

Evolve Offshore Marine and Industrial

A division of Evolve Business Solutions Inc.

NLBKA (JSA) Job Safety Analysis Work Sheet

WORK LOCATION: Province of Newfoundland and Labrador	COMPANY: Newfoundland and Labrador Beekeeping Association Inc.	DATE: June 5, 2017
DESCRIBE WORK TO BE DONE: The tasks being performed involve working with honey bees as a hobbyist beekeeper or commercial operator. Beekeeping activities have a wide scope and there are many potential hazards associated with these activities. These tasks range from transporting and installing nucleus colonies, building hive equipment, the manual and mechanical lifting of hives and boxes (deeps), collecting swarm “splinter” colonies, extracting honey, making wax candles and other beekeeping products. A vital part of beekeeping is selecting the right location to keep the honey bees or apiary. Please use this document to help you assess your bee yard (Apiary) for potential hazards.		
PURPOSE OF THIS JOB SAFETY ANALYSIS: The purpose of this document is to provide both new and experienced beekeepers (Apiarists) in the Province of Newfoundland and Labrador with a guide that will assist to identify potential hazards. The goal is to keep honeybees and Beekeepers safe while conducting beekeeping activities.		
YOUR INPUT is required - Please take the time to think about potential hazards that could happen at your own bee yard (apiary) as well as any past accidents or close calls that have happened to you while caring for bees i.e. not wearing a veil and multiple stings, hive fell off a truck on highway, hurt back while lifting a deep super full of honey etc. Please share any past experience as this may help someone else from having a similar incident. Send your comments in strict confidence to info@evolvebusinesssolutions.ca We will not share your name or company only your story. Thank you, Paul Dinn		
Client Contact: Catherine Dempsey President NLBKA	Signature:	Date:
Evolve Business Solutions Inc. Paul Dinn HSE Lifting and Rigging Advisor	Signature:	Date:

Potential Hazards List for Beekeeping

(The hazards highlighted in blue are applicable)

Electrical	Mechanical	Sound	Gravity
<input checked="" type="checkbox"/> Power Lines	<input type="checkbox"/> Motors	<input type="checkbox"/> Impact Noise	<input checked="" type="checkbox"/> Dropped object
<input type="checkbox"/> Static	<input checked="" type="checkbox"/> Rotating Equipment i.e. extractor	<input type="checkbox"/> Vibration	<input checked="" type="checkbox"/> Roof collapse
<input checked="" type="checkbox"/> Lightning	<input type="checkbox"/> Drive belts/conveyers	<input type="checkbox"/> Equipment noise	<input checked="" type="checkbox"/> Tripping or Falling
<input type="checkbox"/> Energized Equipment	<input type="checkbox"/> Compressed springs	<input type="checkbox"/> High pressure relief	<input checked="" type="checkbox"/> Hive Tipping Over
Radiation	Biological	Temperature	Motion
<input type="checkbox"/> Nuclear Source	<input checked="" type="checkbox"/> Insect sting/Animal Bites	<input checked="" type="checkbox"/> Hot or Cold surfaces	<input checked="" type="checkbox"/> Moving Objects- lifting hives
<input type="checkbox"/> Welding Arc	<input type="checkbox"/> Bacteria, Viruses	<input checked="" type="checkbox"/> Open flame and ignition sources	<input checked="" type="checkbox"/> Vehicles- crane, forklift, trucks
<input checked="" type="checkbox"/> Sun rays	<input type="checkbox"/> Blood Bourne pathogens	<input type="checkbox"/> Liquids or gases	<input checked="" type="checkbox"/> Lifting, Twisting, Bending, Stretching.
<input type="checkbox"/> Microwaves	<input type="checkbox"/> Contaminated Water / Food	<input checked="" type="checkbox"/> Weather- wind snow ice, sun, rain	<input checked="" type="checkbox"/> Pinch Points,
Pressure (high/low)	Chemical	Chemicals cont	Other
<input type="checkbox"/> Compressed cylinders	<input type="checkbox"/> Flammable vapors	<input type="checkbox"/> Inert gas / Low Oxygen	<input checked="" type="checkbox"/> Lone Worker
<input type="checkbox"/> Control Lines, Tanks / Vessels	<input checked="" type="checkbox"/> Fumes Dust and Smoke	<input checked="" type="checkbox"/> Combustibles (dry leaves, grass)	<input type="checkbox"/> Protected Sites
<input type="checkbox"/> Hoses, Piping	<input type="checkbox"/> Reactive hazards, Corrosives	<input type="checkbox"/> Asbestos	<input checked="" type="checkbox"/> Human Factors (fatigue, stress)
	<input type="checkbox"/> Carcinogens or other toxins	<input type="checkbox"/> Hydrocarbon/Gas Release	<input type="checkbox"/> _____

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Tasks / Sequence of basic steps	Potential/Associated Hazards	Recommendation to Eliminate/Reduce Hazards
	(Question each job step for potential/associated hazards)	(What should be done to control hazards? Be specific)
<p>1. Build and assemble your own hive equipment. This may involve using electric powered and hand tools i.e. table saw, router, drill, handsaw, screws, hammer, nails, hot wax, pliers etc.</p>	<p>The first question you should ask is how much carpentry or woodworking experience you have as there are many hazards associated with woodworking. For example:</p> <p>Electric saw or skill saw or band saw- These saws cut very quickly and efficiently and it is very important to keep your fingers, hands, arms at a distance when using these saws. People can sometimes lose their balance and fall into the blade of the saw.</p>	<p>Recommendation for using various carpentry tools safely:</p> <ol style="list-style-type: none"> 1. If you are not familiar with this kind of work then training on the proper use of equipment is the first step. 2. Wear safety glasses, gloves, and steel toed boots when operating equipment. 3. Keep your work area clean to prevent trip hazards, fire etc.
<p>2. Transporting of bees from point A to point B in a vehicle.</p>	<p>Think about the task. You are going to pick up live bees!</p> <p>This will involve a journey management plan.</p> <ol style="list-style-type: none"> 1. What will you need to make this drive? 2. What happens if the bees get out of their box and are flying around in the vehicle with you? 3. What if you are tired or fatigued? 4. What if you are in an accident with another vehicle? 5. What if you vehicle breaks down? 	<p>Recommendation:</p> <ol style="list-style-type: none"> 1. Create a list to include a full tank of gas, a small cooler with water, snacks etc. 2. Inspect the nuc box closely to ensure the bees are well sealed in the box. Bring extra duct tape, 1 inch ratchet straps, twine, first aid kit, flashlight and your bee suit. Keep the windows in your vehicle slightly ajar to keep the bees cool with ventilation. 3. Fatigue is similar to being impaired so do not drive if you are not properly rested. 4 a. An accident with a moose or another vehicle can bring rescuers to the scene. Post a sign on the back window warning others that you are carrying "live bees". This will alert rescuers and keep them from being harmed. 4 b. During a vehicle accident, loose objects

		<p>can be thrown around and bees may be released. To help prevent this, tie the nuc box down with ratchet straps and secure it well.</p> <p>5. Know where local tow trucks and Service stations are located and copy their phone number just in case they are needed.</p>
<p>3. Lighting the smoker</p>	<ol style="list-style-type: none"> 1. The first thing to consider before lighting the smoker is the ignition source i.e. paper, birch bark, grass, are all highly flammable. 2. While inspecting the hive be very aware of where you are laying the smoker. 3. Consider what to do with the smoker once you have completed hive inspections as the smoker is still very hot. 	<p>Recommendations:</p> <ol style="list-style-type: none"> 1. Have a collection of grass, twigs, wood and keep it in a dry place or container for when you need it. 2. Smokers can become very hot and you want a place to lay it down where it won't catch and start a fire. You want to be very careful as you can easily burn your hand on a hot smoker. 3. Have available, a steel ash can or place to put ashes from your smoker. <p>Example of an accident involving a smoker: http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10683189</p>
<p>4. Place nucleus colony into your own hive or deep super.</p>	<ol style="list-style-type: none"> 1. TAKE YOUR TIME. Light the smoker and make sure the area is free from trip hazards. 2. Open the nuc box and lightly smoke. 3. Place the frames into the hive boxes 4. Secure the hive well. 	<p>Recommendations:</p> <ol style="list-style-type: none"> 1. Walk around the apiary to ensure you have all necessary equipment and that there are no trip hazards. 2. Light the smoker allowing ample time to get it going. As the smoker is warming up put on your PPE and open the nuc box. Give a puff of smoke into the entrance of the nuc box and under the cover. Wait a minute before opening the box. This will allow time for the bees to settle. 3. Be careful not to drop a frame or you may crush the queen. Take your time and move slowly as not to agitate the bees.

		<p>4. Placing a heavy brick or patio stone on top of your hive is good but it is not enough. This weight is not secured and therefore, neither is your hive. If your hive is sitting on a wooden pallet you can place a ratchet strap through the pallet and around your hive. Do not be afraid to really ratchet the strap down and two straps are better than one. This is known as redundant securing and it will keep your colony safe.</p>
<p>5. Inspecting your new colony.</p>	<p>Permit the bees time to become established in their new hive. After 8-10 days you can perform an inspection.</p>	<p>Repeat recommendations as above.</p>
<p>6. Adding second box (Super). Removing bur comb and frames bonded with propolis with your hive tool.</p>	<p>Bees will build bur/bridge comb. You will remove bur/bridge comb with a hive tool. They also seal and coat the hive boxes and frames with propolis which bonds frames and boxes together.</p>	<p>Recommendations -</p> <p>Is the area clear from trip hazards?</p> <p>Hive tools can be very sharp. It is important while you are using a hive tool to not push it in the direction of your other hand or another beekeeper. If your hive tool should slip, while applying pressure to remove comb, it could seriously cut someone.</p>
<p>7. Feeding sugar water in large hive top feeders.</p>	<ol style="list-style-type: none"> 1. Heavy when filled 2. Sugar syrup will slop around from side to side and change the weight distribution. 3. Trip hazard and spilling hazard. 	<ol style="list-style-type: none"> 1. Use smaller feeders to keep the weight down. Some hive inner covers have two holes and smaller feeders can be used. 2. Have another beekeeper help with the heavy lifting.

<p>8. Inspecting an established colony and lifting a full box or deep super</p>	<p>Inspecting a large colony with two deep supers full of bees, brood and honey.</p> <ol style="list-style-type: none"> 1. A deep super can be very heavy. Approximately 80Lbs. 2. The weather can change in the middle of your inspection. 3. Bees may be defensive. <p>Here is a good link:</p> <p>http://www.beekeeping.com/overcoming-barriers-how-to-continue-doing-what-you-love/</p>	<p>Recommendations:</p> <ol style="list-style-type: none"> 1. Consider your physical well being. You may already have a pre-existing injury. There are options: <ol style="list-style-type: none"> A. Keep fit and active- warm up and do some stretching prior to lifting. B. Have a friend help with the heavy lifting. C. There is mechanical equipment that can help you lift. D. Use smaller brood boxes such as mediums with only eight frames. This will greatly reduce the weight. E. Use proper lifting techniques 2. If you are in the middle of a hive inspection and the weather changes, it is important to put the hive back together but in rushing you could hurt yourself. 3. Bees can become defensive at anytime so wear your PPE.
<p>9. Adding honey supers</p>	<ol style="list-style-type: none"> 1. It is important to consider how to keep your hive balanced and secure. 	<p>Recommendations:</p> <ol style="list-style-type: none"> A. Place a heavy object i.e. rock or brick on top of the hive cover to keep the boxes together. B. Use ratchet straps that secure your hives to a pallet or hive stand. C. The higher the boxes are stacked, the more unstable the hive becomes. Once you have a hive that exceeds five boxes you may want to use several ratchet straps to provide more stability to prevent the hive from tipping over.
<p>10. Removing honey supers both deep and medium.</p>		<ol style="list-style-type: none"> A. Keep fit and active- warm up and do some stretching prior to lifting.

		<p>B. Have a friend help with the heavy lifting.</p> <p>C. There is mechanical equipment that can help you lift.</p> <p>D. Use smaller brood boxes such as mediums with only eight frames. This will greatly reduce the weight.</p> <p>E. Use proper lifting techniques.</p>
<p>11. Walking while carrying a honey super</p>	<p>1. There are many hazards associated with carrying a honey super. While walking it may be difficult to see your path and you could trip. There is stress on your lower back, arms, shoulders and legs.</p>	<p>Recommendations:</p> <p>A. It is very important to get close to the apiary with a vehicle, so you don't have to walk long distances with hive boxes.</p> <p>B. Keep fit and active- warm up and do some stretching prior to lifting.</p> <p>C. Have a friend to help with the heavy lifting.</p> <p>D. There is mechanical equipment that can help you lift.</p> <p>E. Use smaller brood boxes such as mediums with only eight frames. This will greatly reduce the weight.</p> <p>F. Use proper lifting techniques.</p>
<p>12. Retrieving a splinter (Swarm) colony that is located 10-20 feet up above ground level.</p>	<p>1. Falling- Provincial regulations state that anyone working above 10ft must be wearing fall protection equipment.</p> <p>2. Rushing- many people get hurt when they rush to complete a task.</p> <p>3. Stinging hazard- Splinter colonies are usually full of honey and very gentle but if they have been out of the hive for a week and have not found a new home they can become a dry-swarm and may become very defensive</p>	<p>Recommendations:</p> <p>1. Plan ahead- Personal safety is your first priority. There is commercial equipment available to assist with swarm retrieval. Ladders can tip if you a climbing a tree so think ahead and have someone hold the ladder. DO NOT WORK AT HEIGHT WITHOUT WEARING FALL PROTECTION.</p> <p>2. Never rush the task.</p> <p>3. Wear your PPE.</p>

<p>13. Retrieving a splinter (Swarm) colony from private or public property.</p>	<p>There are many people that have a fear of insects, bees or wasps. The sight of a swarm can be enough to cause your neighbours to call 911. Some people will panic at the sight of one bee never mind a splinter colony.</p>	<p>Recommendations:</p> <p>A. Educate the public and inform your neighbours about honeybees should the bees swarm.</p> <p>B. Never go on private property without permission.</p> <p>C. Do not cut any trees or shrubs on public or private property without permission.</p>
<p>14. Black Bear and electric fencing.</p>	<p>1. Electric fencing 2. Black Bear info</p>	<p>1. Electric fencing is an effective way to prevent bears from damaging your hives. It is important to warn the public including vandals, that the fence is electrically charged. You should post signage of no trespassing and warning of electric fence.</p> <p>2. http://www.flr.gov.nl.ca/wildlife/all_species/bear.html</p>
<p>15. Mouse or shrew in the hive</p>	<p>Risks: biting or scratching the bee keeper Killing the colony Contaminating the honey.</p>	<p>Use mouse/shrew guards and put them in place after your last full hive inspection so you are sure there are no rodents in the hive</p> <p>Wear gloves handling wire mesh</p>
<p>16. While inspecting your hive, a person or people come by with questions about beekeeping or inquiring about your activity.</p>	<p>The risk is that a person may be stung.</p>	<p>Recommendation:</p> <p>Protect the public - Put up signs that warn people no trespassing, stinging hazard, or bee yard.</p>

<p>17. Hive is located on a rooftop.</p>	<p>Risks:</p> <p>High winds</p> <p>Person falling off the roof while inspecting beehive.</p> <p>Potential dropped object from roof to people or vehicles below i.e. Hive cover</p>	<p>Recommendations:</p> <ol style="list-style-type: none"> 1. Monitor wind speed - The wind at ground level may be light however keep in mind that the wind could be stronger on the rooftop. 2. Falling is a real possibility so it is vital that the beekeeper use fall prevention equipment. 3. Dropped objects also pose a serious threat. The wind could blow the hive cover off a roof and onto people or vehicles below. The bee keeper up on a roof must have multiple securing methods that are redundant to prevent any objects from falling from height. A hive tool dropped from 30 ft has the potential to cause a fatality to persons below. This is a combination of the weight as well as the hive tool having a sharp edge. What damage would a lit Smoker do if it blew off the rooftop?
<p>18. Heat exhaustion while inspecting the hive.</p>	<p>Risk: While inspecting your beehive with your suit and veil on, you may become overheated.</p>	<p>Recommendations: Take breaks often, eat your meals and stay hydrated.</p>
<p>19. Inspecting the hive while wearing scented products</p>	<p>Risk: Certain types of scents may irritate bees. It has been said that bananas smell much like the alarm pheromone that bees emit when they are in defence mode.</p>	<p>Recommendations: Be aware of scents that may irritate bees.</p>
<p>20. An apiary located in a secluded area.</p>	<p>Risk: While working hives alone in a secluded area, you may suffer a health emergency i.e. back injury, allergic reaction.</p>	<p>Recommendation: Inform at least one person of your location. It is important that this person be completely familiar with the location of your apiary. Always notify that person when you are going to and from the apiary.</p> <p>A cell phone should always be carried with</p>

		you.
21. Commercial Hive Lifting - Potential hazards in this video on youtube	https://m.youtube.com/watch?v=QKaipOC5fqc	<p>This is more directed towards commercial beekeepers but the video is a good example of unsafe lifting technique. As you can see the person is handling to lifting tool and is very close to it. The lifting tool that is holding the heavy supers is connected to a wire cable.</p> <p>It is important to understand that wire cables and rigging can fail and break. They require inspection after each lift as they can become damaged and lose their safe working load over time.</p> <p>The workers is at risk for several reasons:</p> <ol style="list-style-type: none"> 1. They do not realize they are placing themselves at risk and are completely unaware of the hazards. 2. The load could fall on them or someone else. 3. They are not utilizing hands free lifting techniques such as taglines or push poles that would keep them at a distance should the cable fail.
22. Hobbyists Hive Lifting video on youtube	https://m.youtube.com/watch?v=nH5dvt30hY http://beetime.eu/tool-apihelper-no-more-back-pain-from-hive-lifting/	This device may or may not be suitable for your apiary.
23. Beekeeping for the physically challenged.	https://m.youtube.com/watch?v=pwpcPZBvDhk	This hive and stand would require securing and some modifications for NL climate.
24. Bad Back and Beekeeping	http://www.beemaster.com/forum/index.php?topic=43249.0	
25. Honey Extracting Hazards		
26. Rendering Beeswax and Candle making hazards		

27.		
28.		
29.		

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SAMPLE NLBKA (JSA) Job Safety Analysis Work Sheet

Safety Equipment Required

- | | | |
|---|--|---|
| <input type="checkbox"/> Personnel job specific certification | <input checked="" type="checkbox"/> Proper Tools | <input checked="" type="checkbox"/> Fall Arrest certifications required |
| <input type="checkbox"/> Hard Hats | <input checked="" type="checkbox"/> Gloves-Type | <input type="checkbox"/> Safety Cable |
| <input checked="" type="checkbox"/> Signage Warning of Stinging | <input type="checkbox"/> Chemical Gloves/Boots/Apron | <input checked="" type="checkbox"/> Safety Barricade/Fencing |
| <input type="checkbox"/> Safety Glasses | <input checked="" type="checkbox"/> Double Lanyard w/ Shock Absorber | <input type="checkbox"/> Caution Tape |
| <input type="checkbox"/> Face Shield | <input type="checkbox"/> Life Line | <input checked="" type="checkbox"/> Protective Clothing |
| <input checked="" type="checkbox"/> Veil | <input type="checkbox"/> SCBA | <input checked="" type="checkbox"/> Provincial Apiary Registration |
| <input checked="" type="checkbox"/> Other – Mobile Phone working with Signal to contact 911 | | <input type="checkbox"/> Respirator/Dusk masks |
| | | <input checked="" type="checkbox"/> Fire Extinguisher |
| | | <input type="checkbox"/> Lock Out Tag Out Devices |
| | | <input type="checkbox"/> Gas Detector |
| | | <input type="checkbox"/> Hearing Protection |
| | | <input checked="" type="checkbox"/> First Aid kit |
| | | <input checked="" type="checkbox"/> Epipen |

JSA Team Members – List any additional on separate sheet

I/We participated in the Job Safety Analysis carried out for this work and confirm the hazard controls are sufficient for the proposed work.

Start Date: _____ Time _____ Completion Date: _____ Time: _____

Name	Position	Signature

