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Tigercat

btb BETWEEN THE BRANCHES

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New 570 harvesting head

TIGERCAT RELEASES 570 HARVESTING HEAD

Tigercat continues to expand its range of harvesting heads with the new 570. The 570 is a robust, high-performance, two-wheel drive harvesting head. It offers excellent productivity and reliability, utilizing many of the structural and hydraulic performance benefits of the larger 575, in a package ideally suited to Tigercat H845 series carriers.

The wheel arms, pins, bushings, cylinders, feed motors and rotator are shared with the 575 model for proven strength and long life. The chassis is designed for optimum strength-to-weight with focus on visibility, component protection and quick service access. A new integrated valve package enhances performance and service access with fewer hoses and connections to improve reliability. Clean electrical routing with common service parts further increases uptime.

Dual-purpose harvesting and processing knives (with replaceable blades and tips) come standard with independent cylinders as the ultimate solution for crooked or heavily limbed stems. The dual, independent cylinders allow the knives to follow the stem profile, improving control and delimbing quality. The 570 is flexible and configurable. Optional hydraulic front knife timing improves picking performance in processing applications, while optional harvesting knives with shorter tips enhance harvesting dexterity. Various wheel and motor options are available to tailor performance to application.

The 570 is most productive working with trees 15-50 cm (6-20 in) in diameter in softwood and hardwood stands. Although best suited to the Tigercat H845 series, the 570 is designed to work with the H822 and H855 series carriers or any third party 20-25 tonne forestry excavator.

Tigercat D5 control system

The 570 and 575 harvesting heads both use the Tigercat D5 control system which combines a solid and field proven hardware and bucking control system with a Tigercat-developed head control and user interface offering simplicity and intuitive operator navigation. The Tigercat D5 control system is available in three levels of bucking control and reporting: Tigercat D5 Prio, Tigercat D5 Prio PC and Tigercat D5 Optimization, allowing customers to tailor the system to their needs. ■

The new Tigercat 570 harvesting head in action.

The intuitive display screen for the Tigercat's D5 control system.

NEW G-SERIES CAB

The revised G-series cab provides exceptional visibility and comfort.

Tigercat is continuing to evolve the G-series drive-to-tree feller bunchers with the introduction of an improved operator's cab. Cab comfort and ergonomic design are key to operator productivity in the woods and the new G-series cab is quiet and well-equipped.

On the outside of the cab, the work lights have been moved into enclosures incorporated into the cab structure to better protect them from falling trees or limbs. LED lights improve reliability and brightness over the previous halogen models. The new lights produce a more even light pattern that provides better coverage around the machine. High output LEDs are available as an option.

Tigercat feller bunchers have always provided unmatched visibility. The G-series now takes line of sight to a new level. The front window area is nearly 10% larger. Combined with Tigercat's low-profile boom structure, it provides exceptional visibility to the front. The rear quarter windows are over 21% larger so the view over the back tires is the best in the industry – an asset in thinning applications.

The air suspension seat features pull-through ventilation which moves hot, humid air away from the operator's legs and back, producing a cooling effect. For colder weather, the seat is also heated. The new seat can be adjusted two inches wider than the previous seat.

The electronic control display module is now fitted in an adjustable mount so that the operator can position it for optimal visibility. Frequently used controls have been integrated into the joystick pods to make them easier to reach.

Air-conditioning and heating vents have been repositioned to improve airflow for cooling and heating. As a result, there is a more even distribution of air to the operator and much better defrost. There is no shortage of air supply for operator comfort in the cab. Front window and skylight shades help to reduce heat build-up when working in bright sunshine.

Cab insulation and interior finishing have been improved. The working noise level is 76 decibels which is similar to an automobile on the highway.

Finally, the new cab includes a full range of accessories for operator comfort. The cab includes 12 and 24 volt power sockets, two large cup holders, a cell phone holder and two USB ports that can be used for charging phones or tablets. A CB radio is optional. The audio system provides AM/FM, weather band and Bluetooth for hands-free calling and audio streaming from mobile devices. ■

The new cab on a 724G working in North Carolina.

C-SERIES FORWARDERS, TIGERCAT POWER

The new 1075C working in plantation pine in Australia.

Tigercat's new 1055C, 1075C and 1085C forwarders are powered by the powerful and reliable Tigercat FPT N67 engine which is fully supported by Tigercat – including all parts, service, warranty and technical support. With a simple and effective Selective Catalyst Reduction (SCR) system the N67 Tier 4 final engine option meets the latest emissions standards in North America and Europe. A Tigercat FPT Tier 2 engine is available for other regions including New Zealand, Australia and Chile.

Tigercat produces two forwarder cranes: the 165 kN F165T85 (standard on the 1075C) and the larger 195 kN capacity F195T85 (standard on the 1085C and optional on the 1075C). The F195T85 crane is capable of lifting 20%-30% heavier loads at the same reach compared with any other forwarder crane on the market. In addition, the crane boasts 22-66% more slew torque than any competing crane. Both cranes are designed with a hooked profile to increase the working envelope for reduced machine travel and improved productivity. The FG43 and FG53 series Tigercat grapples complement the cranes with larger load areas at 0,43 m^2 (4.6 ft^2) and 0,53 m^2 (5.7 ft^2) respectively.

Tigercat's unique low-wide™ bunks are angled to reduce overall gate height and eliminate the need for a vertically sliding gate. In combination with the hooked crane, the low-wide bunk system significantly reduces the chance of contact with the gate or bunk stakes. Operator visibility and ergonomics are enhanced. The operator enjoys an improved sightline to the top of the load, increasing log placement accuracy and decreasing cycle times. In addition, the grapple stays within the operator's view through the entire loading and unloading cycle for reduced operator strain. The low-wide system is available for both the 1075C and 1085C forwarders.

The 1085C features Tigercat's WideRange® transmission. WideRange provides extremely high tractive effort while permitting quicker working travel speeds. WideRange is an infinitely variable, single-range transmission well-proven in extreme applications. It allows for high tractive effort to carry massive loads up steep slopes and achieves a maximum working speed of 7 km/h (4.35 mph). The 1085C can manoeuvre on steep slopes like no other machine on the market. ■

The tilt-out hood provides a convenient work platform for maintenance.

855D FIRST IMPRESSIONS

– Samantha Paul, Tigercat marketing

The Tigercat 855D track feller buncher operating in a heavily thinned tract in Aurora, North Carolina.

BTB visited Oral Kirk, operator for Cahoon Logging Company Inc., in Aurora, North Carolina to get his first impressions of the Tigercat 855D feller buncher.

Tigercat recently introduced the 282 hp (210 kW) Tigercat FPT powered 855D feller buncher to the US market. The 855D track feller buncher delivers the same high production performance as the 860C with the proven engine platform of the 845D model. The 855D is best suited for customers needing a full tail-swing, all-around machine well suited to a wide range of final fell applications including high cycle plantations, mixed natural stands and lowland hardwood.

Oral Kirk is an experienced operator with over 26 years under his belt. After operating Cahoon's new 855D for approximately one month he commented, "This machine has great power, there's nothing I can't do with it." Oral previously operated a Tigercat 860C feller buncher and is finding similar power performance with his 855D. Oral is burning through one tank of diesel every two days, getting approximately 7 US gph (26,5 L/h), which is less fuel than his previous Cummins Tier 3 equipped 860C model used.

Working in 20-25 inch (51-63 cm) diameter hardwood, Oral loves the capabilities of the Tigercat 5702 felling saw. "That 5702 head is probably about the best head there is. There is no other head that I have ever seen that can compare to it," explains Oral. "You need a machine that gets the job done." A reliable track buncher, with excellent power and performance and proven fuel economy makes for a smart decision. "It is the ultimate machine and there is no better than Tigercat." ■

See the 855D track machine in action on Tigercat TV: www.tigercat.com/tv

Ronnie Cahoon, co-manager of Cahoon Logging Inc., and 855D operator, Oral Kirk.

OFF-ROAD INDUSTRIAL

A pair of Tigercat utility carriers are used in delicate hydro pole replacement application.

In with the new, out with the old. Two AD610C utility carriers work in tandem on a hydro pole replacement operation.

The AD610C is designed to carry a variety of devices for off-road utility and industrial applications. The durable, reliable skidder-based prime mover can handle tough terrain and heavy duty cycles, easily accessing hard-to-reach job sites.

Two Tigercat AD610C utility carriers were recently observed replacing aging wooden hydro poles with new composite poles in an off-road setting. One machine was equipped with a material handler and double bucket aerial device and the second with a digger derrick attachment.

Working at heights with live high voltage lines is obviously a safety-focused and intricately complex operation. The aerial device unit is used to reach and place the protectors over the live lines, and using the jib attachment, to transfer the lines from the existing pole to the new pole. The machine is also used to remove the old poles. The jib attachment grabs and holds the lines out of the way while work is being performed.

The digger derrick unit also has a number of functions – boring the new holes, lifting the new poles up to the vertical position and setting the poles in place while workers on the ground fill in the base.

Tigercat engineering performs a great deal of development work for each different type of attachment. One important factor is to maintain correct shipping heights when loaded on a lowboy. According to designer, Jason Schneider, “For each new application a specific rear chassis is designed to ensure that we mount the aerial device in the best location and to ensure easy access for the operator when running the device. Once we come up with a concept, we work closely with the end user to ensure the design will work.” Overall stability and placement of the outriggers are carefully examined and evaluated. Once each machine is built, it is delivered to the dealer where the machines are stability tested and certified prior to going into service.

Utility customers require robust and long lasting carriers. Basing the carrier on a skidder platform provides the required overkill in terms of durability and reliability. Customers also demand a machine that

An AD610C equipped with a digger derrick holds the new pole in place.

is easy to operate. “Operators are constantly cycling through different machines,” says Jason. “Having something simple and easy to operate is important. The hydrostatic drive and Turnaround® seat of the Tigercat carrier are very intuitive and easy to learn.”

Site disturbance is another important consideration. “The machines are often used in nature settings accessible by the public. “People don’t want to see big ruts in the ditches or right-of-ways when they are driving up to their weekend house,” says Jason. And more practically speaking, the soft footprint is very important when travelling over buried natural gas lines.

Other important factors include a suitably quick road speed to travel from one worksite to another and attention to detail. “Layout of controls in the cab, service access and the fact that all edges are rounded, so there is nothing sharp to get caught on – the attention to detail is what really sets our equipment apart from other brands,” explains Jason. “The customers want a turnkey machine that will not require a bunch of modifications after it is in service.”

TRACK TO SUCCESS

Track replacement is one of the largest operating expenses for any tracked machine. Forestry and off-road industrial applications in particular present very different challenges for tracked machines than those faced by construction excavators. Steep slopes, uneven terrain, tree stumps, rock, sand and mud can all lead to premature track wear or failure in a potentially remote and inconvenient location.

For over twenty years Tigercat has worked closely with Berco – the world's leading manufacturer of undercarriage components – to co-design key track components for extreme off road use. Special Berco/Tigercat forestry-grade components available through authorized Tigercat dealers include:

- Thicker, reinforced chain links
- Sealed and greased chain
- Heavy-duty track shoes
- Hardened bolt heads
- Forestry rollers
- Forged idlers

Always travel straight up and down the hill and avoid side slopes wherever possible.

In addition to always using the right spare parts, there are a number of common sense maintenance and operation tips that will help to reduce costs and potential downtime.

Maintenance

First and foremost – always carefully review the undercarriage section of the Operator's Manual. The Operator's Manual contains the required details on maintenance procedures, schedules and settings specific to the machine model you are working with.

> "Tigercat's 20 years of partnership with Berco have produced an exceptionally tough, forestry-grade track system that leads the industry in reliability. Proper care and maintenance will keep it lasting for years."
>
> – Bruce Vaile, lead undercarriage designer, Tigercat

Chain tension (or sag) should be adjusted to suit your operating conditions. In general, set the chain tension just tight enough to prevent the sprocket from jumping. This means a machine operating in steep terrain and/or muddy conditions may need the chain tighter than a machine operating in dry, flat ground. A track that is too tight will wear out significantly faster due to increased tension in the chain. The chain tension is directly related to pin bearing loads and contact stress at the sprocket. A 50% increase in the life of the track assembly can be realized by maintaining the correct amount of track sag. Again, use your Tigercat Operator's Manual as a guide for chain sag specifications that will work for most field conditions.

Before starting work each day, always inspect for loose bolts, leaky seals and abnormal wear patterns.

A loose track shoe bolt will very quickly lead to a shoe or link failure. In the event a shoe is removed or replaced, re-torque the bolts at 100 hours after installation to ensure the shoe remains tight.

A leaking roller or idler seal will quickly result in a bearing failure. A failed roller will put additional stress on the remaining components and reduce undercarriage life. Abnormal wear patterns are an indication of incorrect chain tension or failed components. Keep a supply of Tigercat-Berco track hardware, shoes, spare rollers and undercarriage service tools on hand.

Operation

When you order your machine, make sure tracks are configured to match the requirements of your region and average conditions. To minimize undercarriage wear and stress on track machines, select the narrowest track shoe that will meet your flotation requirements.

As with operating any kind of equipment, careful operation will always improve reliability and safety. Track machines are no exception. Avoid counter-rotating the track whenever possible. Counter-rotation accelerates wear on the tracks and other undercarriage components. Instead, turn the machine gradually while slowly moving in forward or reverse. Gradual turns minimize ground disturbance and excessive undercarriage wear.

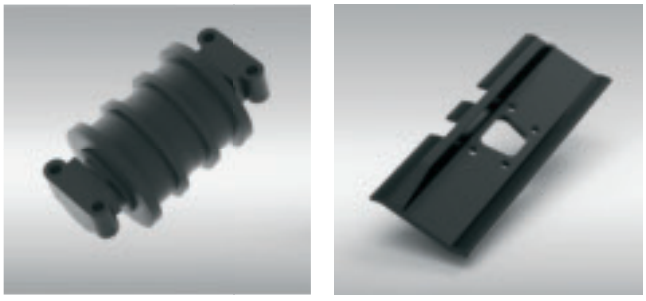
Track machines should be driven with the idlers forward. When the machine is driven in reverse, the top half of the chain is subjected to the full tractive pull. This tension effectively doubles the pin and bushing load cycle within the chain and will result in shorter pin and bushing life.

Drives at the back to get the most pin and bushing life.

When harvesting on slopes, work up or down a slope whenever possible. Working across a slope creates stress in the tracks that shorten undercarriage component life. Try to structure the job with minimal cross-slope activity.

Stumps and other obstacles cause excessive concentrated loads on the undercarriage components. The chain is also subjected to twisting loads that will cause internal pin damage. Avoid driving over these immovable obstacles when possible. Ground conditions are uncontrollable and every job site has a unique combination of slopes, rocks, mud and debris. However, the more you work in difficult terrain that requires high torque and high horsepower, the faster your undercarriage will wear.

Tigercat continues to invest in developing the toughest undercarriage systems for off-road and timber harvesting applications. With some care and attention, you have the power to extend the life of your undercarriage. ■


Tigercat and Berco co-developed rollers, track shoes and other undercarriage components to withstand the most severe duty cycles.

630B CONSTRUCTION TRACTOR

– James Farquhar, Tigercat district manager

Dwayne's 630B skidder equipped with a construction disk for a commercial development project approximately 140 kilometres (87 miles) southwest of Edmonton in Drayton Valley, Alberta.

A 2000 model 630B skidder spent fourteen years operating in extreme Canadian winter conditions before undergoing a substantial transformation.

Dwayne Lyda, owner of The Lydell Group in Drayton Valley, Alberta purchased his first Tigercat 630B skidder in October of 2000. Dwayne's company utilized the machine in daily skidding operations until 2014 when Dwayne's equipment requirements shifted. With continued expansion of the company into oil field construction, road building and land development, Dwayne now needed a machine that could churn the soil with a construction disk – he felt that his 630B was up to the task.

With 20,000 hours of operation under its belt the 2000 model year 630B was completely rebuilt. The boom, arch and grapple were removed, as they were no longer required for its new duties, and a hitch system was added to the rear of the machine to connect to the disk. Most impressive was the total rebuild of the operator station including interior insulation, headliners and a full paint job. Installation of 44 inch tires completed the transformation and the machine was ready to go.

The main requirement was to pull the disk through the hard wet soil (solid clay in Alberta) to improve aeration, allowing for a drier and more stable compaction base to form prior to building. Traditionally this work is done by a high horsepower farm tractor so to no surprise, after 4,000 hours the 630B held up to the challenge.

After successful completion of the contract, followed by several more, the machine was reassembled to resume daily forestry skidding operations at 24,000 hours. After witnessing the machine's capabilities and having his dealer's support throughout the transformation, Dwayne and his team at The Lydell Group have been huge supporters of both Tigercat and dealer, Wajax Equipment. ■

BOTTOM LINE BUSINESS

(L-R) Ben Twiddy, co-owner of Tigercat dealer CTW Equipment, 845D operator Swindle White and Conetoe Land & Timber owner, Forrest York.

By the name alone, Forrest York was destined for the woods. Recently switching to Tigercat equipment within the last year, Forrest talks to BTB about how he got into logging and how Tigercat now plays a key role in his bottom line business.

– Samantha Paul, Tigercat marketing

49-year-old Forrest York is the owner of Conetoe Land & Timber, LLC based in Goldsboro, North Carolina. Like many forestry professionals, Forrest has a passion for the outdoors. "I love hunting and fishing, I am an outdoors guy," he says. Unlike many loggers in the southeastern United States, Forrest is a first generation logger, and started his business all on his own.

> "The numbers are all that matters, and the only way the numbers work is because of those Tigercat machines."
>
> – Forrest York,
> Conetoe Land & Timber, LLC

Forrest always loved math, science and being outdoors. After realizing engineering school wasn't for him, he set out to get his Bachelor of Science Degree in Forestry. Forrest got a first taste for how to make a living in the woods when completing a co-op term with a consulting forester, while attending North Carolina State University. "I got on-the-ground experience," says Forrest. "And I really liked it. It was my calling."

Out of college, Mr. York started out as a forester and has been working at it for fifteen years. "It is hard to teach people to buy timber. You got to be able to talk to people and negotiate. You have to have a certain demeanor and it's not easy."

As stumpage prices got higher and higher, profit margins shrunk and logging costs continued to increase, Forrest had to make a difficult decision as to whether or not to bring everything in house. He explains the rationale. "If you don't make money on the stumpage, then you can make money on the logging… hopefully. It is a huge capital cost but then you are covered from both sides."

With the help and advice from Ben Twiddy and Wayne

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"There's nothing we need to do with it that it can't do," says 845D operator Swindle White.

Cale, owners of Tigercat dealer CTW Equipment, Forrest started the logging side of Conetoe Land & Timber three years ago. "There is definitely a learning curve. CTW has been very patient with us and have taught us a lot," says Forrest.

"I own a logging crew, but I am not a logger. I can run the system and market the company but I cannot run those machines," he says. Many people confuse the role of the forester with that of the logger, but most foresters are concerned not only with the harvest of timber, but also with the sustainable management of forests. In the words of American forester and politician, Gifford Pinchot, "[to] provide the greatest good for the greatest number in the long term."

Crew and equipment

Forrest started off his logging crew in 2013 with two new John Deere pieces but has since been transitioning to Tigercat. He prefers working wildlife management properties over clear fell tracts so he knew he needed a track machine that was agile, capable of selective felling and able to get into some tight places.

To that end, he now has a Tigercat 845D track feller buncher with a 5702 felling saw, a new 630E skidder and a used 718 drive-to-tree feller buncher. "Ya'll make the best machines and I am not just saying that. It is the truth. I have been logging for three years but that is long enough to realize that. It doesn't take long," says Forrest.

Conetoe Land & Timber moves approximately 60 to 70 loads per week with an average tree size of about 14 in (35 cm) in diameter. The company is typically cutting 30 to 60-year-old timber.

One man can't make a logging job. It takes a team, from the office to the ground operations. Forrest's wife Angie does all the bookkeeping and takes care of their three young children – one-year-old Colton,

Ben Twiddy, co-owner of Tigercat dealer CTW Equipment, and Forrest York have known each other for over a decade. "CTW parts and service is second to none," says Forrest.

three-year-old Ben and four-year-old Ruth. Angie is tough and the backbone of the company. "You have to log to make profit. It is all about the money," says Forrest. Angie has a profit spreadsheet that she plugs every expense into, down to a tube of grease. This allows them to easily see the big picture and tell if they are making money or losing money. "You have to constantly monitor the bottom line," says Forrest.

"The number one thing about Tigercat is dependability and value. It really holds its value," says Forrest. "I run other equipment. They are not nearly as tough and they do not hold their value." While Forrest figured that any Tigercat machine would be a good machine, he needed the right feller buncher for his applications. He wanted something that was agile, fuel efficient, easy to move around the woods for selective cuts and easy to move on the highway.

Tigercat 845D feller buncher

In Conetoe's applications – flat ground with small to medium sized pine trees – the 845D uses 7 US gph (26,5 L/h) of fuel. Forrest's previous wheel feller buncher was consuming approximately 5.5 US gph (21 L/h). However, the 845D track machine is significantly faster and more agile so the operator can cut twice as much as he did with the wheeled machine.

After demoing the 845D for about a week and taking into consideration the fuel economy, Forrest made his decision. Operator Swindle White was pleasantly surprised at how strong it was, commenting, "There's nothing we need to do with it that it can't do."

"All we log is the bottom line, that is the most important part. You have to think about the cost per ton," says Forrest. "The numbers are all that matters, and the only way the numbers work is because of those Tigercat machines. Less downtime, less maintenance and they bring more wood in less trips. That is what makes the numbers work." ■

See Conetoe's 845D track machine felling in North Carolina on Tigercat TV: www.tigercat.com/tv

KEY 845D SPECS

ENGINE	Tigercat FPT N67 Tier 4f 210 kW (282 hp) @ 2,200 rpm
WEIGHT (less head)	25 900 kg (57,100 lb)
MAXIMUM CUT RADIUS	8 050 mm (317 in)
BARE PIN LIFT (full reach)	6 215 kg (13,700 lb)
UNDERCARRIAGE	R6-140-3 heavy-duty forestry F8/D6D 203 mm (8 in) pitch chain
GROUND CLEARANCE	710 mm (28 in)
TAIL SWING (over side)	990 mm (39 in)

FIRE IN THE WOODS

– Chris Armour, technical marketing writer

USDAgov via VisualHunt / CC BY

The news of the massive wildfire near Fort McMurray, Alberta is a timely reminder that loggers need to be vigilant to the risks of wildfires, while understanding the important natural process of wildfires for woodland environments. While fire may be necessary, proper logging practices and forestry management can help to reduce the risk of large scale, out of control forest fires.

> "Forests which rely on fire as an integral part of their ecosystem that are 'preserved' rather than actively managed and "conserved" result in greater risk of dangerous wildfires."
>
> – Gary Olsen, Tigercat international sales representative.

In the boreal forests of Canada, for instance, fire is vital to the growth of jack pine and lodgepole pine. Their cones have a waxy coating that requires the heat of fire to release seeds. Eucalyptus forests are even more tightly tied to fire for regeneration and propagation. In some eucalyptus species, the seed release is triggered by fire and the seeds grow in the ash. While in others, epicormic buds on the branches and trunks will sprout when triggered by the stress of a fire. Without regular fires, these forests cannot regenerate properly.

Humans often seek to prevent or completely eliminate forest fires. Human habitation has grown even closer to forests and people naturally seek to protect their homes. However, completely interdicting fires not only slows down reproduction and reduces productivity of forests, it also stores up danger for larger and larger fires. Deadwood, biomass and slash accumulate as fuel on the forest floor. Older, diseased trees are more vulnerable to fire. Eucalyptus and pine forests will even produce flammable saps and oil as they age that

An LS855C harvester working in a timber tract that previously suffered a forest fire.

further heighten fire danger. All of which leads to bigger fires when they do inevitably happen.

A pattern has emerged where fewer fires are having greater and greater overall impact. US government figures show that in 1973 there were 117,957 fires that covered 1,915,273 acres (775 083 hectares), while in 2015 there were 68,151 fires but they covered 10,125,149 acres (4 097 502 hectares) – 40% fewer fires destroyed 500% more area![1] Headline fires such as the devastating Black Saturday wildfires in Australia (2009), the Rim Fire in Yosemite National Park (2013) and the Fort McMurray fire this year are becoming more common and costing more in terms of property and lives.

Larger, hotter fires destroy the seeds and plants necessary for forest regeneration and leave the landscape essentially sterilized requiring expensive and difficult manual replanting. Cooler, "natural fires" work with the forest ecology to speed normal fire recovery.

Mechanized forestry harvesting can help to maintain balance in the forest. By scarifying, removing biomass, mulching weeds and thinning, the fuel load is reduced and light levels for new trees are increased. Both cut-to-length and full tree thinning operations can significantly reduce the severity of fire damage. Clear cut firebreak zones can be used to protect homes and facilities. With lower fuel loads and more firebreaks, controlled burns can be used to safely restore forest ecology with less risk of creating nearly impossible-to-stop conflagrations.

Such thinning can produce wood chips and other commercial biomass, but is generally not very profitable, so in some parts of the world such as Australia, governments are paying contractors to perform thinning and forest cleanup to ensure future

A 615C skidder salvaging burnt timber in Chile.

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forest health and reduce fire risk.[2] In northern British Columbia, local entrepreneurs are looking to biomass to both manage fire risk and provide home heating for rural communities.[3]

After fires, deadwood can be profitably salvaged to prevent future fuel buildup. The practice of mulching which essentially breaks down standing biomass into fine material while facilitating decomposition and retaining soil moisture also eliminates a critical element for a fire to flourish – oxygen. Fires passing through mulched forest biomass typically slow, smolder and suffocate.

US government figures show that almost 90% of wildfires are caused by human activity such as campfires, cigarettes or even arson. The remainder are caused by natural factors such as lightning.[4] Loggers have an important role to play in fire safety. Dealing promptly with combustible fluid leaks is critical to reducing fire risk. Keeping your equipment clean and avoiding buildup of wood debris around the engine exhaust system and hydraulic pumps help prevent ignition. Ensure your machine's fire suppression system is in proper working order and hand extinguishers are charged and available. Besides the cost of your machine, think of the safety of your workers and your whole community. ■

[1] "Total Wildland Fires and Acres (1960-2015)," U.S. National Interagency Fire Center. http://www.nifc.gov/fireInfo/fireInfo_stats_totalFires.html

[2] "National call for mechanical fuel load reduction tenders," March 7, 2016. http://minister.agriculture.gov.au/ruston/Pages/Media-Releases/mechnical-fuel-load-reduction-tenders.aspx

[3] "Biomass business case for managing wildfires," June 17, 2016. http://www.woodbusiness.ca/harvesting/forestry-management/biomass-business-case-for-managing-wildfires-3344

[4] "Wildfire Causes," U.S. National Parks Service. https://www.nps.gov/fire/wildland-fire/learning-center/fire-in-depth/wildfire-causes.cfm

HOT AND COLD IN UTAH

LH855D is the key ingredient to Michael Roundy's new thinning system in Utah's beautiful Dixie National Forest.

– Paul Iarocci

Unlike many loggers, Michael Roundy, member of Barco LLC in Washington, Utah is quite geographically isolated from other contractors. He performs prescription thinning for the US Forest Service in Dixie National Forest, often working at elevations up to 3 350 m (11,000 ft).

Michael Roundy (right) with loader man, Ephraim Nyborg and LH855D operator, Dave Yaffe.

Barco is typically harvesting bugkill spruce mixed with a small percentage of green timber. This is a fuel reduction, salvage and stewardship thinning program and it is important to preserve the saplings and juvenile trees so that the forest can naturally regenerate, maintaining overall health and a wide age range. There is variation in size and diameter and typically a good deal of steep terrain.

Michael explains that traditionally, the cutting work was performed with a track feller buncher. Skidders brought full trees to a hot deck where the timber was processed with a stroke delimber. When Michael began logging, he adopted this system and was achieving six to seven 40 ton loads per day. However, he was never particularly happy with it. The decks tended to be congested and potentially dangerous with skidders, the stroke delimber, loaders and trucks all vying for position. Bottlenecks occurred because inevitably, the skidders were waiting on the stroke delimber before dropping a load or the stroke delimber would starve for wood if the skidders could not keep up. The balance and flow required for hot logging just wasn't there.

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Before and after. Barco's thinning operations in Dixie National Forest have multiple goals including fuel reduction, salvage and stewardship.

Although Michael was unhappy, there weren't many contractors to bounce ideas off of. In fact, he figures there is not another active logging contractor for at least 400 km (250 miles) in any direction. So Michael did much of his research on the internet. He poured over manufacturer websites, contacted owners and operators through social media and watched a heck of a lot of YouTube videos.

> "I am so isolated here and do not have close-by service support. I may have considered a different machine but I needed to have the reliability and that is another reason I needed the Tigercat."
>
> – Michael Roundy, Barco LLC

Much of the research focused on processors and how he could change his system by replacing the stroke delimber. "This was all driven by safety, utilization and production," says Michael. Rather than have one central hot deck, Michael envisioned several landings. The feller buncher would be cutting far ahead of the rest of the system and the skidders would pull to one of several predetermined cold decking areas. A loader would be on hand to pile the decks to a sixteen foot (5 m) height. As skidding progressed along the cutblock, the skidder and loader would advance to the next cold deck, optimizing skid distances. (Each cold deck is directly accessible by the haul trucks.) The processor would work from deck to deck processing the trees without any interference from other machines and later the loaders would come back to load the trucks.

The key to the new system is the LH855D.

Older loggers that had previously worked the region said it would not work because of the slopes. "They didn't think we would have the room in the landings and thought that the processors would be fighting the cold decks," explains Michael.

"In order to change my system, I had to gather information through the internet and word of mouth through social media. It felt like a big gamble even after studying for three years," Michael explains. "When you ask people on social media, 90 percent say that for our conditions, the best processor is a Tigercat 855 with a leveling undercarriage. It was a big gamble but it paid off. Michael ended

up purchasing a Tigercat LH855D leveling harvester equipped with a 600 South Star processing head from Kevin Cotton at Titan Equipment. “I needed cooling, flow and horsepower and that is the reason I bought the Tigercat. I am so isolated here and do not have close-by service support. I may have considered a different machine but I needed to have the reliability and that is another reason I needed the Tigercat.”

Expert processor operator Dave Yaffe, who has been operating the LH855D since it was new sums up its performance pretty efficiently, “Where I come from every processor guy wants an 855. That machine is a champion.”

Michael saw almost immediate benefits upon changing the system. His production tripled from six or seven loads per day to an average of eighteen loads per day. Barco’s number one product is house logs. The dead spruce trees make excellent material for log cabin construction right up until four years after the tree has died. Anything that won’t make a house log goes to the local firewood mill which, through distributors, supplies firewood to retail stores throughout the US southwest. However, he also added a new marketable product.

The Tigercat 620E emerges from the tight skid trail. Clever use of the corridors minimizes site disturbance and makes Turnaround® an important feature.

> “Where I come from every processor guy wants an 855. That machine is a champion.”
>
> – Dave Yaffe, Barco LLC

Replacing the stroke delimber with a processor tripled production while cutting slash piles in half and adding a new marketable product. Many of the logs in this pile would have been wasted previously.

Due to the length of the trees and the time consuming stroke delimbing cycles, all the trees were previously topped at eight inches (200 mm). It just didn’t pay to have the stroker spend any more time handling the tree. With the processor, Michael is capturing and merchandising all those additional sticks – either as an input for the firewood mill or more commonly as a product that is sold to a shaving mill to be made into horse and turkey bedding. “My slash piles dropped by half,” says Michael.

Loader operator Ephraim Nyborg has been with the company for almost four years. He loads trucks and can fill in everywhere in the operation. He explains

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that the LH855D has also improved loading efficiency from 90 to 45 minutes per truck. (Barco also does its own log hauling.) Previously, in order to maintain production, the stroke delimber operator was forced to pile the logs indiscriminately. Then Ephraim was required to sort the products during loading. Now the harvester can sort all the different products neatly and efficiently.

Careful selective felling and strategic placement of the bunches save the juvenile trees visible in the foreground.

One interesting thing to note, the cold decks are stacked with loaders rather than the skidders. While this improves skidder productivity, there is another reason – skidders tend to break the expensive logs. Some of the naysayers thought that adding yet another machine to the system would mess up the costing. However, Michael figured all this in advance and now asserts that the extra loader totally pays off. In addition, since Barco also has a construction side consisting of roadwork, aggregate and equipment hauling, Michael can bounce around operators between log loaders and excavator dirt jobs which makes adding loaders and managing labour easier.

Terry Roseberry, a long time Tigercat customer active in California and southern Oregon, has been contract falling for Barco with a Tigercat LX830C for about a year. Terry's careful felling and strategic bunching combined with a clever use of skid trails minimizes soil disturbance and maiming of the smaller trees and saplings. Hagan Brian, the operator of the Tigercat 620E, makes good use of the Turnaround® seat, shuttling up and down the steep skid trails, without ever having to turn the machine around. Together the Barco crew and Terry are taking forests in poor health littered with deadwood and turning them into expertly thinned tracts that not only provide a good, sustainable yield but will also see excellent health, reduced fire hazard and new growth in the future. Aesthetically – and aesthetics are important in a recreational area such as this – the result is outstanding.

Contract faller Terry Roseberry in front of his Tigercat LX830C with Tigercat district manager, James Farquhar.

Additionally, and very important for Michael, the efficiency of his system allows him to provide his crew members with a safe, lucrative and quality working environment. Michael quips, "If we can't provide our guys a good living and good stability and a nice, safe environment than what are we doing this for?" ■

See the LH855D harvester processing in Utah on Tigercat TV: www.tigercat.com/tv

PG BISON EIGHT YEARS LATER

BTB revisits PG Bison eight years after purchasing four Tigercat harvesting systems for a new operation in a remote part of South Africa.

– Paul Iarocci

PG Bison's latest forwarder, a Tigercat 1075B, has racked up 4,900 hours in its first fourteen months.

Many will remember PG Bison as one of the Tigercat customers featured in the 2012 film '20' that coincided with Tigercat's 20th anniversary. PG Bison is a large, vertically integrated South African company owned by KAP Industrial Holdings, part of Steinhoff International. It manufactures and markets timber, poles, wood-based panel products, decorative laminates and solid surfacing materials.

PG Bison purchased four Tigercat track harvester/forwarder/loader systems in 2008 to feed a newly constructed state-of-the-art particle board plant consuming 1 500 tonnes of fibre per day, and delivered to the mill in three metre lengths.

International sales representative Gary Olsen, who resides in South Africa and participated in the original purchase process, relates that trying to market and sell longevity to a customer as an expected feature of a purpose-built harvesting machine is easier said than done. "It involves so many assumptions, variables and unknowns that could easily prove a salesman's claims

Forwarder operator, Mbhuti Stephen Ndovu, is one of the original five. He has been with PG Bison since the harvesting operations began in 2008.

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Picture perfect. A recently harvested compartment. Harvester operators undergo training every seven months focusing on felling technique and felling patterns.

untrue in a short space of time. However, being able to visit machines years after the sale where the talk has been walked is a rewarding experience and one that gives Tigercat, the dealers and their customers confidence that machines will last as long as Tigercat says they will."

These original machines, eight years later, have acquired upwards of 20 000 hours apiece. One of the original 1065 forwarders has been replaced with a new, higher capacity 1075B. Otherwise the company is looking to refurbish the existing fleet and run the machines substantially longer as they continue to cycle new machines into the mix and adjust the systems to meet changing requirements dictated by market dynamics and other factors.

Harvesting manager Mark Wells explains, "We bought a new 1075B forwarder because we wanted the biggest bunk because the wood is getting lighter. We also want to start blending new machines in with the old so we won't have to replace them all at once."

PG Bison has also changed its focus since 2012. Envisioning a potential shortage of saw timber in South Africa, the company is now emphasizing thinning for saw logs and is cutting less pulp out of its own plantations to ensure that the harvest stays at sustainable levels. In fact, they are trying to get

Another original five operator is Moos Mackenzie. He is achieving 37 m^3 per hour in pulp thinning compartments.

60-70 percent saw log production out of the pulpwood compartments and thinning operations.

In order to accomplish this – while still supplying the mill with adequate product – PG Bison has developed agreements with other producers to trade saw logs for pulp fibre. Outbound finished goods are distributed to various cities around the country and the return journey to Ugie is filled with either logs or wood chips making these trade agreements economically viable.

Aging iron, more experienced workforce

Although usage of the machines has fluctuated over the years, the current activity for the original (20 000 hour) forwarders is 350 hours per month with 85 percent machine availability. Operator turnover has been stubbornly high and the new operator training has been hard on the machines. However, five of the 25 original core of operators still remain with the company. A major rehire and training process that occurred four years ago has yielded an additional seven for a total of twelve experienced operators – all from the local communities in the vicinity of Ugie and Maclear. Nine of these operators cycle through the older machines.

The new 1075B forwarder is triple shifted and run by three of the best operators. One of them is Mbhuti Stephen Ndovu, one of the original five. He likes the stability of the bigger machine over the 1065 that he ran previously. Stephen and the other two operators have put 4 900 hours on the 1075B in fourteen months. Despite running virtually 24 hours a day, the machine looks brilliant.

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PG Bison uses truck-mounted Tigercat 220 loaders to load the shortwood.

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PG Bison has developed a very detailed incentive system. Operators are paid for production over and above a base rate of productivity. However, machine availability is also an incentive. For example, the 1075B must maintain over 90 percent availability in order for the operators to qualify for the extra production bonus. So the production cannot be achieved at the expense of machine damage or unnecessary wear and tear.

Another original five operator is Moos Mackenzie. He is running an H822C harvester with 18 000 hours. In thinning applications, he is achieving 37 m^3 per hour in pulp compartments with average piece size of 0,19 m^3. The machine is on its second head. The tracks, sprockets and track rollers have been replaced, the engine has been overhauled and the oil cooler and harvester pump have been changed. However, the machine is structurally sound with no boom cracks, despite the high cycle application, and generally the machine has been very reliable with current mechanical availability (factoring in the head and machine) at a respectable 80%.

Harvester operators undergo training every seven months that focuses on felling techniques and patterns. There is also a strong emphasis on educating operators on the dangers of chain shot and how to minimize the risk of chain shot accidents. In addition, life skills training and a wide range of counselling services are offered for all employees.

South African Tigercat dealer, AfrEquip, has a permanent technician stationed in this remote part of Eastern Cape. He services PG Bison as well as one other neighbouring harvesting company that is also running Tigercat equipment. Similar to PG Bison's issues with employee turnover, AfrEquip has also had its challenges in keeping good technicians on site in the remote town of Ugie. Current AfrEquip technical manager John Barbour first cut his Tigercat teeth as the on-site technician and eight years later is still helping to oversee the operation. Add in Jeff Cave, southern African Tigercat factory product support representative, and one realizes that the PG Bison success story has as much to do with the people as with the machines. ■

See PG Bison's H822C and 1075B in action on Tigercat TV: www.tigercat.com/tv

From the Archives:
Green Fields - Starting from scratch and the story of PG Bison (BTB 30, March 2012)

AUSTIMBER 2016 PROVES A HUGE SUCCESS

An estimated 100 million Australian dollars worth of equipment on display in Latrobe City, Victoria attracted over 7,500 people throughout the major two-day event.

Loggers came from all corners of the globe for the every-four-year International AUSTimber event. Over 30 knowledgeable and friendly Tigercat and Onetrak staff members greeted

Customers check out the massive pins and thick steel plate on Tigercat's patented leveling system of the LS855C shovel logger.

Tigercat staff always enjoy catching up with customers and the family they bring along with them.

Tigercat visitors. They answered questions and discussed new technologies to improve productivity.

Tigercat and Onetrak featured an impressive showcase of machines including the newly released 1075C forwarder, 630E and 615E skidders – all equipped with the Tigercat FPT Tier 2 engine. On live demo was an H845C harvester, an LH855C harvester, an LX830D feller buncher, a 630E skidder, an M726E mulcher and the 1075C forwarder. The static display was rounded out by an LS855C shovel logger, an 855C feller buncher and an M726E mulcher. There was Tigercat pride everywhere after thousands of Tigercat hats were given out to loyal customers that stopped by the site.

A big thank you to all the customers that took the time to visit with us at the show. Tigercat and Onetrak look forward to hanging out our flags again in Latrobe City at AUSTimber 2020.

Tigercat 1075C forwarder unloading wood processed by the H845C harvester on Onetrak's eucalyptus site.

TEAM EFFORT AT EXPO RICHMOND

Tigercat and Virginia dealer Forest Pro teamed up to showcase an impressive twelve machines at the Richmond Raceway Complex in Richmond, Virginia for the 35th biannual East Coast Sawmilling and Logging Equipment Exposition on May 13-14. EXPO Richmond featured mainly static equipment displays over twelve acres of outdoor exhibit space alongside dozens of indoor booths.

Tigercat showcased an extensive range of equipment including the redesigned cab on the G-series feller bunchers, along with the (T)250D and (T)234B loaders. Some more unique pieces of equipment included the C640E clambunk skidder, the Tigercat FPT powered LX830D leveling track feller buncher and the LS855D shovel logger.

A large number of Tigercat customers enjoyed a delicious breakfast hosted by Forest Pro at its new Ashland location on the Saturday. The event was another great opportunity to share ideas and get customer feedback to bring back to the factory. Thank you to Tigercat dealers Forest Pro, CTW Equipment, Bullock Brothers, Ricer Equipment, CJ Logging and Smith Equipment for their support and a special thanks to all the customers who came to visit.

Tigercat and Forest Pro took the opportunity to capture a team photo before show tear down.

A picture perfect day to meet up with customers and friends as they explored the Tigercat equipment on display.

ONETRAK CELEBRATES TEN YEARS

This year marks a significant milestone for Australian Tigercat dealer Onetrak – ten years serving the needs of the construction, mining and forestry industries in Australia. Established in 2006 Onetrak has rapidly grown into a major supplier of quality equipment, employing over 50 people and providing exceptional customer service.

With headquarters in Hallam, Victoria and facilities in Tumut, New South Wales, Bunbury in Western Australia, Mount Gambier, South Australia and Brighton, Tasmania. Onetrak covers a vast geographic area. All of these facilities have multiple work bays and specialized tooling. Onetrak also has over fifteen fully equipped service vehicles to ensure customer service needs are met – no matter how remote.

To celebrate the 10th anniversary, Onetrak hosted an event at its Hallam branch during AUSTimber 2016 to connect with customers and suppliers. Onetrak managing director, David Hazell, gave a speech giving thanks to those customers and suppliers who have supported them through good times and bad. Tigercat international sales representative, Gary Olsen speaking on behalf of Tigercat, gave thanks back to Onetrak and complimented the team on their outstanding dedication to customer service.

Tigercat congratulates Onetrak on ten successful years and wishes them continued success for decades to come. ■

Onetrak managing director, David Hazell, addresses the crowd, thanking his customers and business partners for their support over the past ten years.

40 YEARS STRONG

Congratulations to the Bates family on the 40th anniversary of B & G Equipment. This wonderful milestone was celebrated at their Philadelphia, Mississippi branch on May 16th 2016. Surrounded by family, friends, employees, customers, vendors and dignitaries, the Bates family recounted that 40 years ago, two experienced loggers, W. J. Bates and Donald Grantham Jr., founded B & G Equipment. In 2005 W. J. bought the business outright and has continued to grow B & G Equipment. Today, the business employs three generations of the Bates family.

Tigercat takes this opportunity to wish the Bates family many more years of continued success!

(L-R) Carolyn Bates, Debbie Webb, W.J. Bates, Ken MacDonald, Johnny Boyd, Kevin Selby, Justin Webb and Tony Iarocci.

Debbie Webb captures the attention of the guests as she recounts the history of B & G Equipment.

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