Survival in Winter

You and your companions have just survived the crash of a small plane. It is mid-January, and you are in Northern Canada.

- The small plane in which you were traveling has been completely destroyed except for the frame. The pilot and co-pilot have been killed, but no one else is seriously injured.

- The crash came suddenly before the pilot had time to radio for help or inform anyone of your position. Since your pilot was trying to avoid a storm, you know the plane was considerably off course. The pilot announced shortly before the crash that you were eighty miles northwest of a small town that is the nearest known habitation.

- You are in a wilderness area made up of thick woods broken by many lakes and rivers. The last weather report indicated that the temperature would reach minus twenty-five degrees in the daytime and minus forty at night.

- You are dressed in winter clothing appropriate for city wear—suits, pantsuits, street shoes, and overcoats.

- While escaping from the plane, your group salvaged the fifteen items listed below.
  Your task is to rank these items according to their importance to your survival.

ITEMS	Individual Ranking	Group Consensus Ranking	'Official' Ranking	Individual Difference Score	Group Difference Score
Compress kit (with 28 ft. of 2-inch gauze)					
A ball of steel wool					
A loaded .45-caliber pistol					
Can of shortening					
Newspapers (one per person)					
Cigarette lighter (without fluid)					
Extra shirt and pants for each survivor					
Flashlight with batteries					
10m of rope					
A sectional air map made of plastic					
One litre of 100-proof whiskey					
A compass					
Family-size chocolate bars (one per person)					
Two ski poles					
Knife					
TOTAL					

EXPLANATION
Mid-January is the coldest time of the year in Northern Canada

The first problem the survivors face, therefore, is to preserve their body heat and to protect their body against its loss. One can solve this problem by building a fire, minimizing movement and exertion, and using as much insulation as possible.

The participants have crash-landed. Many individuals tend to overlook the enormous shock reaction this has upon the human body, and the death of the pilot and copilot increases the shock. Decision making under such conditions is extremely difficult. Such a situation requires a strong emphasis upon the use of reasoning not only to make decisions, but also to reduce the fear and panic every person would naturally feel. Along with fear, shock reaction is manifested in the feelings of helplessness, loneliness, and hopelessness. These feelings have brought about more fatalities than perhaps any other cause in survival situations. Through the use of reasoning, hope for survival and the will to live can be generated. Certainly the state of shock means that movement of individuals should be at a minimum and that an attempt to calm them should be made.

Before taking off, a pilot always has to file a flight plan. The flight plan contains the vital information regarding the flight, such as the course, speed, estimated time of arrival, type of aircraft, number of people on board, and so on. Search-and-rescue operations would begin shortly after the plane failed to arrive at its destination at its estimated time of arrival.

The eighty miles to the nearest known town is a very long walk even under ideal conditions, particularly if one is not used to walking such distances. Under the circumstances of being in shock, dressed in city clothes, having deep snow in the woods and a variety of water barriers to cross, to attempt to walk out would mean almost certain death from freezing and exhaustion. At the temperatures given, the loss of body heat through exertion is a very serious matter.

Once the survivors have found ways in which to keep warm, their most immediate problem is to provide signaling methods to attract the attention of search planes and search parties. Thus, all the items the group has must be assessed according to their value in signaling the group's whereabouts.

RANKINGS

1. **Cigarette lighter (without fluid)** The gravest danger facing the group is exposure to cold. The greatest need is for a source of warmth and the second greatest need is for signaling devices. This makes building a fire the first order of business. Without matches, something is needed to produce sparks, and even without fluid, a cigarette lighter can do that.
2. **Ball of steel wool** To make a fire, the survivors need a means of catching he sparks made by the cigarette lighter. This is the best substance for catching a spark and supporting a flame, even if the steel wool is a little wet.
3. **Extra shirt and pants for each survivor** Besides adding warmth to the body, clothes can also be used for shelter, signaling, bedding, bandages, string (when unraveled), and fuel for the fire.
4. **Family size chocolate bars (one per person)** Chocolate will provide some food energy. Since it contains mostly carbohydrates, it supplies the energy without making digestive demands on the body.
5. **Can of shortening** This has many uses. A mirror-like signaling device can be made from the lid. After shining the lid with steel wool, it will reflect sunlight and generate 5 to 7 million candlepower. This is bright enough to be seen beyond the horizon. While this could be limited somewhat by the trees, a member of the group could climb a tree and use the mirrored lid to signal search planes. If they had no other means of signaling than this, they would have a better than 80% chance of being rescued within the first day. There are other uses for this item. It can be rubbed on exposed skin for protection against the cold. When melted into an oil, the shortening is helpful as fuel. When soaked into a piece of cloth, melted shortening will act like a candle. The empty can is useful in melting snow for drinking water. It is much safer to drink warmed water than to eat snow, since warm water will help retain body heat. Water is important because dehydration will affect decision making. The can is also useful as a cup.
6. **Flashlight**. Inasmuch as the group has little hope of survival, if it decides to walk out, its major hope is to catch the attention of search planes. During the day the lid mirror, smoke, and flags made from clothing represent the best devices. During the night the flashlight is the best signaling device. It is the only effective night-signaling device besides the fire. In the cold, however, a flashlight loses the power in its battery very quickly. It must, therefore, be kept warm if it is to work, which means that it must be kept close to someone's body. The value of the flashlight lies in the fact that, if the fire burns low or inadvertently goes out, the flashlight could be immediately turned on the moment a plane is heard
7. **Piece of rope**. The rope is another versatile piece of equipment. It could be used to pull dead limbs off trees for firewood. When cut in pieces, the rope will help in constructing

shelters. It can be burned. When frayed, it can be used as tinder to start fires. When unraveled, it will make good insulation from the cold if it is stuffed inside clothing.

8. **Newspapers (one per person)** These are useful in starting a fire. They can also be used as insulation under clothing when rolled up and placed around a person's arms and legs. A newspaper can also be used as a verbal signaling device when rolled up in a megaphone-shape. It could also provide reading material for recreation.
9. **Loaded .45-caliber pistol** The pistol provides a sound-signaling device. (The international distress signal is 3 shots fired in rapid succession). There have been numerous cases of survivors going undetected because they were too weak to make a loud enough noise to attract attention. The butt of the pistol could be used as a hammer, and the powder from the shells will assist in fire building. By placing a small bit of cloth in a cartridge emptied of its bullet, one can start a fire by firing the gun at dry wood on the ground. The pistol also has some serious disadvantages. Anger, frustration, impatience, irritability, and lapses of rationality may increase as the group awaits rescue. The availability of a lethal weapon is a danger to the group under these conditions. Although a pistol could be used in hunting, it would take an expert marksman to kill an animal with it. Then the animal would have to be transported to the crash site, which could prove difficult to impossible depending on its size
10. **Knife**. A knife is a versatile tool, but it is not too important in the winter setting. It could be used for cutting the rope into desired lengths, making shavings from pieces of wood for tinder, and many other uses could be thought up.
11. **Ski poles**. Although they are not very important, the poles are useful as a flagpole or staff for signaling. They can be used to stabilize a person walking through snow to collect wood, and to test the thickness of the ice on a lakeshore or stream. Probably their most useful function would be as supports for a shelter or by the fire as a heat reflector.
12. **Compress kit (with gauze)**. The best use of this item is to wrap the gauze around exposed areas of the body for insulation. Feet and hands are probably the most vulnerable to frostbite, and the gauze can be used to keep them warm. The gauze can be used as a candlewick when dipped into melted shortening. It would also make effective tinder. The small supply of the gauze is the reason this item is ranked so low.
13. **Litre of 100 proof whiskey** The only uses of whiskey are as an aid in fire building and as a fuel for a torch (made by soaking a piece of clothing in the whiskey and attaching it to a tree branch). The empty bottle could be used for storing water. Can also be used as an antiseptic for a wound. The danger of whiskey is that someone might drink it, thinking it would bring warmth. Alcohol takes on the temperature it is exposed to, and a drink of minus 30 degrees Fahrenheit whiskey would freeze a person's esophagus and stomach. Alcohol also dilates the blood vessels in the skin, resulting in chilled blood belong carried back to the heart, resulting in a rapid loss of body heat. Thus, a drunk person is more likely to get hypothermia than a sober person is.
14. **Sectional air map made of plastic** This is also among the least desirable of the items because it will encourage individuals to try to walk to the nearest town. It's only useful feature is as a ground cover to keep someone dry.
15. **Compass** Because a compass might encourage someone to try to walk to the nearest town, it is a dangerous item. It's only redeeming feature is that it could be used as a reflector of sunlight (due to its glass top).