

CRUISE REPORT
AST 83-2

Vessel: RV ASTERIAS
Cruise number: AST 83-2
Project: New England Coastal Geology (9540-00479)

Area of Study: central Long Island Sound (Clinton-New Haven, CT)
Cruise dates: May 23-June 4
Port stops: 23 May-Block Island (Payne's Marina)
24-29 May- Clinton, CT (Cedar Island Marina)
30 May-2 June- Branford, CT (Bruce and Johnson's Marina)

Personnel: Ralph Lewis, chief scientist, Connecticut Department of Environmental Protection
Robert Oldale, geologist, USGS (May 26) 1 DAY
Stewart Richards, GFA, USGS (May 27-June 2) 7 DAYS
Jack Connell, electronics technician, USGS
Arthur D. Colburn, Captain, RV ASTERIAS, WHOI

Cruise objectives:

- 1) to define the geology and shallow structure of central Long Island Sound.
- 2) to determine the geologic framework and Quaternary development of the study area.
- 3) to identify and map potential geologic hazards.

Equipment:

- 1) EG&G Uniboom seismic-profiling system
- 2) EDO Western sidescan-sonar system
- 3) Northstar LORAN-C navigation system
- 4) TI Silent 700 system to record navigation
- 5) Analog tape recorder to record Uniboom seismics

Operational procedures:

- 1) Seismic sound source/receiver position @10m astern
- 2) Seismic sound source/receiver separation @10m
- 3) Seismic source trigger interval=.25sec., .5 sec.
- 4) Band pass filter=400-4000Hz
- 5) Seismic recorder sweep rate=.25 sec.
- 6) Sidescan-sonar fish off stern
- 7) Sidescan slant range=200m each side
- 8) LORAN-C master transmitter= Seneca, NY
- 9) LORAN-C slave transmitters 9960 Northeast chain X and Y
- 10) Position logged at 5-minute interval

Narrative:

23 May Load vessel; 1400 depart Woods Hole, MA transit to Block Island, RI; test Uniboom system

24 May Transit Block Island to Clinton Harbor, CT; repair Uniboom sled

25 May Begin Uniboom profiling; analog tape recorder down; no sidescan recording

26 May-2 June Continue Uniboom profiling, intermittent sidescan profiling; transit to Woods Hole.

4 June 0100 arrive Woods Hole

Summary: Uniboom data were very good (excellent penetration and good resolution) except in areas where the acoustic signal was attenuated by gas in the sediments. Sidescan-sonar records were satisfactory.

Tabulated information:

Total working days: 12
Line kilometers of Uniboom profiling = 656 km (354 nmi)
Line kilometers of sidescan-sonar recording = 422 km (228 nmi)

Track charts attached.

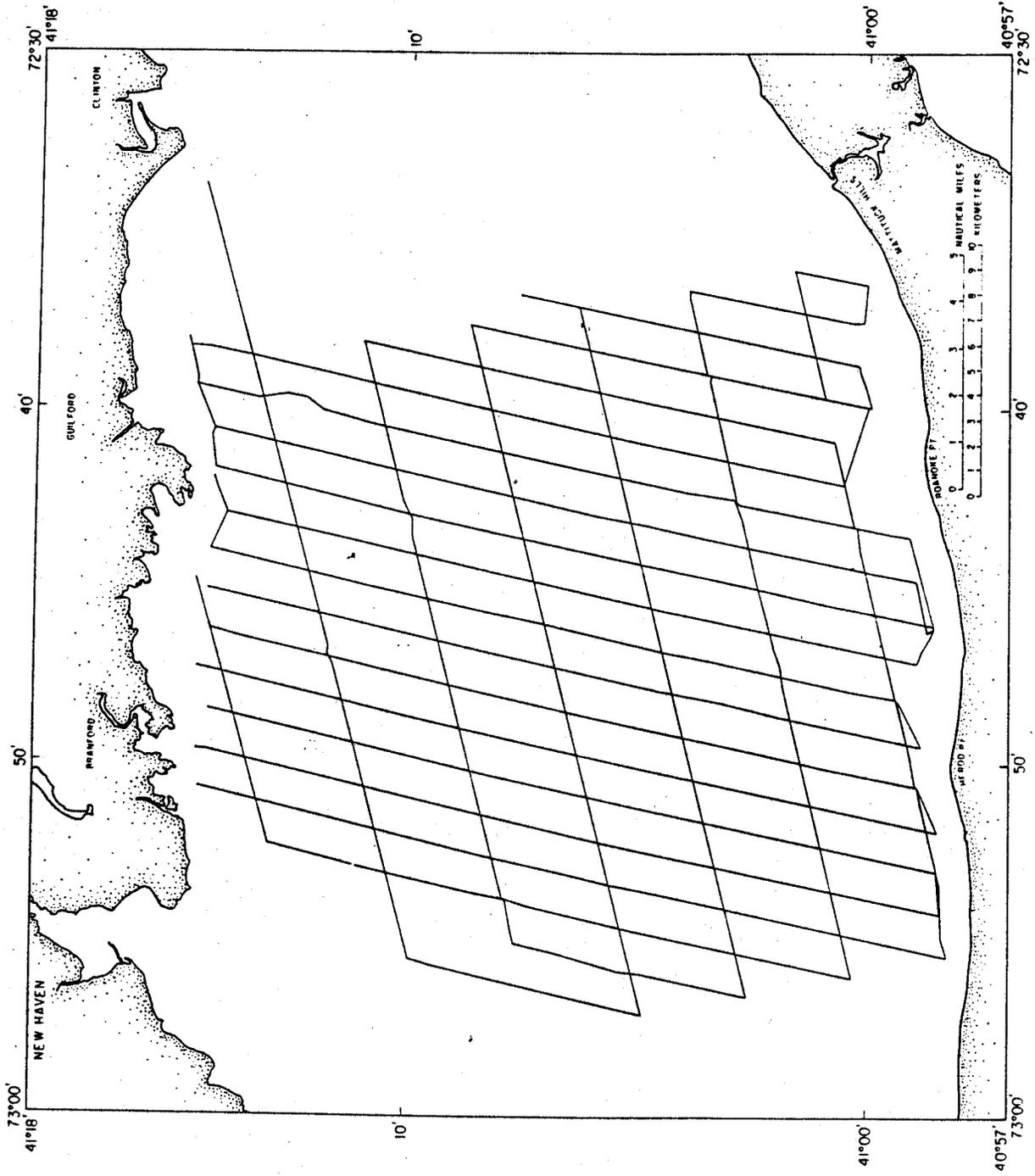


Figure 2. Location of Uniboom high-resolution seismic-reflection tracklines, cruise AST 83-2.

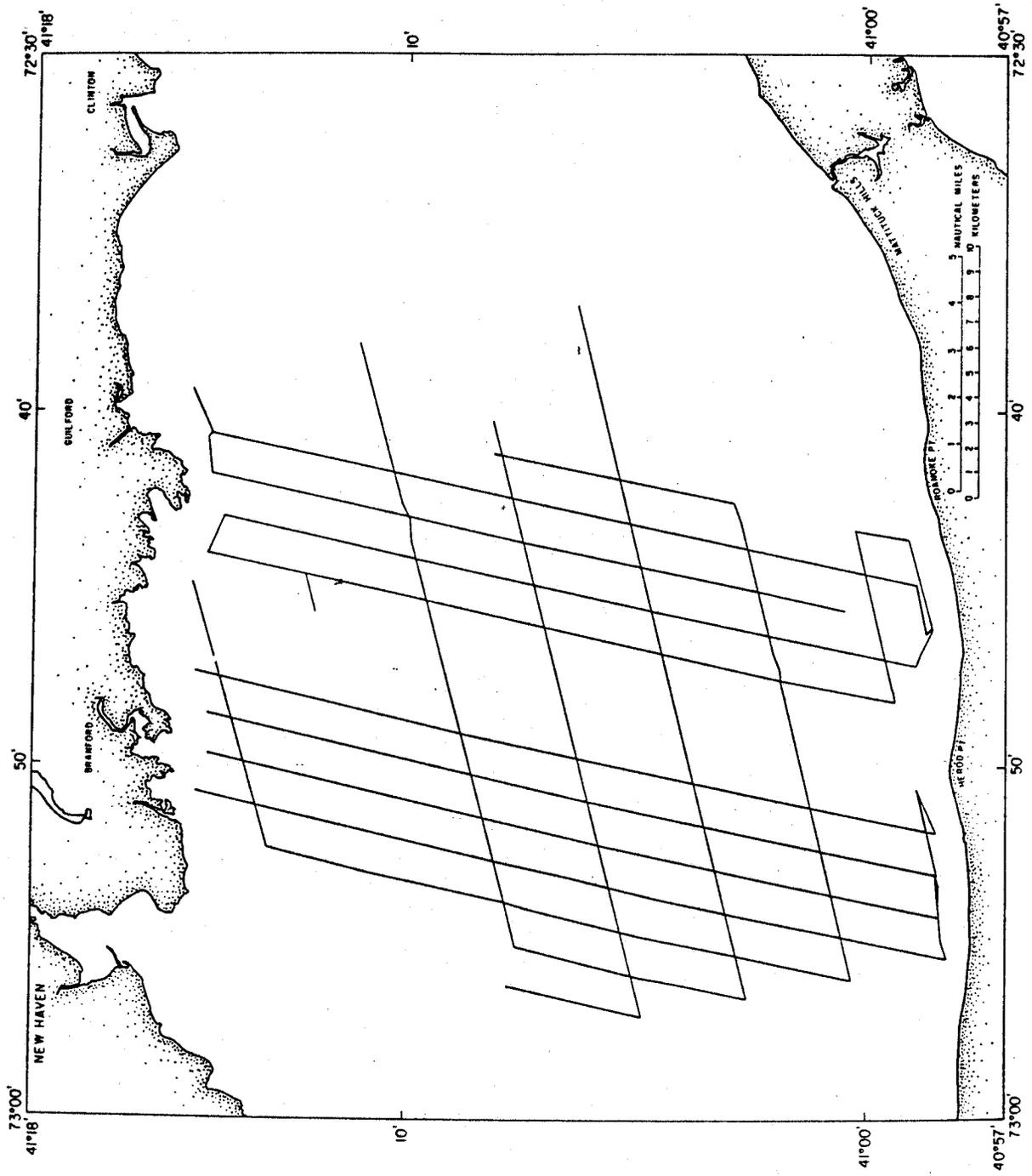


Figure 3. Location of sidescan sonar tracklines, cruise AST 83-2.