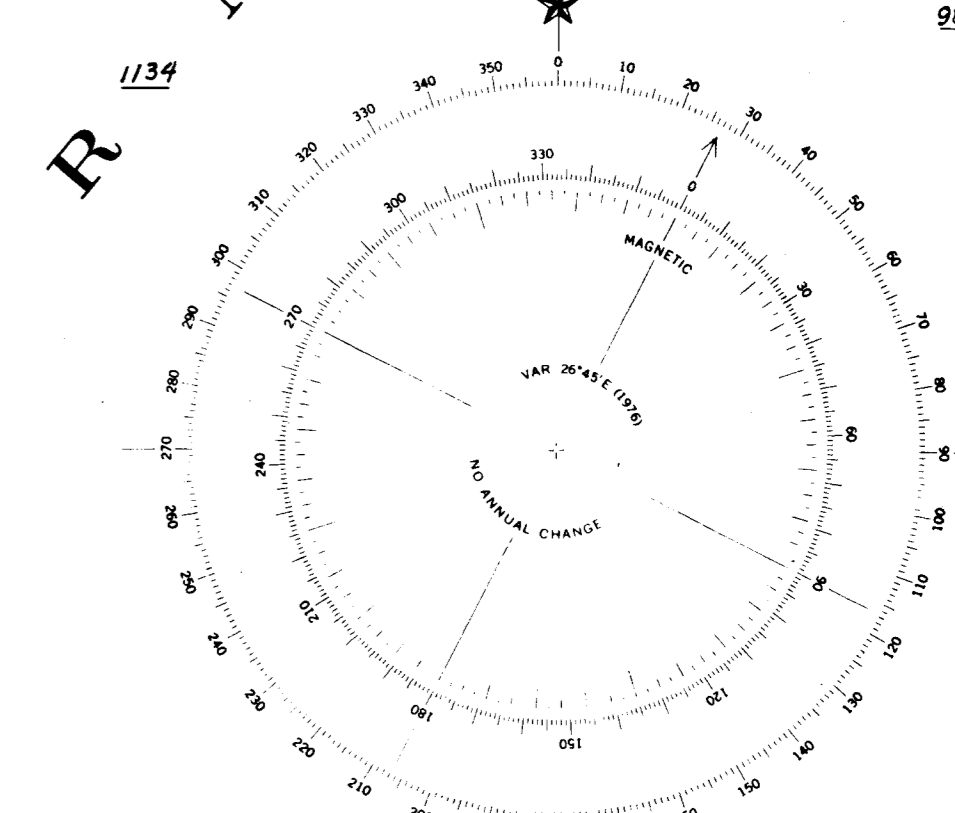
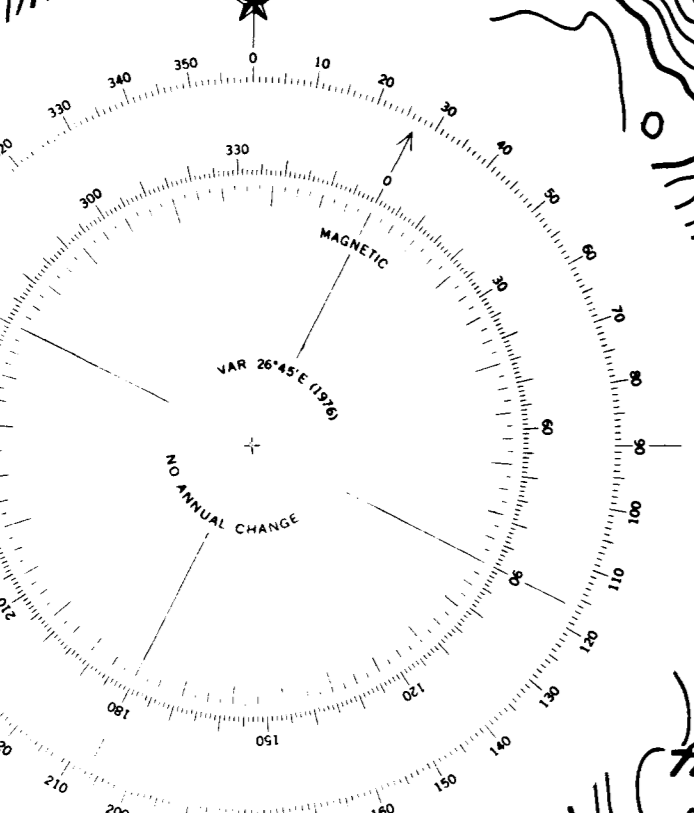


COLUMBIA GLACIER

ICE FRONT AUG. - SEP. 1977



- EXPLANATION**
- SCALE 1:20,000
- 26 Soundings (in feet)
 - 200 Soundings transferred from NOAA Chart 16798
 - 1000 Soundings greater than 1000 feet
 - Rock much dangerous to navigation
 - Sunken rock dangerous to navigation
 - Sand or gravel beach
 - Cobble beach
 - Lighthouse
 - Transmission station
 - Temporary triangulation station (unmarked)
 - Water station (temporary)

The following locally used names are unofficial:

- DALLI BAY
- FIRST COVE
- LEIBEL PASS
- JOSE MARSH
- WHITLOCK PT
- HUNT BEACH
- EDGE LAGOON

Introduction

This bathymetric plot was compiled principally from data collected during the spring and summer of 1977 by the U.S. Geological Survey as part of a larger project to predict iceberg discharge of Columbia Glacier. Bathymetry was available in the area prior to the study. These previous data on water depths were compiled in the course of extending the triangulation net from previously located NOAA stations, using up and surveying weather instruments, mainly daily (inter-frequency) surveys, and running advection profiles.

Acknowledgments

This study was aided by instruments loaned and data provided by the National Ocean Survey, National Oceanic and Atmospheric Administration, the U.S. Coast Guard 17th District Office, Sitka, and the Marine Safety Office, Haines, provided invaluable logistical assistance. A precision depth recorder and tide gauge were provided by the Geologic Division, Office of Marine Geology, U.S. Geological Survey.

How the data were compiled

During the season four different depth recorders were used in the following order: (1) Raytheon DE 739, 100 kHz, reading to 600 feet (2) Bathy SL 600C, 100 kHz, reading to 100 meters (3) Bathy SL 600, 200 kHz, reading to 500 fathoms, and (4) in conjunction with the latter on selected lines, (5) a transducer advection profiler.

None of the above instruments was checked in water depths greater than 100 feet, and considerable spread was obtained by the different sounders at extreme depths. The DE 739 and the SL 600C gave readings approximately 10 percent greater than those obtained with the SL 600. The SL 600C, however, had both recently been calibrated, their data is assumed to be more reliable. Soundings obtained by the different systems were not adjusted, and were recorded as such showing differing depths the shallower readings are judged to be the more accurate. The bathymetric data from temporary tide recorders in Columbia Bay indicated these data to be accurate within about 1 foot of measured time.

Icebergs

Especially during summer and fall months, quantities of glacier ice in the form of small to medium sized icebergs (up to 100 feet or more long) are discharged from Columbia Glacier. Depending on the rate of discharge, which fluctuates greatly from day to day and with tidal currents and wind conditions, icebergs may be present in all the waters shown on this chart. Icebergs, which are present in Columbia Bay and in the waters north of Glacier Island, which, on occasion, are encountered with ice as to render the area inaccessible to shipping. Less frequently, icebergs may drift into Prince William Sound and west of Glacier Island. Navigators are advised to use special caution in this area, as icebergs are frequently submerged and particularly dangerous to shipping.

Notes

Use of brand names or model numbers in this report does not imply endorsement by the U.S. Geological Survey.

INTERIM BATHYMETRY OF COLUMBIA BAY AND APPROACHES, ALASKA

By
AUSTIN POST
1978

SCALE 1:20,000
DATH: 15 APPROXIMATE LOWER LOW WATER SOUNDINGS IN FEET

Base from U.S. Geological Survey topographical maps: Alachaga A-1; Barstow A-1; Georff D-1; and Corcora D-1. Scale 1:63,360. Shorelines relative to air photos.