Section 3b

Safe Job Procedures

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3.b.1 INTRODUCTION

A Safe Job Procedure (SJP) is a written step-by-step description of how to do a job/task from start to finish. SJP's are used to train new workers and workers that are moved to new jobs. SJP's are also used by workers as a reference, especially for complex jobs, particularly hazardous tasks, or for jobs that are not done very often. A SJP contains the appropriate safe work practices and highlights safety points.

Safe Job Procedures have been developed through the use of Job Safety Analysis's (JSA's), which are a field level analysis and review of the job/task. JSA's are done for all high hazard tasks, and should be reviewed on a regular basis. Field crews should identify the high hazard tasks in their Tailgate/Hazard Assessments and refer to the SJP for detailed information on that task. If the field crew feels that a SJP is deficient or missing for a certain job/task, they should inform the safety coordinator, and a JSA should be done to develop a new or updated SJP. Refer to Section 2 – Hazard Assessment and Risk Control for more information regarding JSA's.

All field personnel including contractors are required to follow the procedures and practices as stated in the All-Can Safety Manual, regardless whether those standards exceed the OH&S regulations.

3.b.2 ENFORCEMENT PROCEDURE

1. Rules and directives relating to general safety, policies and safe work practices/procedures will be reviewed during the orientation process with employees, contractors and subcontractors. They will receive a copy for their records.

2. Enforcement will be based on positive re-enforcement and discipline.

   a) Safe work habits will be rewarded, and violations immediately corrected. When violations are noticed, work will be interrupted and the problem discussed with the worker.

   b) Workers who intentionally work unsafely or repeatedly make safety mistakes, depending on the severity of the violation, will be disciplined either by:
      - a discussion
      - letter on personal file
      - temporary suspension (with or without pay)
      - job termination

This module contains safe job procedures to assist you in safely performing various tasks based on recognized hazards.

Although a lot of thought has gone into the development of the Safe Job Procedures (SJP's), they only serve as a guideline to put you in the right frame of mind prior to conducting a task.

It is also realized that some tasks are more critical than others and as such require more stringent procedures. The following list contains SJP from this module which All-Can considers non-negotiable. Failure to comply with these procedures may result in immediate dismissal.

Helicopters:

- Helicopter Safety
- Helipad Checklist

Survey - Operations:

- Operating an ATV
- Loading racks on ATV's
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- Setting up towers
- Towing
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Slashing:

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- Chainsaw uses
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- Working with catapults
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- DGPS mobilization and demobilization
- GPS/EDM theodolite surveys
- Planting and removing a station
- Sharpening liners
- Sulphur pile/deformation surveys
- Theory of survival - A pattern for staying alive
- Staying alive in a cold emergency
- Staying alive in the heat

3.b.4.1 SAFE JOB PROCEDURES HELICOPTER SAFETY

TASK - HELICOPTER SAFETY

HAZARDS:

- struck by rotor
- noise
- stranded in remote location
- hot exhaust
- improper storage of equipment

SAFE JOB PROCEDURES:

1) Never approach or leave the helicopter from the rear or go near the tail rotor.

2) Always stay within pilot's range of vision.

3) Always stay well clear of the helicopter, but within the pilot's line of sight, until the helicopter has landed.

4) Always wait for a signal from the pilot to approach.

5) Always walk in a crouched position when approaching or leaving the helicopter as blade tips may come within 5 feet of the ground.

6) If the terrain is sloping, always approach the helicopter on the low side to allow adequate rotor clearance.

7) Never carry any equipment above shoulder height.

8) Never throw luggage or equipment on or off a helicopter.

9) Always wear a seatbelt while in a helicopter.

10) Never smoke in or around a helicopter.

11) Never lean or place an object against the doors or windows.

12) Sharp objects (i.e. chainsaws, axes and tripods) must be protected and stowed in the cargo compartment.

13) In the event of an emergency, follow the pilot's instructions.

14) Flammable or explosive materials must not be carried inside the helicopter.

15) Tools and equipment must be secure prior to take-off.

16) Never throw anything out of helicopters when in flight.

17) Close doors gently and latch. Be sure that nothing is hanging out.

18) Exit to low side and remain within pilot's range of vision.

19) Carry all loose cargo out of the landing area and secure until the helicopter has departed.

20) One person (i.e. crew chief) must always be responsible for loading and unloading equipment and passengers.

21) Always wear hearing protection when riding in the helicopter.

22) Never store cayenne pepper based bear deterrents in the passenger compartment of a helicopter.

23) No joyriding. Only authorized employees of the contractor or All-Can are permitted to board the helicopter, except in an emergency situation as determined by the pilot.

24) All passengers must wear, or carry on board, clothing appropriate for the climatic conditions in the area of flight. The helicopter pilot will refuse boarding permission to passengers who are inadequately dressed and whose presence might jeopardize the safety of others in a survival situation.

25) For winter operation, ground visibility will often be severely reduced by blowing snow from the helicopter rotors, and the pilot's visibility will be obscured for short periods, especially during take-off, landing and hovering.

26) For winter operations, the pilot may need extra time to ensure that the helicopter has stabilized before allowing passengers to board or exit. Wait for the pilot's signal.

27) If operating in deep snow, the helicopter rotors may be very close to ground level due to sinking. Extra caution must be taken to stay low when boarding or exiting the helicopter.

28) All personnel not involved in the fuelling operation, including helicopter passengers, must remain clear of the fuelling location by at least 15 meters.

29) Except in emergency situations, all personnel to be transported by helicopter must receive a thorough safety briefing from the helicopter pilot.

30) The helicopter pilot is expected to help ensure high standards of passenger and spotter safety by participating in regularly scheduled safety meetings and briefings, as necessary.

31) The helicopter pilot has the authority to suspend operations until all aspects of passenger or spotter safety are to the pilot's complete satisfaction. All passengers must comply with the instructions given by helicopter crew members

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HELIPAD CHECKLIST

Date: _____ Helipad # _____

Party Chief: _____

G.P.S. Location
Lat: _____
Long: _____

1. Helipad numbers 1 meter _____
2. Landing pad level and secure _____
3. Proper footings on landing pad
    - level with top of pad _____
    - secured _____
4. 3 logs 8” in diameter _____
5. Tail rotor ground clearance _____
6. No hidden obstacles _____
7. Snags removed around perimeter _____
8. Passenger access route
    - clear of obstacles _____
    - flagged to line _____
9. Tailcone accessible for storage of bear deterrent? Yes ___ No ___

Action required:

_____
_____
_____
_____
_____
_____
_____
_____

Date of final inspection _____
(mm/dd/yy)

TASK - OPERATING AN ATV (i.e. QUADS, SKIDOOS AND ARGOS)

HAZARDS

- rollover
- collision with other vehicles
- flying debris
- hypothermia
- stranded in remote areas
- drowning

SAFE JOB PROCEDURES

1) Trikes are not permitted on the jobsite.

2) All operators must complete a CATV course for operating quads.

3) The following protective equipment/material must be worn while operating an ATV:
   a) CSA approved motorcycle helmet
   b) eye protection
   c) gloves
   d) adequate clothing and footwear

4) An Alberta #2 first aid kit, operators manual and a hand-held radio must be taken on all trips involving the use of an ATV. In the summer, a 5 pound fire extinguisher is also required.

5) Use proper riding techniques (i.e. as per CATV course) when traversing side hill and climbing hills.

6) Preplan trip ahead of time (i.e. fuel, proper clothing, communication, etc.).

7) Always tell someone where you are going and when you expect to return.

8) Always check ice thickness or depth of water prior to crossing water bodies.

9) Never follow too closely or directly behind another ATV.

10) Always watch for hazards when riding (i.e. trees, low wires, cables, etc.).

11) Never drive on the road or the shoulder of the roadways.

TASK - OPERATING AN ATV (i.e. QUADS, SKIDOOS AND ARGOS) Continued

12) Never ride on terrain beyond your capabilities or the ATV's capabilities.

All steep Hills (30 Degrees or more) must be discussed amongst 2 ATV trained field personnel prior to any ATV Access route attempts. The Tailgate Meeting summary at the center of the All-Can Daily Contract Report shall be used to record this two-person verification. No attempts shall be made if the risks cannot be managed.

Only those personnel who have sufficient experience and training in operating ATV's in the mountains can "lead", in trail breaking and mountain terrain traversing. A "green hand logo" will be fixed to the helmet of ATV operators who may hold valid Safety Certificates, but may not have sufficient ATV experience in difficult terrain.

Survey Crew Chiefs and Field Supervisors will be responsible to obtain verification of Safety Certificates held by their team members.

13) ATVs should be equipped with a suitable winch.

14) Conduct pre-inspection to ensure quad is in safe working order (i.e. tires, chassis, engine, etc.).

TASK - LOADING RACKS ON ATV's (i.e. QUADS, SKIDOOS AND ARGOS)

HAZARDS

- rollover
- transporting equipment
- fuel could spill or burn
- equipment could interfere with operation of vehicle

SAFE JOB PROCEDURES

1) Equipment must be evenly distributed on front and rear racks.

2) Always secure equipment with tie down straps or rope.

3) Always load long equipment on rear racks.

4) Carry fuel in CSA or UL approved container and ensure that the caps are secure.

5) Inspect and test ATV to ensure that the operation is not interfered by equipment.

6) Never operate an ATV if vision is obscured by equipment.

7) Never load racks in a manner that would restrict movement or access, egress from ATV. (i.e. marker posts lengthwise).

TASK - LOADING AND UNLOADING ATV's (i.e. QUADS, SKIDOOS)

HAZARDS

- ATV's could slide off ramps
- unsecured equipment
- ATV's could travel too far into box or on trailer and damage truck or trailer
- cluttered storage area

SAFE JOB PROCEDURES

1) Always use ramps with a grip type material. Ensure that lower end of extendable ramp is secure on level ground to prevent dislodgement at upper end.

2) Always use profile of the terrain to decrease the angle of the ramps.

3) When available, use the winch on the ATV to anchor it to the vehicle when loading and unloading.

4) Always test brakes on ATV before attempting to load to ensure proper operation.

5) Always clear the trailer and the truck box of debris and equipment prior to loading the ATV.

6) Always chain or strap the ATV to the truck box or the trailer bed to prevent it from becoming dislodged.

7) Always remove ice and mud from ramps prior to loading or unloading.

TASK – HANDLING AND TRANSPORTING OF GPS BASE BATTERY

HAZARDS

- chemical burn
- explosion
- electrical shock
- fire

SAFE JOB PROCEDURES

1) Use only a Sealed Lead Acid Battery.

2) Inspect daily, battery and cables for any defects, corrosion and cracks, **do not attempt to use if any defects are found with battery or cables.**

3) Never smoke or have an open flame near batteries.

4) Never transport or store near flammable materials or gases.

5) Transport in an upright and secure position, terminal must be covered during transportation.

6) Cables connecting to the battery terminal must have alligator clips, cables that permanently bolt to the battery posts are not to be used.

7) Use only in well ventilated areas

8) All cables must be disconnected from the battery when not in use.

TASK - BOOSTING BATTERIES

HAZARDS

- explosion
- electrical malfunction
- burns

SAFE JOB PROCEDURES

1) Never boost a frozen battery.

2) Place the two vehicles so that the battery cables reach. Make sure that the vehicles are not touching. Shift both vehicles into neutral or park and set the parking brake. Turn off ignitions and all accessories.

3) Make sure the batteries are the same voltage.

4) Remove filler caps and top up batteries with water if necessary. Never try to start a car with a frozen battery.

5) Identify the positive terminals of both batteries. These are colored red or have a "+", "P", or "pos" written on the battery case, post or clamp.

6) Attach one jumper cable between the two positive terminals.

7) Attach one end of the second jumper cable to the negative terminal of the booster battery and the other end to some part of the engine in the car being started. This final connection should be at least a foot from the battery (i.e. to avoid sparks which could cause an explosion) and must be on a piece of metal that is not painted, chrome plated, heavily rusted or coated with grease.

TASK - CHAINING-UP

HAZARDS

- pinch points
- cuts and scraps
- damage to tire or vehicle

SAFE JOB PROCEDURES

1) Always put on tire chains while parked on a level area prior to driving into a slippery or muddy area.

2) Always ensure that the vee-bars on the cross links are facing the ground.

3) Always ensure that the cross link hooks are uniform, not twisted and facing down and away from the tire.

4) Place chain over the tire and adjust the chain tightly ensuring that cross links are laying flat across the tire and not twisted.

5) Pull the side chain ends together and secure. Do the inside chain first.

6) Close and secure the hook on the side chain link.

7) Always secure the outside side chain hook.

8) Always secure loose links on both inside and outside to prevent them from damaging vehicle.

9) Always use bungee cords to keep chains snug.

TASK - COLD WEATHER OPERATIONS

HAZARDS

- eye sensitivity
- frostbite
- poor visibility
- hypothermia
- exposure

SAFE JOB PROCEDURES

1) The best method of staying warm in cold weather is to insulate the most exposed parts of the body.

2) Crew members must advise each other if a patch of skin starts to freeze (i.e. turns white). On sunny days, the white snow increases the effects of the sun via reflections.

3) Commonly exposed parts of the body are the feet, knees and wrists. Always ensure that socks are of generous length and gloves come well up the forearm. Both must be dry.

4) An example of suitable cold weather footwear is good woolen socks in cellular rubber boots and loose insoles of insulating material.

5) An insulated sole is better than extra socks.

6) Long underwear protects legs from the cold.

7) Remember, little blood circulates through the joints which means they will get cold quickly.

8) Dress using many layers so that they can be added or removed as conditions warrant.

9) The ears can be protected by using a toque or a felt quilted hard hat liner. Ear protectors must still be worn, when required, since the liner does not effectively reduce noise.

10) Never engage controls or equipment when visibility is obscured by steam or snow.

11) Exercise care when handling diesel fuel and gasoline during cold weather operations. The cold burn resulting from saturated clothing due to spillage can be severe.

12) Wear sunglasses when working in bright sunlight with snow cover.

TASK - USE OF A FOUR-WHEEL DRIVE

HAZARDS

- driving beyond limits (i.e. personal and vehicle's)
- brake failure
- rollover
- crash/collision

SAFE JOB PROCEDURES

1) Always drive slower in crosswinds, which can affect normal steering.
2) Avoid sudden, sharp maneuvers (i.e. over-driving).
3) Always grip the steering wheel rim securely from the outside.
4) When driving on sand, keep all four wheels on the most solid area of the trail.
5) Avoid spinning your wheels.
6) After driving through water, dry brakes off and test for effectiveness.
7) When driving in deep snow, use low gear and maintain steady pressure on accelerator.
8) Avoid turning around on steep slopes or hills.
9) When climbing a steep hill, start out in a low gear.
10) If you stall out on a hill, back down to a safe location (i.e. never turnaround).
11) Apply just enough power to the wheels to climb hill. Avoid spinning your wheels.
12) Never drive in reverse over the crest of a hill.
13) Descend a hill in the same gear as you would use to go up the hill.
14) Avoid excessive brake application while descending hills.
15) Never descend a hill while in neutral.
16) Every effort must be made to avoid parking or stopping on hilly terrain.

TASK - FUELING

HAZARDS

- burns (i.e. hot and cold)
- fire
- slips, trips and falls
- static electricity
- spills and leaks

SAFE JOB PROCEDURES

1) Choose firm ground that is not susceptible to flooding.

2) Fuel leaks, of any amount, are unacceptable and must be contained and fixed immediately. Refueling operations are prohibited until all leaks are fixed and any spill cleaned up.

3) Store fuel nozzles off the ground with the nozzle facing downward to preclude water contamination.

4) Suspend fueling operations immediately when a lightning discharge hazard exists.

5) Two (2)10A, 60 BC fire extinguishers must be strategically located, prominently displayed and readily available at all fueling locations.

6) Two (2) “No Smoking" signs must be strategically located and prominently displayed near the fueling locations.

7) When refueling vehicles, the ignition must be shut off.

8) There must be no smoking within 3 metres of the fueling area.

9) Absorbent material must be placed under all valves and hose couplers.

10) All fuel dispensing systems must have grounded metal containers to catch spillage.

11) Fuel storage areas must be a minimum of 100 metres from living accommodations.

12) All access over berms must be accomplished with steps and handholds.

13) Always wear gloves when fueling.

14) Avoid use of cell phones or devices that are not intrinsically safe.

TASK - GUARDING EQUIPMENT

HAZARDS

- flying debris
- moving parts
- caught in equipment

SAFE JOB PROCEDURES

1) All belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains or other reciprocating, rotating or moving parts of equipment must be guarded.

2) All machine guards must be kept in good condition and appropriate guards must be fastened in place.

3) All hand tools must be guarded at point of operation.

4) Employees are not to operate tools or machines unless guards are in place.

5) Never wear any loose or torn clothing or jewelry, except medical alert jewelry, when working with rotating equipment.

TASK - WORKING WITH A SAFETY HOOK

HAZARDS

- load release

SAFE JOB PROCEDURES

1) Always visually inspect hook and latch before using.

2) Never use a latch that is distorted or bent.

3) Always ensure that the spring will force the latch against the tip of the hook.

4) An employer shall ensure that a worn or damaged hook is permanently removed from service if the wear or damage exceeds specifications allowed by manufacturer. **Note:** A latch will not work properly on a hook with a bent or worn tip.

5) Always remove from service any hook with a crack, nick or gouge. Hooks with a crack, nick or gouge must be repaired by grinding lengthwise, following the contour of the hook.

6) Never repair, alter, rework or shape a hook by welding, heating, burning or bending.

7) Eye hooks, shank hooks and swivel hooks are designed to be used with wire rope or chain. Efficiency of assembly may be reduced when used with synthetic material.

8) Always ensure that the hook supports the load. The latch must never support the load.

9) When placing two (2) sling legs in a hook, ensure that the angle from the vertical to the outermost leg is not greater than 45 degrees, and the included angle between the legs does not exceed 90 degrees.

TASK - ICE SAFETY/TRAVELLING/WORKING ON ICE

HAZARDS

- loss of equipment
- hypothermia
- drowning
- slips/trips/falls

SAFE JOB PROCEDURES

1. When working on ice, attention must be paid to the thickness and quality of the ice. Ice profilers and ice augers will be used to check the ice before the project begins. However, all workers must pay attention to the area they are driving on. All vehicles shall travel upon only previously checked ice and shall not take any shortcuts.

2. Do not park units too close together without knowing the thickness of the ice beforehand.

3. Factors to consider when determining effective weight-bearing ice:
   - "White" ice is only half as effective as "blue" ice.
   - If water lies between layers of ice, use only the depth of the top layer of ice. A vehicle speed of less than 30 kilometers/hour is recommended to avoid wave build ups under ice.
   - Air temperature fluctuations affect ice strength radically.
   - Add 20% to above thickness for saline ice

4. The minimum ice thickness of clear "blue" ice for continuous travel is as follows:
   - The first 1,000 kilograms require 14 centimeters of ice
   - Each additional 1,000 kilograms require 4 centimeters
     Therefore, 50 centimeters of ice can support 10,000 kilograms
     After 50 centimeters total thickness of ice, each additional 10,000 kg needs 16 centimeters of ice or 1.6 centimeters of ice/1,000 kilograms.
   - For example: 35,000 kilograms requires:
     14 cm for 1,000 kg
     + extra 36 cm for 9,000 kg at 4 cm/1,000 kg
     + extra 40 cm for 25,000 kg at 1.6 cm/1,000 kg
     = total 90 cm for 35,000 kg

TASK - LIFTING

HAZARDS

Musculoskeletal injury resulting from

- over-reaching
- twisting or turning
- objects too heavy

1) If there is one rule to follow regarding back care it is: "spare your back". Always keep any strain on your back to a minimum. If your back is sore do not attempt to lift any heavy objects, as reinjure is more likely.

2) Support your elbows on your knees when working in a crouched or bent position.

3) Always keep your back straight and as upright as possible when lifting to ensure even distribution of the load. Keep the knees bent. In this way you can use the strength of your leg muscles.

4) Bending over and lifting at the same time will eventually cause back injury.

5) Always use both hands when lifting so that your back is loaded evenly on both sides.

6) Avoid lifting when your back is not straight. Never pick up or put down an object while in a twisted position.

7) Never over-reach or bend too far to the side. If the object is unduly heavy, get help. To avoid the load on one person, pick up or lay down the object on a given signal.

8) Take advantage of skids, hoist, bars, jacks, blocking or rollers when moving heavy material. Never place yourself under a heavy object when it is being lifted.

9) Musculoskeletal injuries: If a worker reports to the employer what the workers believes to be work related symptoms of a musculoskeletal injury, the employer must promptly

   a) review the activities of the worker, and of other workers doing similar tasks to identify work-related causes of the symptoms, if any, and
   b) take corrective measures to avoid further injuries if the causes of the of the symptoms are work related.

TASK - GENERAL MAINTENANCE

HAZARDS

- moving parts
- high pressure
- pinch points

SAFE JOB PROCEDURES

1) Record and log all maintenance work.

2) Regularly service vehicles (i.e. oil, belts, grease, filters, etc.) as per manufacturer's recommendations.

3) Always ensure that the battery is adequate for cold weather operations.

4) Never attempt repairs, maintenance or service while the machinery is running. If adjustments must be made while the machinery is running, do so only when a fully trained assistant is at the controls to take emergency measures in the event of a malfunction.

5) Inspect universal joints and steady bearings for excessive wear and loose connections.

6) Inspect all hoses, fittings, chains and lines daily.

7) Beware of moving machinery parts. Always ensure that guards are in place.

8) Fire extinguishers must be checked regularly and serviced when required.

9) Bleed pressure off prior to breaking any connection.

10) While parked overnight or in storage, all tracks, buggies and heavy equipment must have absorbent pads placed under all potential areas where fluids or fuel could leak.

11) Do not alter any equipment outside of its original form. Strictly adhere to the manufacturer’s specifications when repairing equipment.

TASK - MOUNTING AND DISMOUNTING EQUIPMENT

HAZARDS

- slipping on handholds and foot supports
- falling off elevated area

SAFE JOB PROCEDURES

1) Always use a three-point mount and dismount when climbing on or off equipment.

2) While climbing on or off, always face the equipment. This will maximize footing and holding points.

3) Never jump from any elevated area.

4) Always access trailer via working deck or beavertails, utilizing handholds and proper foot supports.

5) Always ensure that footwear is reasonably free from grease, mud or snow prior to climbing on or off equipment.

6) Always ensure quad/snowmobile is shut off and/or appropriate brakes are applied (to avoid runaways).

TASK - WORKING ON OR AROUND A ROADWAY

HAZARDS

- collision with other vehicles
- poor visibility
- traffic
- hit by vehicle

SAFE JOB PROCEDURES

1) All vehicles must use beacons.

2) Proper "cable crossing" and "survey crew ahead" signs must be displayed on each side of the road to alert passing motorists.

3) Park off roadways so that you never impede traffic control.

4) Never assume vehicle will see you and stop.

5) Never work on road under poor visibility conditions unless proper traffic control is in place.

6) Ensure flag people are in place when working on road.

TASK - SCOUTING CONTROL

HAZARDS

- working/stranded in remote locations

SAFE JOB PROCEDURES

1) Always carry survival supplies. (i.e. extra food/clothing, bear bangers, flares, etc.)

2) Maintain radio contact with another person. If not possible, then advise supervisor or another responsible person of plans and proposed schedule and arrange for a check-in time.

3) Notify supervisor or other responsible person when scouting is complete.

4) When scouting with an ATV, an emergency response plan must be completed for a lost and missing person. If contact with the designated person is not made then a search and rescue must be initiated.

5) Never abandon a stranded ATV unless certain of whereabouts.

6) Always carry SPOT system

7) Carry bear spray, bear bangers, flares or any appropriate survival gear

8) If unsure, mark trail that was used for entry, always ensure chainman knows location and ERP

TASK - TIRE CHANGING

HAZARDS

- vehicle movement
- pinch points
- loss of control
- collision with other vehicles

SAFE JOB PROCEDURES

All-Can ensures that professional personnel will service, inspect, disassemble and reassemble tires or tire wheel assemblies in accordance with manufacturer's specifications. All-Can personnel, while not allowed to do so, are qualified, trained and experienced to change tires in emergency situations in accordance with the following procedure.

1) Never apply the brake heavily. Move to a safe place on the side of the road.
2) Park on a level spot and turn off the ignition.
3) Turn on the hazard flashers and place flares as required.
4) Always wear high-visibility clothing when changing a tire.
5) Always ensure that the vehicle will not roll (i.e. block the wheels).
6) Always set the parking brake, prior to jacking up the vehicle.
7) Loosen wheel nuts. Never remove lug nuts until tire is raised off the ground.
8) Never place any part of your body under the vehicle.
9) Always place the jack in the specified front or back jacking points.
10) Never use a jack-all for tire changing.
11) Always ensure lug nuts are snug prior to lowering the tire.
12) Fully tighten lug nuts after lowering vehicle to the ground.
13) Always ensure that all tire changing equipment is put back in its original place.

TASK - SETTING UP TOWERS

HAZARDS

- underground and overhead facilities
- cuts
- lifting
- wind
- limited work area
- electrical shock
- cables may break or detach
- slips, trips and falls

SAFE JOB PROCEDURES

1) Locate underground and overhead facilities.

2) Always wear gloves and a hard hat to prevent cuts, bruises and crushing injuries.

3) Lift with your legs and have a sufficient number of personnel present.

4) Plan work during calm weather conditions.

5) Choose an adequate sized site.

6) Clear site of obstructions and debris prior to set up.

7) Always use approved cables, clamps, connectors, fasteners and power supplies.

8) Inspect all cables, clamps, connectors and fasteners for damage. Never use damaged equipment.

9) Always ensure correct size cables are used.

TASK - TOWING

HAZARDS

- collision with tow vehicle
- failure of steering or braking system
- breakage of tow equipment
- slow moving vehicles

SAFE JOB PROCEDURES

1) Attach tow equipment only to the main structure of the vehicle.

2) Tow equipment must be routed so they never touch any part of the suspension, steering, brake or cooling system.

3) Always tow vehicles from the front.

4) A maximum speed of 50 km/hr must be maintained while towing.

5) Set manual locking hubs in free position on the vehicle being towed.

6) Never use nylon ropes as towing equipment.

7) Flat nylon web or straps are recommended for towing.

8) If a tow length (i.e. chain, cable or strap) of greater than 4 metres is required, then an alternative tow method or vehicle must be considered.

9) Combination towing configurations must never be used (i.e. chains and straps).

10) Always take up the slack gradually.

11) Any towing operations must be under the direction of one person. Only drivers in the vehicle and that person must be involved in the operation.

12) If a tow strap breaks, the broken end can snap back with enough force to maim or kill anyone in its path. This applies to all lines so use extreme caution.

13) All personnel must stay well clear of any line under load.

14) There must always be someone steering a vehicle under tow.

15) Vehicles under tow must have their hazard flashers on.

TASK – VERIFICATION OF LOWERED IN PIPE DEPTH/WELD LOCATION

HAZARDS

- slips, trips and falls
- entering an unsafe ditch
- working around mobile equipment

SAFE JOB PROCEDURES

1) Never walk on pipe, whether suspended or in final position. Use specialized equipment for this task.

2) Wear adequate personal protective equipment.

3) Maintain safe distance from ditch line.

4) Ensure range pole is in vertical position.

5) Never walk in unstable trench/ditch if unsafe. Refer to trenching/excavation procedures in OHS manual.

TASK - WALKING

HAZARDS

- indiscriminate
- slips, trips and falls
- unstable ground
- falling rocks

SAFE JOB PROCEDURES

1) Never run down any type of survey line.

2) Never overload yourself with equipment (i.e. geophones).

3) Always step over logs not on them.

4) Never cross creeks without footwear being worn.

5) Utilize seismic lines or detours, never take shortcuts.

6) Maintain foot contact with creek bottom (i.e. no crossing a creek via a downed tree).

7) Never stand directly below an ascending or descending worker as rocks can be dislodged.

8) Pay full attention to your surroundings and constantly pre-plan your actions.

9) Test all ropes prior to using.

10) Observe "flagging" warnings (i.e. cliffs, bee hives, detours, etc.).

11) Never follow closely behind workers on a hand cut because of branches springing back.

12) Always use caution when climbing through barbed wire fence. If possible, have someone part it for you while you climb through it. Never stand on the wires.

13) Never jump a ditch.

14) Never jump off a fence.

TASK - WINCHING

HAZARDS

- cable break
- collision with other vehicle
- cuts and scrapes
- pinch points

SAFE JOB PROCEDURES

1) If pulling or winching another vehicle out of the ditch, use extreme caution with respect to other traffic. If it cannot be achieved with a margin of safety, do not attempt it.

2) Use additional people as flag personnel to control oncoming traffic, when required.

3) Never winch across a roadway unless traffic is stopped in both directions.

4) Winching operations must be under the direction of one person. Only the drivers in the vehicles and that person must be involved in the operation. All other personnel must stay well clear. The persons involved must be certain of their roles and communicate clearly with each other. The person directing the operation must stand well clear and to the side of cables under tension.

5) If a winch line or tow strap breaks, the broken end can snap back with enough force to maim or kill anyone in its path. This applies to all lines so use extreme caution.

6) All personnel must stay well clear of any line under load.

7) Use a snatch block, if possible, when winching.

8) Handle winch cable with gloves to avoid cuts and steel slivers. Never let a winch cable slide through your hands. Use the hand-over-hand method.

9) Use extreme care when spooling the slack cable back onto the drum of the winch. Stand well back (i.e. minimum 1 meter) from the cable guides to allow time to stop the winch if a glove gets caught or to get free if the winch malfunctions.

10) Wind the cable on the drum neatly so that when tension is put on the line it does not kink the cable. A kinked cable loses strength and could snap under tension

TASK – WORKING ALONE

HAZARDS

- any situation, or condition on the work site that could cause illness, injury or emergency where assistance is not readily available.

SAFE JOB PROCEDURES

Normally, All-Can workers are employed in pairs comprised of a Party Chief and Chainman who have constant radio communication while in the field. In the event of separation even for brief periods the following general parameters shall be respected.

When a worker is required to work alone, the employer shall:

1) First conduct a written hazard assessment of the work site, with or without the assistance of the affected worker, (Form SM2-003) to identify existing or potential hazards and take all reasonable steps to eliminate any hazard identified or control hazard if it is not reasonably practicable to eliminate it. (Employer to provide copy of hazard assessment to affected worker)

2) Establish an effective means of communication (radio, telephone, or other electronic device) between the worker and persons capable of responding to worker's needs.

3) If an effective means of communication is not practicable or readily available at the work site, the employer shall visit the worker, or ensure the worker contacts the employer at intervals of time, appropriate to the nature of the hazards associated with the worker's work.

4) In addition to the initial hazard assessment, the employer should conduct further written hazard assessments at intervals of time appropriate to the conditions and circumstances of the worker's work and affected workers shall be provided with a copy.

5) In the event of an emergency use available support equipment and supplies:
   the party chief truck / quad have First Aid supplies, additional mobile radio, GPS receiver to contact STARS, site-specific emergency contact numbers (page 10-23), tow rope, flares, fire extinguishers and both workers have current First Aid / CPR tickets.

3.b.4.3 SLASHING

This module contains Safe Job Procedures to assist you in safely performing various tasks based on recognized hazards.

Although a lot of thought has gone into the development of the Safe Job Procedures (SJP), they only serve as a guideline to put you in the right frame of mind prior to conducting a task.

It is also realized that some tasks are more critical than others and as such require more stringent procedures. The following list contain SJP from this module which All-Can considers non-negotiable. Failure to comply to these procedures may result in immediate dismissal.

- A minimum three (3) tree lengths from other people and machinery is required in all falling operations.
- Always hold a chainsaw with two hands while cutting.
- Never cut above the shoulder with chainsaw.
- Never work under hanger or lodged tree or cut the supporting tree. Always wear gloves when working with the chain.
- Never drop start a chainsaw.
- Never operate a chainsaw which is missing or has broken safety features (i.e. chain catcher and chain brake).

ALL-CAN CHAINSAW CREW CHECK LIST

JOB: CREW: DATE:

PPE											
Metal Mesh visor											
Class “A” muff (min. 24NRR)											
Orange or red hardhat											
Hard toed footwear											
Gloves											
Sawpants 3600 TCS rating											
AB. #2 first aid kit & Individual Type P Kit											
Whistle											
High visibility clothing											
BC #2 first aid kit (packer)											
SUMMER REQUIREMENTS											
Bee sting kit (1 per crew)											
Belt fire extinguisher											
Cayenne pepper (1 per crew)											
Continuous noisemaker											
CHAINSAW											
Hand guard											
Chain brake											
Anti-vibration damper											
Rear hand guard											
Throttle trigger lock-out											
Safety raker or safety link chain											
Chain catcher											
Muffler with flame arrestor											
Guide bar cover											
TOOLS AND EQUIPMENT											
Spare parts											
Tool kit											
WHMIS (signage)											
CSA or UL gasoline container											
Radio communication											
Flagging											
Wedges (faller)											
Axe with cover (faller)											
TRAINING											
Basic worker orientation											
WHMIS											
Chainsaw											
First aid (67%)											
Defensive driver (as required)											
H_2S awareness (as required)											
ATV (as required)											

TASK - CHAINSAW MAINTENANCE

HAZARDS

- kickback
- cuts

SAFE JOB PROCEDURES

1) To prevent general bar wear, maintain the chain properly, tension the chain frequently, use plenty of oil and never apply force to make the chain cut.

2) Check the bar for bent or worn guide rails and cracked or burred edges. Badly damaged bars should be replaced.

3) Clean the bar groove and oiler holes often. Use a sharp tool which is long enough to reach the bottom of the groove.

4) When cleaning the oiler holes, ensure that they are cleaned through the bar groove so oil can flow freely.

5) Always ensure that the bar and chain are receiving adequate lubrication.

6) Sprocket bearings should be lubricated daily to prevent premature wear.

7) Never install a new chain to a worn sprocket.

8) Broken chains are nearly always a result of poor chain maintenance. Keep your chain sharp, correctly tensioned and well lubricated.

9) Increase chain maintenance in cold weather. Frozen wood causes cutters to wear, crack and break at the back rivet hole.

10) Set chain depth gauges properly. Depth gauges which are set too low can create unnecessary strain on the chain increasing the risk of kickback.

11) Always wear gloves when working with the chain, in order to protect your hands from injury.

12) Never use a saw with a clogged or defective muffler.

TASK - FUELING

HAZARDS

- fire
- spills

SAFE JOB PROCEDURES

1) Only use CSA or UL approved containers. Anti-freeze jugs are not approved containers.
2) Always ensure that the containers are kept clean.
3) Never smoke while refueling.
4) Always fuel in a cleared, debris free area.
5) Avoid oil and fuel spills.
6) Have a fire extinguisher handy.
7) Let your saw cool down before refueling. Never refuel a hot saw.
8) Use a fueling spout.
9) After fueling, wipe the entire saw off with a rag or allow it to completely dry before starting the saw.
10) Make sure the filler caps are snug; check for leaks. Replace or repair caps that have damaged vents.
11) Move the saw away from the refueling area before trying to start it.

TASK - STARTING THE SAW

HAZARDS

- flying debris
- kickback

SAFE JOB PROCEDURES

1) Accidents which occur while starting the saw are usually caused by using an incorrect procedure.

2) Before starting the saw, make the following pre-start checks:
   - handles are straight and tight
   - covers are tight
   - muffler is tight. Never grab a hot muffler
   - throttle trigger lock-out is working
   - front hand guard and chain break lever moves freely
   - tension of the chain using a glove. Pull the chain toward the bar nose to avoid cutting yourself
   - chain is sharp and not damaged
   - fuel and oil level
   - chain catcher is still present
   - pull rope and handle knot

3) Never attempt to start the saw unless both the guide bar and chain are fitted. The clutch may fly off and cause injury.

4) There are two recommended methods to start a chain saw:
   - starting the saw on the ground
   - starting the saw between the knees

A. STARTING THE SAW ON THE GROUND

1) Make sure there is nothing close which could catch in the chain. It is recommended that the area within a 5 foot (1.5 metre) radius be cleared.

2) Remember, as soon as the saw starts the chain will race around the bar. This is a dangerous time.

B. STARTING THE SAW BETWEEN YOUR KNEES

1) Grip the rear handle firmly between your knees.

2) The best way to start a saw when in deep snow.

TASK - HOLDING A CHAINSAW

HAZARDS

- carrying the saw
- unsecured saw
- kickback

SAFE JOB PROCEDURES

1) Carry the saw at your side with the hot muffler away from your body.
2) If you are carrying the saw for more than a short distance, turn the saw off and put the chain brake and protective bar cover on.
3) Always hold the saw with two hands.
4) There are three basic techniques to remember when holding a saw:
   -your left thumb must always be around the front handle to prevent the saw from being wrenched from your hands in the event of kickback
   -keep your wrists straight. Bent wrists cause unnecessary strain on muscles and your arms will quickly tire
   - let your rear handle twist in your hand when you change the position of the saw
5) When working with a saw, plant your feet firmly and:
   - stand with your legs well apart so your body has a steady support
   - never work on insecure material
6) Always keep the saw close to your body. This will keep your body's center of gravity and that of the saw as close together as possible. Thus, you will be steadier.
7) Utilize your leg or the tree trunk to steady the saw. This will relieve the load on your back and arms. It will also enable you to use maximum force to control the saw in the event of kickback.
8) Use your hands and arms mainly to guide the saw. They should bear as little of the saw's weight as possible.
9) Never stand in a direct line with the chain. This keeps your body out of the way in the event of a kickback. It also keeps your feet out of the way in the event you cut completely through the log.

TASK - WINTER WORK

HAZARDS

- wind
- snow
- frozen wood
- wedges

SAFE JOB PROCEDURES

A. WIND

1) During the winter, wind can be frequent and severe. It can create severe windchill factors leading to hypothermia and frozen skin.

2) Wind causes blowdown which creates additional dangerous situations for fallers.

3) Excessive wind can be a factor in barber chairs.

4) Snags, dead tops and limbs can be blown down by the wind.

5) The solution is to move to a protected area where wind is not a factor or to stop falling and wait until conditions improve.

B. SNOW

1) Snow covers debris which can cause slipping and falling. Wear safety footwear with good grip soles. Carry your saw correctly with the brake on.

2) Heavy accumulations of snow can cause limbs to break off and fall. Look up occasionally while sawing. Be particularly cautious when wedging.

3) Snow also can change a tree's center of gravity, making it difficult to determine the direction in which the tree will fall.

4) Falling trees create clouds of snow that can cause "white outs" at the critical time. Wait at the safe location until all that will fall has fallen. Remember to be particularly cautious that nothing will be catapulted back through the snow cloud.

5) Snow covers hidden hazards which could fall from the tree tops.

6) Heavy clumps of snow could fall and cause injuries.

7) Debris hidden in the snow could be thrown back. Look for humps or ridges in the snow which could indicate debris. Clear off and buck the debris if required.

8) Snow hinders escape. If you have dug the snow out from around the stump, ensure you never get trapped in the hole. Pack down the snow on the escape route if required.

9) The increased physical effort required when working in snow increases fatigue and the potential for injury.

10) Snow distorts sound, making it difficult to accurately judge the location of and distances from other workers and equipment. It is important to maintain the safe distance of 3 tree lengths when falling trees.

C. FROZEN WOOD

1) Frozen wood is brittle and breaks readily. Look up while sawing and wedging to ensure that limbs or tops never fall. Never fall trees so that they unnecessarily brush other standing trees causing debris to fall.

D. WEDGES

1) Wedges are more brittle than usual in cold weather, increasing the hazard of injury from chips or flying particles.

2) Always ensure that the burrs are cleaned from the wedge. Always wear eye protection when wedging.

3) In frozen wood, wedges can fly out with considerable force if struck by a glancing blow. Be sure wedges are well set before attempting any heavy wedging. Keep the swing path clear to ensure that the wedge receives a direct, solid hit.

TASK - CHAINSAW USAGE

HAZARDS

- kickback
- cuts
- noise
- broken chain
- vibration
- burns

SAFE JOB PROCEDURES

A. KICKBACK

1) Kickback occurs when the chain cutters at the guide bar nose jam and cause the saw to kick rapidly backwards and upwards. Since the chain is traveling at speeds of up to 65 feet per second, the entire kickback cycle is over within one-fifth of a second. In other words, this gives you no time to take evasive action.

2) The most dangerous part of the bar for kickbacks is the 12 to 3 o'clock position.

3) There are some common work situations where kickback frequently occurs:
   - inadvertently touching an object with the bar nose
   - when a saw binds in a cut during a sit back or in a log under tension
   - limbing bushy trees in a deck or on the ground
   - brushing out an escape route
   - boring cuts

4) Remember, whenever you use the bar nose there is a chance of kickback.

5) To minimize the risk of kickback:
- never bring the nose of the bar in contact with any object
- never cut with the bar nose (i.e. 12 to 3 o'clock position)
- cut with the engine at full throttle
- stand to the side of the cutting path of the saw
- know where the bar tip is at all times
- grip the saw with your thumb around the front handle
- hold the saw securely with both hands
- never operate the saw when you are tired
- use a safety chain and keep it sharp
- never lower the depth gauges below the recommended limits
- maintain correct chain tension by adjusting as required
- ensure the chain brake is functioning. Chain brakes do not prevent kickback but they can prevent serious injury

B. CUTS

1) Never push and cut at the same time. In this situation you are in an awkward position and holding the saw with one hand. Loss of saw control is possible.

2) Know where your bar is at all times. Many injuries are caused when a log is cut through and the bar strikes the operator's feet or legs.

3) Never stand directly in line with the chain - stand to one side. This way the saw body is between you and the chain.

4) Carry the saw correctly. Put on the bar guard and the chain brake.

5) Never drop start your saw. The starter rope may break, allowing the saw to pivot in your hand and cut you.

6) Never cut above the shoulder. Loss of saw control is more likely to occur.

7) Always wear gloves when handling saw chain.

8) Remember; ease off on the chain saw throttle when performing a cut with a pushing chain. The saw will have a tendency to "jump" toward you as it is released from the top of the log.

C. NOISE

1) Sound level readings indicate they can operate at sound levels in excess of 110 dBA.

2) To prevent hearing loss all power saw operators must wear an ear plug within an ear muff.

3) Clean ear pads periodically.

4) Hearing protection must be on prior to starting the saw.

D. BROKEN CHAIN

1) To prevent injuries from broken chains ensure your saw has a chain catcher and a rear hand guard.

E. VIBRATION

1) Over time, chain saw vibration can cause circulatory disorders in the more delicate blood vessels.

2) This situation appears to be more common in climates that are cold and wet.

3) Vibration related injuries can be reduced by:
- using a saw with anti-vibration dampening on the front handles and between the handle and engine body
- wearing gloves to keep hands warm
- holding the saw in a way that does not cause your hands to cramp
- using a properly sharpened chain which reduces vibration

F. BURNS

1) The major cause of burns while using a chain saw is from the hot muffler. Burns can also occur from a hot chain, the engine cylinder or spark plug.

2) To avoid burns follow these basic rules:
- wait for the saw to cool before performing any maintenance
- carry the saw with the bar to the rear and the hot muffler away from your body

TASK - THREE BASIC CUTS

HAZARDS

- kickback
- cuts

SAFE JOB PROCEDURES

A CUTTING WITH A PULLING CHAIN

1) The safest and easiest method. This cut is made with the bottom of the bar.
2) The saw will pull away from you and towards the wood due to the direction of the rotating chain.
3) Cut at full throttle.

B CUTTING WITH A PUSHING CHAIN

1) This cut is made with the top of the bar so the saw is going to push away from the wood and towards you.
2) Hold the saw into the wood.
3) Be careful not to pull the saw into yourself when the cut is completed.
4) Beware of kickback.

C THE BORE CUT

1) This cut is made with the nose of the bar and is the most dangerous cut you can make. Kickback often occurs.
2) Start the cut using the tip of the bar at the 4 to 5 o'clock position. Cut into the log about the depth of the bar. Next, align the saw in the direction you wish to bore. With the saw at full throttle, push bar into the wood.
3) If possible, support the saw against your leg.

TASK - FALLING

HAZARDS

- hit by the tree
- falling debris (i.e. tree tops, snags, catapults, etc.)
- kickback
- slips, trips and falls

SAFE JOB PROCEDURES

A LOOK UP

1) Never be in a hurry to begin cutting.

2) Look up for rotten branches, rotten tops or snags. The vibration from the saw or movement of the tree can trigger a trap.

3) Check all conditions that might influence or interfere with falling.

4) Check for defects in the tree you will be cutting.

5) Look up for leaners or natural hangers.

6) Check wind direction and velocity.

7) Note any snow loads which may fall and momentarily block your vision at the critical time (i.e. white out).

8) Check for trees which could act as a catapult and hurl branches and debris back in your direction. Poplars are particularly bad in this regard.

B PLAN

1) Plan a starting spot. The ideal spot is a hole or natural opening into which the first trees can be felled without hang-ups or jackpots.

2) Plan your cut to follow the natural lean of trees. This lean is due to the prevailing winds and sunlight.

3) Plan how you are going to work hillsides to ensure that fallen trees never slide downhill and strike other workers.

4) Know the location of other workers. A minimum of 3 tree lengths from other people and machinery is required in all falling operations.

C BRUSHING OUT THE TREE

1) Before the tree is felled, it is necessary to remove any brush that interferes with the falling procedures or your escape route.

2) Trim the trunk of branches that are in the way.

D PLANNING THE ESCAPE ROUTE

1) Plan your escape route at a safe angle to the direction the tree will fall.

2) An escape route at a 45 degree angle from the line of fall is recommended.

3) A safe angle escape route ensures that you are:
   - not under the tree to be felled
   - not in the path of catapults
   - not behind the tree in case of kickback
   - far enough away to be free of fallen debris

4) Brush the route out if necessary.

5) Watch for any rocks or hidden debris which could cause a trip or fall.

6) Once the tree starts to fall, retreat far enough to avoid:
- broken top and limbs
- falling debris
- tree butt kickback
- trees rolling off the stump
- tree splits and barber chairs

7) An escape route should not be down a steep hill from the tree being felled. The tree may roll or slide down after you.

E THE FALLING CUTS

1) There are two basic cuts required to fall a tree:
- the notch
- the back cut

2) The notch determines and controls the direction the tree will fall.

3) The notch must have these characteristics:
- it should be horizontal
- the depth of the notch must be one-third the diameter of the tree
- it must be as open as it is deep
- the two cuts required to make the notch must meet cleanly at the back of the notch
- the notch wedge must be removed

4) The back cut removes most of the wood still holding the tree.

5) The back cut should have these characteristics:
- it must be 2.5 to 5 centimeters (1 to 2 inches) above the notch (never lower than notch) and horizontal
- leave a strip of holding wood between the notch and back cut. This holds the tree on the stump and helps to control the direction the tree will fall
- never cut the tree right through or the tree will not hang true and it could fall in any direction
- always ensure that the holding wood is the same thickness on both sides of the tree. If it is thicker on one side, it will cause the tree to pull in that direction

F DRIVING THE WEDGE

1) Begin the back cut following recommended procedures.
2) Stop sawing when there is enough space to insert the wedge.
3) Snug the wedge(s) into the back cut being careful not to drive it into the saw chain.
4) Look up during the driving to ensure the vibration caused by pounding in the wedge does not shake loose any overhead hazards.
5) Continue the back cut.
6) Tap the wedge further in as required.
7) Continue the back cut to create a good hinge.
8) As tree begins to fall, remove the saw and retreat to a safe location. Take a quick look back as you retreat.

G RETREAT

1) As the back cut is completed, the tree will begin to fall in the direction of the notch. A retreat is essential for your safety.
2) Log butts may kick back and jump into the air or swing sideways.
3) Chunks may be catapulted with deadly force.
4) Dead branches or tops may fall.
5) Snags may fall back toward you if they are brushed by the falling tree.
6) Ideally, you should stand behind a solid standing tree. This will serve as a shield from falling debris.

H WAIT

1) Always wait until everything that is going to fall has fallen.
2) Often a top or branch will hang in the top of a swaying tree for several seconds before dropping.
3) In winter conditions, snow often causes temporary loss of vision as it falls off the tree. This snow could fall in a cloud causing a "white out" which can momentarily restrict your vision. Consequently, you may not see debris as it falls off the tree.

TASK - BUCKING TREES

HAZARDS

- kickback
- cuts
- tree under tension
- slips, trips and falls

SAFE JOB PROCEDURES

1) Assess how and where the tree is supported and where the tension and compression areas are.
2) Always stand on the uphill side of the tree; the tree may roll from the support after bucking.
3) Always use the saw with both hands and with a firm grip.
4) Always keep your feet well away from the tree trunk.
5) When withdrawing a jammed saw never jerk it out. The chain may come in contact with your leg.
6) Never work directly in line with the saw; position your body to one side.
7) Always have an escape route.
8) You will be in the best position to control kickback if you maintain a firm stand with your feet apart.
9) Never stand on insecure material.
10) Never work off balance or in an awkward position.
11) Keep the log between you and the saw as much as possible.
12) Watch out for limbs, other logs or butt ends which your saw nose may touch, resulting in kickbacks.
13) Always stand inside the bow on a tree under tension.
14) Maintain a minimum of 5 metres between yourself and fellow workers.
15) Cut all willows flush to prevent spear-like sticks.

TASK - FALLING FIRE KILLED TIMBER

HAZARDS

- falling debris (i.e. tree tops, snags, etc.)
- unstable trees
- splitting and snapping of trees

SAFE JOB PROCEDURES

1) In fire killed timber, overhead hazards exist due to limbs being partly burned through. Look up, be particularly careful when wedging. Vibration caused by pounding the wedge can dislodge limbs and debris.
2) Stands can be unstable due to roots being burned. Trees are more likely to fall or be knocked over if brushed by a felled tree.
3) Fallers must retreat to a safe location and wait there until all debris that will fall has fallen.
4) Snags can be unstable at the best of times. If they have been burned they are more likely to fall than ever before. Snags which can fall into a worksite must be felled or flagged as a hazard if unsafe to cut.
5) Fire killed trees can be drier than green timber. As the back cut is being made, the holding wood may have a tendency to "snap" rather than break gradually.

TASK - WORKING WITH CATAPULTS

HAZARDS

- flying debris

SAFE JOB PROCEDURES

1) To prevent injuries from catapults, fallers must retreat to a safe location and wait until all that will fall has fallen.

2) Catapults can come from a long distance, therefore it may take some time before they hit the ground. Always ensure that the wait at the safe location is long enough.

3) Always take a quick look back as you retreat.

TASK - WORKING IN BLOWDOWNS

HAZARDS

- trees under tension
- slips, trips and falls

SAFE JOB PROCEDURES

1) Blowdowns presents special hazards. When cut, the trees may rebound and cause serious injury because they are often under tension.

2) Saw binding can be expected in most blowdown trees because of uneven terrain and other materials on the ground.

3) The best way to avoid injury is to examine windfall trees carefully. You must determine what stress exists.

4) When bucking trees under tension it is difficult to predict tree movement at the completion of the cut - so be careful and prepared to move quickly.

5) For trees under tension, make a cut on the compression side to relieve the stress.

6) Blowdowns are also hazardous because the faller has to climb on downed trees. When doing this always ensure that the chain brake is in good working order and used when moving.

TASK - CUTTING LEANERS

HAZARDS

- falling debris (i.e. tree tops, snags, etc.)
- barber chair

SAFE JOB PROCEDURES

1) Trees with a heavy lean often cannot be felled in the conventional manner without splitting or causing serious kickback.

2) The butt end of heavy leaners is under considerable tension and there may be splits in the trunk (i.e. barber chair).

3) When cutting heavy leaners the following steps must be adhered to:
   - the undercut notch must be 1/4 the diameter of the tree instead of 1/3 the diameter
   - use a boring technique to cut the back cut from the hinge wood out to the back side of the tree instead of the usual back side to hinge wood direction
   - because of the lean and the reverse direction of the back cut, the tree will start its fall more rapidly. The retreat must be well planned and rapid

TASK - CUTTING HANGERS

HAZARDS

- falling trees
- falling debris (i.e. tree tops, snags, etc.)

SAFE JOB PROCEDURES

1) The safest and recommended way to take down a hanger is to push it down or winch it down with a skidder.
2) Occasionally a hanger can be freed by cutting through the hinge wood and allowing the tree to roll free.
3) Use extreme caution to avoid being trapped when the tree rolls.
4) Never work under or near a hanger or lodged tree.
5) Never attempt to fall the supporting tree.
6) Never fall another tree across the lodged tree; this will usually result in a jackpot.
7) Always establish a warning area around the hanger with flagging.
8) Never climb a hung up tree.

TASK - CUTTING SNAGS

HAZARDS

- wind
- vibration
- falling trees (i.e. tree tops, etc.)
- falling debris

SAFE JOB PROCEDURES

A SNAG ASSESSMENT

1) A snag is defined as any dead or dying tree which is over 10 feet in height, regardless of species. Trees become snags when they succumb to old age, fire, disease or when growth competition becomes too severe for an individual tree.

2) As the root structures deteriorate, and rot sets in, snags become prone to falling. Ice, snow and frost all have a deteriorative affect on snags. Snags dry out all summer, then during the heavy rain of fall and winter, soak up large volumes of water and become heavy and unstable. Winds or ground vibrations created by falling or other logging activities can cause snags to come crashing down.

3) Snags have injured and killed workers. They are very unpredictable and are normally felled before other work within the hazardous area of the snag takes place. Snags must be removed progressively with the falling of other timber. This eliminates the chances of unnecessary brushing of the snag which further weakens it. It also prevents the snag from becoming isolated and perhaps more vulnerable to wind, vibration, and other factors.

4) Fallers must be constantly on the lookout for snags, checking the hazards of each snag before falling or working within the hazardous area of the snag.

5) It is the faller's responsibility to arrange for the removal of snags as soon as possible. Supervisors must ensure they comply with this practice and that the fallers are experienced and competent in snag falling.

6) Special techniques and safety precautions are needed for the safe felling of snags. Each snag poses a different problem, and must be assessed for hazards. The top must be visible before falling begins. Always assume the top is rotten and that material could dislodge easily.

7) Examine the snag itself for size, height and condition. Check for defects such as rot and splits at the base. Study the snag carefully. Always work from the safe side of a snag, generally opposite to any side lean, but not under loose material.

8) If you suspect a snag is hollow, test it by tapping it with an axe. Determine an escape route, and alternative routes. Make sure they're well brushed-out. Clean out around the base. Check for sufficient room to work.

9) Check for material lying on the ground in the immediate area. Will it be disturbed by the falling snag? If so, will it create a hazard to you?

10) Determine the lean. Limbs may be a factor. Check for loose limbs, bark or other material which may present a hazard. Try to break away any loose bark.

B PLANNING THE UNDERCUT AND BACKCUT ON SNAGS

1) Make sure you have all the tools you will need for the job, including enough fuel in the saw to finish falling the snag.

2) Put undercuts and backcuts in at a comfortable stump height to allow for freedom of action and maximum visibility for hazards above.

3) Snags which have rotten roots or are "suspect", judging from other snags in the area, should have the falling cuts placed further up the trunk where the wood is more solid. However, be prepared for the unexpected since these snags may be very unstable.

4) Keep glancing at the top of the snag when sawing the undercut. The snag may fall as soon as the first cut is started.

5) Check the undercut sawdust and block for signs of rot. This may have a bearing on your cuts and falling procedures.

6) Snags require a large undercut, deep and wide, about one-third of the trees diameter or as much as a heavy leaning snag will allow. On short snags, the undercut should be sawn into or past the centre. A deep undercut minimizes the use of wedges and the resulting vibration.

7) Ensure your undercut is cleaned out. If it is not cleaned out a snag can hesitate when the undercut closes, causing the top to break off and come flying back.

8) Make sure the undercut is at the correct angle to the intended fall. Whenever possible, snags shall be felled in the direction of the lean into open areas. Falling a snag into an open area prevents it from striking trees, or other snags, and causing pieces to fly back at you.

9) As soon as the snag starts to fall, move out following your escape path. Watch the falling snag for overhead hazards when moving away.

10) When a snag falls it may buckle or strike other trees and break up. Portions could fall sideways and push smaller trees or snags onto the faller.

C FALLING THE SNAG

1) If wedging is absolutely necessary, first carefully assess the snag's ability to withstand it. Do not wedge harder than necessary to get the snag moving. Scrutinize the top section after every blow for break off or chunks falling. You can't risk looking away for more than one or two seconds.

2) Vibration, even on large snags, acts as shock waves that could send loose bark, rotten tops, or other loose material down unexpectedly. The use of more than one wedge is advisable if wedging is necessary, tapping on each wedge alternately.

3) If a faller determines a snag is unsafe to fall, no cuts are to be started. Move to a safe distance away from the snag to resume work. The immediate supervisor is to be notified of the snag, along with other workers who may be affected by the snag hazard.

4) If cuts are made and the faller cannot complete felling the tree, the snag must be marked and reported to the supervisor. The supervisor is then responsible for the safe felling of the snag which must be done before work in the area continues, as per written SAFE JOB PROCEDURES.

5) Avoid pushing snags. The top may break off or the snag may buckle in the middle and fall in your direction. Never push a snag with another snag.

6) If you have to push a snag to overcome a falling difficulty, prepare escape routes and alternate escape routes for both the snag and the pusher tree before any falling work begins. Use wedges to hold the snag from falling or sitting back while the pusher is being felled. Immediately after the pusher tree begins to fall, seek cover through the escape route. Stay there until all possible hazards have ceased.

TASK - CONSTRUCTING A HELIPAD

HAZARDS

- felling operations
- bucking operations

SAFE JOB PROCEDURES

1) Whenever possible, look for natural clearings.

2) Best helipads are along ridge tops (i.e. this provides 2 approach paths). Prior to cutting a helipad, slashers must identify any potential hazards.

3) Place helipads along the edge of the line not down the middle.

4) Clean-up must be done when a pad is cut to remove anything the helicopter might blow away with the rotors.

5) Always remove leaners or dead snags in and around the helipad first.

6) Always remove all small trees, twigs and snags around the tail rotor area.

7) Clear a path leading to and from all helipads. The path must be lower than the helipad and well flagged.

TASK - CUTTING DROP ZONES

HAZARDS

- felling operations
- bucking operations

SAFE JOB PROCEDURES

1) Drop zones, at shot points will be cut at least six meters square to accommodate the safe set up of drills and equipment. Drop zones must be cut larger if the tree canopy obscures the cleared area to the helicopter pilot.
2) The area must be cleaned and all trees taken down must be bucked to lay flat.
3) Special attention must be given to drop zones that are located on steep slopes, these areas may require stumps to be left longer than usual which then may be used to anchor drill components.
4) Tall dead snags must be felled within a radius of 10 meters from the middle of the drop zone.
5) Drop zones must be located to make maximum use of level terrain such that the drill equipment can be slung to the center of the drop zone and not toward the edge where standing trees increase the slinging hazard.

TASK - FALLING TREES CLOSE TO OVERHEAD POWER LINES

HAZARDS

- electrocution
- third parties (i.e. pedestrians)

SAFE JOB PROCEDURES

A PRIOR TO COMMENCEMENT OF FIELD WORK

1) Discuss the potential of overhead power lines in the program area.

2) Include the emergency contact telephone number of the utility operator on the general Emergency Response Plan number sheet.

3) Discuss the details of the ERP should an incident/accident occur.

B DURING FIELD OPERATIONS

1) When falling trees near power lines walk ahead and access the situation. Make sure that you are 90 meters away from power lines. Use wedged or mechanical help if the tree is leaning towards the power line.

2) The felling of trees will not commence until it has been determined that the height of the trees being felled is such that contact with the power line is not possible.

3) Should there be any question regarding possible contact, the power utility operator will be called to determine the voltage of the line in question and give assistance to the specific potential hazard.

4) Whenever possible, trees in question will not be felled. If it is essential for a tree to be felled then the power utility operator will be contacted to remove the tree.

5) Should a tree become hung-up on an overhead line or break a power line, then workers in the vicinity will remove themselves from the danger, ensure other workers or persons stay away from the danger and contact the utility operator giving a location and line voltage when possible.

TASK - BUCKING DIFFICULTIES

HAZARDS

- limbs under tension
- limbs supporting tree
- hidden limbs
- bottom bind
- heavy bottom bind
- top bind

SAFE JOB PROCEDURES

A BUCKING LIMBS UNDER TENSION

1) Limbing a tree can involve a number of potential hazards. Watch for limbs bowed over as a result of the falling procedure. They can be under tremendous pressure...a trap waiting for the touch of a saw. When touched, they can literally explode, springing back or around, throwing the saw back and towards you. Many faller-buckers have been seriously, even fatally injured in just this way.

2) Do not cut these traps at the bole of the tree first. Closely examined the situation, determine which direction they'll spring, select the right side to stand on, and defuse them with a series of cuts, generally at the point of most pressure. Although not always the rule, this will often relieve the pressure enough so you can safely cut the limb off flush at the bole.

B LIMBS SUPPORTING TREE

1) Limbs that are broken off and driven into the ground, are another very serious limbing hazard. They can be under tremendous pressure, bending in any direction. When cut away, they will allow the tree to move, either rolling towards or away from you, depending on which direction the limb is bent. Try to anticipate what will happen when you make a cut. Never make a cut if you aren't sure.

TASK - BUCKING DIFFICULTIES - Continued

C HIDDEN LIMBS

1) Watch for limbs that could spring out as the log is released. If bent limbs and saplings are not cut off before the felled tree is bucked, they may fly up as the log rolls away. They've also, on occasion, hit buckers and even hooked their clothing as the log rolled.

D BOTTOM BIND

1) In a situation where large butt is sticking up and hanging free, if the top is cut first, the weight of the butt will allow the rest of the tree to swing up in the air, possibly towards the bucker. The log may also slab. Removing the butt log will allow the tree to lay flat and stable.

E HEAVY BOTTOM BIND

1) When the hang of a log is extremely heavy, you should cut a V into the underside of the tree when underbucking. This will help to relieve some of the extreme pressure created as you make the top and final cut and will allow the log to drop more slowly.

F TOP BIND

1) In the opposite situation, a tree is suspended at both ends across a draw, sagging and creating top bind. For sag, you overbuck first. Choose a safe place to stand, and have an escape route selected. Start your bucking cut over and down the far side making sure you cut the far bottom corner, then come back and make your top cut.

2) Next, use the bar tip to cut the side closest to you, making sure all small cuts match and that all outside sap wood is cut. The cut should now begin to close at top.

3) The only wood left uncut and holding is under great strain at the bottom of the tree. Start the final cut, reaching under and cutting the wood furthest from you. If you've made all cuts in the proper sequence and they all match and there are no lips left, the log should drop free and clear. This is considered standard procedure when bucking large diameter logs.

4) Underbucking should be finished with the saw chain in the standard position. This will also allow the cutting chain to be kicked out as the cut is completed.

TASK - PLANTNG AND REMOVING MARKER POSTS

HAZARDS

- flying debris
- sharp object
- swinging sledge hammer or axe
- underground facilities
- Jackall could slip when removing marker posts

SAFE WORKS PROCEDURES

1) Always wear eye protection to prevent flying debris from entering the eye.

2) Always wear gloves to prevent cuts and slivers from the sharp post.

3) Stay clear of the sledge hammer or the axe path when swinging to prevent an accidental strike of the hammer or axe.

4) Check area for possible signs of underground utilities. If in doubt, never place the marker or use a pipe locator to locate any facility.

5) Set the Jackall up on level ground and brace against marker post.

6) Never stand directly behind the Jackall.

TASK - GPS MOBILIZATION AND DEMOBILIZATION

HAZARDS

- electrical shock
- lifting
- cuts and bruises
- stranded in remote location
- slips, trips and falls

SAFE JOB PROCEDURES

1) Always wear gloves and a hard hat to prevent cuts, bruises and crushing injuries.

2) Always have survival equipment on-site.

3) Secure all cables with tie downs and flag cables to allow visibility.

4) Pick sites sufficient in size to allow safe footing when working.

5) Clear work area of all obstructions and debris prior to set up.

6) Lift equipment with your legs and use help for heavy objects.

7) Secure all lids to prevent winds from blowing them closed on arms or hands.

8) Inspect all electrical cables. Never use damaged cables.

9) In the event of electrical storms, cease operations.

TASK - GPS/EDM THEODOLITE SURVEYS

HAZARDS

- electrocution (i.e. contact with power lines)
- sharp objects
- eye sensitivity
- slips, trips and falls

SAFE WORKS PROCEDURES

1) Always keep sharp ends of equipment pointing away from personnel.

2) Always use Roelofs Prism (i.e. smoked sun-glass) when taking sun shots.

3) Never look directly at the sun.

4) Clean worksite prior to setting up.

5) If using Roelofs Prism (i.e. smoked sun-glass) ensure that it is the proper model and fits your theodolite properly.

6) Always look up to ensure that there are no power lines above, prior to extending the rods.

7) Never use metal or fibreglass rods with the cable running the length of the rod during an electrical storm.

TASK - PLANTING AND REMOVING A STATION

HAZARDS

- cuts, punctures and slivers
- Jackall could slip when removing pin
- flying debris

SAFE WORKS PROCEDURES

1) When planting stations, wear gloves, eye protection and safety boots.

2) Never use splintered lath.

3) Set the Jackall up on level ground.

4) Always use two personnel, one to hold the Jackall and the second to work the handle, when removing pins. If possible, tie Jackall to truck or ATV bumper to provide support.

5) Never stand directly behind the Jackall.

TASK - SHARPENING LINERS

HAZARDS

- cuts

SAFE JOB PROCEDURES

1) Always cut away from your body.
2) Always wear gloves.
3) Never use dull equipment.
4) The use of a machete is prohibited.

TASK - PILE/DEFORMATION SURVEYS

HAZARDS

- fall from elevations
- traffic
- slips, trips & falls

SAFE JOB PROCEDURES

1) Always ensure that areas to be walked on have solidified.

2) Always wear restraining harness when working near edges.

3) Always place appropriate road signage to warn other personnel of your activities.

4) Watch footing and make sure one hand is free to brace in case of fall

3.b.4.5 SURVIVAL

This module contains SAFE JOB PROCEDURES to assist you in safely performing various tasks based on recognized hazards. Although a lot of thought has gone into the development of the SJP, they only serve as a guideline to put you in the right frame of mind prior to conducting a task.

It is also realized that some tasks are more critical than others and as such require more stringent procedures. The following list contain SJP from this module which ALL-CAN considers non-negotiable. Failure to comply with these procedures may result in immediate dismissal.

Purpose: This outline describes the safety procedures for summer and winter survival.

Safety Procedures: These procedures apply to all staff travelling outside urban areas.

1) The vehicle must be properly equipped and maintained.

2) The vehicle to be used shall be suitable for the road conditions expected to be encountered (4 wheel drive/snow tires as required)

3) Road conditions for the travel of route shall be checked prior to departure. If inclement weather could make driving hazardous, then the trip shall be postponed.

4) A trip itinerary shall be submitted to the party chief prior to departure.

5) Equipment, in vehicles:
   - Safety kit
   - First aid kit
   - Knife
   - Insect repellent
   - Maps
   - Survival kit
   - Mobile radio telephone (on infrequently used roads)
   - Winch operating procedures (if vehicle is so equipped)
   - Vehicle safe operating procedures
   - Provincial road map

6) Clothing suitable to weather conditions expected must be worn or carried inside the vehicle. A complete change of clean, warm, and dry clothing should be carried in the vehicle at all times.

7) Suggested list: Winter:
   - Boots
   - Hats or toque
   - Mitts/gloves
   - Wool socks
   - Long underwear
   - layered clothing
   - An extra pair of mitts/gloves and socks should be taken

THEORY OF SURVIVAL - A PATTERN FOR STAYING ALIVE

REST:	Once the immediate essentials of life have been obtained and signals for help prepared, it is vital to conserve energy and allow your body to stabilize itself.
BODY & EQUIPMENT MAINTENANCE:	Personal comfort, constructive activity, prevention of further injury and protection from the elements and natural hazards are major factors for maintaining a POSITIVE MENTAL ATTITUDE.
TRAVEL:	DON'T, unless there is a serious medical emergency, or if no one could possibly know where to look for you or be aware that you have a problem. DO NOT TRAVEL - let help come to you.
FIRE/HEAT:	In the event that clothing or shelters are inadequate to prevent heat loss, a fire or other heat source could mean the difference between life and death. A fire is also a primary signalling device.
SIGNALS:	If no one is aware of your problem or your location, they will not be able to come to your aid.
WATER:	In order to function with any degree of efficiency you must regularly re-supply your body with sufficient potable water.
FOOD:	Is important to provide energy, heat and material for body repair but only if it can be obtained with very little effort. Searching for food wastes limited resources and most often fails to produce enough to offset energy costs.
FIRST AID:	Injuries causing breathing problems, serious bleeding and shock must have priority over all other activities except removing victims from danger of further injuries.
STOP PROCEDURE:	Before going any further, it is most important to sit down, determine the real problem, take inventory of your resources, analyze the possible solutions and plan your activities for maximum benefit.
CLOTHING:	Is the first line of defence against a hostile environment and other natural hazards. Failure to provide and maintain suitable clothing will seriously hamper any chances of survival.
SHELTER:	Is the next step to reduce or eliminate exposure to a hostile environment. In the event of inadequate clothing, shelter in an emergency bivouac is essential to life.

TASK - STAYING ALIVE IN A COLD EMERGENCY

HAZARDS

- Frostbite
- Hypothermia

SAFE JOB PROCEDURES

The principal adverse effect of cold on man is a lowering of body temperature below the normal temperature of 98.6 degrees Fahrenheit at a rate faster than the body can maintain. When body temperature falls below 94 degrees, the victim may become disoriented and lapse into a coma. Heart failure and death can result if the body temperature falls below 90 degrees.

Frostbite is an injury caused by the freezing of the body tissues and can occur when extremities do not receive sufficient heat from the central part of the body because of restricted blood circulation or inadequate insulation.

Whenever a victim of frostbite is treated, care must be exercised to prevent the possibility of refreezing.

1) Conserve energy - Don't travel in a storm.
2) Get out of the wind and rain/snow if possible.
3) Put on all clothing available with dry layers on the inside.
4) Protect your head and neck from the wind and cold.
5) Cover insulating layers with wind or rain gear.
6) Sit down on an insulated sear and have a drink and a snack.
7) Determine the type and degree of personal danger:
   - severity of storm and degree of heat loss
   - current physical and mental condition and amount of remaining energy.
8) Analyze the possible time frame of the emergency and the chances of assistance from other sources.
9) Evaluate your energy, equipment and chances of improvising shelter and heat from surrounding terrain and vegetation.

10) Plan your actions to ensure survival with minimum effort and maximum comfort.
11) Open or close all clothing openings to minimize sweat build-up or heat loss.
12) Add or remove layers of clothing as necessary to maintain maximum comfort.
13) Make a shelter suitable for conditions and terrain.
14) Do not prolong exposure to elements in search of better site, firewood, water or assistance.
15) Use insulated pads or improvise protection from cold ground.
16) Stay in shelter until conditions improve.
17) If wood is available, light fire or stove.
18) Drink water or prepared drinks (Do not eat snow or drink cold water, as it will greatly reduce body heat).
19) Keep stored water from freezing.
20) Nibble food to provide maximum energy return.
21) Rest as much as possible to conserve energy.
22) Watch for frostbite, particularly on feet, hands and head.

TASK - STAYING ALIVE IN THE HEAT

HAZARDS

- Heat exhaustion
- Heat stroke (hyperthermia)

SAFE JOB PROCEDURES

1) Do not travel in extreme heat; protect your body and brain from the hostile environment.
2) Get out of the sun into shade, even if you have to build it.
3) Sit down and drink some water.
4) Analyze what the heat is doing to your body and your ability to counteract it.
5) Determine the severity of exposure to heat, time of day, amount of water availability and energy level.
6) Analyze distance and effort required to reach safety.
7) Analyze supplies and natural material available to provide shelter, water and signals if necessary.
8) Plan you actions to ensure survival with minimum effort and maximum comfort.
9) Use your clothing to cover your complete body, trap sweat, as insulation and protection from the sun's rays.
10) Protect your head and face from the sun with hat or cloth.
11) Move short distances to another site only if it provides more shade, lower temperatures, or better access to water.
12) If the ground is hot, provide insulation or get up off it.
13) By digging down into the ground, you may find cool soil.
14) Do not ration water, reducing sweating by every means possible.
15) Stay in shade, travel only at night if necessary to reach better site, water or safety.

16) If water is available, soak clothing and head covering to cool by evaporation.
17) Drink at least every half hour, practice OVERDRINK system.
18) Using the water you have most effectively is more valuable than attempting to find more.
19) Nibble food in very small amounts to provide salt and other electrolytes.
20) Watch for symptoms of heat problems, especially in older persons and children.
21) Rest at least 15 minutes every half hour, more if necessary

3.b.5 ALL-CAN SAFE JOB PROCEDURES ANNUAL REVIEW

SAFE JOB PROCEDURES	Development		Review	
	Date	By Whom	Date	By Whom
HELICOPTER SAFETY	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
SURVEYING-OPERATIONS Operating an ATV	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Loading racks on ATV's	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Loading and unloading ATV's	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Working with batteries	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Boosting batteries	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Chaining-up	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Cold Weather Operations	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Use of a four-wheel drive	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Fuelling	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Guarding equipment	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Working with a safety hook	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Ice Safety/Travelling/Working	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Lifting	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
General Maintenance	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Mounting and dismounting equipment	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Scouting control	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Tire changing	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Setting up towers	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Towing	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Verification of lowered in pipe depth/weld location	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Walking	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein

ALL-CAN SAFE JOB PROCEDURES ANNUAL REVIEW

SAFE JOB PROCEDURES	Development		Review	
	Date	By Whom	Date	By Whom
Winching	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Working Alone	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
SLASHING Chainsaw maintenance	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Chainsaw crew checklist	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Fuelling	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Starting the saw	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Holding a chainsaw	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Winter work	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Frozen wood - wedges	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Chainsaw uses	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Three Basic Cuts	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Falling	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Bucking Trees	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Falling fire killed timber	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Working with catapults	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Working with blowdowns	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Cutting leaners	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Cutting hangers	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Cutting snags	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Constructing a helipad	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Cutting drop zones	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Falling trees close to overhead power lines	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Bucking difficulties	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein

ALL-CAN SAFE JOB PROCEDURES ANNUAL REVIEW

SAFE JOB PROCEDURES	Development		Review	
	Date	By Whom	Date	By Whom
SURVEY - SITE-SPECIFIC Planting and Removing marker posts	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
DGPS mobilization and demobilization	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
GPS/EDM theodolite surveys	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Planting and removing a station	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Sharpening liners	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Sulphur pile/deformation surveys	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Theory of survival – A pattern for staying alive	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Staying alive in a cold emergency	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein
Staying alive in the heat	03/23/04	Alex Hittel	06/17/11	Jerrad Gerein