

Released upon receipt
but intended for use
October 7, 1931

? WHY THE WEATHER ?

Mailed September 30, 1931

By Charles Fitzhugh Talman,
Authority on Meteorology.

AIRSHIP WEATHER STUDIES

Last summer's Arctic cruise of the airship "Graf Zeppelin" revealed facts of striking interest concerning atmospheric conditions over the North Polar basin and at the same time demonstrated the utility of such craft for meteorological investigations in high latitudes. The history of past exploration has made us familiar with the great prevalence of foggy and cloudy weather in summer over the Arctic Ocean, but before explorers took to the air little was known about the vertical extent of such conditions. The "Zeppelin" found that fog was general over the waters but not over the lands of the Arctic. This sea fog formed, however, a relatively thin blanket, its thickness varying from a few hundred to a thousand feet. Its billowy upper surface was sharply defined. The airship cruised in the clear air and sunshine just above the fog layer.

The temperature of the air above the fog was constantly a few degrees above freezing. The fog is due to the condensation of moisture from relatively warm, moist air under the cooling effect of the sea water below, which is a degree or two below the freezing point; and the fog-laden air remains at a low level because of the marked "temperature inversion." Thus it seems that while marine navigation is badly hampered by fog in the Arctic regions, aircraft in flight over these regions should not find it an obstacle.

The "Zeppelin" made a number of measurements of temperature, humidity and barometric pressure within the fog layer by means of apparatus lowered from the ship by a wire, and also used successfully Prof. Molchanov's new radio sounding-balloons, which send automatic reports of the meteorological conditions encountered during their ascents.

(All rights reserved by Science Service, Inc.)

SCIENCE SERVICE
21st and Constitution Ave.
Washington, D.C.