



Maritime Helicopters

October 2017 Quality & Safety Notes



Is It Winter Where You Are?

When winter starts slowly, it's nice to think that it eventually won't whack us with an ice-caked 4x4. But least, north of Fairbanks and above 3,000 feet, winter is here. There are some whom haven't even looked at their survival gear yet. I took some folks out to work on their remote site, and I was the only one around to have brought a lighter to thaw their door lock. I like carrying a pocket torch as well as a few cheap cigarette lighters. Whichever way you go, I think a source of fire/heat is THEE basic item for Alaska winter survival.



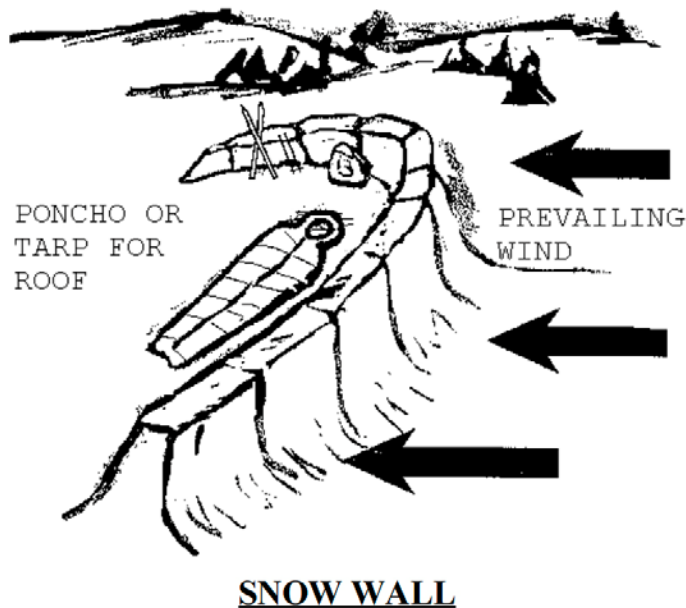
So while we aren't going to play, "what's in your survival kit?" this month. It might be time to take a look at a few survival tools and tricks to help us cope with emergencies in our big, cold state...

Survival Shelters

The U.S. Marine Corps has provided two useful documents that show us how to construct improvised shelters: the Survival, Evasion, and Recovery Handbook and the Winter Survival Course Handbook. We looked through these two handbooks, and found **5 different winter shelters** that have been tested and proven by the USMC to protect you from the cold. See below for the methods, but first, here are some general tips:

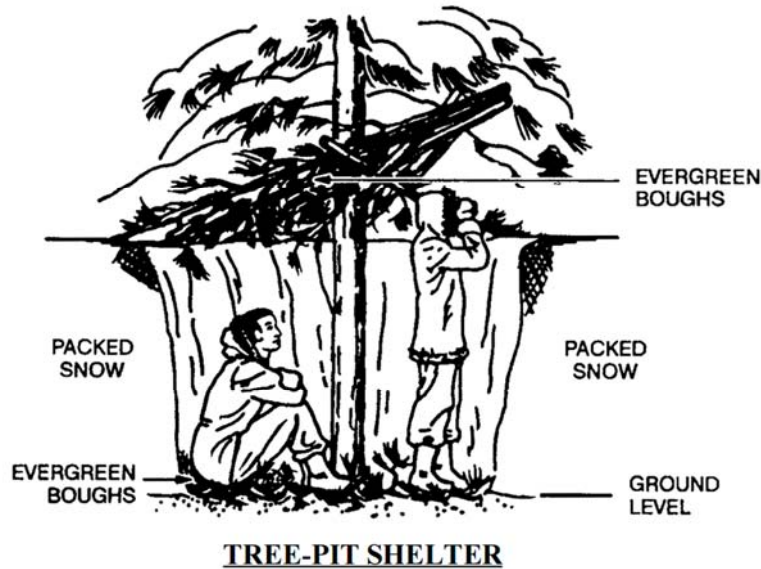
- Cold climates require **enclosed, insulated shelter**.
- Snow is the most abundant insulating material in these climates. Although it is cold to the touch, it's also very effective at containing heat in an enclosed space. So, incorporate it into your shelter.
- Insulate your body from the snow and the cold ground by putting down a layer of pine boughs or other foliage. This slows the loss of body heat.
- An air vent is required to prevent carbon monoxide (CO) poisoning from using an open flame inside an enclosed space. CO poisoning can kill you before you even realize there's a problem, so don't forget this step. (Read the Mayo Clinic's guide on symptoms of CO poisoning for more information.)
- As a general rule, unless you can see your breath, your snow shelter is **too warm**, and should be cooled down to prevent the snow from melting and dripping.

This is what the USMC calls an "immediate shelter". It's about as basic as it gets, but piling up a snow wall to act as a wind break for your camp is a lot better than sitting totally exposed. Wind chill can drop the perceived ambient temperature by 20 to 30 degrees (or more), so by simply blocking this wind, you'll feel much warmer.



If you're located in a flat plain or valley like the photo above, there are no trees to work with, and the snow is too shallow to dig into, a **snow wall** may be your best option. File this under last-ditch plan, but don't rule it out completely.

The **tree pit shelter** is another form of immediate shelter. If you can find a sizeable tree buried in a few feet of snow, dig down to the base of the trunk, and cover the ground with boughs from the tree itself.



Then, stack more boughs against the trunk above you to serve as a roof. Aside from an ingress/egress hole, try to keep the space as enclosed as possible to retain heat. Simple but effective.

It's just too bad that in Alaska, we don't always have any trees at all, let alone trees with 5 feet of snow, stacked around the base.

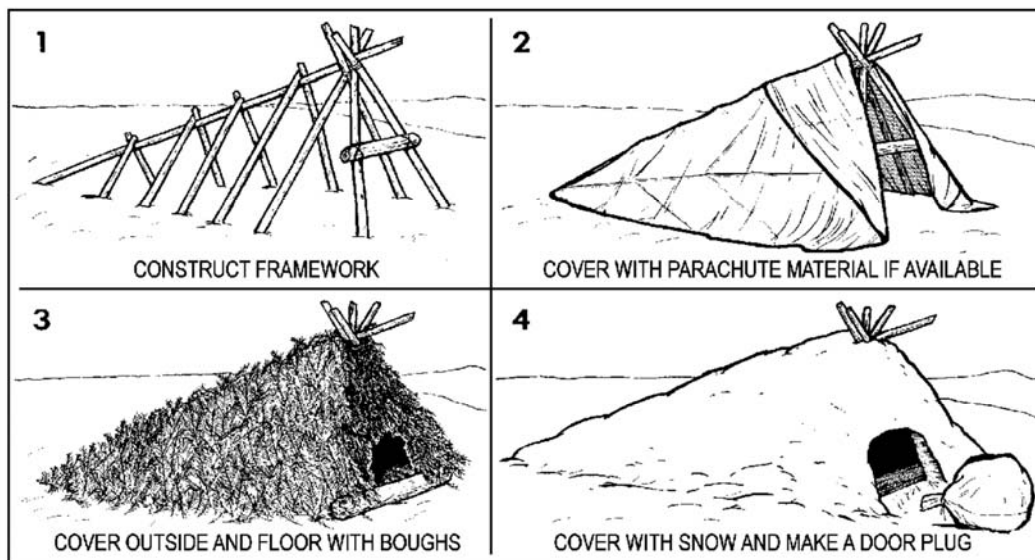


Figure VI-5. Thermal A Frame

You've probably heard of an A-frame shelter before, and this is a winter variant. Build a framework as shown from tree branches or sticks, then cover with a parachute, tarp, or thermal blanket (if you have one). Cover the floor with tree boughs or other soft plant material, which will insulate your body from the cold ground.

Top off the structure with more tree boughs, preferably stacked in layers from the bottom up (with the branch up and leaves down), in a similar manner to roofing shingles. This layered pattern will help strengthen the structure, and prevent pinhole leaks from forming in the next layer.

Speaking of the next layer, the previous step is where you would have stopped if you were building an ordinary A-frame shelter—now for the “winter” part. Cover the tree boughs with packed snow, watching for holes and gaps. Finish it off with a door plug to seal out the wind, and don't forget to add an air vent if you plan to build a fire inside.

The **A-Frame** is the shelter we had to build in Uncle Sam's Army. The helicopter soundproofing gets offered up pretty quickly in a real emergency. Even in the Army, they would always give you a chunk of parachute to cover your airframe. But we don't have many ejection parachutes on our aircraft!

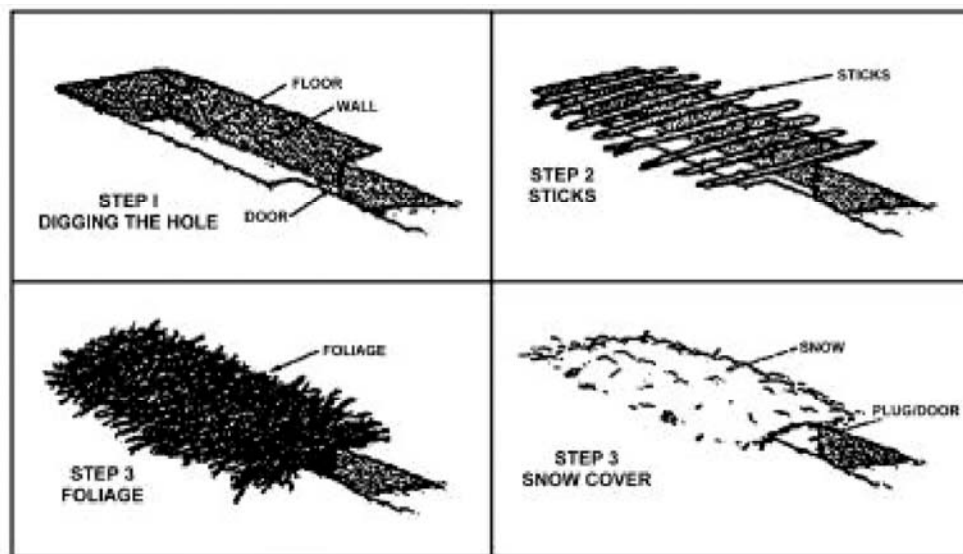


Figure VI-6. Snow Trench

The **snow trench** was also called the “coffin”. This shelter is exactly what it sounds like. First, you’ll dig a ditch or trench into the snow, making it deep enough to lie down in comfortably. Then create a support structure of sticks across the top, and cover with foliage (such as tree boughs or moss) and snow. Plug the doorway, and voila—it’s not roomy, but it’ll keep you warm.

The Snow Trench method can also be combined with the Tree Pit design, by digging your trench under the snow-covered branches of a nearby tree. The branches act as a pre-made roof, saving you time and effort.



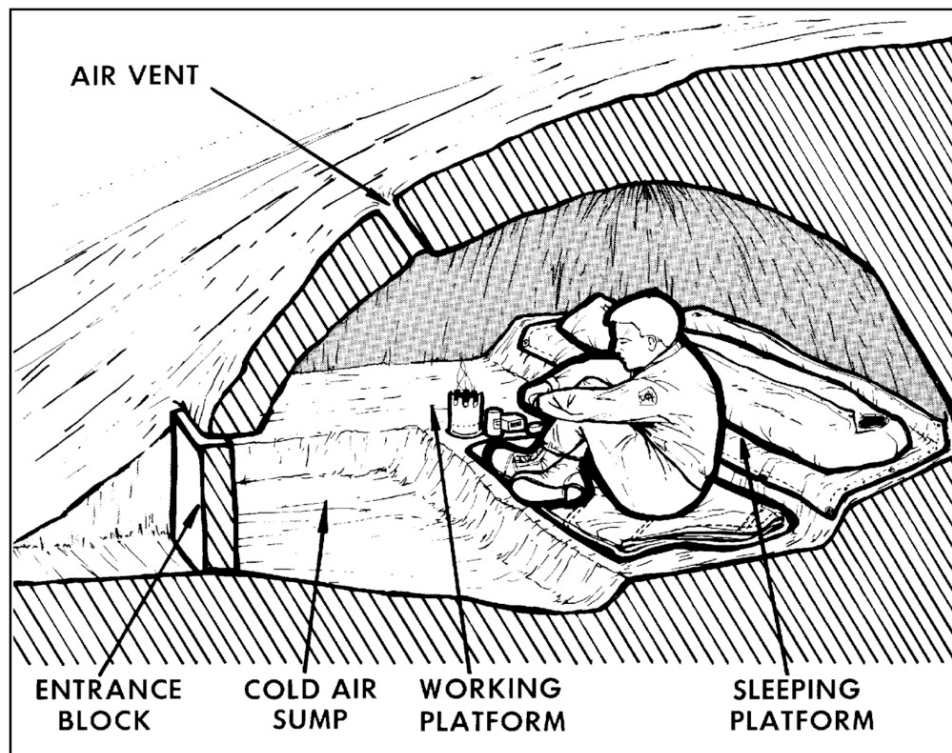


Figure VI-7. Snow Cave

This is the most complex and time-consuming shelter to build, but it also provides lots of space, excellent insulation, and even a way to conceal your location. Dig your shelter into a snowy hillside, ensuring there's plenty of snow above your head to prevent a collapse.

You'll also want to create three stepped floor levels. The purpose behind these levels has to do with the fact that cold air naturally sinks, while hot air rises. By building the floor of the chamber below where you're sleeping and working, you'll avoid sitting in a "pool" of cold air that has fallen to the lowest point in the chamber. This makes efficient use of the heat you generate inside the shelter.

The lowest level is the cold air sump, which is even with the entrance to the shelter. This is where the cold air will collect. Next, you have a working platform, where you can cook and build your fire. Finally, on the top level, you have your sleeping platform, elevated for maximum heat retention while you're asleep.

As with the other shelters, remember to block off the entrance with a solid object (like a backpack or some snow), so the wind doesn't get in. Also, don't forget to poke a small air vent hole at the top, to prevent carbon monoxide from collecting in the shelter and silently poisoning you. It would be a real shame to go to the effort of making this shelter, only to have it become your tomb because you forgot the air vent.

If you have time to build a real-live snow cave such as this, you have a lot of time on your hands! And once again, I'm not sure how much snow we have, shy of the mountains, to make such a cave. For the Homer folks, I would just call the Discovery Channel and have the Kilchers drive out and collect you with their horses.

This Presentation has been brought to you by the United States Marine Corps



SDS of the Month: Scotch Weld Epoxy (A & B Parts)



One more fine product from 3M Company that we use a lot but can cause us serious grief if used improperly. I think the bottom line on all epoxies is to not get them in your eyes!

PRODUCT NAME: 3M (TM) Scotch-Weld (TM) Epoxy Adhesive 2216 Gray PMF (PART A)

EMERGENCY OVERVIEW

Specific Physical Form: Viscous

Odor, Color, Grade: Gray, pungent odor

General Physical Form: Liquid

Immediate health, physical, and environmental hazards: Hazardous polymerization may occur. May cause severe eye irritation. May cause allergic skin reaction.

PRODUCT NAME: 3M(TM) Scotch-Weld(TM) Epoxy Adhesive 2216 Gray Part B

2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2B.

Skin Sensitizer: Category 1.

7.1. Precautions for safe handling

For industrial or professional use only. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.).

8.2.1. Engineering controls

Provide ventilated enclosure for heat curing. Provide appropriate local exhaust ventilation for cutting, grinding, sanding or machining. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

10.4. Conditions to avoid

Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.



4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

Safety Note: I did check several industry pages on the use of Polymer Laminate gloves and most sources agree that for the amounts you use for small repairs and the limited time of usage, that the Nitrile gloves we keep on hand are sufficient protection.

OLD BUSINESS

Change to Station Audit Checklists???

I've had a few requests to try tailoring the audit checklists a little better for relevance and applicability. I've received Station Checklists for Homer on the current form, (which wouldn't be detailed enough) and also for Alyeska (redundant to Pipeline Company Audits or lack relevance). I'm very aware that there is no "one size fits all" in Maritime's facilities. I'll be taking suggestions for the best way to modify or outright rewrite these station checklists. In the meantime...

Continue sending them to me at...

safety@maritimehelicopters.com or fax them to Fairbanks office at 907-452-4539



We're doing pretty well at getting the workforce trained on Adult First Aid/CPR/AED. There were 21 employees trained in Fairbanks in October with another class being taught on November 28th. Per OSHA, the intent is that all the remote site pilots and mechanics certified for this class this fall and winter (currency is every two years). I'll probably travel down to Homer for a class at least once in December, so please be flexible on class dates. The class takes approximately 4 ½ hours and we'll have an add-on for Blood borne Pathogens class which takes about a half hour. The Blood borne Pathogens class is for all employees.

We are making a list for the Red Cross Certification class, so even if you do not work remotely, and want to get certified/recertified, let Heidi or me know.

Incident Reporting: October

FIR: 10/20/2017: Bell N308H, (XMSN Chip Light)

During approach to final at refuel site, the transmission Chip Light flickered, and then came on steady. On short final, the light extinguished. Then, at a hover, the chip light flickered again and became steady. Pilot hovered to transient parking. While setting the aircraft down, the chip light extinguished again. The pilot shut down and notified the Chief Pilot and the station mechanic.

Mechanic pulled both chip detectors to the Main Gearbox and found a small chip on the lower plug. Information was recorded, both plugs reinstalled and a 20 minute ground run was performed. No faults noted.

(Sometimes the most annoying chips are the intermittent ones. Is there are problem or not. But we treat them all the same. Good job by everyone. 308 has not had subsequent chips)

FIR: 10/30/2017: Bell 407H, N312MH (Engine Oil Pressure)

Aircraft was approximately one mile from station at the beginning of flight, and in cruise. At 73% Torque, and 94.6% NG Speed, the engine oil pressure was steady at 105 PSI. The EOP should have been at least 11h PSI at this NG setting. Aircraft was returned to station and mechanic was called. Fairbanks maintenance was notified and an engine oil pressure transducer and oil gauge were flown out of Fairbanks.

Mechanic completed function check of Engine Oil Pressure Transducer during ground run with in-line pressure gauge. Function check showed no faults IAW the Bell Manual. Aircraft was MOC's and parts kept at remote station in-reserve.

Intermittent or "one time" problems are still problems that need to be addressed. But for an aircraft that is and was making good pressure in the oil system, we are left with no more than a one-time *indication* issue. We'll continue to monitor this aircraft for proper engine oil indications.

Last Words

Here is a list of bullet statements from the Pipeline Station Audits, which might bring to mind items at your work site that need some attention...

- The checklist holders are there for a reason. Let's make sure that everyone is using the aircraft checklists
- Wish lists are important! Whether it is plain "want" items like a certain type of equipment, or maintenance items like paint at various locations, we need to know
- The Emergency Response Guide, current version is ver.17. Please make sure it is available/visible.
- If you have items like headsets that need repair, please just go through the actual process and green tag them and turn them in for repair. Wishing for things doesn't get you apple pie OR repaired equipment!
- Please, please, please! Remember that then you are reviewing aircraft logbooks for preflight that the calendar inspections need to be looked at as well as the hourly inspections. We've had several examples of overflying the most innocuous inspections (e.g. fire extinguishers)
- One more note: sometimes, the best solution is to find a solution yourself! Big Thanks! To Tim Kirkendall for adding some protection bollards to the propane tank at Valdez by some serious sweat, digging holes and mixing up some concrete!



Dennis S. Busch

Quality and Safety Manager

safety@maritimehelicopters.com



1915 Donald Ave

Fairbanks, AK 99701

Tel 907.452-1197

Cell 907.750-9548

Fax 907.452-4539

**MARITIME HELICOPTERS
PUBLICATIONS
ROUTING MEMORANDUM**

DATE: 11/3/17

TO: AK ALL

FROM: Records Department

SUBJECT: October Quality and Safety notes

Please complete the verification of receipt below and return this form to the Records Department in Fairbanks via email to faiaadmin@maritimehelicopters.com or by fax to (907)452-4539

BY SIGNING THIS FORM I ACKNOWLEDGE I have reviewed and will comply with the memo listed above

EMPLOYEE SIGNATURE

DATE