Flying In Paraglider Competitions

A Guide for the Aspiring XC Pilot

By Tim O'Neill

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Preface

When I first learned to fly paragliders, I had been flying for 35 years. I'd flown various flying machines that ranged from 400 lb. sailplanes to 875,000 lb. commercial airliners. I was no sky-god, but I *was* a "Flyer." I was the guy who looked out the window of a car and wondered what flying along that ridge would be like; and I'm the guy that my wife has heard, innumerable times, say, "I wish I was a bird. . ." Paragliding is the perfect combination of freedom, autonomy, and challenge.

That said, when I learned to paraglide in 2003, I viewed the sport of racing paragliders like I viewed moped racing – "What's the point?" Then, in 2004, I began to yearn for more adventure, more challenge and started straying from my home site to fly cross-country. This thrill rekindled the excitement I felt when I was 16 and first flew a sailplane over a couple ridges to land in a friend's pasture. In 2005 I was flying a popular LTF 1/2 paraglider and entered my first XC competition and really enjoyed the challenge. I took it slowly & didn't score very well, but I learned so much in just 6 flights that I was truly hooked on XC competitions.

I've learned that I learn best by reading all I can and visualizing events, then applying what I've learned. I also find that I gain value by 'debriefing' and critiquing – writing down my observations for future reference and comment by other pilots I respect. The main documentation is done on **my blog**. This paper is an extension of that process. Much of it is personal opinion & observation. Most of *that* is information I have gleaned from others. It is meant to be a tool for those who are considering entry into XC Comps. By removing some of the unknowns, I hope to make your entry into this sport more comfortable and safe. Nothing has done more to increase my enjoyment of local flying, and improve my skills, than participating in XC competitions.

Now the legal stuff.
Paragliding is an inherently dangerous sport. Nothing in these pages should be construed as encouragement or endorsement of **YOU** entering the sport of Cross Country Paragliding. This paper is written to document what I have learned about the sport. I encourage you to use your judgment and training to decide whether your qualifications are appropriate and your life is ready to engage in this activity.

Tailwinds,

Tim O'Neill

1. Paragliding Competitions - Right for You?

What are Paraglider XC Competitions?

The paraglider community has held paragliding competitions since the sport caught on in the 80's. Early wings had atrocious performance and even worse flying characteristics, so these comps were true thrill-sporting events. The modern paraglider is much safer and has the performance to fly long distances at high speeds relative to the early days of the sport.

Generally speaking, most XC Comps are events that have a defined task, over turnpoints, to a goal; with points accrued for distance flown and speed-to-goal. There are other formats that will be discussed later, but this is the format that will be considered for most of the examples.

Why Fly in Competitions?

Do you ***really want to compete?*** If the answer is ''NO,'' then understand that you will be among many other pilots who also participate in competitions, only for the experience and enjoyment it provides. If competitions didn't offer more than an opportunity to 'WIN', there wouldn't be more than 10 to 20 participants. So, why should you consider these events? Competitions are, by definition, ***organized*****.** The extent of the organization will vary, event to event, but this organization often includes:

Task setting based upon weather knowledge and local knowledge.
It's like having the local guru give you personal advice on where to fly. The tasks often push you to reach goals that you would otherwise think unreachable. During the task briefing, listen carefully to any cautions and WX predictions; particularly forecasts of valley winds and over-development.
Retrievals. You have a group of pilots all heading the same direction and cars along the route to pick up those who land out. Comp organizers look for every last pilot until they are all accounted for.
Camaraderie among the participants is very encouraging and educational. Just 'lurking' at launch provides many tidbits of information regarding equipment, tactics, and technique.
Logistics. Most competitions will have worked out accommodations, safety procedures, launch recommendations, repair services, emergency services, and retrieves etc.
Safety. The prospect of planning and flying cross-country flights can be sketchy without the above items. It is my opinion that a well-run competition is the safest way to fly XC, especially for the newer XC pilot.
FUN – These events can be a lot of fun.

Who Should Fly XC Comps

I'm the first to admit that there are some pilots who shouldn't fly, or aren't ready to fly, in XC Comps. To safely fly away from the comfort and familiarity of the 'nest' introduces many new variables that one needs to observe and react to correctly.

If a pilot is unable to deal with variables (wind changes, obstacles in the LZ, turbulence, etc.) he should gather more experience before leaving the nest. Another factor to consider is nerves, or lack of

confidence. Some nervousness is normal (and healthy) but too much can hamper your ability to respond to changing conditions and react correctly. XC is all about decisions. When you are making consistent good decisions and are looking for additional challenge, it is time.

As you read the equipment and skill requirements necessary to participate, it may seem a bit intimidating. Remember that you are building skills and your equipment list is something akin to building a foundation that allows you to enjoy the joys of our sport.

A pilot who is capable of landing in an LZ assessed from the air; who has demonstrated thermalling ability in traffic and control of her wing in turbulence; who is willing to make mistakes and endure disappointment to learn the game – is qualified to fly a competition. Generally a P3 with endorsements or a P4 are required to enter a national competition. Local/regional comps are not so concerned and the minimum rating is determined by the rating required to fly the launch site.

Pilot Readiness

The most important prerequisite is your mental readiness and emotional control. You must be prepared to endure some disappointment while doing your internship as a new XC pilot. Too much competitive drive, coupled with too little experience is a recipe for disaster. Approach your first few comps as a student of the game. There are so many aspects one must master to be a good XC pilot that it will not happen overnight. An XC pilot should be fit enough to carry his PG rucksack for at least 3 miles. Acclimatization before flights above 3500 meters is highly recommended.

Pilot Skills

Before considering participation in an XC Comp a pilot should be experienced in:

Assessing Weather conditions. The ability to assess the changing weather conditions while flying is essential. Your safety may rely on your reactions to the weather and its changes, even in unfamiliar locations.
Consistent Launches in variable conditions. Launch often feels like the first golf tee at the US Open for new pilots. The "yips" are very real unless you are comfortable launching. Practice getting your wing up in less than optimum conditions.
Thermalling - in traffic. You can't fly far if you can't stay up. Practice at your home site. It isn't as scary (usually) as it looks to be in a gaggle of well behaved pilots, but things can be hectic. We have all left gaggles we thought were not safe, but gaggle flying is a skill you will need to develop.
Navigating. You don't need to be Magellan, but you need to be able to visualize the task and how you want to fly it. The truth is, that your early comps will have you playing follow the leader but you will be building navigation skills as you fly each task. Build judgment skills that allow you to decide whether you can make a thermal source on glide.
Wing Control. We fly our competitions in the heat of the day, when conditions are their best and, often, rowdiest. The conditions are not dangerous, just very active. Each pilot needs to keep their wing over their head. SIV experience is very helpful. Confidence in your skills and ability to control the wing is essential.

Assessing LZs from the air and planning the approach and landing. The most dangerous part of a XC

flight is the approach and landing. You may be tired and dehydrated. It is natural to be frustrated if you land out. You will unconsciously relax, since the task is now 'forgotten.' You will need to exercise discipline to maintain focus and a healthy paranoia during the approach and landing.

Equipment Required

Any modern LTF 1/2 rated (or higher) wing can be flown in XC competitions. A properly adjusted "Speed-system" is imperative. You do not need the latest and greatest – just a wing that you are comfortable on and confident in.

Reserve Parachute is required. It is generally accepted that the reserve should be less than 10 years old and regularly inspected / repacked by a pro.

Transceiver (radio) capable of transmitting on the common frequencies. Many 2M transceivers need to be modified to transmit on USHPA frequencies. It is helpful to have a speaker/mike to allow easy operation of the unit. Don't invest in fancy PTT (push-to-talk) systems. They tend to be distracting, damaged easily, and are outlawed by many comp. directors. VOX (voice activated) systems are a very bad idea at comps. Keep it simple with either a chest harness or a simple speaker mike.

GPS unit. You will need a GPS unit (preferably one with a 3D tracklog) and cable to download waypoints and upload tracks to/from your unit. For your first few events a simple GPS is fine. Later you might opt for an integrated unit which displays more information in a more useable format. These units are great at 'unloading' the pilot – allowing him to concentrate on flying rather than computing final glide figures. Serious XC Comp pilots carry a backup GPS as a track logger in case of primary instrument failure.

Variometer. You will want to carry either a variometer or an ***integrated GPS instrument.*** Some pilots carry an audio only vario as a backup.

These are the essentials. More on what pilots carry in their kit, later.

2. Getting Started

Addressing the Prerequisites

You want to give it a try – but are you ready? You don't have to be a sky-god to fly your first few comps – Just not a danger to yourself or others. You can build your list of skills gradually. Let's go down the list and discuss how to develop some of the tools you should have in your aviation toolbox.

- **Pilot Readiness**. It is imperative that you are properly mentally prepared to fly in Paragliding Competitions. A beginner with Intermediate Syndrome and a gung-ho attitude is a little scary to watch – and dangerous to be. You need to talk with pilots who have flown comps and understand the game. You need experience at flying away from the local hill and the understanding that an XC flight should be conducted with the same level to safety and sense as that of a simple local flight.

  You need to fly every flight with a commitment that you will not go places, or fly in conditions, that you wouldn't while on a non-comp-local flight. Risk / Reward management is the primary skill that one needs to cultivate while building an aviation toolbox.

- **Pilot Skills**
  - **Assessing Weather conditions.** The ability to assess the changing weather conditions while flying is essential. When you fly locally, don't just be a follower. Try to *understand* how the local wx guru determines the forecasts and decides on likely flying spots. Look, also, at the weather on *non-flyable days* to develop a talent for seeing the hazards hidden in the forecast. Get to the site early and watch the conditions change. Note the visible hints and timeline of change vs. your forecast. All these skills will make you a safer and more tactical pilot.
  - **Consistent Launches in variable conditions**. Practice, Practice, PRACTICE. Mountain pilots don't get to kite as much as coastal pilots, so the skills are different. Both groups should work hard to develop their weak skills. Know how to time your launch in a thermal cycle. Know how to control the wing in a stronger-than-anticipated gust. Practice.
  - **Thermalling - in traffic**. Thermalling is a dark art that many new pilots avoid. They worry about turbulence and bumps and collapses. Experience and airtime are the only cures for fear of the air. The sky is an ocean of air and thermals are an essential part of the 'freedom' of free-flight. Get good at thermalling and visualizing the lift. That said, thermalling with friends is a skill you will need to develop too. A gaggle is a busy place and, as a beginner, you need to fit in. You have to stay within your comfort level and get closer to other pilots with experience. The main mistakes a new pilot makes are:
    - **Turning in weak thermals.** When you are new, the temptation is to take ANY lift available. That's fine until you see a bird, trashbag, or other glider climbing faster than you are. If you see this you should move to that thermal. Learn to judge climb rates of others while you are in a thermal.
    - **Not turning tight enough.** Keep your turn going. Let the gaggle guide the circle for a bit and just climb with the collective. When you are in a gaggle, it's not

your time to try to modify the circle. If you have pilots consistently cutting the turn, behind you, it means you need to tighten the turn.

- **Not keeping a constant attitude while banking up.** When you tighten your turn, keep a constant nose attitude so you don't spiral down through the gaggle.
- **Be Polite.** Remember that this is one of many climbs today. You don't need to 'win' this climb. Fly cooperatively and respectfully. Don't try to stay out of the way, that almost always creates problems since now, you are not doing what they expect you to do. Try to be predictable and signal your intentions with body language.
- **Enter like a PRO.** You can make a name for yourself (not a good one) very quickly by entering a gaggle the wrong way. When approaching a gaggle you must look at it like a turnabout that you are merging with. Choose a gap in the parade and fly outside the turn, on a tangent, and slowly slip into the gaggle. There is no need to crowd or barge.
- **Leave when the lift fades.** There is little to be gained by staying with a thermal once the lift begins to fade. You will be in a better position staying with the gaggle. Assuming your altitude is close to that of the gaggle's, when the gaggle rolls out on glide you should too.

- **Navigating**. Practice with your GPS. I've set up waypoints at my local hills and built tasks to go through all the steps in flying a task. It is important to feel confident in your instrumentation and your ability to use it.
- **Wing Control**. Flying the wing simply has to be a secondary task. You must build the experience to keep the wing over your head even when flying in dynamic air. Don't get in the habit of looking up at your wing every time you fly into turbulence. Sense your wing position as a bird does – through your body, hands, and sight.
- **Assessing LZs from the air and planning the approach and landing**. Like all flights, XC flights come to an end. The landing plan must be begun while high enough to offer you options and a good view of the landscape. You should actually plan *many* approaches to landing as the day progresses in a normal flight. At 1500' AGL I have a rough plan and a field or two that I keep in mind. At 1000' AGL I make sure that at least one of my fields is adequate – That is:
  - A size that is appropriate for the conditions and slope.
  - Wind direction and speed.
  - Wires
  - Obstructions to the approach and rotor creation
  - Wires
  - Livestock in the field
  - Wires
  - Extraction considerations.
  - **IMPORTANT –** Look for a backup spot in case of; wind change, low altitude pop, etc. Nice to have a place to go when Plan 'A' doesn't work out.

  It's an effective strategy to fly over a nice thermal trigger along the way to your LZ, so you are giving yourself an opportunity for a save while maneuvering to land.

Strict discipline is important though. You should abandon all efforts for a save at an altitude (I won't pick a number since it is conditional) and stick to that decision. Most pilots who get hurt, while landing out, start their stories off with something like, ''I was on base leg when I felt this great bit of lift off to my right. . .'' While flying your approach to landing you must consider that you are tired, dehydrated, disappointed, and concentrate on the task at hand. Get down safe so you can fly tomorrow's task. While on the subject of landing out: Nobody looks good while throwing a tantrum or sulking. If you have a bad day, either go away to sulk alone or hang out with your buddies and regale in their success. Know that *everybody* has had a bad day, at one time or another - Fly enough events and you are bound to have a bad competition, where every task is a struggle and your results are dismal. Don't get wrapped up in the results. You are doing this for fun and the pilots who have longevity in the sport never forget this – they are truly a treat to be around.

Setting up your flight Instruments

Prior to arriving at weekend comps you will need to load the waypoints into your GPS unit. At a larger (longer) competition, the scorer will load the waypoints into your unit and input a pilot number into the waypoint list. You will want to make sure your flight instruments are configured to provide you with the most valuable information.

For your variometer, is the averager set up correctly? For the GPS, you want the user-selectable fields to display information that is relevant to the phase of flight. Consult with a mentor or fellow pilot for advice on your set up. I have listed some instrument preflight set-up parameters, for the Garmin 76S and Flytec 5020, in the appendix of this document, as a place to start.

One thing you should do, on the Garmin models ***every time you clear your tracklog,*** is to verify the tracklog has not turned off. If it is 100% full, it has probably turned off and you will need to reactivate the tracklog.

Know your instruments well before you arrive at your first task. All questions are usually answered during your first few flights with a new flight instrument, so make a point of using them prior to your first XC experience. Even the issue of mounting the instruments for proper viewing can be an issue until you get the configuration dialed-in.

Start the comp off with a fresh set of quality batteries. Long, cold cross country flights can put quite a strain on batteries – don't use cut-rate cells. It is my experience that rechargeables can be troublesome. A high quality, individual charging unit (one that monitors and charges each battery separately) is necessary to get the rated amp-hours and longevity of rechargeables.

Familiarize yourself with the area

Most leagues, and all competitions, will provide topo maps of the area. You can also learn a lot about a site by overlaying the waypoint files on a Google Earth view of the area. Leonardo (http://www.paraglidingforum.com/leonardo) is an online contest that allows you to search takeoff spots and then see the flights tracks flown from that site. This is very helpful in providing information

about thermal triggers and sink-holes. You can ‘dry-fly’ and build valuable area awareness without leaving the ground.

I have included a Competition Checklist and Equipment List in the Appendix for guidance in preparation for the comp.

3. What to Expect at the Competition

Much of the anxiety you may feel, when attending your first few events, is caused by the fact that, "you just don't know, how much you don't know." This chapter gives you a look at what to expect during a competition and what's expected of you. Because many new XC pilots participate in weekend league meets, this type of event will be discussed first.

Weekend League Events

League events differ from larger competitions in that the number of participants is smaller and, even though they are more informal, your workload will be a bit higher to ensure that you are properly prepared for the event, logistically.

The league will have a website that is used to disseminate information, distribute waypoint files, and list pilot rosters. You would do well to explore all areas of the website before attending your first weekend comp. An example of excellent use of this medium is the Northern California XC League site. You are provided with **waypoint files** and **topographical maps,** as well as **Google Earth .KML files with points of information (lift sources, LZs, cautions, etc.)** Take the time to do your online registration and waiver, if this is an option. Get as much done before the event as possible so you can concentrate on the task.

A lot of work goes into a site like that listed above – don't be the guy who shows up at the last minute without the waypoints loaded, without maps, and without a clue. Do your homework so you can get to the flying without being a distraction for other pilots. Show up at the designated meeting place ON TIME. When 25-30 pilots get together and wait for stragglers it has a tendency to blow the day, so we don't wait. If you are left behind, it creates logistic problems with your vehicle being stuck at launch, etc. Be on time.

There are usually no dedicated retrieve drivers at League meets. The system works because one or more pilots bomb out or land early in the task. They get back to their cars early in the day and start retrieving others. It is good form (and the only way a system like this works) for those pilots to do some early retrieve duty. While on the subject of good form – when you are retrieved by someone, consider their time and fuel. Compensate them reasonably and next time they will not hesitate before again driving into the boonies to pick you up. Most big trucks get around 5 miles/buck (at $3.00/gal.) so a 50 mile drive to pick your butt up is at least a $10 ride. Be generous and humble when recounting your epic flight to the guy who landed in the LZ two hours ago –
When you get back to your car, don't drink that 2nd beer until you are sure that YOUR services are not needed to retrieve someone else. GOOD FORM is important ;-)

OK, you have arrived at launch and you begin getting the lay of the land. Find out when the site intro will be conducted. Sort your gear and have it ready to go. Eat something (you did bring a sandwich didn't you?) and drink water. Lurk, introduce yourself, learn who's been here and get as much local beta as you can. You are basically killing time until the pilot meeting. Use this time wisely, and your day will be more relaxed and successful.

Pilot Meeting

At league meets the Pilot Meeting is very important. All information, considered important enough to pass along to all pilots, will be discussed. Don't get yourself stuck next to a guy who wants to chat. Bring a pen, paper, and your flight instruments and map to the briefing. Information regarding rules, no-land fields, and safety will be discussed. Information such as phone numbers and email addresses will be provided, which may become very important.

A 'buddy system' may be used to organize groups who keep an eye on each other at the end of the day. Pilots with similar experience and performance, in groups of 3-5, will make sure all members of their buddy-group are down safe and accounted for with each other, and the meet director.

Task Briefing

Once all the administrative information has been covered, the Task Briefing will be done. I recommend writing down the task on a piece of paper, or even better, a bit of tape on the blank spot of your GPS. By writing down the task you aren't distracted by the effort to input it into your GPS in a rush, and it is available for reference during the flight. It is important to note the turnpoint cylinder diameters and start cylinder parameters on this task sheet. Times, such as **LAUNCH OPEN, LAUNCH CLOSE, START OPEN, START CLOSE, GOAL CLOSE, and REPORT BY TIMES** are sometimes enforced. Any frequencies and/or Phone #s given during the pilot meeting should be noted in your notes. A weather briefing will be done. Pay particular attention to afternoon valley winds and hazardous overdevelopment forecasts. Once the pilot meeting is over you are free to input the route into your GPS. If you have questions about the procedure, be considerate by NOT interrupting other pilots until they have completed their route setup. Here's my informal checklist for inputting and verifying a competition route:

1. Input all waypoints.
2. Verify the number of waypoints and total distance of the task are correct.
3. Verify (and input, if a GPS feature) all cylinder diameters.
4. Set up the start (If a GPS feature) and verify start diameter, EXIT or ENTRY START, and start time.
5. Activate route (if required).
6. Verify countdown timer (if GPS feature) is correct.

When you are satisfied that your electronics are set up you should verify the following, one last time:

1. Track log cleared.
2. Variometer audio ON.

Launch Queue Etiquette

Let's talk a bit more about 'good form.' It's often hot at the launch, and standing in the launch queue in full regalia isn't comfortable. It is, however, very bad form to get in the queue when not fully ready to launch. You should have all harness buckles checked & double checked, gloves and helmet on and be ready to go. I recommend launching early, but this is simply technique. I figure that if indications are that it is possible to stay up, and conditions are favorable, it makes sense to get in the air before it blows out or the queue gets long.

Launching 30 to 45 minutes before the start allows you to launch before the majority of participants crowd the launch queue. It also allows you to explore a bit and get a feel for the top-of-climb, wind, and develop a map of the start cylinder, so you can formulate a tactical plan for the start.

When new to comps, the launch can be a bit intimidating. Launch only when you are ready and the cycles are right. If you are lined up 2 or 3 abreast, announce your launch when about to pull-up. DON'T get in a hurry and rush the launch. If you don't like the conditions at launch, there is no shame in stepping out of the queue. Remember Rule #1 - Don't make decisions that you wouldn't make while free flying. Your safety is ***your*** responsibility.

Large Competitions

The primary differences, between Large Competitions and those held regionally, are those of scale. The flying venues are sites that can accommodate many pilots at launch, and any gathering of pilots will see over 100 in the room rather than the 20-30 at League events.

Don't be intimidated by the size of the field or the quality of the pilots and their exotic wings. The higher the quality of the field, the more learning opportunities there will be for you.

For you, the differences will be seen in the following instances:

- The websites for larger comps are less oriented towards the 'new' pilot. If you desire information about the flying venue, you will have to do the exploration using Google Earth or similar map program.
- The waypoint files will be loaded into your GPS units at the competition briefing by the scorer. It will also include your pilot number as a unique waypoint in the unit. You can make the scorer's job easier by clearing all routes and waypoints from your instruments prior to arrival at the scorer's table. If you have an 'exotic' GPS unit, I would recommend that you bring the cable for the unit with you, in case the scorer does not have a cable for your unit. If it is new and exotic, you might send an email to the Competition Director asking if your instrument will be supported. It is essential that your NAME and PILOT NUMBER are visible on the flight instrument case.
- The Competition Director will hold a mandatory Pilot Meeting the evening before the competition begins. Bring your Instruments and notepad to this meeting. You will be checked in and given some type of bag-tag or card with your pilot #. It will also include phone #s for the competition staff and emergency contacts.
- Transportation to the launch site is usually provided and the cost is included in the entrance fee.
- Retrieves are usually included in the entrance fee.
- All of the caveats relating to "Good Form" still apply.
- As a new guy though, try to find a helpful pilot with some experience to answer your questions. In the US, a great first 'BIG' competition is the "Rat Race" put on by the Haley's

in Ruch, Oregon. They have a well developed Mentor Program that is designed to help novice XC competition pilots participate safely.

- Usually a big comp. will have a Launch Window based upon your standing in the competition. For example; The meet director may announce that ***Launch Opens*** at 12:30PM with ***Ranked Launch*** beginning at 1PM. For you this means that you will have the opportunity to launch early, without restriction, until 1PM. After 1PM your ranking in the comp will allow all pilots with a higher score to pass you in the queue. The possibility of being stuck in the queue is quite high for a low ranking pilot, after ***Ranked Launch begins***.
- To ensure that the meet director knows who is flying, you are required to check in when ready to launch. This safety precaution is imperative to guarantee that all pilots are accounted for at the end of the day.
- It is absolutely essential that you check in at the end of your day to notify the Competition Director that you are down and safe. Even if you bomb-out and end your day in the LZ, 20 minutes before the start of the race, you MUST check in and submit your track at the end of the day. There is always *somebody* who forgets this and causes grief for the CD - *Don't be this guy.*
- Some competitions, because the logistics allow for easy transport from the LZ to launch, will allow a "RELAUNCH". This option may have specific times and rules associated with it. Have a plan if you are in danger of landing in the LZ. Sometimes it is advantageous to land rather than miss the relaunch shuttle because you tried to pull off a low save in vain.

Wind Tech

Large Competitions often offer the option of serving as a 'Wind Tech' to pilots who unsure whether they want to participate in the competition but would like to fly during the event. If you are tempted to participate at that level, it is a good way to get a taste of the event. There are certainly positive and negative aspects to flying as a Wind Tech, depending on your goals –

Positive Aspects –

- You are not required to enter the competition to act as a wind tech. This saves money and is nice if you can't participate every day of the scheduled competition.
- You will see the workings of the competition and how your fellow pilots prepare.
- You will have the chance to fly with the pilots prior to the start of the task.
- You may have the option of flying on course (if allowed by the competition director)

Negative Aspects –

- You will not be scored.
- Your flying is "at the pleasure" Competition Director.
- You will be told when to launch. It will be timed well before Launch Opens.
- You may not qualify for a free retrieve.
- You are a non-participant.

Good Form as a Wind Tech

Remember that your flying is allowed so you can be of service to the competition. Don't forget that the participants all paid an entrance fee to fly in the event. Don't fly in a way that causes others to compete with you for climbs or position. They are in a competition that they paid for – don't hinder their efforts. You should yield to others and be a very polite in your flying. Do not expect to fly the whole task and don't turn in your GPS for scoring.

4. Flying the Task

The scope of this article is that of information of use by new pilots to competition flying. For that reason, I will discuss flying tasks as a new pilot on a lower/mid performance wing. The strategies one uses when beginning are different than when the pilot has the skills and wing performance to stay in contact with the lead gaggle. For now, your goal is to make as few mistakes as possible during the task.

Philosophy and Strategy

You are here, not to win the competition, but to ***Learn and have Fun.*** You can maximize your learning opportunities, score, and your fun, by make it to goal. I caution you to not let your competitive juices get the better of you. While getting carried away in a weekend soccer game can leave you sore and bruised, making decisions that put you in harm's way during a PG event just doesn't make sense. Use your head so you may fly another day.

It is a valid strategy, at this point in your flying, to be a follower and fly with the gaggles around the course. Flying with friends increases your odds for making it along the course. Racing along at your own pace, alone, is just about guaranteed to put you on the dirt, or in holes that slow your speed considerably.

Planning the Task

Once the task has been programmed into your GPS and you have a moment to look at your map, take a moment to plan your flight. It's a given that you will need some key climbs during the task. You can depend on luck, others showing you the lift sources, or you do your own strategizing. As an example, if the top-of-lift for the day is planned to be 2,500 meters, and the 'lift-band' is roughly 2000 meters deep[1], then you will have transitions (at a glide ratio of 6:1) of no more than (2000 meters X 6) or 12 Kilometers. To fly a 50 Km. task you will need at least 5 full climbs, or more partial climbs to make it to goal. Plan these climbs by looking for lift sources, spaced accordingly along your route. Keep in mind the forecast winds for the day. You should also look for potential 'crux points' along the route so you can plan to attack this portion of the task with other pilots to increase your odds of completing the transition successfully.

[1] In other words, below 500 meters you would be in danger of bombing out due to lift being broken or weak below 500meters

When to Launch

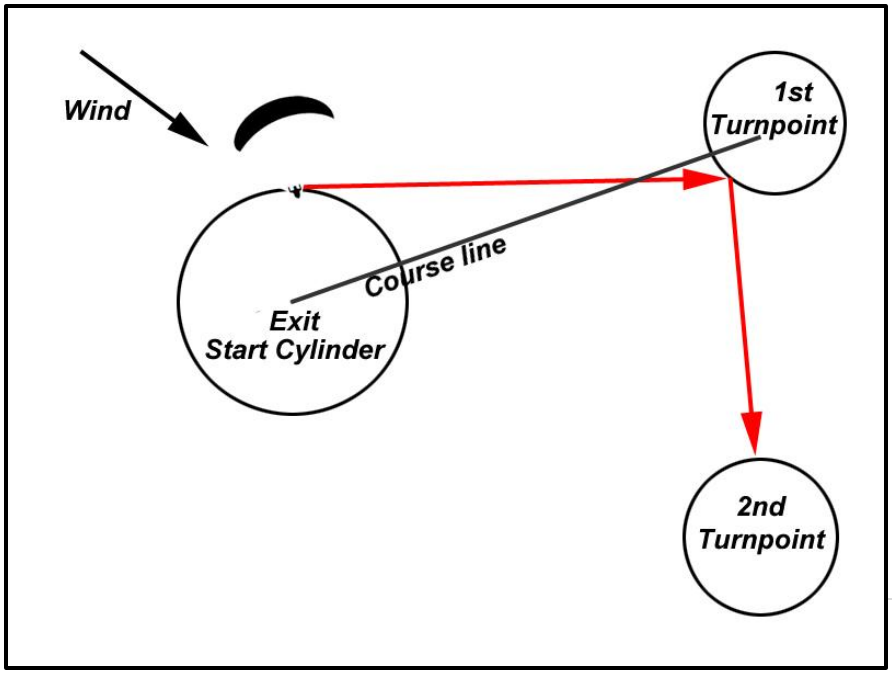
I've already discussed launch organization a bit and you shouldn't underestimate the importance of your decision regarding launch timing. Generally, I recommend launching shortly after the wind techs have demonstrated that there is sufficient lift to stay in the air. It works out well to launch 30 to 45 minutes before the start time. If it is obvious that you will have traffic in the queue and/or the weather conditions are variable, you may want to be suited up and ready to launch early, so you can take advantage of any launchable window. I've seen very experienced pilots loose a task before they even launched, by delaying their launch for one reason or another, only to have the wind turn and make the launch impossible or excruciatingly slow. Remember that you will need to consider your rank in the ordered launch to decide whether to wait or use the open launch period. If in doubt, get in the air at your earliest opportunity.

The Pre-Start

Once in the air, I do a quick inventory to make sure my instruments are all working properly, speed system is working correctly, water source is OK, and that the condom catheter is un-kinked. Spend time exploring the immediate area around the start cylinder for lift triggers and note the wind direction and speed. All this information is data that is useful in planning your start. At this time you also want to get to the top of lift and stay there. The best pilots have a knack of getting high and staying there, prior to the start. 10-15 minutes before the start you want to get serious about putting yourself in the optimum position for your start.

The Start

Ideally your start should take place at the optimum edge of the start cylinder, at the top-of-lift, just after the start time expires. The optimum edge is determined primarily by the wind. You want to place yourself upwind of the course line if possible. As the Start-time approaches, you need to remember one very important thing – It is better to be late across the line than to cross early. If you do cross the start cylinder early, or if there is ANY doubt, do a quick turn back and re-cross the line. You will receive no points for the day if you blow the start and continue on course.



The graphic shows an example of flying the optimum route to the first and second turnpoint after the start. By flying the optimum (red) line you have effectively shortened the route and turned the cross wind into as much of a tailwind as possible.

By noting your groundspeed, as you approach the start cylinder, you can use the Start Planning Chart in the appendix to help you judge your time to cross.

Back to the start for a moment: If you find yourself low and/or out of position for the start, don't get frustrated and desperate. We've all had bad starts. Take the time necessary to get up and make a reasonable start. Remember that you are not 'ahead' if you are the lowest glider in the valley – you're just LOW. Take your time and don't compound error.

Flying the Task

Once you are on course, you are flying with the intention of incrementally advancing along the route. Don't let the specter of the distance intimidate you. Just keep on working your way from climb to climb. On transitions you should spread out so that you and your gaggle-mates can cover a large search area for lift. When you see someone turn, wait a bit and verify they are going up, before moving to them. While you are looking at the task in short increments, it is also important to keep the "big picture" in mind also. By that I mean that a good pilot is looking down the course, at wings preceding her, and also anticipating the conditions as they change with time.

Pace is very important to successful execution of the flight. Some stretches can be flown fast when the lift is strong and abundant. Other transitions will require a deft touch and the use of every scrap of lift. Sensing this change in pace is very important in longer tasks that fly through many micro-climates and into the later portions of the day. One way to learn this pacing is to work with more experienced pilots. When they slow down, you should do so also.

Don't give up when things look bleak. As long as you keep yourself in the air, you have a chance to get back up. Don't wait until you are desperately low before you begin to work every foot out of the available lift. Remember that the bubble that is teasing you may turn into a fully developed thermal core in 100 meters. Always work *towards* getting up. Never go on a "Death-Glide" when you have the option of gliding to a lift source. It can even make sense to *back-track* to a lift source, if the best odds for survival are located there.

Getting to Goal

When you are a thermal or two from goal you should be looking at your final glide calculation. The big-boys are going to work this out down to the millimeter and then play chicken with each other until one blinks & starts his final glide on full speed-bar. *You* are going to be a bit more conservative and make it to goal with some altitude so you can bask in your glory before landing ;-) Keep your distance to goal in mind, even prior to the last turnpoint, so you can have a good idea when to begin your final glide. You should have a good idea of your *L/D Over the Ground,* when heading in the direction of goal, so you can come up with a number (altitude or L/D req'd to Goal) where is will be possible to begin your final glide. Don't get in a hurry and make up an optimistic number – I've landed 1K short of goal after a 3 hour flight – it's not fun. Give yourself a guaranteed final glide & relax as you head into goal – it feels marvelous!

Most Goal Lines are a cylinder around a waypoint (like any other turnpoint) however many will have concentric cylinders with goal at 400meters and a 1Km End of Speed Section (ESS). What this means to you is that when you make goal, your speed will be the average speed between the start and the ESS point. You can stop 'racing' at 1K – You DO, however, need to cross the 400m cylinder to get your full points (speed, leading, etc.) Don't forget to proceed all the way to the goal cylinder.

Variations

Some competitions utilize variations of the formats mentioned so far. I'll mention a few here so that they are not a complete surprise when they are utilized. If any of these options are exercised you can expect some explanation from the CD to answer questions at the Pilot Meeting.

Alternate Tasks – Occasionally, when weather conditions are in transition, the Task Committee will build an "A" task and a "B" task. Each task fits weather conditions that may develop. The Task Committee will call the appropriate task at a later pilot meeting when the weather forecast is more developed. A good strategy is to write down each task with all details, then program both into your GPS. When the task is called, you can make the appropriate route a competition route, and/or activate that route.

Multiple Start Gates – When the Task Committee considers it necessary, a start with multiple start times, or gates, will be specified. A "first" gate at 1 PM may be specified with 15 minute intervals between gates, and the last start at 2:15 – for example. What this means to you is that you can choose to start the task any time after 1 PM. Your elapsed time for the task will be computed from the time of the last start gate time that expired prior to you leaving the start cylinder. This format can provide some strategic opportunities including: Choosing the gaggle you'd like to fly with; Flying out on course, and then returning for a later start gate (if conditions become stronger for example) etc.

Ground Starts – At large launch sites this option can be used and is quite a sight. At the "start" time all participants launch and begin the task. Elapsed time begins at the start-time. These are generally not seen in the USA.

Open Distance – The XC Open series uses this format. Instead of a task committee setting your waypoints and goal, you choose the turn-points. There is no goal other than the horizon. Flying these tasks can be less stressful, but also has less 'mano-a-mano' feel.

Class Racing – Most competitions have an "OPEN" class and a "SERIAL" class. Some also include a "SPORT" class. Serial Class includes EN-D wings and Sport Class includes EN-C, B, or A. Usually all pilots, in all classes, will fly the same task. Scoring is not handicapped or given premium based on class.

Handicapped Racing – Some competitions use a handicapped score to allow pilots of low experience and flying low performance wings to score a 'value plus' score. This type of scoring is sometimes used in Open Distance type of tasks and is useful in Team scoring.

Additional Equipment

Other than the equipment mentioned previously, I carry the following:

SPOT – The SPOT unit is a valuable piece of kit when flying XC. Unlike cell-phones, it uses satellite phone technology to make a graduated request for aid. I think it is cheap insurance. www.findmespot.com

Tree Kit - I carry a home-made kit similar to the kit in **this article** from www.towmeup.com.

Survival Kit – I carry a kit with the items listed in **my article**.

Water – I carry a 2 liter water bladder in my harness and 1 or 2 additional liters in my pack.

Condom Catheter - Believe it or not, this is an important item. I am able to drink freely and allow proper hydration while flying a long task. Once you've used the CC, you will be a believer also. Girls, I've heard some use adult diapers, but I have no first hand info -

Oxygen – Many competitions are held in mountain sites where it is not uncommon to get over 15,000'. A pilot's performance is noticeably affected when at high altitude for any length of time. Oxygen also helps the pilot stay warm when properly oxygenated.

4. Putting it All Together

Your task is to tie this all together. The difference between Cross Country flying and flying Cross Country *Tasks* is similar to the difference between waterskiing around the lake for fun and skiing a slalom course at a prescribed speed. Flying an XC task requires specific skills, preparation, planning, and strategy. The best way to build the skills and learn the strategies required to fly in comps, is to fly comps. It is a specialized skill-set that, when you achieve a level of competence, leads to understanding and competence that carries over into your non-comp flying.

Safety

The trickiest time, in your XC competition 'career,' will be your first 3-4 competitions. Your experience is lacking, while your enthusiasm and competitive drive are high. Many pilots are of the opinion that flying comps is dangerous. I disagree. Flying beyond your experience is dangerous. Flying wings that you are unable to fly competently is foolhardy. Competition pilots are some of the most experienced and safety-minded pilots you will meet. Make a concerted effort to be a safe and mature competitor, and your longevity will guarantee you a degree of success. You can begin by choosing to fly a wing that you are comfortable on. Get experience flying in thermal conditions and launching in variable winds. Practice your wing control so you are comfortable on launch. Each landing should be planned and controlled. When LZs are scarce, don't "put yourself in a corner" where there are no good options. In short – Use your head. Remember that this is not your livelihood and an 'optional' activity.

Expectations

When you begin to fly XC comps your primary goal should be to fly each task as safely and successfully as possible. Don't try to race. Make every attempt to fly with a gaggle to cover the miles and make it to goal. Making goal equates to success. When you land short of goal you should try to learn from the experience. How did others get through that area? Could you have increased your chances? I've found that writing up a debrief of each flight has future value when reviewing flights. Expectations to ***learn*** are good since, even if you land short of goal, you will have valuable lessons to learn.

Strategy

Be a student of *the game.* You will soon understand that a paraglider competition task is like a road-bike race where cooperation and courtesy are important to your success. The real *race* doesn't begin until that last thermal when everyone in the lead gaggle is computing their glide to goal. The pilot with the fastest wing, with the best glide, and the most accurate final glide computation (not to mention largest cojones), wins. Your strategy is different. Your goal is to fly with a gaggle of similar performance pilots and wings to work your way around the course to goal. As your skill improves you will find that the company you keep will be of better quality.

Camaraderie

There are many learning opportunities during the competitions. If Mentoring is offered, take the time to ask questions and discuss mistakes with your Mentor. Take the opportunity to talk with the successful pilots when it presents itself. Be sensitive to timing and don't be a distraction when the pilots are setting up for a task. Beer seems to be a good trade for expertise. Some pilots are more conversational than others, but we all know that new pilots have questions and we are happy to work with them.

Success

Each of us has our own goals. This sport has so many layers of challenge that 'mastering' XC competitions is quite a lofty goal. Even pilots who have flown competitively for decades have bad days and make the occasional mistake. The trick is to make less mistakes than you did last flight, each time you fly. When you have your gear set-up correctly, when you know how to use your electronics to your best advantage, and when your flying skills and strategy are optimum for the day, you will fly a 'good task' to goal – the feeling of accomplishment is very rewarding. Your rank is a secondary measurement to that of the joy you feel. Hang-on, because NOW you are hooked.

Appendix

Competition Checklist
Equipment List
Setting up your GPS
Nice Harness, What's in it Besides your Butt?
Start Planning Chart

Competition Checklist

Prior to the Competition – Verify and pack the following:

- □ Give wing and harness a once-over including:
  - Wing overall condition - Line condition – Stretch lines if deemed necessary
  - Clean out any debris
  - Check Speed bar lines within harness
  - Look-over reserve bridle and pins.
  - Verify all contents of kits (survival, tree, etc.)
- □ Preflight All Electronics:
  - Transceivers – spare batteries and chargers
  - Vario and GPS batteries, chargers, and cables
  - Load waypoints and pilot# in units if available
  - Camera, batteries, charger, cable, and memory cards
  - O2 system should be checked & filled
- □ Pack the following in rucksack, and spares in storage:
  - Condom catheters and tubing
  - Hot-Hands, gloves, cold wx gear
  - Food carried in harness
  - Water carried in harness and rucksack
  - Spare writing implements and tape to copy task
  - Maps of the area

At the Competition – Prior to the first task:

- □ Charge all batteries and electronics
- □ Fill water bladder
- □ Sunscreen
- □ Verify Electronics set-up correctly, Clear track logs, put freq's in memory, phone #s in cell-phone
- □ Back all freq's and phone#s up in written form
- □ Fill O2 if necessary
- □ Bring area flight deck electronics, maps, pen, and paper, to the briefing
- □ Eat a good meal prior to the pilot meeting and hydrate properly

At the Pilot Briefing

- □ Get a good seat, away from noise and take notes
- □ Copy down all parameters of task prior to inputting into GPS
- □ Don't let others distract you. Finish the prep before helping others and don't bother other pilots until they have completed their set-up.
- □ Check and recheck task and all parameters – WP radius – Start times etc.
- □ Look over forecast for the day – Plan launch time.
- □ Think about the task. Get advice and discuss. Make a plan.

30 minutes prior to planned launch time

- □ Assess launch conditions and reconsider your launch window decision.
- □ Do a final preflight of your gear and verify all electronics are ready to go.
- □ Depending on WX, get dressed for flight and install catheter & hot-hands, etc.
- □ Verify all pockets and equipment are secured

When entering the launch queue

- □ Do a final check of all harness buckles, straps, reserve handle pins, & zippers.
- □ Verify the vario audio is on. Verify all electronics are on & get a radio check. Assess launch conditions and plan the launch and initial flight path.
- □ Leg straps & reserve pins – final check.

Launch and make it to goal

When Landing Out

- □ Have potential LZs in mind while still at intermediate altitudes
- □ Consider the following variables when choosing your LZ: (in some order of importance)
    - Wind Direction/Speed
    - Obstacles and potential rotors
    - Wires
    - LZ slope
    - LZ terrain type and vegetation type
    - Secondary LZ options (place to go if high/low during approach)
    - Retrieval options – plan your hike out / pick up directions
- □ Consider making a radio announcement while still airborne (transmission distance is many times greater while in the air.
- □ Make the LZ and approach decision at a safe altitude.
- □ Do not take a climb below a set altitude (consider drift and turbulence to make this determination) - Stick to this decision.
- □ When safely on the ground, rosette your wing to signal to others that you are OK.
- □ Turn off all electronics and switch to the correct freq. to contact retrieval.

After Scoring

- □ Copy IGC file to your computer or online server.
- □ Erase track logs. Verify the log was not full and that the tracklog is turned ON.
- □ Assess battery conditions and replace/ recharge as necessary.
- □ Drink a beer and review your flight.

Equipment List

- □ Wing, Harness, Reserve
- □ Flying clothing
    - Boots
    - Long underwear
    - Flying suit / Coat
    - Balaclava
    - Gloves
- □ Transceiver
    - Speaker Mike
    - Charger
- □ Flight Instruments
    - Variometer
    - GPS
    - SPOT
    - Batteries / Chargers
- □ Camera
- □ Water system
- □ Condom Catheter system
- □ Cell Phone
- □ Food
- □ Pad and Pen
- □ Pocket Money (Variety of bills)

Optional Items

- □ Spare lines
- □ Spare Speed Bar Cord
- □ Hot Hands
- □ Sunscreen / Hat

Garmin GPSMap 76S Set-up

1. MAIN MENU➔TRIP COMPUTER➔MENU➔HORIZONTAL➔RESET ALL➔RESET ODOMETER➔VERTICAL➔RESET ALL➔RESET MAX ALT.
2. MAIN MENU➔TRACKS➔CLEAR – Then MENU➔SETUP TRACK LOG➔RECORDING➔STOP WHEN FULL➔RECORD METHOD➔TIME➔INTERVAL➔3 SEC.
3. VERIFY TRACK LOG IS ON
4. Verify the waypoint list is correct.
5. SETUP ➔GENERAL TAB➔MODE➔NORMAL
6. ========== ➔WAAS➔DISABLED (Increases Battery Life)
7. ==========➔BACKLIGHT TIMEOUT➔15 SEC.
8. ==========➔BEEPER➔KEY AND MESSAGE
9. ==========➔LANGUAGE➔ENGLISH
10. =====➔ALTIMETER➔AUTO CAL. ➔ON
11. =====➔ALTIMETER➔ALTIMETER➔ON
12. =====➔ALTIMETER➔PRESSURE UNITS➔INCHES OF MERC.
13. =====➔ALTIMETER➔BAROMETER MODE➔VARIABLE ELEVATION
14. =====➔COMPASS➔OFF (Increases Battery Life)
15. =====➔TIME➔SET ALL FIELDS AS APPROPRIATE FOR LOCATION
16. =====➔UNITS➔SET AS APPROPRIATE
17. =====➔UNITS➔SPEED FILTER➔AUTO
18. =====➔LOCATION➔FORMAT➔hddd*mm.mmm'
19. =====➔LOCATION➔MAP DATUM➔WGS 84
20. =====➔LOCATION➔NORTH REF. ➔MAGNETIC
21. =====➔LOCATION➔VARIATION➔014*E (OR AS APPROPRIATE FOR THE LOCATION)
22. =====➔ALARMS➔ALL SET TO OFF

On my main display I set LAYOUT to be Medium (3 rows) with the following data fields:

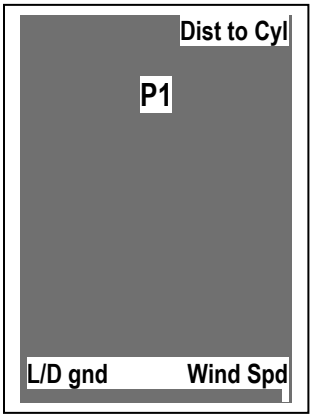
[**SPEED**][**DIST. TO NEXT**][**VERT. SPD**.][**ELEVATION**][**TIME OF DAY**][**GLIDE RATIO**]

These displays can be modified to your tastes – Your mileage may vary. Experiment for best results.

One thing you should do, ***every time you clear your tracklog,*** is to verify the tracklog has not turned off. If it is 100% full, it has probably turned off and you will need to reactivate the tracklog.

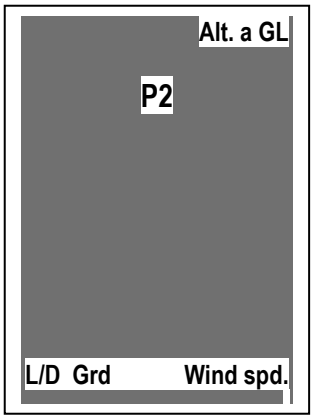
Flytec 5020 set-up for XC competition Tasks

The three User Defined (UD) fields are located at the top-right, bottom-left, and bottom right, areas adjacent to the vario display. The following is ***technique*** – Feel free to change your display to your needs and taste.



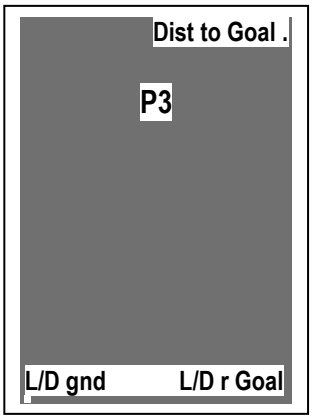
P1 – The Start Screen

This screen is displayed prior to the start of the task and early in the task. As the time to start counts down, you monitor your Ground Speed and Proximity to the start cylinder. See **Start Planning Chart** in the appendix. This is a good time to feel out the lift and wind. **L/D Ground** will give you a good reference to guide in speed-bar use. Know your groundspeed when approaching the cylinder for a well executed start.



P2 – The Task Screen

This screen is used to supply support information to help in decision making in the late stages of the task. It has the**, Alt above Goal** to provide a feel for the timing of the final glide. It also displays **L/D Ground and Wind Spd.** for reference**.** When the **Alt. above Goal** is getting close to a value that is reasonable, you can switch to page 3.



P3 – The Glide to Goal Screen

When the in the final stages of the task, you want to spend no more time climbing than is necessary. The information presented on this screen optimizes the last climb & glide and immediately let's you know that the glide is adequate or not, as you approach goal.

To change your User-Selectable fields:

a. Select the page you wish to modify – P1, P2, P3 by pushing the right arrow button.
b. Push the left arrow button to highlight the top/right data field; push again to select other data fields. Use Up/Down arrow buttons to select the User Field Data to be displayed.
c. Use left arrow button to move on to other data fields.

Nice Harness What's in it besides your Butt?

or, Survival for the Adventurous Pilot

When I discovered the challenge and joy of cross country flying, it opened up an entirely new part of my life. Cross country flying, and competition XC flying in particular, requires preparation, training, practice, and good decision making. When you land in "Tiger Country" your recovery – even your survival, will rely on these same prerequisites. There may be times when your adventure begins ***after*** the landing and it is useful to consider the following before you find yourself in this position.

Philosophically, I feel that none of us should ever plan to have others "find" or "save" us if we are not injured. Your 'survival with style' starts while still airborne – Use your bird's-eye-view. Are there any roads or structures near? Which direction will you take on your hike out? What obstacles lie between you & civilization? We may find ourselves miles from roads, at high elevation with sunset looming and only a vague idea of the best route to travel. Communicate your situation and location prior to landing if possible. After landing, a radio call, "Down OK" is very helpful to those who might worry. Then, you must set about to make decisions that will make your evening as safe and comfortable as possible.

Your first order of business is to assess your personal condition – Are you injured? If so, how badly? If you have sustained more than slight injury, communicate your position and condition ASAP via radio or cell phone (You do have the appropriate emergency number in your phone, don't you?). The signal that you are NOT OK, to fellow pilots, is to leave your wing as it fell when you landed. If no communication is possible, set about to 'hunker down' until help gets to you.

Next, what are the conditions of your world? What kind of terrain, brush, weather, and distance will you need to cover to get to civilization? How much daylight is left? Know the time of sunset. It is much harder and hazardous than you might imagine, to hike in the dark, so you must make a decisive choice to begin the hike out, or to make camp while you still have sufficient light. If you choose to make camp, your evening in the woods is not an emergency and it doesn't have to be uncomfortable, IF you have prepared for such an eventuality. One of the primary characteristics of a survivor (Yes – you now have entered the world of the 'survivor') is that a survivor thinks realistically – not optimistically. If your hike out will be substantially longer than the daylight remaining, it may be safer to find an appropriate camp site and settle in for the night. This prospect is much easier to consider if you have prepared for this eventuality by bringing some essential items to use with those you have already in your bag.

I come from a SAR / Technical Rescue background. This experience has shown that a situation can go from uncomfortable to life threatening in a few hours for even the most hardy of individuals if they are mentally unprepared and lack certain simple tools in a survival kit. I've carried various kits with me while flying comps and XCs. I've carried a tree kit, survival kit, first aid kit, etc. I've carried too little, and I've carried too much. I think I may have reached an acceptable compromise with the kit I now carry. Space and weight are always a consideration. Some of you will have ideas for more gear and I will consider all suggestions – the important thing is to ***go through the mental exercise and carry some form of survival kit*** any time you venture away from your home LZ.

Your first chore is to find a suitable container. I use a pair of amenity bags I got on airline flights. They are soft, flexible and spacious enough for my requirements. One I carry deep in my harness. It is seldom removed. The other is in my flight-deck storage. It has renewable items like food and batteries. You need to think of your kit as part of a system of survival. Everything you carry should have a purpose.

The tools of rescue/recovery are:

1. Communication
   i. Transceiver with spare battery (AA version)
   ii. Cell Phone with recharger unit (AA powered)
   iii. Whistle
2. Visibility
   i. Signal mirror
   ii. Flashlight/headlamp (AA powered)
   iii. Strobe Light (AA powered)

Each of these items is carried to aid in your communication and recovery. If you are injured, these will increase the chance of a quick rescue and extraction. Notice that all use similar batteries for redundancy. The rest of the items (below) are carried to buy time and increase your protection from the elements.

The basics tools of survival are:

1. Water
   i. Bottles/Bladders (amount depends on wx/terrain- at least 3 liters)
   ii. Water Purification tablets
   iii. Emergen-C type of vitamin powder (for taste)
2. Food
   i. Energy Bars (enough food to fuel me for 48 hours)
   ii. Dried Fruit / Nuts
3. Shelter/Warmth
   i. Use Paraglider for shelter
   ii. 10'X10' Blue Plastic Tarp
   iii. Space Blanket
   iv. Fire Making tools / Matches
   v. All clothing used for flying (Be sure to carry a waterproof shell)
4. Navigation
   i. Compass
   ii. GPS unit
   iii. Topo maps of the area
5. Tools/Supplies
   i. Knife
   ii. Flint
   iii. Spare Boot Laces or twine
   iv. Streamer Tape
   v. Spare Batteries
   vi. Pain Meds
   vii. Hat
   viii. Plastic Bags
   ix. Pen and paper to log progress and coordinates
   x. Toilet paper

All these items fit into my two small kits (each about the size of a woman's clutch purse) and my harness storage pocket. Total weight for these items (minus clothing and water) is less than 2 kilos and costs less than $50.

I fly with enough clothing to withstand the forecast evening temperatures. If the flight is in warm conditions, I still carry a waterproof shell and fleece in my harness. Your wing, tarp, and space blanket complete the basic shelter needs. Start a fire if cold weather is planned and remember to drink water and eat the food in your kit. Your goal is to remain warm and rested for your hike out in the morning. If you decide to leave behind equipment, note the position with your GPS and tag your path with the streamer tape you brought. Use your knapsack to carry as much of your gear as you can haul.

As I wrote earlier, survival requires preparation, training, practice, and good decision making. Your kit is a major portion of the preparation. Preparation includes the airborne orientation that you do when visualizing the area around your planned landing site – Are there any roads, streams, buildings? Which direction will your route take when daylight comes? Practice this exercise just as you do when looking at potential LZs.

To train your mind for this type of scenario, you might visit some survival sites on the web and read some of the great books on the subject. Practice using the equipment in your kit – Have you ever used a flint/magnesium tool to start a fire or consumed water that has been purified with your tablets?

Familiarize yourself with, and use your gear so you will be confidant in its ability to sustain you. The decisions you make will determine whether your stay in the wild will be an adventure or a hapless brush with danger. Plan ahead and use your head. A great book on the subject of survival is "Deep Survival: Who Lives, Who Dies, and Why" by Laurence Gonzales. The author explores not only the HOW of survival, but the WHY. He looks at the decision process and attitude adjustment that survivors need to accomplish, to go from victim to survivor.

So many people go through life ignoring the opportunities to experience true adventure – take your opportunities and temper the adventure with just the right amount of preparation and caution for an adventure you can tell your grand kids about!

Start Planning Chart

	1 Minute	100 mtrs
25k	400m	15 sec.
30k	500m	12 sec.
40k	660m	10 sec.
50k	800m	7.5 sec.
Meet Freq.		
Retrieve Freq.		
EMERGENCY		
Phone		

Directions

To use this chart you must approximate your groundspeed (as you approach the cylinder)

1. **Enter the chart at your Groundspeed (left column).**
2. **The middle column is how many meters you are traveling in one minute.**
3. **The right column is the time nit takes to cover 100 meters.**
4. **As you approach the cylinder you must make a check at either /or distance and time checkpoints.**
5. **It's easier than it looks and takes some of the guessing out of the picture.**
6. **Remember it is better to be 30 seconds late than to be 1 second early.**

A long time ago I started flying with a note written on the tape on my variometer. It reads:

FLY
SAFE