

76048

Cruise Report

Tug WHITEFOOT

Dec. 22-23, 27-29, 1976

RoscoP sent  
31 Jan 76  
JR

B. Butman  
USGS



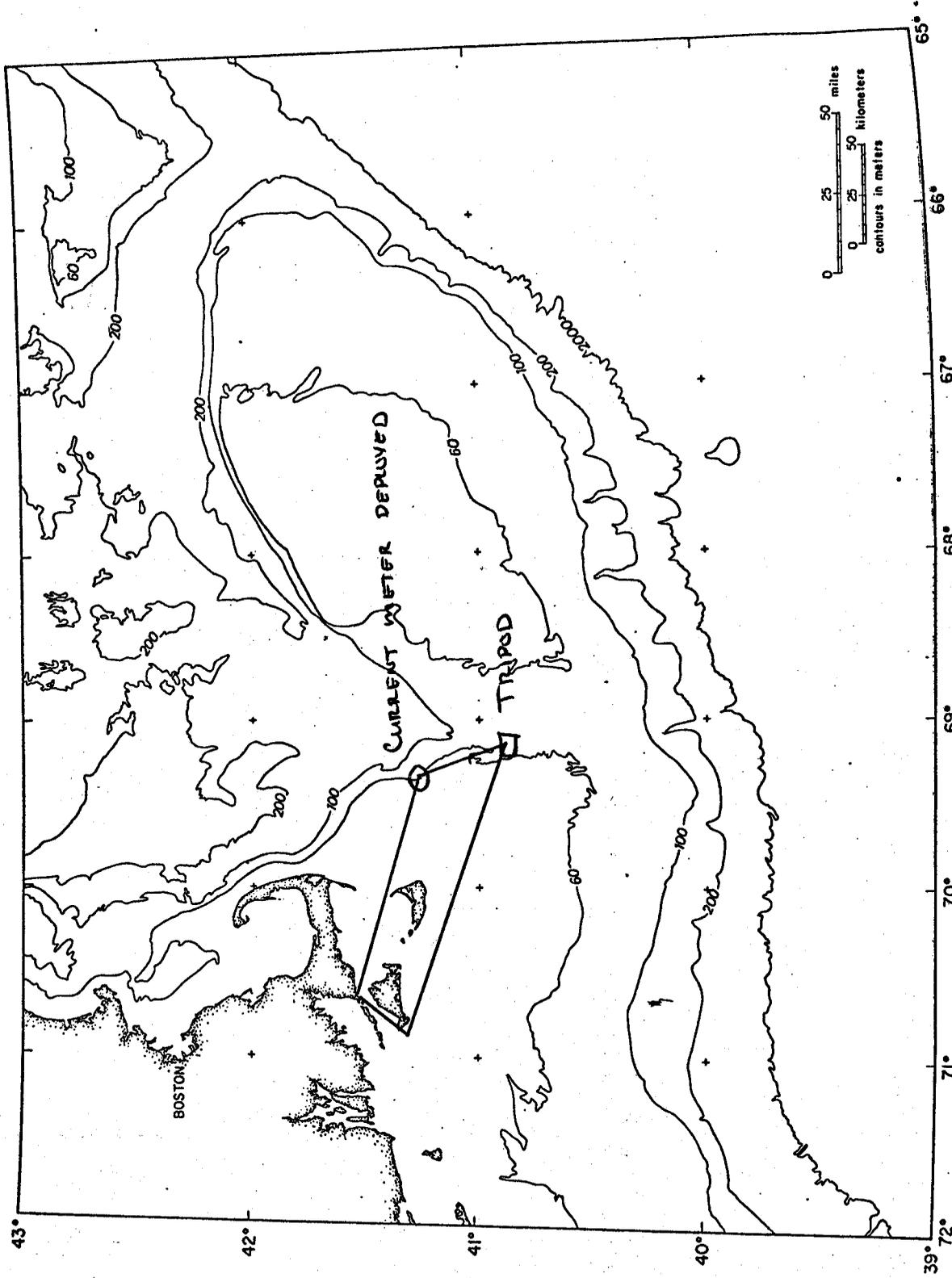
Dec. 28 1045 Deploy mooring  
 1400 Deploy USGS Tripod Mooring 121  
 1500 Underway to Woods Hole, bottom sampling  
 Dec. 29 0700 Arrive Woods Hole

Tabulated Information:

- a. Days at sea
- b. Instrumentation deployed  
 Mooring 123 (40 14.0, 69 22.5) current meter  
 Mooring 121 (40 53.4, 69 09.6) tripod
- c. Stations  
 grab samples
- d. Total trackline approximately 200 mi.

*→ 2*

*6 max days*



WHITEFOOT CRUISE TRACK DEC. 27-29, 1976

### Station Locations

<u>Sta. No.</u>	<u>Date</u>	<u>Lat.</u>	<u>Long.</u>	<u>Depth</u>	<u>Sample</u>
1	28 Dec. 1976	40°57.5'	69°25.5'	85'	Van Veen grab - sand
2	28 Dec. 1976	40°58.5'	69°29.9'	125'	No sample - hard bottom
3	28 Dec. 1976	40°59.0'	69°59.6'	35'	Van Veen grab - sand



# United States Department of the Interior

## GEOLOGICAL SURVEY

January 3, 1977

In response to the recent grounding of the ARGO MERCHANT, and as part of an ongoing program designed to study currents and sediment transport on the Georges Bank region of the New England Continental Shelf, the U.S. Geological Survey, Woods Hole, Mass. has deployed six current meters and two bottom monitoring instruments on the continental shelf. The current meter moorings are a cooperative effort with the Woods Hole Oceanographic Institution, the Bureau of Land Management and EG&G.

The objectives of the study are to assess possible consequences of the ARGO MERCHANT oil spill. Specifically, the instruments are deployed to:

1. Define the subsurface currents pattern in the Nantucket Shoals region, particularly the net flow across the Shoals,
2. Define the subsurface currents on the southern flank of Georges Bank.
3. Monitor bottom conditions, and direction and frequency of sediment movement. Of particular interest is the amount of oil (if any) found in the bottom sediments.

The current meters measure current speed, current direction, and temperature. The bottom monitoring instrument package (tripod) measures current speed and direction, pressure (at wave frequencies and lower), temperature, and light transmission (a measure of suspended matter concentration). The package also takes a picture of the bottom every four hours to visually record changes in bottom conditions.

It is requested that all fishing activity and other scientific studies remain well clear of these sites to avoid possible loss or damage of instruments and fishing gear.

The instruments are located at the following locations:

1. Southern Flank of Georges Bank:

Latitude 40°51.2'N  
Longitude 67°24.7'W  
Depth: About 85 m



(1. Cont.)

Instrumentation: Two AMF VACM current meters on a subsurface mooring. Instruments at 45 and 75 m. Bottom monitoring tripod.

Surface Markers: Site is marked by four surface buoys. The buoys are red or orange, 5' diameter spheres with 6' towers. Unlighted.

2. Nantucket Shoals:

Approximately 4 mi. WSW of Boston Approach Channel Buoy 'BB'

Latitude: 40°14.0'N  
Longitude: 69°22.5'W  
Depth: About 60 m

Instrumentation: One AMF VACM current meter on a slack surface mooring. Instrument at about 13 m

Surface Marker: Site is marked by one surface buoy. The buoy is a 5' diameter red sphere with a 6' tower and is lighted with a 2 sec. white strobe and a 4 sec. white lamp.

3. Nantucket Shoals, Great South Channel:

Approximately 8.5 mi. NW of Boston Approach Channel Buoy BA

Latitude: 40°53.4' N  
Longitude: 69°09.6' W  
Depth: 70 m

Instrumentation: Bottom monitoring tripod

Surface Marker: Site is marked by one surface buoy. The buoy is a 5' diameter red sphere with a 6' tower, and is lighted with a 2 sec. white strobe and a 4 sec. white lamp.

4. Nantucket Shoals, near Davis Shoals.

(Near Coast Guard Whistle "8DS" about .7 mi. S)

Latitude: 40° 42.5' N  
Longitude: 70°00.5' W  
Depth: About 40 m

Instrumentation: One Geodyne 850 current meter on a subsurface mooring. Instrument located approximately 18 m from surface.

Surface Marker: No surface marking

5. Nantucket Lightship

Latitude: 40°30.8'N  
Longitude: 69°29.3'W  
Depth: About 60 m

Instrumentation: Two EG&G CT3 electromagnetic current meters on a subsurface mooring. Instruments located at 18 and 28 m from the surface

Surface Marker: No surface marking

Figures:

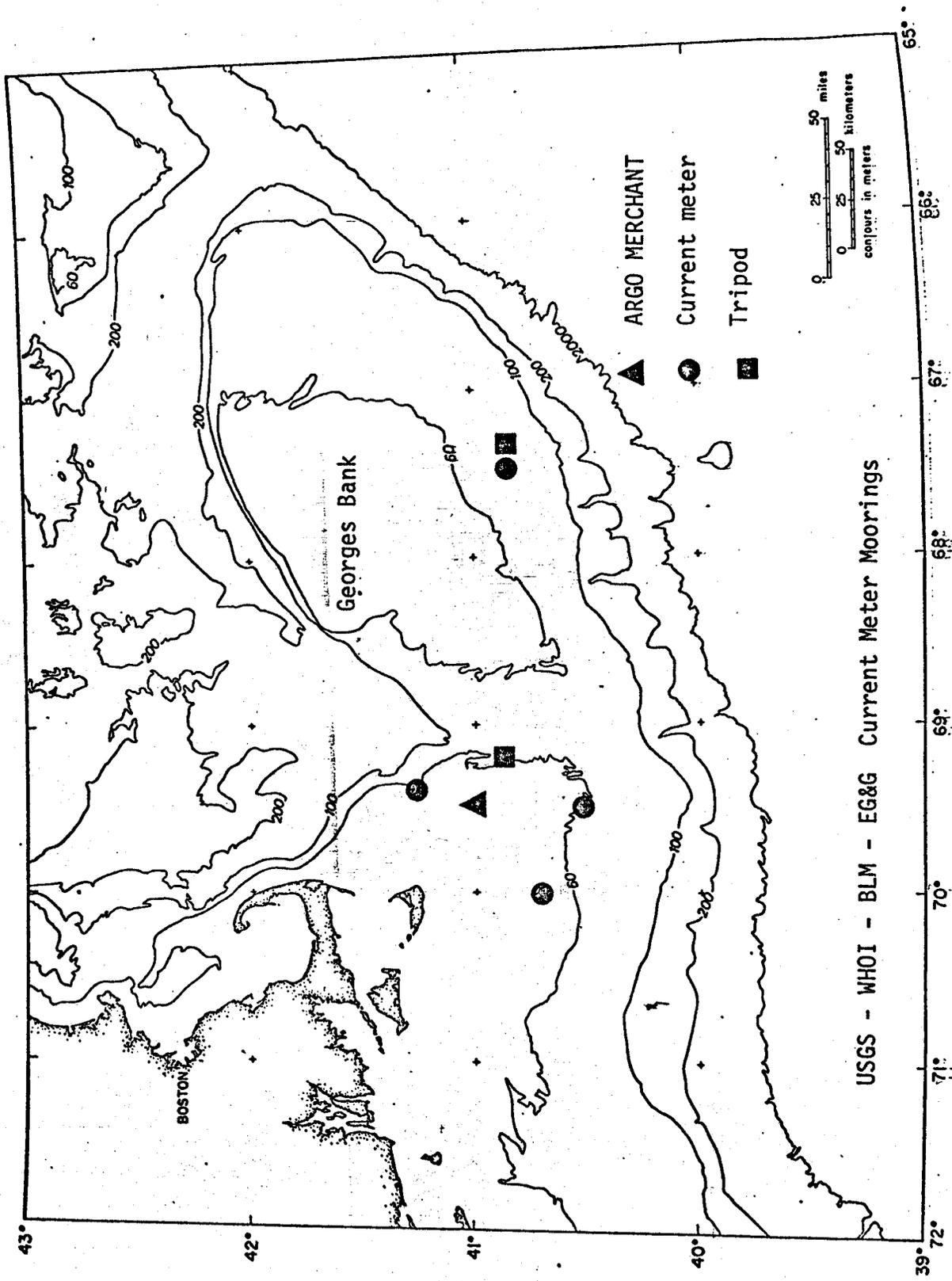
Map of instrument locations

Outline drawing of bottom monitoring package ('tripod')

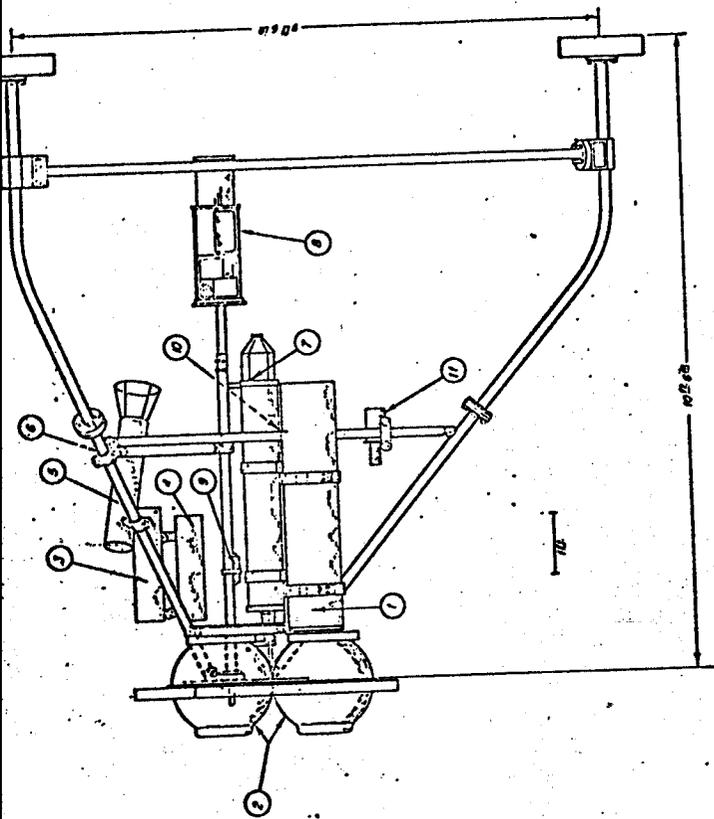
For information: Bradford Butman  
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Instruments deployed 28 December 1976 from R/V OCEANUS and TUG WHITEFOOT

Mooring #1 - Deployed 5 December 1976 from R/V OCEANUS



USGS - WHOI - BLM - EG&G Current Meter Moorings



- ATTACHED COMPONENTS.**
- 1 ROPE CANISTER
  - 2 RECOVERY FLOATS
  - 3 BENTHOS CAMERA
  - 4 CAMERA BATTERY PACK
  - 5 STROBE LIGHT
  - 6 TRANSMISSION METER/REHELIOMETER
  - 7 CURRENT METER
  - 8 PRESSURE SENSOR
  - 9 SEA DATA ELECTRONICS/RECORDER
  - 10 TILT PINGER

