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Tigercat

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Tigercat FPT powered 724G feller buncher

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TIGERCAT ROLLS OUT G-SERIES DRIVE-TO-TREE BUNCHERS

As 2014 draws to a close, Tigercat is busy rolling out the G-series drive-to-tree feller bunchers, starting with the 724G that made its formal debut in Starkville, Mississippi in September at the Mid-South Forestry Equipment Show. This was quickly followed by the first 720G produced in October and the first 726G due to come off the line in December.

The 720G and 724G are powered by the high performance Tigercat FPT N67 Tier 4f engine at 149 kW (200 hp) and 180 kW (242 hp), respectively. This represents 15% power increase for the 720G and a 12% increase for the 724G.

Both the 720G and 724G feller bunchers have more power, a newly-designed engine enclosure, and improved component layout providing superior access and serviceability. A sloped roof profile enhances rearward visibility.

Other enhancements focusing on the operator experience include an improved interface that provides detailed information, by way of a large colour display screen for accurate engine and machine monitoring. The enclosure access panels and doors have been redesigned for easier access and increased strength. The engine, hydraulic and electrical component layout has also been designed with easy access and serviceability in mind.

Tigercat FPT engines meet Tier 4 final emission standards using the simplest possible technology – no variable geometry turbochargers, no EGR system, no diesel particulate filters, no “regens”. The engines offer improved reliability and lower long-term maintenance costs. The key is the selective catalyst reduction (SCR), which converts the harmful components of the exhaust gas stream into water, nitrogen, and carbon dioxide.

Tigercat FPT engines are fully supported by Tigercat and the Tigercat dealer network, including all parts, service, warranty and technical support. ■

The new 724G in big hardwood.

product news

845D CARRIERS ARE TIGERCAT POWERED

The Tigercat 845D series feller bunchers and H845D series harvesters have moved to Tier 4 final with the Tigercat FPT N67 engine delivering 210 kW (282 hp) at 2,200 rpm. Early fuel consumption figures for the first LH845D harvester, which is operating in Scotland, are very encouraging. Compared to the Tier 3 C-series machines in the same application, fuel consumption is significantly lower. Production is averaging 850 tonnes per week and fuel consumption is about 20 L/h. The fuel savings more than offset the added expense of the DEF fluid which is running at 6-8% of fuel consumption.

With many thousands of hours of experience on Tigercat harvesters, operator Barry Thain is impressed with the efficiency and quiet operation of the new engine as well as the general performance of the machine.

The 845D series carriers are available in North America and Europe. The C-series Tier 3 machines will continue to be offered to all other markets. ■

The first LH845D harvester is working in Scotland. The new machine is extremely fuel efficient.

630E SKIDDER

BTB recently visited a Tier 4i 630E skidder near Hinton, Alberta owned by Seth Dickenson (Dickenson Logging). The skidder is significantly outproducing the company's previous Deere 748G model and consuming around 200 L of fuel per day (or 20 L/h) as compared to the 225 L the 748G was burning.

Operator Tyler Burtt is highly enthusiastic about the machine and is making full use of the Turnaround® seat when performing decking functions and backing into the stand, saving time and fuel on short distance hauls. ■

BOOM PROXIMITY SENSORS FOR 234 LOADER

When it's time to move the loader to a new landing the grapple is usually hooked onto the heel to prepare the loader for transportation. This is done by fully extending both the hoist and stick cylinders with the grapple open. As the grapple falls around the heel it is closed to tuck the grapple close to the stick boom. This position with the boom extended straight in the air is one of the most dangerous for the loader since it creates a very high centre of gravity. Care must be taken during this operation to prevent the cylinders from hitting the end of stroke at full speed.

A relatively new feature on the Tigercat 234 loader are boom proximity sensors that slow the cylinders down before they reach the end of stroke, essentially acting like a cushion. This is important to prevent damage not only to the cylinder, but also to the pins, bushings, and structures as well. Machines that are pilot joystick controlled cannot take advantage of the boom proximity sensors since an electric signal is needed to adjust the flow to the cylinder. For these machines, it is important for the operator to slow the cylinders down before hitting the end of stroke, since repeated pounding on the cylinder will result in expensive damage. ■

Boom proximity sensors are especially important when fully extending both the hoist and stick cylinders to tuck the grapple close to the stick boom to prepare for transportation.

TIGERCAT AWARDED 2014 COMPANY OF THE YEAR

Tigercat continues to grow as a company, recently breaking ground for a new $12 million manufacturing facility in Paris and aquiring a new facility in Kitchener. Tigercat was recently recognized with the Brant County award for 2014 Company of the Year. This past year, Tigercat has been able to provide countless new jobs and has always chosen to manufacture locally.

Tigercat president Tony Iarocci states, "We could have gone to the US for a new facility where 50% of our products are sold but we chose Brant County because it is the people of Brant that make the difference."

Community officials and business owners came together on October 22nd to 'Salute to Brant Businesses' and honour all businesses within the community. Tigercat president, Tony Iarocci proudly accepted the award from Brant County mayor Ron Eddy, and when asked to explain a bit about the company Iarocci said, "Tigercat has always been known for its product integrity and innovation over the competition… and we are competing with the big boys." ■

Tigercat president, Tony Iarocci, accepts the County of Brant award for 2014 Company of the Year. Way to go Tigercat!

WHEELS ARE COST EFFECTIVE AT THE HEAD OF TIDE

— Samantha Paul, Tigercat marketing

Bill Olson, owner of Olson Inc. is a second-generation logger who works with his son, Josh for a land management company, Wagner Forest Management in Bangor, Maine, cutting a mix of typical Maine hardwood and softwood for the lumber and pulp industry.

With logging operations south of the Penobscot River watershed, at the edge of the Appalachian Mountains and close to the coast, Bangor is at the head of tide (between the rapids and the ocean) making its location historically ideal for lumbering. Logs were floated downstream with the Spring thaw to waterfall-powered sawmills just above Bangor. The sawn lumber was then shipped from the city's docks to the Atlantic coast.

Frank Martin Sons Inc. retails first Tigercat drive-to-tree feller buncher, a 718E, in the state of Maine. (L-R) William Olson and son, Josh Olson with Frank Martin sales specialist Kris Lepage.

Due to the rocky and steep topography in this region, harvesting with track machines is the obvious choice, making it very rare to see a drive-to-tree machine working in the northeastern United States. However, in May of last year Bill pondered the idea of purchasing a Tigercat 718E wheel feller buncher to replace his previous Tigercat H822C track harvester, which he owned for three years.

Bill states, "I am getting old and I wanted to downsize on my next machine purchase. I believed in the machine and the time was right so I bought it." Instead of investing in another harvesting machine, Bill took a risk and thought to try out a wheel machine on the rocky and hilly terrain he operates in.

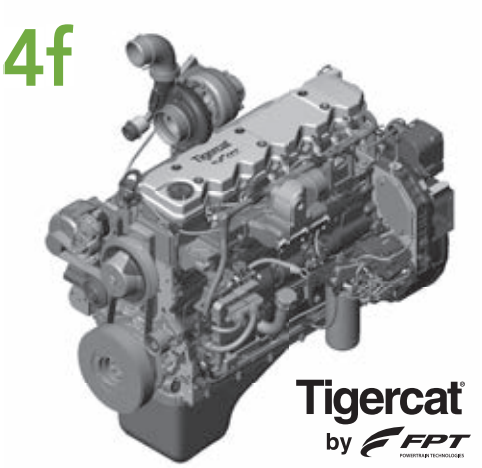
Thankfully, the risk is paying off. "I am getting 70-80% of the production tonnage out of the wheel machine compared to my previous track harvester, working in the same terrain, with the same contractors," Bill asserts. "It is half the money and uses half the fuel. That is all I hoped for."

Bill was the first to call Tigercat dealer, Frank Martin Sons Inc., expressing interest in the 718E wheel machine and now the dealership is getting many more calls with interest in drive-to-tree machines for this area. Four different contractors have come to see Bill's 718E wheel feller buncher in action, since he purchased it in May, 2013.

With 600 hours on it, Bill indicates to his visitors, "I don't lie. Everything is good with this machine and I am saving money." Frank Martin Sons Inc. has more wheel feller bunchers on order, and already took delivery in late October of another 718E equipped with a Tigercat 5500 saw.

Bill further explains, "Someone from Lincoln, a three hour drive away, called me today wanting to see the 718E working in the field this Friday!" Bill is happy to continue showing off his wheel machine to other potential Tigercat customers. ■

THE TRUTH ABOUT TIER 4f TECHNOLOGY



Tigercat FPT engines meet the stringent Tier 4 emission level requirements without the need for a variable geometry turbocharger, an EGR system, a higher capacity cooling system, an intake throttle body or a diesel particulate filter.

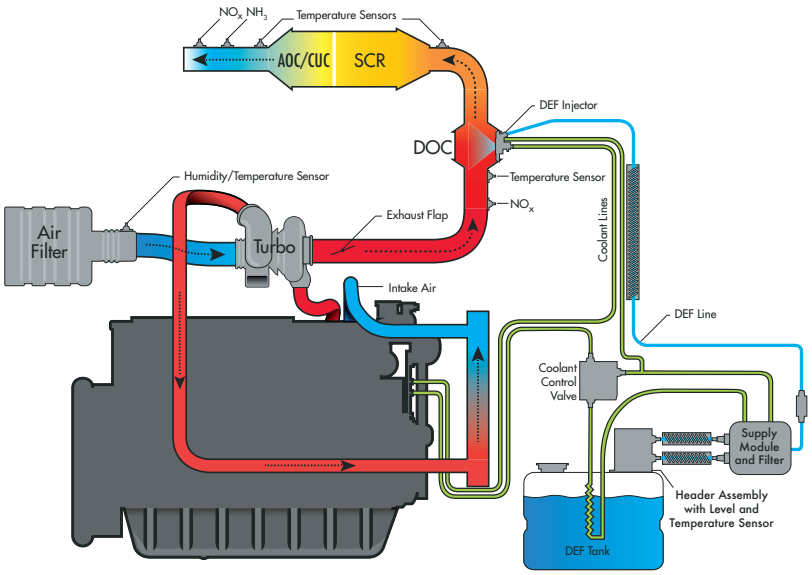
In addition, the engine series offers proven reliability and lower long-term maintenance costs.

Most of the new emission equipment is found in the exhaust or after-treatment system. The key is the selective catalyst reduction (SCR) which converts the harmful components of the exhaust gas stream into water, nitrogen and carbon dioxide.

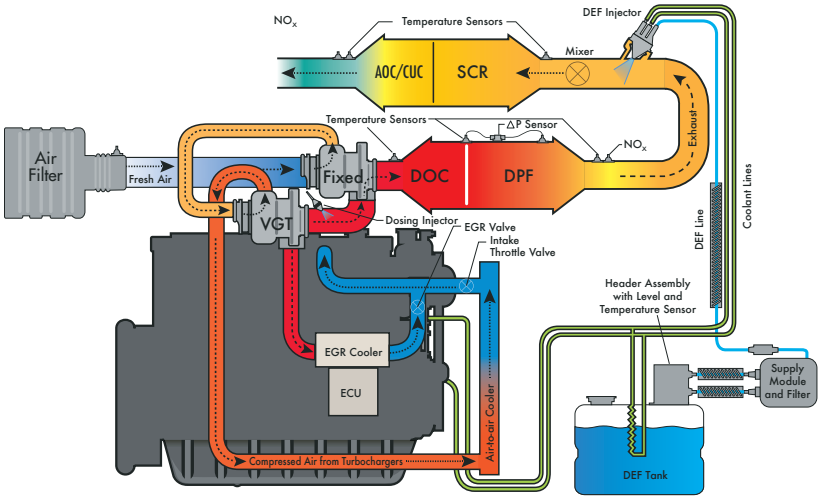
For the operator, other than refilling the diesel exhaust fluid (DEF) tank, no action is required for the SCR system to function.

The biggest benefit for Tigercat machine owners is that the FPT engine series is fully supported by Tigercat, including all parts, service, warranty and technical support.

Tigercat FPT Solution



Brand C & D Solution



Tigercat FPT	Brand C & D
TURBOCHARGER	
• One fixed geometry mechanically wastegated turbocharger. • No complex variable geometry turbocharger. • Simple and reliable with few moving parts.	• Two in-series turbochargers, one variable geometry (VGT) and one fixed geometry. • Besides adding the cost and complexity of a second turbocharger, the VGT is more costly and complex, with more moving parts, than a fixed geometry turbocharger. • The VGT increases the envelope of the engine. • The VGT requires a control system and additional sensors to control operation of the vanes. • The VGT is used in part to control the amount of exhaust gas directed to the exhaust gas recirculation (EGR) cooler. The vanes can be clogged with particulate matter (PM) over time, a greater concern in engines that use EGR.
EXHAUST GAS RECIRCULATION (EGR)	
• EGR is not required. • EGR works by cooling and recirculating exhaust gas back to the combustion chamber to reduce oxygen content in the combustion process, lowering in-cylinder combustion temperatures and creating less mono-nitrogen oxides (NO_x) but more particulate matter. This increase in PM leads to the need for a diesel particulate filter (DPF). • The Tigercat FPT engine is more fuel efficient than an EGR equipped engine.	• EGR is required, leading to higher radiator cooling loads. A larger cooling package and more air flow is required. • Requires the addition of the EGR cooler and EGR valve. This increases the engine envelope. • The EGR valve requires ongoing maintenance. • EGR results in shorter maintenance intervals due to more contamination of the engine oil as exhaust is passed back into the air intake.
DIESEL PARTICULATE FILTER (DPF)	
• Tigercat is able to meet Tier 4 emissions without the DPF, due to the efficiency of the engine and lack of EGR. • The Tigercat FPT engine is more fuel efficient than a DPF equipped engine.	• Required to control PM created due to EGR. The filters can become clogged with ash. • The DPF requires continuous regeneration, both active and passive, resulting in decreased fuel economy. • The DPF requires additional sensors to measure pressure drop across the unit to control regeneration. • The DPF increases backpressure to the engine, increasing fuel consumption.
DIESEL OXIDATION CATALYST (DOC)	
• DOC is a simple technology that passively oxidizes NO_x to increase the efficiency of the selective catalytic reduction (SCR).	
SELECTIVE CATALYTIC REDUCTION (SCR)	
• SCR technology, coupled with the high efficiency engine, meets Tier 4 requirements. • The SCR unit houses both the catalyst and clean up catalyst (CUC). Exhaust gas mixes with diesel exhaust fluid (DEF) as it enters the SCR. The DEF breaks down into ammonia which reacts with the NO_x to form nitrogen and water vapour. The unit requires no maintenance or regeneration.	• Competitive machines are using SCR technology and will be required to carry DEF.
AMMONIA OXIDATION CATALYST/CLEAN UP CATALYST (AOC/CUC)	
• The AOC/CUC is used to neutralize excess ammonia from DEF injection.	

The Tigercat show site attracted lots of attention. With plenty of iron, key Tigercat staff and dealer personnel were available to answer questions and discuss new requirements. Tigercat sees forestry shows as the perfect venue to exchange ideas.

MID-SOUTH FORESTRY EQUIPMENT SHOW

— Judy Brooks, Tigercat marketing

Tigercat dealer for Mississippi, B & G Equipment Inc., teamed up with Tigercat to participate in this year's Mid-South Forestry Equipment Show held in Starkville on September 19-20. Late summer weather set the stage for excellent attendance. Tigercat CEO Ken MacDonald, president Tony Iarocci, US sales manager Kevin Selby, district managers Johnny Boyd, Don Snively and Ben Twiddy and engineering staff from the loader, skidder, feller buncher, mulcher and felling attachment product groups interacted with attendees.

In conjunction with the live demonstrations, Tigercat hosted a dealer conference on the beautiful Mississippi State Campus with participating Tigercat dealers in the region. This gave engineering staff the opportunity to present learning sessions and discuss issues and future product development that affect southern US contractors. Participants included B & G Equipment, Forestry 21, Forest Pro, MidSouth Forestry Equipment, Patrick Miller, Smith Equipment, Smith & Turner, Tejas Equipment and Tidewater Equipment.

Tigercat debuted the 724G, the first drive-to-tree feller buncher powered by the Tigercat FPT Tier 4f engine. Product manager, Rob Pentesco, was on hand at both the sales conference and show site to point out new

The Tigercat FPT powered 620E skidder.

Tigercat debuted the 724G feller buncher with Tigercat FPT power.

features and answer questions. The machine, equipped with a Tigercat 5500 felling saw operated during the live demonstrations along with a 620E skidder, 234 loader and T234 loader. Static machines on display included the M726E mulcher, 630E skidder as well as a 718E and 726E feller bunchers.

Tigercat guests, Bobby and Lori Goodson, also attended the show. As usual, it was a pleasure to see the enthusiasm of the people gathering to shake Bobby's hand, snap a photo with him and ask for his autograph.

Tigercat thanks B & G Equipment and the Mississippi Loggers Association for another successful event. ■

MID-SOUTH™
FORESTRY EQUIPMENT SHOW
live, in-woods 30 YEARS demonstration
Log On!

DEBUNKING DEF

What You Need to Know

— Josh Tovey, Tigercat service engineer

All forestry equipment manufacturers are going through the growing pains and education process of dealing with Diesel Exhaust Fluid (DEF) as production of Tier 4 final machines begin. This "new" fluid that invokes such concern has actually been used for some time, introduced commercially to on-road markets in 2004. Tigercat introduced its first Tier 4 machine, a 620E skidder in September, 2013. By providing proper education to dealers and customers, the introduction of additional models using DEF has had minimal impact to the end user. Much like fuel, there are specifications and handling procedures that must be respected to ensure the complete system functions properly. Here are the basics that you need to know to be successful with DEF.

What is DEF?

DEF is a clear, odourless mixture of chemical grade urea and demineralized water. Those familiar with the agricultural industry may be familiar with urea, which is a common nitrogen-based fertilizer. However, DEF is made with chemical grade urea, with strict limits on the amount and type of particles in the urea.

How does DEF work?

The Environmental Protection Agency (EPA) regulates the amount of particulate matter and nitrogen oxide emissions an engine can produce. DEF is used in conjunction with a catalyst to lower nitrogen oxide emissions. DEF is injected in the exhaust stream, breaking down into ammonia and reacting with nitrogen oxide to form water and harmless nitrogen gas. This chemical reaction is most efficient at high temperatures. Extended idling (4 hours for T4i, 9 for T4f) or low load operations should be avoided where possible.

How much DEF does the machine use?

DEF consumption is normally 6-8% of fuel consumption for Tigercat Tier 4f machines. In extreme applications it can be as high as 10%. The exact consumption depends on the machine model and some environmental conditions.

Use only DEF that has the API logo on the label.

Where do I buy DEF?

Most truck stops and gas stations stock DEF in 2.5 gallon disposable jugs with built-in spouts for the on-road market. DEF can also be found at stores such as Walmart, NAPA and Canadian Tire. Make sure the seal is present and intact when the cap is removed. Contractors with large fleets may find this impractical, preferring to buy and store in bulk totes or drums. In this case, extra care must be taken to ensure that the excess amounts do not get contaminated.

With all of the DEF suppliers available, which brand do I choose?

All DEF must meet ISO 22241 specification and be certified by the American Petroleum Institute (API). DEF should not be diluted with any other fluid, including water or be used with any additives. Doing so risks adding chemical contamination into the system. Any product promoting low temperature DEF or additives should be avoided.

If you use DEF that does not meet the required specifications, your machine may operate correctly for a short duration, but minerals in low quality DEF will quickly build up in the after-treatment system, leading to an inevitable and costly failure. To put this in perspective, it only takes two teaspoons of oil to contaminate a 5,000 gallon tanker of DEF.

How much will DEF cost?

Input costs are a prime and legitimate concern in the timber harvesting industry. How much is this new fluid going to cost? Since the Tigercat FPT engines are more fuel efficient than previous Tier 3 machines, (and most competing Tier 4 machines) the cost of DEF is easily offset by reduced fuel consumption. The end user will not see any increase in operating costs by using DEF.

How do I store DEF?

DEF has a defined shelf life that is temperature dependent. Proper storage maximizes shelf life. For reference, DEF stored at 38°C (100°F) will last less than three months but stored at 27°C (80°F), it will last approximately one year. DEF that has expired will cause emission components to function incorrectly and limit the performance of the machine. Ideally DEF should be stored between -5°C and 20°C (23°F - 68°F), which will result in a shelf life of up to three years. It should be stored out of direct sunlight and away from possible contaminates.

It is a good practice to understand how much DEF will be consumed and to maintain no more than a three month supply to avoid risks associated with expiration. DEF should only be stored in sealed and approved containers that have not been previously used to store other fluids. As shelf life is limited, DEF should be stored to allow for first-in, first-out usage and the manufacturing date should always be reviewed to ensure you are not purchasing or storing expired DEF.

What happens if DEF freezes?

Freezing does not harm DEF. The freezing point of DEF is -11°C (12°F) and takes some time even at extreme cold to freeze completely. The DEF system is heated, both electrically and with engine coolant, so even if DEF freezes in-tank, the machine will thaw it. It is good practice to fill the tank after each shift – since the tank freezes from the outside in, it will keep liquid DEF near the suction line. Regardless, once the machine has been brought up to working temperature the thawing process is well underway and the operator should not be waiting for DEF to thaw.

How do I fill up the machine?

The first and most important step in filling up the DEF tank is to clean the area around the tank fill cap. Do not remove any of the strainers or filters in the system. This equipment is necessary to protect the system from contamination. Smaller disposable jugs of DEF have a built-in spout. If larger totes are being used, a transfer container or pump system may be required. These should be constructed of a material suitable for DEF such as stainless steel or polyethylene, including all fittings within the system. Do not use transfer containers that have previously stored other fluids or containers that are not specifically approved for DEF.

> It cannot be stressed enough that dirt and debris must never enter the DEF tank.

Only two teaspoons of oil will contaminate a 5,000 gallon tanker, according to reputable supplier, Brenntag.

How do I service the DEF System?

The most recurring issue observed in the field is contamination in the DEF tanks. It cannot be stressed enough that dirt and debris must never enter the DEF tank. Large debris will plug the inlet of the suction strainer and small debris could damage the DEF pump and injector. There are multiple strainers and filters in the DEF system. However, this equipment will not protect the system if it has been removed or compromised.

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Cleaning a DEF tank is not the easiest job and it is best to avoid contamination to begin with. If dirt or debris has made its way into the tank, only DEF or demineralized water should be used to clean the tank. Remember, chemical contamination damages the catalyst and is one of the biggest risks to the after-treatment system, so no brake cleaner or ether.

What happens if my machine runs out?

Running out of DEF is actually quite a challenge. The DEF level, much like the fuel level, is displayed on the machine computer and multiple alarms are broadcast as the DEF level reaches 10% and below. As per EPA regulations, the machine will begin to lose power when 5% DEF level is reached and will continue to do so until the DEF tank is empty at which point the machine is left to idle. This process takes hours. Full machine power can be restored by simply filling up the DEF tank.

How not to store DEF - In direct sunlight, with 34°C temperatures, and the transfer equipment exposed to dust and dirt.

With all of the guidelines for using and handling DEF suggested in this article, it may seem like a lot to remember. However, with a bit of experience handling DEF, it will all become second nature. With the use of high quality fluids, stored correctly and kept free of particulate or chemical contamination, the DEF system will function flawlessly. ■

GOING FOR THE BURN

Jerry relies on plenty of older machines, including this 244 loader. He cites Tigercat reliability as an important factor.

> "This is a demanding environment with literally no room for downtime, so I need my equipment to be both productive and durable. I get that with Tigercat; it's reliable and outperforms anything else on the market today."
>
> — Jerry Sapp

Fleet of "seasoned" Tigercat equipment helps Sapp's Land & Excavating meet growing demand for biomass product.

— Larry Trojack, independent writer

As the US economy continues its sluggish but steady climb back to respectability, several industries are seeing a corresponding uptick in business. One of those is the US biomass market which, in 2013 alone, added more than 230 megawatts of power to the nation's energy grid, more growth than it has seen in four years. In addition, wood pellet exports from North America to Europe have doubled in two years to reach 4.7 million tons in 2013, with southern states accounting for 63% of the volume, according to the North American Wood Fiber Review. To help make all that happen, a growing number of loggers who had been enduring hard times are now in demand, supplying chips to mills and plants throughout the country.

For Jerry Sapp it has meant growing his business from seven people to one that employs nearly three dozen. It has also meant slowly building up a fleet of forestry equipment capable of meeting this new found demand for biomass product. Today, aided by no fewer than fourteen Tigercat machines, (some new, many bordering on vintage) Sapp's Land & Excavating is poised to become one of the Florida panhandle's premier suppliers of microchips for biomass use.

Legacy in Logging

First formed in 1978 as a logging company called Jerry Sapp Timber, the company expanded to offer land clearing and excavating in order to accommodate residential and commercial development in the region. But, according to Sapp, logging has always been in his blood.

"My father, Richard, was a logger so I grew up with wood harvesting as a big part of my life," he says. "In fact, I worked with him for seven years before starting my own business. I operated both of my companies for more than 20 years, but in 2000, we decided to cut back and focus on land clearing rather than logging."

For several years, Sapp's stayed busy building subdivisions, clearing lots, constructing lakes and fish ponds, all the while operating with just a three or four person crew. With the economic downturn, the housing and commercial development industries fell

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on horrific times, and Sapp was once again turning to logging to keep the ship afloat.

"We still had an old Tigercat skidder we'd bought in 1996, then picked up a used Tigercat feller buncher and loaded trucks with our excavator for some time before we even bought a loader," he says. "We really got back to our roots."

Push for Biomass

Chipley, Florida based Sapp's Land & Excavating is a family company by nature. Jerry's wife Sharon has been with him since the company's inception and son Jeremy is active on a daily basis in many parts of the operation. Upon re-entering the logging market, Sapp called upon some of his old logging agent contacts to re-establish a working relationship and secure some work. Eventually, however, he found that working directly with mills in the area made more sense.

"Soon we were clearing and logging for only a couple of key companies, one of which was Green Circle Bio Energy," he says. "We didn't know it at the time, but aligning ourselves with them would change things dramatically for us."

Green Circle Bio Energy, Inc., is a major producer of fuel pellets which are sold to the European power-generating industry for co-firing in coal-based power plants. Opened in 2008, the Cottondale, Florida based company generates upwards of 580,000 tons of fuel pellets per year against a maximum production capacity of 600,000 tons per year. With those kinds of volumes, a steady flow of specialty chips into their facility is critical; the company secured that flow – and capitalized on an opportunity – with a call to Jerry Sapp.

"In late 2012 Green Circle contacted us asking us to tackle a number of round wood tracts of timber that they needed to get cut by a certain date, apparently to take full advantage of an impending tax situation," says Sapp. "By that time, we had grown our business, but were still just doing 40 to 45 loads of round wood a week. In early 2013, however, a new agreement with Green Circle quickly got us into large-scale chipping, doing as many as 150 loads a week. At that point, we had become a totally different company, but we were happy to be growing at a time when a lot of other companies were still struggling to recover from the downturn."

Committed to Excellence

To meet Green Circle's needs for a specialty chip – one that is generally 13-20 mm (0.5-0.75 in) in length and width and about 3 mm (0.125 in) thick – Sapp relies upon a pair of Morbark 40/36 Whole Tree MicroChippers.

"We typically get about 110 loads of microchips a week between two chipping crews," says Sapp. "When conditions are ideal, however, I've seen a crew get more than 80 loads a week with a single chipper."

The latest addition to the skidder fleet is a new 620E.

Jerry Sapp, at right, discusses the clearing operation with one of his chip haulers.

On the logging and clearing side of the operation, as business grew, a loyalty that started with that one Tigercat machine developed into a full-on commitment. The company currently owns and operates a Tigercat fleet consisting of five feller bunchers (four 720E models and one 720D), four skidders (one 620E and three 620C models) and five loaders (three 240B loaders, one 230C and a 244).

"This is a demanding environment with literally no room for downtime, so I need my equipment to be both productive and durable," he says. "I get that with Tigercat; it's reliable and outperforms anything else on the market today. I differ from a lot of other logging firms in that I prefer to purchase used equipment rather than new, and the folks at the Thomasville, Georgia, branch of Tidewater Equipment, have been great in helping me get the equipment – both new and used – that I need."

He adds that the bottom line for him is a level of confidence in Tigercat equipment that has never been shaken.

"Even though a Tigercat machine is three or four years old and out of warranty, I know I can still count on it for years and years of solid performance. That's made a huge difference for us."

Indeed, most of Sapp's fleet is equipment built between 2005 and 2008 with a couple of new units in the mix and that 1996 model still working today. Not long ago, because of a deal he felt he couldn't pass up, Sapp says he purchased a competitive brand skidder. "I probably should have passed it up," he says. "It was brutal compared to our Tigercat units – within six months we sold it and replaced it with a new Tigercat 620E."

Making a Difference

Sapp says the push to create more and more biomass – including the pellets generated and exported by Green Circle – is prompting them to consider converting a third chipper currently used for larger, standard fuel chips to a microchipper. He says he sees the work they do as benefiting the forest industry in their area both now and into the future.

"A good portion of the acreage we're cutting is land that people first cut fifteen years ago and simply let sit," he says. "As a result it's gotten overgrown with junky material up to 30 feet tall that is not of any interest to a logging company. In cases in which replanting is the goal, the landowners need to get that product off site just to see which areas are even worth being sprayed with an herbicide and replanted. They have a couple ways to do that: they can pay someone to come in and take it down with a dozer or have us come in and clean it up for nothing."

Left alone, says Sapp, most of the land they deal with would look like it does for another fifteen to twenty years until anything of value could be pulled from it. The alternative they offer is much better: clean it up, replant and in ten years get a good income from it.

"Everyone benefits from what we do," he says. "It gets a lot of acreage that would otherwise just be wasted back into production and eventually ends up yielding a higher-quality product as well. There's a lot of land like that within the 60 mile radius we work, so I can see us being busy for quite a while. Our Tigercat equipment has played a huge role in helping make all this happen and will continue to do so as we move forward." ■

A TRIP TO GREASE

— Pierre Fortin, Tigercat service administrator

Every workday, at least once a day, someone has to take a trip around your machinery and inject some of that gooey stuff called grease into all of the moving joints. This can be fun when greasing your brand new machine for the first time. After all it provides you the opportunity to see that new beast up close and personal. On the second day the novelty has generally worn off and greasing the beast becomes nothing more than a chore.

We live in the 21st century, where we can turn on the sprinkler system or preheat the oven remotely from our iPhones. So why do we have to manually grease pin joints and bearings, making it feel like the 19th century? Well, here are a couple of good reasons why regular greasing is still the most effective way to make moving joints last on heavy equipment.

Regular greasing also flushes out the old grease and the contaminants trapped within.

Good quality grease can take the high pressures associated with forestry applications and remain in place between parts that are subjected to very high loads, keeping them apart from one another to eliminate the metal-on-metal wear that would otherwise occur. Grease also acts as a shock absorber, protecting the metal on the pins and bushings on those occasions when the operator says, "Oops!" But for the grease to do its job, it must be present, it must be clean, and it must be good quality.

It must be present

If grease intervals are too long, the joints will run dry and damage to the metal components will occur very quickly. Just a few movements of a dry joint can initiate irreparable damage, especially in cases where a machine is used in very high cycle operations, such as small stem harvesting with a feller buncher. In this case, the normal greasing interval of eight hours may not be enough and the pin joints on the saw head and boom could get dangerously close to becoming dry. Therefore it is advised to increase the frequency of greasing joints that are subjected to higher cycles.

It must be clean

If care is not taken when cleaning the fittings before pumping grease in, the dirt sitting on top of the grease fitting will be pushed into

Tigercat's brand of lithium complex base grease with the proper quantity of molybdenum disulfide is specifically made for heavy-duty forestry applications.

the joint. The mix of grease and dirt can work on the metal surfaces as a rubbing compound would, causing premature wear of the metallic components.

Dirt can also enter the grease joints around the pins and work its way between the pins and bushings. Some of the grease joints are sealed to prevent this contamination, while others are not. It is important to know which joints on your machines are more susceptible to contamination. These specific joints should be greased more often and with more grease than normal to flush the joint of these abrasive contaminants.

Good quality

Modern timber harvesting machinery is more productive and capable of more cycles per given time period than ever before, making it that much more important to use good quality grease.

Since the very beginning, Tigercat has recommended lithium base grease with min. 3% molybdenum disulfide on all pin joints. This type of grease is water resistant and will not break down under the extreme pressures that the pivots are subjected to in heavy-duty forestry applications.

Most petroleum product companies offer good quality lithium base greases that can be used on Tigercat machines, but some are better than others. To make your choice easy, Tigercat is now offering its own brand of lithium complex base grease with 3%+ molybdenum disulfide, specifically made for heavy-duty forestry applications.

Lithium complex grease possesses many of the same properties as simple lithium soap greases. However, an important distinction is the higher dropping point, allowing lithium complex grease to perform at higher temperatures. The dropping point is higher than that of simple lithium soap grease, due to the presence of a thickening component known as the complexing agent. Lithium complex grease also has the ability to maintain consistency when subjected to high mechanical shear forces. A high percentage of Moly (3-5% Molybdenum Disulfide) means that the Tigercat heavy-duty forestry grease can support extreme pressures without breaking down.

Knowing that you are extending the life of your machine might make your next trip to grease feel a little more rewarding, even if you aren't sailing on the Aegean Sea. ■

BLUEWOOD INDUSTRIES PURCHASES 250TH TIGERCAT DOWN UNDER

— Glen Marley, sales representative for Australasia and Southeast Asia

The 860C with the new 5300 bunching saw has an edge over the shear in coppiced plantations.

Tigercat sold its first unit into Australia (also the first Tigercat machine sold outside of North America) to Kevin Morgan back in early 2000. Kevin also purchased the 50th and 100th units to be sold into Australia. Kevin Morgan Group of Companies currently owns 24 Tigercat machines and continues to be a great supporter.

In early July, 2014 Tigercat sold its 250th machine in Australia – an 860C feller buncher fitted with the new 5300 bunching saw. Clint and Sharon Rayner purchased the machine. They own Bluewood Industries Pty Ltd (formally known as Albany Timber Services) based in Albany, Western Australia.

Clint and Sharon's company is somewhat typical of a young family-owned logging venture. The couple started off in a completely different industry (earthmoving) and learned very early on that flexibility and resistance to adversity would be the keys to success. As Clint recalls, "Albany Timber Services was registered in late 2004 and commenced harvesting operations in January 2005, initially contracting to Great Southern Plantations within the Albany region for an annual production of 80 000 tonnes of Eucalyptus Globulus, more commonly known as blue gum."

Albany Timber Services provided a full stem skid-to-roadside harvesting methodology for Great Southern Plantations. Over the next three years of operation, the company's secured tonnage increased, resulting in the start-up of a second crew in 2008 for combined annual production of 240 000 tonnes. Albany Timber Services contracted exclusively to Great Southern Plantations until January 2010, when that company went into receivership.

A solid reputation for quality and reliability allowed Clint and Sharon to negotiate some short term commitments with other companies. "Between March, 2010 and January, 2011 we completed various short term log production projects for Australian Plantation Export Company. This varied between 220 and 550 tonnes per day. We also assisted them in gathering data whilst undertaking harvesting of unmanaged second rotation coppice plantations," says Clint.

Clint and Sharon Rayner celebrate the purchase of their new 860C, the 250th Tigercat machine in Australia.

In mid-2010, Gunn's Ltd became the new responsible entity for Great Southern Plantation Managed Investment Scheme. The problem was that Gunn's was looking for in-field chipping and Albany Timber Services was set up to supply debarked six metre logs. "We commenced a small logging operation for Gunn's in October, 2010," says Clint. "However, shortly after we converted our logging systems into two in-field chipping systems with a minimum production of 220 000 tonnes per annum."

> "Contractors and harvesting companies must be innovative and proactive in developing processes which improve their overall position in the market."
>
> — Clint Rayner

One system utilized roadside processors to stockpile and feed a stand-alone chipper. The other system used a flail and chipper supported by a feller buncher and skidders. Although Clint and Sharon experienced a second setback when Gunn's entered into Voluntary Administration during September, 2012, the company had commenced skid-to-roadside log harvesting services with Australian Bluegum Plantations in January, 2011 and has continued to provide numerous methodologies in both logging and chipping formats. Current production requirements are in the range of 1 200 to 2 000 tonnes per day.

"We worked closely with Australian Bluegum Plantations to improve operational efficiencies and quality," explains Clint. "One recent development is chemical spray bar technology during harvesting to eradicate the need for stump spraying after the event. Not only does this allow a more timely process, but to date this has shown a significant increase in the effectiveness of the kill rate of the stumps."

It was during this time that Clint and Sharon purchased their first Tigercat 630D skidder in August, 2012. They were looking for additional reliability, production and flexibility along with reduced logging costs. Once Clint saw the impressive results that the Tigercat skidder had delivered to his operations, he purchased his first Tigercat feller buncher, an 855C fitted with the 2000 series bunching shear and a 340 degree wrist.

Bluewood Industries runs a pair of 630D skidders.

After looking at his options and visiting the Tigercat factory earlier this year, Clint decided to pull the trigger on the new 5300 bunching saw fitted to the 250th machine, an 860C feller buncher. This purchase

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The 855C equipped with the 2000 bunching shear. The shear has low maintenance costs and is extremely productive in single stem plantations.

is allowing him to fully compare the two machines. Clint suggests that both machines are extremely good at what they do and both have their strong points. The disc saw has a distinct advantage in the coppiced blue gum plantations that the company will be cutting around the Boyup Brook region for the next few years. The 860C was quickly followed by a second 630D skidder and Clint continues to be impressed with the machines and the service back-up from Onetrak, Tigercat's Australian dealer.

Albany Timber Services recently changed its name to Bluewood Industries Pty Ltd as the company moves to in-field chipping services outside of the Albany region. Bluewood started a completely new chipping operation in June, 2014, contracting to Western Australian Plantation Resources (WAPRES) and operating around the Bunbury region of Western Australia.

With this expansion, Bluewood purchased an existing chipping operation from WAPRES. In the process, Clint and Sharon acquired two eight-year-old Tigercat machines, a 14,000 hour 630C skidder and a 724D drive-to-tree buncher with the rather unique ability to run either a 2000 series bunching shear for single stem plantations or a 5600 bunching saw for use in coppiced plantations.

Clint reflects that chip specifications have been continually evolving over time, due to changing mill technology and differing customer requirements. "It is important not to dwell on the change, but the fact that it is another string in our bow. We are able to provide alternate specifications, thereby, increasing the potential range in our market. Contractors and harvesting companies must be innovative and proactive in developing processes which improve their overall position in the market."

Bluewood Industries prides itself in providing outstanding service to its customers by creating stable working relationships. "Quality, productivity, environmental consideration and providing a safe and neutral working environment to employees are just a few of the commitments we make," says Clint. Tigercat and Onetrak are pleased to be involved with such a professional and progressive company.

Kevin Morgan, Gary Olsen (factory sales representative, international) and Glen Marley (sales representative for Australasia and Southeast Asia) in 2013 in front of the original machine in Australia, an 845B, purchased by Kevin in 2000.

NEW TPO
A WIN FOR DEALER NETWORK AND CUSTOMER BASE

— Chris McMillan, senior technical illustrator

Training sessions were held to familiarize dealers with the new TPO parts system.

After close to two years in the works, Tigercat's technical publications department has officially released the new and exciting Technical Publications Online (TPO). Using EzParts software, Tigercat parts catalogues are now available to the dealer network online, with many more useful features that benefit the dealer and ultimately the customer. The more information Tigercat dealers have at their fingertips, the stronger the level of service for the Tigercat customer base.

Years ago, technical publications staff along with IT, were able to convert all parts catalogues to digital format and make them available online to all Tigercat dealers. This conversion allowed dealers to search for specific pages and part numbers without searching through thick parts books. While this format worked well for many years, it was time to take it to the next level.

In 2012, Tigercat decided to purchase EzParts software and began the integration of the parts catalogues into the new system. Before officially releasing the new TPO online system to all dealers, parts manager Brian Jonker chose BC distributor, Parker Pacific, to test the new online system and provide feedback. With twelve locations using the software for approximately nine months, it allowed Brian and I to gather feedback and make changes that would benefit the end user.

The next challenge was to provide necessary TPO training to our dealers. Two successful training sessions were held, one for Tigercat's Canadian dealers and one for US dealers. Brian found the training sessions to be valuable, not only for our dealers, but also for the Tigercat parts department, "To have some of the dealer parts personnel have the opportunity to meet the people they deal with on a day-to-day basis is a bonus to these sessions. Spending time with each other only helps foster stronger relationships and that trickles down to the customer. Everyone has a better understanding of how much we are all working on the same team for the same cause."

In early September, a TPO training session was held in Kamloops, BC, where 25 employees travelled from all over the province to attend the sessions. The following week another dealer training session was held at the Tigercat facility in Ailey, Georgia. Steve Barrow, senior product support advisor for Tidewater Equipment attended the training session and appreciated us coming down to Georgia stating, "The class was informative and helped our parts people better understand how to use the new TPO system. They taught us how to navigate through the site, making it much easier to use and understand. The links on the parts pages and notes are very useful. The training staff did a great job in presenting the information."

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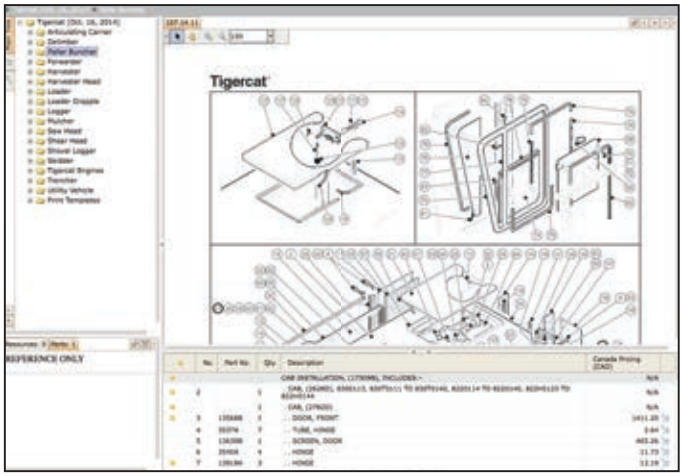
The ability to search by the customer's specific machine serial number makes it much easier to find what you are looking for as other irrelevant machine parts disappear and only the information for your specific machine is shown. With Tigercat dealer parts personnel being more trained and informed on the new system, the process of ordering parts is expedited. Dealer parts personnel are able to more easily, quickly and efficiently search for inventory and pricing information. Consequently, the information is communicated back to the customer more swiftly.

While TPO has proven to be a valuable tool for Tigercat dealers and ultimately the customer, we have just begun to implement all of the features available. In the coming months, dealers will be able to check availability, not only in our Brantford parts warehouse, but also our warehouse in Georgia. By integrating with our ERP system, quantities on hand, as well as price additions and changes, will be updated in real-time. "TPO is going to open up an increased level of information to our dealer partners," comments Brian. "It will give them information that they otherwise would have had to directly contact us to get. Providing more information, better functionality and a more manageable site will allow them to be self-sufficient, in turn, allowing Tigercat to have more time to deal with other challenges our dealers or customers may face."



Parts illustration uses "hot spot" callout to link to the parts list.

GHOSTS IN THE FOREST

BTB recently visited the Cape Breton Highlands to see how the first 1135 harvester on the continent is working out. Truro, Nova Scotia based Highland Pulp Ltd. recently acquired the machine to perform ghost thinning – low impact in-stand selective felling between widely spaced forwarder trails.

— Paul Iarocci

With a narrow overall width and tapered cab, the 1135 can weave through tight stands without contacting or damaging residual trees.

Highland Pulp is a family business owned by James Tompkins with a long history in Cape Breton. James' father, Donald Tompkins who founded Highland Pulp in 1962, was a pioneer in mechanization, running a Beloit harvester as early as 1965. Donald purchased a Koehring shortwood harvester in 1970 and as James explains, "We ran it until 1989. The last few years it did site prep work."

(Note to reader: Many members of the original Tigercat team came from Koehring Waterous, a heavy equipment manufacturer located in Brantford and purchased by Timberjack in 1988.)

Donald passed away in 1983 just as the spruce budworm was capping off several years of devastation in Cape Breton forests. The outbreak ultimately destroyed about 1,2 million hectares (3 million acres) of woodland, triggering a wholesale clear fell salvage effort. Eventually there was no wood left to cut. After his father's passing, James as the eldest son, stepped up to run the business. In 1989, he relocated the company from Margaree Valley to Truro (on the mainland of Nova Scotia).

Now some 25 years later, Highland Pulp is back in the Highlands for the short summer season, performing thinning and clear fell harvests within the marginal and largely unmanaged forests that were replanted in the wake of the budworm infestation. Highland Pulp's clear fell crews utilize a combination of Tigercat 845 series harvesters and 14-tonne forwarders. James purchased his first Tigercat H845B harvester in 2001 and the prototype Tigercat 1014 forwarder in 2004. He just recently sold the 1014 and the H845B is still running every day. Oddly enough, the harvester broke down with a bad alternator nearly the moment it was delivered. James and Tigercat district manager, Chris Baldwin worried that the machine might be a lemon, but the subsequent 35,000 hours of virtually bulletproof, double shift operation have assuaged their initial concerns. This year James purchased a new H845C from Wajax Equipment Maritimes forestry manager Sandy Hodgson, taking delivery in January, 2016. Highland Pulp runs three H845 series harvesters in total.

Then in September 2014, Highland Pulp purchased the first 1135 in North America from Wajax after Hodgson and Tigercat district manager Chris Baldwin thoroughly assessed the company's requirements. (Baldwin has a great deal of experience with the

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The 9,7 m boom has a tilting base allowing the operator to reach around standing trees. Operator Jacob Curry processes the logs to the nearest forwarder trail. The forwarder trails are spaced 30 m apart.

1135 product, after spending many years working in the Swedish market.) The 1135 was developed in 2009 for in-stand first thinning (or ghost thinning) in Sweden. Ironically it is another ghost in the forest, the elusive and threatened American pine marten, that is dictating this ultra-low impact harvesting technique. "If it wasn't for the ghost thinning, Port Hawkesbury Paper would not be able to utilize this timber at all," says James. Highland's 1135 is working on a portion of forest land encompassing around 40 000 hectares (100,000 acres) in total, that is protected as a pine marten habitat.

The last time ghost thinning treatments were performed anywhere in the province was ten years ago. The technique is coming back, not just for pine marten habitat in Cape Breton, but also on the mainland, where the 30 m (100 ft) forwarder trail spacing is a requirement to mitigate blowdown risks exacerbated by the shallow root mass that characterizes much of the forest land.

The idea is to space minimal width forwarder trails 30 m apart. Then the 1135 does two passes in between the trails, using the 9,7 m (32 ft) crane to process wood to the nearest trail, as it winds its way through the forest, removing trees to a basal area of 20. The thinning volumes are later confirmed with the use of LIDAR (Light Detection and Ranging) equipped drones. The LIDAR system uses laser pulses to generate 3D profiles, providing reliable data on stand inventory including volume and diameter distributions.

The 1135 along with the rest of the harvesting equipment, working in the Highlands, moves to mainland Nova Scotia at the end of October, because winter harvesting is not feasible on the island – snow cover in the upper elevations is routinely over three metres.

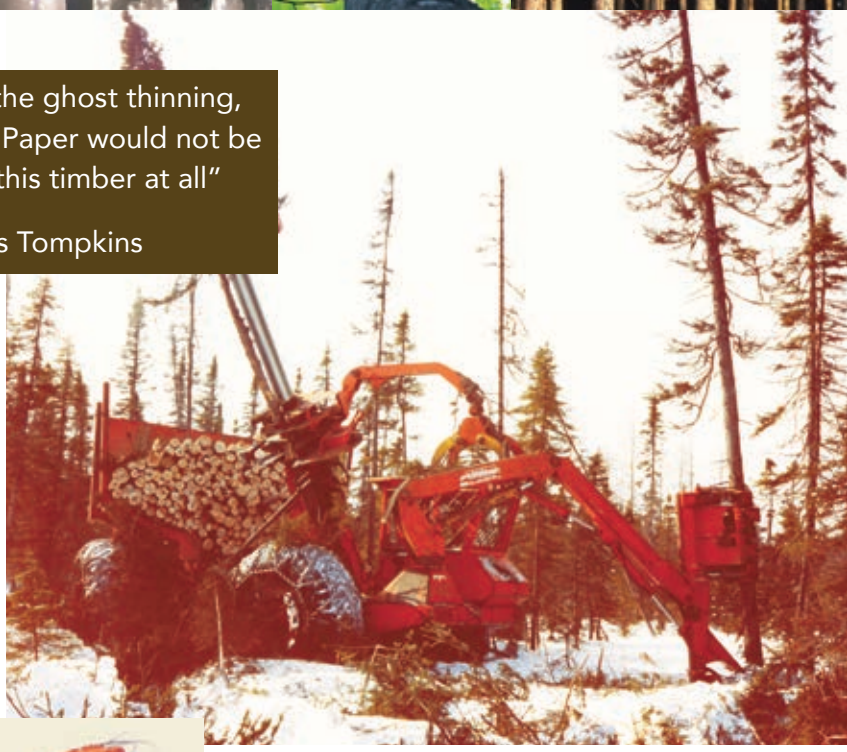
James took over Highland Pulp at a young age. His two younger brothers work in the business. Robert is a mechanic and Kevin, an operator. James has two sons, Adam and Michael, who also work in the business. Both are apprenticing as heavy equipment

Tigercat district manager, Scott Earle with 1135 operator Jacob Curry, Highland Pulp owner James Tompkins and Sandy Hodgson, Wajax Maritimes forestry manager.

technicians. Currently, Adam is managing the thinning crew.

> "If it wasn't for the ghost thinning, Port Hawkesbury Paper would not be able to utilize this timber at all"
>
> — James Tompkins

1135 operator Jacob Curry had no prior experience on a wheel harvester, but after a month on the machine, he is confident and productive in the close quarters. The trees are short, extremely limby and densely spaced – limiting both visibility and room to manoeuvre. Walking behind the 1135 in the stand, it is hardly possible to tell that a 15 tonne machine has just wandered through. The extra narrow machine width and highly manoeuvrable crane, that can literally reach around standing trees, help to keep forest disturbance to an absolute minimum.



The Koehring shortwood harvester. Donald Tompkins was a pioneer of mechanization. Highland Pulp ran the machine from 1970 to 1989.

A novel aspect of this 1135 is that it is carrying a larger head (Logmax 5000) than any of the machines that are operating in Sweden. This was a requirement for James, so that the harvester would be versatile to handle larger timber and clear fell jobs as required.

For further reading on the 1135 harvester, see BTB Issue 27, March 2011, New Product Review: 1135 Harvester. ■

ICE BUCKET CHALLENGE TIGERCAT STYLE

On August 25th, Tigercat willingly participated in the #ALS Ice Bucket Challenge, a fantastic fundraising campaign that trended across the world. Tigercat put its own spin on things, calling in a water tanker to soak the entire office staff at one of the manufacturing facilities in Cambridge, Ontario. Everyone had a great time and a good laugh. But most importantly, Tigercat was proud to be one of the many companies to raise money and awareness for the ALS Society of Canada, as the phenomena continued to trend across the globe.

Watch the video here: http://www.youtube.com/TigercatForestry

The amusing aftermath of Tigercat staff getting soaked with ice-cold water on a chilly day in late August.

Ken MacDonald, Tigercat founder and CEO, after getting drenched in ice-cold water. "I'm losing my breath!"

POETIC LICENSE

Tigercat has been setting new monthly production records on a fairly consistent basis in 2014. When a new record is set, it triggers a poem by resident Tigercat poet, Stacey Jonker (customs support), which in turn triggers a company-wide pizza party lunch. Here is Stacey's October submission and Tigercat owner and CEO, Ken MacDonald's, response:

October is well known for the tricks and the treats

Costumes aplenty and kids wandering the streets.

A pizza strategy was drawn up and put into place

139 is the record high and we've now won the race!

It was tight and close but the number was met.

We all pulled together Ken, don't you fret!

Pizza can be ordered, so let's fill our bellies up,

And prep for November and another record??? YUP!!

Dearest Stacey,

Thanks for another work of art from a poet so great,

And not a minute too soon, given the final numbers came so late,

You have several weeks for a new poem to prepare,

The good news remains that the sales backlog is there,

I have faith that you can still make the breaking of records so fun,

Now it's up to our production team to maintain the run.

Have a great day all,

Ken

UPDATE ON TIGERCAT'S NEW FACILITIES

Construction underway at 142 Consolidated Drive in Paris, Ontario (as of November 7, 2014).

142 Consolidated Drive, Paris, Ontario

Construction of the $12 million, 11 800 m^2 (127,000 ft^2) manufacturing facility in Paris, Ontario is well underway. The new facility at 142 Consolidated Drive will be primarily used to assemble swing-to-tree machines including 800 series feller bunchers, harvesters and loggers, 200 series loaders, as well as harvester and bar saw attachments. The move will free up capacity at the other manufacturing facilities and therefore all sites will benefit from the additional space created in the new plant.

While most buildings of this size are built using a pre-engineered structural steel format, the new Tigercat plant has a customized structure using conventional steel frame building methodology, along with specialized crane and structural columns to create a very strong and open structure.

"This will be one of the highest quality, strongest, most modern heavy manufacturing facilities in the country," states Steve Crosby, vice president – Paris operations.

As the winter months approach, Tigercat is pressing to finish up the manufacturing side of the plant and complete the diaphragm of the structure, allowing construction to continue on items such as electrical, painting concrete, plumbing and crane installation.

95 Washburn Drive, Kitchener, Ontario

Tigercat moved into its new 6 100 m^2 (66,000 ft^2) plant at 95 Washburn Drive in Kitchener, Ontario on September 10, 2014 after a herculean effort from Tigercat's facilities and maintenance staff. Production began only a few days after the move-in date to ensure manufacturing flow lines were kept on schedule.

The modern two-level office space and production area will be used to engineer and assemble axles and transmissions. The facility is currently outfitted with five overhead and two jib cranes systems with Tigercat installing several more in upcoming months.

Also coming soon is a new high-tech rebuild centre for the Tigercat Exchange Component program. Adjacent to this room will be the home of two state-of-the art Coordinate-measuring machines (CMM). The room is outfitted with a separate floating section of concrete floor to aid in precise measurements and ensure no movement disturbs the CMMs.

"Tigercat looks forward to increasing production of its own Tigercat drivetrain products to enhance the quality of our machines for our customers," explains Michael Ellig, plant manager – Kitchener operations. ■

An exterior view of the new plant at 95 Washburn Drive in Kitchener.

An interior view of the state-of-the-art production floor with Tigercat staff standing behind Tigercat axles and transmissions.

dealer news

TIGERCAT INCREASES RUSSIAN COVERAGE

Tigercat is pleased to announce that the Technoforest company, based in the city of Khabarovsk, Russia has joined the Tigercat dealer organization. Technoforest has over ten years of history and solid experience in selling and servicing heavy machinery. Technoforest is very excited to be a new member of the Tigercat dealer family and represents the Tigercat brand in the Russian far east territories.

"We are most honoured to be part of the Tigercat team and are ready to work hard to develop the Russian far east market," says Alexey Tarasyuk, director of development of Technoforest. ■

employee news

Aaron Gregan.

Uziel Batista Dos Santos.

Product Support Representative in New Zealand

To keep up with the exploding population of Tigercat machines in New Zealand over the past couple of years, Tigercat is pleased to announce that Aaron Gregan has joined the team in the position of New Zealand factory sales and support representative.

Based in Geraldine, New Zealand, Aaron will focus on providing after-sale technical and commercial support to Tigercat's New Zealand dealer AB Equipment and Tigercat end users. Aaron has over five years of experience working with AB Equipment, where he has quickly built a reputation amongst his customer base as an extremely motivated and committed service technician. ■

Tigercat Increases Product Support in South America

Tigercat is pleased to announce that Uziel Batista Dos Santos has joined the Tigercat product support team in the position of South American factory support representative.

Based in Londrina, Paraná State, Brazil, Uziel will focus on providing after-sale technical and commercial support to Tigercat's growing customer base in South America. Uziel has five years experience working in the forestry industry. He previously worked for former Tigercat dealer, Latin Equipment do Brazil and most recently as a contract technician to Continental Biomass Industries (CBI). He brings excellent hands-on and technical skills to the Tigercat team, being certified in General and Automotive Electrical Systems by the National Service of Industrial Learning Institute. ■

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