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? WHY THE WEATHER ?

Dr. Charles F. Brooks,
Secretary, American Meteorological Society,
discusses:

CLOUDS AS WIND INDICATORS

The clouds play an important part as indicators of the direction and speed of winds aloft. When the aviator or meteorologist wants to know conditions in the free air he may send up a pilot balloon and watch it travel as it rises, which does very well in a clear atmosphere, but is useless as soon as it disappears in a cloud. Or he may simply watch cloud motions.

A cloud, being merely an aggregate of liquid or solid particles, usually travel with the same speed and direction as the wind at its level. Rising thunderheads and the cumulus cloud in its early stages are exceptions since their air has just come from lower, slower levels. So also is the well-defined lenticular cloud, often called crest cloud, banner cloud, or billow cloud, which marks the standing crest of a wave when air is streaming over an obstruction, such as a mountain range. With these exceptions, clouds indicate the winds.

But from the angular motions of clouds, which alone usually are observable, actual speeds are not obtainable unless their distances are known. Rarely can a single observer establish the height, excepting in the case of clouds formed from air recently at the ground level, or such clouds as show city lights or intercept searchlight beams at a known distance. When cumulus clouds pierce several cloud layers it is a simple matter to get the relative heights of the layers and from a computed height of the cumulus base find the actual heights. Pilot balloon and cloud observations in conjunction give the most satisfactory results, for the balloon can be used to find the cloud heights as well as to indicate the winds at the cloudless levels.

(Tomorrow: Moist Air Indoors Saves Coal)
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