Slope Soaring From Muskegon to St. Joseph, Michigan

We consider this flight an introduction to a flight from Ludington, or possibly Frankfort, to Michigan City, Indiana. Given a break from the weather, such a flight is not at all impossible, and would, as far as we have been able to find out, be the longest slope soaring flight ever made.

When I took off at noon from the beach near the Muskegon Water Works, the wind was due east and blowing about eighteen miles per hour. This gradually increased and veered to the south as I got further down the lake. This was according to the weather reports, which for once hit the nail right on the head.

Slope soaring for distance along the shore is made up of a series of easy stretches with regular bluffs and very steady lift, but with "gaps" every so often where the hills disappear or run inland. These gaps generally occur at harbor entrances, so that there is the added difficulty of a channel to cross.

The first of these, at Grand Haven, has a break of about a mile in the bluffs, but there was some lift due to the smaller rise of the beach and I reached the bluffs south of the channel with about two hundred feet of altitude to spare. From there it was easy going for miles, and I sacrificed height to stay in strong lift where I could cruise the Bowlus at about fifty miles per hour.

At Saugatuck, which has been the Waterloo of other attempts made in the past, there seemed to be more lift than I had found anywhere else along the shore, although the bluffs were very much lower. I worked up to eight hundred feet over dunes which appeared not more than one hundred feet high before heading for the gap. Even with this altitude the bluffs to the south looked a long ways away, and I confidently expected a "forced landing" before reaching them. However, my luck held, and soon I was back on the south bluffs with altitude enough to work back into the lift and be on my way.

At South Haven it was a repetition of the same thing. I worked up to six hundred feet and started across. Here it was necessary to pass outside of the Coast Guard lookout tower, because there was not enough altitude left to go over. When I reached a small ridge about twenty feet high and felt lift, we were almost on the ground. This ridge held me up until I reached the bluffs. Then back to cruising speed until St. Joseph showed ahead.

By this time the wind was heading me badly and my altitude and ground speed were both getting less and less. I coasted off the end of the bluffs and landed on the beach by the piers. Not until then did I realize that it was rather cold, that I hadn't eaten since breakfast, and that I had a stiff neck due to crabbing down the bluffs with my head turned one way for almost four hours. I think the best part of the flight came when the Coast Guard Commander invited me in for a hot supper with his family.

EDITOR'S NOTE: We regret the above article was not signed.

Naming the Clouds

(*Continued from page* 5)

"low" are roughly at 1 mile, the "medium" at 2 or 3 miles, and the "high" at 4, 5, or 6 miles.

The texture of the "sheets" depends on physical conditions in the cloud layer and above or below it. Those with names ending in "stratus" are in stable air; that is, there are no vertical currents to disturb the uniformity or continuity of the sheet.

The "pattern" clouds, ending in—"cumulus" are, with possible exceptions, in a layer of unstable air; that is, the top and bottom of the layer want to change places and so have to split up into a pattern of up- and down-currents, and it is genetally assumed that cloud forms in the upward-moving air and melts away in the downward-moving air. The resulting pattern can be one of speckles, ripples, globules, flakes, plates, rolls, and so on, the smaller subdivisions being usual in the high cirro-cumulus and the larger in the low strato-cumulus; in fact, this is one way of judging the cloud's height and so deciding on its name.

The other way of judging the height of a sheet is to note how much light gets through. High clouds are mostly pure white, even if they have some thickness, since air at that height is too cold to carry much water vapour. Sometimes the edge of an alto-cumulus sheet is so thin, with a pattern so delicate, as to be mistaken for cirro-cumulus, but the rule is that the latter name must be applied only when the cloud has developed from cirrus or cirro-stratus, or looks as if it had. Alto-clouds are grey in their thickest parts.

The rain clouds must be given their official names not only when it is raining from them but also when it looks as if it is going to. Like the sheets, they are of two kinds, depending on whether they are formed in stable or unstable air. Nimbo-stratus comes with a depression; cumulo-nimbus as the depression goes away, or in thundery weather. The tops of cumulo-nimbus often "freeze" and become fuzzy; in the past this appearance was called "false cirrus," but the scientists objected because they said it was real cirrus, being composed of ice crystals. Some day they will get even nearer the truth and say it is real cirro-stratus, but meanwhile the official name is "Cirrus nothus."

There are 27 Latin words for various subsidiary types of the 10 main ones; for instance, alto-cumulus, alto-stratus and strato-cumulus can, like soup, be either *opacus* or *translucidus*—thick or clear. But the only important subsidiary names are:

Lenticularis.—Applied to any of the sheet clouds when they look as if they occupy the tops of long aerial waves, though the official definition doesn't say so.

Castellatus.—When the air above a cloud layer (usually alto-cumulus) is instable, each cloudlet grows upward and looks like a miniature cumulus.

Mammatus (or prefix *Mammato*).—Downward bulges on the under-surface of a cloud.

Fracto (prefix).—Applied to cumulus or stratus when in small bits.

A. E. S.

Courtesy of "Sailplane and Glider."