

# B E T W E E N the BRANCHES

## Tigercat expands manufacturing capacity

**With the acquisition of three former steel fabrication facilities, Tigercat significantly expands manufacturing capacity and seeks greater manufacturing efficiencies.**

In the wake of steadily growing demand for Tigercat equipment in North American and international markets, Tigercat has made a move to significantly increase its manufacturing capacity by acquiring three facilities from associated suppliers MacDonald Steel and Manufacturers Metalfab.

The acquisition will have a number of positive effects. Floor space available for the assembly of Tigercat machines will be greatly expanded.

The assembly of skidders and forwarders is already being relocated to one of the newly acquired fabrication plants formerly occupied by Metalfab. The location, in nearby Cambridge, is significantly larger than the Brantford facility. The move will reduce lead time for steel fabrications and eliminate transport costs of these bulky steel components from one plant to another. Skidder frames, grapple tongs and cabs will be fabricated and welded in one bay and assembled into finished machines in an

adjacent bay. Our manufacturing efficiency will be considerably enhanced," says plant manager, Martin Jennings.

By freeing up the former skidder assembly facility, a dedicated plant will be available for loader assembly, one of Tigercat's fastest growing product lines. "With the addition of the 220 and 244 models plus the strong demand for the 230 and 240 series loaders, we simply need more space," comments Jennings. "The dedicated loader facility will give us the space required to ramp up production to the levels dictated by current market demands."

Finally, floor space available for track feller buncher assembly, which was formerly shared with the loader group, will also be

### I N S I D E

- Chipping in Georgia pg. 2
- Carolina Log'n Demo pg. 4
- ExpoCorma 2003 pg. 5
- Hardwood logging in the Soo pg. 7
- Loader Line-up pg. 8
- H09 in Sweden pg. 13
- Design Awards pg. 16

cont. on pg. 2.



Loader assembly group moves into their own dedicated production facility.

cont. from pg. 1.

increased as a result of the relocation of the loader line.

With the acquisition, not only will Tigercat staff be more involved with one of the most important inputs, steel fabrications, Tigercat will also acquiring equipment and expertise that is, in some cases, unique to the industry. “MacDonald Steel has made extensive investment in its fabricating technology

with laser and plasma cutters, massive boring mills and robotic welders. This puts Tigercat in a strong position,” explains Jennings. “Organizational and operational efficiencies will be realized.”

The acquisition will increase Tigercat’s workforce from approximately 260 to over 600 people and will add nearly 400,000 sq. ft. (37,000 m<sup>2</sup>) of floor space. ■

# Chipping in Georgia

**K & A Logging improves productivity and chip quality with Tigercat purpose-built delimber carriers.** By Anthony Goad



Change, adaptability and a willingness to entertain new ideas and practices seems to be a prerequisite for success in any business. Working in the logging industry in southern Georgia is no different, particularly for K & A Logging of Cuthbert Georgia.

Ken Melton and Adrian Taylor of K & A Logging got their start in this business while still in high school. With contracting connections from Melton’s father, who ran the chip yard for Brunswick Paper Company, the two industrious students began with short pulpwood in 1978. Working after school and on Saturdays, Taylor and Melton would hand fell the trees and then hand load the five foot three inch lengths. Melton estimates that in the late 1970s while attending school they would get about a “load a day, after school and then a couple on Saturday.” One week they were able to get twenty-eight

loads to Container Corporation. “That was a good paycheck,” Melton recalls.

After the two finished high school, Taylor and Melton started logging full time. Their first mechanical acquisition was a Barko 80 loader mounted on a Chevrolet truck. In 1984, they purchased their first skidder. Melton recalls, “It cost us \$6,500 dollars and we weren’t sure that we would be able to afford it.”

In 1986, they incorporated the business of K & A Logging. It was around this time that they began the transition from shortwood to tree-length contracting. Not long after they acquired their first drive-to-tree feller buncher - a used John Deere 544C with 20 in. (510 mm) directional shear. Melton recalls that in the early stages he would “fell trees for two to three hours in the morning

and then run to the loader to start loading for the rest of the day, because Taylor was constantly skidding.” In 1988, they purchased their first brand new piece of equipment and according to Melton, “this was the start of the big time.”

From these humble beginnings, K&A Logging has developed into an innovative, high-production operation, which is comprised of four logging crews. Melton points out that they work within a 100 mile (160 km) radius of Cuthbert, GA - covering three states.

Generally, K&A purchase most of the timber they cut and they merchandise and market the wood themselves. The majority of the pulp goes to a Georgia-Pacific operation in Cedar Springs, GA and the saw logs are sent to various mills in the area.

Two of the crews are dedicated to pine chipping. One crew is exclusively in pine thinning applications and the fourth does both pine thinning and clear felling. The pine chipping crews are run by Kelly Melton and Stephen Jackson. Walter Williams and Robby Welch are in charge of the other two crews.

The equipment line-up on Stephen’s crew is a Tigercat 720B feller buncher with a Tigercat 5500 felling saw, 630 and 630B skidders, a Tigercat D860 equipped with a Denharco stroke delimeter and a Tigercat 220 loader.

On Kelly’s job is another 720B with 5500 felling saw, Tigercat 630B and 620 grapple skidders, a D860 with a Denharco stroke and a Barko 160 loader.

When K&A got into the demanding business of chipping, Ken realized that “the quality of the chips was the number one priority.” They initially tried using a loader-delimeter package but did not get the results that they were anticipating. In 1999, they decided to purchase a Tigercat D860 with the Denharco stroke delimeter. Melton states that they decided on the purpose-built Tigercat 860 “because of its apparent durability, stability and reliability.” Within a year, they decided to purchase another

D860 to start a second chipping crew. According to Melton’s wife and business manager, Melissa, they have achieved better chip quality in the woods than what is expected at the mill. “We achieve less than three-quarters of a percent of bark in our chips which completely exceeds expectations,” she says.

Realizing the importance of quality and productivity, Ken states that buying the second D860 was an easy decision. “I was so satisfied with the first one.” When Taylor and Melton purchased the first stroke delimeter attachment, a Denharco representative informed them that the attachment would outlive the carrier, but according to Ken, he is not sure. “The first unit has over 10,000 hours on it and we have not had to replace the undercarriage, despite the travel that it has to do.” Although the D860 carriers are confined to the deck, they are not stationary. They travel back and forth along the piles, delimiting as they go. According to Melton, the Denharco attachment has been good, but the 860 carrier has been “great” - stating that “there are no leaks on that unit.”

Melton sees Tigercat as instrumental to his operations, particularly the chipping crews. With the high productivity of the D860, it’s necessary to ensure that the skidders are keeping up. He points out that skidding is not about speed but the volume of wood that the skidder can bring to the deck with each drag. Equipped with the 18 sq.ft. (1.67 m<sup>2</sup>) grapple, Melton sees the benefit of the Tigercat 630 series skidders. “The bigger the volume of the grapple, the better - particularly for chipping crews,” he explains.

Despite having a large maintenance shop located in Cuthbert, GA, with four service repair staff, Melton says dependability is an important criteria for evaluating any piece of logging equipment. Tigercat’s reliability is a definite plus. He points to the center section on the skidder as an example. “Tigercat has no competition with that center section - that will last a long time - a lot longer than the competition.”

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As well, Melton appreciates the support that he has received from his Tigercat dealership, Tidewater Equipment Co. in Thomasville, GA. Sales support from Jim Lattay has provided assistance in purchasing new equipment and trading in used pieces. Service support from Tidewater has also been a great plus for K&A Logging. Leonard Faircloth, Tidewater service foreman, was instrumental in getting the Denharco stroke delimiters into operation. "Leonard's knowledge of the product was extremely helpful," confirms Melton.

With increased mechanization and operational costs, Ken wonders aloud if he was actually making more money when he and

Adrian were doing everything by hand. But truth be told, the business has been quite good to him. Ken smiles when he recalls that he met his wife Melissa through the business. She was working at the local NAPA store in Manchester, GA when Melton and Walter Williams went in for some hoses. He states that he has made the transition from shortwood to tree-length and questions whether there might be a transition back to shortwood. Taylor and Melton have seen the business go up and down with many changes still to come. Melton says, "One thing about this business is that it will always be changing." ■

## Carolina Log'n Demo

By Tracy Culp



The 2003 Carolina Log'n Demo and Forestry Show, originally scheduled for September 20, was postponed due to the arrival of Hurricane Isabel. The North Carolina Forestry Association rescheduled the one-day event for Saturday, October 25th in Vass, North Carolina.

Although postponing the show cost organizers some money, it allowed 30 days of additional advertising and, in the end, may have affected attendance in a positive way. "We had to consider the safety of everyone associated with the show," says Doug Duncan of the North Carolina Forestry Association when asked about the decision to reschedule. "Pushing the show back to October didn't hurt us, there were 45 vendors and over 1500 people that attended this year's event."

Organizers arranged to have an equipment display at the roadside the night before and morning of the show to help promote the event within the community. Community fire trucks provided light for the machine display while an impressive 1 million-candle power WWII searchlight lit up the sky. "It was a really good turn out and we're looking to schedule the 2005 demo in the same area, the community is very friendly and accepting of our group," says Duncan.

"The show was great, I think probably the best one yet. Doug and his group did an outstanding job organizing and promoting the day, really first class," says Tigercat district manager Ben Twiddy. "We were pleased with the overall attendance especially since there were a lot of loggers from eastern North Carolina looking to invest in new equipment for the salvage of the timber damaged in the storm."

Visitors to the Tigercat site were treated to an outstanding product display. The Tigercat crew set up a T240B loader, 724D wheel feller buncher and 620 dual arch skidder for the in-woods demo. The static display included the new 244 loader, 718, 720D and 726B wheel feller bunchers, 240B and T250 loaders, and the new 630C skidder.

"We were pleased with this year's event, the Tigercat booth was busy all day," says Tigercat district manager Don Snively. "Binky, Fredrick and Toppin, the volunteer operators that we had, really put on a good show for everybody." ■

724D buncher, 620 skidder and T240B loader; a productive combination.



# ExpoCorma 2003, CONCEPCION, CHILE - A REVIEW

By Gary Olsen

**The biannual ExpoCorma held this past November was billed to be more important than ever before with strong interest coming from many parts of the world where intensive plantation forestry has become of foremost importance.**

For Tigercat, this show was timely. Tigercat has made much progress in the South American market, particularly in Chile. Also, numerous expansions of forest product processing facilities have taken place in recent times. As a consequence, Tigercat, along with Latin Equipment Chile S.A. made its presence felt with the showing of three machines. Two of the three were demonstrated to prospective customers immediately after the show.

The third machine, a Tigercat 620 dual arch grapple skidder, had already been sold to KBM Chile S.A. and was on loan for the purpose of the show. The other two machines were a L830 track feller buncher with a 5400 disc saw and the newly introduced 220 loader which was truck mounted for the typical Chilean loading application.

Throughout the duration of this three-day show, there was strong interest in the ER equipped L830 for a number of reasons. Most important the size and capacity of the machine compared to any of the competing products introduced to this market to date. Prior to the show, the feeling was that in

most radiata pine applications, the Chileans would require Tigercat's largest leveling feller buncher, the L870 with the 5702 disc saw.

However, the L830 is a transition machine in terms of cost and size and is still capable of high performance in the radiata application. There has been strong resistance to the disc saw due to previous negative experiences with other brands. Overcoming the perception of a cutting tool that is wasteful due to its wide kerf blade was another bridge to cross in bringing this machine to market.

The Chilean truck mounted loader market is possibly the biggest in the world with a typical transport contractor owning a loader and a fleet of trucks to service the landowner in getting the wood to the mill. Depending on the product, the logs can range from 18 m (60 ft.) lengths to 2.4 m (8 ft.) pulpwood so a versatile grapple such as the Rotobec 6606 is a popular choice.

The Tigercat name and obvious structural benefits compared to a run of the mill loader drew strong attention from many transport operators. With its superior lift capacity, thoughtful design features and desirable cab, the new 220 loader should become a popular fixture in the Chilean forest industry.

With some additional lights and final installation, the Tigercat 220 was put to work on a 24-hour loading operation and is likely not

cont. on pg. 6.







L830 feller buncher with 5400 felling saw.

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leaving the job site. Product manager Kevin Keats made the journey to this new market for the show and demonstration and returned very excited about the prospects for this new product.

The L830 demonstration

was the pinnacle of the marketing effort. Tigercat Pacific northwest district manager, Rob Selby and Tigercat customer and operator, Blair MacKenzie were in attendance. MacKenzie who hails from Quesnel, BC acted as demo operator for the show. He quickly mastered the machine's capabilities, the conditions and the tree size.

Given the prejudice toward the wasteful nature of disc saws, he ensured that each tree was cut as close as possible to the ground and placed with perfection for the

subsequent motor-manual delimiting operation. Bunches were required to be five trees in size and trees had to be fanned in order to facilitate the delimiting activity. Compared to the traditional bar saw feller bunchers used to date, the disc saw cut consistently lower than what was expected. An added bonus using the disc saw is the "weed whacking" service it provides in clearing the site of heavy undergrowth which encumbers access for both the delimiting activity and the subsequent site preparation and planting operations.

The L830 - 5400 saw ER combination is already proving to be a great choice for this application although the "big wood" boom package with the larger 5702 saw will be a future consideration for larger trees and steeper slopes.

It is clear that the introduction of these Tigercat products is the greatest single logging technology improvement to be introduced in Chile for some time. Tigercat and Latin Equipment are proud to be spearheading the development. ■

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**Tigercat**

*powered by Mercedes-Benz*

Tracy Culp

Anthony Goad

Paul Iarocci

Gary Olsen

Please send any  
comments to:

[comments@tigercat.com](mailto:comments@tigercat.com)

# HARDWOOD LOGGING in the Soo

By Paul Iarocci

**Henson and Tregonning Logging are making the move from hand falling and cable skidding toward fully mechanized harvesting in Ontario's high value hardwood forests.**

## Who would have thought?

These days logging is a game of incremental productivity gains. At this stage in the development of timber harvesting practices in Canada, it is uncommon to see innovations that represent an entirely new and more efficient process. Such is the case with Barry Henson's selective thinning hardwood jobs near Sault Ste. Marie, Ontario.

The selective cutting that has been going on in these hardwood forests has traditionally been achieved through manual felling and cable skidding. Currently, Tigercat is participating with Henson and Tregonning Logging in overhauling the hardwood operations to gain efficiency and improve safety.

The company is owned by the Henson family; father, Barry and sons Vance and Jonathon. Barry's wife Marsha manages the office assisted by daughter, Beverly. According to Vance, "This business would not happen without them." A couple dozen fallers and equipment operators make up the three crews.

Interestingly, Barry's nephew Kevin Henson works as a product designer for Tigercat.

Starting off in a co-op position during the summer of 2002, Kevin now works full-time in the skidder group. Having run slashers and delimiters for his father and uncle, Kevin brings a unique and beneficial perspective to Tigercat.

The area north of Sault Ste. Marie, where the Hensons operate two crews, marks the western edge of the Great Lakes - St.

Lawrence tolerant hardwood forest region.

Encompassing a large portion of Ontario, this forest extends east through Sudbury, North Bay and Algonquin Provincial Park and continues into the Ottawa valley.

This huge area makes up 20% of Ontario's 70.4 million hectares (174 million acres) of forestland. Provincial government ownership consists of 3.6 million hectares (8.9 million acres) of working forest. Hard maple predominates, accounting for approximately 75% of area and wood volume.

Other merchantable species include soft maple, yellow and white birch as well as red oak, beech, white ash, hemlock and black cherry. Ontario's tolerant hardwood forest

produces high value wood products for furniture, hardwood flooring, paneling and the coffin/casket industry. The lower grade wood is used for pulp.

Although the reward is high value lumber, harvesting in this

cont. on pg. 10.



Felling large hardwoods without damaging standing trees requires a great deal of operator skill and a capable machine with ample lift capacity.



(L-R) Barry Henson, Derek Tremblay (Tigercat Ontario district manager) Vance Henson, Ivan Gravel (630C operator) and Marc Paquet (Strongco Equipment, sales).

# Tigercat Loader Line-up

Tigercat loaders benefit from quality engineering, structural integrity and a high degree of parts commonality among the different models. All Tigercat loaders are equipped with a luxury operator's station and a high capacity swing bearing.

Designed for convenient maintenance and service access, Tigercat loaders get high marks for operator comfort with respect to cab ergonomics, in-cab noise levels, climate control and smooth boom and swing functions.

## 220 loader



**ENGINE** . . . . . Cummins QSB5.9 Tier II, 155 hp  
(115 kW) @ 2200 rpm

**MAXIMUM REACH** . . . . . 27 ft. 8 in. (8.5 m)

**LIFT CAPACITY** (not incl. grapple)

At 10.5 ft (3.2 m) . . . . . 24,000 lbs (10,890 kg)

At 25 ft. (7.6 m) . . . . . 9,400 lbs (4,265 kg)

**WEIGHT** . . . . . 27,400 lbs. (12,430 kg)

Truck or trailer mounted, the 220 is a small tree-length or shortwood loader with optional ground saw and delimeter hydraulics for light duty delimiting applications. The simple, clean design incorporates a proven open-center hydraulic system and superior access to the engine, valves, filters and other service points compared with competing loaders in the 220 class.

## 230B loader



**ENGINE** . . . . . Cummins QSB5.9 Tier II, 173 hp  
(129 kW) @ 2200 rpm

**MAXIMUM REACH** . . . . . 30 ft. (9.14 m)

**LIFT CAPACITY** (not incl. grapple)

At 10 ft. (3.05 m) . . . . . 26,000 lbs (11,800 kg)

At 25 ft. (7.6 m) . . . . . 11,000 lbs (4,990 kg)

**WEIGHT** . . . . . 35,000 lbs. (15,880 kg)

The 230B is a strong, long lasting, versatile loader. Strong, wide booms and powerful swing torque make it an excellent choice for pull-through delimiting applications.

**James Rhodes, R&S Logging (Columbia, NC)** owns a 230 and 240B. The loaders work in tandem. Both loaders power ground saws and pull-through delimiters on high production pine plantation clear-fell applications.

*“That 230 has 10,000 hours on it and has never missed a day’s work. It is just as strong today as the day I bought it.”*

## 240B loader



**ENGINE** . . . . . Cummins QSB5.9 Tier II, 173 hp  
(129 kW) @ 2200 rpm

**MAXIMUM REACH** . . . . . 32 ft. (9.75 m)

**LIFT CAPACITY** (not incl. grapple)

At 10 ft. (3.05 m) . . . . . 31,000 lbs (14,080 kg)

At 25 ft. (7.6 m) . . . . . 12,800 lbs (5,800 kg)

**WEIGHT** . . . . . 38,000 lbs. (17,240 kg)

Like the 230B, the 240B is a durable, versatile loader but has more reach and higher lifting capacity than the 230B. Strong, wide booms and powerful swing torque make it an excellent choice for pull-through delimiting.

**Randy Reed, Randy Reed Logging (Hermitage, AR)** owns a 240B with over 4000 hours. *“The Tigercat is the easiest to operate,”* he says. *“Trouble free, strong and smooth. I operate the 240B. For health reasons, I have the swing function installed in the right joystick. The grapple rotate is on the toggle switch on top of the joystick. I can beat any non-Tigercat loader in production and operation.”*



**ENGINE** .....Cummins QSB5.9 Tier II, 173 hp  
(129 kW) @ 2200 rpm

**MAXIMUM REACH** .....32 ft. (9.75 m)

**LIFT CAPACITY** (not incl. grapple)

At 10 ft. (3.05 m) .....31,000 lbs (14,080 kg)

At 25 ft. (7.6 m) .....12,800 lbs (5,800 kg)

**WEIGHT** .....53,000 lbs (24,000 kg)

The T240B achieves excellent tractive effort with minimal hydraulic complexity and is capable of maneuvering around the deck or between multiple decks for truck loading, sorting and merchandising. The cab riser tilts hydraulically for transport.

*Johnny Hodge, J. Lahoun Pulpwood Co. (Hamburg, AR) operates a T245B with live heel. (The T240B replaced the T245B model) The loader has 3200 hours and loads between 35 and 40 loads a day. "The machine is stronger and smoother than the Barko 275 I ran before," claims Hodge. "I've had no problems other than a few hoses on the grapple. I like the cab. It's the largest cab I've seen on a loader. The machine is comfortable, smooth and don't wear one out. The live heel is great for side loading," he says, "and the tracks is the only way to go for me."*

**ENGINE** .....Cummins QSB5.9, 173 hp  
(129 kW) Tier II @ 2200 rpm

**MAXIMUM REACH** .....32 ft. (9.75 m)

**LIFT CAPACITY** (not incl. grapple)

At 11 ft. (3.35 m) reach .....32,500 lbs (14,740 kg)

At 25 ft. (7.62 m) reach .....13,280 lbs (6,025 kg)

**WEIGHT** .....40,000 lbs. (18,000 kg)

The 244 is a high pressure loader standard equipped with bar saw slasher and delimber hydraulics. The 244 matches or outperforms other loaders in its class at a competitive price.

**ENGINE** .....Cummins 6CTAA8.3, 205 hp  
(153 kW) Tier II @ 2200 rpm

**MAXIMUM REACH** .....32 ft. (9.75 m)

**LIFT CAPACITY** (not incl. grapple)

At 11 ft. (3.35 m) reach .....35,000 lbs (15,875 kg)

At 25 ft. (7.62 m) reach .....14,000 lbs (6,350 kg)

**WEIGHT** .....44,000 lbs. (19,960 kg)

The 250 has a loading sensing flow-on-demand hydraulic system common to Tigercat track feller bunchers for high performance and simultaneous control of all machine functions. The 250 is suited to bar and circle saw slashing, tough duty cycle pull-through delimiting and high production loading applications.

**ENGINE** .....Cummins 6CTAA8.3, 205 hp  
(153 kW) Tier II @ 2200 rpm

**MAXIMUM REACH** .....32 ft. (9.75 m)

**LIFT CAPACITY** (not incl. grapple)

At 11 ft. (3.35 m) reach .....35,000 lbs (15,875 kg)

At 25 ft. (7.62 m) reach .....14,000 lbs (6,350 kg)

**WEIGHT** .....57,000 lbs (25,850 kg)

The T250 is a high production loader with powerful tractive effort and a Tigercat-built forest duty undercarriage for mobility between decks and light shovel logging applications. The loading sensing flow-on-demand hydraulic system is common to Tigercat track feller bunchers and enables the T250 to also act as a harvester carrier. The T250 is suited to bar and circle saw slashing, tough duty cycle pull-through delimiting, sorting, shovel logging and high production loading applications.

## T240B track loader



## 244 loader



## 250 loader



## T250 track loader





Hills, rocks and leaning trees; not an easy feller buncher application.

cont. from pg. 7.

forest presents its own set of peculiar challenges. To start with, clear felling is not an option. The provincial government allows private timber companies to operate on crown land subject to very strict regulations. The government also allows harvesting in provincial parks in order to maintain the health of the forests and to subsidize the costs of operating the parks.

Maintaining the existing forest is of utmost priority. Because the trees are sensitive to changes in sunlight intensity, the canopy must remain intact and standing trees and understory cannot be damaged. Contractors must work within tight operating parameters or face hefty fines for infractions, accidental or otherwise.

Rutting is not permitted nor are large landings or excessive road building. The terrain is steep, rocky, uneven and inconsistent. Extracting too many trees leaves the residual stand too exposed to wind damage and blow down so the trees marked for cutting are scattered and unconcentrated requiring a great deal of travel from one to the next. The trees themselves are large, top-heavy, old, crooked and leaning every direction. Taking all these challenges into consideration, mechanized logging does not seem to be a good fit. It seems that the machines would be too hard on the forest and the forest too hard on the machines.

Vance Henson went with Strongco representatives to the 822 feller buncher and processor at work on a Tembec site near

Huntsville early in 2002. The machines were working on a trial basis to assess the feasibility of mechanizing Tembec's hardwood operations in Algonquin Park. Vance was impressed with what he saw. The conditions were terrible, similar to what Henson and Tregonning have been up against for the last 30 years.

No stranger to Tigercat, the Hensons have a '97 853 feller buncher working on a softwood job further north in Wawa. It's been a good machine," says Vance. "12,000 hours on the original engine."

Eventually in February 2002 Barry, Vance and Jonathon decided on an 822 feller buncher with the F6155 undercarriage (the larger of the two D6 options) and 490 L (130 US gal.) fuel tank. They credit the purchase to a number of factors including what they saw on the Tembec job, their past experiences with the 853 and according to Vance "we bought Tigercats largely because of good sales and service from Strongco."

The 822 was purchased to replace hand fallers and although there were pains associated with the operational changes, the machine performed well enough that the Hensons acquired a second 822 in July of 2003. Reliability of both machines has thus far been

excellent. The first 822 has logged over 2,900 hours and the second, 800 hours.

Both are equipped with Quadco 2800 intermittent saws. Aside from the large 28 in. (710 mm) cut capacity required for hardwood, the intermittent saw offers another important advantage. Understory damage is minimized because the saw is not constantly mowing down everything in its path. It is much easier to pick-up, manipulate and bunch fallen trees for the skidder because the operator can grab the tree anywhere without having to worry about a blade spinning at 1,100 rpm.

Roger Mayll operates the older of the two machines and Dave Strum operates the new ER equipped 822.

Strum, who has worked for Henson and Tregonning for ten-years, used to operate the 853 on Henson's softwood crew. On



822 buncher operator, Roger Mayll.



822 buncher operator Dave Strum.



switching from poplar to hardwood he says, “The worst thing to get used to was the tree count. You are used to cutting 2000 trees a day and then you are cutting 350 in a ten-hour shift.”

On switching from the 853 to the 822, “The ER machine is faster compared with the old 853,” he says. “The boom is really fast... its vicious. You hit the joystick and it’s out there.”

A tank of fuel easily lasts an 11-hour shift. Neither of the operators mind that there is not a rear window. The large fuel tank option eliminates the rear window. “You don’t really need it,” comments Strum, “and the right side visibility is good. I love this machine. The only thing missing in the cab is a colour TV.”

In terms of power and performance, the machine exceeds all expectations. As noted earlier, the terrain is tough with lots of steep hills and rocky soil. With the 240 hp Tier II Cummins QSC8.3, the 822 has more power than the larger 853 that Strum operated previously. “When you go up a steep hill backwards... man can it climb,” Strum confirms.

Also important to the hardwood application is boom lifting force. Because of the size of the trees, the large Quadco 2800 saw is a requirement. The buncher must be able to handle this 2,970 kg (6,550 lb) head in addition to the large hardwoods that are being felled. “They have to keep good control of the trees and carefully direct them as they are falling,” explains Ontario district manager, Derek Tremblay.

The 630C was skidding 1 km. To keep up productivity on 30-45 minutes turns, every extra tree in the grapple counts.



“It’s very important not to damage the other standing trees.”

The Hensons tried some competing machines but they just did not have the lifting power and could not do the job. “The 822 is in a bit of a class of its own up here,” adds Marc Paquet, sales representative for Strongco Equipment. “It’s a zero tail-swing machine with enough lift for the application.”

The feller buncher also has to be extremely strong, well built and well guarded. The large limbs have a tendency to break off and the top-heavy hardwoods are difficult to control and sometimes fall back onto the machine. For durability, the 822 lands on top of all competitive models.

To further improve productivity, Henson and Tregonning Logging recently took delivery of a 630C skidder on a rental-purchase plan. It is the first to appear in Ontario and early impressions are positive. “Everything about the access is good,” comments Vance. “I like that the radiator is not in the front. It won’t pick up sticks that way.”

The 630C is radically different from the B-series machine. Tigercat designers flipped the engine around and removed the pump drive gearbox. The inline pumps are now located in the front frame underneath the coolers and the tilting cab. The engine is at the front of the machine and completely isolated from the hydraulics. The nose of the machine tilts forward serving as a service platform in the open position. From the platform, the entire engine is easily accessed.

The Hensons ordered the machine with the new 1.72 m<sup>2</sup> (18.5 sq.ft.) dual cylinder grapple.

“For the hardwood, the constant pressure grapple is really good,” says 630C operator, Ivan Gravel.



cont. on pg. 12.



cont. from pg. 11.

Because the trees are heavy and vary in diameter from 250-750 mm (10-30 in.), the size, shape and clamping force of the grapple were all important factors in the purchase decision.

The Hensons tried other skidders before deciding on the 630C. Vance explains that they were all getting similar fuel economy but the 630C had more power and was achieving more production. "On a hardwood job where the trees are high value and low volume, it is easy to quantify productivity, explains Tremblay. "The 630C was pulling eight trees and the competitive machines with smaller grapples and less power were pulling five trees."

The increased payload should allow the Hensons to use longer skid trails and to get by with fewer roads. Aside from the associated cost savings, this will result in less soil disturbance and less impact on the canopy. Although skidding distances can go as far as a kilometre (0.6 mi.), Barry will aim for 300-600 m (1000-2000 ft.) skidder trails.

When asked if the size and weight of the 630C compared to the cable skidders would pose any problems, Gravel asserted, "I figure I'll be able to go anywhere a cable skidder will go. The skid roads aren't any bigger either."

It is Barry's hope that one 630C should be able to follow the 822 feller buncher, greatly reducing equipment maintenance and manpower costs. The 822 and 630C combination replaces approximately eight hand fallers and four cable skidders leaving just one or two chainsaw operators on the ground for topping at the stump.

After the skidder brings the trees to roadside, the slashers cut everything into shortwood then sort by species. The saw logs go to a mill in Sault Ste. Marie and the hardwood pulp goes to Espanola. Henson owns the slashers but contracts the trucks. "We were looking into trucks but Tigercat doesn't make one yet," says Barry with a half smile. ■



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# Balancing productivity and landowner concerns

By Paul Iarocci

In Sweden, row thinning is never a desirable option for thinning forests. Private land owners wish to extract merchantable timber from their land while preserving the forest as a whole, along with the associated aesthetics. In these applications, forwarder roads are spaced every 40 m (130 ft.) The harvester travels inside the stand, selecting the timber to be extracted and ensuring that it is processed within range of the forwarder.

Magnus Kempe of EKG explains, “The fewer forwarder roads, the better the thinning result. The quality of the tree selection will increase and the value of the growing forest also increases.”

EKG (Economical Quality Thinning in Trångsviken AB) is owned by Bruno Kempe, his nephew Magnus and Pelle Sahlin. The operational work is done by Bruno and Magnus. Sahlin looks after the administrative and sales side. Many new customer contracts are signed when the neighbouring forest owners see the results of EKG’s thinning operations.

“With the H09, EKG cuts two in-stand thinning routes between every two forwarder roads and feeds out the wood such that the forwarder driver can easily reach processed timber even though the distance is 40 to 44 metres,” explains Göran Persson, Tigercat AB general manager.

Bruno elaborates, “The background to our strategy was that we wanted to combine the ambition of doing a good job and also think in a long term way. Luckily, many forest owners have shown appreciation over the way we are working and I am not surprised over that myself. The fact that private forest owners prefer growing trees in their forests rather than naked forwarder roads every twenty meters feels rather obvious.”

This all adds up to a great deal of precise maneuvering as well as demanding power requirements. No harvester is better suited to the task than the Tigercat H09.

The H09 eight-wheel drive harvester is 1.9 m (75 in.) or 2.1 m (83 in.) wide depending on tire size. It can maneuver within the stand unlike any other machine. The tapered cab helps the operator avoid contact with standing timber. The innovative Mowi crane system tilts 15 degrees to each side, allowing the operator to manipulate the crane to sneak past standing trees, further increasing the agility of the H09.

“When you want to have in-stand thinning harvesters there are not many to choose from. When we realized that the change of

brand to Tigercat resulted in a production increase of more than 20% we stopped looking. The difference is very big and means a lot to our economic result. On top of this we also gained a lot in terms of comfort

since Tigercat’s harvester offers a spacious and comfortable cabin, double bogies and very good stability,” Bruno comments.

With the H09 harvesters, EKG is able to offer a premium service to the landowner

**Swedish contractor realizes that Tigercat H09 is the best choice for low impact in-stand thinning.**

“When we realized that the change of brand to Tigercat resulted in a production increase of more than 20% we stopped looking.”

— Bruno Kempe, EKG

cont. on pg. 14.

Tigercat H09 performing in tight quarters.







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The Mowi crane tilts side-to-side to avoid standing trees.

cont. from  
pg. 13.

while improving productivity. EKG offers fixed prices per cubic meter to forest owners, then harvests and forwards out the timber and pulpwood and sells it to sawmills and pulp mills.

As testament to the H09's ability to operate in the stand with minimal impact and high productivity, EKG has purchased two H09 harvesters within a year.

The H09 was recently enhanced with a 180 hp (134 kW) Iveco turbo diesel engine, providing ample power for multi-functioning. Traveling while operating boom and harvester head functions is a common task in the tight working environment characteristic of in-stand thinning.

The H09, the only eight-wheel drive harvester in its class, achieves reduced ground pressure, less soil disturbance and a smooth ride.

Every H09 harvester is delivered with a spare parts kit. The kit contains the consumables required to keep the harvester and harvester head in operation. It has proven very useful.

Bruno comments on the parts availability. "We have almost everything we might need in the pallet and as soon as I have exchanged something I order this part and restore the kit. It is mainly wear parts for the head and it is worth a lot for us to have these parts here in the forest and not have to wait for parts and stop producing. If there should be something we need to order we will get parts the same day from Tigercat AB."



Although the H09 is a niche-market machine in Sweden, there are potential applications in other parts of the world. For example, in some cases a species may be so sensitive to its environment that it needs

consistent, even light. Row thinning exposes the trees such that too much light comes from one direction. The H09 could extract trees evenly without the need to open wide rows. ■

# In-stand Thinning: How they do it

By Göran Persson, Tigercat AB general manager

In this example the H09 harvester has a 7.5 m (24.5 ft.) crane reach. The harvested trees represented by green are loaded from forwarder road 1. The harvested trees represented by brown are loaded from forwarder road 2.

## Pass 1

The H09 cuts the first forwarder road and thins approximately 7.5 m (24.5 ft.) on each side of this road, processing all the trees.

## Pass 2

(parallel to pass one, approximately 15 m (49 ft.) to the east)

The H09 travels in the stand, thinning 7.5 m (24.5 ft.) to each side. All wood is processed to the west of this path where the forwarder can reach the wood from the first forwarder road. The harvester maneuvers around the trees during pass 2. This path does not resemble a road.

During pass 2, the H09 fells a 'sight line' tree approximately every 30 m (100 ft.). This tree is cut as far as the harvester can reach to the east and oriented at a 90° angle to the forwarder road. The sight line trees are not processed.

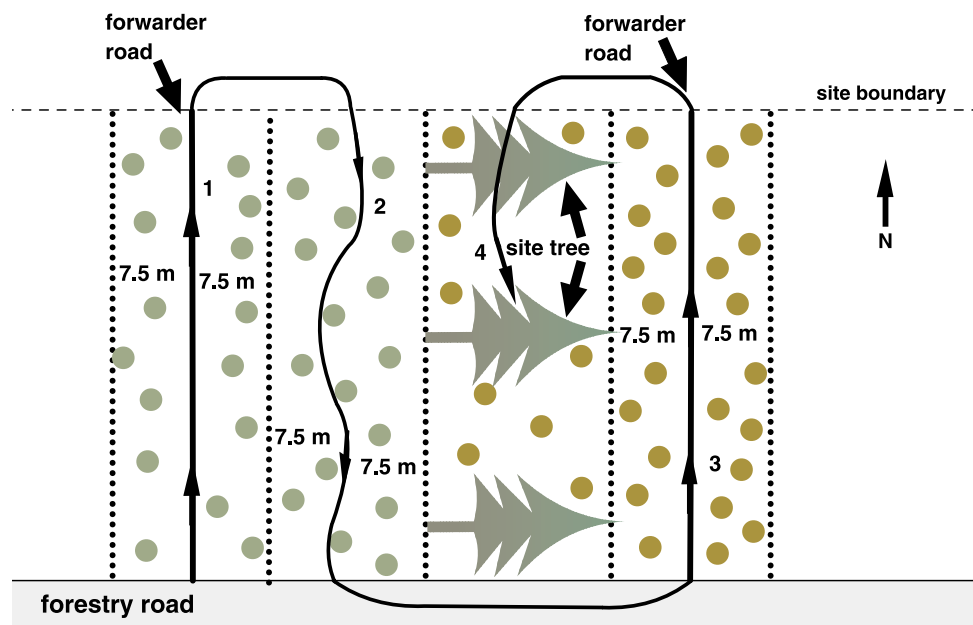
## Pass 3

The harvester turns east along the forestry road and passes the sight tree. When the harvester gets to a position east of the sight tree where it can just reach the top of that tree, the harvester cuts the second forwarder road, thinning on both sides. The H09 also processes the sight line trees.

## Pass 4

The H09 gets to the site boundary, turns to west and does a fourth pass in the remaining stand between pass 2 and 3. The processed wood is placed to the east so the forwarder can reach it from the second forwarder road.

By using this method the H09 can effectively thin with 40-44 m (130-145 ft.) forwarder road spacing even though the crane reaches only 7.5 m (24.5 ft.). ■



# Tigercat Industries Inc. sponsors Design Award for Conestoga College

By Tracy Culp

The final engineering project of the Mechanical Engineering Technology Design and Analysis co-op program at Conestoga College in Kitchener, Ontario requires students to complete a design, produce a full engineering report and conduct a formal presentation for the Mechanical Engineering Technology faculty.

Tigercat mechanical designer Jeff Lotz approached Tigercat with a proposal to sponsor the Best Overall Design and Analysis Engineering Report Award. "I thought the award sponsorship would be a great opportunity to promote Tigercat within the college as a co-op and post graduation employer," comments Lotz.

Lotz is a graduate of the program and this summer received the Mastercraft Award from Conestoga College for his research and design of a remotely operated submersible vehicle. The project included a design of the entire vehicle, a 1,000-page report, 205 engineering drawings and a three-dimensional computer model.

Mechanical Engineering Technology faculty member Mike Verwey describes the final project as "very intense." According to Verwey, the project is based on a 400 to 500 hour commitment and some students take on more challenging projects, adding even more engineering time to the project.

This year's award recipients, Sean Phillips and Colin Durdon, have since accepted positions at Tigercat. "We are happy to have them here," says Jon Cooper, product manager for cut-to-length products. "They were very successful students in the program, they both interviewed well and are now working effectively as members of the design teams we've matched them with."

Phillips chose to design a hydraulic backhoe arm while Durdon and his group worked on a design for an all-terrain vehicle. Both Durdon and Phillips identified time management skills and technical software knowledge as key elements to completing the projects.

"I took it upon myself to learn more about some of the technical software programs available in the college's computer lab," says Phillips. "This was a complex project. I logged over 700 hours and often put in 15 hour days at school. I needed to find a way to become more efficient with my time. By using the updated software I was able to streamline the design process."

Durdon comments that the "mini baja" design that his group selected offered a unique challenge because a design for this type of vehicle had never been submitted. "A copy of all the projects are kept in the school for reference but this project had

never been handled by anyone at Conestoga before so we had no material in the school to reference. Most of the basic information was gathered from SAE specs. After that it was a collaborative effort to determine how the vehicle would be assembled for functioning efficiencies."

Durdon worked with two co-designers on the project. "Between the three of us, we were able share the workload of a more challenging project. The level of difficulty of this project required each of us to put in about 700 hours of design and analysis time."

Each year the students showcase their projects to supporters of the co-op program and other representatives of local industry. The faculty presents two students with the Best Overall Design and Analysis Engineering Report Award.

"Sponsoring the award is a great way to get into the school, meet the winning students and discuss their work," says Cooper. "We look at the awards event as an opportunity to conduct informal interviews with the students. I was impressed by the students I met. They represented the program with professionalism and their projects demonstrated exceptional engineering capabilities."

When asked if Tigercat will continue to sponsor the award, engineering administrator, Robin Barker enthusiastically responded, "Sure, sponsoring an award like this is a chance for us to connect with the top students in the class just as they are preparing to enter the workforce." Barker went on to discuss the company's support of cooperative education saying that the programs present the company with an opportunity to bring the students in for a three to four month work term and assess their abilities. "Over the course of that employment term we can determine where and how well the student will fit into the Tigercat team. If we are impressed with their performance we will offer them a position post graduation." ■



(L-R) Colin Durdon, Jeff Lotz, Sean Phillips.

## Letters to the Editor:

E-mail: [comments@tigercat.com](mailto:comments@tigercat.com)

Internet: [www.tigercat.com](http://www.tigercat.com)

Tel: (519) 442-1000

Mail: 40 Consolidated Drive, P.O. Box 544, Paris, ON Canada, N3L 3T6

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