



The Bend High Desert Flyer of Chapter 1345

WEBSITE: <http://www.eaa1345.org/>

KBDN AWOS 134.425

MARCH 2007, VOL 6, #3

PREZ SEZ:

Boy...just when I was starting to think about all those flight hours I'd accumulate during our mild late winter, the bad weather hit. Never mind, this is a time to get your winter woolies on and take your propane heater out to the hangar or garage and attend to some of those building or maintenance chores you've been postponing. There's always something to do when it comes to airplanes, right?

Our February meeting was well-attended and we listened to Bud Candland present his ideas for a road-able airplane. An ambitious project, to be sure, but Bud is really serious about getting something going. There's a short article about Bud's presentation in the pages below and I've sent an Acrobat file of his presentation to Ross and asked him to post it on our website, www.eaa1345.org. Check it out.

Our March meeting features a "two-fer" on survival, moderated by Bill Lewis. George Lanning from the Civil Air Patrol (CAP) will give us a presentation on survival methods and the CAP's search and rescue methods. Then Bill will show us some survival kits he has made up, why he included the things he did, and how to use the tools and gizmos in them. Bill will have three different version of his survival kit there, and each of them will be available for purchase by our Chapter members. I expect a lot of questions and answers about survival to flow from this meeting. With George's extensive piloting and CAP experience and Bill's down-and-dirty know-how, this meeting will be a must-attend event for each of us who are flying or thinking about flying.

I look forward to seeing you March 14th at 7 p.m. We'll have a Board meeting at 6:30 pm and you're all invited to that as well. We'll try to meet in the classroom above the ProAir maintenance hangar. Our back-up to that (if COCC is having classes in the upstairs room) will be the FBO's lounge area. Be there if you can.

Dennis Douglas

Schedule of Meetings & Events

<u>Meetings:</u>	<u>Breakfast</u>
March 14	March 17 -- location TBA
April 11	April 21
May 9	May 19
June 13	June 16
July 11	July 21
August 8	August 18
September 12	September 15
October 10	October 20
November 14	November 17
December 12	December 15

February 14th Meeting Minutes

Officers Present:

Dennis Douglas President
 Bill Blackwood Vice President
 David Waltman Secretary

11 members present

Treasures report: Balance on hand \$2093.29

Minutes of last meeting read and accepted

Announcements: Bruce Myers flew his RV-9A last Wednesday for the first time.

Program: Bud Candland presented his ideas on his Flying Car concept to the group followed by a question and answer session from members present

Meeting adjourned

Dave Waltman

My RV-9A status

Since the first flight, I now have 10 hours on the Sube 6 Cylinder engine. Being an automotive engine, the break-in procedure is to ground run the engine at different RPMs for five minutes, working your way up to wide open throttle. This procedure is done for 5 hours.

Then from the first flight for the next 5 hours I will fly at cruise and lower speeds and avoid wide open throttle. After the 10 hours, I will change the oil, filters and get the propeller balanced. Also, I will do an inspection of the plane.

It's time to start doing flight tests. The FAA test program has 13 flight test schedules to fly. I will send the test program information to the chapter when completed.

So far the plane has been just great to fly.

YES, I HAVE THE RV GRIN!!!

Bruce Myers... Test Pilot

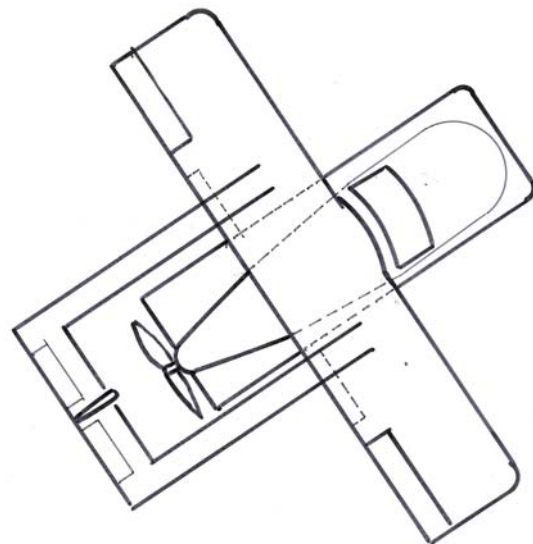
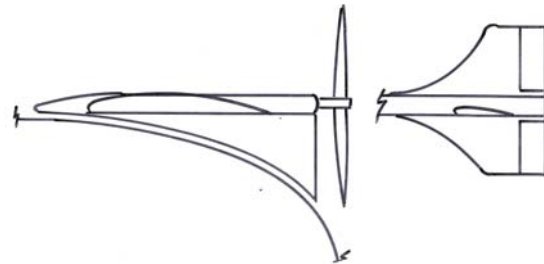
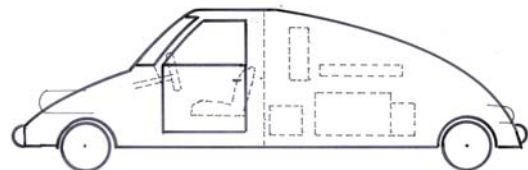
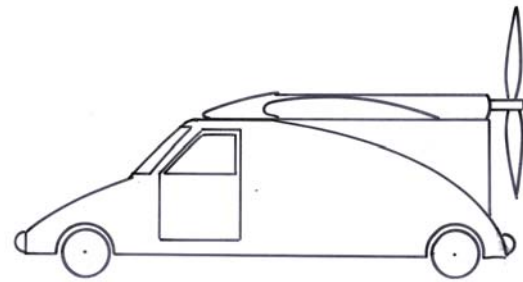
Aeromobile Report

February's meeting was a bit different than most...kind of..... Instead of discussing just airplanes or parts of airplanes, Bud Candland gave us a great presentation on his concept for an "aeromobile"—a road-able airplane.

Bud wants to build a flying car. He's researched the problems of prior efforts and has some ideas for getting around many of them. Bud showed us photos and drawings of earlier efforts and he's assessing why they were not successful and how to make his concept more successful. Bud's been talking to composite materials folks to lighten the structure and is looking at high-strength snowmobile transmissions to power the wheels and prop. Some of Bud's concept sketches are shown below.

Bud reckons that he still needs a few things before he can turn his concept into a real object: a buildable design, funding, a place to build, and people to help him make it happen. Just a few minor details.... But he's pursuing this and he'll give us updates as progress is made.

Bud's presentation stimulated lots of discussion at the meeting and generated several useful suggestions to facilitate the design portion of the work.



If you have an interest in flying to an airport, then driving the same vehicle around town there, you should consider getting with Bud to help him further his dream. If you want to see Bud's complete presentation, check our website, www.eaa1345.org.

Dennis Douglas

Aircraft Survival or Plane Sense, Part II

By Bill Lewis

This is the second part of an article intended to assist you the pilot in preparation of an unscheduled off airport landing or survival of an emergency situation. Some of my thoughts may

The past month we have all had several serious reminders of just how unforgiving the NW weather can be and how difficult it can be to survive. I'd like to regress a bit and talk about the pilot and his training and readiness to handle his aircraft in an emergency situation and the aircraft's ability to perform low level maneuvers may just be the deciding factor in survival.

THE PILOT

I briefly talked about the pilot's experience and training last month but I cannot over emphasize that many times both the aircraft and pilot's capability are exceeded with grave outcomes. Forced landings at night remind me of the old saying; "the reason they put a landing light on airplanes is, if you don't like what you see you can turn it off!" That being said I will concentrate on daytime forced landings with marginal or good VFR weather.

In mountain flying, or over rough terrain, the ability of the pilot to perform advanced commercial maneuvers is essential many times to ensure the best possible outcome. "Lazy 8's", power off spirals, wingovers and other maneuvers, which will reverse direction of flight in and let you descend in a controlled manner to provide a turn to lower ground. These can be performed only if you are familiar with the low speed handling of your aircraft. Knowing how to unload the wing (reduce the potential for stall), and use the rudder properly to handle maneuvers is essential. An unloaded wing will not stall and extreme maneuvering can be done such as "duster turns, wingovers, etc". With any forced landing a decision where to land must be made with sufficient altitude to work with. I would consider at least 1,000 feet an altitude to start maneuvering with the decision where to try landing already made. Remember trying look for a landing site, configure the aircraft, tune radios and talk are going to be more workload than the pilot may be able to handle at that time. A passenger may be of great assistance at helping depending on flight experience and training.

I always made a rule in mountain flying to ALWAYS leave a turn to lower ground or the "back door open" since the lack of an engine that is not producing 100% power or a strong downdraft can negate any chance of clearing a ridge.

differ from what you have knowledge of but, agree or not, these articles are intended to stimulate your thoughts about what is important regarding survival and preparation for such an event.

Another cardinal rule in mountain flying is never approach a ridge at 90 degrees but always approach it at 45 degrees and always fly one side of any valley or canyon (windward) to provide lift and turning room to lower terrain. The 45 degree approach requires less of a turn to head for lower ground.

Now some of these rules may seem ridiculous to those who fly mountains at four or five thousand feet above the terrain at 150 plus knots but they do apply as we run out of ideas and airspeed in a sick airplane. Get an instructor and keep current on how to get the most out of your aircraft and know the maneuvering speed(s) and glide characteristics of what you are flying. Your aircraft may go real fast in cruise configuration but do you really know the bottom end performance speeds and their characteristics?

THE AIRCRAFT

Many of the new composite aircraft fly very fast and high but do we know how to maneuver them and handle a glide and low speed when we are without power and faced with difficult terrain to land. All pilots have an unbending desire to save the aircraft. If we can only admit to ourselves that we are in trouble, call for help, give our position, and fly the aircraft to contact chances of a survivable crash are multiplied many times. I know of no way to train anyone who flies an airplane to meet these conditions due to the many variables. Train in emergency procedures and preparation of the aircraft are good starting points. I personally never took off without having the fuel tanks topped off and checking the oil level followed with a good walk-around. As a commercial student in NW Washington State the FBO told me I should have sufficient fuel to make the round robin flight since his fuel was 25 cents cheaper and let me tell you, coming in over a lake with very rough vertical cliffs on all sides and landing with only 15 minutes of fuel in the dark I learned that fuel was never going to be too costly. That little lesson taught me to always top off the tanks. If it won't fly with full tanks or have a good hour's reserve then I don't go!

An item, which I consider essential for all aircraft, is a power outlet or 12-volt cigarette lighter outlet on the panel. This can be very useful in charging cell phones or GPS's or handheld radios.

SURVIVAL KITS

The ability to cope with any emergency is a versatile collection of tools and resources and materials, which provide the essentials for sustaining life. There is no survival kit that will provide all essential materials for all types of situations in all locations. The best survival kit is one, which an individual makes for assembles for his own use based on the geographical location and time of year. Search and Rescue history show that long-term survival situations are rare and usually do not exceed 72 hours.

We could purchase some of the “one size fits all” aircraft survival kits sold by many of the suppliers and stores or we can easily build our own kit. In Florida the CAP had a two-man raft in their Cessna 152, which weighted 40 pounds. Full fuel and two 200-pound crewmembers and the five radios we had on board made the aircraft overloaded and a real “lead sled”. Keep your survival kit as light as possible.

Most good Sport aircraft two man survival and first aid kits weigh in the range of 20 pounds. Costs will run for the pre-made unit about \$70 or less. I have compiled a list of things that can be considered for making up survival kits:

- a. First aid kit
- b. Flash light & batteries
- c. Cell Phone with quick charger
- d. Life vests if over-water flight
- e. Strobe (Life vest type)
- f. Matches and several new lighters
- g. 100 foot of Duct tape and 200 feet of Nylon cord
- h. Signal Mirror (Air Force type)
- i. Candles for fire starting
- j. Can(s) of sterno
- k. Tube tent & large garbage sacks to be used for rain jackets
- l. Whistle
- m. Tin cups (can heat water in them)
- n. Bullion cubes
- o. Water bottles
- p. MRE's (meals ready to eat)
- q. “Toolman” knife or Swiss Knife
- r. Large bayonet knife (K-Bar or similar military bayonet with fixed blade) with wire saw and compass handle close to pilots reach
- s. Magnetic compass
- t. Hat and gloves
- u. Flare pistol (watch homeland on this one!)
- v. Space blanket(s)
- w. Tie wraps (vary sizes) or 20 foot of 0.032” safety wire.
- x. Warm insulated snow pants and jackets
- y. Sleeping bag(s)
- z. Anything else you consider useful

Now that you have all these items it's time to choose a good heavy nylon zipper bag or two to carry them in. Be sure to stencil or clearly mark each bag with label since you, as the pilot may not be the one having to retrieve them from the aircraft.

Good sources for building a survival kit can be military surplus stores, REI, and sportsman's supply houses. Water purification units are not really needed in the NW but in the SE part of the country may be a necessity. Tailor your kit to meet the geographical area in which you will be flying.

As one can see the list can become very long in a hurry. As I have earlier stated the airplane is our resource for survival, headliners, seat cushions, wire, removable ELT, Oil, to name a few. Batteries can be used to power charger for cell phones if you have a lighter plug installed in the panel of the aircraft, and the battery is still good and is accessible. If a fire is to be built in the snow or other wet location use metal from the aircraft to keep the fire from sinking into the mud or snow. (spinner or something shaped like a hubcap.)

The size of your survival kit and what to carry it in becomes a puzzle and has to be suited to your aircraft storage and baggage capacity and space. Think about what is going to be useful and how much extra weight can you afford to carry.

THE FLIGHT

The best protection is having someone know where you are going and when you will be back. A flight plan still works in all cases although I certainly experienced problems filing and canceling flight plans when flying to and from Florida since I was low and slow.

Another idea in which club members keep track of each other is to have a hanger blackboard or chalk board and write down the time and date off, route of pleasure flight and, when expected back with name of the passengers and crew. Sounds simple but saves hours of confusion if things go sour. Remember the first searchers may be your buddies flying the same route looking for you. The CAP is a good resource for information on route searches and how to scan.

One must remember following a hard landing the ELT may, due to terrain or damage, bounce signals giving the satellites an unreliable signal. In my experience we never got a call to roll the CAP search aircraft until Colorado had three good signal hits which could cover a 10 mile triangle for search and it took at least six to eight hours before we got the call to start flying the search.

A flight plan is still the best protection for all flying. Flight following if ATC isn't too busy provides a more secure feeling because someone has an active radar tracking you. But low weather and descent below good radar coverage in remote areas often happens.

THE EMERGENCY

As pilots this is the part we hope never to have to practice or become involved with. We do need to have a plan of execution since time is not abundant and the workload for a successful emergency landing is high. The first thing we must be aware of is FLY THE AIRPLANE! If we maintain control of flight all other things will be secondary. The following is a list to better help organize the thought process.

The six common sense “C’s” of an Emergency situation as outline I the booklet “Survival Sense”:

1. Confess – Confess to yourself that you are experiencing flight difficulties. (ice, engine, guidance, lost, sickness, etc.)
2. Climb – Gain as much altitude as your aircraft will allow if power is available, for better communication. Do not be hasty in power application until you know the engine will respond and DO NOT RETARD the throttle since this places reverse load on the engine components and many times hastens total engine failure. Try to coax power using mixture and or prop controls.
3. Communicate – Let others know of your distress. Broadcast on 121.5 or communicate with ATC on current frequency established. Turn transponder to 7700 and squawk-ident.
4. Conserve – Conserve available power by slowing down and reducing throttle to setting for endurance operation and configure aircraft accordingly.
5. Comply – Follow explicit ATC or controlling agency instructions as long as possible.
6. Consult – Consult the Aircraft operations manual and understand the concepts of survival and off airport landings.



Not good terrain to pick an emergency landing spot but, do we always have a choice where an emergency will occur?



Doesn't this look better for an emergency landing? Look out for the ditches, power lines and other obstructions in the approach path and fly the plane to a landing!

Remember there is nothing louder than an aircraft engine(s) which has stopped running! Know your fuel system and how to get gas to the engine ASAP. Empty fuel tanks do not make much airplane noise.

The suggested message format for Emergency should include the following:

- Mayday three times with type aircraft and tail number.
- Squawk 7700 immediately.
- Position
- Heading
- Altitude
- Nature of emergency
- Intentions (ditch, forced landing or other and required maneuvering required for emergency landing.
- Assistance desired (bearing to nearest emergency filed, etc.) Remember your GPS database may not have many emergency strips such as forest service or private strips.
- Fuel remaining (admit if you are out of fuel or have fuel problems since your radius of forced landing can be estimated closer.

Remember to TIGHTEN ALL SEATBELTS AND SHOULDER HARNESS as tight as possible and secure loose items or place on floor of aircraft. Now granted this is a great deal to do in a very short time but, KEEP FLYING THE AIRPLANE all the way to touchdown or contact!

SURVIVAL

Once all the noise has stopped and the dust has settled and if the airplane is still somewhat intact in the cabin area, its time to immediately exit first throwing out the survival kit(s). Fire is the first concern and if the aircraft burns we have lost a huge part of our resources for survival. Stay away from the aircraft until the engine cools and fuel has evaporated.

Watch the batteries for any short-circuit which might spark and cause a fire also. Did you forget to turn off the master switch on short final?

The next item of high importance is the ELT. Know its location and how to remove it from the aircraft. If it has a remote mounted antenna, which is not removable, improvise one. See if you can rig up a ballpoint pen or short wire to increase the signal it transmits. Remember every 90 minutes or less a satellite will be coming by and the ELT signals should be picked up. In the case of a soft landing most ELT have a manual switch to turn them to transmit. Place the ELT on a high rock or tree to gain signal reliability.

RESCUE

This is the phase in which we can assist or aid those searching for our downed aircraft. Interestingly enough in cases where ELT's functioned it took less than 24 hours to locate and start rescue. Where ELT's did not function search missions took over four days to locate the downed aircraft.

As pilots we should also be aware of the current search policies and flight rules that govern when we conduct flight into Canada or Mexico.

Analyze the length of time it may take rescuers to find you. What clues or communications did you provide (flight plan, radio communications, etc.) to help locate you, and weather consideration, which may hamper searchers? The Civil Air Patrol will normally be the first responders in tracking down ELT signals and will also be doing an Aerial search. Local authorities may also supplement CAP Aerial and Ground teams with rotary or fixed wing aircraft depending on which state you have your "unplanned campout" in.

Managing your emergency:

- Protect and maintain Life includes shelter, analyze immediate dangers, shade and available water
- First Aid and Self Aid and take precautions prior to moving seriously injured.
- Protect Equipment including personal items and natural materials for resources and shelter.
- Conserve all resources and analyze all potential resources, which the aircraft may have such as seats, headliner, battery, and oil for fires, metal empennage for shelter, wing fabric, floor carpet and other items. Can a radio be made to work?
- Signal distress with ELT and portable radios and cell phones.
- Signal panels, colored clothing or other ground signals to attract attention to aerial search crews. Air Force type signal mirrors and smoke for fires. Remember to collect burnable materials (wood) prior to darkness setting.

- If a portable life vest type strobe is included in your survival kit be ready to set it up quickly when passing aircraft are heard. (Airliners at 30,000 feet will not be assigned to your search.)

One of the most important factors is to stay with your aircraft if at all possible or leave good ground signals showing your direction of travel. Make your downed aircraft as visible as possible. Continue to improve ground signals each day. Forced landings in tall timber may not be visible from the air and leave only a few broken limbs on at the point of entry by an aircraft. ELT and smoke may be your best signals.

CONSIDERATIONS IN AIRCRAFT SAFETY

As pilots we should become better at thinking about crash survival and emergency systems. What can we do to improve our own aircraft and reduce the potential for injury. EAA over 20 years ago had a drive to install shoulder harness in all member aircraft. Now most homebuilt have heavy-duty shoulder harnesses.

As I stated earlier a power plug on the panel for power to portable GPS's, radios and cell phones should also be a standard. Don't forget to throw in some of those cute little quick chargers for each device.

Since many of the injuries are to the head during a forced landing, wearing a helmet could reduce head trauma.

One of the current certified aircraft comes with a ballistic aircraft chute, which was pioneered by the ultra-light industry.

Other items include airbags, better canopy releases, internal floatation and better leg and foot protection for pilot and front sea passenger. I feel there is always room for improvement in the sharp edges and objects in the cockpit area. Ever consider a tool to break to the canopy if jammed?

The location of external canopy releases, external access to survival kits and equipment. As you can see there are many items we can adapt to our aircraft to make them more crash resistance and provide better occupant protection. A good discussion with Chapter members may come up with some very good additional ideas.

The last thing I hope in some way I have stirred your thoughts on how to assemble a useable survival kit and some of the factors, which can make us better pilots in an emergency situation.

Safe Flying and clear weather for all!

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