

# B E T W E E N the BRANCHES

## One Good Leveler Leads To Another

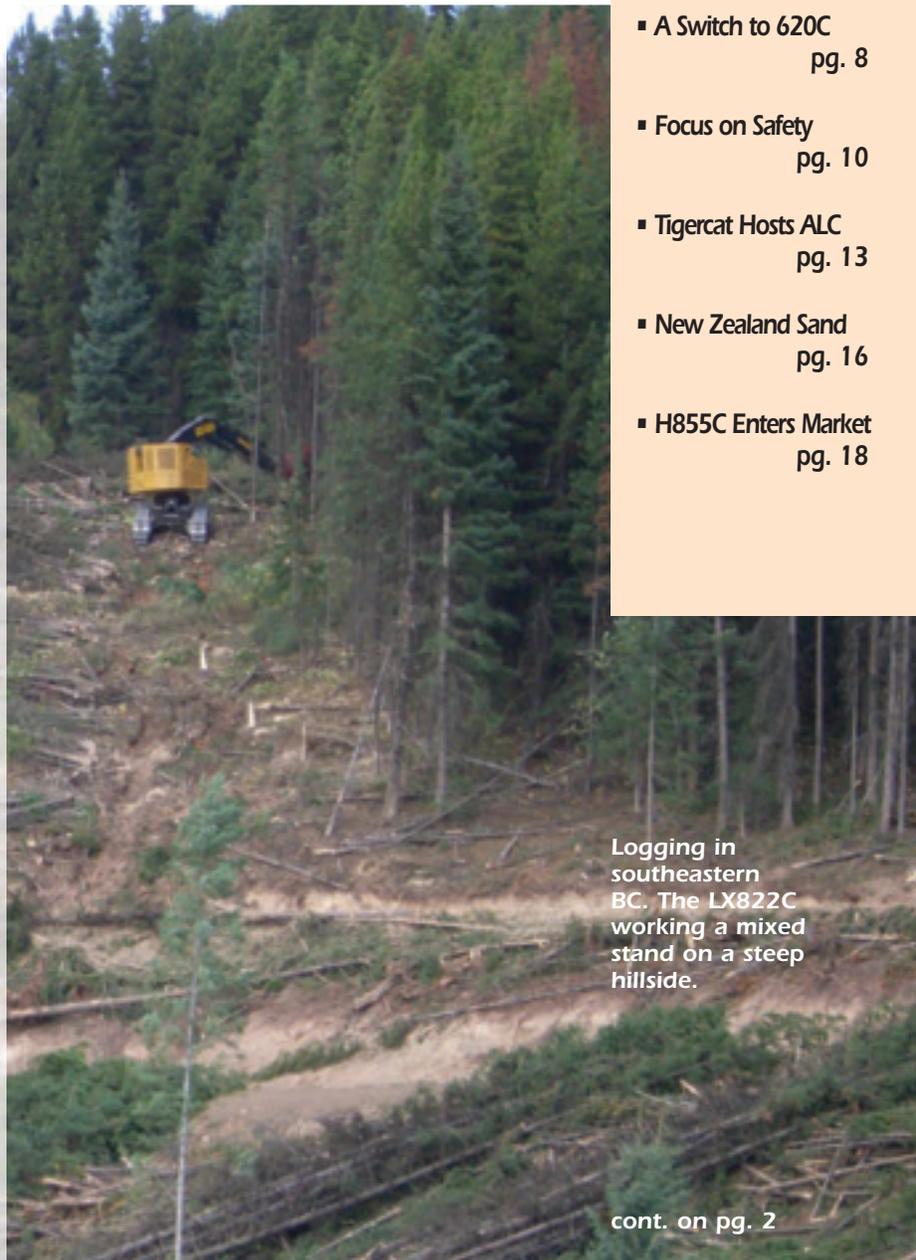
– Bruce Vaile, senior designer

In 2000 Tigercat introduced the two-cylinder style R7150L leveling undercarriage equipped with FH400 (approximately D7 sized) track components for use on the L830 and later the L870 series feller bunchers. At the time, the steel work appeared large compared to other machines and the patented geometry of the tilting mechanism seemed to work well in a variety of mountainous conditions. Time has now proven the elements of this design to provide exceptional life and superior stability.

The same design elements have been applied to the new R6152L leveling undercarriage with F8 (D6 sized) track components. The prototype has been mated to an 822C platform equipped with closed loop track drives. The primary goals of the new leveler were to reduce weight and provide a lower cost leveling undercarriage that would work well with smaller platforms offered by Tigercat.

In addition to the L822C/LX822C, the new undercarriage will eventually be the standard lower for the LH822C, L845C and LH845C. The leveling angles achieved under the 822C platform are 26 degrees forward, 6 degrees to the rear and 20 degrees side to side. The 845C platform has more tail swing, causing a reduction in tilt angles: 21 degrees forward and 16 degrees side to side. The rear tilt angle is unchanged at 6 degrees.

The roller bearing components used in the major pivot axis are identical to those used in the larger R7150L leveling system. The seal



Logging in southeastern BC. The LX822C working a mixed stand on a steep hillside.

### I N S I D E

- Dealer News  
pg. 4
- Contractor Profile  
pg. 5
- A Switch to 620C  
pg. 8
- Focus on Safety  
pg. 10
- Tigercat Hosts ALC  
pg. 13
- New Zealand Sand  
pg. 16
- H855C Enters Market  
pg. 18

cont. on pg. 2



cont. from pg. 1 packs and ball bushings used in the leveling cylinders are common as well. The use of common components assists Tigercat dealers in providing critical part support for both undercarriages.

### Does it work?

The prototype LX822C (the 'X' denotes closed loop track drives) was purchased by Dixon Trucking Ltd. of Elko, British Columbia. Located about 60 km (35 mi) east of Cranbrook, Dixon Trucking is one of the area's predominate logging contractors. Wally Dixon started the business with a single logging truck in 1961 and added his first piece of equipment – one of the first Timberjack 404 skidders – in 1968.

Today, Dixon Trucking Ltd. is owned by Wally and his two sons Gary and Allan. The company employs 34 including Allan's son (Wally's grandson) Jamie. The equipment line-up includes four leveling feller bunchers, four grapple skidders, two cable skidders, two track skidders, five processors as well as rock trucks, dozers and a fleet of Kenworth logging trucks.

The LX822C prototype was designed and built for the Dixons based on their requirements, the recommendations of Tigercat's BC distributor, Parker Pacific and Tigercat's ten years of experience with leveling feller bunchers. Although Tigercat already offers the LX830C, a zero tail-swing leveling feller buncher with closed loop track drives, the Dixons were looking for a narrower, lighter machine closer in size to the Timbco 425 units they were accustomed to running.

According to British Columbia district manager Rob Selby, this is not the first time Dixon

Trucking has helped pioneer new machines. "Their Timberjack 480T track skidder and wheel-based Liebherr 934 with a special lift cab for loading are other examples," he says.

The operations of Dixon Trucking consist of felling, skidding, processing, sorting and hauling to the mill. The company produces about 130 000 m<sup>3</sup> (approximately 130,000 tn) annually for Tembec. Most of the harvesting takes place in steep, mountainous terrain with a mix of species including pine, spruce, balsam, fir and larch. The cut sites tend to be size specific and are selected by the mill depending on market conditions and demand levels for pulp and dimensional lumber.

The LX822C is currently felling a 17 000 m<sup>3</sup> (17,000 tn) block between Sparwood and Elkford in the Rocky Mountain range of southeastern BC. 60% of the timber is pulpwood averaging a diameter of 20-25 cm (8-10 in). The terrain is steep with slopes averaging 40-50%.

**Wally Dixon (centre) with sons Allan (on his right) and Gary (on his left) in the yard at the Dixon Trucking shop in Elko, BC.**



Wally mentions that one of the bigger challenges facing Dixon Trucking is the difficulty in finding good employees. Case in point, during

my visit in September, one of the skidders was parked because the company was short an operator. The small pulpwood and beetle-kill wood combined with the steep slopes present additional challenges. Felling and processing small stems increases the company's cost per ton; productivity decreases and wear and tear on the feller buncher increases due to the increased boom and swing cycles.

As of late September, the machine had clocked 180 hours. Feedback has been very positive. The lighter weight LX822C climbs hills more quickly than the LX830C and will likely achieve better fuel economy without giving up too much of the stability that has made the 35 000 kg (76,000 lb) L830 series machines so popular in BC and the Pacific Northwest.

With capable personnel and a well equipped shop, the Dixons understand how to get the most out of the equipment. Coming off Timbco feller bunchers, Gary Dixon and operator Clay Nickels who has worked for Dixon Trucking for 20 years, both adapted easily to the controls of the LX822C. The speed and planer motion of the Tigercat ER boom system is a feature both men picked up on and appreciated straight away.

When asked about the machine, Nickels said he was very impressed with the smooth, consistent power of the machine functions. He also commented favourably on the track power and stability. With the small wood and high boom cycles, Nickels liked the ER boom feature which he found to be fast and smooth and easier on his wrists due to the reduced joystick movement required compared to his previous machine. He found the cab to be comfortable and well laid out. He also liked the track drive speed control lever. Nickels noted the low temperatures of the engine, hydraulic oil and track drive gearbox compared to other machines he has run.



The new F8 leveling undercarriage is 280 mm (11 in) narrower and 4 090 kg (9,000 lb) lighter than the FH400 leveler but has the same track length. According to Gary, the undercarriage provides a smooth ride and stable arrangement. The bottom corner of the track drive motor housing is clipped, preventing the undercarriage from plowing a furrow through the soil. This leaves extra power available for hill climbing.

The Parker Pacific branch in Cranbrook provides skilled on-site equipment service and supports the Dixon truck fleet as required. The relationship Parker Pacific has built with the Dixons was a big factor in the purchase decision of the Tigercat. Selby points out that service manager, Darren Pickering and field mechanics, Jason Quaife and Neil Featherling provide top notch service support. Salesman Steve Carter and branch manager Dale Felhauer recognize the importance of working closely with the area's successful loggers as the up and coming contractors watch the leaders and their equipment choices.

Tigercat and Parker Pacific will continue to monitor this new leveling system and respond to any issues this new product may have. With hundreds of thousands of hours on the original levelers, we think the list of issues will be a short one. ■

**The prototype LX822C with Tigercat's new F8 leveling undercarriage.**

## DEALER NEWS

### Tigercat appoints new Canadian distributor



Tigercat is very pleased to announce that it has appointed Wajax Industries as its exclusive, authorized full-line distributor for the provinces of Alberta, Ontario, Quebec, New Brunswick and Nova Scotia, effective December 1, 2007. Founded in 1858 and currently employing 2,600, Wajax is a publicly traded company with extensive forestry equipment industry experience.

Wajax is highly focused on providing exceptional product support and after sale service. To that end the company's mobile equipment division employs over 1,000 employees in 30 locations throughout Canada. Wajax has a strong commitment to the forestry market. Due to its lengthy history in the industry, Wajax commands extensive knowledge and expertise in all types of logging operations.

With branches strategically located in forestry regions and highly experienced personnel, Wajax is well equipped to provide the highest levels of service to the forestry customer base. Wajax will be an excellent complement to Tigercat's full line of premium quality forestry equipment.

Tigercat and Wajax will work hard not only to

ensure that there is no interruption in service to existing Tigercat customers, but also to significantly improve the level of customer support. ■

## Tigercat Product Support Bulletins

In addition to premium quality products, a great deal of Tigercat's success can be attributed to superior after sale product support.

In a continuous effort to maximize machine uptime, productivity and reliability, Tigercat on occasion publishes a range of Product Support Bulletins (PSBs). These PSBs are technical documents that notify the Tigercat dealer network of available updates and product improvements for machines that are currently operating.

Many of these updates are available at no charge to the Tigercat machine owner. Please contact your Tigercat dealer periodically to determine if there are any updates that may apply to your machine and to arrange a time to have PSB updates installed. ■

The advertisement features a large background image of a yellow excavator with a grapple saw attachment in a forest. The text is overlaid on the left side. At the top, it says 'HULTDINS SUPERSAW™ GRAPPLE SAWS'. Below that, a smaller image shows the grapple saw attachment. The main headline reads 'SuperSaw. You'll wonder how you got along without one.' A sub-headline says 'For the 101 jobs where you need a chainsaw, switch to the safety of a Hultdins Grapple Saw on your loader, shovel logger/hoe chucker, chipper and excavator.' A list of benefits follows: 'Unplug bottlenecks • Trim butts, and merchandise • Remove difficult limbs or forked stems • Salvage storm damaged timber • Tough jobs handled easily with finger tip control from the comfort of your cab'. A quote states: 'To make your operation safer and more profitable, or to just tidy up your landing - choose a Hultdins Grapple Saw. You can't go wrong.' The Hultdins logo is at the bottom left, and contact information is at the bottom right. A green oval with the text 'SuperCut™ Inside' is positioned over the excavator's tracks.

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**SuperSaw. You'll wonder how you got along without one.**

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*To make your operation safer and more profitable, or to just tidy up your landing - choose a Hultdins Grapple Saw. You can't go wrong.*

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SuperCut™ Inside

# Contractor Profile: Irish Family Logging

**Maine contractor, Irish Family Logging uses Tigercat machines for felling, skidding and loading.**

– Mike Ross

Located in Peru, Maine, Andy Irish started his business back in 1984 with a Ranger cable skidder and chainsaws. All the timber was manually felled, limbed and topped, before being pulled to the landing by the cable skidder. In 2000, Irish Family Logging became fully mechanized with track feller bunchers, skidders, trailer mounted loaders and stroke delimiters. The company was one of the first in the state to gain status as a certified Master Logger.

Today, the equipment line-up consists of two 822 Tigercat feller bunchers, three Tigercat 630C skidders, two Tigercat 244 loaders running circle saw slashers, two excavator-based stroke delimiters and two Sterling log trucks. The equipment is split up between two crews which normally work within the same road system. All Tigercat equipment is purchased through West Mount Inc. in Farmington, Maine which is only 50 km (30 mi) from Andy's home.

The company harvests 1 000-1 200 ha (2,500-3,000 acres) per year and on average produces 63 loads each week, 45 weeks per year for annual production of approximately 90 000 tonnes (100,000 tn). Typically, each of the 13 employees work between 55-60 hours in a five day week. Andy tries to keep the crews within an 80 km (50 mi) radius of his home.

All of Irish's harvesting is done on land purchased by Wagner Forest Management within the last couple of years when local mills



like International Paper and Mead were selling off approximately 2 000 000 ha (5,000,000 acres). A combination of clear felling and selective felling, Maine's annual harvest is 6,000,000 cords equating to a yield of about 12 cords per acre. (A cord of spruce pulpwood weighs approximately 2,5 tonnes.)

Andy says he is very fortunate to be working for Wagner, the largest land management company in the state. "When you work for someone who wants you to succeed, you will both be successful," says Andy. "It is just a win-win situation!"

75-80% of the Irish's annual harvest is pulpwood which supplies New Page mill. The saw timber consisting mainly of spruce and fir is marketed to various sawmills up to 110 km (70 mi) away. White pine is taken to the local Irving sawmill and sometimes a little further to the Hancock sawmill. Other species of hardwood saw timber which make up about 20% of the overall hardwood cut include white and yellow birch, oak, ash and red maple. In the past when the Maine market was soft, the spruce and fir were taken to mills in Canada but with the additional permits, duties and the longer hauling distances, this is not an optimal solution.

Wood is brought to the landing by the Tigercat skidders. Because Andy has three 630C skidders, the skid distance determines which crew Andy

**Andy Irish (left) with feller buncher operator Frank Hamnael in a mixed stand.**

**"When you pay more for the equipment, you should expect more and with Tigercat, you get it."**

– Andy Irish

**cont. on pg. 6**

cont. from pg. 5 will deploy a second skidder to. The trees are limbed, topped and stacked by the stroke delimeter. Working alongside the delimeter, the circle saw slasher equipped Tigercat 244 bucks and loads the logs. The skidder takes tops and limbs back into the forest, depositing the loads on the skid trail to protect the ground and root mass and reduce rutting in soft terrain. "I am not sure what we will do once we are required to use the branches and tops for biomass," wonders Andy. "Maybe the Tigercat 635C six-wheel drive skidder will have low enough ground impact without any additional underlay required."

Despite the extremely steep terrain that is often encountered, the operators favour flat bottom feller bunchers. Both Brian Philbrick and Frank Hamnael have operated Timbco leveling bunchers but found they had "too many controls" and operator comfort was not as good. The operators do not mind sitting at an angle for many hours everyday and are so used to working the hills, they can handle the trees and put them in bunches for the skidders with ease. Andy says there are a lot of leveling feller bunchers working in similar terrain in Maine but with flat bottom machines they are able to save a lot of money on the initial purchase as well as with maintenance costs.

"The 822 is a very stable machine," says Andy. "We used to run Tigercat 845B feller bunchers prior to the 822. When we switched to the 822, our production increased by 25%." He admits the only real issue they have had with the machines was the unacceptably short track life with the 610 mm (24 in) single grouser shoes. Once he replaced them with the 710 mm (28 in) single grouser tri-track, the problem went

away. Andy now considers the tri-track to be indispensable. "The ground conditions with all of the rocks and hills is extremely hard on any undercarriage," he says.

Andy is always fair to his employees and strives to keep them for the "long haul." He



**The 244 loaders are equipped with circle saw slashers.**

feels that by treating them as a team, paying competitive wages and keeping late model equipment, they will stay. "I try not to keep equipment longer than four or five years even if it is in good working condition," explains Andy. "Down time costs too much and that is not something I want to gamble with." He has tried to maintain this philosophy even when the market is soft. "It is better to come out of a soft market with newer machines than much

**94% privately owned, Maine's forests are among the most biologically diverse in North America with eleven types of conifer and 54 broad leaf species.**



older ones. When things start to pick up again, I know my equipment is ready to go.” Keeping machines running is top priority and is not taken lightly. Irish Family Logging has its own super duty Ford F650 service truck equipped with a Maintainer truck body.

Andy’s son Jason operates a 244 loader and began working with his father starting at a very young age. At 25, he has a great deal of operating and maintenance experience under his belt. Lately Andy has had Jason participate in bank and other business meetings to introduce him to the financial side of the business. Andy’s wife Kathy is also involved in the business and their daughter Nicole is finishing up her Masters as a CPA. Nicole plans on helping with the family business once she is finished her schooling.

Sticking with one manufacturer, Andy is able to keep his operators multi-functional and efficient with respect to operating other machines if necessary. Stocking parts is less costly when there is component overlap from



machine to machine as there is with Tigercat equipment. “Tigercat equipment is the premium choice of equipment,” says Andy. “When you pay more for the equipment, you should expect more and with Tigercat, you get it. The quality of the machines, the high productivity as well as the price per ton make it an easy choice to keep with Tigercat machines.” ■

**One of Irish’s three 630C skidders. He attracts good operators by paying competitive wages and keeping late model equipment.**

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# Arkansas Logger Switches to Tigercat 620C Skidder

– Heinz Pfeifer, district manager for southern central US

(L-R) Burton Nowlen with Darrell Windham, Tidewater Equipment and skidder operator Daniel Sawyer.

Burton Nowlen, owner of Burton Nowlen Logging based in Monticello, Arkansas began logging in the southeastern part of the state 25 years ago with Chuck Hoover and Daniel Thompson. The trio cut and hauled short wood with a pulpwood boom truck. All have since become successful, hardworking loggers and Tigercat customers.

Today, Nowlen works with his son BJ and five other employees. The company harvests mostly private timber which Nowlen purchases, merchandises and markets. The vast majority of the stands are mature pine or hardwood. Because Nowlen works on private land, a clean, quality job is his primary concern. Consequently,



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production varies widely from 250 to 550 tons (225-500 t) per day in terrain ranging from very flat and dry to rolling hills and soggy river bottoms. Darrell Windham, salesman for Tigercat dealer, Tidewater Equipment in Warren, Arkansas says, "I have never went to one of Burton's jobs that he did not leave in better shape than when he arrived. Treating his client's land and timber like his own has contributed to his success."

Recognizing the efficiencies to be gained from running one larger skidder instead of two small capacity machines, Nowlen switched to a single skidder operation about five years ago. He cites lower labour costs as one of the major advantages of this system. Nowlen tries to keep skidding distances under a quarter mile (400 m) and uses a dozer and grader to build and maintain the haul roads.

All hauling is done with three company owned Mack trucks equipped with scales to ensure the correct payload which is usually 28 tons (25 t). Each crew member is assigned responsibility for the care and maintenance of the machine or truck that he operates. "I will put them up against anyone's crew for maintenance and keeping the equipment looking good," says Windham.

Although Burton has primarily used John Deere equipment, in 2004 he purchased his first Tigercat, a 720D drive-to-tree feller buncher. He traded this machine for a new 720E model in the spring of this year. When it came time to replace his John Deere 748GIII he listened to his skidder operator, Daniel Sawyer and tried out a Tigercat 620C. He was pleased with the machine and purchased it in July 2007.

This purchase prompted a representative from



the local John Deere dealer to visit Burton on his job site to find out what possessed him to buy a Tigercat skidder. Burton invited the representative to drive the 620C to find out for himself.

In response, John Deere sent a team of engineers to Nowlen's job site in early September to inspect the 620C skidder. Among other tests, they measured noise levels inside and outside of the cab and asked Sawyer what they needed to do to make the John Deere as good as the Tigercat. Sawyer told them to look at the wheel base and stability of the machine as well as the design of the cab.

For Nowlen, the skidding component of his operation offers a number of challenges, including longer skidding distances, large, heavy timber and wet or steep terrain. "I used to have to refuel my 748G two times

a day," says Nowlen who measures the fuel consumption of the 620C at 51 gallons for a nine hour shift or 5.7 US gal per hour (21,6 L/h). The machine averages about 5.5 tons (5 t) per drag in the highly variable terrain. Burton, BJ and Daniel Sawyer are all very pleased with the performance of the new 620C skidder. ■

**Nowlen's Tigercat 620C bringing in a drag.**

**"I have never went to one of Burton's jobs that he did not leave in better shape than when he arrived. Treating his client's land and timber like his own has contributed to his success."**

**- Darrell Windham, Tidewater Equipment Warren**



The thickness of the material used in a particular cab window is determined by a number of factors including the size of the window opening and the proximity to a safety hazard.

## Focus on Safety

### Care of Polycarbonate Windows in Tigercat Operator's Stations

– Robin Barker, engineering administrator

Most windows used in the operator's stations of Tigercat forestry machines are made from a polycarbonate resin thermoplastic. This material is a replacement for glass when improved strength, durability and safety is required. The thickness of the material used in a particular cab window is determined by a number of factors including the size of the window opening, the proximity to a safety hazard, the type and severity of the hazard and the requirements of applicable safety standards such as Falling Object Protection (FOPS) or Operator Protection (OPS).

Polycarbonate windows used in Tigercat operator's cabs range in thickness from 9-32 mm (0.375-1.25 in). Properly designed and installed, polycarbonate windows do not require external steel mesh safety guards. This results in enhanced operator visibility.

Polycarbonate manufacturers provide very detailed procedures for suppliers to follow when cutting the material into the required window shapes. A high quality of workmanship

is necessary to avoid scratches, nicks or notches both on the window edge and surface. Small defects can lead to cracking in the polycarbonate if the window is highly stressed during impact.

The manufacturers of polycarbonate material also provide guidance in the proper mounting of the windows to the cab structure. Each polycarbonate window in a Tigercat machine is fully supported around the edges by smooth, flat surfaces. The window is cushioned with rubber edge moldings and secured along all sides with bolted steel retaining strips.

Careful design and quality control of the manufacture and installation of polycarbonate windows ensures good, long term performance in forestry and logging applications. Polycarbonate material is expected to resist heavy impact from large branches and falling tree tops and to absorb high levels of energy when contacted by high velocity thrown objects such as wood chips, disc saw blade teeth or broken harvester head saw chain.

The outer surfaces of Tigercat polycarbonate cab windows are specially treated with a hard coating to provide enhanced resistance to abrasion and ultra-violet (UV) radiation.

The extreme operating environment seen in logging applications heightens the need to regularly inspect and properly maintain polycarbonate cab windows as an essential piece of operator protective equipment.

### Inspection and Maintenance

Daily inspection and maintenance is essential to confirm that the window's ability to protect the operator has not been compromised.

- Inspect all windows daily and immediately after any impacts.
- Check for any damage to the window material or steel structure in the area of the window mounting.
- The edges of the polycarbonate window must be evenly and fully supported on a flat surface around the entire window opening at all times. Bent or dented skylight structures must be replaced immediately. Bent or dented cab structures must be evaluated immediately for possible repair or replacement.

- The edges of the polycarbonate window must be free from cracks or chips and must not be pinched or stressed. Windows with these defects must be replaced immediately.
- Cracks, chips or scarring anywhere on the window's surface will decrease its impact strength. Windows with these defects must be replaced immediately.
- Bent, dented or missing window retaining parts must be replaced immediately.
- Rubber materials used in mounting the window must be maintained in good condition.
- Identification of the polycarbonate originally used by Tigercat is hot stamped in a corner of the window to identify its composition. Do not use any replacement window without proof of its material composition. Do not substitute with any other materials.
- Skylights, cab structures, windows and window retaining parts must not be modified or replaced with components that are not approved by Tigercat.

## Resistance to Chemicals

The resistance of polycarbonate material to chemical exposure varies widely. Fortunately, polycarbonate materials have good resistance to diesel fuel, grease, hydraulic oil, kerosene and engine oil. Other chemicals can seriously weaken the polycarbonate. Do not permit these chemicals to come into contact with polycarbonate windows:

- acetone
- air conditioning refrigerant
- ammonia
- anti-freeze
- benzene
- brake fluid
- carbon tetrachloride
- cutting oils
- gasoline
- lacquer thinner
- toluene
- turpentine
- xylene

## Fire Precautions

Polycarbonate window material is the least combustible safety glazing plastic but will ignite when exposed to an ignition source in excess of 427°C (800°F). When working around

The extreme operating environment seen in logging applications heightens the need to regularly inspect and properly maintain polycarbonate cab windows as an essential piece of operator protective equipment.

cont. on pg. 12



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cont. from pg. 11 polycarbonate windows, observe similar fire precautions to those in place for wood.

Unlike the tempered glass sliding side windows on the drive-to-tree feller buncher cab, the polycarbonate windshield and skylight do not require external steel mesh guarding. It is important to visually inspect polycarbonate windows daily. Cracks, chips and scarring will compromise the window's ability to withstand a significant impact.

### Resistance to Water

Polycarbonate material has good resistance to water up to approximately 65°C (150°F). Above this temperature the effect of water is time-temperature related. Exposing polycarbonate to repeated steam cleanings or high temperature pressure washing may result in crazing, a phenomenon that causes clouding of the surface. Crazing can ultimately result in a loss of physical strength and may precede a fracture.

### Cleaning Instructions

- 1 Rinse the window thoroughly with lukewarm water
- 2 Using a soft cloth, cellulose sponge or chamois, gently wash the window with a mild solution of soap or detergent in lukewarm water. Do not scrub or use brushes or squeegees.

Brand name soaps and detergents recommended for cleaning polycarbonate are:

- Fantastik
- Formula 409
- Hexcel F.O. 554
- Joy
- Lysol
- Mr. Clean
- Neleco-Placer
- Pine-Sol
- Top Job

- 3 Rinse the window thoroughly with lukewarm water.
- 4 Dry the window with a moist soft cloth, cellulose sponge or chamois to prevent water spotting.
- 5 To remove grease or oil, first rub lightly with a good grade of VM&P Naphtha or isopropyl alcohol followed by the same rinse, wash, rinse and dry procedure described in steps 1 to 4. Do not use gasoline.

### Cautions

- Do not use abusive cleaning procedures either by hand or pressure washing on polycarbonate windows.
- Do not use brushes, razor blades, scrapers, squeegees or other sharp tools on polycarbonate windows.
- Do not clean polycarbonate windows when the daytime temperature is high or in direct sunlight.
- Do not use abrasive or highly alkaline cleaners on polycarbonate windows.

Failure to follow these cleaning instructions will shorten the service life of polycarbonate and may cause visual hazing, loss of light transmission and delamination of the polycarbonate hard surface coating.

### Concealing Hairline Scratches

The appearance of scratches and minor abrasions on the surfaces of polycarbonate windows can be minimized by using a mild automotive polish such as Johnson's Paste Wax, Novus Plastic Polish #1 and #2 or Mirror Glaze Plastic Polish. Be certain to clean the polycarbonate window as outlined above prior to application of an automotive polish. ■



# Tigercat Hosts ALC

– As reported by DK Knight, Hatton-Brown Publishers

Tigercat Industries hosted the summer meeting of the American Loggers Council Board of Directors June 27-29 in Brantford, Ontario. The meeting attracted 74 board members and guests from coast to coast and involved dozens of Tigercat personnel, including company owner Ken MacDonald and president Tony Iarocci.

A welcome reception at the historic Brantford Golf & Country Club was the first event on the agenda. Iarocci welcomed all visitors, introduced Tigercat personnel and guests and outlined coming activities.

On Thursday morning MacDonald and Iarocci were among those leading small-group plant tours of Tigercat manufacturing and fabrication facilities in Brantford, Paris, Cambridge and Woodstock.

Tigercat engineers and regional field personnel were in the mix as well. Visitors were able to engage engineers and talk with employees working in fabrication and machine assembly.

In fact, Dillon Stratton, Jr. and Dillon Stratton, III of D.M. Stratton, Inc. based in Jacksonville, Fla., met the team that built their 630 Tigercat skidder. The Strattons thanked assemblers Thomas Buffong and Ray Rimmer for their attention to detail and quality workmanship. Tigercat officials used the opportunity to point out that advanced design and engineering details, along with fastidious fabrication and assembly, lead to exceptional products that, while costing more, tend to last longer and operate at a lower cost per tonne produced.

## Informative Program

Both days of plant tours concluded with informative programs that involved guest speakers and Tigercat representatives. Mark Ryans, representing the Forest Engineering Research Institute of Canada (FERIC), spoke on forest biomass opportunities and challenges,

## Between The Branches Team:

Judy Brooks  
(circulation)  
Mike Ross  
Paul Iarocci

Please send any comments to:

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cont. on pg. 14

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Tigercat hosted the Florida Logging Tour component of the ALC 13th Annual Meeting held in St Augustine from September 27-29. Two Tigercat systems – a final fell application and a pine thinning application – were in action on the logging operations of Johns & Conner Inc.

**Tigercat's new T234 loader was part of the final felling operation during the ALC Florida Logging Tour in September.**

cont. from pg. 13 pointing out multiple questions that linger concerning the collection, value and use of forest fuels. Ryans said that Nordic countries are leaders in forest biomass harvesting and handling, having accelerated development since 2001. He noted that collecting, processing and transporting woody biomass is expensive, regardless of location and accompanied by issues of contamination, piling, drying and truck scheduling. “Biomass will change the way



**Dillon Stratton, Jr., second from left, and his son, Dillon III, far right, met the Tigercat employees, Thomas Buffong and Ray Rimmer, who assembled their 630 skidder. At left is Tony Iarocci, Tigercat president.**

we view and manage the forest,” he said and it will present opportunities to many, “including equipment manufacturers.”

Ed Donovan, mid west regional sales manager for Continental Biomass Industries (CBI) spoke on grinders and chippers utilized in woody biomass applications.

He said CBI now offers grinder rotors with two and four knife chipper pockets capable of making chips as small 6 mm (0.25 in) for use in pellet plants. In addition to its well-known grinder line, he said the company offers a brush transport system as an enhancement for forwarders. The wing-type standards open and close to allow for brush loading and compaction so that a forwarder can transport a nine tonne (10 tn) load of the loose material.

Veteran Tigercat engineers Robin Barker and Grant Somerville discussed product development related to forest machine fire prevention and energy conservation.

According to Barker, Tigercat over time has aggressively acted to dampen fire threats by: 1) making it more difficult for debris to get inside a machine by using better gaskets and creating smaller openings; 2) designing machines that incorporate variable pitch or reversing cooling fans to minimize daily debris build-up in the heat exchangers; 3) creating generous access to make it quicker and easier to clean out debris, and providing openings to better extinguish a fire should one occur; 4) separating components such as batteries and hydraulic pumps, valves and lines from the engine and areas prone to debris build-up; 5) using deflectors to keep debris from hot exhaust areas; 6) adding fire detection

warning devices (lights and horns) in the cab; 7) educating machine owners/operators; and 8) making available fire suppression systems. Tigercat is also working with insurance companies and other machinery companies in a joint effort to reduce fire losses.

Somerville noted that in the last couple of years manufacturers have focused on fuel economy but pointed out that Tigercat began addressing this area in machine design long before oil prices spiked. For example, he said the design of the ER (Energy Recovery) boom used on its track feller bunchers functions with an average savings of 19 kW (25 hp) or about \$9,500 per year. “It has a smoother motion and faster, longer horizontal reach and its productivity is much higher,” he said. Other examples he cited are improved hydrostatics swing systems used on Tigercat loaders that save 11 kW (15 hp) or an average of \$3,900 per year and cooling fans worth 7,5 kW (10 hp) or \$2,600 per year on average. Some Tigercat machine models may actually burn more fuel but they also produce more, he said, resulting in an actual cost per ton decrease.

“The formula for building the low-cost machine is always changing. We keep looking ahead and continue to develop new technology,” he concluded.

Iarocci and fellow engineer Jon Cooper combined to share thoughts on North American forest machine evolution over the last 40 years and to point out how advancing technology has made machine design much easier and faster.

Iarocci showed slides of the 1970s vintage Koehring shortwood harvester that he helped develop. Only 171 of the giant twin-boom machines were built. They were 5 m (16.5 ft) wide and traveled on tires 2,5 m (8 ft) tall. “It was all done with a pencil and paper and a slide rule.” He noted that although the harvester went through a good deal of hydraulic oil, requiring a top-up at each refueling, “it was the first forest machine that processed more than one stem at a time.”

Cooper showed slides of 1960s and 1970s era skidders, skidding grapples and tree shears, commenting that at one time a dozen North American manufacturers made skidders, selling a combined 10,000 per year. Today five manufacturers sell approximately 1,500



The ALC group.

per year, stressing that skidders now are much larger, more powerful and much more productive and reliable. They cost more per unit but actually cost less per pound than 40 years ago. "Today we'll add cost to a machine if that cost means that the cost of wood per tonne goes down as well," he said. "Whatever direction the industry takes, we'll be there for you."

Tigercat's Southern Hemisphere marketing manager, Gary Olsen discussed harvesting practices in South America, South Africa and Australia. He commented that Brazil is the country to watch, saying its plantation acreage will double in 13 years and that its annual harvest will swell from 168 million tonnes (185 mil tn) this year to 240 million tonnes (265 mil tn) by 2020. This is about half the current annual U.S. harvest volume.

MacDonald made closing remarks. He thanked ALC members for visiting and offered his business card and cell phone number. "Call me day or night," he said. He noted the company has undergone many changes, that machine development today takes longer and that Tigercat is striving to fill some voids in U.S. distribution. "One thing that goes unchanged and we don't lay claim to it: We look at it from the customer's perspective and try to treat people the way we would want to be treated."

### ALC Board Business

The ALC board went to work on Saturday with President Charles Johns presiding. The Legislative Committee reported on the many activities taking place in Washington, including both the 2007 Farm Bill and the Energy Bill. Jim Geisinger, Chair of the Legislative Committee, gave a detailed report on the work that the ALC has been doing on both bills as well as a host of other bills and administrative proposals.

The Communications Committee continued

to support the publication of the ALC Eagle, carried three times a year as a special section in Timber Harvesting magazine and found on the ALC web site.

The Membership Committee Chair, Allen Ribelin of Flagstaff, Arizona, reported that the Green River Loggers Council in Kentucky had completed revision of its bylaws and recommended that the conditions of their membership status be removed and that they become full voting members of the ALC. Board members unanimously agreed.

In other business, the board considered reports by the Master Logger Certification program participating states, Wood Supply Research Institute and the Woody Biomass Coalition.

Johns concluded the meeting by thanking guest Ken MacDonald for the hospitality and support that he and his organization have shown for the ALC.

Tigercat wishes to thank the ALC for the opportunity to host such an event and to those involved. ■

**Tom Barnes, executive director of the Michigan Association of Timbermen presents a handmade wooden Tigercat feller buncher model to Tigercat chairman Ken MacDonald as Charles Johns looks on. The skidder and feller buncher models were hand crafted by Sam McPherson of Newberry, Michigan.**



# 620C Excels in New Zealand's Sandy Manawatu Region

– Glen Marley, district manager Australasia

Whisker Harvesting Ltd. based in the town of Bulls in the Manawatu district of the southwest region of the North Island, has just purchased its first Tigercat which is also the first 620C skidder to land in New Zealand.

A relatively small but very diverse and comprehensive company, Whisker Harvesting fells 60 000 tonnes (66,000 tn) of Radiata pine annually in the Santoff Forest near Bulls and specializes in timber, transport, establishment, silviculture and chemical treatment for the surrounding region's forestry industry.

Partners Nick Whisker and Colin Wroe required a new skidder. After a quick look at what other contractors had been recently purchasing, conversations with satisfied Tigercat owners and careful deliberation, they decided the Tigercat 620C with its unique hydrostatic drive was their best option.

Whisker Harvesting placed the order with Titan Plant Services salesman Lawrence Ordish. Once the

machine arrived and started pulling wood, Nick and Colin instantly knew they had made the right choice.

Nick, who holds a diploma in Forestry Management looks after the day to day management of the harvesting business in addition to other large volume farm pursuits. Colin is in the bush with the crew full time, usually working a new excavator conversion machine, both on the landing or in the forest with the static (pull-through) delimeter.

Owned by local New Zealand company, Ernsshaw One Ltd., the Santoff Forest sits on a large coastal belt of sand. "Due to the high coastal winds and heavy rainfall, this whole region can often prove to be a challenging area to work," explains

Nick. "The large mature Radiata pine trees we're cutting are around 30 years old and average two to two-and-a-half tonne [2.2-2.75 tn] piece size but can range up to around four tonnes (4.4 tn) per tree in some pockets of land." Diameter averages around 60 cm (24 in) and can be as large as 100 cm (40 in) but Colin explains that due to the restricted volumes spelled out by the strict local forestry management practice, trees of this size are hand felled.

"Due to the hand felling, we needed a machine not only to pull the large loads but we also need to manoeuvre around and accumulate our bunches. The 620C with the big 1,4 m<sup>2</sup> [15 ft<sup>2</sup>] grapple was the best all round choice for us, although we did consider both the 630C and 610C machines. The mid-sized Tigercat still has plenty of power at 220 horsepower and is proving to be even better than we expected with the fuel consumption which is pretty important with the price of diesel these days."

Colin believes that the pulling power of the 620C in these large and very heavily limbed trees is by far the best he has seen. "I operate the skidder from time to time as well and the cab layout and ease of operating are brilliant. With the cab's seat on a 40 degree angle and the foot pedals as well, it just makes it so easy to work," he says. "The vision of your blade when you're looking out the front to push up on the landing is brilliant and again through the arch when you're grabbing the trees is by far the best I've seen. When it came time to spec out the machine, we chose the 30.5 x 32 tires and they're offering a real good blend of traction and flotation on the sandy soil."

Ross Bertram operates the 620C and it's fair to suggest that you can't wipe the smile off his face. He agrees with Nick that the area they work in throws up a few challenges that are a bit unique. "When the hand fallers fell the trees, because of the big branches on the heads of the trees and the sandy soil, sometimes the trees literally spear themselves into the ground, and get stuck. The other old girl used to really battle when this happened but the Tigercat just pulls



**Ross Bertram works around standing trees while pulling mature Radiata pine.**

away, no worries,” Ross explains. “The big bonus is that if the machine starts to break traction in the sand because of the steepness of some of the sand dunes the trees are planted on, you can just dial back the output to the drive [using the speed dial on the side dash] and the wheels will stop spinning and she pulls away.”

Ross normally adjusts his ground speed and drive output with the foot pedal. “Because of the seating position and the joystick layout, I don’t move my right arm off the armrest usually. All the boom, arch and grapple functions are there on the joystick and although I don’t use them as much as the last machine, the diff lock button is there as well. I just steer with my left hand and operate the functions with my right. I just feel so much better at the end of the day.”

When asked what could be done better with the machine, Ross just laughs and suggests, “The colour. Can I get it in black?” This is said in typical patriotic Kiwi fashion, as he is just as passionate about the All Blacks (New Zealand’s national Rugby Union side) as he is about his new Tigercat.

According to Nick, two of the company’s skidder operators that work on crews involved in mature timber thinning operations also managed to get a turn on the machine. “Now the other two skidder drivers in the other logging crews are asking when their new Tigercats are coming. Leon, who has been allowed a few days pulling on the new 620C, after catching Ross off guard or at a weak moment, believes that the 610C Titan has in stock in Rotorua would be an ideal machine

for the woodlot logging crew.” Due to slightly different requirements, the operators believe that the physical size and width of the 610C would be even better suited for navigating the standing timber in these thinning applications. “Paul who drives the skidder in the production thinning crew assures me that narrowing the wheels or diffs would mean that a 610C would be ideal for his operation as well.”

All in all the Tigercat purchase is proving to be a very good choice for Whisker Logging. Colin and Nick are impressed with the first class back-up support and service from Titan Plant’s Lower Hutt branch. Colin states, “We know the service guys are well trained in all the products Titan Plant sell but most especially the Tigercats. Tigercat sent out their factory service training officer Rick Routliffe to do some follow-up training. They came up and did all the on-machine training on our skidder, so that’s a good thing for us... that the boys really know our machine well.”

Nick closes saying, “We expect to get really good availability with this unit because it does the job so easy and the production to the landing is up. The machine doesn’t seem to be working hard, even when the grapple is full with three or four big trees. We’re confident that we’ll get a really good run with the 620C and we think it’s perfectly suited to our application. When we were looking at purchasing a skidder, a current owner of a 630B told me that once you buy a Tigercat you will never buy another type of skidder. I am now starting to understand what he meant.” ■

“...if the machine starts to break traction in the sand because of the steepness of some of the sand dunes the trees are planted on, you can just dial back the output to the drive and the wheels will stop spinning and she pulls away.”

– Ross Bertram,  
skidder operator

**Delivery day. (L-R) Skidder operator Ross Bertram with Whisker Harvesting owners Nick Whisker and Colin Wroe.**



# Tigercat challenges excavator conversion market

– Grant Somerville, advanced engineering manager, track machines

The hydraulic excavator has become a commonly used tool within our industry for road building, shovel logging, loading, processing and harvesting. Built in high volumes, excavators offer attractive up-front pricing. When used in applications where it is effective in its near stock condition, the excavator based machine delivers good value to the user.

However, varying amounts of conversion work must be done to the carrier, from minor guarding upgrades to major structural and power train refits. Modifying machines is economical only if the changes are relatively minor. When the cost of the new and discarded original parts as well as the accompanying double labour costs are factored in, the overall cost rises significantly. Should the excavator's basic power, hydraulic and gear train components require upgrading, modification costs often become prohibitive.

Market pressures are driving harvesting contractors to find additional efficiencies in every aspect of their operations. In many applications excavator based carriers have reached their performance and durability limitations. Increasingly, our customers are seeing a requirement for something more capable.

In response Tigercat developed the H855C, designed specifically to carry harvesting and processing attachments for

use at roadside and in the forest. Derived from Tigercat's flagship 860C series carriers, the H855C uses the same upper frame structure, cab and boom systems as the H860C harvester. These feller buncher-class structural components were chosen to extend the operating life of the carrier, thus increasing the amortization period.

Harvesting attachments have evolved into complex machines that place unique demands on the carriers. Harvesters (with heads that fell and process) and processors (with heads that only process) are noted for their relatively low fuel consumption. In many cases they burn half as much fuel as a modern feller buncher equipped with a disc saw head, giving the impression that harvesting heads demand relatively low power. However, while the attachments have a relatively low average power draw, their peak power demands can be twice that of disc saw heads.

Improving feed roll performance leads to higher harvester head productivity. Although harvesting attachments commonly work with typical excavator power levels, substantial



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improvements in feed roller performance can be realized with increased engine power. While the higher power engine does burn some additional fuel during peak demands, the resulting increase in productivity more than offsets the fuel cost. To take advantage of this potential productivity gain, the H855C is equipped with a 6,4 L

turbocharged and aftercooled Tier III Mercedes 906, delivering 205 kW (275 hp) at 2,200 rpm. The same engine is used in the Tigercat forwarder line and the new 845C feller buncher.

Hydraulic system design is key to getting performance and efficiency out of today's harvesting heads. Because the H855C hydraulic system is designed specifically to power harvesting attachments, it is far more efficient and productive than modified excavators. The H855C uses a dedicated attachment pump to supply oil to the primary head functions, delivering flow and pressure to match the demands of the head without interference from other machine functions. Under high flow conditions like roll or saw operation, additional oil is supplied from the main load sensing system. Total flow and pressure requirements can be tailored to the application, with up to 150 kW (200 hp) available at the attachment. The result is a hydraulic system that provides superior head performance and multi-functioning capabilities while delivering excellent fuel economy averaging 17-18 L/hr (4.5-4.75 gph). Independent studies have shown that Tigercat purpose-built track harvesters are 20-25% more productive than similarly sized excavator conversions equipped with the same attachment.

Another key advantage the H855C offers is



cooling capacity. Overheating is a common issue with excavator conversions often resulting in frequent shutdowns (to allow the machine to cool) or the addition of expensive, troublesome auxiliary coolers. The H855C is equipped with a high capacity cooling system taken directly from the 224 kW (300 hp) 860C feller buncher. The variable speed, hydraulically driven fan is computer controlled to match cooling requirements. This improves fuel efficiency and keeps the hydraulic oil temperature consistent in cold weather, improving measuring system performance and accuracy. The fan reverses direction to purge debris, reducing dust build-up between the cooling fins. The air intake is located at the rear of the machine, well away from debris that is discharged from the harvesting head. The surface of the coolers and the intake areas are large, decreasing air-flow velocity and further reducing the amount of debris ingested into the coolers.

The component layout of the H855C provides outstanding service access. The

**An H855C in a roadside processing application in interior British Columbia.**

**An H855C is delivered in late October to Cold Stone Logging Ltd. on Vancouver Island.**



cont. on pg. 20

cont. from pg. 19 main engine compartment is accessed through a hydraulically operated roof enclosure and a central walkway allows the operator to access

all systems and components. A large hinged side door provides quick access to the engine service points without opening the roof enclosure. The hydraulic pump stack is compartmentalized and separated from the engine and

easily accessed through a manually tilting cover. Large clean-outs are provided throughout to easily remove accumulated debris.

The boom system is designed specifically for harvesting and processing. It incorporates Tigercat's patented parallel motion ER technology which is smoother and more fuel efficient than excavator style boom systems. In applications requiring long reaches, a telescopic boom is available with a 12 m (39 ft) reach. The additional boom swath allows the operator to lay down a larger, thicker brush mat for the forwarder, achieving an even lower ground disturbance harvesting solution.

The standard F6140 undercarriage is taken from the feller buncher program with 203 mm (8 in) pitch forestry duty F8 chains, forestry duty gearboxes and idlers, long fully guarded track frames and a wide-stance, high clearance carbody. Tractive effort is significantly higher than excavator-type undercarriages for excellent in-woods mobility. For wide shoe applications, Tigercat offers tri-track style assemblies to greatly improve chain life.

Today's operators spend long shifts in these machines. A spacious, ergonomically designed cab reduces operator fatigue and boosts productivity. The H855C cab leads the industry, helping owners attract and keep high quality operators. The hinged full-length windshield provides excellent visibility and doubles as the primary entry/exit. The front door allows quicker and easier access to the attachment. The air ride suspension seat is angled toward the attachment for increased comfort. The purpose-built high capacity climate control system has eight adjustable vents to keep the operator comfortable. Frequently used controls such as pilot, air conditioning and track speed are laid out for quick access from the joystick.

The key to choosing any forestry machine is calculating the cost per tonne of wood produced. While the up-front cost of an H855C may be more expensive relative to an excavator conversion, the long-term ownership costs can be significantly lower and we encourage our customers to look at this new opportunity. ■



**An H860C equipped with the 12 m telescopic ER boom working in very soft terrain in Scotland. The H855C can be equipped with the same boom system.**

**The 24 m (78 ft) swath ensures that a low percentage of ground is traveled over and leaves very thick brush mats for the forwarder.**



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