81032rpt

CRUISE REPORT

AST 81-2

Vessel: R/V ASTERIAS
Cruise Number: AST 81-2
Project: New England Coastal Geology (9540-00479)

Area of study: Block Island Sound
Cruise dates: 10-18 September 1981
Port stops: 10-13 September Block Island Harbor (Payne's Marina)
14-18 September Noank, Connecticut (Univ. Conn. Marine Facility)

Personnel: Sally Needell, Chief Scientist, USGS
Ralph Lewis, Geologist, Conn. Dept. of Environmental Protection
Frank Jennings, Electronics technician, USGS
Arthur D. Colburn, Captain, R/V Asterias, WHOI

Cruise objectives: (1) To define the geology and shallow structure of Block Island Sound and eastern Long Island Sound
(2) To determine the geologic framework and Quaternary development of Block Island Sound
(3) To identify and map potential geologic hazards.
(4) To complement similar study in Rhode Island Sound.

Equipment: Shipboard Systems

1. EG&G Uniboom Seismic Profiling System (EPC Graohic Recorder)
2. EDO Western Sidescan Sonar System (EDO Graphic Recorder)
3. Northstar 6000 Loran-C Navigator and Repeater
4. Texas Instruments Silent 700 ASP Terminal (Navigation log)
5. EG&G Hydrophone Streamer
6. Hewlett Packard Instrumentation Recorder, Uniboom only
7. Teledyne Exploration High Resolution Amplifier

Operational Procedures

Seismic sound source/receiver position -10 meters astern
Seismic sound source/receiver separation -10 meters
Seismic recorder sweep rate -.25 seconds
Seismic sound source trigger interval -.5 seconds
Band pass filter setting- 400-4,000 Hz.
Sidescan sonar fish - off starboard beam
Sidescan slant range-varied 400,200,100 meters each side of vessel
Loran -C master transmitter- Sesnca, New York (9960 Northeast Chain)
Loran -C slave transmitters- W, Caribou, Maine and Y, Carolina Beach, North Carolina (9960 Northeast Chain)
Position logged at 5 minute intervals
Average ship speed- 5 knots

Cruise Narrative: 10 September: 1700 leave Woods Hole on route to Block Island
2200 arrive Block Island

11 September: Conduct uniboom seismics and sidescan sonar investigation.

12 September: Continue investigation. No sidescan sonar 0828-1250 due to heavy fog.

13-14 September: Continue investigation.

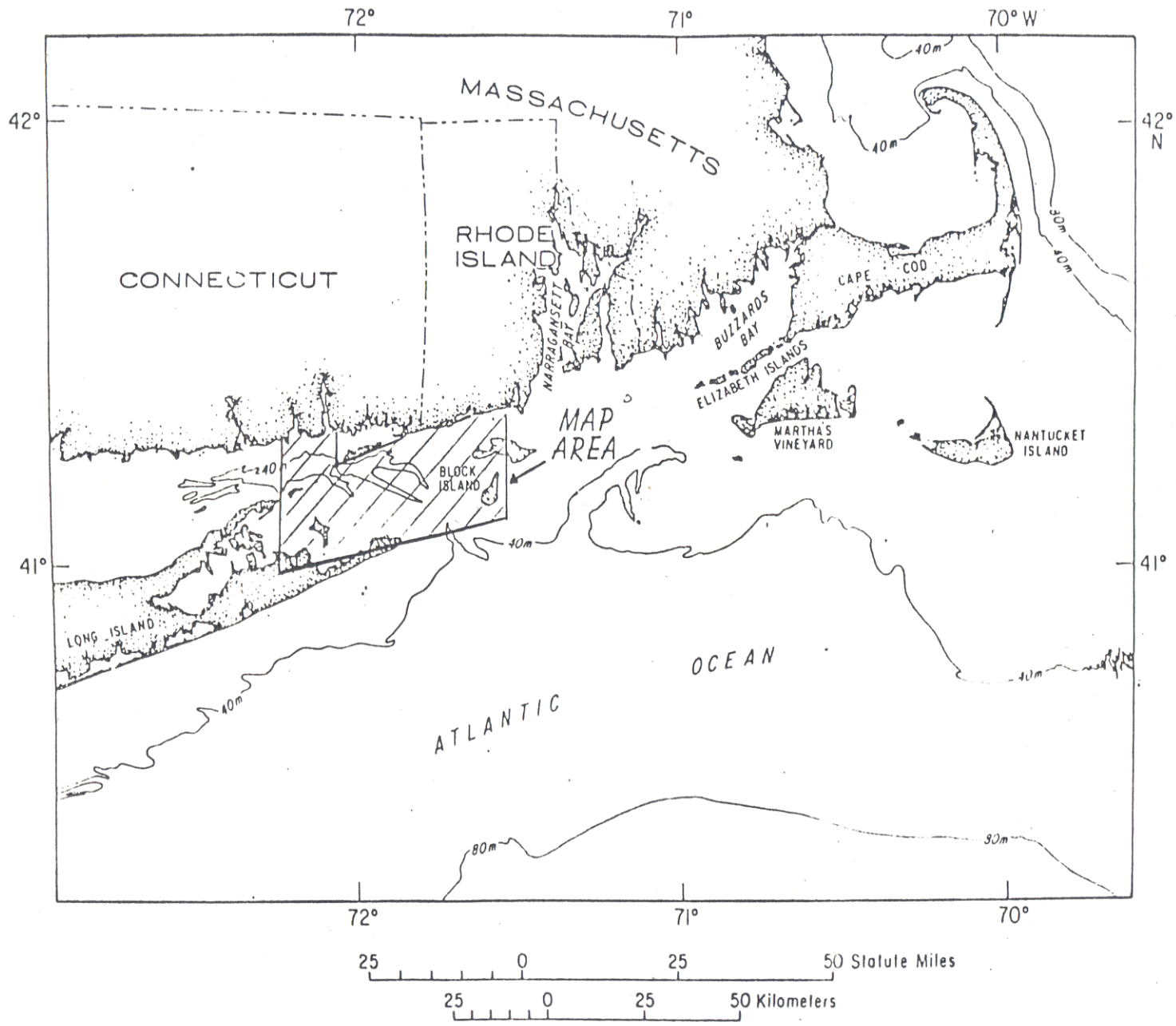
15 September: Continue investigation. No sidescan recording 0745-1010 due to heavy fog. 1420 sidescan recorder no longer recording.

16-17 September: Continue uniboom seismics investigation.

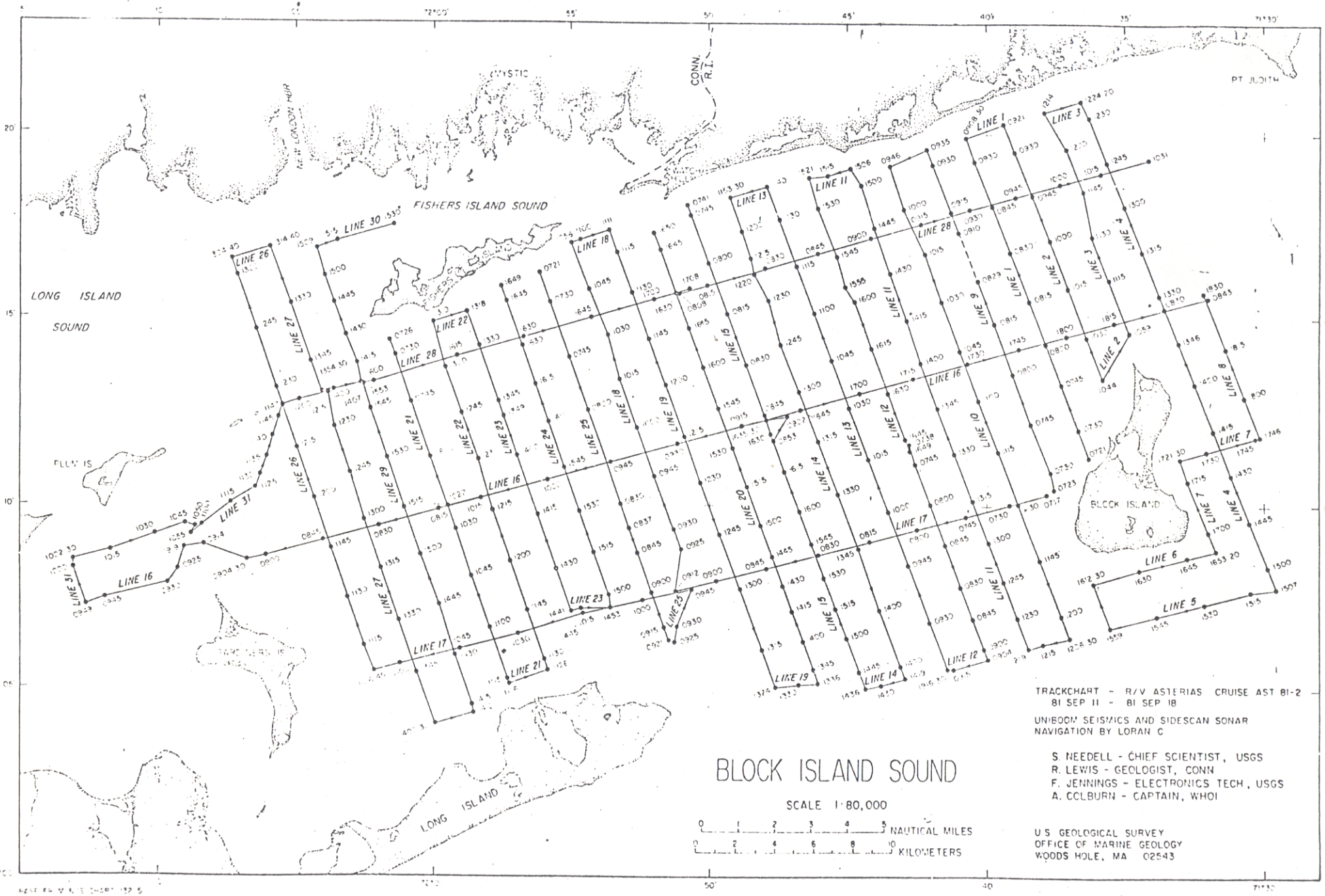
18 September: 1031 Complete survey. 1445 arrive Woods Hole.

Tabulated Information: Total working days = 8
Ship tracks
Line kilometers of high resolution seismic reflection profiling = 702 (379 nmi)
Line kilometers of sidescan sonar recording = 402 (217 nmi)

Trackchart and study area map attached.



STUDY AREA AST 81-2 10-18 September 1981 R/V ASTERIAS



BLOCK ISLAND SOUND

SCALE 1:80,000

0 1 2 3 4 5 NAUTICAL MILES

0 2 4 6 8 10 KILOMETERS

TRACKCHART - R/V ASTERIAS CRUISE AST 81-2
81 SEP 11 - 81 SEP 18

UNIBOOM SEISMICS AND SIDESCAN SONAR
NAVIGATION BY LORAN C

S. NEEDELL - CHIEF SCIENTIST, USGS
R. LEWIS - GEOLOGIST, CONN
F. JENNINGS - ELECTRONICS TECH, USGS
A. COLBURN - CAPTAIN, WHOI

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