

THERMAL SOARING AS APPLIED TO OLD TIMERS

An article by Don Bekins from SAM Speaks #27, Sept – Oct, 1977
Gleaned by Don Bekins from Mark Smith (former National Soaring Champion)

The only difference between an old timer and a glider is the method of getting the model in the air. Deriving the benefit of thermal activity is a matter of recognizing the updraft when your model passes through it, and then getting in it and staying there. Once that is done, then you must get the plane down on time and hit the proper spot if you are flying the limited engine run events. Here is a summary of Mark Smith's comments, with some of mine added.

When you arrive at a field, look for the "hot" spots; a building, dark roads or fields or other landmarks that can produce enough radiant heat to start thermal activity. Don't forget that line of contestants' cars from which those shimmering heat waves rise at mid-day! This is a part of getting to "know the field". It is most helpful to have an "assistant" who can help in spotting thermals and educating the timer in reading the watch and calling countdowns.

Before take-off, the assistant should hold the plane and confirm with the pilot that he has the transmitter and receiver ON, with all controls operating properly. When the model is off and climbing, the timer should call the time every five seconds of engine run to fifteen seconds, then call each second as it is tacked off. At eighteen seconds, the pilot should give some down elevator and cut the throttle. The reaction time for the movement of the stick and the mechanical cut-off will give a perfect twenty second run. Now the model is gliding and properly trimmed for straight and level flight. In Mark's words, "Don't stand there and watch it fly - stare at it, concentrate, bear down and look hard". "Watch for the faintest wiggle, bump or deflection from its flight path". "Don't let anyone distract you by talking; thermal soaring is work! Keep upwind, set up a search pattern and stay alert". Hunt, trading altitude for distance. If the airplane is in 'down' air, get the nose down and get out of there. Usually strong down currents are an indication that a thermal is in the vicinity. Other indications are circling birds, a sudden change in temperature or a sudden wind shift. Be alert.

As you practice R/C soaring you will find yourself being able to sense the location of a thermal. If the airplane will cover enough ground, the chances are good that you will find rising air. When in the immediate vicinity of a thermal, the flight path will be deflected depending on the location and strength of the thermal. If the airplane passes along the edge, it will raise one wing. Turn into the wing that raises, for the model is just outside the thermal. If the tail rises, the airplane is flying through the thermal so press on until the plane regains a normal flight altitude. Then turn and plunge into the center of the thermal. Start a large easy circle. If the plane ascends on one portion of the circle and descends on the other, move the pattern over toward the ascending portion. Keep working until the model is going up at a high rate. Security is a thermal!

Mark Smith's advice continues, but I would like to add a short note. How do you tell when the airplane is going up? When the model is nearly overhead, this is nearly impossible to perceive. Therefore, I make it a practice to move the model upwind to approximately a 45° angle. At that position it is easy to detect the altitude changes immediately. Once you are circling in a thermal, you can set down your transmitter and let your airplane do what it does best - soar. If it passes overhead or through the sun, don't worry. Your model is stable and will continue flying as a freeflight in the trim that you have set. Only when the model stops going up, or is too high, or too far away for visual contact, do you disturb the trim and bring the plane back. Thermals move with the wind direction - downwind. Mark continues: "As the plane moves out of visual range, get the nose down and head back. Return to the area where you found the last thermal and set up another search pattern ..."

Finally, the plane has been up as long as required. It is time to establish your landing strategy. At the John Pond Commemorative, the requirement is to hit a fifty foot circle at exactly five minutes of duration. Time over or under is deducted from your time in the air. If you are way up, then you had better start down with one and one-half minutes to go. (*we no longer have this rule, Ed.*) In any event, start your descent at the latest one minute before touch down. Have the timer call off the elapsed time every minute during the flight so you are fully time-oriented. At one and one-half minutes to go, have the time called every fifteen seconds. Stay upwind during the descent. At one minute to go, you should be about one hundred feet off the ground. Turn down wind and pass to one side of the spot in a shallow dive. At thirty seconds you should be on

your final approach aimed at the fifty foot circle. Keep up your speed. Your distance downwind is determined by your airspeed and the velocity of the wind. The timer should now be calling the time every five seconds. At fifteen seconds he should count down every second, and your plane should be ten to fifteen feet off the ground. If your plane has sufficient speed you can make it touch the ground just as the timer calls one second to go. By the time he reacts and pushes the button, you should have five minutes to the second and a spot landing. Remember, it is better to pick up the extra points by hitting the spot than to miss it and touch down at the exact moment.

Now a word or two about flight attempts; If you have a foreshortened engine run or poor engine performance, it is far better to take an attempt by letting the engine run over twenty seconds, or in the case of a short run, getting the plane down under forty seconds. Remember, you have six attempts for three official flights. (*we no longer have attempts, every flight counts, Ed.*) Don't tempt fate by trying for that elusive thermal if you don't have maximum altitude!

So there is a proven formula for contest wins. In the words of Mark Smith, "Prepare the airplane and yourself. Mental attitude has a lot to do with *RIC* thermal soaring. A positive thinker expects to find a thermal and when one is found he is ready to work it. A negative thinker does not expect to find a thermal, so he does not really look for one" Think positive! With all that down air there has to be a thermal there somewhere." Good luck at the John Pond Commemorative. Remember, practice will help win contests. Hope to see you in Santa Maria.

Don Bekins