

## Findings

Mr. Dulberg was cut on the forearm (bottom) by a chainsaw while helping Mr. Gagnon limb a pine tree on the property of Mr. Gagnon's parents – Bill and Carol McGuire. While power tools such as this chainsaw make work more efficient, they carry hazards such as experienced in this incidence. Manufacturers and retailers of power equipment go to great lengths to reduce the dangers associated with such equipment through training and warnings listed in owners manuals. The chainsaw in this incident appears from a photograph to be a EFCO MT3500 purchased by the McGuires close to the date of the incident and probably was a new saw and probably equipped with an owners manual. Depositions from both Mr. Gagnon and Mr. Dulberg indicated that they received no chainsaw training. Therefore, the owners manual and their experience were the primary sources of instructions for the safe use of the saw.

Mr. Gagnon was the only operator of the saw and, therefore, was responsible for its use. While the saw was appropriate for the tasks involved, there are safe and unsafe activities that could have taken place. The owners manual shows 2 bar lengths for this saw – 14 and 16 inches. It appears that the McGuires chose the 16 inch bar. For the work involved, the shorter bars would have been safer. It appears that Mr. Gagnon performed some unsafe acts which lead to Mr. Dulberg being cut. Mr. and Mrs. McGuire who owned the saw apparently did not heed the warnings posted on page 2 of the owners manual which states “Allow persons only who understand this manual to operate your chainsaw.”

Cuts with chainsaws cause more damage than those caused by power or hand tools having a thinner blade such as that of a table saw. Chainsaws are designed to take out a “kerf” of about ¼ -inch, so if someone is cut, the sides of the cut are separated by this gap (or kerf) removing a chunk of meat.

From the depositions, there is no mention of safety apparel – hard hat with ear and eye protection, safety chaps or pants nor safety gloves. (See page 7 of the owners manual for proper safety apparel.)

Mr. Gagnon and the McGuire's goal was to remove a tall pine tree (40 – 50 feet in height) in their yard without damaging their buildings. From depositions, Mr. Gagnon chose to delimb this tree as it stood in a vertical position. According to Mr. Dulberg, Mr. Gagnon did this by climbing and cutting off limbs as he climbed the tree using limb stubs as a ladder where he placed his feet. In the owners manual on page 9, it tells to never cut limbs from a ladder or a tree and always cut from a firm foundation or platform. Not having seen the exact circumstances, it cannot be stated unequivocally, but my recommendations would have been to fell the tree first before trying to remove any limbs higher than could be reached safely from the ground. Once the tree has been felled on the ground the secondary limbs could have been removed while the primary limbs were still attached to the main bole. Bucking the primary limbs into firewood lengths could also be done in a safer fashion with them attached to the bole. Doing the work in this fashion would have eliminated the conditions of where Mr. Dulberg was cut. From Mr. Gagnon's deposition, there was room to fell the pine tree with its described height.

The EFCO MT3500 has a number of features designed to operate it safely. The handle where the accelerator trigger is located has a throttle trigger lockout device that must be depressed before the engine can accelerate which means that Mr. Gagnon had a tight control on the trigger handle when the saw accelerated before cutting Mr. Dulberg.

Next, there was no mention of the chain brake being used. The MT3500 has a lever mounted just

forward of the front handle. This lever serves to stop and lock the cutting chain movement when pushed forward; when in the rear position, the chain travels freely on the bar. On page 8 of the owners manual, it is recommended that the chain brake be set whenever the operator moves and the bar should be facing to the rear of the direction of travel. This applies directly to this incident. If Mr. Gagnon had set his chain brake and put the bar in a rearward position as he finished cutting the last secondary limb, Mr. Dulberg would not have been cut.

Next, the MT3500 comes with a saw chain designed to reduce kickback. Kickback is a violent upward action of a chainsaw bar when the chain on the upper quadrant of the bar's tip comes in contact with an object. While this chain does not completely eliminate kickback, it helps. It is assumed here that the chain supplied by the manufacturer had not been replaced.

Page 7 of the owners manual recommends that other people be kept at least 35 feet from someone operating a chainsaw. This is because the chainsaw operator should be focusing his attention on his task, not bystanders. Chainsaws are noisy and anyone around them should be wearing ear protection. It is recommended that bright clothing be worn by all bystanders to help operators see people who might inadvertently move into the danger zones. The operator is the person in control of his saw and responsible for whatever results from his cutting. When trees are being felled bystanders should be 2 tree heights away from the chainsaw operator. If this rule had been followed, Mr. Dulberg would not have been cut.

Page 7 of the owners manual has some additional recommendations that might apply to this incident. Cutting with chainsaws is fatiguing even for professional sawyers who use their saws everyday. For the occasional operator, chainsaw work can be very exhaustive. In this incident, Mr. Gagnon not only used a chainsaw which he was not accustomed to using one, but he also climbed a tree and delimbed it as he climbed. By the time Mr. Gagnon stop limbing and started removing secondary limbs from the primary limbs, he must have been very fatigued even with frequent breaks as described by Mr. Dulberg. The warning of the owners manual not to cut when fatigued is very important in that fatigue impairs judgment, reduces response time and probably impairs reflexive actions. Simply put, we make mistakes when we are tired.

Another occurrence of this incident may have been a loose chain. New saw chains stretch when first used. This saw was probably new; this may have been its first application. The owners manual discussed how to tension the chain on page 17 and describes proper break-in of the chain. The chain should have been tightened after the engine had become warm and later after some use. A loose chain might jump off the bar. Pertinent to this incident was that a loose chain will not decelerate as fast as a properly tightened one. Without the chain brake engaged, the chain continues to travel along the bar until it naturally comes to a stop. Mr. Dulberg said he tried to move away from the saw chain but could not escape its travel path. With a properly tensioned chain, it may have stopped before contacting his arm.