The Do's And Don'ts Of Contest Flying

by

Richard Schreder

The subject of my talk this morning is the Do's and Don'ts of contest flying. I'm going to work from notes that I've made over the years since I've been in soaring. I've had lots of happy experiences, a few unhappy ones, and I've tried to write down all of the reasons for having the unhappy ones. This is what I'm going to dwell on principally this morning. They are not organized in any special way. I'm just going to run through them and read off the note that I made at the time, and I made these notes right after I was down on the ground sitting and watching everybody going over with beautiful cumulus in the sky. So some of these may sound sad or they may not make good sense, but they made awfully good sense to me at the time.

First of all I would like to say that to go into a contest you must have a good sailplane, a good car, a good crew, and a good trailer. Of course you're already committed when you decide to go. You have your sailplane, but a little thought ahead of time will save you a lot of trouble. A good sailplane in a contest will save you a lot of headache. You want something that you're familiar in and here again I say don't do like I do but do as I say, because I've gone to several contests, as most of you know, with sailplanes that have only been flown once or maybe not even flown at all in one case and this certainly doesn't help you to do well in the contest. The same way with the car. You should have a car that has good tires on it that aren't going to wear out before you get there, and the car isn't going to break down. Same way with the trailer. Most of us leave our trailers until the very end and it's a last minute rush job to get the trailer finished and you're picking the pieces up and putting it together all the way to the competition, during the contest and on the way home. A crew--this is really a big thing. I've had lots of crew problems and strangely enough you just can't tell about a crew man until you've lived with him awhile. It's much like getting married. You really prove the marriage out after you live with the other party, so I just can't overemphasize the importance of picking out a crew. I would say never go to a national contest with a crew that hasn't at least worked with you on a regional or local competition of some sort. Because you run into all kinds of problems. Suppose you're getting ready to take off and you're rushing to get down to the line, you only have ten minutes before you're supposed to be in the air, and you look around for your crew and you find they've gone to breakfast because they just can't miss breakfast. This is the kind of crew man you sometimes encounter. And it can go on and on so check these things out very carefully. One more item about crews. The best crew man you can possibly get is your wife. Now for those of you single fellows who are not married--this is the most important thing in picking your mate for life.

All right, I'm just going to start right here and go down the list.

1. Always take a full tow to 2000 feet. The rules have been changed now so that you can release any time you want. We did have rules that said you had to wait until you were in the release area. That's been changed now, but many of us old timers have come to grief by going up when we were allowed to release early and while flying along at 500 feet we go through a boomer and pull the string and you go around three, four times and you can't find it and the next thing you know you're on the ground. If you're lucky its back at the airport, and if you're unlucky you don't even make the airport. Well, you don't win any points for the day if you must go back to the end of the list, especially if you have to dismantle your sailplane to get there.

2. Stay with the first lift you find at 2000 feet or below. In other words, if you find a one meter thermal when you are below 2000 feet, you had better stay with it and get some altitude. Don't go looking for a two meter or a three meter thermal, because at that time you are likely to get very anxious and want to push on and not waste time, especially if it's a speed task. When you're down to 2000 feet and you find something that will even keep you up, you better stay with it and get some altitude because if you go on you might not find anything. And
once on the ground, you're finished. My procedure in working thermals is: I fly through a thermal—when I'm
barreling along and I wait until I reach the maximum lift and notice that it's starting to drop off—this is on the
total energy variometer—and then I start making a turn. This works pretty well. Most of the time you will be
fairly well centered in it or not too far off. The next item is that I always turn in the direction that the thermal
has tried to pick up my wing. Some of these things probably sound very simple and I may look stupid standing
up here telling you this. You probably know all these things, but maybe some of you don't. Use your own
judgment on what you want to do about it. As I go into each thermal, I try to consciously pick up the reaction of
the sailplane. I hold the stick very loosely and if the right wing is trying to come up, this is a pretty good
indication that the best part of the thermal is on your right. As soon as the thermal begins to drop off, I rack it
up to the right.

There's a lot of controversy, of course, about all the thermals circling to the left in the northern hemisphere and
to the right in the southern hemisphere. Most of us fly better with one arm than with the other and we get into a
habit of always turning in one direction. I think this is a mistake. I think you ought to practice flying in both
directions, circling in both directions, get so you can circle just as well to the left as you can to the right. Then if
you know that the thermal is on your right you can circle just as well that way as you can the other. Its common
to get into competition where the first man in the thermal is supposed to set the direction of the turn. Then you
can't do anything about it. If you can go into a thermal with forty gliders in it and they're all turning to the right,
you better turn to the right too. Of course, there is always somebody that, halfway up, is going around to the
left. This makes it rather interesting, especially when you're 15 or 20 feet apart in altitude and passing each
other every time you go around. Getting back to this turn right in the southern hemisphere and left in the
northern or vice versa, right in the northern hemisphere and left in the southern hemisphere because of the way
the thermals are supposed to naturally travel, I had an operation in Puerto Rico and had a Puerto Rican running
the place. I showed him what a thermal looked like one day when all these sugar cane leaves were going around
and going up into the air and I said, "Well, I'm going to be gone for two months and while I'm gone, every time
you see one of these, I want you to write down which direction it's going." So I came back two months later and
he had the list and we added it up and I think there were 71 that went to the right and 72 that went to the left.

6. If a dust devil is associated with the thermal and you are getting a good indication on the ground of the
direction that the thermal is turning, then by all means fly against the thermal, because undoubtedly your
circling speed will be lower if you're going against the rotation than if you're going with it.

7. Thermal five miles per hour above stall unless thermal is unusually large, when minimum sink should be
used. In other words, if the thermal is small and it's not too rough, I feel that I can do my best flying just above
the stall. Of course, here again it depends on the ship that you have and its characteristics, but I feel you're
better off sacrificing a little of your best sink performance to stay right in that core if the thermal is small. If it's
large then you can afford to fly a little faster. Where you have a better minimum sink your sailplane
performance is better and you don't have to rack it up. You're not putting as much of a G load on your wing,
which is going to decrease your climb and you should wind up with a better net climb with a little higher speed.

8. Do not leave the field without gaining altitude in the vicinity. This is especially true at the start of a contest
day. I wouldn't leave the airport without a lot of altitude. While you are over the airport (your starting point),
especially on a speed task day, you are better off to try to work your thermal and get altitude there. If you have a
problem and just don't seem to be able to get up and you waste a lot of time, you can always go down and take
another tow and get another start. However, if you go pushing off into the boondocks with no altitude and you
get out there scraping around, working zero sink for an hour or two, you don't have much choice because you're
too far away from home to come back and start again.

9. When you're low and having problems staying up, you want to do everything you possibly can to help
yourself. If you're down low and there are no apparent thermals and you are desperate, the first thing you want
to look for is a dark area on the ground. This will help you more than anything. Look for ground fires. If
somebody is burning off a crop on the field, you can almost always find a thermal there if there are any. Tops of hills tend to kick off the thermals. Ridges which face into the wind are good. This is all elementary stuff but you want to have this in your mind. Incidentally, I read these notes over every time before I go out in a contest and I try to review them every day, because it's surprising and very discouraging when you forget one of these simple things that you've written down and you're on the ground watching everybody go by and you realize you have violated one of your own points that you have just completely forgotten about or neglected on this particular day. Another thing that I watch for and it's saved me many times is if I am down low and having trouble finding a thermal and I am flying over fields that have a high flexible crop, like soy beans or wheat, even corn--corn isn't quite as good--but if you watch closely you can see thermals working in this kind of a crop. You'll see the crop swaying in a circular pattern as the thermal passes along. I've gotten back up from altitudes as low as 200 feet by using this method. When you are a little higher, say, 1000 feet or more above the ground and you have clouds, it's better to stick with the clouds. If you have cumulus clouds spotted around and you are still above 1000 feet on the average, to me at least, it seems that I can do better by trying to get under the best looking clouds. Once you are down low, however, the lift that is forming the cloud may have been cut off at the ground and you might get right under it and find absolutely nothing. It is much better to aim for the dark areas and ridges and hills and obvious wind patterns on the ground. Quite often you will be flying on a good day--going along and get into heavy sink and speed up (you fly faster in the sink, of course)--but you just don't seem to get out of it, and it's a mystery because you appear to be under the cloud or cloud street and the thing to do under that situation is turn, either right or left, because you are apparently flying down a trough of descending air, that is, a wave between the cloud streets. The reason I wrote this down is I went down and landed one day when there were cumulus clouds all over the sky. I just flew for several miles before I hit the ground without finding a single bit of lift and after I got down and watched everybody go by and got to analyzing it, I figured that what happened was I just continued to fly exactly downwind, parallel to the cloud streets and all the lift. If I had merely turned one way or the other, I could have gotten out of it and gotten into the lift.

10. When following another Sailplane at the same altitude, keep your position if you are behind him and he is ahead of you. I always try to put my right wing tip in the spot where I think his left wing tip vortex will be. And I don't know, maybe all of you know this, maybe you don't, but the biggest loss in a sailplane is in the wing tip vortices. All of you have seen ducks and geese flying in formation. They don't do that because they have been to some military academy. They have found that by doing this they let the leader do most of the work and the rest are going along for a free ride. The leader is spinning two vortices off his wing tips and all those birds that are following him are reversing the turn on these vortices, at lease on one of their wing tips, and they are converting that energy back into flying their machines. They can cut their drag 10 to 15 percent by doing this. If you try this scheme and you can actually get your wing tip in the vortex of the ship ahead, you will find that even though you are both flying the same type of machine, you will gain on him and you will finally be able to pull right up alongside of him. Then you are the same, and you must work just as hard as he.

11. Fly under cloud streets whenever possible. This is very obvious but you can certainly increase your cross country speed by being able to fly along at a very low sink or zero sink than you can by flying rapidly in smooth air, stopping occasionally in thermals to climb.

12. Slow down when flying straight and when in lift. Speed up when in down or sink. This is of course a standard rule in soaring but it is something you want to keep in mind, because the longer you are in lift, the more it is going to help you, and of course the longer you are in down more it is going to hurt you. You want to get out of the down as soon as you can, and here again if this down persists, don't continue straight on course. Turn and get out of it. now just as a rule of thumb, a lot of people have fancier rate of climb indicators than I do. Some of them have computers that average their climb and everything. I've never gotten around to this and I use a rule of thumb for most flying, maybe it's wrong, maybe it's right., I don't know, but when I have nothing else to go on, I cruise at about the same speed corresponding to the rate of sink value as I normally get positive in a climb. if I am climbing one meter that day, then I cruise at about one meter down. If I am climbing at two or three, I can afford to fly faster so I fly at two or three meters per second down. Of course I use a speed
calculator for the ship that I am flying and I refer to that, but I find this is a pretty good rule of thumb.

13. Here is one that has trapped me several times. It trapped me in Poland. One day in Poland I was at the head of the pack making tremendous time and I came-(we had had cumulus clouds all the way)-and I came to an area where there were no more cumulus clouds but it did look like there was lift out there. You could see puffs in the haze, but I barreled right on out in this area with lots of altitude. I flew at the same speed, and the next thing I knew I was down below 500 feet. I struggled there for about 45 minutes at 500 feet and watched several other ships that were following me come along and go down and land in the field right under me. I wasted enough time there so I lost too many points that day. It hurt me very badly in the contest. I finally got back up, but then instead of being at the front of the pack, I was at the rear. As it turned out, nobody completed the task and it meant that I went a much shorter distance than the others. Therefore, the thing to do when you are flying and have had good conditions and you see a definite change in the weather patterns, such as running into an area where there are no more clouds, it means one of two things. Either the thermals have stopped because the ground is wet or you are running into a different air mass. In any event, there is something different and you had better be cautious. Once you get out in it, you may find that the thermals are just as strong as they were and you don't have any trouble. Then you can speed up again, but the safe thing to do is to slow down. In all of your contest flying, you must be somewhat conservative. Because if you go down on one day, and most everybody else completes the task, you are out of the contest. It used to be in the old days that there were not too many good pilots, six or seven, and you could have one bad day and recover, but not any more. The ships are getting better, the pilots are getting better, and you just cannot afford to make mistakes, and especially obvious mistakes.

14. Avoid areas shaded by high cirrus or cu-nims. This again is a very simple thing. Everybody should know it. You need sunlight in order to have thermals and if you fly into areas that are shaded by high cloud cover, you are just bound to have poor scaring conditions, and there is nothing that will kill off lift quicker than a towering cu-nim that goes to 35,000 or 40,000 feet and casts a huge shadow over the entire area. So avoid shaded areas whenever you possibly can and if you do have sunlit areas, zigzag around on your course to try to hit the sunlit areas and even then it is better to stay on the side where you know the ground has been heated longer. In other words, if you have a good wind and the clouds are drifting along, it is better to stay on the downwind side of the lighted area of the ground because it has been in the sunlight a little longer than the other.

15. Favor slopes facing bright sunlight and the prevailing wind. If you have a slope on a hill that is in the sunlight and it also has the prevailing wind blowing up the surface, you have your best chance of finding a thermal there, because you have two things working for you.

16. A big mistake that a lot of pilots make is staying in thermals too long. If you have good thermals that go up to a good altitude you see so many pilots circling right up at the very top where the rate of climb has dropped off from four or five meters down to two or three. They are just wasting their time there and you don't want to get trapped into circling under these people and finding that there is very little lift left. Normally, this area is from 500 to 1000 feet from the absolute top of the thermal, but of course this will vary especially if you are under clouds). Quite often under clouds the thermal will get stronger, right up under the base of the cloud. But I'm talking mainly about dry thermals.

17. Here is an excellent one. On down-wind leg, get maximum altitude before making a turnpoint. On upwind leg, go into a turnpoint low and drift back on course while climbing.

18. On an open day get the earliest possible start. Now there is a big difference of opinion on this but it is my belief that on an open day, if you can get away and stay up that you are much better off than the man who is at the end of the list because if you do nothing more than circle and drift with the wind, you are going to be 15, 20, 30 miles or more away from the field when that last man takes off. So no matter how you cut it, you are 30 miles ahead of him. Now of course if you go out and go down, you have lost the game for the day too, so you
must be sure that you can stay up before you leave the field. We have to assume that, but I do believe that on distance days, the earlier you can get away the better off you are. Of course on a speed task it is best to try to bracket what you think will be the strongest conditions of the day, but here again I would say favor the early time rather than the later time because many many times I have gone down and a lot of other people have gone down because we waited too long. We wanted to get the very best conditions so that we would be first instead of second or third, and then we found out that we waited too long and we could not complete the task and then were last or near last. So its better to start early than to start late. It gives you a little more insurance.

19. A good rule of thumb is that you can't fly through most fronts, or you shouldn't expect to make it. This is true even if it's a very minor appearing front and now I'm thinking of the one out in Marfa in 1967. All of us (except the very smartest like A.J. Smith) got trapped in this front. We took off from Marfa, and had a struggle getting to Van Horn. As we approached Van Horn the clouds developed much better, the lift be-came strong and we were able to get up to cloudbase and go booming along and hitting these 5, 6, 7 meter thermals. But right at Van Horn we could see a line of dust blowing on the ground, and beyond that the sky was clear. I got trapped in it and a lot of other people got trapped. I think there were only about three that got through, three or four, and I had 12,000 feet about five miles from Van Horn, which really isn't the time you start worrying about having to land. We had no front forecast whatsoever and most of us probably failed to assess this as a front. We thought it was a local phenomenon or a shower or something that was trying to build up and I myself pressed into this thing at high speed. I could have climbed another 1000 feet or so and flown at a slower speed where I wouldn't have lost altitude as rapidly, but I thought it was going to be a lead pipe cinch to go across this five miles from 12,000 feet to the turnpoint and turn around and come back where there was tremendous lift in the area where the clouds were. I thought I'd get back into that and just go barreling right straight down to the next turn at Pecos and make 100 mile an hour average at least. Well, I buzzed across into this area, made the turn at Van Horn, with probably 8, 9, or 10,000 feet, somewhere in there, I don't remember exactly but plenty of altitude left, and better than 5000 feet above the ground. I dashed back and got under the clouds and there was no lift. And I continued. I vent three or four miles back on course toward Marfa, and still found no lift and I had passed under all this beautiful area that had had lift, and I was absolutely baffled. I couldn't understand it. And the next thing I know I was down on the hills trying to ridge soar and finally had to land on a ranch where there was no one at home, no telephone and the only way they ever got me out of there was I got in touch with an airplane that was flying over to relay a message back. What happened here? This actually turned out to be a cold front, this cold air mass was sweeping down from the first turnpoint towards Marfa where we had started. There was a wedge of cold air coming across and that was what was picking up the dust on the ground.

What happened was all of us hot rocks up here were flying at very high speeds, we flew into the turn and we penetrated this wedge of cold air. We made a turn, we came back, we flew right under the wedge, right to the ground without recognizing it. Had we recognized it earlier, and been thinking a little more and been prepared for some kind of trouble we wouldn't have flown so fast. We would have flown at a better glide ratio where we could have made the turn and come back and penetrated that wedge of cold air and gotten back where all the lift and all the action was, like A.J. Smith did. While I'm talking about A.J. Smith I'd like to just mention I heard him on the air one day when he was over in Poland hollering for his crew and he was down below 500 feet and he said, "This is it, it's all over, get here and pick me up," and the next thing we know he was back up again and won the contest.

I've already mentioned if the weather is doubtful or likely to blow up, start just as early as you can, especially if they are forecasting heavy thunderstorm activity, because there is nothing that will bring you down like heavy thunderstorms. If you get thunderstorms all over the area and they throw the entire area into a shadow, you will be very lucky to even complete the task. So on days like that get away just as early as you can. What started me on this long discourse. There is never lift on the sides of a front, That you can be sure of. So if you have to penetrate a front get absolutely as high as you can before you start into it. Now, if you can get high enough--of course if you could go into clouds, you would have no problem because you could get high enough so that you could go far enough through the front to get into the cu conditions on the back side if it were a cold front. But of
course we are not allowed, and I don't foresee any time in the future when we will be allowed to fly instruments in national competition and so you just can't do this.

20. Don't pay too much attention to thermals chosen by other gliders unless you are desperate. I've gotten trapped so many times by dashing over under a thermal or circling glider, expecting to go back up and I get there and find there is absolutely nothing. And, by that time I am down a lot closer to the ground than I want to be. I have actually gone down and landed because I have done this. So one thing that will help you is to carry a sheet with the numbers of the competitors on it. You will find that there are certain numbers that circle in thermals and there are certain other numbers that circle in zero sink. Here again I'd like to mention A.J. Smith again. Number two is a good number. Dick Johnson is pretty good too. Oh, there are a lot of other good pilots too but there are certain ones that do this sort of thing and you will learn who they are, I'm sure.

21. Always pick a suitable area for possible landing. I am different than most people—I'm not like Paul Bikle. Paul Bikle will head out into any area at any altitude, and he doesn't mind me saying this because he tells everybody that he does this, and he saves himself lots of times, but occasionally he goes down too. But I personally never go into an area unless I am sure I can land. I went down in East Germany once, I forgot about it then, but..... As a general rule, if I am flying in rough country and I can see nothing but woods and trees up ahead and not any good indication of lift, in other words if there aren't cu's, all the way and it looks like there is a big hole, I won't head over that area. I'll try to skirt around it, because if you can't fly the next day you are out of the contest. And if your glider is hanging in a tree, you are out of the contest. So you can't be reckless. You have to fly safely, and remember that there is another day. Of course if it's the last clay of the contest, well, then you can smash up the glider.

22. Use the yaw string for accurate flying. A lot of people laugh at me, they think I'm back from the age of the Wright brothers, and they look at my ship and see a little piece of yarn on the canopy, but frankly this is one of the best instruments I have. You'll find that with a turn and bank with a ball in it, that the ball will sit there right in the middle and that yaw string will be pointing off this way or that way or it will be swinging back and forth and the ball will just sit there. I think most of you can realize that the glider flies a little better if it is going straight into the wind than if it is skidding. So I'd suggest a yaw string.

23. Fly at minimum weight in poor conditions. If I had disposable ballast in my glider, I would not start out, for instance, with the water tanks full on a very weak day, or if carrying sand bags and uranium blocks like some other pilots do (I'm not mentioning any names here) you wouldn't want to start out with these on a very poor day. The reason I wrote this down was that at Marfa, I put 165 pounds of sand bags in the HP-14 and started out on what looked like a good day and next thing I knew I was down to 300 feet with 165 pounds of sand in the back of the sailplane. Luckily I got back up and I still can't figure out how I did it.

24. The higher the thermal tops, the stronger and fewer the thermals. This is a general rule, it's not always true. On days when you have very high thermals, you can be quite sure that they are going to be a little farther apart, because these high thermals take a lot of energy and there just isn't enough energy left for a lot of small ones in between. And conversely, when the thermal tops are low, you are going to find a lot more, or on the average you will. I remember one day in particular when A.J. Smith and I were flying in a local contest from Adrian, we wound up in Dayton. I don't think we got more than 1800 feet above the ground all the way down there, and every glide you made you thought you were going to land but you picked up another thermal and we just kept going. We would go up to 1800 feet and come down to a thousand and back up to 1800 all the way. About 190 miles, I guess.

25. Avoid large wet or green areas. This is especially true out in the southwest. If there is an irrigated area, that spells bad news because almost invariably you will find very poor sink. Avoid heavily wooded areas whenever possible, except in Poland. In Poland the best thermals are over the woods. I still don't know why. There were pine trees and lots of needles on the ground. Maybe that had something to do with it. Also, late in the evening,
thermals become better over the woods. In dry country watch for dust devils. They are the best markers that you can find. Under poor conditions, watch for hawks. If you are getting down low and desperate, take a sweep around the sky and if you see a hawk circling, that is often a good life saver.

26. Land in bare fields wherever possible. I always take a plowed field in preference to any other kind of field. Better yet, take a disked field. It is better than plowed. I would rather land in a plowed field than in a nice grassy field, because I've landed several times in grass and stepped out on boulders that were right up to the rim of the cockpit.

27. Stay as high as possible late in the day. I don't have to expound on that. Also if you land in high grass or high crops, you should expect a violent ground loop. That is another reason to stay out of grass.

28. Carry extra speed in the landing pattern and on final approach to guard against wind gradient and negative gusts so that you don't undershoot.

29. Avoid hard landings at all costs. If you damage your ship in a contest, you are out, and if you are out one day, you're really out.

30. Avoid rain areas. This is the wet ground thing again.

31. When flying in shear line areas, plan your flight to take maximum advantage of the shear line and its movement. If you expect to have a shear line on course, try to plan your flight to fly parallel to the shear line as much as you can.

32. Stay out of thunderstorms. Some of these little innocent looking showers can turn into the most violent thunderstorms you have ever seen or heard of. This has happened to me.

33. Plan each flight carefully. Consider weather, course, and distance. I strongly advise that all of you make a checklist that you carry and each morning before you get into the ship, run through this checklist and check everything off. You have all heard the story, I'm sure, of the pilot over in the Chicago area who took off and his wife called him on the radio and said, "Hans, haben see de shucil een de pocket," or whatever it was, and he said "Ya, ich habe im pocket,' I and "I will fly over the field, tie the keys to the handkerchief and drop it. I have dropped the keys, did you see them?" "No, ve didn't see them."

34. Be very careful what you say over the air. Dean Svec had a very interesting experience. His wife Barbara called him one day during a practice day and she said, "Honey, how soon will you be down. I'm very hot and I'd like to go to the motel." About twelve transmissions came in and said, "We'll be right down." Thank you.

Question and Answer Session

Question: (Wylie Mullen) "How do you go about finding the lift under a cloud?"

Answer: "Of course I always try to go toward the part of the cloud that looks the heaviest, the fluffiest, and the darkest on the bottom. On certain days you will find the best lift on the downwind side of the cloud and on other days you will find it on the upwind side. After you have flown under several clouds you get a pretty good idea what this pattern is. In general, head for the darkest and blackest area and the sharpest area on top which indicates that there is more activity in the cloud and it is building more rapidly there."

Question: (Steve DuPont) "I hear a lot about shear lines. Can you tell me where you can find them and what they look like?"
**Answer:** "Shear lines are always caused by two different air masses. One air mass is always a little warmer than the other, and it tends to climb over the colder air mass and kicks off thermals. I don't think we get so many shear lines here in this part of the country and in the central U.S. but they are very prominent out in the El Mirage area. Every afternoon there the cold and dirty air comes through from Los Angeles through the passes and into the desert and right on the leading edge of that is a wedge of cold air. Here again it is the same as the conditions I described at Van Horn. This cold air mass runs along the ground and kicks up these thermals and you get a lot of dust devils. They are really the best indications. If you see a line of dust devils, you know you have a shear line, and also you will quite often get a different condition of air clarity. The shear line will be dustier on one side than the other, and this gives you a pretty good idea if there are no clouds or no dust devils 'where it is. When there is a sea breeze front, you get the same conditions. For example, in England where every afternoon the wind comes in off the ocean and the cold air sweeps lap the warm air and causes a shear line. These things are always moving. They are not stationary so you want to try to stay with them.

**Question:** "You mean go downwind of them more or less?"

**Answer:** "No, I would say stay ahead of it, just like any front."

**Question:** (Cal Walker) "Do You have any special rule about whether you ever backtrack on course when you fly into an area and things aren't too good?"

**Answer:** "Well, I think all of us have gone back to thermals we've left before, but You can only do so much of that. You have to press ahead and you usually don't have enough altitude when you get in trouble to go too far back, but, yes, if you know where there is a thermal within gliding distance and you are desperate, you better get back to it."

**Question:** (A.J. Smith) "Dick, I particularly like that one point that you didn't expound on and that is, if you can, go high into a turnpoint you are going downwind, and go in low is you are going upwind."

**Answer:** That is right. If you're going into a turnpoint against the wind, then it would pay you to go in and not waste time getting high to go into the turn, but as soon as you are sure you can get to the turnpoint without being too low and taking a chance on going down then you head into the turn, go around the turn low and then get your thermal and you can take a lot of time working back up because you will then be drifting on course. But if you get a lot of altitude and go into the turn, you have wasted a lot of time because you have drifted back downcourse while climbing. If you're going with the wind, get all the altitude you can before you go into the turn because you are drifting towards the turn and getting closer to it. Then when you make the turn you can go a long way before you have to circle and drift back with the wind again."

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