

Soaring

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Soaring and METEOROLOGY

Many times in the past few years we have given as the three practical adjuncts to the sport of gliding and soaring: flight training, technical design, and meteorological research. In mentioning last the value in helping to advance the science of meteorology, we have certainly not meant it to be least, as of the three, this interests us the most.

It has long been our belief that every outstanding soaring flight, which the pilot has carefully recorded in a detailed log, can be a real scientific contribution. Not infrequently, a pilot discovers certain interesting phenomena of thermal lift, cloud formation, or temperature inversion, that may be of value to the Weather Bureau or the airline meteorologists. It has already been proven that a knowledge of the size, distribution, and vertical velocity of thermal updrafts on unstable days is necessary to the airship pilot, who wishes to avoid them just as much as a sailplane pilot wishes to encounter them.

On each of our three flights down the Allegheny ridges we kept a log on a pad strapped to our right knee. The scribbled notes, not infrequently illegible because of the turbulent air, ran something like this: "10:30 Port Jervis 2000' 32° 5 ft./sec.—11:50 Wind Gap slope wind 55 m.p.h. at 500 ft. 0'/sec.—2:15 Mauch Chunk strong thermal 17 ft./sec. 29° at 5000'—3:10 Swatara Gap, etc." It was our first crude attempt to keep a running log containing pertinent facts, which could be coupled to the barograph trace to make a scientific record of the flight. Now that we are about to embark on another soaring expedition, we hope to extend this record.

Such a log should also include recordings of relative humidity, approximate width and extent of thermals encountered, and as many additional observations as possible. To put all this down after a flight is only an

approximation at best, as it cannot possibly be entirely accurate. However, to do so during the flight is sometimes very difficult, as the pilot must give his entire attention to flying his ship in turbulent air, especially when on instruments in clouds. One solution is voice transmission by radio to someone taking it down on the ground. This has its distinct drawbacks, due to the short radius of the 5-meter transmitters, which are the best we have to use.

The ideal solution of this problem, as well as several others in motorless aircraft, is the use of a two-seater high performance sailplane. With the help of a passenger who can take shorthand and doesn't get dizzy from continual tight spiralling, you can make a running account of the flight, which may be not only of scientific value from a meteorological point of view, but also of great use to other pilots and extremely interesting reading to the average layman. Of the many true life adventure stories that can be written today, we know few that can be more thrilling than a "blow by blow" account of a distance or altitude soaring flight.

A most encouraging indication that leaders in American commercial aviation are beginning to appreciate the value that our soaring research can be to them, was our being invited by the Committee of Meteorologists of the Air Transport Association of America, to attend a meeting in Chicago on March 11th. At this meeting, we gave a brief talk on some of our experiences and our ideas of how meteorological research, through soaring, can be of benefit to commercial aviation. The chief meteorologist of the ten principle airlines showed great interest in what we had to say and helped us draw up a form for a pilot's log which, if properly filled out, will make any outstanding soaring flight a definite contribution to the science of meteorology. The chairman of the meeting told us, just before our departure, that he saw real possibility of our being able to get a cross section of the troposphere that is not possible by any other means. In addition, we were promised the active cooperation of American Airlines and Hanford Airlines, who fly through the section of the country in which we hope to be soaring during the Texas expedition. Their pilots will report by radio conditions encountered in flight. It is our intention to run the Texas Soaring Expedition this month on a truly scientific basis, with regular recordings of wind velocity and

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