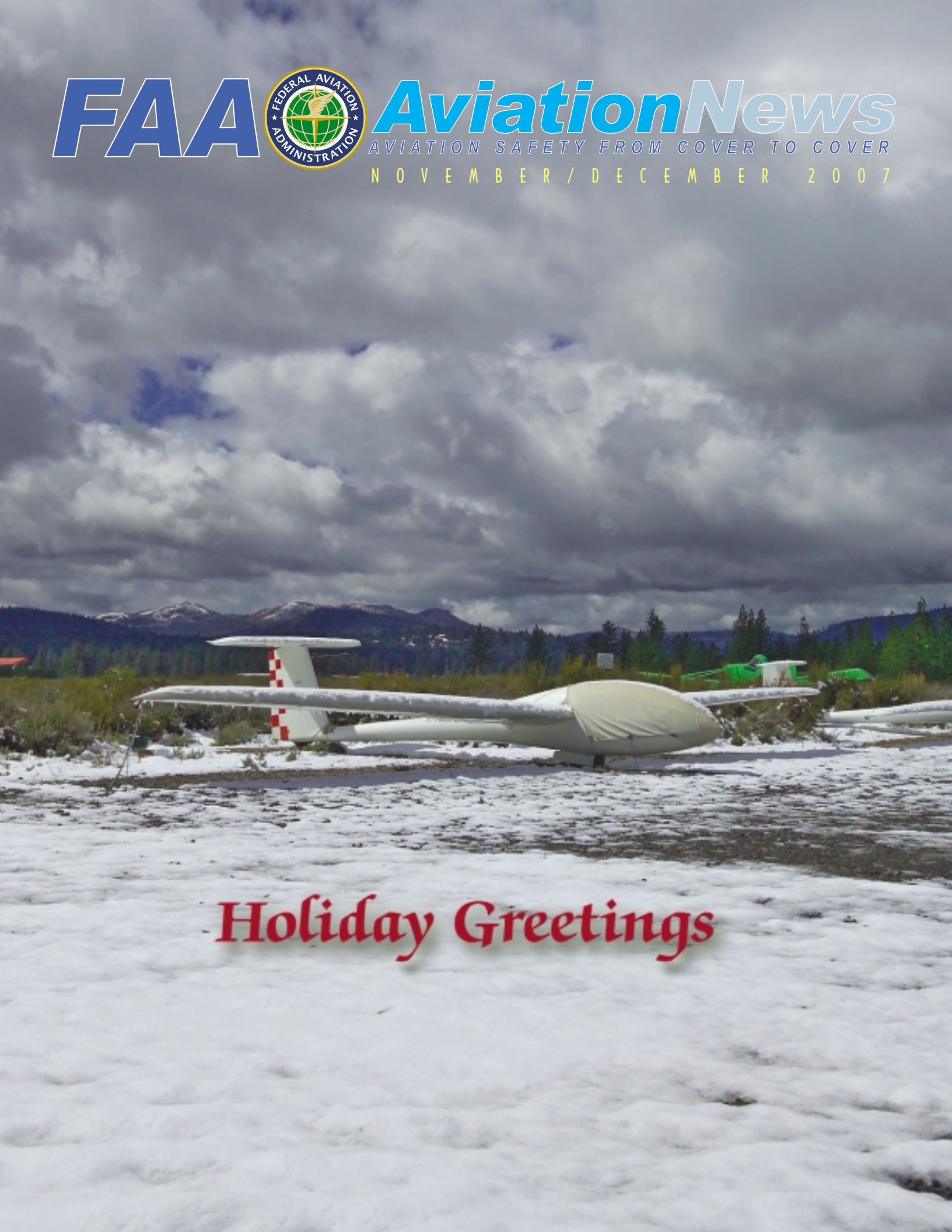
FAA AviationNews
AVIATION SAFETY FROM COVER TO COVER
NOVEMBER/DECEMBER 2007



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**Federal Aviation
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The FAA's Flight Standards Service, General Aviation and Commercial Division's Plans and Programs Branch (AFS–805) publishes *FAA Aviation News* six times each year in the interest of aviation safety. The magazine promotes safety by discussing current technical, regulatory, and procedural aspects affecting the safe operation and maintenance of aircraft. Although based on current FAA policy and rule interpretations, all material herein is advisory or informational in nature and should not be construed to have regulatory effect.

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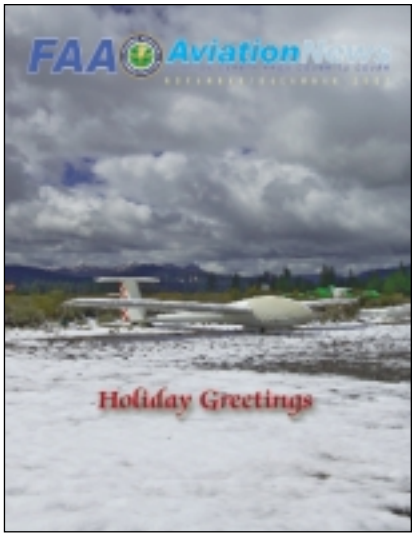
FEATURES

DEPARTMENTS



FRONT COVER:This sailplane sits secure in its canopy cover and well tied-down at the Truckee/Tahoe Airport, Truckee California. (H. Dean Chamberlain photo)
BACK COVER: . Can you identify the aircraft in this photo taken by Michael W. Brown? Send your entry to <Dean.Chamberlain@faa.gov>.

Search and Rescue

CAP photo

by Rogers V. Shaw, II

In the unlikely event that your aircraft crashes, you should be very aware of search and rescue procedures, and what you can do to improve your survival odds. After a crash, how can you best utilize the resources available to accomplish the survival goal—rescue?

We need to distinguish between these two key words, search and rescue. What does the term "search and rescue" mean? If rescue personnel don't know where you are, it's a search. If they do know where you are, then it's a rescue.

What can you do to help in the search phase? The key to your survival is to shorten the time from the crash to rescue. Obviously, if the rescue team doesn't know your location, then it will take a lot longer for them to find you.

How much longer? The average time from the last known position (LKP) to rescue is 31 hours. Since this is an average, one could be a survivor for a few hours—or a few days. To assure that the LKP is known, as a pilot, your key survival effort begins by filing a flight plan. It is a road map of your inflight movements and is the cheapest insurance available. How cheap? It's free. The types of flight plans filed will greatly affect the time you may have to survive during a search phase.

Flight Plan Average Time from LKP to Rescue

- Instrument Flight Rules (IFR), 13 hours 6 minutes
- Visual Flight Rules (VFR), 37 hours 18 minutes
- No Flight Plan, 42 hours 24 minutes

It is very easy to see how important it is to have a flight plan on file with a Flight Service Station.

Communications: A Key to Aircrew Survival

It's important to understand how the rescue personnel are put into action. When an aircraft is overdue, missing, or sends a radio distress call, the National Search and Rescue Plan is activated. There are many organizations and volunteers associated with search and rescue (SAR), but the Federal government assumes overall responsibility. The National SAR plan designates the U.S. Coast Guard as responsible for maritime SAR and the U.S. Air Force for inland SAR.

All SAR activities in the contiguous 48 states are coordinated through the full-time Air Force Rescue Coordination Center (AFRCC) at Tyndall Air Force Base, Florida. When a call on a missing or overdue aircraft is received by the Center, the National SAR Plan is activated.

When Is a Flight "Overdue?"

If a flight plan is filed, the air traffic control system will automatically initiate a plan to locate overdue flights. When an aircraft on a VFR flight plan is overdue by one hour, or by 30 minutes on an IFR flight plan, the Flight Service Station servicing the destination airport issues an INREQ (Information Request). If a flight plan was not filed, there is no designated time limit before a search is initiated, thus greatly delaying the onset of search and rescue.

The following summarizes the actions that are used to locate a downed aircraft.

Search Process Phase Description

Uncertainty. The Information Request (INREQ) is initiated. The FAA and the Air Force Rescue Coordination Center conduct a Preliminary Communications (PRECOM) search. Because of the high rate of false alarms, this phase is designed to determine if an aircraft is really missing or if a crew neglected to close their flight plan. If the PRECOM comes up negative, then the next phase is activated.

Alert or Alert Notice (ALNOT). The ALNOT will be issued at the end of the INREQ or when the estimated time that the missing aircraft's fuel would be exhausted or when there is serious concern regarding the safety of the aircraft and its occupants.

At this phase, the destination airport checks all ramps and hangers to locate the aircraft. Local law enforcement agencies in the search area are notified and all information is sent to the AFRCC. If the ALNOT

fails to find the aircraft, then the final phase is activated.

Distress. At this point, the actual search mission is launched. Air search efforts will not begin until first daylight, unless there is a functioning emergency locator transmitter (ELT) alerting a ground rescue party. If the weather permits, air rescue is dispatched to the distress location. Even with an ELT, terrain and weather may hinder response time. Chances are good of spending at least one night as a survivor.

It is very important to ensure that your aircraft's ELT is in good operating condition. The average time required to find a downed aircraft with a functioning ELT is 6.8 hours. Compare that time to 40.7 hours without an operating ELT and the benefits of properly maintaining emergency equipment become obvious.

Improving Survival Odds

Another important factor is the probability of death from serious injury: It increases substantially after 24 hours. How can the search phase be shortened? A flight plan filed with Flight Service, an operational ELT, and good communications will increase your chances of a quick response by rescue personnel.

Survival Equipment

One item to help you survive after a crash is a good personal survival kit aboard the aircraft. Be sure to read the next article, "Prepared for Anything" by Roger Storey, for a description of a good survival gear kit.

Fly safe and be smart.

Rogers Shaw, a former USAF pilot with 3,000 hours of flight time, manages the Civil Aerospace Medical Institute's (CAMI) Airman Education Program.

This article originally appeared on the FAA Web site for pilots under training, Airman Education Programs, <http://www.faa.gov/pilots/training/airman_education/>.

AIR FORCE RESCUE COORDINATION CENTER

As the United State's inland search and rescue (SAR) coordinator, the Air Force Rescue Coordination Center (AFRCC) serves as the single agency responsible for coordinating on-land federal SAR activities in the 48 contiguous United States, Mexico, and Canada.

The AFRCC is located and assigned to the 1st Air Force at Tyndall Air Force Base, Florida, and operates 24 hours a day, seven days a week. The AFRCC directly ties into the Federal Aviation Administration's alerting system and the U.S. Mission Control Center. In addition to the Search and Rescue Satellite Aided Tracking information, the AFRCC computer system contains resource files that list federal and state organizations, which can conduct or assist in SAR efforts throughout North America. When a distress call is received, AFRCC investigates the request, coordinates with federal, state, and local officials, and determines the type and scope of response necessary. Once verified as an actual distress situation, the AFRCC requests support from the appropriate Federal SAR force. This may include Civil Air Patrol, U.S. Coast Guard, or other Department of Defense assets, as needed. State agencies can be contacted for state, local, or civil SAR resource assistance within their jurisdiction. The AFRCC chooses the rescue force based on availability and capability of forces, geographic location, terrain, weather conditions, and urgency of the situation. During ongoing SAR missions, AFRCC serves as the communications hub and provides coordination and assistance to on-scene commanders or mission coordinators in order to recover the mission's objective in the safest and most effective manner possible. AFRCC uses state-of-the-art technology including a network of satellites for monitoring emergency distress signals. Systems such as these help reduce the critical time required to locate and recover people in distress.

For more information, visit its Web site at <www.1af.acc.af.mil/units/afrcc>.

COSPAS-SARSAT Rescues as of September 07, 2007, since 1982

- Worldwide – More than 22,058 people rescued
- United States – 5,664 people rescued

Number of persons rescued to date in 2007 in the United States: 268

- Rescues at sea: 194 people rescued in 54 incidents
- Aviation rescues: 26 people rescued in 16 incidents
- Personal Locator Beacon (PLB) rescues: 48 people rescued in 22 incidents

Number of persons rescued during 2006 in the United States: 272 people rescued in 105 incidents

- Rescues at sea: 220 people rescued in 71 incidents
- Aviation rescues: 15 people rescued in 12 incidents
- PLB rescues: 37 people rescued in 22 incidents

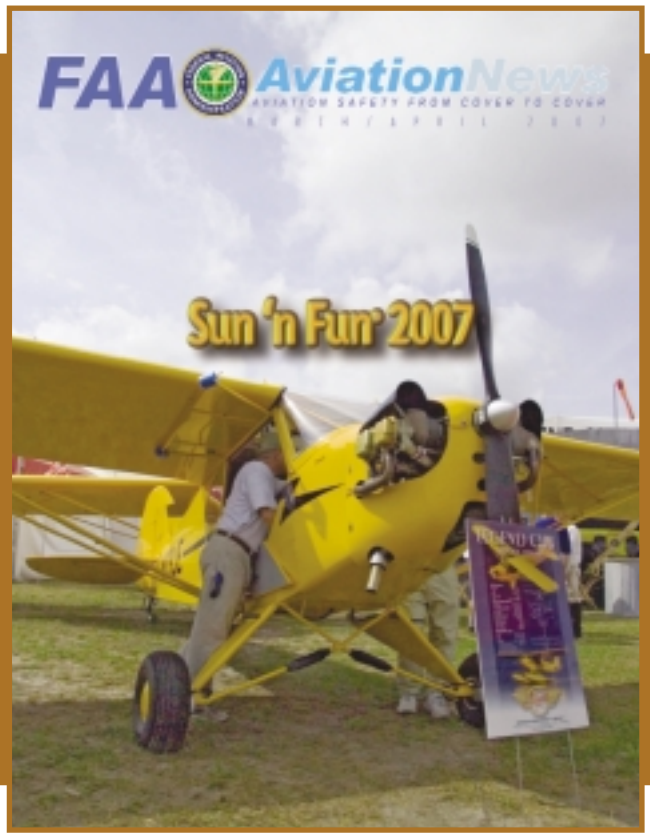
SARSAT - A Lifeline to Survival!

Around the world—around the clock—the U.S. National Oceanic and Atmospheric Administration (NOAA) proudly stands watch. As an integral part of worldwide search and rescue efforts, NOAA operates the U.S. Search and Rescue Satellite Aided Tracking (SARSAT) System to detect and locate mariners, aviators, and recreational enthusiasts in distress almost anywhere in the world at anytime and in almost any condition.

The SARSAT system uses NOAA satellites in low-earth and geostationary orbits to detect and locate those in distress. The satellites relay distress signals from emergency beacons to a network of ground stations and ultimately to the U.S. Mission Control Center (USMCC) in Suitland, Maryland. The USMCC processes the distress signal and alerts the appropriate search and rescue authorities of those who are in distress and, more importantly, approximately where they are located. With the newer GPS encoded 406 MHz distress beacons, a victim's location can be located to within a few square meters.

Aviators should be aware that on February 1, 2009, SARSAT's satellites will no longer monitor for the analog 121.5 MHz frequency given off by older Emergency Locator Transmitters (ELTs). Pilots and aircraft owners are advised that they should consider changing out their 121.5 MHz ELT for a digital 406 MHz frequency, which will continue to be monitored by the satellites.

NOAA-SARSAT is a part of the international Cospas-Sarsat Program to which 38 nations and two independent SAR organizations belong. For more information about SARSAT and the transition to 406 MHz ELTs, readers can log onto the following Internet Web site at <http://www.sarsat.noaa.gov/>.



SUGGESTIONS ANYONE?

Even though the *FAA Aviation News* is now in its 46th year, we strive to continuously improve the magazine and meet the needs of our customers. We are always interested in your feedback. Please let us know if there is a specific topic you'd like us to cover, or if you think a different format would be more effective.

Please e-mail your comments or suggestions to AviationNews@faa.gov

Prepared for Anything

by Roger A. Storey

As the popularity of aviation as a career and as a hobby increases, so does the concern for safety. One such concern is survival after a crash. As a Survival Instructor with the Civil Aerospace Medical Institute's Airman Education Division, I am often asked: "What is the most important piece of equipment to have in a survival situation?" The answer is simple: Me, the survivor.

In any survival situation, there will be specific priorities. The priorities will include medical first-aid, shelter from the elements, rest, water, and food. The order of importance you place on each of these priorities will be dictated by each situation. For instance, the priorities for a pilot forced into a survival situation in rural Missouri during the month of August will vary from a pilot who has to survive in northern Michigan during January. One thing is for certain, without a "will to survive," the chances of survival will be greatly reduced. If you do not have a desire to survive, there is no equipment available that will help you survive.

There are two simple, but important, ways you can increase your chances of survival. These involve preparation—before you ever find yourself in an actual survival situation. The first is to admit to yourself that "It Can Happen To Me." The next step is to prepare yourself, both mentally and physically. It is not enough to prepare mentally if you cannot withstand the physical requirements of a survival situation.

The mental preparation can come in the form of educational courses, books, or conversations. There are various survival courses conducted around the United States that deal specifically with the climate, terrain, and many other factors that you may be exposed to in a particular region. Along with these courses, there are a great number of books on survival techniques for the desert, arctic, and sea. You can find these at most bookstores or at the library. Another way to gain knowledge is to ask people who have been through a survival situation what to expect. Training also includes learning how to use and practicing the use of survival gear you may already have.

Preparing yourself physically for a survival situation depends greatly on the shape you are in now. Keep in mind that your situation may require you to walk, climb, or even carry a fellow crewmember or passenger a distance. You will want to be as physically fit as you would expect the person, who might have to carry you, to be.

By improving your knowledge and physical capabilities, you will also increase your confidence, which will benefit you a great deal. The more informed you are about your own capabilities and on the climate and terrain over which you fly, the easier it will be to decide what your priorities for survival will be.

The priorities of survival will vary from situation to situation and region to region. Using the priorities established earlier you can start to evaluate what equipment would be best suited for your personal survival kit (PSK).

Once you have decided what your needs are in accordance to your priorities and typical flying area you can decide what equipment will best suit your needs. Below is a basic list of suggested equipment you might consider for your PSK. Keep in mind a PSK is a survival kit that is designed to supplement your survival needs, but must be readily and easily accessible in the event of an emergency evacuation from the aircraft.

Mr. Storey is an instructor in the Civil Aerospace Medical Institute's (CAMI) Airman Education Programs.

This article originally appeared on the FAA Web site for pilots under training, Airman Education Programs, <http://www.faa.gov/pilots/training/airman_education/>.

Priority Checklist and Equipment for your Personal Survival Kit (PSK)

Category	*Purpose*	*Item*
Medical	Treat injuries and illness	First aid kit, prescription meds, aspirin, splint
Shelter	Survival	Tent, poncho, fire starting material, matches, raft
Water	Fluid intake	Water purification, canteen, water container
Food	Nourishment	Granola bars, MREs (meals ready to eat), energy bars, fishing kit, survival food
Signaling	Rescue	Whistle, flares or laser flares, survival radio, mirror/reflector, Cell/Sat phone, handheld GPS, Personal Locator Beacon (PLB)
Miscellaneous	Comfort	Compass, quality pocket knife, mirror, bug repellent, multi-purpose tool/knife, your imagination
Rest	Recharge