

SURVIVAL

after a crash

The wind howled and blowing snow obscured visibility as Ralph Miller skillfully rotated the nose of the cream-and-red Piper Comanche, N5324P. A seasoned pilot with twenty years of flying and two Arctic research expeditions in his logbook, he and Bob Quinn, both physicians at Dartmouth Medical School, had flown to Berlin, New Hampshire (BML) earlier in the day to assist the medical team at a local hospital. As daylight faded, they were now headed back to their home field in Lebanon, some 75 miles south. This was February 21, 1959; I was a bit shy of my fifteenth birthday, and knew both men as friends and neighbors. After departure, they were never seen alive.



Over the next eleven weeks we searched throughout the rugged White Mountains. Army, Air Force, Civil Air Patrol, National Guard, Sheriff Department, and State Police searchers teamed with countless civilian volunteers to check out more than 260 claimed sightings of the missing aircraft. On May 5 a conservation officer finally located it at the base of a narrow ravine in the Pemigewasset

wilderness, in the center of the White Mountain National Forest -- about as far from a paved road as one can get in the craggy wilds of northern New England.

The relief team endured a difficult trek over nearly impenetrable terrain to find the men – deep snow was punctuated by roaring streams of spring runoff – and it was no surprise that the two had not survived. The most compelling discoveries at the crash site turned out to be two: a pair of snowshoes crudely fashioned from branches and surgical tape, with bindings of Ace bandages and fabric from the aircraft upholstery, and a plastic bottle with a dashed line below the neck marked *CUT HERE*. The bottle contained a journal of four days survival in storms and temperatures that reached far below zero.

Dr Miller was a lifelong outdoorsman, Dr Quinn less so. Miller had worn heavy winter clothes and boots; Quinn was found in his street clothes without shoes, which were never found. It appeared from the message in the bottle that Miller, despite a severely broken jaw, outlived the uninjured Quinn by a fair margin. He had even managed to a neat pile of firewood, cut with a surgical saw. Had it not been for his personal skills and the survival kit Miller always carried with him in his plane, neither man would have lived as long as he did.

Despite more than forty years of flight instruction, I still get amazed when I see folks meticulously planning their cross-country flights, but giving never a thought to the possibility that they might have to make a nonscheduled off-airport landing far from friends, or even from strangers. Pilots consult with weather briefers and make alternate plans if Mother Nature has below-minimum plans for the preferred route. They carry approach plates for hundreds of fields other than the destination, just in case. But even seasoned aviators will fly across hostile terrain – the high desert of the southwest or the rugged Appalachian backwoods, for example -- wearing wingtip shoes, a short-sleeved shirt, and a business suit. With no other clothes in the airplane.

A lasting lesson I took from the experience of searching for Doctor Miller was to have a survival kit always at the ready, and in the intervening half-century I've never flown without it. The first time I fly with any pilot, I explain why I carry it. I explain to students that they are not required to carry survival gear themselves, but if the gear is required, I do not plan to share mine. They get the picture remarkably fast.

The kit I keep with me has been styled for my part of the world – the cold and mountainous regions of the northern United States. I adjust it when flying far from home, and folks from the plains, deserts, or swamp country will want to vary the contents of their kits.

No matter where you find yourself, your survival kit will amount to nothing if you can't find it, reach it, and carry it. I keep mine in a bright yellow backpack, easy to see in diminished light or smoke. It has at least a half dozen separate pockets, and affords the luxury of redundancy – if one pocket compass gets shattered, there's a backup handy. But what to put in it?

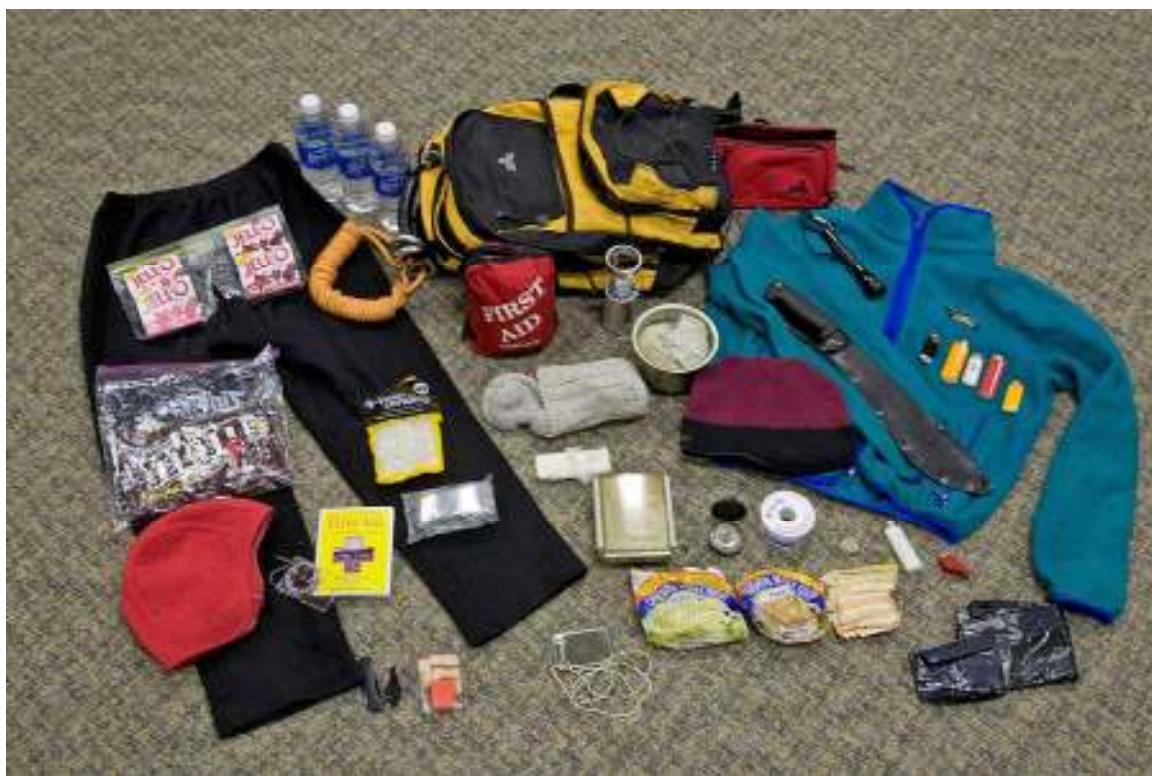
In deciding this crucial question, it's important to bear in mind what survivalists call the Rule of Threes.

A fit adult can live for THREE:

- weeks without food
 - days without water
 - hours without protection from a harsh environment

Protection

So start off by stocking your kit with what's most vital – protection from the elements. I carry two reflective space blankets, a couple of big plastic trash bags, and a complete change of clothing. Since wool and synthetic fleece are among the few fabrics that insulate even when wet, I make sure all clothing is composed only of those; check with the manufacturers if you have any doubt. A couple of pair of wool socks can be worth their weight in platinum! And remember that most heat escapes your body through your scalp: have a wool hat in winter, and a loose-fitting cap with a big visor in sunny months.



Typical personal survival kit

In a mild climate, big plastic trash containers can serve as a sleeping bag. I winter, I still carry a down sleeping bag – it compresses so well that it demands little space, weighs but a few pounds, and insulates magnificently. Bear in mind two fundamental principles: (1) heat travels from a warm area to an area that can absorb heat, and (2) one of the best insulators known is motionless air (this is the reason many animals grow their fur in hollow hairs when the days begin to grow shorter; polar bears grow this kind of fur all year around). You can take advantage of these principles by creating a bed of evergreen boughs. The fronds of vegetable matter separate you from the cold earth and hold the insulating air motionless beneath you.

My kit contains but two tools of the traditional sort. The first is a three foot cable saw – you can find them I almost any camping supply store – with metal rings on each end. It cuts wood well and is highly unlikely to cut the user. Safety and weight are the reasons to shun axes and hatchets of any kind. They weigh a lot, are clumsy to transport, and are user-friendly only to those who use them regularly. Rather than a heavy-headed cutting tool, carry a *bola* knife – a modified short machete that takes up far less space in the kit. The *bola* is well balanced and ideal for the light cutting one encounters in a survival situation.



Bola knife

Sleeping bags, space blankets, and homemade mattresses are passive protection from the elements. The most active step you can take is to build a fire that will keep you warm, cook your food, and help show strangers your location. A few packs of waterproof matches are invaluable, and simple flint-and-steel fire starters cost a couple of dollars at every camping shop. Never one to trust waterproofing, I also carry several disposable lighters at an average cost of ninety-nine cents.

Some reminders about fire: Use tinder to get it started. Birch bark will always light, even during a hurricane. Place yourself between your fire and a big reflecting surface, such as a stone face. Small fire to cook, larger to heat.

Thirst

Forget all you've heard about space-age miracle beverages. The important thing to keep in mind is avoiding dehydration. So stock a few plastic bottles of water. Better to have four half-liters – stored in separate pockets of the pack -- than one two-liter bottle, because if you break the only bottle you brought along, you'll end up filling it with tears.

Another handy item is a thumb-sized container of iodine. Get one with an eye-dropper lid, and use it to purify stream water or melted snow. No matter what you recall from those old scout handbooks, it really doesn't taste that bad.

Part drink and part food, Jell-O powder works wonders in a small package. It can make brackish water less repulsive, gives quick energy, and packs easily. My personal experience with the high-density power bars that trail bikers and marathoners use, on the other hand, has been unpleasant. Call me a snob, but they taste like gluey sawdust.

Hunger

The least important of your needs in the long haul, food is nonetheless consequential when it comes to morale. My kit has a single bag containing:

- a dozen or so boxes of Jell-O, carried in zip-lock sandwich bags
- a small stainless bowl usable for cooking, gathering water, or digging
- about a pound of rolled oats
- a small plastic screw-top container of freeze-dried coffee, primarily as a morning reassurance that things are going to be OK, and
- a similar container of sugar, for quick energy

Other stuff

One last consideration in assembling your personal kit is signaling – letting rescuers know where you are and how to find you. Brightly colored panels and silvered fabric are far more visible than a human body, but neither makes a sound – so make sure your handheld VHF has well-charged batteries for every flight. Learn how to remove and use your ELT before you plan to move away from the aircraft – and remember that searchers will most likely be looking for an airplane, not a person. A signal mirror – the kind that military surplus stores sell for three bucks – is easy to use, fits in a pocket, and needs no maintenance.

Once you have your kit assembled, make a practice run. Try to sleep outdoors using nothing other than the things in your kit and your airplane. The simple exercise can teach you wonders about what more you'd like to have along – we haven't even mentioned first aid kits yet!

Summary

The biggest enemy in a survival situation is not hunger, thirst, weather, or injury, but fear. Never let yourself get down in the dumps. The odds are great that you'll be located within a day or two, even in the most desolate circumstances.

So think about the obvious things, as well as the obscure. Take along a cell phone. Always don footwear appropriate to long outdoor walks before you go flying. You filed a flight plan, your plane has an ELT, and you have prepared yourself for a brief ordeal that will give you a lifetime of stories to tell all the grandchildren in town.