



AUTOMATIC WEATHER REPORTING—This shows a typical unmanned station used by the Department of the Navy. Electric generators driven by gasoline engines allow it to operate some two months without attention.

meteorological instruments is not a complicated matter. In the radiosonde, for instance, the electric hydrometer used contains a lithium chloride material that absorbs moisture. The higher the humidity, the greater the amount of electricity it transmits.

The temperature is measured by a ceramics resistor. As it gets colder, fewer electrons flow through the resistor. A diaphragm, which contracts and expands with the pressure of the surrounding air, measures atmospheric pressure. The diaphragm as it moves makes a changing electrical contact.

Weather forecasting for days ahead, as well as for 24-hour forecasting, needs constant information from many strategically-placed reporting stations. Some of these are great ocean regions where there is no land for land-based stations.

The weather over the Pacific far offshore from the continent affects the Pacific coast. Conditions over the Atlantic east of Florida must be known by pilots taking off for transoceanic flights. In these, and other areas, airborne weather-reporting stations are now in use.

Westward daily flights circling over the Pacific from California to Alaska by Department of the Air Force planes are reporting hourly the conditions encountered. Daily flights in the Bermuda-

Florida and the West Indies region are reporting Atlantic conditions.

An adapted automatic station, similar to those used on land can be used on these planes. It would probably furnish a better system than the one used now by some planes on which readings are taken by crew members, and the data transmitted to shore bases by radio.

Weather reports are international in interest. Some day, through international cooperation, thousands of automatic and other stations will cover the world—for the benefit of all.

Science News Letter, November 8, 1947

GENERAL SCIENCE

Small Navy Force Returns To Map Antarctic Area

➤ A SMALL Navy expedition of two ships and approximately 450 men will leave this month for the Antarctic to continue some of the projects begun by last year's large task force into the southern polar continent.

Two icebreakers, the USS Edisto and the USS Burton Island, will make the long voyage south with a party of military and civilian scientists. The Edisto will leave an East Coast port, probably Norfolk, Va., early this month, while the other icebreaker will depart from

San Pedro, Calif., about Nov. 20. The vessels will meet at Samoa early in December before proceeding to the Antarctic.

Chief job of the expedition will be to continue the mapping of the least-known continent. This will include further study of the Antarctic "oases", discovered early this year by the 1947 expedition.

The first postwar Navy venture into the Antarctic, which sailed less than a year ago, was the greatest in history. Four thousand men and a dozen ships comprised the task force which was commanded by Rear Adm. Richard H. Cruzen, now senior member of the Naval Review and Clemency Board.

Lt. (jg) R. G. Thompson of the Navy's Hydrographic Office will head a group of civilian and military scientists who will conduct mapping work on the expedition.

The ships will head into the Ross Sea and visit the famous base of retired Rear Adm. Richard E. Byrd, Little America. At Little America a check-up will be made on weather and time effects on equipment left there last year.

The expedition will be in the Antarctic for that continent's summer, our winter months.

Science News Letter, November 8, 1947



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