



Direct Bearing Network Resource

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Contact Information

Publisher

Direct Bearing Incorporated

7466 River Road, RR1

Palmer Rapids, ON

K0J 2E0 Canada

Email: publisher@directbearing.ca

The Direct Bearing Network



The Direct Bearing Network represents a group of people responsible for risk management in their organizations.

Members gain access to risk management related articles, studies, tools, templates and links to quality resources that have been vetted by the Direct Bearing Team.

The Network also serves to put you in touch with other people working in similar areas with challenges not unlike your own.

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Severe Weather Precautions

LIGHTNING SAFETY GUIDELINES

Lightning strikes the earth 100 times per second, and two or more people are struck by lightning in North America every day. As an outdoor enthusiast, you are particularly at risk.

How does lightning work? Taking only a few milliseconds, electrically charged cumulonimbus clouds (negative charge) send 'leaders' out in random directions to seek objects with an opposite charge. If one gets close to the ground, objects in the area (positive charge) send up 'streamers'. The two instantly unite and create a path for a major strike – delivering 10 million volts of electricity traveling at 160,000 km / second.

Humans are rarely hit with a direct strike, and those that do rarely survive. Ground shock is more common. A direct strike hits a tree, for example, and the energy travels through the roots and earth outward, until the energy dissipates. Anyone in the area of a strike is at risk.

AVOIDING LIGHTNING STRIKES

- 1. Consider weather when planning trip time and location.** Certain geographic regions and features are at higher risk of lightning strike, such as mountain ridges and inland lakes. Late afternoon summer humidity build up often releases as a lightning storm. Plan to avoid high risk locations or travel through them at low risk times.
- 2. Hear thunder? Get to lower risk areas.** Follow the 30 / 30 rule: If the lightning to thunder delay is 30 seconds, get to safer ground, and stay there for 30 minutes after the last sound of thunder. Sound travels at 1 Km per 3 seconds (1 mile per 5 seconds). If a storm is within 30 seconds of your location, it is only 10 Km (6 miles) away, and will be on you within moments. Thunder storms travel at 35-40 Km/hr (22-25 MPH). Act early. Paddlers get to shore.
- 3. Avoid trees.** Negatively charged leaders search for charged objects on the ground – trees are a prime target. Lone trees in the open are the highest risk. If you are traveling in the forest, find a stand of similarly sized trees, and avoid the tallest trees in the area. The old 'cone of protection' around a tree is no longer recommended.
- 4. Avoid conductors.** Bridges, fences and antennas are higher risk areas. Wet climbing ropes are conductors – coil or leave behind.
- 5. Assume the lightning position.** Crouch low on an insulated surface, such as a sleeping pad or cloth pack. Spread your group out but within visual distance.

Higher Risk Areas	Lower Risk Areas
Open water, large rivers or lakes	Narrow streams or canyons with taller features nearby
Mountain tops and ridges	As far downhill as possible
Tall trees in the open	Forest of even sized trees
Open fields	Ravine or depression (but don't stand in water!)

SEVERE WIND

Thunder storms can produce severe wind conditions that can threaten any group traveling in the backcountry. Conditions that can cause exceptionally strong and dangerous winds develop when massive amounts of energy is generated in the thunderheads. Tornadoes and micro burst (strong downward winds) form as the energy in the clouds gets released. Specific signs to be looking for that might indicate dangerous conditions include: towering thunderheads with overshooting tops (anvil shaped), very dark underbellies, multiple thunderheads merging together, large hail and very heavy rain, sharp drop in barometric pressure, increasing wind strength, intense lightning, dark grey sky with a 'greenish' hue. Precautions include monitoring forecasts and weather warnings, observing local conditions and taking appropriate shelter.

Immediate danger: Clouds above you, at several different levels, seem to be moving in different directions - lower ones from the southeast, higher from the west. This is where tornadoes are found. Keep an eye on the clouds, and listen for warnings. When tornadoes form, they are typically found in a rain-free area on the back or southwest side of a large thunderstorm and may be immediately preceded in time by a "clear slot" - a localized opening in the cloud which allows sunshine to reach the ground. You are watching a thunderstorm and notice that some of the clouds beneath it appear to be rotating - the far side is moving right to left while the near side clouds are moving left to right. This storm could produce a tornado, large hail, or damaging winds.

When danger has passed, Environment Canada asks that you please report severe weather to 1-800-239-0484. Your report may help warn someone else along the thunderstorm track.