PRACTICING FOR COMPETITION

by
George Moffat

Practice is obviously the key to improvement whether a pilot has two hours or two thousand, but over the years I have seen a great many pilots who confuse practicing with just plain flying. Practice for competition must always be channeled toward specific improvement and specific problems. Meaningful practice must cover not only the mechanical aspects of flying itself but everything that can lead towards winning. In this talk I would like to cover three general areas that seem vital to consider if a pilot wishes to compete seriously. These three areas are psychological conditioning, making use of the past, and actual flying itself.

I would like to start with the psychological aspect because I feel that for most people it is the biggest single stumbling block. Soaring is made up of decisions, and decisions are relatively easy when there is little pressure. Unfortunately pressure is the very essence of competition flying, and some people who do very well in day to day flying tend to come apart under the stress. I remember in the early Sixties down at the Marfa records camps doing a lot of flying with Ben Greene and thinking he was about as fine a pilot as I'd ever flown with, cool, smooth, always making the right decision. But until a couple of years ago he couldn't seem to put it together under contest pressure. The basic difference I see between Ben now and Ben then isn't the technical skills-they are much the same-but the ability to keep the pressure under control so it works for him rather than against him.

How do you practice to get this control? The only way is to enter all the contests you can get to–but especially big contests. Lots of people who do well in Regionals never seem able to put it all together in the big contests. I know pilots that I would consider hard to beat in a fifteen ship contest that I would never even consider as competition in the Nationals. Their mental attitude is all wrong. They begin to think about all the people who could beat them rather than all the people they are going to beat. In soaring as in most other things there are those who go out to get and those who go out to get got.

An important thing to realize is that pressure is *good;* that the butteries in the belly help performance as long as you keep them under control. During my pole vaulting days in high school I could seldom clear better than ten feet in practice, but under pressure of a meet I could do 1l' 6" or better. The competitive pressure made the difference.

It is important that the crew as well as the pilot be able to handle pressure. A good crew has to be hopped up about the team effort, has to really care. I would far rather have a thoroughly competitive crew than a don't-give-a-damn one who had a few more skills. But, like the pilot, the crew has to be able to handle the pressure. Crew members who start running around like chickens with their heads cut off are worse than useless and very distracting to the pilot. On my own crew I find Ralph's twenty years of professional stock car racing invaluable not only because of the skills it has given him but also because of the ability to understand and handle competitive pressure.

One of the hardest things to learn is proper pacing in competition. Beginners tend to use up all their psychic energy in the first four days of a meet and they have nothing left for the last half. This may be one reason for the fact that some of the newer pilots who do very well in Regionals can't seem to handle a Nationals. Last summer in Bryan a pilot who was well up in the first ten at the end of the fifth day told me that he was just going to try to hang on to his spot for the rest of the contest. He no longer had the aggressive attitude that it takes to win, yet he could easily have beaten at least one of the pilots ahead of him.

On the morning of a contest day I like to have all the mechanical and technical problems out of the way by an hour to an hour and a half before takeoff. This lets me concentrate on building up just about the right head of steam, thinking about the task itself. Something I have often noticed before take-off is a growing sense of loneliness, of growing farther and farther away from friends and crew as you get more and more immersed in this thing that you have to do alone. I always like crossing the finish and landing. It feels like coming back to humanity.

On speed days the period between take-off and crossing the start line offers problems. There is a tendency to do a lot of gaggle flying and waste a lot of energy trying to out climb people. Don't. If possible go off a couple of miles and find a thermal of your own to laze around in. If there are only one or two thermals, just fly around in big lazy circles, relaxing as much as possible. You don't start to make points until you cross the starting line. I find it rather hard to hold on to just the right amount of tension during these waits that can take two hours and more.

Tension will inevitably mount as you near the end of a contest, particularly if you are doing well. It is very important to keep control just as you would keep control of physical energy if you were running a race. I remember in the Nationals in Marfa in '69 when Wally Scott, Rudy Alleman and I were very close to even in points going into the last day, looking over at Rudy when the 350 mile task was announced and watching his face fall. I knew right away that he was pretty well licked. Looking over at Wally, I could see his thin little smile. Nobody handles tension better than Wally.

A good pilot must be aware of the psychological state of competitors. Some people are all finished if they have one bad day, some never give up. On the final day of the World's in Texas Hans Werner Grosse, a couple of hundred points down in second place, came over and said "George, how are we going to beat that Frenchman (Mercier, standing third)?" Immediately it was clear that Hans Werner was concerned about keeping second rather than winning first. There was no need to worry much about him.

There is no real way to practice having the right mental attitude except by entering all the meets you can get into and by being constantly aware of the importance of tension and its pacing. No amount of flying skill will enable you to win if you go to pieces under pressure.

The second major factor in realistic practice is the lessons that can be learned from the past. Every pilot who seriously wants to win must be aware of his own strong and weak points. He must be able to look back at flights and contests of the past and decide what he did well and what he did badly. Sometimes it helps to ask friends what they think are your strong and weak points, but politeness frequently prevents criticism that is sharp enough to be of any use.

In my own case I find that I fly best in relatively predictable weather where patterns of lift can be established and used. My weakest point seems to be in making use of banded or cycling weather such as we had in Nebraska in '64, Poland in '68 and Bryan in '71. A.J. is far and away the best pilot I know at flying in such conditions. He got a 3-1-1 in these three contests; I averaged about 18th. Obviously in both thinking and actual practice I need to work especially hard on this problem.

In trying to ascertain past performance don't be misled by good placings that you didn't deserve or disturbed unduly by just plain bad luck. On the second day at Bryan I finished 2nd behind AJ in my Standard Cirrus, which might seem like a pretty good flight. Actually I made several rather bad mistakes. On the first leg I allowed myself to be lulled into complacency by the relatively strong conditions because I recognized the distant spacing of the few strong thermals and waited to get to them before circling even though it meant getting lower than I like. At the second turn, with things looking pretty dead, I made a real beginner's mistake in joining a gaggle that obviously wasn't doing very much. The penalty was dragging a lot of them along for half the third leg. Finally I made a navigational error during my last climb, thermalled higher than necessary, and lost perhaps five minutes in finishing too high. Second, but not a good flight. Conversely, on the 5th day I finished 42nd, my worst ever, but feel the flight was really not a bad one. With wide spaced but fairly good dry thermals, I left the last turn at 6000 feet and about 80 mph to try to leave a large gaggle behind. In one of those nightmare cases that haunt your dreams, I found absolutely not a ripple and landed 35 miles farther on. I discovered later that the rest of the gaggle had set out at max L/D, spreading out to increase chances of thermal finding, and had finished slowly but safely. However, I was trying to win and felt the risk worth taking.

It is important to be very skeptical about laying problems to luck. If "bad luck" always seems to haunt you under certain circumstances, it's probably really bad judgment. And don't forget to balance off the bad luck with the good like the totally undeserved save I got on the last day at Bryan at three hundred feet.

Learn to look at performance realistically, not in terms of final placings. In Bryan the pilot who ended up 5th had daily placings of 27-35-2-13-12-23-20-19. The pilot who finished seventh had 6-4-20-22-2-2-4-29. They

were flying ships of roughly equal performance. The seventh place man is obviously quite a lot the better pilot, having five days in the top ten as opposed to one for the fifth place man. A study of scores matched to days would show that the higher placing pilot did his best on the weakest and least predictable days, his opponent did his worst on these days on which luck is likely to be a major factor. The fifth place finisher did rather badly on the honest speed days, which shows the need of more practice in aggressive flying. The seventh place finisher did extremely well on the more predictable days, but his consistently low performance on the weak days would indicate need for greater caution and more practice under these conditions.

We have covered the psychological factors and the uses of past experience. How about actual practice flying?

Certainly the most important point to remember is that if you aren't flying cross country, you aren't practicing. There is almost no point at all to piling up hours within five miles of the airport. Actually I think that such flying is actively detrimental. Quite a few of the pilots and instructors at my own field have grown so used to the three "reliable" home thermals that they seem utterly lost if they have to find lift over strange territory. For many years I have entered in the remarks column of my logbook the number of XC miles covered, not bothering to log flights of under fifty miles. Adding up these miles gives a much more realistic idea of practice than do hours. I usually try to get in 1000-1500 miles during the spring before the big contests.

Much the best type of practice is to get a group of friends together and organize a competition around a course. Frequently at Wurtsboro we choose a course after we have been airborne awhile and all start together from some common altitude. While fun, this is not as good practice as starting separately at the time each pilot thinks best. When starting together there is too much tendency for the less experienced pilots to just follow the leader, learning little about decision making. On these practice tasks it is important to really compete-none of this "Hey, Dick, there's a great thermal here over the turn, I'll wait for you at the top." Practice should be as contest-like as possible. In practice as well as in contests, success seems to be inversely proportionate to the amount of time spent on the radio. Talkers aren't winners.

In practice flying special attention must be given to weak points. If you decide that your thermaling needs work, give thermaling special practice. One good technique for this is to drop down to 800 feet and try to get back up. As soon as you hit 2000 feet open the dive brakes and try again. It's less wasteful of tows if you practice this just before you plan to land at the end of the day. One of the reasons Wally Scott is so good is that he invariably auto tows with a ratty old tow line that breaks every other launch. Nobody has as much practice as Wally at getting away from 300 feet. Last year I noticed in my own flying that my final glides were getting sloppy, so I'll be giving them some special attention this spring.

Too many pilots only practice on good days. Anyone can fly on good days with nice, regular, cloud marked thermals. It's the bad days that separate the men from the boys. Even if the weather is too weak to make XC worth while, an hour or two of weak weather practice and thermaling can be had. Sometimes a 15 mile triangle can be laid out with the field in the center so that you can practice against time and other ships without the bother of a retrieve. If the practice is to be meaningful you should not stay in one thermal all afternoon but try to find others even if you don't manage to win the I-stayed-up-longer-than-you-did-trophy. Contests are frequently won and lost on weak days. It takes confidence and practice to do well in such weather, particularly to make the decisions as when to hold awaiting better conditions that so frequently decide the difference between winner and also-ran.

Weak days are especially good for practicing gaggle flying since most of the local pilots will obligingly create gaggles for you to play with without even being asked. Here the big problem is how to climb through other ships. In contests one frequently gets stuck below a slow climber who can hold up progress for minutes at a time. Practice ways to get through such as really tight turns, luring him away from the core (if he will take his eyes out of the cockpit long enough to notice you), wide turns, etc. Notice particularly the effect it has on your ship if you follow in his downwash and how far back you have to be to escape the effect. Get used to flying in close quarters with other ships and especially to using them in place of the variometer as an indication to the size and shape of the thermal.

For most pilots the biggest single avenue for improvement lies in entering and leaving thermals. If you can save 15 seconds on getting centered in each thermal, you will gain five minutes on the average contest flight. It takes

a lot of conscious practice to enter thermals properly, especially from high speed and in the bigger and less maneuverable ships that are being forced upon us in the Open Class. Too many pilots begin to turn immediately as they pull back on entering a thermal without realizing that the high speed will ensure that they end up well to one side of the core. The correct technique is to pull back, but keep the wings level until the speed drops to ten miles above circling speed. At this point one banks into thermaling angle and begins to circle. During the first circle or two it is especially important to note the strongest and weakest parts of the thermal and pursue some plan to get really centered immediately. Some pilots take a long time to edge into the core, apparently trying not to scare it. This is time wasted. A good way to practice entering thermals is to come into a thermal below an already circling ship. Come in fast, pull up, make your turn and then see if you really are lined up right below him. And too often you will find yourself well beyond or to one side of your target. Since successful contest flying involves a fair amount of swiping other people's hard won lift, this maneuver needs plenty of practice.

Leaving thermals is also important. Too many people seem hypnotized by lift. Be the first kid in your gaggle to leave! Practice getting out as soon as the lift declines to a pre selected figure, don't dawdle about hoping things win get better. If the thermal is reasonably wide it can pay to tighten up the last turn and cut across the middle while gaining speed. At any rate practice getting the ship up to cruise quickly and decisively. Too many people can't seem to bear to get the nose down for the first mile or so. If you are flying a course with competitors, practice getting into their blind spot before you peel out. It may take them a circle or two to realize they have been left. Keep in mind that if all this practicing does any good you should be winning enough things so people will think you know what you are doing. Don't make it easy to follow you. Escaping gaggles is extremely important, especially in the Standard Class where ship performance is virtually identical.

During practice flights get used to spotting other gliders at maximum distance. Often the only indication of a distant gaggle is an occasional flash of the wings. Ability to see gaggles at a distance may have important bearing on your decisions about the weather up ahead. One of the reasons that a fairly late start on a speed day often works well is that one can step from gaggle to gaggle, saving valuable time on centering. Practice especially judging whether the ships in gaggles up ahead are climbing well or not. You may just want to bump the thermal and keep on running. Nothing is more demoralizing that working your heart out in a thermal and seeing some hot shot like AJ bomb right on by it.

Another interesting item to work on with a cooperative friend in a similar type ship is whether the so called "dolphin" techniques of pulling up sharply in minor thermals works for you and your ship. Have your friend hold his speed steady through the thermal while you dolphin. You may be surprised to discover that you are losing quite a bit. Dolphining doesn't seem to work on ships that are prone to easy separation like the Pheobus. It also takes good timing which takes plenty of practice. I find it only gives a really clear cut advantage in big predictable thermals or with ships with lots of kinetic energy like the ASW-12.

An item that you can practice on weak days is turn point photography. Use the ends of the various runways as turn points and the other end as the target. Practice picking out lines of reference from a couple of miles away so that you can tell when you have actually arrived over the turn without any wild slips to check position. Arriving at the wrong spot and having to correct is very expensive in tune. Practice taking the photos themselves without any wild gyrations. Spinning out while trying to get lined up is a stupid way to lose a couple of thousand feet-as I found out in Texas in 1970. But even if you never manage to do anything dramatic like that, the couple of hundred feet you lose on each turn through poor line up and faulty technique are four hundred feet you will have to climb back somewhere along the course. Much of this practice can be done by just clicking the camera shutter, but it pays to run film through each camera every once in a while just to make sure you really are getting what you think you are and that the pictures are clear and readable.

Speaking of equipment, practice periods are a fine time make sure everything works in the way of equipment, instruments, computers, etc. To win, you must have confidence in all your instruments and gear. This goes triple for total energy systems. If you aren't too experienced, get someone who is to fly your ship and give you an idea of whether the instruments are doing all they should do. A surprising number of pilots fly around with poor instrument systems just because they have no idea how good a system can be. Most of the better pilots will be glad to try your ship out if you offer to pay the tow. During practice use any computers you have aboard as much as possible. This is especially important if you are using something complex like the Skye computer-variometer or one of those ultra-elaborate circular computers that Graham Thompson sells. Gadgets of this type are an active detriment

unless you are so used to them that you barely have to glance at them. Do enough final glides at various speeds so that you believe your ship will do what computer says–or know what allowances to make. Eight miles out on a low approach is no place to start wondering if the calculator really works.

Finally, during practice, experiment with different approaches to problems, the behavior of streets, likely and unlikely thermal sources. If there are waves about, don't just sit there getting higher and colder, experiment with methods of getting from wave to wave, relationships of hill to wave to lennie, etc. Who knows, the next Nationals might be at Reno! Soaring is still a young sport, and not all the knowledge is in books by a long shot.
