

ARCTIC OCEAN RESEARCH

Irene M. Cotell
Air Force Cambridge Research Center

The discussions of Arctic Ocean research presented in this program are intended to provide a cross sectional view of the nature, extent, and objectives of the various studies being sponsored by GRD at the Drifting Stations. The history of research conducted by GRD in the Arctic Ocean extends nearly a decade. The basic program has remained unchanged except for improvements in methods, new ideas concerning the research problems, and better instrumentation. Investigations include gravity and magnetic observations, ice studies, oceanographic observations, submarine geophysical measurements, ice movement studies, marine biological research, and micrometeorological observations.

The early GRD research sites were located in the Beaufort Sea. Geophysical stations were later established on ice island T-3, 1952-1955; Ellesmere Ice Shelf, 1954; and most recently, dual programs were set up on Drift Stations Alpha and Bravo (T-3) throughout the International Geophysical Year. At the termination of the IGY, the need for continued observations in the Arctic Ocean was apparent to all concerned with polar research. The Department of Defense, as a result, authorized an extension of logistical support for the two stations. Alpha, which had been evacuated in November, 1958, was replaced in the spring of 1959 by Station Charlie, another ice pack station. Support and maintenance for both stations are now provided by the Alaskan Air Command at the 11th Air Division, Ladd Air Force Base. Support personnel for each station averages fifteen. Each station will accommodate approximately twelve scientists.

GRD research is one phase of the total scientific program at the stations. Several research organizations conduct concurrent investigation. While each effort is independent, the individual programs are mutually complementary and provide an integrated study of the Central Arctic from the earth's crust, through the sea and ice into the atmosphere.

GRD has contracted with several organizations to bring the necessary broad skills into the diversified aspects of the work. Contractors engaged in Arctic Ocean research are the Lamont Geological Observatory, U. S. Geological Survey, Arctic Institute of North America, Dartmouth College, and Woods Hole Oceanographic Institution.