

the one instrument whose guidance could solve all his ills. Or, if he does finally apply rudder and center the pointer, his excessive speed with stick pulled fully back brings him up into violent stall, from which he falls out, probably one wing low, and repeats the procedure a few times until either the ship breaks up, or he masters the turn indicator, and settles down to straight flight. Remember: **WHEN ALL ELSE FAILS, CENTER THE TURN INDICATOR.**

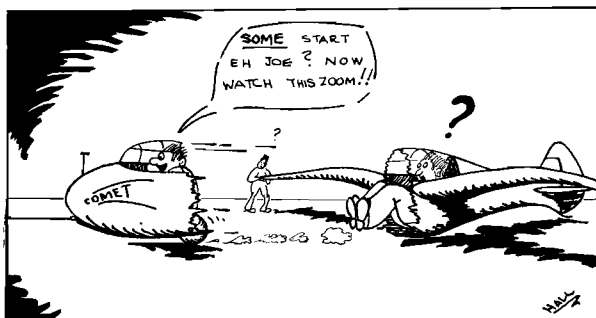
The above paragraph explains the difficulty Woody Brown related concerning his attempted cloud flight on the splendid goal flight to Wichita. It explains the frightening experience which led to Udo Fischer's bail out at the national meet. It explains the countless references made to such difficulties in Hirth's treatise on soaring, as related by German pilots. The diving spiral is the inevitable reward to attempting to fly by the seat of the pants instead of by instruments.

Mention has been made of the fallacy of believing the compass. This can readily be verified. Head north. Start a turn to the right. You will note that the compass indicates a *left* turn. Turn left, and you get indication of right turn. Head east, then turn right. You will note that the compass now turns the correct direction, but out runs the airplane, arriving at a south heading long before the airplane does. Make turns of varying bank over landmarks whose directions you know, and you will lose all faith in the compass as an instrument of correctly indicating rate or direction of turn. *It can be used only when the turn indicator is centered.*

On the magnetic equator, an aircraft compass would register correctly. At any other latitude, a force known as dip is exerted upon the compass needle. Banking the airplane permits this dipping force to rotate the compass needle, a factor which, combined with the compass card's inertia, completely nullifies any accuracy of the compass until straight flight has been resumed, and dip no longer affects the reading. So, until you're an expert blind flyer, don't believe the compass unless you can see the ground.

While we have thus far considered only the simplest flight maneuvers, they suffice for all cloud soaring, and are fundamentals whose mastery will require all your skill and precision to do correctly. Once mastered and intelligently employed, they will prove to be that key which will open up for you a whole fascinating new field of soaring which the contact pilot will never know.

The adoption of a planned and definite technique still remains before the skill of blind flying can be adapted to the needs of cloud soaring. In a future issue, it is hoped that space can be allotted to cloud soaring technique and problems apt to be met in thunderstorm soaring. This is a new field in which we tread, in which there are no experts and few precedents. A discussion of the facts and theories on the subject might, however, pave the way toward an ultimately better understanding later on.



Front Soaring

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should be lift about as the air was turbulent, but it did not average out well. I was below the 7,000 feet mark. Finally I turned and flew straight toward the point of land to the north, which I could see quite clearly. I had been about to drift too much to the left out over Good Harbor Bay. On the right, ahead, I identified Omena, and on the left Leland. There could be no doubt either about my location, because the shape of the point looked just like the map I carried.

Perhaps it is not in the cards to fly straight toward your goal in a sailplane. In this case, the result was 2 meters per second down and it kept on being that. I finally turned back along the shore and flew over Lake Lelanau. The Horn showed about one half a meter per second down most of the way along the coast to directly opposite Woolsey Airport. It is possible I was making 100 miles per hour during all this flying toward the goal as the wind must have been somewhere near 60 and I was flying about 40. I beat cross-wind the two miles or so to Woolsey Airport and arrived immediately over the circle with 2,400 feet of altitude left. There was ample time to study the strength of the wind which was still 40 miles an hour or more even at this lower altitude. There was time to study the airport and the runway carefully.

I came down and landed in the circle near the airport office, getting only one small surprise. There were small pebbles on the ground which resounded under the skid of the Wolf but which did no harm.

Mr. A. L. Greene and others helped me tie the ship down with a borrowed rope. Someone called up the airport manager and he came and opened the office rather soon. We stored the chute and instruments in the office together with the barograph. Mr. Greene asked me over for a cup of coffee, which turned out to be a complete meal, and then, afterwards, he drove me back to the airport and helped me take the ship apart. The airport manager had called Frankfort for me and the trailer arrived soon after dark. Rodney Mast had brought it behind his car. His family came along for the ride and Al Santilli was along to help with loading the ship. It was the end of a perfect day. During the night a cold front of some severity passed over Frankfort. It had been ahead of this (and driven by it) that the mild occluded front, which had changed my luck so much, had moved in on the Sleeping Bear Sand Dune.

Watch for the article next month by Montgomery on Storm Soaring in an Aeronca C-3.

Hudson Valley Fall Meet

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who as Chief Timer sat at a table for two long, cold days and recorded each flight down to the exact second. The rest of the hard work was done by other members of the Hudson Valley Club, joint sponsors with the Airhoppers Club. On two week ends they labored to lengthen the east-west runway some eighty feet back into the woods, as well as to make all the other practical arrangements.

As, tired but happy, we disassembled, packed up, and prepared to go home Sunday night, plans were already in the air for a spring meet here next year and a repetition of the October affair to make it an annual event.