

btb

BETWEEN
THE
BRANCHES

OFFICIAL PUBLICATION OF TIGERCAT INDUSTRIES INC.

New 632E Skidder

Product News	2	A Dangerous Bite	21
The Final 822C	5	Event Round-up	23
Proteak in Mexico	6	FPT Everywhere	25
J & R Logging	11	Tigercat Fuel Filters	26
DEMO International	15	ALC Board Meeting	27
Steep Terrain in South Africa	18	Dealer News	28

TIGERCAT GOES BIGGER WITH 632E

The new Tigercat 632E skidder is the most powerful, productive four-wheel skidder ever built. Several enhancements have been integrated into the new model, setting new productivity standards for timber extraction.

The 632E is powered by the simple and reliable Tigercat FPT N67 engine which provides full emissions compliance for Tier 2 and Tier 4f along with excellent fuel economy. The Tier 4f engine delivers 212 kW (285 hp) at 2,200 rpm and the Tier 2 engine delivers 215 kW (288 hp) at 2,100 rpm.

The 632E can be equipped with the largest grapple offered on any four-wheel skidder on the market. The larger 2,1 m² (23 ft²) option has a tip-to-tip opening of 3 860 mm (152 in). Complementing the higher horsepower and larger grapple, the hydraulic system and driveline have been extensively upgraded. Several components and structures have been upsized for improved durability.

The 632E uses a larger main hydraulic pump and valves for faster operation and better multifunctioning. The hydraulic cylinders are larger allowing the machine to run pressures that are 10% lower while increasing performance by 10% on average. Cylinder rod sizes have been increased by 25%.

Load sensing control and a simplified steering circuit lead to more responsive and adjustable steering control. A newly enhanced EHS transmission produces 11% more torque – with the same top speed as the previous generation of EHS.

The new OB20 rear axle – specially designed for the 632E – provides 47% more torque capacity and nearly twice the life on all bearings. The service brakes and park brake are incorporated into the new axle. The axle mounting has been redesigned to use four high-strength 30 mm (1.18 in) bolts and two 30 mm studs on each side mounted to a massive 77 mm (3 in) thick steel frame. The new design transfers the force to



The new 632E skidder is the highest capacity four-wheel skidder.



With an innovative mounting system for four-wheel skidders, the new OB20 is designed to match the power and productivity of the 632E.

the skidder chassis and can better handle the higher torque load of the new axle and uprated EHS drive. Rear drive shafts have been increased in size to 8.5C from 7C.

Operators will see additional improvements in the cab starting with the new air-ride seat. A new instrument panel layout improves placement of electrical outlets

and the electronic control system display. Operators will enjoy finer joystick control of the travel speed. The new high visibility arch means a 10% improvement in visibility to the ground through the arch. LED lights, improved boom light location and a new arch light further enhance visibility to the grapple area.

And introducing the 625E...

Tigercat has added a third six-wheel skidder to the line-up with the introduction of the 625E. The 625E mates the front end of the 620E to the back end of the 615E. The result is a six-wheel skidder suited to soft or steep terrain with excellent traction and low ground pressure. It gives loggers a medium-sized six-wheel drive option. The Tier 4f engine delivers 165 kW (221 hp) at 2,200 rpm and the Tier 2 engine delivers 169 kW (226 hp) at 2,100 rpm.

Loggers can choose grapple sizes up to 1,95 m² (21 ft²) with a tip-to-tip opening up to 3 810 mm (150 in). Box tongs, spoon tongs, plate tongs or cast tongs are available to suit any application. ■

Tigercat Specs? We have an app for that!

- Up to the minute machine specifications whether you are online in the office or offline in the bush
- Quickly toggle between metric and imperial

Search for 'Tigercat' in the App Store or Google Play.



880D LOGGER DEBUTS AT DEMO 2016

The first Tigercat 880D logger was a part of Tigercat's live demonstration at DEMO 2016. The 880D supersedes the highly successful Tigercat 880 – a heavy duty, purpose-built forestry carrier that can be configured for loading, shovel logging or processing. The 880 stands out against converted excavators with higher horsepower, more robust construction and superior productivity.

The D-series has been upgraded to the Tigercat FPT N67 engine outputting 230 kW (308 hp) at 2,000 rpm. The engine is available in Tier 2 and Tier 4f configurations. Both deliver excellent fuel economy in a simple and reliable package.

The swing bearing diameter has increased from 1 370 mm (54 in) to 1 565 mm (62 in). The larger bearing provides increased capacity and swing torque. The twin swing drive system reduces gear tooth loads. A massive single-piece, forged pedestal strengthens the undercarriage and improves durability.

The 880D now shares the modular main hydraulic valve with all other Tigercat 800 series carriers for improved parts commonality. With the ability to easily swap out a valve section, the modular design simplifies maintenance.

Another advantage of the 880D over competing excavator-based carriers is Tigercat's forest duty undercarriage. Long frames and a wide stance carbody provide excellent stability. Track components are co-designed with Berco to provide maximum durability in forestry applications.

The 880D has plenty of cooling capacity with an automatic variable speed fan for improved fuel efficiency and an automatic reversing cycle to clean the heat exchangers. Another fuel saving feature is the energy recovery swing system. A closed loop

drive feeds power back to the engine when swing decelerates, reducing fuel consumption and recovering energy for other machine functions.

Service access is outstanding with the power operated side engine door and overhead roof enclosure. Shields separate the engine from the hydraulic pumps and valves. The entire upper assembly is designed for extreme duty. Heavy wall side bumpers and a solid cast counterweight protect the upper assembly from impacts when swinging.

The 880D provides an ideal work environment. Convenient walk-up access to the rear entry door leads to a generous interior cab space. The cabin is quiet and comfortable with excellent visibility. The full-length front window and additional floor windows provide clear sightlines. The high output climate control system keeps the operator comfortable even in ambient temperature extremes. LED lighting provides higher output and improved reliability. ■



The new Tigercat 880D equipped with a live heel at DEMO 2016 in British Columbia.

LAST 822C LEAVES THE FACTORY



Out with the old, in with the new. Key team members in front of D-series and C-series 822 carriers. (L-R) Caleb Sorensen, PDI inspection; Kyle Keats, designer, track machines; Dave Riedl, product designer, track machines; Steve Crosby, vice president, Paris operations; Tim Myers, assembler; Chris Sorenson, assembler; Tim Koniuch, assembly supervisor; Dennis Resendes, assembler; Mike Kesteloot, assembler; Jeremy Guest, assembler; Allen Kellman, engine sub-assembler.

Out with the old and in with the new as Tigercat retires C-series and introduces D-series platform worldwide.

On a brisk morning in early October, staff at Tigercat's Paris, Ontario track machine manufacturing facility marked an important milestone – the shipment of the last C-series 822 carrier. The D-series machines were introduced in mid-2015 with the Tigercat FPT Tier 4f engine. However, the C-series models were kept in production for non-Tier 4 export markets. Now with the introduction of the Tigercat FPT Tier 2 engine option, all production has been switched to the new and improved D-series.

The highly successful 822 platform began with the original L830, introduced at DEMO 2000 in Kelowna, British Columbia. It quickly proved itself a nimble workhorse for thinning and final felling operations in tough conditions around the world. The L830 carrier spawned the 822 feller buncher as well as the H822 harvester, LH830 harvester and the LX830 buncher. Total production of the 822/830 platform approached 900 units. The machines were sold worldwide and the 822 became particularly well entrenched in the northeastern and southeastern US.

The 822D series represents a major departure from original 822 and subsequent 822C series platforms. “Tigercat has invested considerable time and effort into the new generation 822 and 830 as well as adding a third model, the 820,” explains Grant Somerville, vice president, engineering who leads the track machine, loader and attachment product groups. “While the wish list for this redesign was extremely challenging, our team has produced a machine that I believe will impress.”

In addition to the Tigercat FPT powerplant, there are numerous improvements and upgrades. The whole structure of the machine from the swing bearing up has been redesigned to improve service access and operator visibility. Most notably, the D-series sports a fully retracting roof enclosure and improved component layout. The new cab interior is quieter with optimal ergonomic placement of controls, a 180 mm (7 in) touch screen electronic control display and a sky camera system providing the operator with a much wider field of view compared to the traditional skylight. ■

SOMETHING FROM NOTHING

– Paul Iarocci

Teak round log export specialist, Proteak, ventures into eucalyptus in Mexico in a big and bold way.



(L-R) Gary Olsen, Oscar Perezbolde Martinez, Enrique Espinosa and Raphael Riaño at Proteak's headquarters in Mexico City.

Proteak has come a long way since it started its forestry operations in 2000 with a 180 hectare (445 acre) teak plantation in Nayarit, Mexico – a region with a similar soil type and climate to parts of southeast Asia where teak flourishes.

Ten years later in 2010, the company went public, listing on the Mexican Stock Exchange. By this point, Proteak's plantations had increased to 4 700 hectares (11,600 acres). Throughout the entire history of the company's operations, the teak plantations had been harvested manually. It was not until 2013 when the

company acquired 8 000 hectares (19,700 acres) of eucalyptus in Tabasco – a region that receives 2 800 mm (110 in) of rainfall per year – that mechanized harvesting became a part of Proteak COO Enrique Espinosa's vision. Around this time Proteak acquired development land in Tabasco and began construction of a continuous press MDF plant nearby to the plantations. And this is where the partnership with Tigercat begins.

We toured the forestry operations with Oscar Perezbolde Martinez and Hugo Palafox. Oscar is



The 845C equipped with a 5000 series saw working in one of Proteak's twelve-year-old plantations.

responsible for the eucalyptus chip supply to the mill. His job starts in the forest with the company-owned harvesting system, extends to contract transport to the mill and ends once the logs have been fed into the on-site chipper. Hugo is the harvesting manager for the Mexican teak plantations. There is evidence everywhere of the progressiveness of the company and its people. For instance, the first thing that Oscar did upon arriving on the site was an inspection flyover of the operation using a drone.

The eucalyptus plantations that were acquired in 2013 are of lesser quality than the new clone stock that Proteak is planting at roughly a rate of 2 000 ha (4,950 acres) per year. The neglected and aging plantations, averaging four trees to the cubic metre, are choked with vines and underbrush. It is a tough job for a feller buncher but the quality of the plantations will soon be improving. We drove past endless perfect plantations with fantastic growth rates, superior genetics, active management and better vegetation control. The result of these efforts will be five year rotations and in turn, significantly increased productivity for the harvesting systems.

Some of the initially acquired forest land had already been harvested to meet market demands at the time and left to coppice. These coppiced stands were so poor in quality that the first machines Proteak acquired were two M726E mulchers to level these stands, apply good site preparation practices and plant new material.

The two mulchers have worked steadily since 2013, acquiring over 6,000 hours. Now Proteak utilizes them in a site preparation capacity, knocking down new vegetation, grinding up coppiced stumps and breaking down residual material from the harvested compartments.

This method of site preparation and vegetation management offers many advantages. It avoids all the negative environmental effects of burning and returns nutrients to the soil. The mulched material also slows the establishment of new vegetation, possibly lowering the frequency or concentration of future herbicide applications.

cont'd on page 8



The feller buncher is in constant battle with thick vines and underbrush.

cont'd from page 7



Proteak's 630D skidder decking a bunch. On the short distance skids, operator Geraldo Monzon makes full use of Turnaround® as he shuttles back and forth from the block to the deck.

As the necessity for mulching declines in the future, the machines can be easily repurposed as feller bunchers since they were specified with the multi-function hydraulic system and quick attach boom adapter.

Raphael Sanchez is the harvest site manager, overseeing a three machine crew consisting of an 845C feller buncher, a 630D skidder and a T250B loader. The harvesting system is simple and effective. The 845C is currently cutting on average about 200 stems per hour or 600 m³ per day in the older plantations. (The eucalyptus weighs about one ton to the cubic metre.) The buncher is constantly fighting thick underbrush and vines and has acquired 4,000 hours. The trees are skidded to roadside and then slashed to six metre lengths with a Rotobec-MSU grapple saw that is equipped on the T250B. The loader builds two rows – one for the logs and one for the tops which are also taken to the mill for fuel. (The mill will eventually have net positive energy capacity from waste burning, feeding power back into the grid.) The logs are left to dry infield for two months, then transported to the mill with bark on.

One big advantage to the harvesting operation is that the mill doesn't require debarked logs. This enables Proteak to have the relatively simple T250B at roadside as opposed to a processor and loader. Currently the mill intake is 600 m³ per day. However, the mill is



(L-R) Skidder operator, Geraldo Monzon and Raphael Sanchez, harvest site manager along with Oscar Perezbolde Martinez, Hugo Palafox and Tigercat's Gary Olsen.

not yet running at full capacity. As the fibre supply improves, Proteak intends to purchase a second harvesting system and open a second line in the 24 hour continuous press MDF facility, increasing the fibre intake to 1 000 m³ per day. Due to the high annual rainfall, the road system does not support continuous log delivery, so the wood yard holds a three-day stockpile. In addition, the silo holds 10 000 m³ of chips, equivalent to 3 000 m³ of round wood.

Back in 2013 this was all merely a well-laid plan. Today, the mill employs 120 people and supplies 30% of the domestic MDF board market. (Previously 95% of MDF consumed in Mexico was imported.) Proteak employs over 1,000 people and is harvesting 200 000 m³ of the six million cubic metre annual cut in Mexico.

Today, in addition to the 10 000 hectares (25,000 acres) of eucalyptus, Proteak also has 8 000 hectares



The T250B is equipped with a large capacity grapple saw. It bucks the logs to six metres and stacks the tops in a separate row. It is a very simple operation with no debranching, no debarking and no waste. The tops are transported to the mill as well for fuel.

(20,000 acres) of teak - all FSC certified. Teak roundwood is exported to India and China for furniture production and there is also a teak veneer market. While the majority of the teak revenue is coming out of Costa

cont'd on page 10

The brand new MDF plant is full of the latest German continuous press technology.



cont'd from page 9

Rica and Venezuela, Proteak is now harvesting 1 000 m³ per year in Mexico.

Recently, the company began experimenting with motor-manual harvesting methods for teak using a skidder and feller buncher with manual debarking. This out-of-the-box thinking has spawned modifications and trials such as rubberizing the skidder grapple tongs. While this mechanized harvesting experiment requires more work to eliminate splitting and other



Samples of Proteak's teak veneer.

The plant is now supplying 30% of the Mexican market with MDF board.

types of damage to the valuable teak logs, Hugo, Enrique and the team are formulating a new plan for a motor-manual system that will produce logs well within the quality standards that the company is achieving with fully manual harvesting. As Tigercat and Proteak continue to collaborate, stay tuned for further developments in Mexico. ■

NEW VIDEO

Tigercat Forestry 2016

Available on Tigercat TV
with subtitles in:

- French
- Portuguese
- Spanish
- Swedish
- Russian



Go to www.tigercat.com/video/forestry2016
then choose your language from the drop down menu.



RIGHT TOOLS FOR THE JOB

– Samantha Paul, Tigercat marketing

Joedy Cahoon (left) and CTW Equipment sales specialist, Donald Smith. “CTW is first class and I can always count on Donald if I need anything,” claims Joedy.

BTB visited Castalia, North Carolina to speak with Joedy Cahoon about his family operations, preferred equipment and prime harvesting methods.

Brothers Joedy and Ronnie Cahoon are third generation loggers who know the timber business like few others.

Joedy and Ronnie both own and operate their own logging companies. Joedy owns J & R Logging and Ronnie owns Cahoon Brothers Logging. In addition, the brothers co-manage their mother Christine’s company, Cahoon Logging, which she took responsibility for when her husband, Carlton Joedy Cahoon Sr. passed away. With their mom by their side, the Cahoons continue to take pride in their business and family name.

“Now that my operators have tried Tigercat, that is all they want to run.”

– Joedy Cahoon,
owner of J & R Logging.

Not only are the Cahoons keeping the logging business in the family, they are now keeping it in the Tigercat family, gradually switching from Deere to Tigercat equipment. Joedy was first introduced to Tigercat in 1995 when he saw an advertisement for a 726 feller buncher in a local magazine publication. “I knew just by the photo that somebody had done their work,” claims Joedy. So he tried one out.

That same year, Joedy purchased the 36th Tigercat 726 ever to be produced. “Tigercat mastered the weak parts,” says Joedy. “The centre section was always the weakest part on cutters and it would beat a man up sitting in it all day, wobbling back and forth. But with Tigercat this doesn’t happen and I have never had to replace a centre section.” Joedy then decided to switch over his loaders

cont’d on page 12

cont'd from page 11



The men of J & R Logging. (L-R) Chris Respass, Jeff Bell, Jason Respass, James Foster, Joedy Cahoon, Goreio Martinez, Billy Joe Boyd, Aaron Warren, Loco Ramirez and Tommy Baldwin.

to Tigercat models and started thinking about Tigercat skidders, “I always wanted a tractor with a big bucket on it,” he says.

In 2005, Joedy purchased his first Tigercat skidder, a 620C from Jimmy Harris, whom at the time was sales specialist for Tigercat dealer A.G. Lassiter. Joedy initially ordered the machine with the standard 1,39 m² (15 ft²) grapple but then he found himself getting into some tracts where the hardwood was not heavy but bulky, short and hard to handle. Joedy then decided to put an order in with A.G. Lassiter for a larger 1,58 m² (17 ft²) grapple. By mistake, a 1,72 m² (18.5 ft²) grapple – typically equipped on a 630 skidder – ended up on the machine. This was a very lucky mistake for Joedy. He couldn’t have been happier, thinking that the oversize grapple would be perfect for his operations.

The bigger grapple went a long way toward maintaining a steady flow for the chipping operations. “Normally we run two chippers and it takes a lot of wood to run two of them. Before the skidders get out of eye sight to get another load the chippers were already done, but those Tigercat skidders with the big tongs will get enough wood for both before all the wood is eaten up,” claims Joedy.



One of Joedy’s 630E skidders.



Joedy comments on this oldest 250B loader (right) purchased in 2006, "I have run some smooth loaders but nothing will last 22,000 hours like my Tigercat."

After the mistake was revealed, Tigercat engineering spent some time investigating and learning more about Joedy's operations. Considering all the factors involved and the type of operation, the final decision was to leave the 620C as it was minus the remaining warranty. Joedy agreed based on his high level of confidence in Tigercat and the quantifiable improvements in his chipping operations. Eleven years later with 24,000 hours on the machine, the configuration is still working very well for Joedy.

Full equipment line-up

Joedy's current Tigercat equipment fleet includes four drive-to-tree feller bunchers – a 720, two 724Gs and one 726B – as well as an 860 track feller buncher. He also operates three 250B trailer mounted loaders and one T250B track loader. The most recent addition to his line-up is a 2016 630E skidder purchased through sales specialist Donald Smith of CTW Equipment. In addition, he still has his eleven-year-old 620C skidder and a 2014 630E. Soon he plans to replace an older 2006 model 250B with a second track loader for additional shovel logging capability. Between the three

Cahoon companies, they try to upgrade five to six machines each year.

Joedy has a crew of eleven employees on his site. Foreman, Jeff Bell zeroes in on why he thinks Tigercat equipment lasts so long, "It's the hydraulic equipment. Tigercat runs so cool," he says. "You get off a Prentice and you lay your hand on a cylinder and it would be scalding hot and the o-rings would be cooked hard. But with Tigercat, you could touch the cylinder for a while. You can really tell the difference."

Eastern North Carolina – wet and muddy

Unlike the frozen ground in cold and snowy Canada – which Joedy likes to visit in winter to hunt whitetail deer – J & R Logging cuts tracts along the coast of North Carolina, an area often hit with tropical storms that bring along massive amounts of precipitation, causing river and coastal flooding.

Based on their many years of experience logging in the area, the Cahoon brothers know how to survive the wet conditions with traditional shovel logging techniques. They will use a track feller buncher and track loader

cont'd on page 14



James Foster operating one of the two 630E skidders for J & R Logging.

to build roads to the landing. Once they are finished logging a sector, the skidders will remove the temporary road and skid those logs to roadside as well. Their trick when building log roads is to put the butts of the trees toward the deck, making it easier for the skidder to remove them when they are done. “You can either sit at home and wait for the rain to dry up or you can get yourself a shovel and keep moving timber,” says Joedy.

Joedy’s mother, Christine “Mama” Cahoon, logs most of her tracts for Weyerhaeuser. Earlier this year they got word from Weyerhaeuser that they were the only company that did not have to stop operations due to rain so far in 2016. Other contractors had multiple tracts that they started but couldn’t finish due to wet weather. Going back later to finish and clean up once conditions improve can be a waste of time and money. “You never go in and cut all the front of your timber out. That is a no-no,” says Joedy. “If it gets wet, you have no wood close by to build a road to your deck. Continuously cut front to back,” he explains.

These days, Joedy’s wood averages 46 cm (18 in) in diameter. The chips are sent to the Enviva pellet mill in Ahoskie, North Carolina. Round wood goes to North Hampton County, North Carolina. Joedy aims for 25 loads per day whereas his mom aims for about 50 to 60 loads per day. “It’s a different beast with the bigger timber on Mama’s job,” says Joedy. “All the trees are in nice neat rows but you get paid less so you have to move more wood.”

40 years later

Looking back Joedy is happy he took the chance on that new Tigercat 726 feller buncher soon after it was introduced to the market. This year marks Joedy Cahoon’s 40th year in the logging business. It took hard work, careful planning and the right equipment to get to where he is now. ■

WEST COAST FOR DEMO INTERNATIONAL



Over its 49-year history, DEMO International has evolved into one of North America's largest, most distinctive forestry equipment events and the 13th edition this past September in beautiful British Columbia was no exception. The event attracted more than 100 exhibitors and 7,400 attendees from around the world.

The location

DEMO 2016 was hosted by the University of British Columbia's Faculty of Forestry in the unique 2 025 ha (5,000 acre) Malcolm Knapp Research Forest. Located in the Coast Mountains and approximately 60 km (40 mi) east of Vancouver, this working forest is an important global centre for forestry research and education – and an ideal location for DEMO.

The event

A 3,2 kilometre (2 mile) loop was specifically built for the show. Tigercat's active site was well positioned with a central location that spanned the upper and lower sections of the loop, providing excellent visibility for the live demonstrations from above and below. On the upper deck, visitors got to relax and enjoy the show from a large patio equipped with bar stools and rocking chairs.

The site was extremely challenging – steep with large old growth stumps and rock shelves. Four machines took part in the active harvesting. The designated felling machine was an LS855D shovel logger equipped with a feller-director boom and the 5195 directional felling saw. The very first Tigercat powered 880D logger worked in a shovel logging capacity. A six-wheel drive 635E skidded the 'good ground' and a South Star QS605 equipped 880 logger processed 9,1 m (30 ft) logs.

The crowds enjoyed the view of the live demo from the upper deck.

Crowds also noted the impressive Tigercat static display with over a dozen machines and attachments. Front and centre was the new 632E skidder – the biggest, baddest, highest capacity four-wheel skidder on the market. There was also a five-machine 855D display showing the wide array of felling, harvesting and shovel logging solutions available on the 855D platform. A 1085C forwarder represented Tigercat's CTL side.

Tigercat product managers, engineers, technical support staff and sales team members intermingled with dealers and customers throughout the three-day event, explaining new features, answering questions and discussing new ideas. The socializing continued Friday evening with a large dinner hosted by Tigercat at the Marriott Pinnacle in downtown Vancouver. Over 600 people attended the event including Tigercat personnel, dealers, customers and their families from around the world. Tigercat CEO Ken MacDonald and president Tony Iarocci thanked the show set-up team for the fantastic work and acknowledged all the customers and dealers for their continued support.

And the winner is...

An exciting highlight was the draw sponsored by Tigercat and BC dealer, Inland. It was a 1-in-25 chance to win a 2016 Dodge Challenger. Any customer who purchased one of 25 pre-selected machines was placed on the ballot for a chance to win the car. An exciting reverse draw kept the crowd on edge. The last name pulled was Shawn Nicholson of Kaatza Logging Ltd. from Vancouver Island. ■

See the DEMO 2016 equipment in action on Tigercat TV: www.tigercat.com/DEMO2016.



DEMO INTERNATIONAL



The 632E was placed front and centre in the Tigercat show site. Being the newest addition to the skidder line-up and the highest capacity four-wheel skidder on the market, the machine attracted a lot of attention.



Redhead Equipment sales manager, Chuck Miles (left), discussing the new 570 harvesting head with Tigercat product manager, Duane Barlow.



(L-R) Tigercat US sales manager, Kevin Selby talking to Mississippi-based customer, Arthur Holcomb.



Tree huggers. Two ladies wrap their arms around a large Hemlock on Tigercat's upper viewing deck.



Kids were kept busy enjoying Tigercat colouring books at the picnic tables on site.



The extreme-duty 25-tonne Tigercat 1085C forwarder on static display.



The Inland army standing at attention. It was hard to miss the large group of Inland representatives at the Tigercat site.



(L-R) Tigercat international factory sales representative, Gary Olsen, talking with Ecuador dealer representative, Juan Manuel Durini from Efocol and customer, Pablo Larreategui from Endesa.



The designated falling machine was an LS855D equipped with a feller-director boom and the 5195 directional felling saw.



Tigercat president, Tony Iarocci (right), speaking with logging/silviculture contractor, Clint Lightburn of Lightburn Ventures.



The show set-up crew worked tirelessly. (L-R) Mike Kesteloot, Jason Van Belleghem, Pedro Venegas, Brock Rainville, Matt Leatherdale, Mike Soluk, Don Snively, Joe Adamkiewicz, Jason Perry, Glen O'Neal, Devin Snively, Brandon Homewood.



The lucky winner of the new 2016 custom-branded Dodge Challenger was Vancouver Island's Shawn Nicholson of Kaatza Logging Ltd.



After DEMO, Tigercat dealers and customers from Australia, New Zealand, France, Belgium, Russia, Brazil and Uruguay toured the Tigercat factories in Ontario.

MOTOR-MANUAL: PINE HARVESTING IN STEEP TERRAIN



The neat bundles in the background are manually felled, debranched and stacked.

With 300 employees – including handfallers, peelers and stackers – and eight sets of tractor-trailer short haul transport systems, Grant Rankin has been involved in manual felling operations in South Africa for over ten years.

– Paul Iarocci

Operating as GBR Contracting, and based in Greytown, KwaZulu-Natal, Grant traditionally sought out pine, gum and wattle contracts in flat terrain. The short haul system Grant traditionally used consisted of a large team of labourers that performed manual felling, debranching, crosscutting and stacking. The tractor-trailer short haul units travelled infield where the short logs were loaded with Bell three-wheelers, then the logs were transported to a location accessible by on-highway haul trucks.

In the case of wattle plantations, a highly specialized extra set of steps are required. The bark must be

carefully peeled in long lengths and grouped into 2,4 m (8 ft) long bundles weighing 50 kg (110 lb). Once delivered, the bundles are chipped and tannin is extracted. The highest grades of tannin are for leather



Operations manager, Deon Alexander, owner, Grant Rankin, and 610C skidder operator, Sipo Madondo.



Tractor-trailer cycles average 30 minutes with ten to fifteen tonne payloads.

tanning and lowest grade is used in the production of glue. Grant notes that since the recession in 2008, the markets for high end tannins have swung from Europe to Pakistan and other Asian countries.

However, back in 2011, an opportunity presented itself. Grant bid on a Mondi wattle contract that involved steep terrain. There is no way that he could tackle such a job with tractors and trailers loaded infield by three-wheelers. So Grant made the decision and commitment to change his short haul system by purchasing a skidder.

After evaluating the different options, he settled on a Tigercat 610C skidder purchased from South African dealer, AfrEquip. “One of the reasons we chose the Tigercat over other brands is the fact that the machine was going to be working on steep hills with dropouts and we liked the idea of the hydrostatic braking,” explains Grant.

In addition, the size and capacity of the machine is optimally matched to his operation. “I’m very happy with the production and how it works. I used a smaller Deere skidder at one time and realized that I had too much work for a machine like that. Lacking both in speed and load capacity, it only did half the production of the 610C.”

The skidder has changed Grant’s business and added flexibility to the type of contracts he can bid on for his main clients, Sappi and Mondi. The trees are manually felled, debranched, crosscut and stacked in grapple sized bundles by hand. Once all this is complete and the ground-based workers have moved on to the next cut block, the skidder comes in and moves the stacks, averaging around one tonne, to roadside. A three-wheeler loads the trailers with a ten to fifteen tonne payload (1 tonne equals 1.1 ton).

The tractor-trailer cycle time averages around 30 minutes, depending on distance – which sometimes exceeds three kilometres one-way to the depot area. Then the logs are offloaded, stacked and eventually reloaded onto highway trucks. A tractor-trailer unit could perform as many as twenty cycles per day to get the required volume and the 610C does ten to fifteen cycles per trailer load with fairly short distances and generally uphill skidding. Suffice it to say, the amount of travel required of the equipment is high in these remote higher elevation plantations with very poor road infrastructure. However, short of extensive road engineering, there is no other viable method to get the wood to a location accessible by haul trucks.

cont’d on page 20



A bundle weighs about one tonne and daily production ranges from 220-350 tonnes per day. It is a tough application for driveline components.

“The skidder is the crux of the whole operation,” explains Grant. “If it stands, nothing gets delivered.” So Grant is totally reliant on the machine and demands very high mechanical availability. He can cycle through the tractors, overhauling at planned intervals but with the skidder, it is a different story. The machine works a single twelve-hour shift including the operator’s daily maintenance procedures. “This terrain is too steep and dangerous to work at night,” comments Grant. The 610C has achieved production as high as 350 tonnes but 220 tonnes per day is more typical.

Tigercat product support representative, Jeff Cave fitted the machine with oversize custom fenders to keep the logs from hitting the rear tires, while not so large as to catch the ends of the 2,5 m (approx. 8 ft) logs when lifting the grapple.

Grant explored other skidding methods, namely cabling the bundles. While the payload is larger, Grant decided against it, opting for fewer men on the ground near the skidder. (His skidding system can work with no men on the ground whereas the cable method requires two men to feed and attach the cable and one additional man at the loading area to release the load.) The reliance on the extra manpower for the skidding function and the safety issues related to having people on the ground near mobile machinery swayed him toward the grapple method.

To date, the machine has racked up over 11,000 hours with very little in the way of unplanned downtime. Now armed with the Tigercat skidder, Grant is far more flexible in the type of contracts he can bid on, going after terrain that would have been impossible to access with three-wheel loaders and tractor-trailers. ■

A DANGEROUS BITE

Fluid or high pressure air injected under the skin at pressures as low as 7 bar (100 psi) can cause crippling injuries or even death if not treated promptly.

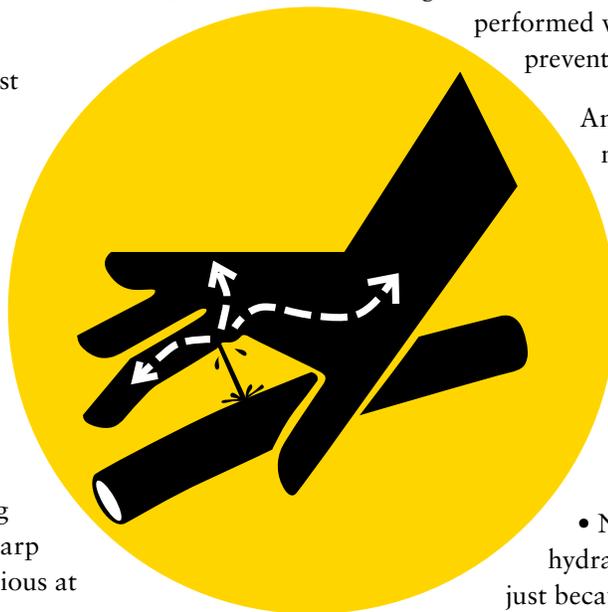
– Chris Armour, marketing technical writer

Forestry and off road equipment operators and maintenance technicians are used to dealing with obvious dangers from spinning saws and falling tree limbs, but may be less familiar with a critical danger that can cause crippling injuries or death – high pressure injection injuries.

With heavy equipment, the most potent threat comes from high pressure hydraulic leaks. A tiny break or pin hole in a hydraulic line or a failure of a fitting can release hydraulic fluid in an almost invisible stream at over 200 bar (3,000 psi). If technicians or operators are searching for a leak with their hands or investigating some unrelated problem, they might feel a sting similar to an insect bite or a sharp wire cut and not consider it serious at first.

The wound may not even appear that severe – just a cut or red mark like an insect bite. Mechanics get bumps and scrapes on their hands all the time, after all, and wasps can nest in machinery that lives in the woods. However, within a few hours, the injury will cause excruciating pain and require immediate and specialized surgery. The longer emergency treatment is delayed, the higher the risk of permanent injuries such as losing fingers, the whole hand or even death.

What happens is that high pressure fluid is injected deep under the skin into the blood stream, muscles and tendons. The fluid itself can cause serious damage to tissue depending on the type, but just the pressure alone can rapidly cause swelling of enclosed compartments within the limb leading to painful damage to tendons, arteries, nerves and muscles. Hydraulic fluid or fuel entering the bloodstream can quickly result in death since the human body has no defence against it. If that weren't serious enough, bacteria can be driven deeply into the wound causing dangerous infections. Only specialized surgery performed very soon after the injury prevents permanent disability.



Anyone working around hydraulic machines needs to be aware of the following precautions:

- Always wear Personal Protective Equipment (PPE) such as safety glasses and gloves, but be aware that high pressure fluid can penetrate even heavy welding gloves.
- Never assume a machine's hydraulic system is depressurized just because the machine is turned off.

Lines or accumulators can hold residual pressure for weeks or even months with the engine turned off. Consult the operator's manual for the specific depressurization procedure for the machine. Remember, however, that there is no definitive way to tell if a system is fully depressurized so always be cautious.

- Never use your hand – even wearing a heavy glove – to grab a hydraulic line or search for leaks. Always place the far end of a long object

cont'd on page 22



A technician checking for hydraulic leaks using a sheet of cardboard.

such as a piece of cardboard, wood or steel in the suspected path of any fluid stream to localize a leak.

Besides training technicians and operators, companies and dealers working with heavy equipment should put plans in place for dealing with injection injuries. Local medical facilities should be alerted that they may see these kinds of injuries (which require specialist treatment) and there should be evacuation plans in place for crews working in remote locations. Make sure the Material Safety Data Sheets (MSDS) for any fluids in use (hydraulic fluid, fuel, paint and so on) are readily available and provided to emergency personnel.



Fluid injection injuries can look and feel like insect bites at first, but need to be taken seriously and treated immediately.

If an incident does occur, injured workers must be transported to hospital as quickly as possible since time is of the essence. Surgery must be immediate to relieve pressure and remove injectate from the wound. Both victims and emergency room personnel can sometimes be reluctant to proceed to this step because the outside appearance of the wound can seem very minor, but it is essential that these kinds of injuries be treated as immediate surgical emergencies.

While this article has focused on the dangers of hydraulic fluid injuries, it is also important to remember

that injection injuries can happen with any substance under as little as 7 bar (100 psi) pressure – even water or air. Many common maintenance shop activities such as pressure washing, painting, clearing debris with compressed air and use of a high pressure grease gun can also result in injection injuries.

Always wear the proper protective equipment for the job and take responsibility for your safety and the safety of your coworkers. Beware of the bite! ■



Even a small injection injury will lead to major surgery.

event round-up

THE ORIGINAL AMERICAN FORESTRY SHOW

Tigercat and local dealer Ricer Equipment teamed up for the Paul Bunyan Show, October 7-9 in Cambridge, Ohio. Beautiful weather helped bring in the crowds for the 59th annual event.

“The Ohio Forestry Association could not be happier with the turnout for the 2016 event. We had several new exhibitors this year and attendance was the highest that it has been in the last ten years. OFA is excited about the future of the show and we are looking forward to seeing continued growth over the next several years,” comments Gayla Fleming, event manager for the Ohio Forestry Association.

Tigercat machines on display included a 604E cable skidder, a 610E skidder, the LX830D feller buncher, a 234B loader and the 470 mulcher. In addition to the iron, the show had its usual variety of exciting activities including the Ohio State Lumberjack Championship, the International Lumberjack Competition, a log loader competition, skid steer rodeo and much more. ■



A decorated carving of giant folklore lumberjack Paul Bunyan.



Jeff Beck, sales specialist with Tigercat dealer Ricer Equipment discussing the 610E with J & M Logging customers Rudy and Joe Yoder.

HOT MISSISSIPPI TURNOUT



The 234B loader with a newly redesigned cab.

The extreme heat didn't stop the crowds of over 7,000 from showing up for the 15th biannual Mid-South Forestry Equipment Show, held August 26-27 in Starkville, Mississippi. The oldest and largest live in-woods demonstration of forestry equipment in the nation was hosted once again by Mississippi State University. The venue, John W. Starr Memorial Forest, is one of the properties in the university's Bullfrog Forest which covers approximately 12 000 ha (30,000 acres) throughout the state.

The latest and greatest advancements in forestry equipment were showcased. Continuing education programs offered during the show provided an opportunity for loggers, landowners and foresters to learn of the newest research advances from top professionals in the field.

Tigercat's full tree harvesting demonstration consisted of a 724G drive-to-tree feller buncher, a 610E skidder and a 234B loader. Attendees were also able to watch a T234B track loader feeding material into a Bandit chipper and got a close-up look at the latest Tigercat machines, including the LX830D track feller buncher, a 720G feller buncher and the E-series skidders.

The show generated over \$10,000 for Log-A-Load for Kids through merchandise sales and donations, including one made by Tigercat dealer, B & G Equipment. B & G also sponsored the loader contest with top finishers including, Charles Garrett of Glen Henderson Logging in New Augusta, Mississippi, Lee Powers of Doug Powers Inc. in Carthage, Mississippi and Clay Maxwell of Stott Wood Co. from Olla, Louisiana. ■



The new Tigercat FPT powered LX830D track feller buncher attracted a lot of attention.

TIGERCAT – FPT EVERYWHERE

– Lodovico Sinchetto, diesel engine systems

Tigercat introduced Tigercat FPT engines in North America and Europe in 2013. To date, Tigercat has shipped over 2,800 machines equipped with the N67 and C87 Tier 4i and Tier 4f engines. The transition has gone very smoothly.



Tigercat FPT power plant.

The engines are performing extremely well – with excellent fuel efficiency and great uptime. Power and performance are well matched to the various applications of the machines. The efficiency of Tigercat’s parts and service support combined with the additional dealer empowerment has resulted in

an increased uptime and a better experience for our customers. We all know well that in logging, lost production is never made up. Tigercat’s customer service department and the dealer network take machine uptime very seriously.

Based on the positive experience, it was a natural progression to begin to add Tigercat FPT Tier 2 engine options to all the latest models. This will give all markets worldwide access to the latest and greatest machines as well as what we consider to be the best power plant. Tigercat has been working hard to train dealer technicians throughout the world. Tigercat is or will soon be shipping E-series skidders, D-series loaders, C-series forwarders, E-series drive-to-tree feller bunchers, the 875 logger and the various 822D, 845D and 855D carriers to Australia, New Zealand, Russia, South Africa and throughout South America.

Tigercat FPT Tier 2 and Tier 4f engines offer fast load response, low operating costs and high power density, combined with excellent fuel economy. Tigercat FPT emission technology is simple and reliable, meeting Tier 4f emission standards without the complexities of a variable geometry turbocharger, EGR system or diesel particulate filter. The key is the patented selective catalyst reduction (SCR) system. ■



The first Tigercat FPT powered loader to ship to Russia.

TIGERCAT FUEL FILTERS

Protect your engine with high performance Tigercat synthetic media fuel filters.

– Chris Armour, marketing technical writer



A Tigercat BH810 primary fuel filter installed on an 880D logger.

In BTB #41 November 2015, Dealing with Diesel, we covered important issues surrounding diesel filtration and fuel quality and why both are critical to peak performance and reliability in modern diesel engines.

To summarize, the latest generation high pressure common rail (HPCR) fuel injection system used with the Tigercat FPT engine operates at much higher temperatures and pressures than previous engines. This means even slight fuel contamination can cause serious engine damage. To keep Tigercat FPT engines running smoothly, it is critical to use fuel filters that meet Tigercat specifications such as the BH810 main fuel filter and to replace filters at the correct intervals as specified in the operator's manual.

The BH810 primary fuel filter is placed after the transparent water/fuel separator filter on Tigercat FPT engines and is the last line of defence for the engine before the diesel enters the fuel injection system. The specially engineered synthetic filter media traps particles down to four microns (a human hair is approximately 100 microns in diameter) and is certified for use with Tigercat FPT engines. The filter will hold up to 99.9% of contaminants over four microns even in conditions of high vibration and fuel surges characteristic of forestry

and off road industrial applications. This improves the reliability of the engine fuel system and reduces downtime and maintenance costs.

Competing filter media made from cellulose with glass or polyester additives are just not up to the job. Cellulose can absorb water leading to microbe growth and premature filter plugging. Even worse, water-logged filters can freeze in cold weather and reduce fuel flow. Ultimately the result can be a collapsed filter allowing unfiltered and potentially contaminated fuel to enter the injectors. The fuel injectors then quickly become damaged, requiring expensive repair.



Tiny particles of contamination can damage fuel injector ports. (200x magnification)

In addition to using the correct filter, it must be changed at the right time. The operator's manual specifies the proper intervals for changing filters. These intervals have been determined to be acceptable under normal operating conditions. However, if you suspect the diesel fuel in your area is of lower quality, you may need to change your filter more often. Consider using a two-stage filtration system on diesel storage tanks and mobile fuelling carts to ensure the fuel is as free of contaminants as possible before it enters the machine tank. As an extra preventative measure, always clean the fuel filler neck before filling to ensure debris does not enter the tank. Consult with your authorized Tigercat dealer immediately if you suspect a problem with fuel quality. Use genuine Tigercat parts to protect your investment. ■

TIGERCAT HOSTS ALC SUMMER BOARD MEETING

The American Loggers Council (ALC) held its Summer Board of Directors meeting at Tigercat in Brantford, Ontario on July 29-30. The American Loggers Council is a non-profit organization representing timber harvesting professionals in 31 states.

ALC members arrived on Thursday afternoon and attended a welcome reception. CEO Ken MacDonald, president Tony Iarocci, sales manager Kevin Selby and other Tigercat team members were on hand to welcome the group. Friday was spent touring several manufacturing facilities. The group walked through the plants with Tigercat vice presidents and engineers who answered questions about machine design and manufacturing processes. On Saturday, the ALC Board members met.

ALC president Richard Schwab thanked the members of Tigercat for not only hosting the meeting, but also for their hospitality throughout the two day event. "Tigercat was an excellent host and provided a great venue for our meeting. We not only appreciate their sponsorship and financial support for the American Loggers Council, but the opportunity to get to know them better and to build on our relationship with their organization." ■



ALC board members gather for a group photo before heading to the next factory tour.

Protect Your Investment.

Ensure your Tigercat FPT engine has a long, trouble-free service life.

Protect your fuel injectors by using Tigercat certified synthetic fuel filters.

Part number: BH810



Purchase from your local Tigercat dealer.

NEW TIGERCAT DEALER FOR UPPER GREAT LAKES REGION

Tigercat is pleased to announce that Woodland Equipment is the new dealer in the upper Great Lakes region of the United States. Based in Iron River, Michigan, Woodland Equipment will cover the upper Great Lakes states including northern Wisconsin, the upper peninsula of Michigan, and the northern portion of lower Michigan.

Woodland Equipment owner Ron Beauchamp comments, “We are excited to introduce Tigercat to our customers in the upper Great Lakes region. Tigercat is a proven forestry-focused company with a passion to build rugged and durable equipment. For us, Tigercat is about better serving our customers with the best solutions we can find. For our customers, Tigercat offers the broadest portfolio and the highest quality in forestry – more productivity, less downtime, longer lasting equipment.”

Woodland has been family owned since 1974 with the next generation assuming leadership in 2014. Woodland Equipment has over twenty years experience with CTL harvesting systems, which dominate the upper Great Lakes region. Tigercat looks forward to expanding its customer base in this region and along with Woodland, will strive to deliver a superior customer service experience. ■



(L-R) Ron Beauchamp, vice president and general manager; Russ Fennick, parts/computer systems; Ryon Thornton, finance; Jim Lund, parts manager; Larry Nelson, service technician; Frank Pollock, service technician; Doug Griffus, service technician; Ron Beauchamp Sr., president; Patti Fish, office manager; Wayne Golberg, service manager; Karen Beauchamp, administration. Missing in the photo are Donna Almonroeder, Sue Beauchamp, Ron Francis, Steve Nelson and Ken Stapleton.

LETTERS TO THE EDITOR:

Email: comments@tigercat.com

Internet: www.tigercat.com

Facebook: www.facebook.com/Tigercat

Tel: 519.753.2000

Mail: P.O. Box 637, Brantford, ON Canada, N3T 5P9

Sign up to receive a personal copy of Between the Branches by subscribing online at www.tigercat.com/btb

Tigercat®

Tough • Reliable • Productive

© 2001 - 2016 Tigercat International Inc. All Rights Reserved. TIGERCAT, WIDERANGE, TURNAROUND, ER, EHS, and TEC, their respective logos, TOUGH RELIABLE PRODUCTIVE, TIGERCAT TV, “Tigercat Orange” and BETWEEN THE BRANCHES, as well as corporate and product identity, are trademarks of Tigercat International Inc., and may not be used without permission. TIGERCAT, TURNAROUND, WIDERANGE and ER, and their respective logos are registered trademarks of Tigercat International Inc.