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? WHY THE WEATHER ?

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WINDS OF THE ARCTIC

It should be encouraging to aviators who are aiming for the Pole to know that the polar basin proper is practically free from storms. According to the observations on the "Fram" the maximum wind velocity there averaged under 25 miles an hour, and velocities over 40 miles per hour were very seldom experienced. Around the rim of the polar basin, that is, along the northern margins of the continents, cyclones or storms occur, making wind somewhat higher in this border region. At Spitsbergen, the maximum wind velocity at the surface is 45 miles an hour, but at an elevation of 500 meters, 27 miles an hour. Above 4000 meters (about 13,000 feet) winds are stronger than at the surface.

In the Arctic storms with strong pressure gradients do not produce as heavy winds as elsewhere, because of the great increase in deflective effect of the earth's rotation as one approaches the pole. Disregarding friction, a pressure difference of 0.1 inch in about 100 miles will make a wind of about 40 miles an hour on a nearly straight course at latitude 40, but only 30 miles an hour at latitude 60, and 25 at latitude 80. Taking the density of the air and friction into account, the relative polar velocities are even less, for cold dense air moves less readily and with greater friction than warmer less dense air. So conditions that will produce a gale in mid-latitudes can make only a brisk wind near the Pole.

Airplane routes must be determined by the prevailing winds. The Arctic winds appear to show a monsoon character. They blow out from the continents in winter and in towards these land masses in summer. Thus, on the north coast of Asia southerly winds prevail in winter, but in the spring the winds become north or northeast.

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