discoveries in Tanzania will contribute to a regional advantage in electricity and economic growth that will support a construction boom.

Presently, plantations and medium and large companies dominate the South African forestry sector, while natural forest resources and low-value added products produced by small and very small informal market participants are still prevalent in Tanzania and Mozambique.

This will change as increasing numbers of international forestry and wood products companies are targeting the natural forest resources in the two countries. Indications are that most of these forests are set to be FSC accredited. There are opportunities for high end wooden furniture manufacturers in the region. This could be made possible by a combination of access to both cheap wood and labour in Tanzania, relatively good skills in manufacture in Mozambique, preferential trade access via Tanzania, and technology, management and design skills in South Africa.

Experts say that the only way in which South Africa can be part of this growth is by increasing its hardwood plantations, marketing its highly skilled expertise in the sector, and playing a key role in the development of what could become a regional forestry hub. The ability of the regional economy, as opposed to individual companies, to capitalize on this will be determined by infrastructure development, political stability, access to capital and increased skills.
The creation of the Kreg pocket hole system

Great product ideas emerge when two disciplines, woodworking, and metalworking, collide.

In 1986, Craig Sommerfeld was building his home and needed to find a way to attach his doweled face frames to his kitchen cabinet carcass. Although he was a tool and die-maker by trade, and woodworker out of necessity, Craig had a problem. Not wanting to nail the face frames on and then fill them with putty, he designed and built “Craig’s Jig”, which was a single-hole pocket hole jig crafted from steel and aluminum. His jig allowed him to attach the face frames from the cabinet’s interior, where the joint could be hidden from view.

Encouraged by friends and co-workers, Craig built a few more jigs and set out to show them to the public at local woodworking shows. At these shows, Craig met an audience who had no knowledge of the joinery method he was promoting, yet they were very interested in learning about a new way to build projects with wood. Week after week, month after month, year after year, Craig continued to build his products and promote them at weekend woodworking shows.

Hundreds of trade shows and thousands of demonstrations later, Kreg Tool Company emerged as the leader in pocket-hole technology. From Kreg jigs to fully-automatic machines, Kreg offers simple solutions that have changed the way thousands of woodworkers join wood.

Kreg has several smaller, entry level pocket-hole units, the fancier DIY units, and a full range of professional machinery. The products are fast, quiet and built to run in rugged environments, Kreg offers pocket hole machines that can drill 1, 2, 3, 4 or 5 pocket holes in just one machine cycle.

“Besides the ingenious Kreg pocket hole system units for both the professional and DIYer, they also offer a superb range of innovative tools for clamping, joining, routing, cutting and measuring, and more,” says Ryan Hunt sales director of Vermont Sales the official Kreg agent in South Africa.
Cabinet Hardware Jig

Whether you’re updating your cabinets or you’re building a project from scratch, the Cabinet Hardware Jig makes it easy to install new knobs and pulls easily and consistently every time. Adjustable hardened-steel drill guides, a moveable edge guide, and built-in measuring scales ensure simple, repeatable accuracy.

Key Features
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- Measuring scales: Imperial and metric

For more info and distribution enquiries
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www.kregtool.com
Weinig InTech 2016: Paving the way for the future and Industry 4.0

The Weinig Group can look back on another successful InTech, the company’s traditional in-house trade fair. Around 1000 customers from 32 countries accepted the invitation to Tauberbischofsheim, the headquarters of Weinig in Germany, to attend the 22nd InTech to gather information and gain inspiration for new investments.

Weinig presented its complete range of solid wood processing equipment in more than 4000 square metres of floor space. A total of 30 machines and systems were sold across the group, a significantly higher number than the previous InTech in 2014.

The mix of live demonstrations and practical information was popular with the visitors. A central theme was Digitization of Production, for which Weinig has developed an extensive portfolio of solutions. These range from System Plus for planing and profiling, OptiPal for cutting, and Fencon and master computer technology for window production.

Machine monitoring and predictive maintenance are key issues covered by Weinig via its Service App. In addition, with Millvision, Weinig provides a solution for furniture production an group company Holz-Her, offers an attractive concept in the cutting of panels with the Smart Workshop.

Chief sales officer, Gregor Baumbusch, explained that these systems help companies to “achieve improvements in terms of costs, availability and resources while keeping operations as simple as possible.”

The requirements placed on businesses by Industry 4.0 were illustrated by Prof Hube in his presentation, which drew an interested crowd every day of the in-house trade fair. “Data is the fuel of the 21st century,” stated the economist. He believes this development applies not only to components of production technology but to all processes in a company.

Besides its digital offerings, Weinig’s product unit for planing and profiling received orders for the Powermat 2400 moulder, among other models. The Weinig Classic Shop with its wide range of pre-owned machines also secured good income.

The presentations from Weinig Concept, currently enjoying success in the market with complete system solutions, also drew significant attention. The numerous innovations at InTech included the OptiCut S60 wflex+ cutting system for fully-automated length and width cutting in a single work stage, and the ProfiPress T next generation gluing press and four-sided contour profiling. Visitors also witnessed complete customer systems in action including, for the first time, furniture production on the Conturex system.

The group expects to achieve a turnover of €380 million for the current year. This represents an increase of six percent year on year, which the company sees as pleasing growth that it expects will continue in 2017.
The WEINIG Unimat series offers an excellent price-performance ratio combined with outstanding quality. From the high-quality cast iron frame, to safe operation usage. The sophisticated technology guarantees a high level of production efficiency.

The highest achievement in jointing technology.
Furntech project introduces school children to the furniture industry

In the light of South Africa’s need for technical and artisan skills, and the lack of vocational training in non-specialised schools, Furntech is giving school children the opportunity to gain a furniture making qualification, part time over a period of three years.

Michael Reddy, the CEO of Furntech, says the main objective of the programme is to give school leavers a knowledge and understanding of the woodworking industry so that they can make informed career choices. He says the project aims to build capacity in technically qualified people for the furniture industry. “The graduates can now choose between finding employment in the industry, continuing with further studies in an engineering field, and those with an entrepreneurial flair can apply to enter into Furntech’s business incubation programme and start their own wood products company.”

Schools located within a 10km radius of the Furntech Durban Centre were contacted and school principals were briefed on the pilot project. The selection process included a furniture design competition, and the winning learners joined the programme. Sixteen grade 10 learners were selected, 10 from New West Secondary school, and six from Sea Cow Lake Secondary school.

The programme commenced in September 2014 and was structured not to clash with school work and exams. Training took place on Wednesday afternoons, Saturday mornings, and in the June and December holidays. The programme ends this month, after the learners have completed their matric exams. One learner did not complete the programme. Those who are found competent at the end of the four-day practical assessment will receive their National Certificate in furniture making, specialising in wood machining and cabinet making at NQF level 2.

The 15 learners who were trained at Furntech’s Durban Centre in Springfield Park, say they enjoyed themselves, and were surprised to find that it helped them with their schoolwork. For example, it boosted their confidence in their English orals, and the technical skills assisted them when they had to do product cutting lists in civil technology. The measuring and technical drawing skills helped with maths and engineering, graphics, and design (EGD).

Parents were supportive, and quickly gave the children tasks around the home so that they could practice their new skills. The female student’s friends advised her to drop out because “carpentry is for men,” but she persisted, and her friends are now impressed by her technical knowledge and the products she can make.

When asked what advice they would give other youths, they replied, “Try new things that are skills-based because it is something that can’t be taken away from you. Have a ‘I don’t know it ‘til I’ve tried it’ attitude so that you can learn where your talents and passion lie.”

Reddy is excited by the result of the pilot project and says Furntech is going to roll it out at other centres. “We achieved our objective of attracting new entrants to the furniture industry while growing our community development programme.”
Southern Cape timber economy at critical crossroads

The dwindling supply of both indigenous timber and timber from plantations is a critical constraint for the furniture and wood products manufacturers along the southern Cape’s Garden Route and the Tsitsikamma regions.

The sustainability of the forestry industry has been the focus of several discussions among stakeholders including the Southern Cape Landowners Initiative (SCLI), the Knysna Timber Initiative (KTI), the George Millers’ Forum (GMF), tourism entity Knysna & Partners, the Knysna Timber Buyers’ Association (KTB), and representatives of local and provincial government.

Between the early 1700s and the 1980s, some 80% of the economic activity of the southern Cape and Tsitsikamma region was related to the forestry industry. Today, that figure is estimated to be well below 15%, and still declining. Sadly, in the Boland and Western Cape, the forestry industry has essentially ceased to exist, with most sawmills closed.

Most of the economic activity related to the timber and forestry industry, such as job creation and socio-economic upturn, is not generated in the plantations alone, but in the downstream value-adding activities. The forestry value chain includes nurseries, planting and extraction of timber, the specialised transport companies, large and small sawmills, formal and start up furniture factories, and support businesses, providing jobs and career opportunities for thousands of people.

The latest meeting held on 11 November in Knysna was facilitated by respected business leaders, Prof Roy Marcus and his wife Dee. The delegates decided on a way forward that will kick-start the process of finding a solution to the complex challenges. The first step will bring as many stakeholders as possible together in a two-day work session early in 2017. It is expected that up to 60 people will attend, including trade unions, workers, business owners, and decision makers from local and provincial government.

SKILLS DEVELOPMENT

The Furniture Technology Centre provides vocational skills training and customized learning programmes to the furniture and wood products industries.

Furntech’s centres provide South Africa’s furniture manufacturers with access to relevant skills training of an exceptional quality. We are accredited by the Fibre Processing and Manufacturing SETA (FP&M SETA) to deliver training and assessments in the form of learnerships, skills programmes and short courses. These basic furniture trades are offered at NOF levels 1 - 4 in the following:

- Cabinet Making
- Wood Machining
- Wood Finishing
- Upholstery
- CNC Machining
- New Venture Creation
- Product Based Programmes

For information on training email: training@furntech.org.za or call: Raven Naidoo on 021-510-0088
WWW.FURNTech.ORG.ZA
Savvy business woman says persistence pays

For over 30 years Ingrid Williams climbed the corporate ladder in the business world and ignored the intuition that told her she is an entrepreneur. Two years ago, she decided to heed her calling and, armed only with a self-styled business plan, she resigned and stepped into the unknown.

Soon after I started out as an entrepreneur, I asked myself, ‘Are you bold or just a little crazy?’ and I quickly backed this up with, ‘Ingrid, you had better get your head straight’ otherwise you won’t succeed,” says Ingrid Williams, owner of Wood Savvy.

Williams, in her 50s, left her career of 15 years as an organization development specialist at Anglo American to start up her own business. She registered and established Pet Savvy in 2014 and, with three casual workers, limited resources, borrowed-time on machines, and rented space in a corner of a factory, began manufacturing DIY wooden dog kennels.

The many years Williams worked in human resources management made her aware of what it really takes to build a team with the same personal and business values. A key driver of the decision to start the business is her passion for people and helping them develop their full potential. “I am striving to build a team with shared values who think about what they do, and are committed to growth on a personal level,” she explains.

“I put into practice the five Ps of marketing: product, price, people, promotion, and place, and it worked,” says Williams. “But more importantly I realised that you must know and believe in your product, actively listen to customers, and have a value proposition that you and your team believe in and commit to.” During the first year, she found that the demand for kennels is seasonal and needed other products to sustain and develop the business. Pet Savvy drew on the existing and developing
skills of its employees and expanded its range to include a number of timber-based hardware and houseware items. Soon the revenue from the arched and slatted garden gates, picket fences, benches, stools, utility tables and work benches began to exceed that of the kennels.

In December 2014, the company experienced a hard blow and could not operate between January and June 2015. “It would have been easy to admit defeat, but giving up was not an option, not with the encouragement from my team members and our customers and their belief in us,” Williams says.

Despite the setbacks, she set out to identify and build a network of industry, and private and government role players that could assist the business.

Williams advises entrepreneurs that when starting a business, it is impossible to have all the answers. “It is, however, important to surround yourself with people who can provide advice and guidance. Humility pays! Ask for help, when you need it.”

Her persistence, patience, openness, and passion won the day. In June 2015, they moved into new premises, acquired the necessary resources, and set up and commissioned their plant. Her husband Harry, decided to assist on the operational side, and his more than 40 years’ experience in manufacturing has proved invaluable to the business. In July 2015, Wood Savvy was officially launched.

Today Wood Savvy employs 16 permanent and casual staff members, and visitors to the factory can see and feel
Savvy business woman says persistence pays

the signs of teamwork in action. Everyone knows there is a long way to go. The marketing efforts are working and demand for the company’s products from wholesalers is increasing.

The plans for 2017 include implementing a succession plan, skills development of all staff, creating opportunities for unemployed people, and finalising the branding of the company and its products. This will all take place within a context of compliance with safety, health, environment, and quality practices starting with ISO 9001:2008.

Over the past few months business has picked up and Wood Savvy is finalising contracts with leading hardware stores to be a preferred national supplier. Williams is also receiving regular productivity enhancing guidance from various people and organisations.
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