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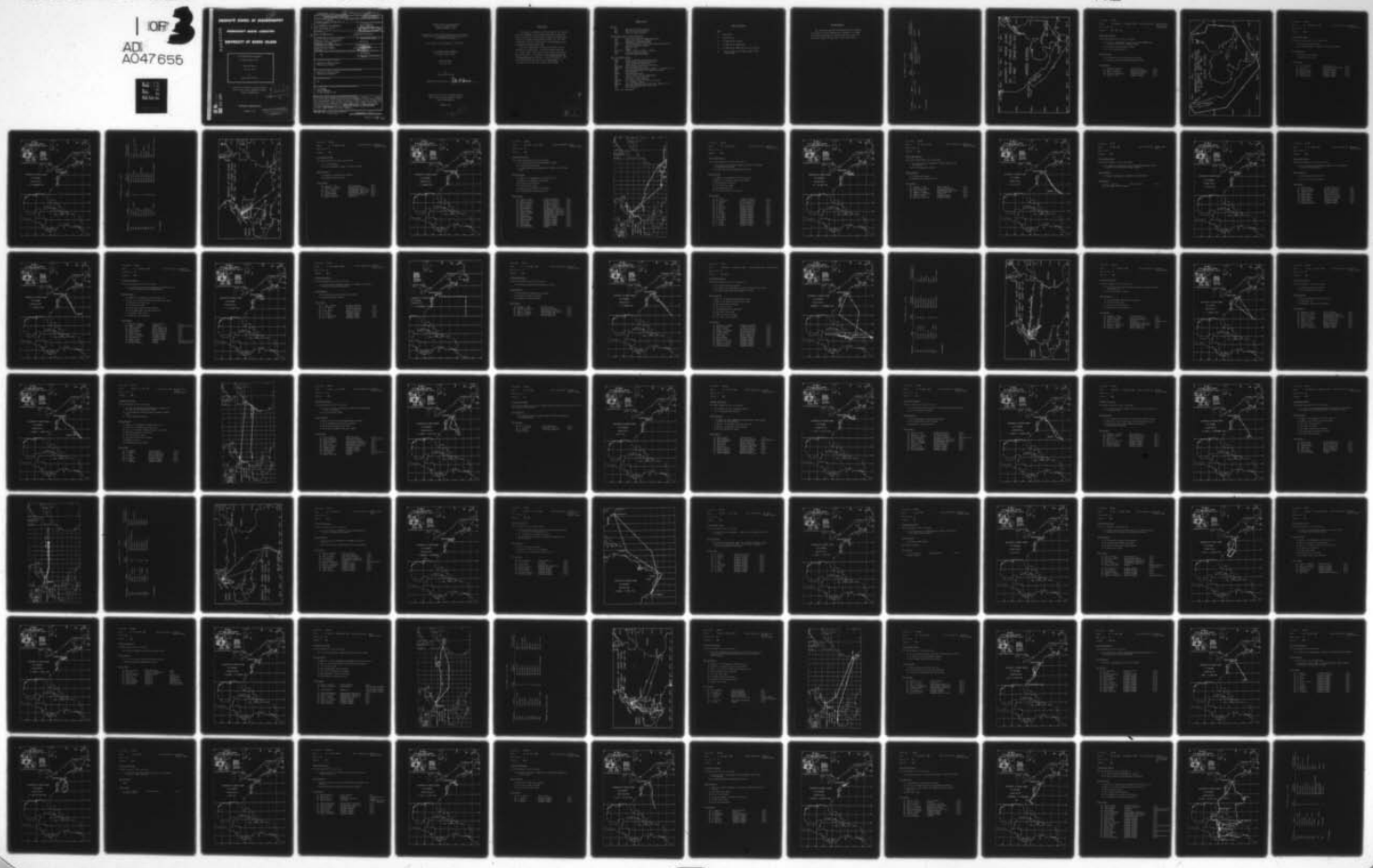

GRADUATE SCHOOL OF OCEANOGRAPHY

NARRAGANSETT MARINE LABORATORY

UNIVERSITY OF RHODE ISLAND

R/V TRIDENT CRUISE SUMMARIES

CY 1962 through CY 1971

Technical Report

Ref. No. 77-4

by

Edwin McB. Williams

Sponsored by the Office of Naval Research
Report under Contract N00014-76-C-0226
(Project ONR-083-165)

KINGSTON, RHODE ISLAND

NOVEMBER 1977

Unclassified 11/77 (14) URI/GSO-REF-77-4

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R/V TRIDENT
CRUISE SUMMARIES
CY 1962 through CY 1971

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report was prepared by the Data Archives group at GSO/URI. It is a summary of the operations of our research vessel R/V TRIDENT for CY 1962 through CY1971. For each calender year a listing of cruises is given followed by an index chart. Cruises have been summarized by: cruise number, dates, days at sea, funding, and general area of operation. A Program Description and Data Collected are itemized. Participants and their affiliation on each cruise are listed. A Cruise Chart follows each Cruise Summary.

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S/N 0102-014-6601

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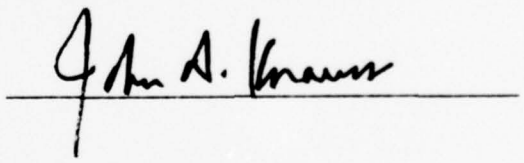
Graduate School of Oceanography
University of Rhode Island
Kingston, Rhode Island

R/V TRIDENT CRUISE SUMMARIES
CY 1962 through CY 1971

Technical Report
Ref. No. 77-4

by
Edwin McB. Williams

Approved for Distribution 

Sponsored by the Office of Naval Research
Report under Contract N00014-76-C-0226
(Project ONR-083-165)

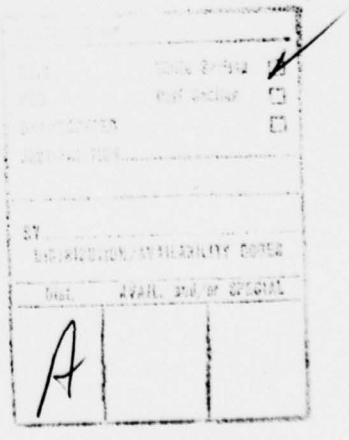
November 1977

See 1473

DESCRIPTION

This report is a summary of the operation of our research vessel R/V TRIDENT for the calendar years 1962 through 1971. Used in conjunction with the Graduate School of Oceanography, University of Rhode Island Technical Report, Ref. No. 76-2, it completes the cruise reporting of all R/V TRIDENT cruises undertaken from 1962 through 1975.

For each calendar year a listing of cruises is given followed by an Index Chart. Cruises have been summarized by: cruise number, dates, days at sea, funding, and general area of operation. In addition a brief Program Description and Data Collected are itemized. Scientific personnel, their titles and affiliations are listed as Participants. An individual Cruise Chart follows each cruise summary.



ABBREVIATIONS

Funding

NIH	National Institute of Health
NSF	National Science Foundation
ONR	Office of Naval Research

Program Description and Data Collected

CSTD	Conductivity-Salinity-Temperature-Depth
CTD	Conductivity-Temperature-Depth
GEK	Geomagnetic Electrokinetograph
JOIDES	Joint Oceanographic Institutions Deep Earth Sampling
MBT	Mechanical Bathythermograph
n.m.	Nautical Miles
O_2	Oxygen
Ocean Acre	$31^{o}30'$ - $32^{o}30'$ N, $63^{o}30'$ - $64^{o}30'$W
STD	Salinity-Temperature-Depth
XBT	Expendable Bathythermograph

Participants/Affiliation

BGRM	Bureau of Geologic Research and Mines
LDGO	Lamont-Doherty Geological Observatory
LGO	Lamont Geological Observatory
MIT	Massachusetts Institute of Technology
NAVOCEANO	Naval Oceanographic Office
NMWQL	National Marine Water Quality Laboratory (Kingston, R. I.)
NOIC	National Oceanographic Instrumentation Center
NUSL	(See USN-USL)
OE/URI	Ocean Engineering/URI
SIO	Scripps Institution of Oceanography
SUNY	State University of New York
UNH	University of New Hampshire
USBSF&W	U.S. Bureau of Sport Fisheries & Wildlife
USGS	U.S. Geological Survey
USN-USL	U.S. Navy-Underwater Sound Laboratory (Newport, R. I.)
WHOI	Woods Hole Oceanographic Institution
Yale	Yale University

Others self explanatory

Table of Contents

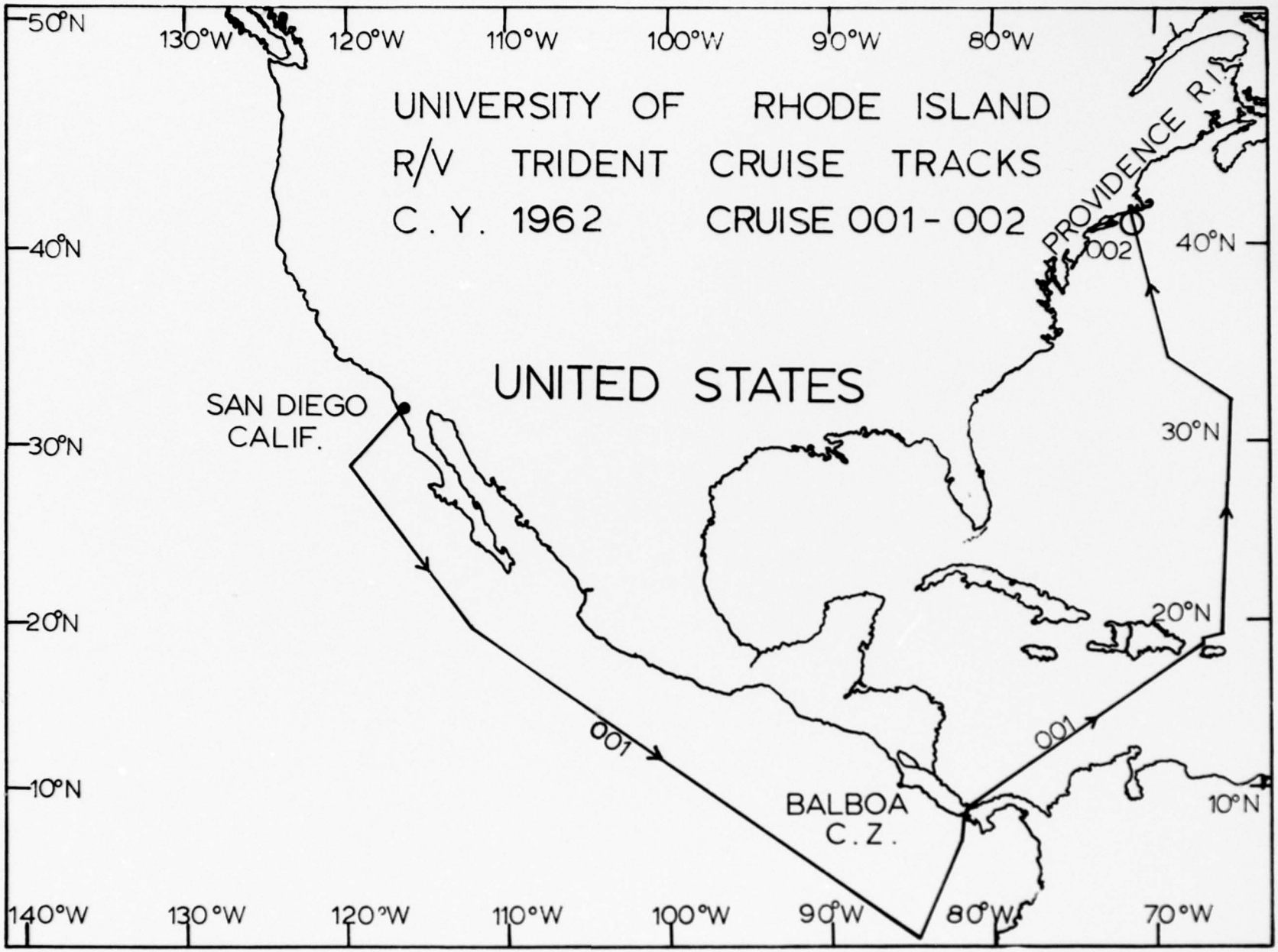
Acknowledgments

This report was compiled and reviewed with the generous assistance of Virginia Bowerman and Tran Quang. Mr. Quang contributed a good deal of time and planning in making up the yearly summary and individual cruise track charts.

R/V TRIDENT Cruises - CY 1962

Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
001	15 Sept. - 16 Oct.	29	East Pacific, Panama Canal, Caribbean, SW Atlantic	Sieburth
002	16-20 Nov.	6	NW Atlantic	McMaster

*All GSO/URI


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C. Y. 1962 CRUISE 001 - 002
UNITED STATES
SAN DIEGO
CALIF.
PROVIDENCE R.I.
002
001
001
BALBOA
C.Z.
50°N
40°N
30°N
20°N
10°N
130°W
120°W
110°W
100°W
90°W
80°W
140°W
70°W

Cruise No.: TR-001

Dates: 15 September - 16 October 1962 Area of Operation: Pacific Ocean, Panama Canal, Caribbean Sea

Days at sea: 29

Funding: ONR, NSF, NIH

Program Description

The primary objectives of this cruise were:

a) to deliver the URI/GSO research vessel R/V TRIDENT from San Diego, California, to Rhode Island

b) to perform bacteriological studies

c) to study sargassum weed

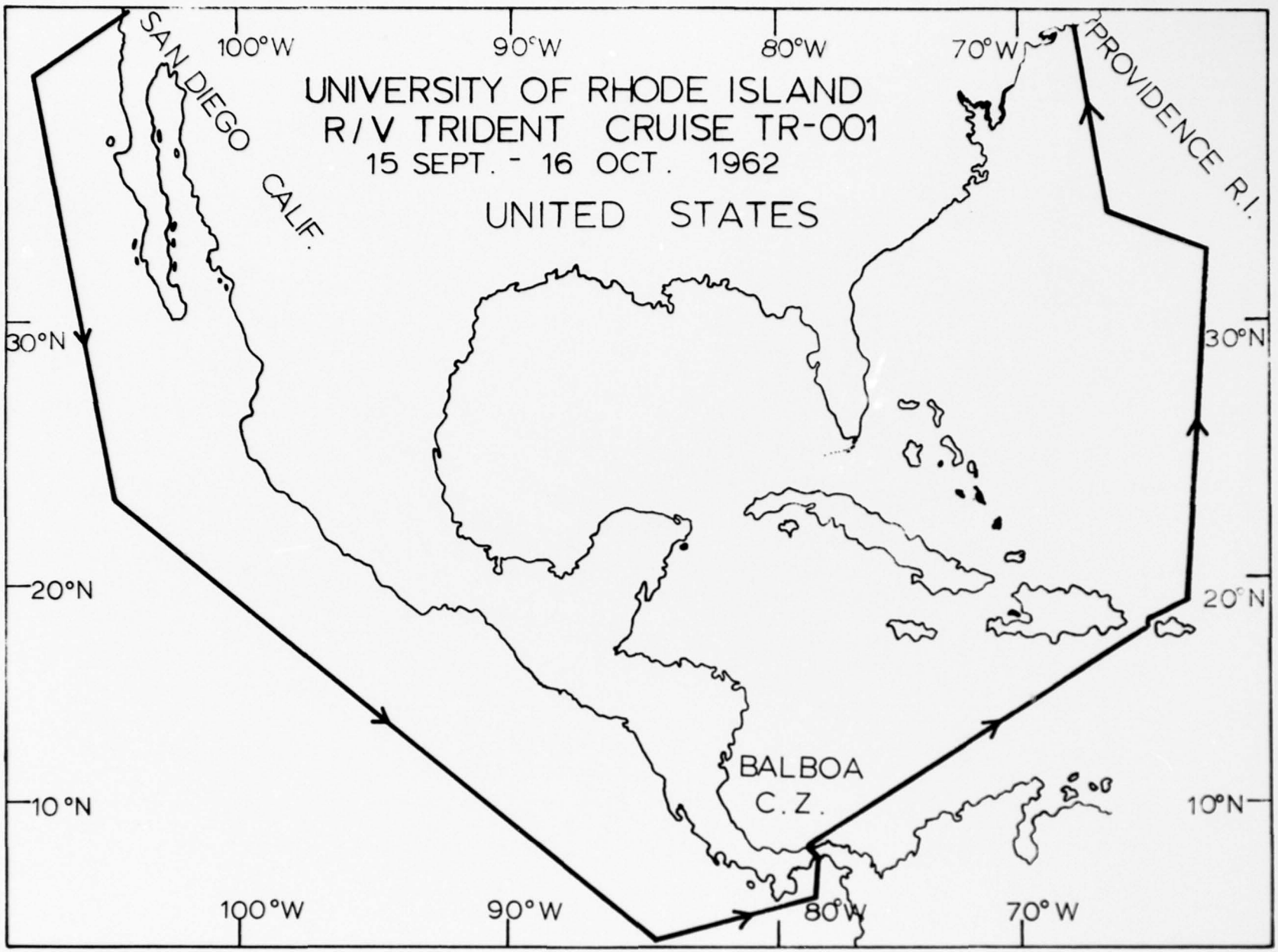
Data Collected

1) 45 bacteriological stations were completed

2) sargassum weed was collected between stations

Participants

Dr. John McN. Sieburth	Chief Scientist	U.R.I.
Dr. John T. Conover	Assistant Professor	U.R.I.
Mr. Merrill E. Bracci	Laboratory Technician	U.R.I.
Mr. Stanley B. Chenoweth	Graduate Student	U.R.I.
Mr. James F. Frey	Graduate Student	U.R.I.


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TR-001
15 SEPT. - 16 OCT. 1962
UNITED STATES
SAN DIEGO
CALIF.
PROVIDENCE R.I.
100°W
90°W
80°W
70°W
30°N
20°N
10°N
BALBOA
C.Z.

Cruise No.: TR-002

Dates: 12 - 20 November 1962 Area of Operation: Northwest Atlantic Ocean

Days at sea: 6

Funding: ONR

Program Description

The primary objectives of this cruise were:

a) to perform equipment tests

b) to obtain geological samples in Block Island Sound

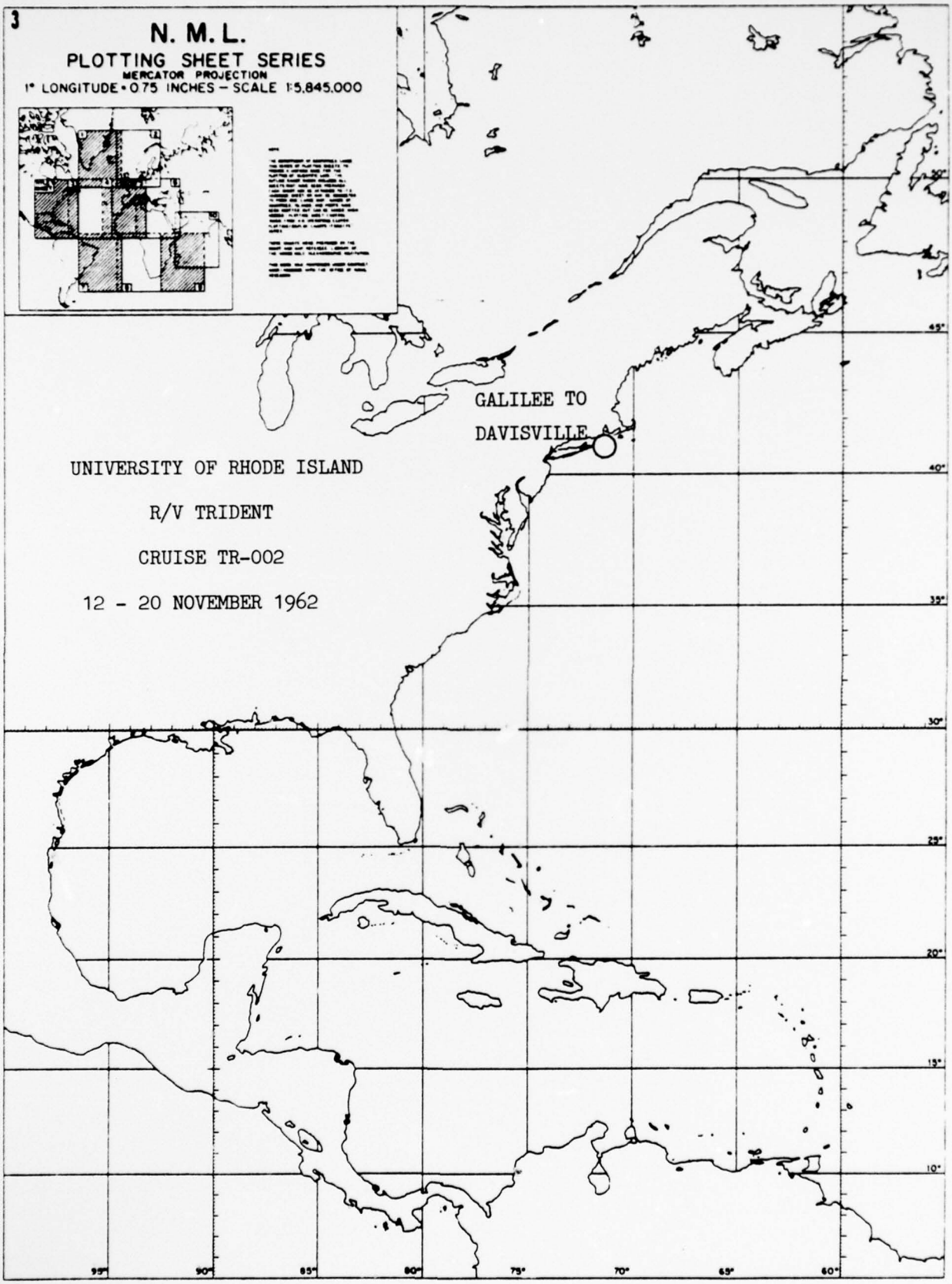
Data Collected

1) 80 grabs were recovered

2) equipment was tested

Participants

Dr. R. L. McMaster	Chief Scientist	U.R.I.
Mr. Jim Frey	Oceanographic Specialist	U.R.I.
Mr. Don Corrigan	Graduate Student	U.R.I.
Mr. Norman Hillman	Graduate Student	U.R.I.
Mr. Donald Phelps	Graduate Student	U.R.I.
Mr. Sheldon Pratt	Graduate Student	U.R.I.
Mr. Wilfred Savard	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
GALILEE TO
DAVISVILLE
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-002
12 - 20 NOVEMBER 1962
45°
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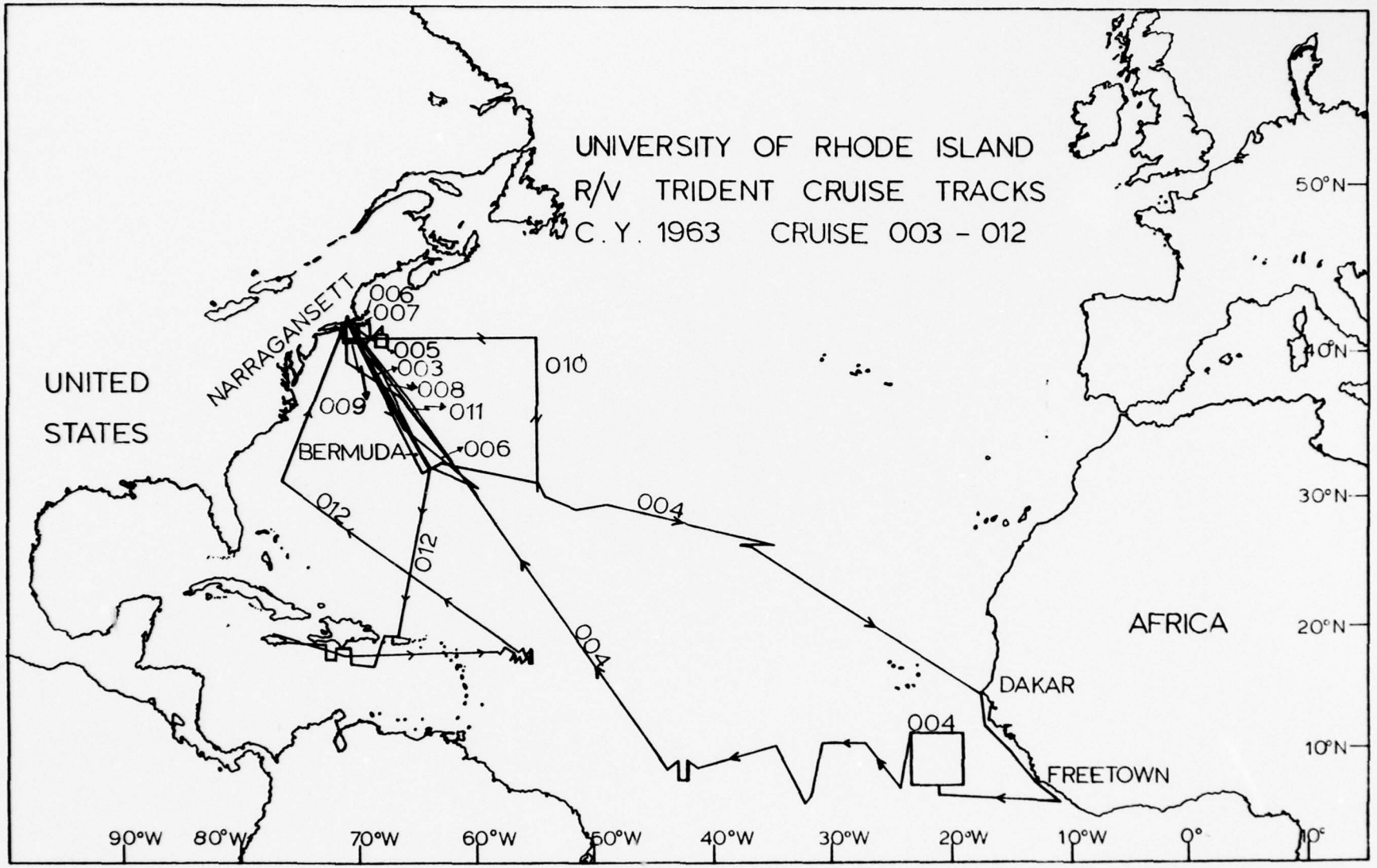
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

R/V TRIDENT Cruises - CY 1963

Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
003	5-19 Jan.	7	NW Atlantic	Fish
004	22 Mar. - 6 June	72	North Atlantic	Knauss, Fish, and others
005	24-28 June	5	NW Atlantic	Krause, Jeffries
006	6-20 July	15	NW Atlantic	Fish
007	26 July	1	Rhode Island Sound	Jeffries
008	3-10 Aug.	8	NW Atlantic	Schink, Smayda
009	16-30 Aug.	15	NW Atlantic	McMaster
010	7-21 Sept.	15	NW Atlantic	Sieburth, Conover
011	1-13 Oct.	13	NW Atlantic	Fish
012	1 Nov. - 13 Dec.	40	NW Atlantic, Caribbean	Smayda, Krause, Marshall

*All GSO/URI


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C.Y. 1963 CRUISE 003 - 012
UNITED
STATES
NARRAGANSETT
BERMUDA
AFRICA
DAKAR
FREETOWN
006
007
005
003
008
011
009
010
012
012
004
004
004
50°N
40°N
30°N
20°N
10°N
90°W
80°W
70°W
60°W
50°W
40°W
30°W
20°W
10°W
0°
10°

Cruise No.: TR-003

Dates: 5 - 19 January 1963

Area of Operation: Northwest Atlantic Ocean

Days at sea: 7

Funding: ONR

Program Description

The primary objectives of this cruise were:

a) to test equipment

b) to run bioacoustic studies in the Gulf Stream

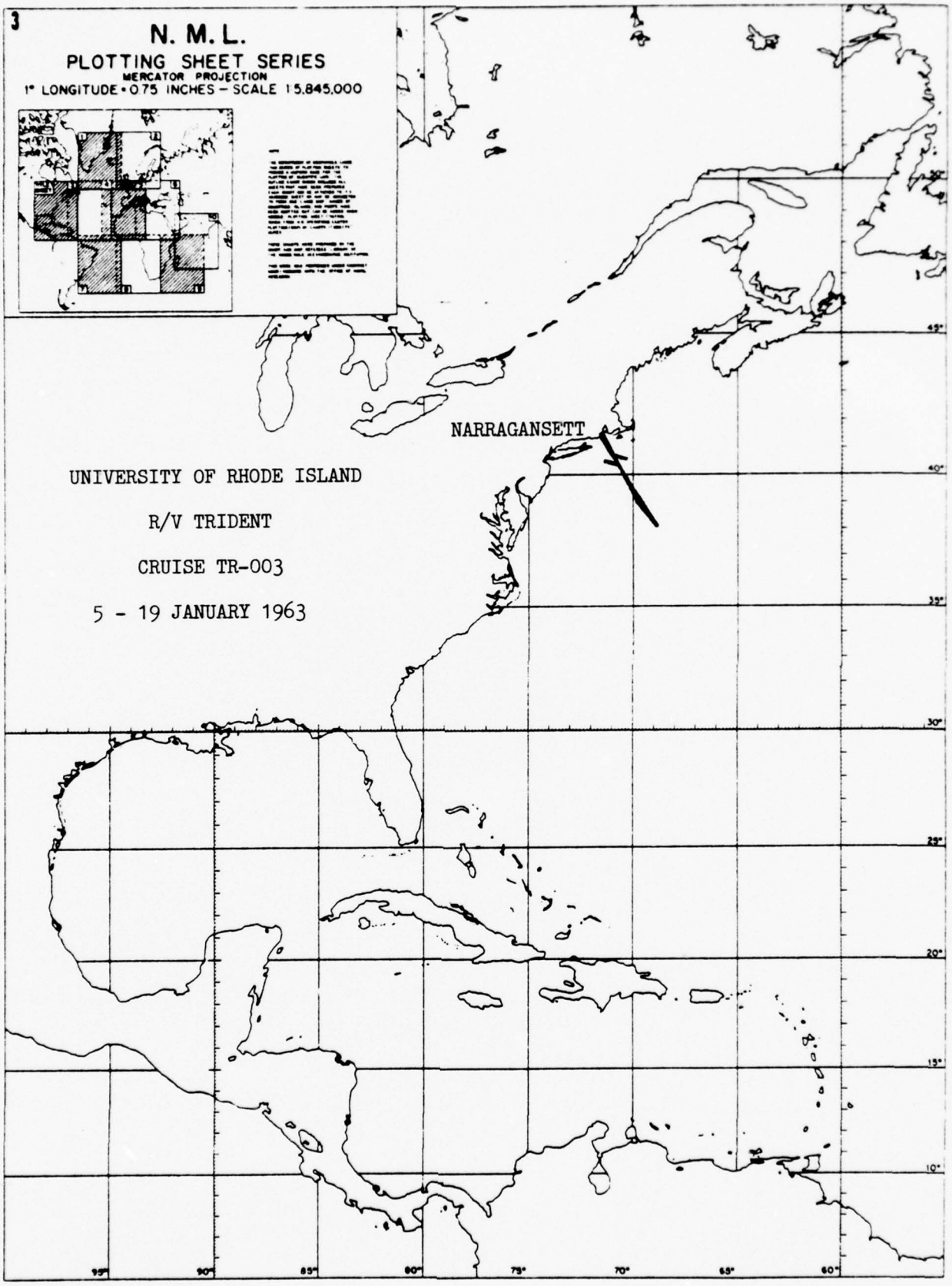
Data Collected

1) bioacoustic stations were occupied

2) equipment tests were run

Participants

Dr. Charles J. Fish	Chief Scientist	U.R.I.
Dr. Theodore A. Napora	Assistant Professor	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. James T. Frey	Oceanographic Specialist	U.R.I.
Mr. Sidney Herman	Oceanographic Specialist	U.R.I.
Mr. Harold Keating	Technical Specialist	U.R.I.
Mr. Robert Sundblad	Technician	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 075 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-003
5 - 19 JANUARY 1963
45°
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90°
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80°
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65°
60°

Cruise No.: TR-004

Dates: 22 March - 6 June 1963

Area of Operation: North Atlantic Ocean

Days at sea: 72

Funding: ONR

Program Description

The primary objectives of this cruise were:

a) to perform biological and bioacoustic studies

b) to take chemical samples

c) to make geological and geophysical studies of the African coast

Data Collected

1) 8,560 n.m. of bathymetric profiles were run

2) 6,000 n.m. of magnetics were taken

3) 52 grabs were collected

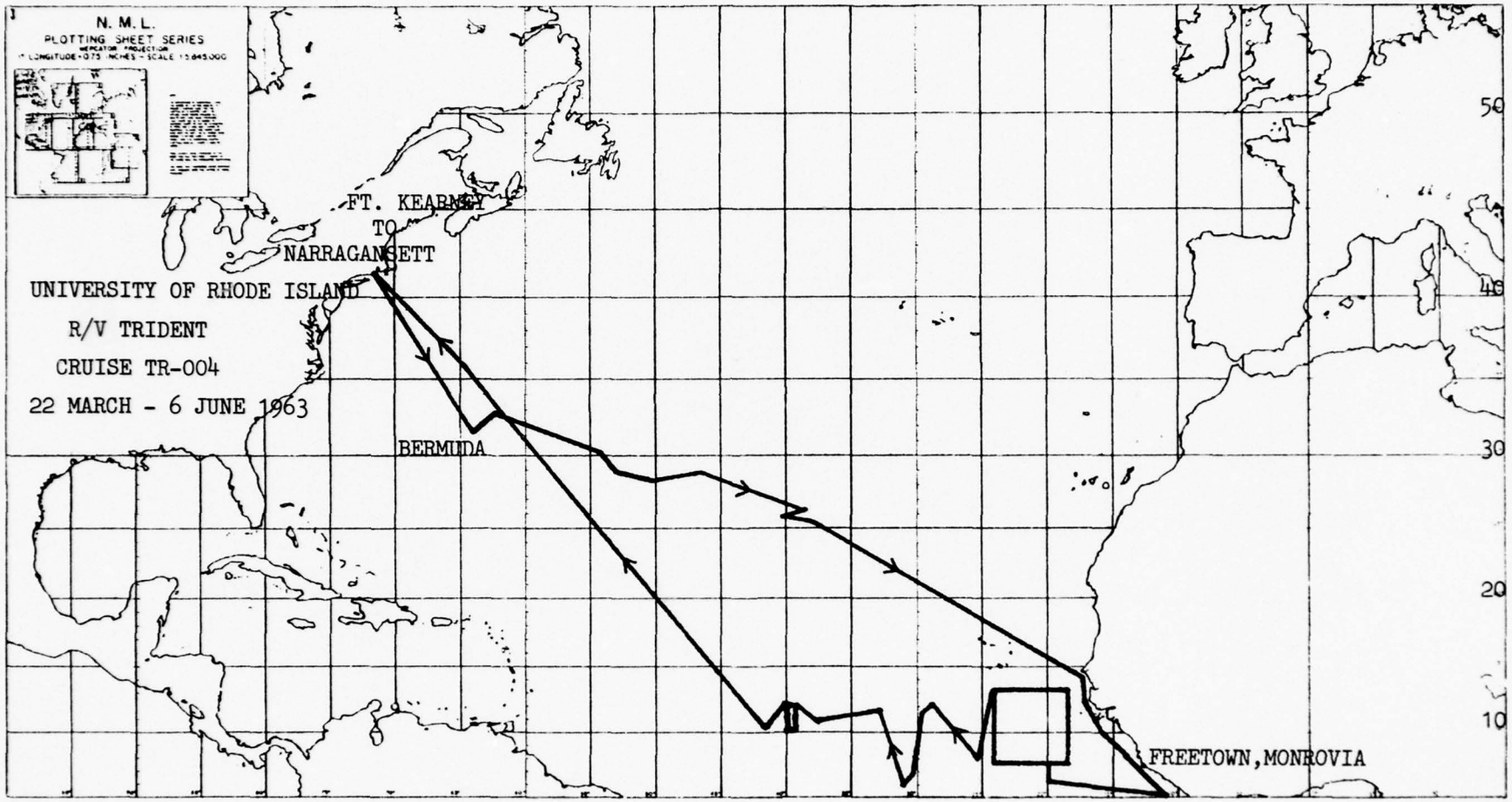
4) nine cores were taken

5) seven camera stations were occupied

6) 10 hydrographic stations were run

Participants

Dr. John A. Knauss	Co-Chief Scientist	U.R.I.
Dr. Charles J. Fish	Co-Chief Scientist	U.R.I.
Dr. Robert McMaster	Co-Chief Scientist	U.R.I.
Dr. Dale C. Krause	Co-Chief Scientist	U.R.I.
Dr. David Schink	Co-Chief Scientist	U.R.I.
Dr. Peter Wangersky	Assistant Professor	Yale
Mr. Paul Perkins	Oceanographic Specialist	U.R.I.
Mr. Thomas D'Ambra	Oceanographic Specialist	U.R.I.
Mr. Maurice Anderson	Oceanographic Specialist	U.R.I.
Mr. James Frey	Oceanographic Specialist	U.R.I.
Mr. Kwadwo Ansong	Graduate Student	U.R.I.
Mr. Donald Corrigan	Graduate Student	U.R.I.
Mr. Donald Gordon	Graduate Student	U.R.I.
Mr. Robert Howe	Graduate Student	U.R.I.
Mr. James Robb	Graduate Student	U.R.I.
Mr. David Roebuck	Graduate Student	U.R.I.
Mr. Clifford Schink	Student	U.R.I.


N. M. L.
PLOTTING SHEET SERIES
FT. KEARNEY
TO
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-004
22 MARCH - 6 JUNE 1963
BERMUDA
FREETOWN, MONROVIA
50
40
30
20
10

Cruise No.: TR-005

Dates: 24 - 28 June 1963

Area of Operation: Northwest Atlantic Ocean

Days at sea: 5

Funding: ONR

Program Description

The primary objectives of this cruise were:

a) to provide experience for graduate students in handling oceanographic equipment

b) to make geological and geophysical studies

Data Collected

1) 1,080 n.m. of bathymetry profiles were run

2) 460 n.m. of magnetic profiles were taken

3) 52 grabs were recovered

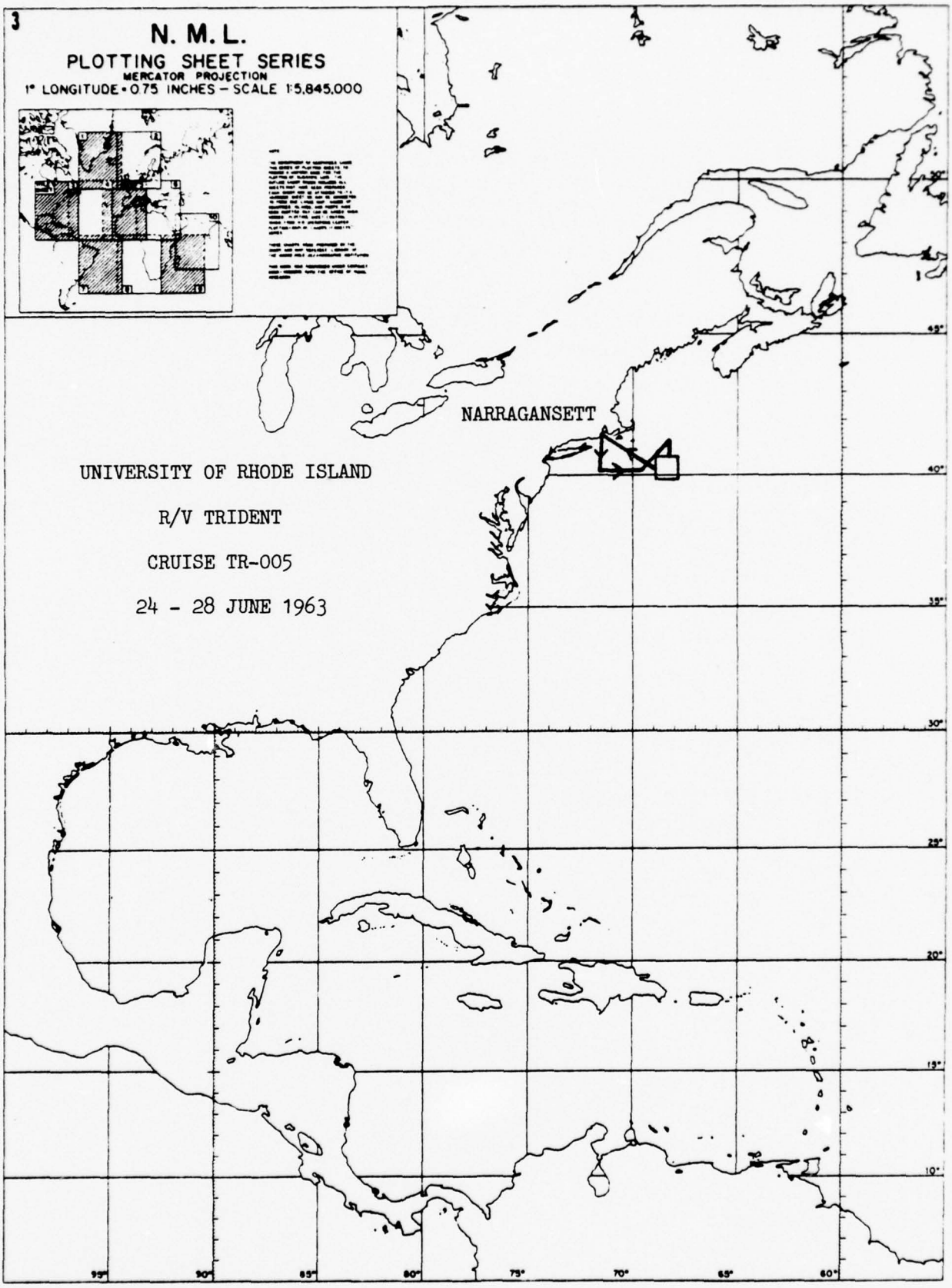
4) nine cores were taken

5) one dredge was taken

6) one camera station was occupied

Participants

Dr. D. Krause	Co-Chief Scientist	U.R.I.
Dr. H. P. Jeffries	Co-Chief Scientist	U.R.I.
Mr. T. D'Ambra	Marine Technician	U.R.I.
Mr. J. Frey	Marine Technician	U.R.I.
Mr. R. Cooper	Graduate Student	U.R.I.
Mr. D. Corrigan	Graduate Student	U.R.I.
Mr. R. Davis	Graduate Student	U.R.I.
Mr. W. Dillon	Graduate Student	U.R.I.
Mr. T. Gaucher	Graduate Student	U.R.I.
Mr. G. C. Grant	Graduate Student	U.R.I.
Mr. D. W. Lear	Graduate Student	U.R.I.
Mr. M. Marshall	Graduate Student	U.R.I.
Mr. J. K. Moore	Graduate Student	U.R.I.
Ms. C. Oviatt	Graduate Student	U.R.I.
Mr. S. Pratt	Graduate Student	U.R.I.
Mr. J. Schwartz	Graduate Student	U.R.I.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PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-005
24 - 28 JUNE 1963
45°
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25°
20°
15°
10°
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90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-006

Dates: 6 - 20 July 1963

Area of Operation: Northwest Atlantic Ocean

Days at sea: 15

Funding: ONR

Program Description

The primary objectives of this cruise were:

a) to study biological species at various depths in the Sargasso Sea

b) to run bioacoustic stations

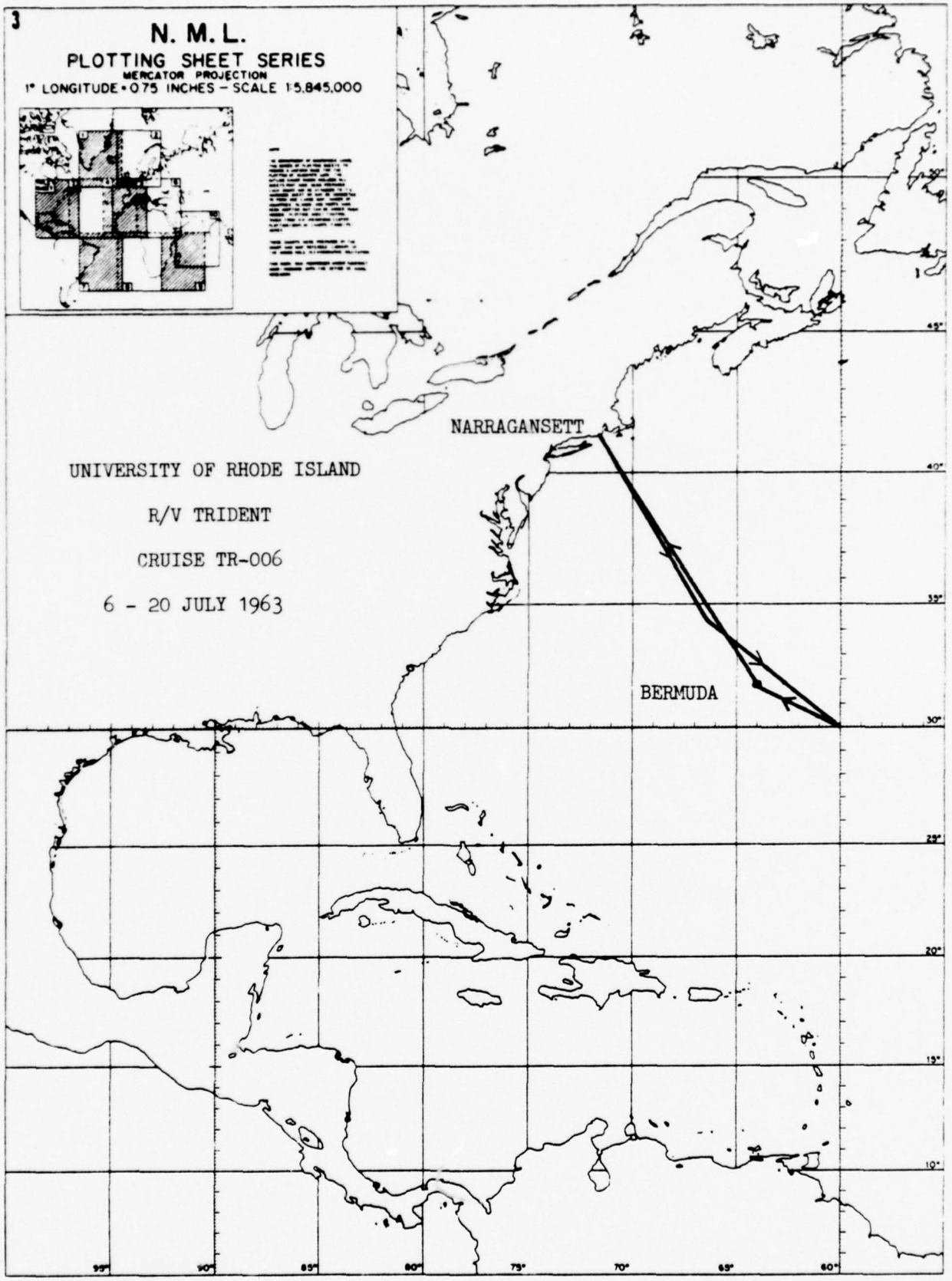
Data Collected

1) 15 hauls were taken

2) bioacoustic stations were run

Participants

Dr. Charles J. Fish	Chief Scientist	U.R.I.
Dr. Theodore A. Napora	Assistant Professor	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Thomas S. D'Ambra	Marine Technician	U.R.I.
Mr. Edward C. Brainard II	Technician	U.R.I.
Mr. John H. Martin	Graduate Student	U.R.I.
Mr. Bernard J. McAlice	Graduate Student	U.R.I.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MERCATOR PROJECTION
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NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-006
6 - 20 JULY 1963
BERMUDA
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-007

Dates: 26 July 1963

Area of Operation: Rhode Island Sound

Days at sea: 1

Funding: NSF

Program Description

The primary objective of this cruise was:

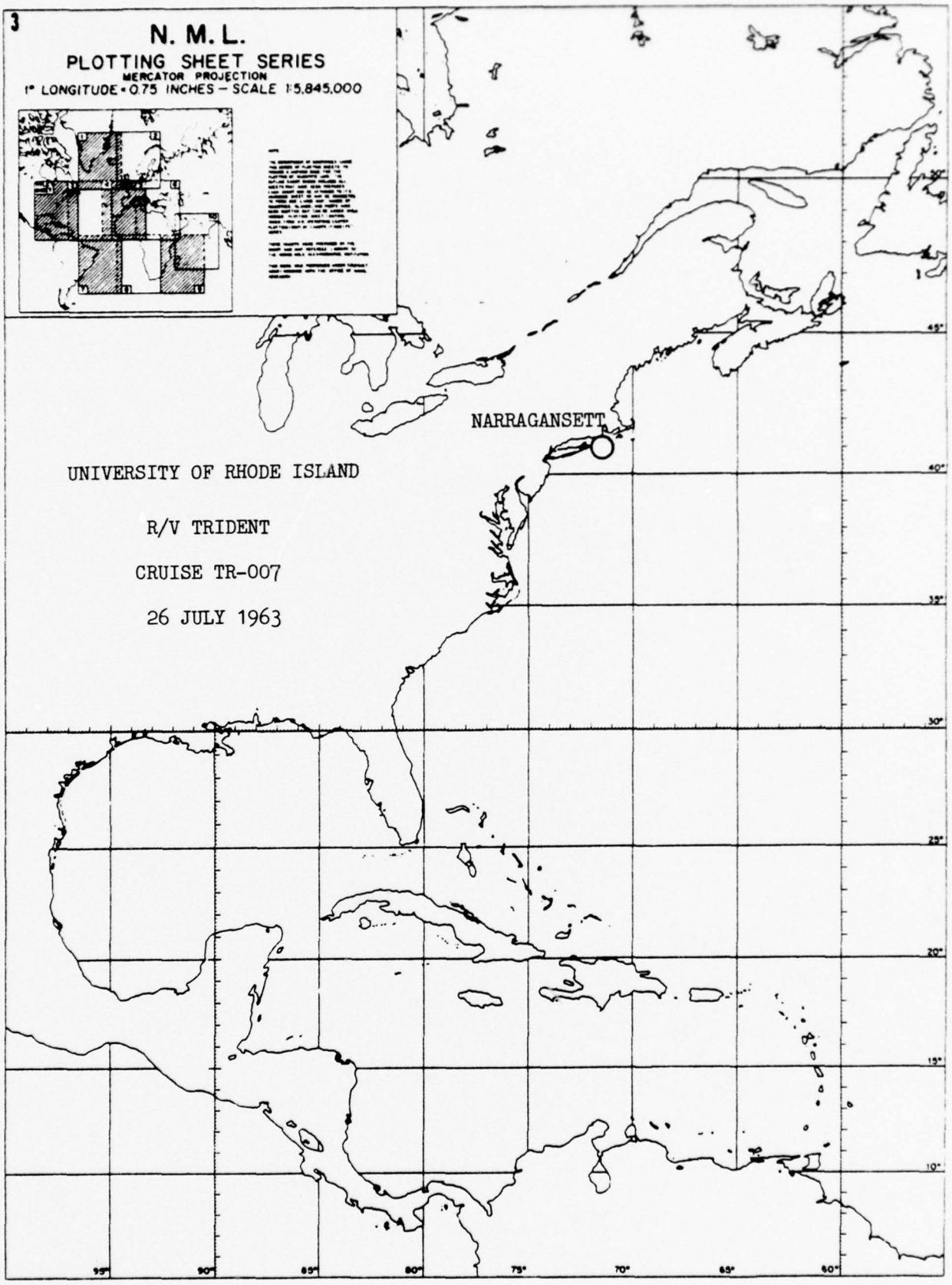
a) to conduct an orientation cruise for the NSF-sponsored summer institute for high school biology teachers

Data Collected

1) Shipboard oceanographic equipment was demonstrated

Participants

Dr. H. P. Jeffries	Chief Scientist	U.R.I.
40 high school biology teachers		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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-007
26 JULY 1963
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35°
30°
25°
20°
15°
10°
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90°
85°
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75°
70°
65°
60°

Cruise No.: TR-008

Dates: 3 - 10 August 1963

Area of Operation: Northwest Atlantic Ocean

Days at sea: 8

Funding: ONR

Program Description

The primary objectives of this cruise were:

a) to take chemical and biological samples on a line between Rhode Island and Bermuda

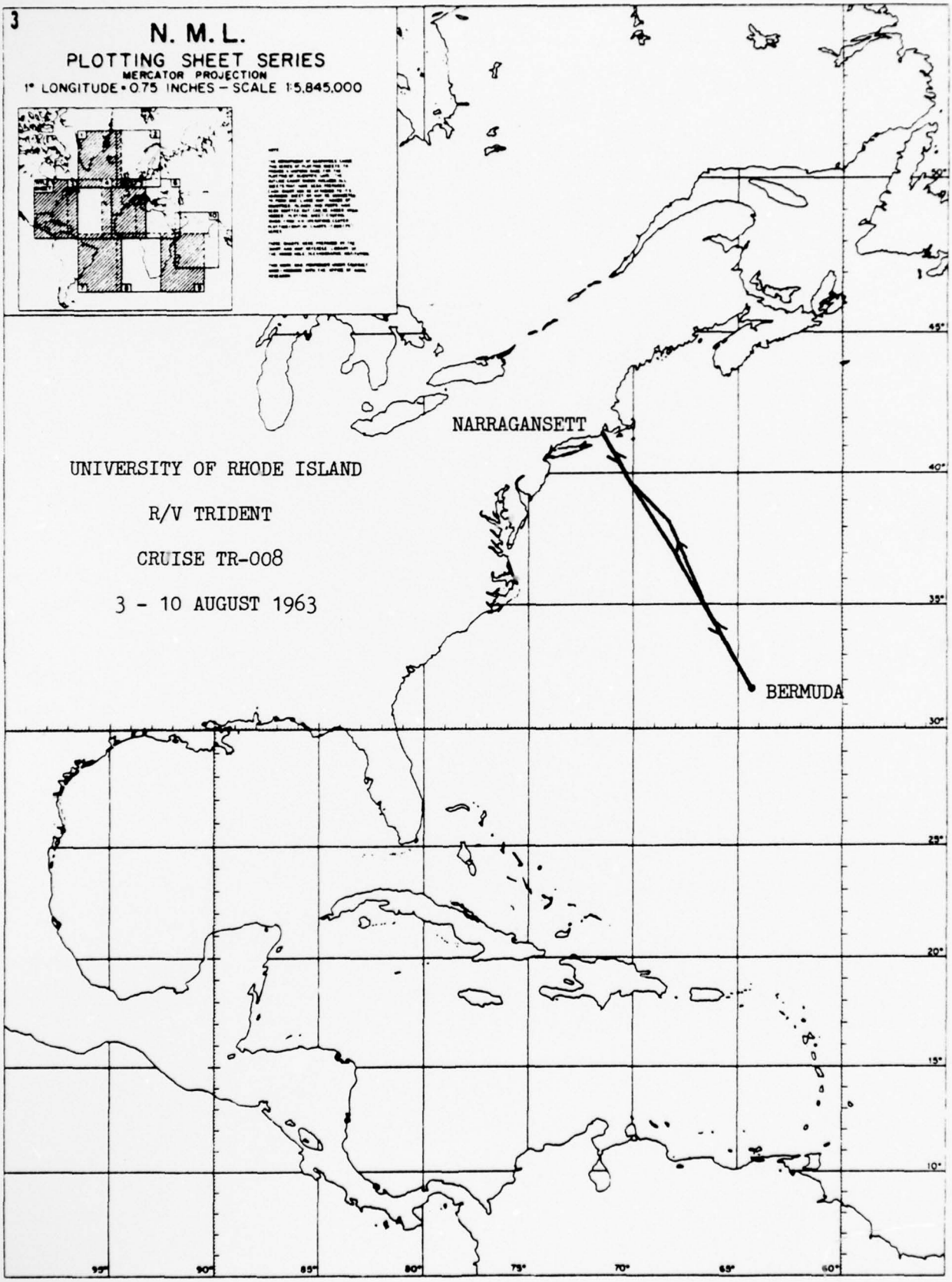
Data Collected

1) six hydrostations were taken

2) five net tows were recovered

Participants

Dr. David Schink	Co-Chief Scientist	U.R.I.
Dr. Theodore Smayda	Co-Chief Scientist	U.R.I.
Mr. Thomas D'Ambra	Marine Technician	U.R.I.
Mr. James Frey	Marine Technician	U.R.I.
Ms. Brenda Boleyn	Research Assistant	U.R.I.
Ms. Nancy Coman	Technical Assistant	U.R.I.
Mr. David Giuliano	Technical Assistant	U.R.I.
Mr. Samuel Hopp	Graduate Student	U.R.I.
Mr. Sheldon Pratt	Graduate Student	U.R.I.
Mr. Kenneth Wunschel	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-008
3 - 10 AUGUST 1963
BERMUDA
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-009

Dates: 16 - 30 August 1963

Area of Operation: Northwest Atlantic Ocean

Days at sea: 15

Funding: ONR

Program Description

The primary objective of this cruise was:

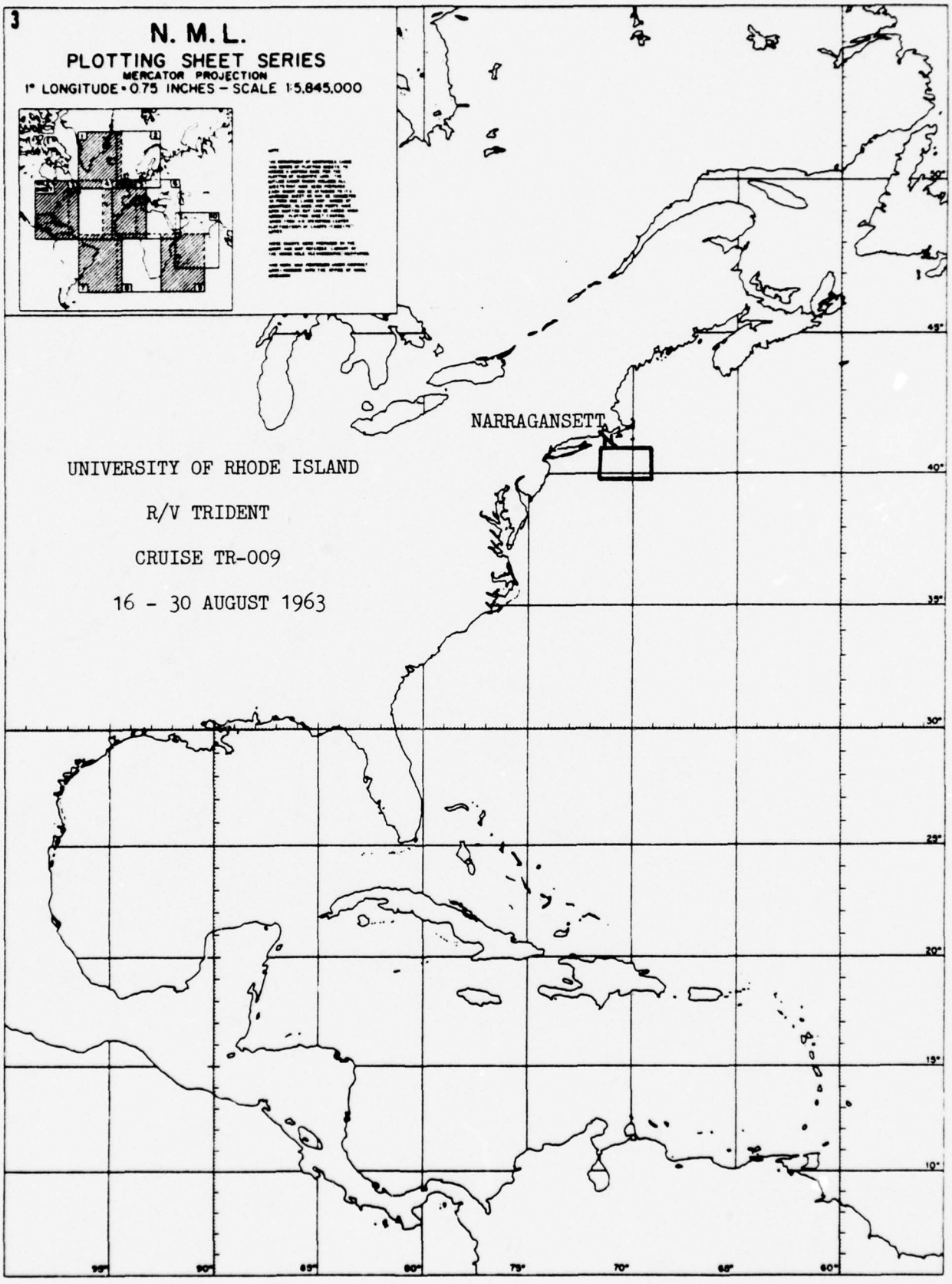
a) to study the geological and geophysical characteristics of the continental shelf off New England

Data Collected

1) 2,000 n.m. of bathymetric profiles were run
2) 119 n.m. of seismic reflection profiles were taken
3) 120 grabs were recovered
4) 31 cores were taken
5) eight camera stations were occupied
6) seven hydrographic stations were taken
7) seven XBT's were taken
8) biological tows were made

Participants

Dr. Robert L. McMaster	Chief Scientist	U.R.I.
Dr. Robert I. Krasner	Professor	Providence College
Mr. Thomas D'Ambra	Marine Technician	U.R.I.
Mr. Warren Hall	Marine Technician	U.R.I.
Mr. Peter Paolella	Marine Technician	U.R.I.
Mr. Samual Smith	Marine Technician	U.R.I.
Mr. Donald Corrigan	Graduate Student	U.R.I.
Mr. Louis E. Garrison	Graduate Student	U.R.I.
Mr. Sheldon Pratt	Graduate Student	U.R.I.
Mr. James Schwartz	Graduate Student	U.R.I.
Mr. Edward Hayes	Student	Providence College
Mr. Malcolm McConnell	Student	Yale University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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-009
16 - 30 AUGUST 1963
45°
40°
35°
30°
25°
20°
15°
10°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-010

Dates: 7 - 21 September 1963

Area of Operation: Northwest Atlantic Ocean

Days at sea: 15

Funding: ONR

Program Description

The primary objective of this cruise was:

a) to perform bacteriological studies of seawater on a track to the Gulf Stream and Sargasso Sea

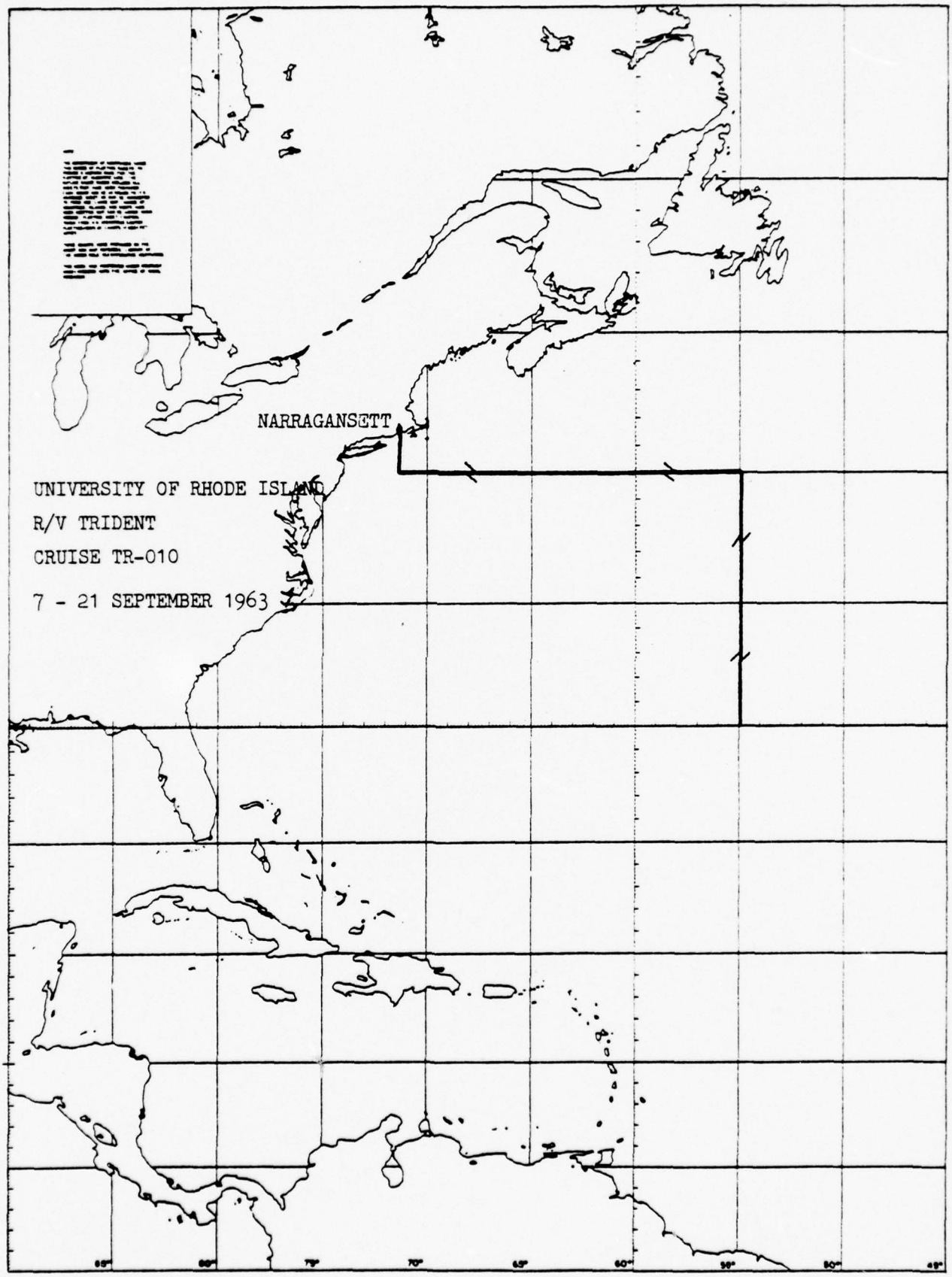
Data Collected

1) 30 stations of water collection were made

2) sargassum weed was studied

Participants

Dr. J. McN. Sieburth	Co-Chief Scientist	U.R.I.
Dr. J. T. Conover	Co-Chief Scientist	U.R.I.
Mr. J. A. Frey	Marine Technician	U.R.I.
Mr. M. R. Bracci	Research Assistant	U.R.I.
Mr. P. Iveton	Graduate Student	U.R.I.
Mr. D. W. Lear	Graduate Student	U.R.I.
Mr. R. A. Murchelano	Graduate Student	U.R.I.
Mr. M. D. Rogick	Graduate Student	U.R.I.


NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-010
7 - 21 SEPTEMBER 1963

Cruise No.: TR-011

Dates: 1 - 13 October 1963

Area of Operation: Northwest Atlantic Ocean

Days at sea: 13

Funding: ONR

Program Description

The primary objectives of this cruise were:

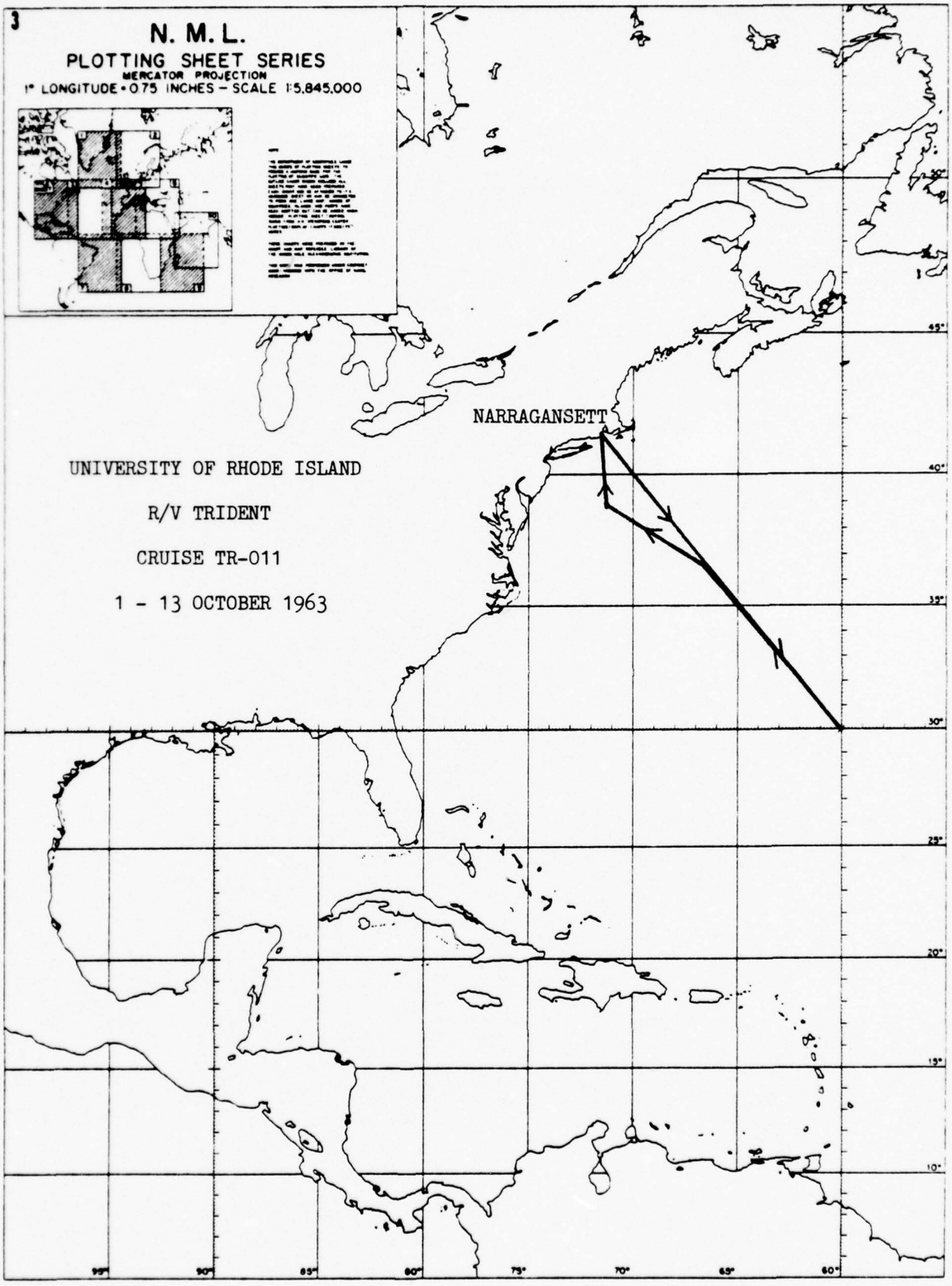
a) to perform biological and bioacoustic studies

Data Collected

1) seven biological hauls were recovered
2) bioacoustic studies were made
3) sargassum weed was collected

Participants

Dr. Charles J. Fish	Chief Scientist	U.R.I.
Dr. Theodore A. Napora	Assistant Professor	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. David K. Roebuck	Oceanographic Specialist	U.R.I.
Mr. Thomas S. D'Ambra	Marine Technician	U.R.I.
Mr. Warren H. Hall	Marine Technician	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-011
1 - 13 OCTOBER 1963
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-012

Dates: 1 November - 13 December 1963 Area of Operation: Caribbean Sea

Days at sea: 40

Funding: ONR, NSF

Program Description

The primary objectives of this cruise were:

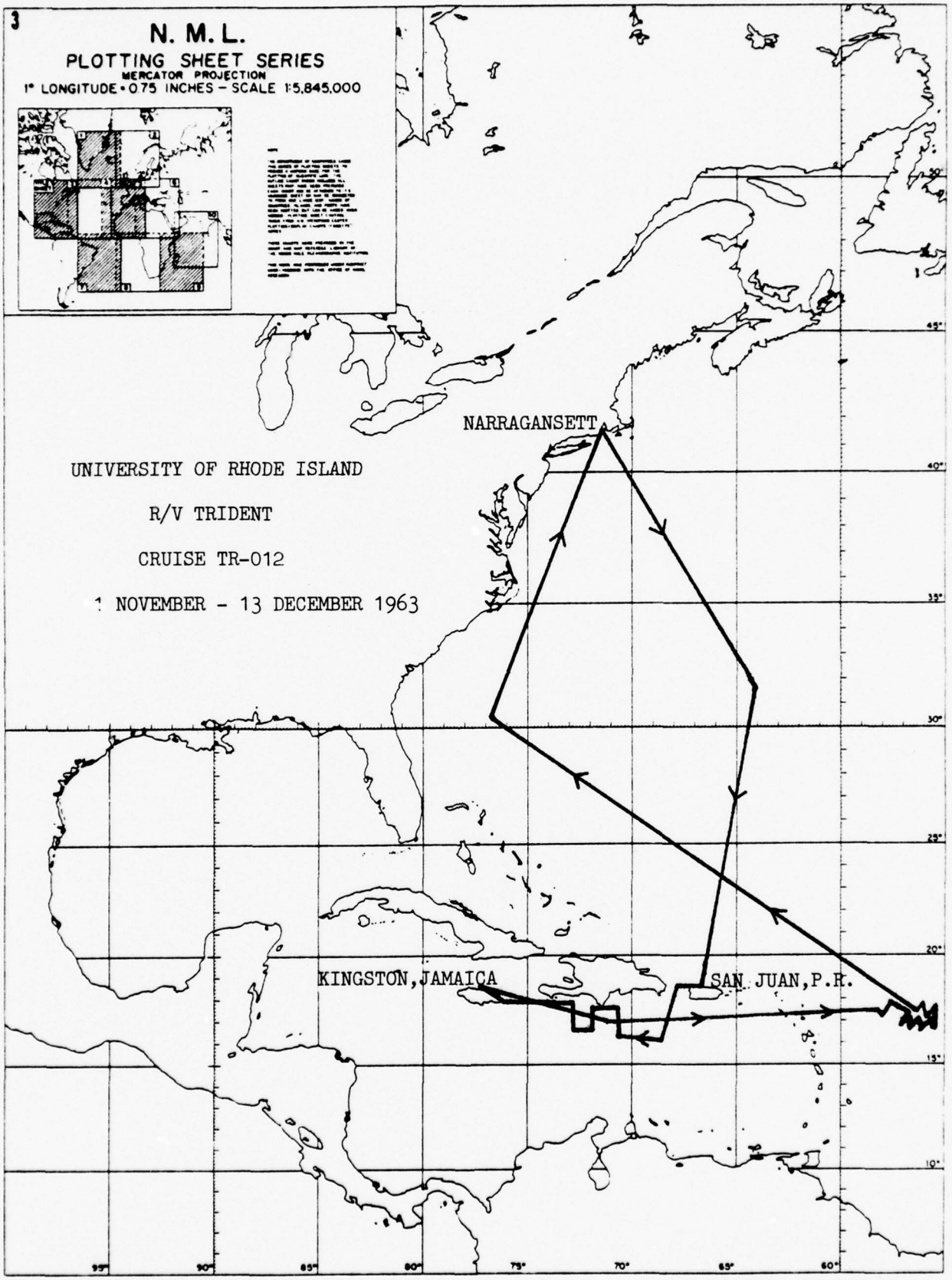
a) to perform biological studies
b) to study organic aggregates in the open ocean and near reefs
c) to perform geological and geophysical studies

Data Collected

1) 550 n.m. of bathymetric profiles were run
2) 350 n.m. of magnetic profiles were taken
3) four grabes were recovered
4) one core was taken
5) 23 hydrostations were occupied
6) seven MBT's were taken
7) eight net tows were made
8) five trawls were recovered

Participants

Dr. Theodore J. Smayda	Co-Chief Scientist	U.R.I.
Dr. Nelson Marshall	Co-Chief Scientist	U.R.I.
Dr. Dale C. Krause	Co-Chief Scientist	U.R.I.
Dr. Theodore A. Napora	Assistant Professor	U.R.I.
Mr. Thomas D'Ambra	Marine Technician	U.R.I.
Mr. Trevor Callus	Marine Technician	U.R.I.
Mr. James Frey	Marine Technician	U.R.I.
Mr. David Bennett	Graduate Student	U.R.I.
Ms. Brenda Boleyn	Graduate Student	U.R.I.
Mr. Donald J. Corrigan	Graduate Student	U.R.I.
Ms. Roberta L. Davis	Graduate Student	U.R.I.
Mr. Thomas A. Gaucher	Graduate Student	U.R.I.
Mr. Kenneth Wunschel	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-012
1 NOVEMBER - 13 DECEMBER 1963
KINGSTON, JAMAICA
SAN JUAN, P.R.
45°
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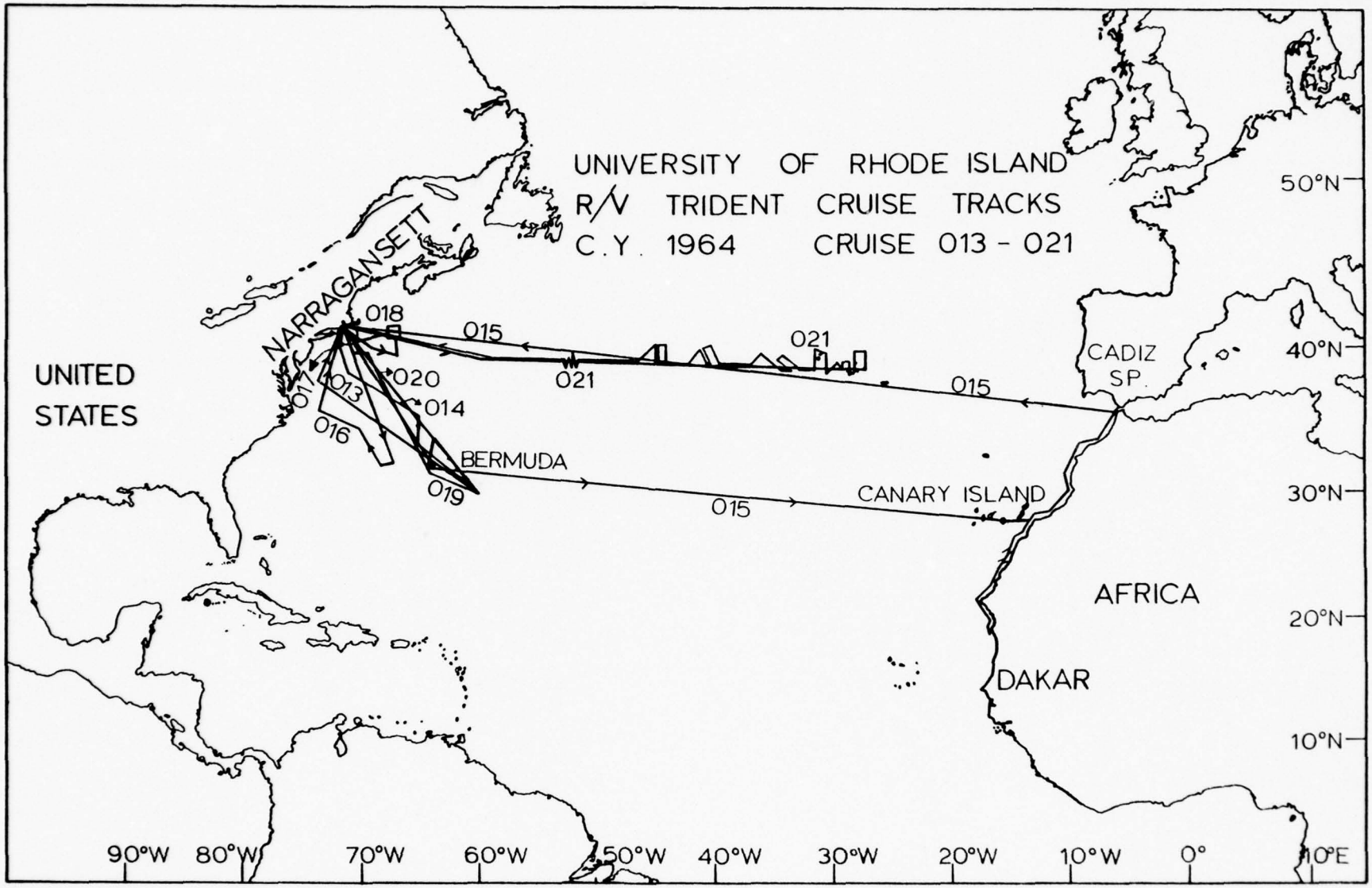
60°

R/V TRIDENT Cruises - CY 1964

Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
013	3-17 Jan.	15	NW Atlantic	Fish
014	31 Mar. - 9 Apr.	10	NW Atlantic	Fish
015	13 Apr. - 2 June	48	North Atlantic	McMaster
016	12 June - 3 July	22	NW Atlantic	Knauss
017	8 July	1	NW Atlantic	Jeffries
018	13-26 July	14	NW Atlantic	Schink
019	4-19 Aug.	14	NW Atlantic	Fish
020	26 Aug. - 2 Sept.	8	NW Atlantic	Smayda
021	16 Sept. - 3 Nov.	47	North Atlantic	Schink, Krause

*All GSO/URI


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C.Y. 1964 CRUISE 013 - 021
UNITED STATES
NARRAGANSETT
018
015
021
021
CADIZ SP.
015
017
013
020
014
016
BERMUDA
019
015
CANARY ISLAND
AFRICA
DAKAR
50°N
40°N
30°N
20°N
10°N
90°W
80°W
70°W
60°W
50°W
40°W
30°W
20°W
10°W
0°
10°E

Cruise No.: TR-013

Dates: 3 - 17 January 1964

Area of Operation: Northwest Atlantic Ocean

Days at sea: 15

Funding: ONR

Program Description

The main purposes of this cruise were:

a) to perform biological and chemical studies in the Gulf Stream and Sargasso Sea

b) to run bioacoustic stations

Data Collected

1) two hydrographic stations were occupied

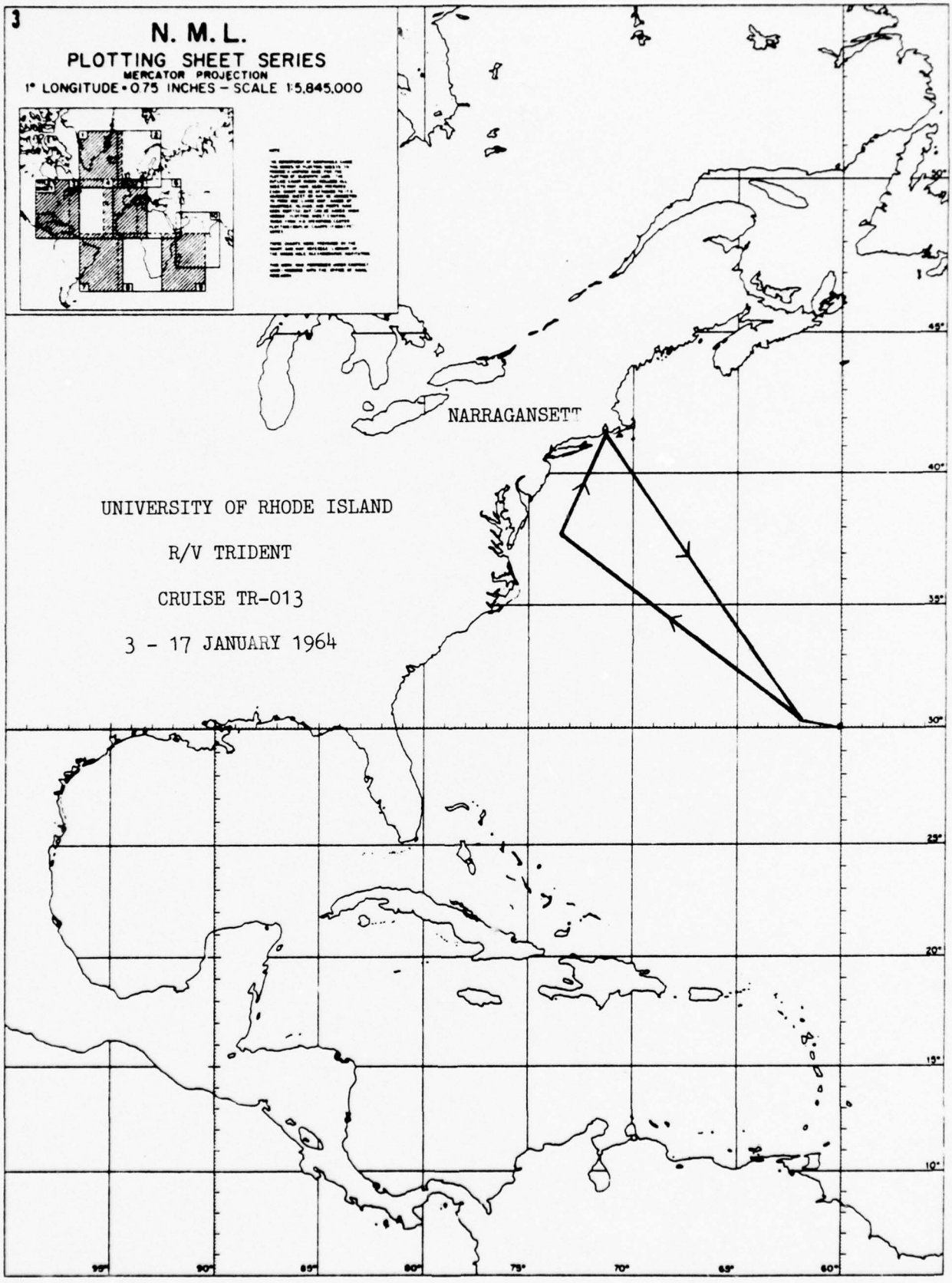
2) eight tows were made

3) two trawls were recovered

4) bioacoustic stations were run

Participants

Dr. Charles J. Fish	Chief Scientist	U.R.I.
Dr. Theodore A. Napora	Assistant Professor	U.R.I.
Dr. John T. Conover	Assistant Professor	U.R.I.
Dr. Gordon A. Riley	Professor	Dalhousie Univ.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Albert L. Brooks III	Oceanographic Specialist	U.R.I.
Mr. Thomas S. D'Ambra	Marine Technician	U.R.I.
Mr. Warren H. Hall	Marine Technician	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-013
3 - 17 JANUARY 1964
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65°
60°

Cruise No.: TR-014

Dates: 31 March - 9 April 1964

Area of Operation: Northwest Atlantic Ocean

Days at sea: 10

Funding: ONR

Program Description

The main purposes of this cruise were:

a) to perform biological stations

b) to run bioacoustic stations

Data Collected

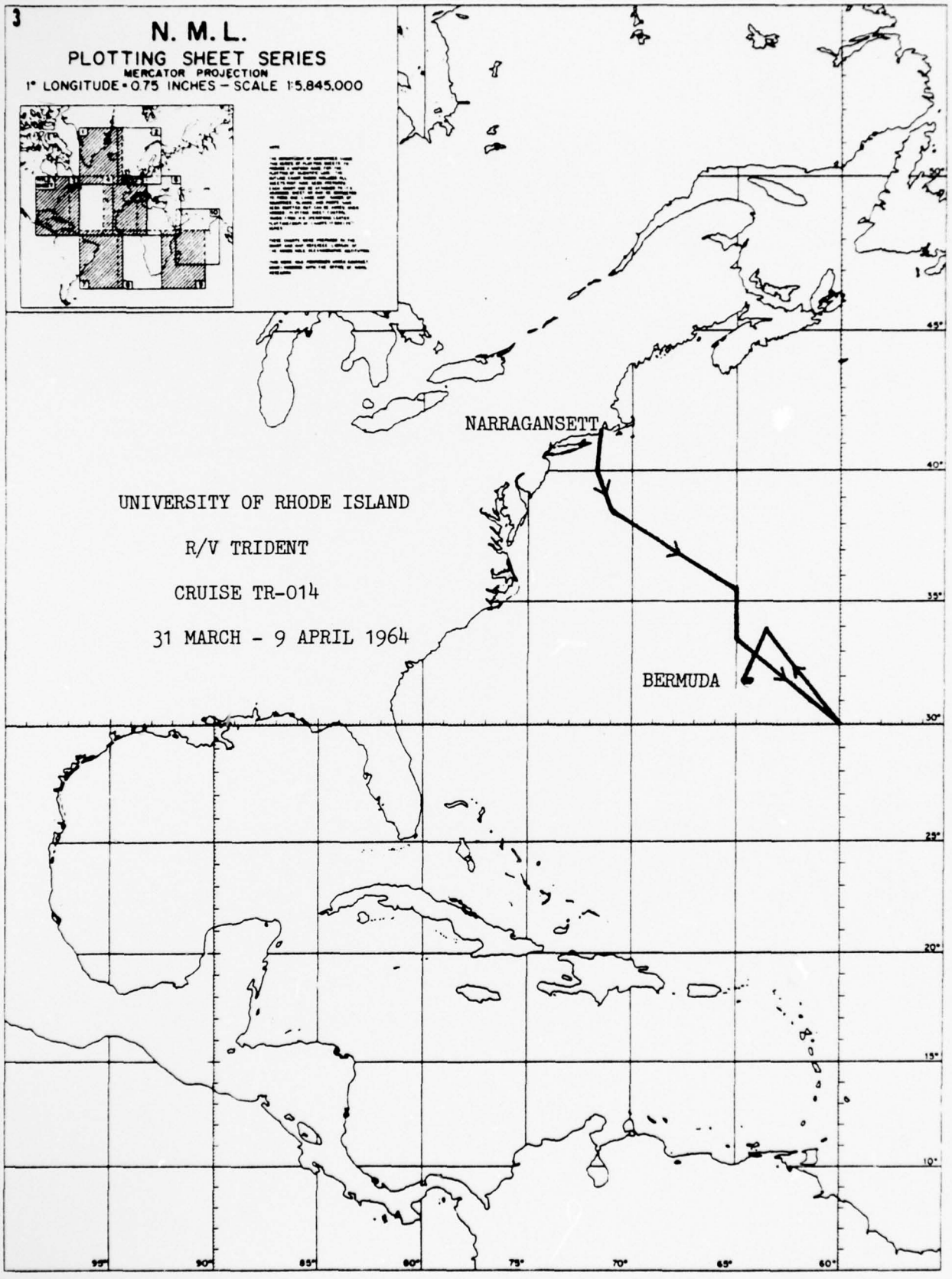
1) three hydrographic stations were run

2) trawls were run

3) bioacoustic stations were occupied

Participants

Dr. Charles J. Fish	Chief Scientist	U.R.I.
Dr. Theodore A. Napora	Assistant Professor	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. David K. Roebuck	Oceanographic Specialist	U.R.I.
Mr. Thomas S. D'Ambra	Marine Technician	U.R.I.
Mr. James M. Frey	Marine Technician	U.R.I.
Mr. John P. Piety	Marine Technician	U.R.I.
Mr. Lawrence J. Dunn	Graduate Student	U.R.I.
Mr. Fourtin Powell	Graduate Student	U.R.I.
Mr. Robert A. Radulski	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
BERMUDA
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-014
31 MARCH - 9 APRIL 1964
45°
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60°

Cruise No.: TR-015

Dates: 13 April - 2 June 1964

Area of Operation: Northwest and Northeast Atlantic Ocean

Days at sea: 48

Funding: ONR

Program Description

The main purposes of this cruise were:

a) to study the geological and geophysical properties of the shelf off the West African coast

b) to run bathymetry transects across the North Atlantic Ocean

c) to take biological samples

Data Collected

1) 8,000 n.m. of bathymetric profiles were run

2) 5,500 n.m. of magnetic lines were run

3) 330 n.m. of seismic reflection profiles were taken

4) 132 bottom grabs were recovered

5) nine dredges were taken

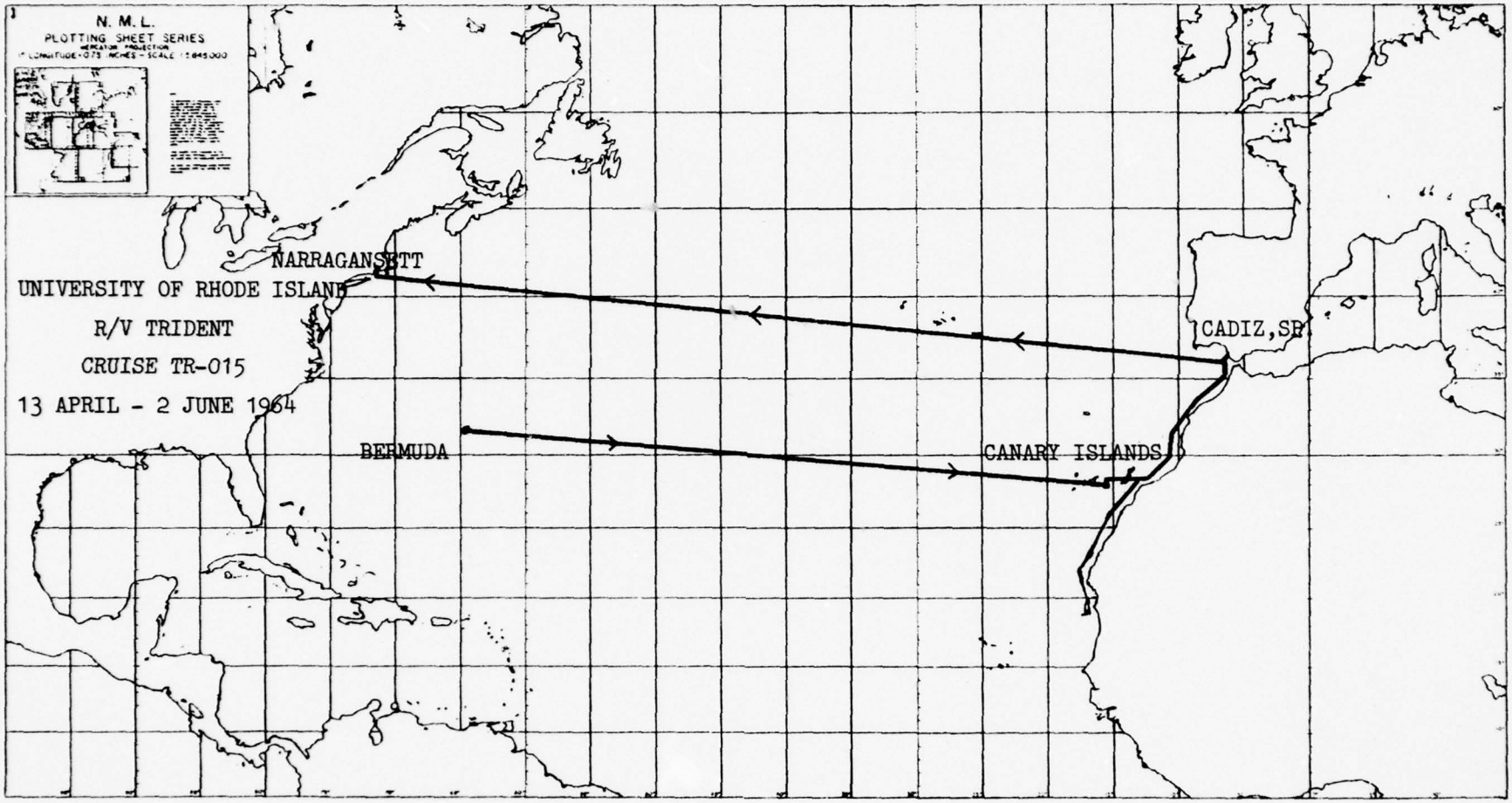
6) 14 camera stations were occupied

7) 48 MBT's were run

8) 42 plankton tows were taken

Participants

Dr. R. McMaster	Chief Scientist	U.R.I.
Mr. T. D'Ambra	Marine Technician	U.R.I.
Mr. J. Frey	Marine Technician	U.R.I.
Mr. J. Piety	Marine Technician	U.R.I.
Mr. N. Hillman	Graduate Student	U.R.I.
Mr. F. Powell	Graduate Student	U.R.I.
Mr. R. Radulski	Graduate Student	U.R.I.


N. M. L.
PLOTTING SHEET SERIES
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-015
13 APRIL - 2 JUNE 1964
BERMUDA
CANARY ISLANDS
CADIZ,SP.

Cruise No.: TR-016

Dates: 12 June - 3 July 1964 Area of Operation: Northwest Atlantic Ocean

Days at sea: 22

Funding: ONR

Program Description

The main purposes of this cruise were:

a) to test a system for obtaining current meter measurements very near the bottom

b) to track the Gulf Stream

Data Collected

1) four current meters were deployed and recovered

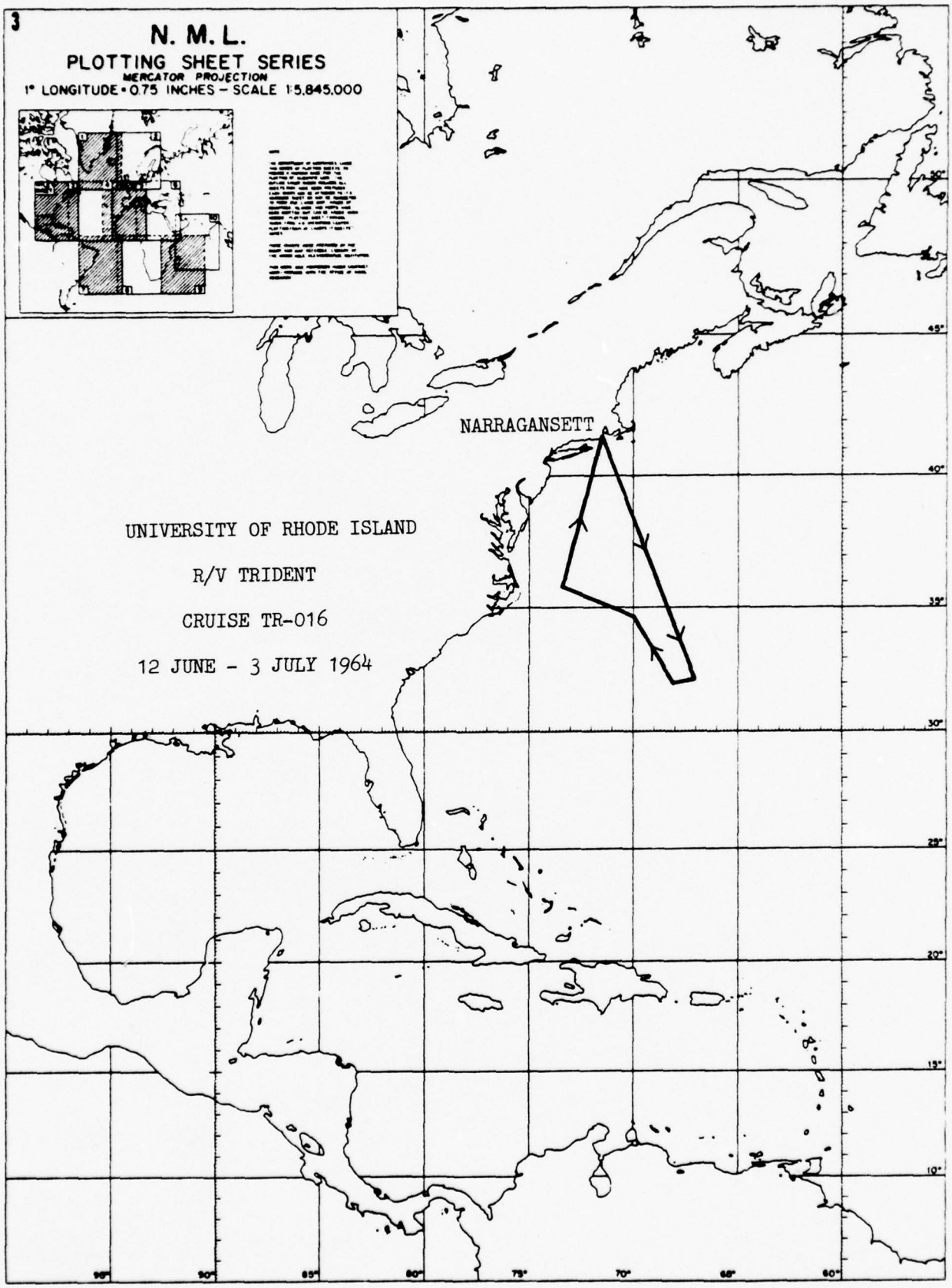
2) two hydrographic stations were occupied

3) three GEK measurements were made

4) one neutrally buoyant float was tracked

Participants

Dr. John A. Knauss	Chief Scientist	U.R.I.
Dr. Peter Wangersky	Assistant Professor	Yale University
Mr. Philip P. Bedard	Electronics Engineer	U.R.I.
Mr. Thomas D'Ambra	Oceanographic Specialist	U.R.I.
Mr. John Piety	Oceanographic Specialist	U.R.I.
Mr. Paul J. Peterson	Electronics Technician	U.R.I.
Mr. Thomas Baseler	Graduate Student	U.R.I.
Ms. Candace Oviatt	Graduate Student	U.R.I.
Mr. Sheldon Pratt	Graduate Student	U.R.I.
Mr. Gary Cohen	Student	Yale University
Mr. George Schreiber	Student	M.I.T.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-016
12 JUNE - 3 JULY 1964

Cruise No.: TR-017

Dates: 8 July 1964

Area of Operation: Northwest Atlantic Ocean

Days at sea: 1

Funding: NSF

Program Description

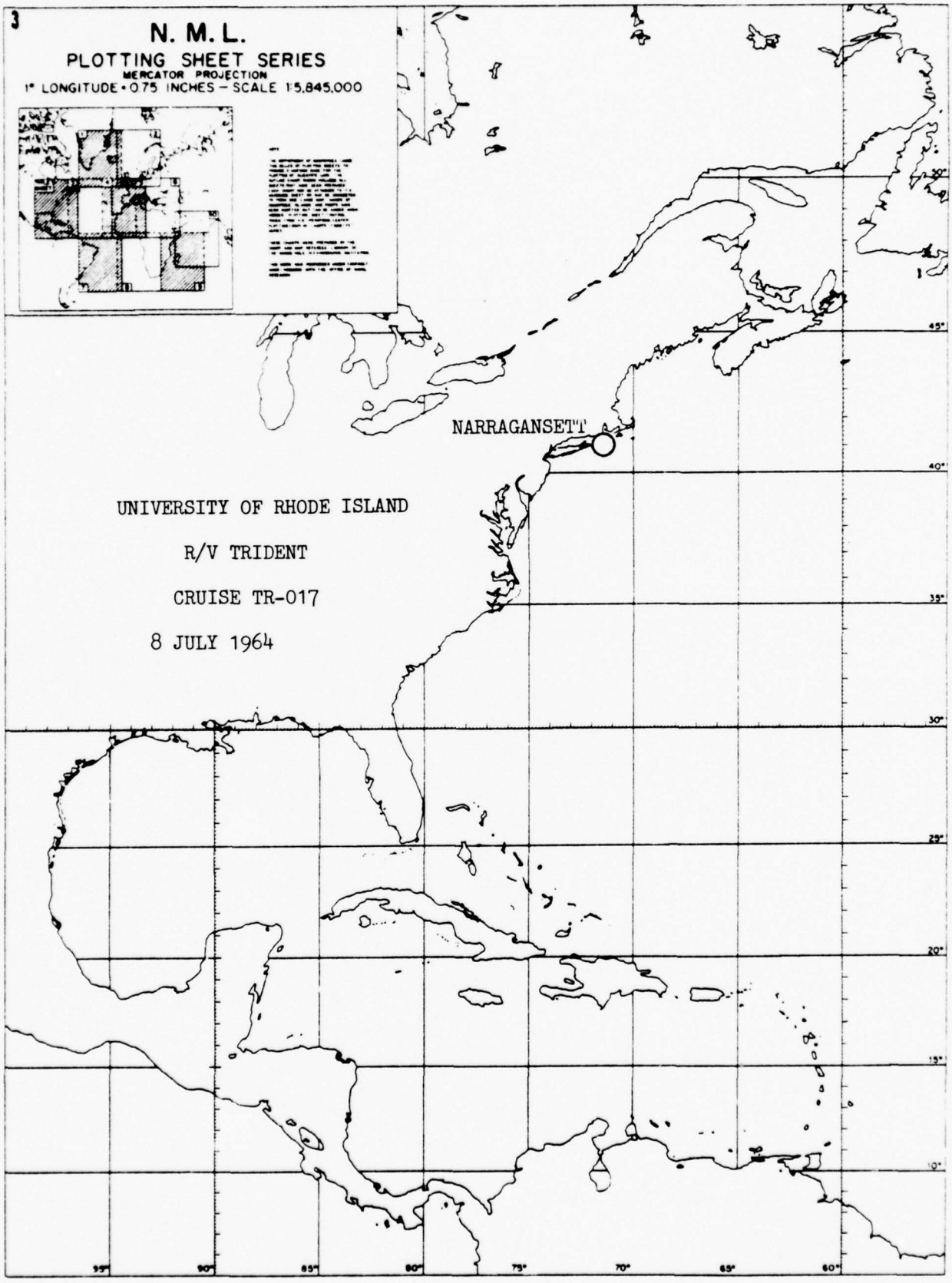
This was an orientation cruise of the NSF-sponsored summer institute at U.R.I. for high school biology teachers.

Data Collected

1) Test apparatus and instruments used for biology and geology were demonstrated

Participants

Dr. H. P. Jeffries	Chief Scientist	U.R.I.
Dr. J. T. Corless	Assistant Professor	U.R.I.
Dr. D. Schink	Assistant Professor	U.R.I.
Biology teachers		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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-017
8 JULY 1964
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Cruise No.: TR-018

Dates: 13 - 26 July 1964 Area of Operation: Northwest Atlantic Ocean

Days at sea: 14

Funding: ONR

Program Description

The major programs on this cruise were:

a) to sample for future chemical analysis

b) to run geophysical profiles

Data Collected

1) A number of water samples were collected for trace metals, organic and microplankton

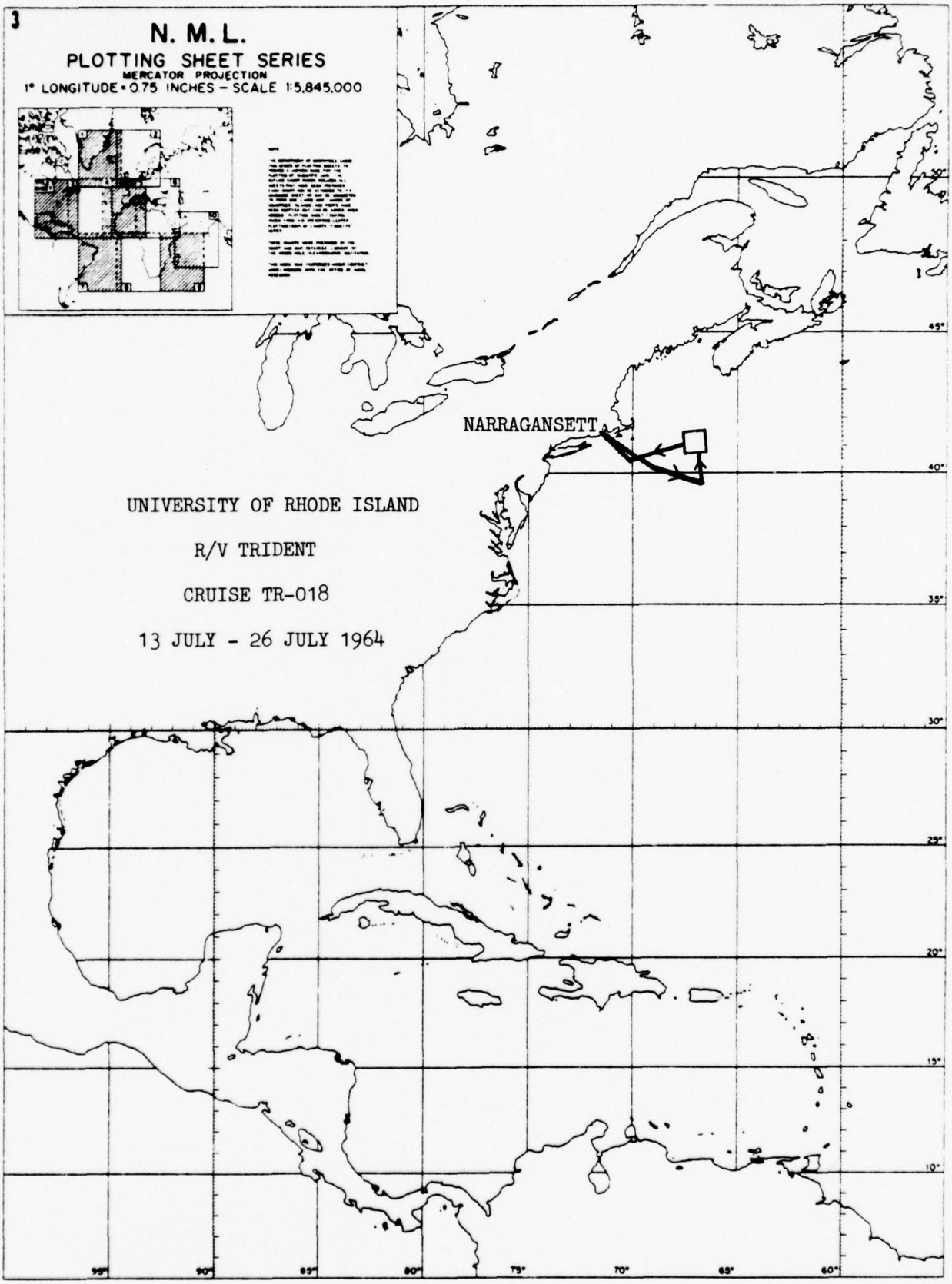
2) 600 n.m. of bathymetric profiles were run

3) 150 n.m. of magnetics were obtained

4) 45 grab samples were taken

Participants

Dr. David Schink	Chief Scientist	U.R.I.
Dr. Peter Wangersky	Assistant Professor	Yale University
Mr. Benjamin Buglio	Marine Technician	U.R.I.
Mr. James Frey	Marine Technician	U.R.I.
Mr. Gary Cohen	Research Technician	U.R.I.
Mr. Wing Grist	Research Technician	U.R.I.
Mr. Robert Fournier	Graduate Student	U.R.I.
Mr. Bernard McAlice	Research Technician	U.R.I.
Mr. James Schwartz	Graduate Student	U.R.I.
Mr. Kenneth Wunschel	Research Technician	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-018
13 JULY - 26 JULY 1964
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90°
85°
80°
75°
70°
65°
60°

Cruise No,: TR-019

Dates: 4 - 19 August 1964 Area of Operation: Northwest Atlantic Ocean

Days at sea: 14

Funding: ONR

Program Description

The major programs on this cruise were:

a) to perform biological studies in the subtropical Atlantic Ocean

b) to run bioacoustic studies

Data Collected

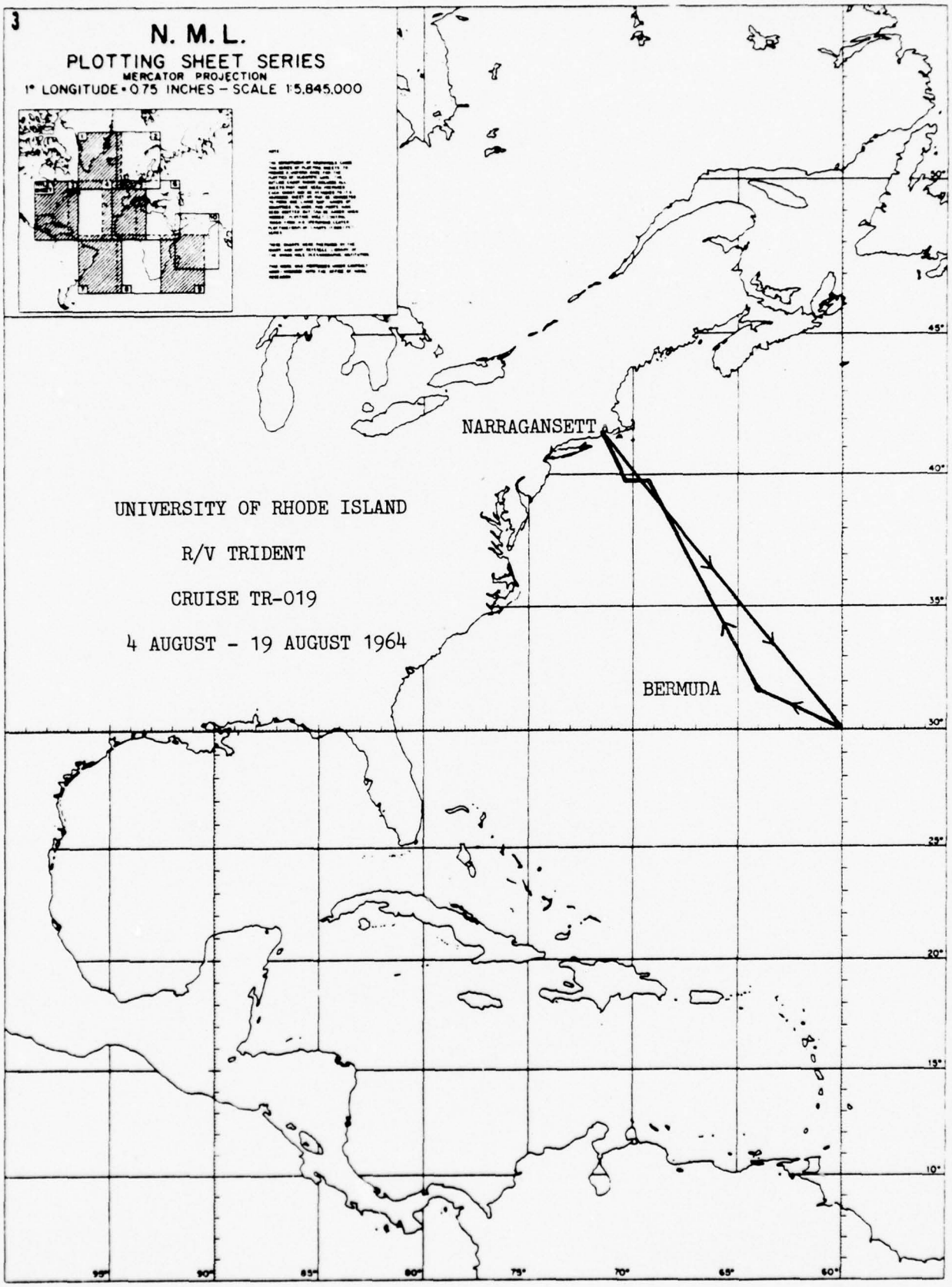
1) four hydrographic stations were occupied

2) five oblique hauls were recovered

3) bioacoustic stations were run

Participants

Dr. Charles J. Fish	Co-Chief Scientist	U.R.I.
Dr. Marie P. Fish	Co-Chief Scientist	U.R.I.
Dr. Theodore A. Napora	Assistant Professor	U.R.I.
Dr. Peter Wangersky	Assistant Professor	Yale University
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. David K. Roebuck	Oceanographic Specialist	U.R.I.
Mr. Thomas S. D'Ambra	Marine Technician	U.R.I.
Mr. Gary Cohen	Graduate Student	U.R.I.
Mr. James F. Fish	Graduate Student	U.R.I.
Mr. David Giuliano	Graduate Student	U.R.I.
Mr. Ellsworth Wheeler	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
BERMUDA
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-019
4 AUGUST - 19 AUGUST 1964
45°
40°
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25°
20°
15°
10°
95°
90°
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80°
75°
70°
65°
60°

Cruise No.: TR-020

Dates: 26 August - 2 September 1964 Area of Operation: Northwest Atlantic Ocean

Days at sea: 8

Funding: ONR

Program Description

The primary objective of this cruise was:

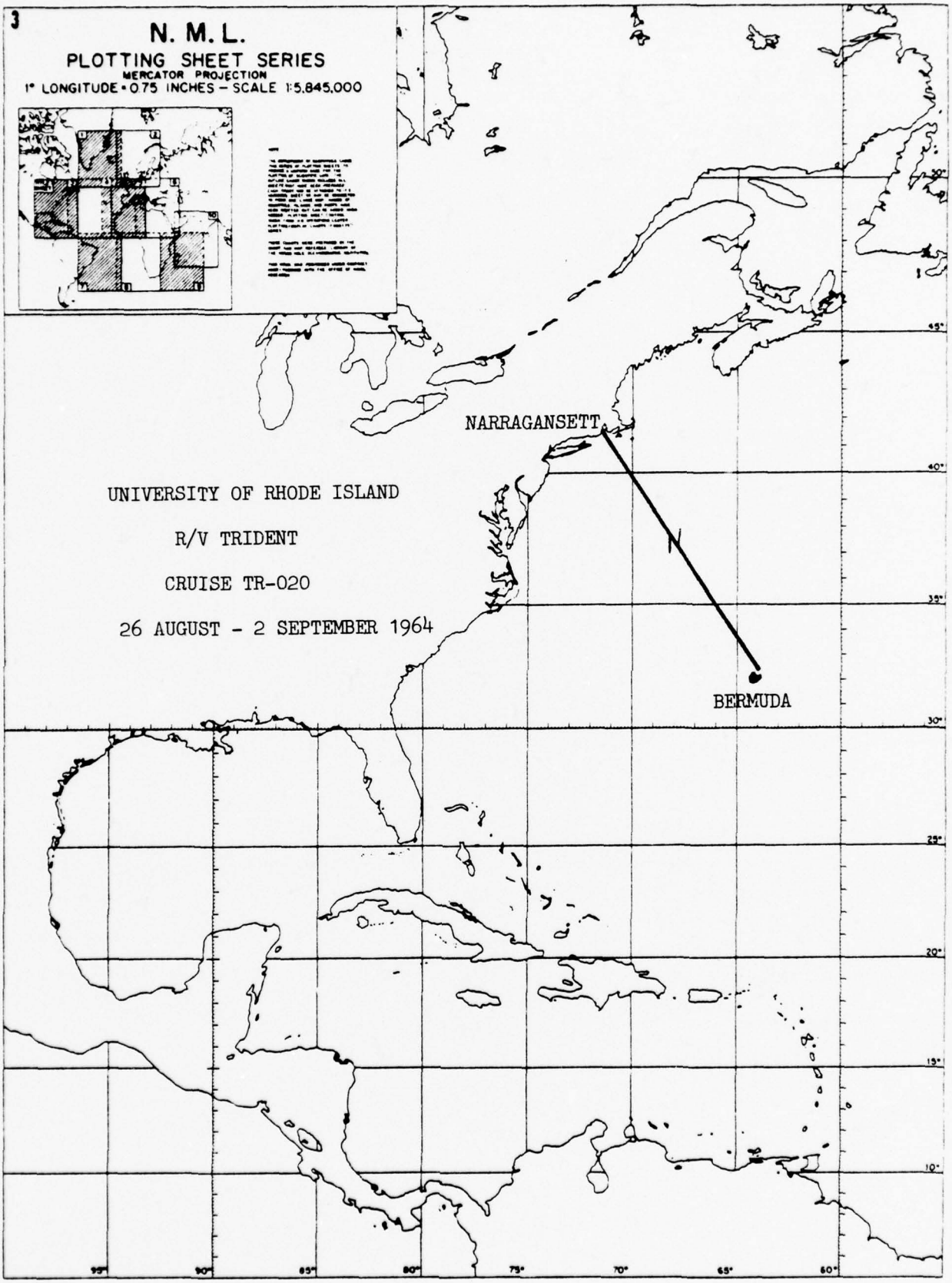
a) to study the primary productivity across the Gulf Stream into the Sargasso Sea

Data Collected

1) four stations were occupied for nutrient enrichment studies
2) biological surface samples were collected along the track
3) samples were taken along a 100-mile transect for bacteriological analysis

Participants

Dr. Theodore J. Smayda	Chief Scientist	U.R.I.
Ms. Brenda J. Boleyn	Research Assistant	U.R.I.
Mr. James Frey	Marine Technician	U.R.I.
Mr. John Piety	Marine Technician	U.R.I.
Mr. Robert O. Fournier	Graduate Student	U.R.I.
Mr. George Hoskins	Graduate Student	U.R.I.
Mr. Robert Murchelano	Graduate Student	U.R.I.
Mr. Kenneth Wunschel	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
BERMUDA
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-020
26 AUGUST - 2 SEPTEMBER 1964
45°
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95°
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70°
65°
60°

Cruise No.: TR-021

Dates: 16 September - 3 November 1964 Area of Operation: North Atlantic Ocean

Days at sea: 47

Funding: ONR

Program Description

The primary objectives of this cruise were:

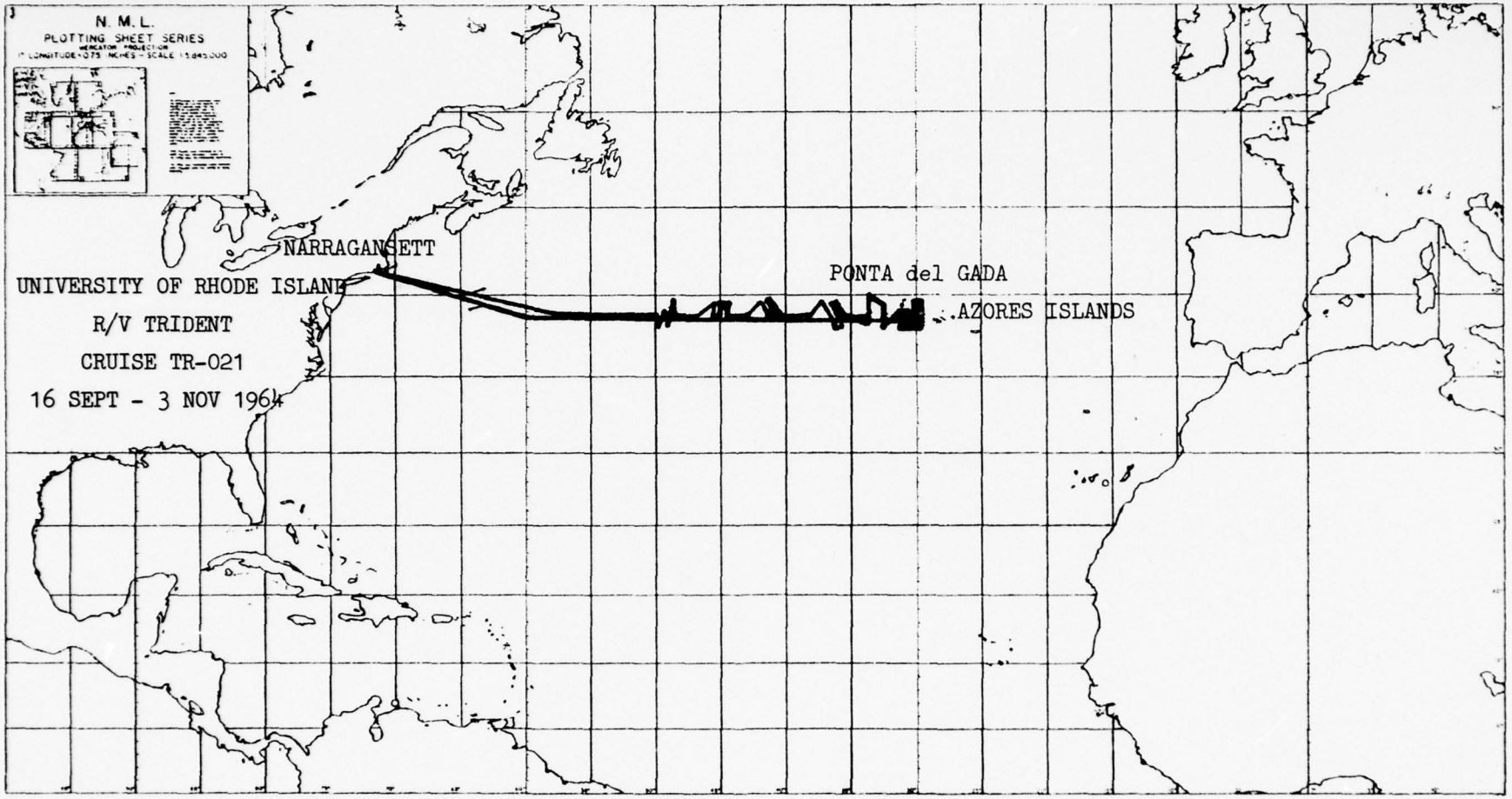
a) to study the geological,geophysical, geochemical and biological characteristics from Rhode Island to the Azores Islands

Data Collected

1) 8,460 n.m. of bathymetric profiles were run
2) 8,200 n.m. of magnetic lines were taken
3) nine grabs were recovered
4) ten cores were taken
5) two dredge stations were occupied
6) 14 hydrographic stations were taken
7) net tows were made daily

Participants

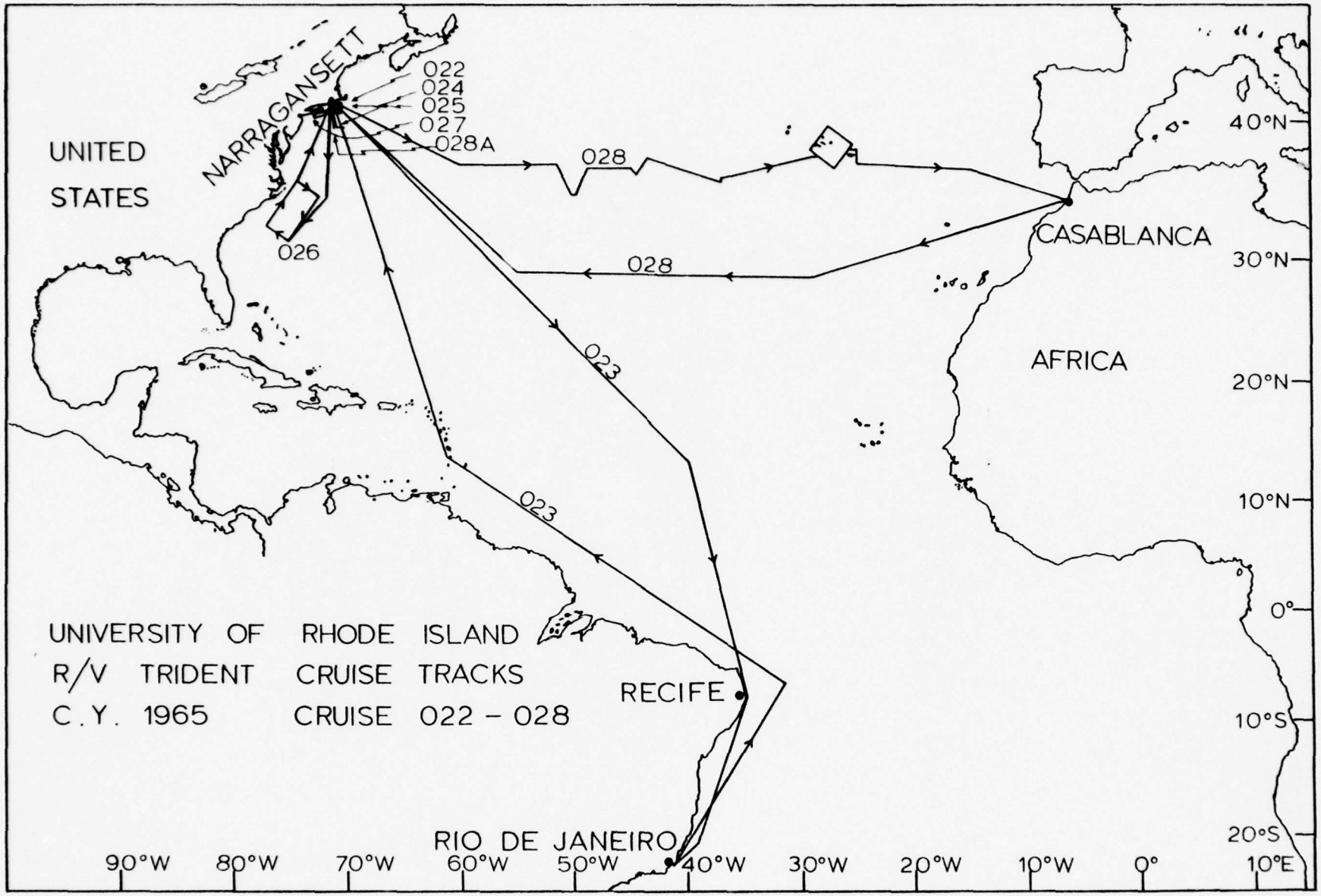
Dr. David Schink	Co-Chief Scientist	U.R.I.
Dr. Dale Krause	Co-Chief Scientist	U.R.I.
Mr. Thomas D'Ambra	Marine Technician	U.R.I.
Mr. James Frey	Marine Technician	U.R.I.
Mr. John Piety	Marine Technician	U.R.I.
Mr. Kent Fanning	Graduate Student	U.R.I.
Mr. Clifford Schink	Student	U.R.I.


N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE=1.375 INCHES - SCALE 1:5,845,000
NARRAGANSETT
PONTA del GADA
AZORES ISLANDS
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-021
16 SEPT - 3 NOV 1964

R/V TRIDENT Cruises - CY 1965

Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
022	27-28 Feb.	2	Rhode Island Sound	Baseler
023	8 Mar. - 15 June	95	NW Atlantic, SW Atlantic	Napora
024	28 June - 2 July	5	NW Atlantic	Krause, Chramiec
025	9 July	1	NW Atlantic	Jeffries
026	13 July - 13 Aug.	32	NW Atlantic	Knauss
027	19 Aug. - 2 Sept.	15	NW Atlantic	McMaster
028A	8-10 Oct.	3	NW Atlantic	Krause
028	11 Oct. - 20 Dec.	66	North Atlantic	Krause

*All GSO/URI


NARRAGANSETT
022
024
025
027
028A
028
026
028
023
023
UNITED
STATES
CASABLANCA
AFRICA
RECIFE
RIO DE JANEIRO
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C.Y. 1965 CRUISE 022 - 028
40°N
30°N
20°N
10°N
0°
10°S
20°S
90°W
80°W
70°W
60°W
50°W
40°W
30°W
20°W
10°W
0°
10°E

Cruise No.: TR-022

Dates: 27 - 28 February

Area of Operation: Rhode Island Sound

Days at sea: 2

Funding: ONR

Program Description

The main purposes of this cruise were

a) to investigate the basement structure and geophysical properties in Rhode Island Sound

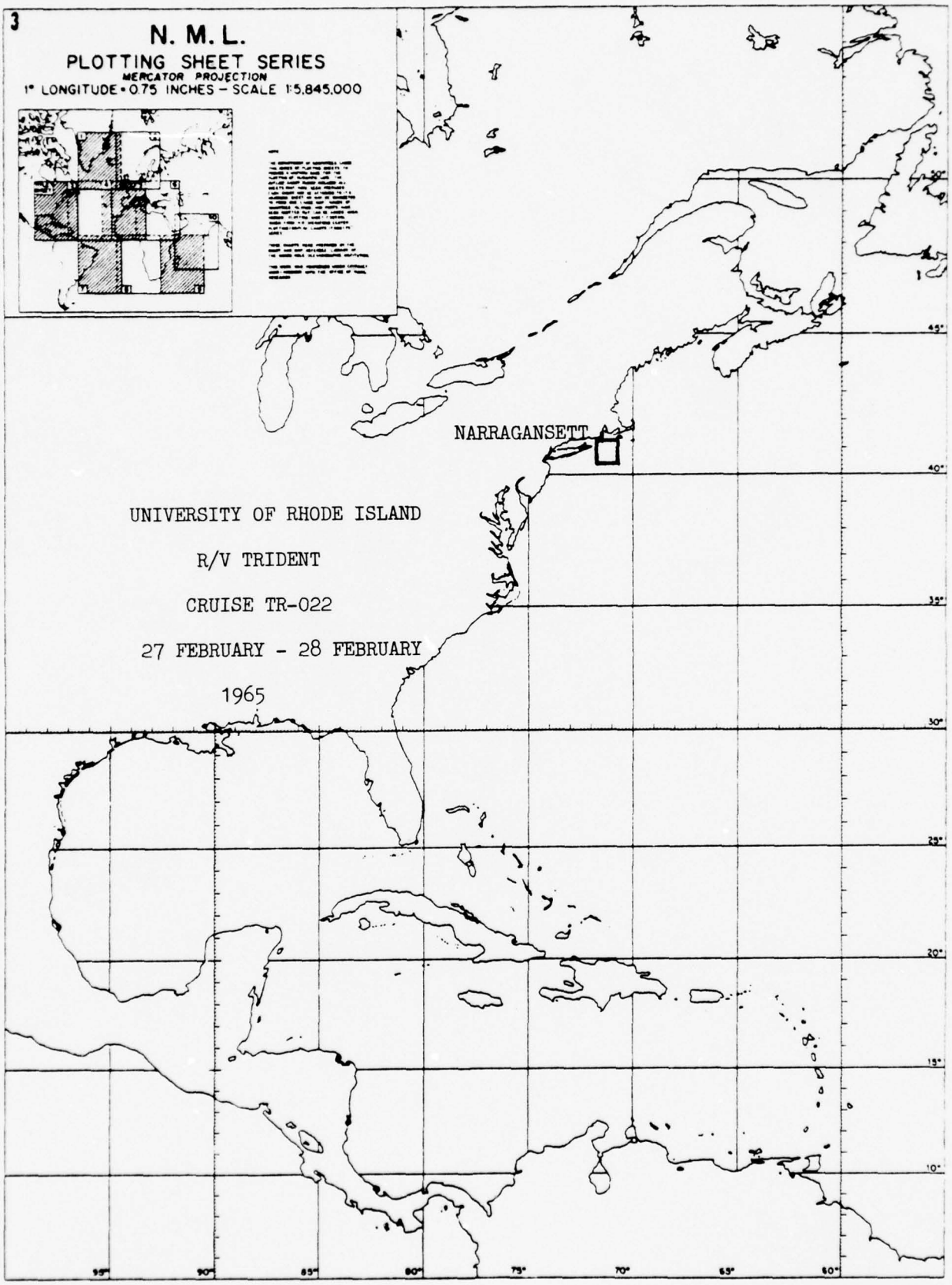
Data Collected

1) 230 n.m. each of bathymetric and magnetic profiles were run

2) 55 n.m. of seismic reflection profiles were collected

Participants

Mr. Thomas W. Baseler	Chief Scientist	U.R.I.
Dr. Dale C. Krause	Assistant Professor	U.R.I.
Mr. Philip Bedard	Electronics Engineer	U.R.I.
Mr. Gino Mecarini	Oceanographic Specialist	U.R.I.
Mr. Paul Peterson	Oceanographic Specialist	U.R.I
Mr. Steven Chelminski	Scientist	Bolt Associates
Mr. Donald J. Corrigan	Graduate Student	U.R.I.
Mr. Martin F. McDonald	Graduate Student	U.R.I.
Mr. Robert Radulski	Graduate Student	U.R.I.
Mr. James Robb	Graduate Student	U.R.I.
Mr. James Schwartz	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-022
27 FEBRUARY - 28 FEBRUARY
1965
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60°

Cruise No.: TR-023

Dates: 8 March - 15 June 1965

Area of Operation: Northwest and Southwest Atlantic Oceans

Days at sea: 95

Funding: ONR, NSF

Program Description

The main purposes of this cruise were:

a) to study plankton and silicon occurrence and distribution from the North to South Atlantic

b) to run bioacoustic studies for whales

c) to use bathymetry to study the eastern extension of the Barracuda Fault

Data Collected

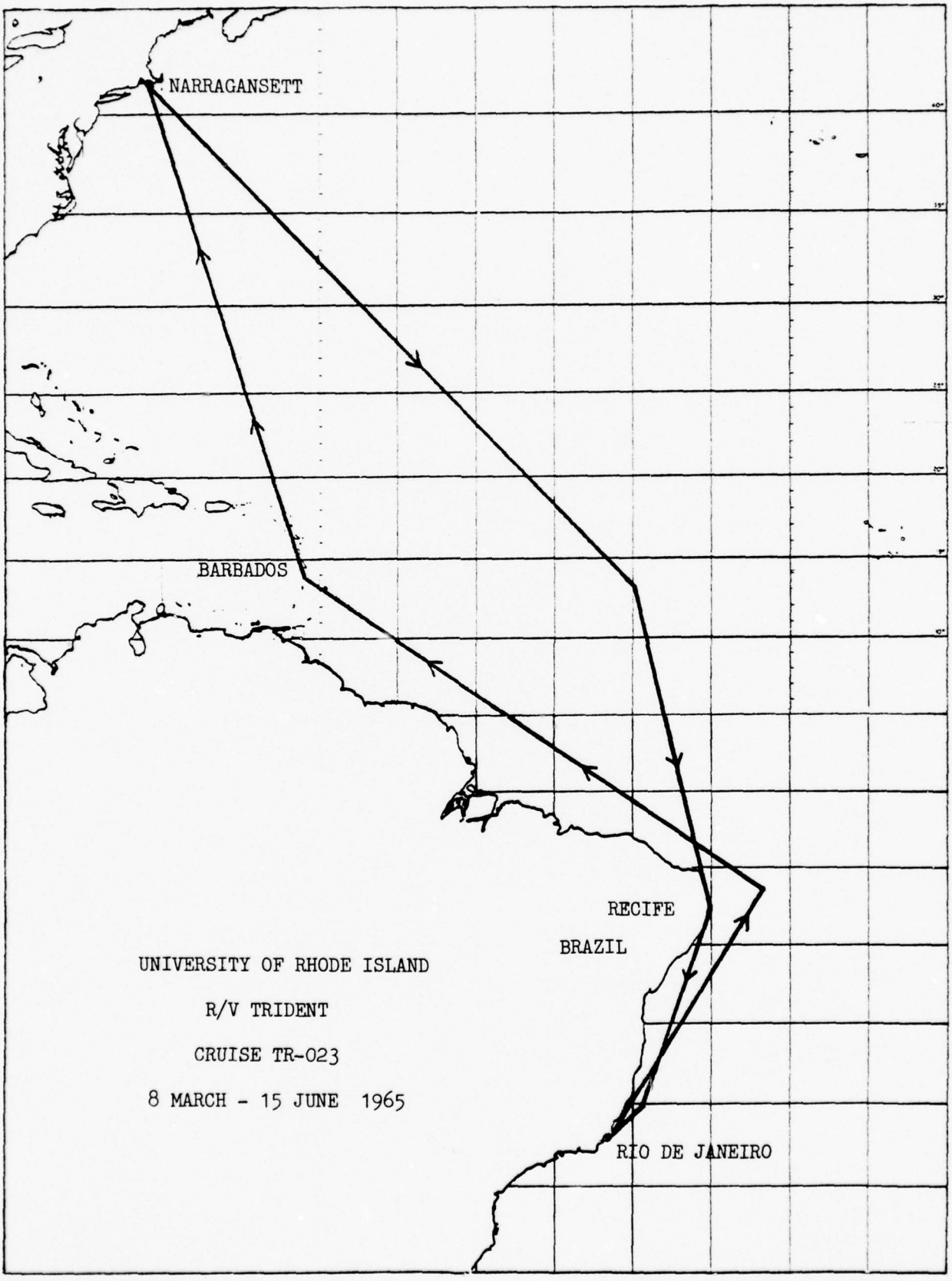
1) 25 net tows were recovered

2) bioacoustic stations were occupied

3) bathymetry and magnetic profiles were run

Participants

Dr. Theodore Napora	Chief Scientist	U.R.I.
Dr. C. J. Fish	Professor	U.R.I.
Dr. D. M. Pratt	Professor	U.R.I.
Mr. Paul Perkins	Oceanographic Specialist	U.R.I.
Mr. Robert Fournier	Graduate Student	U.R.I.
Mr. Donald Gordon	Graduate Student	U.R.I.
Mr. Elijah Swift	Graduate Student	U.R.I.
Mr. Ellsworth Wheeler	Graduate Student	U.R.I.
Mr. Kenneth Wunschel	Graduate Student	U.R.I.


NARRAGANSETT
BARBADOS
RECIFE
BRAZIL
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-023
8 MARCH - 15 JUNE 1965
RIO DE JANEIRO

Cruise No.: TR-024

Dates: 28 June - 2 July 1965

Area of Operation: Northwest Atlantic Ocean

Days at sea: 5

Funding: ONR

Program Description

The main purpose of this cruise was

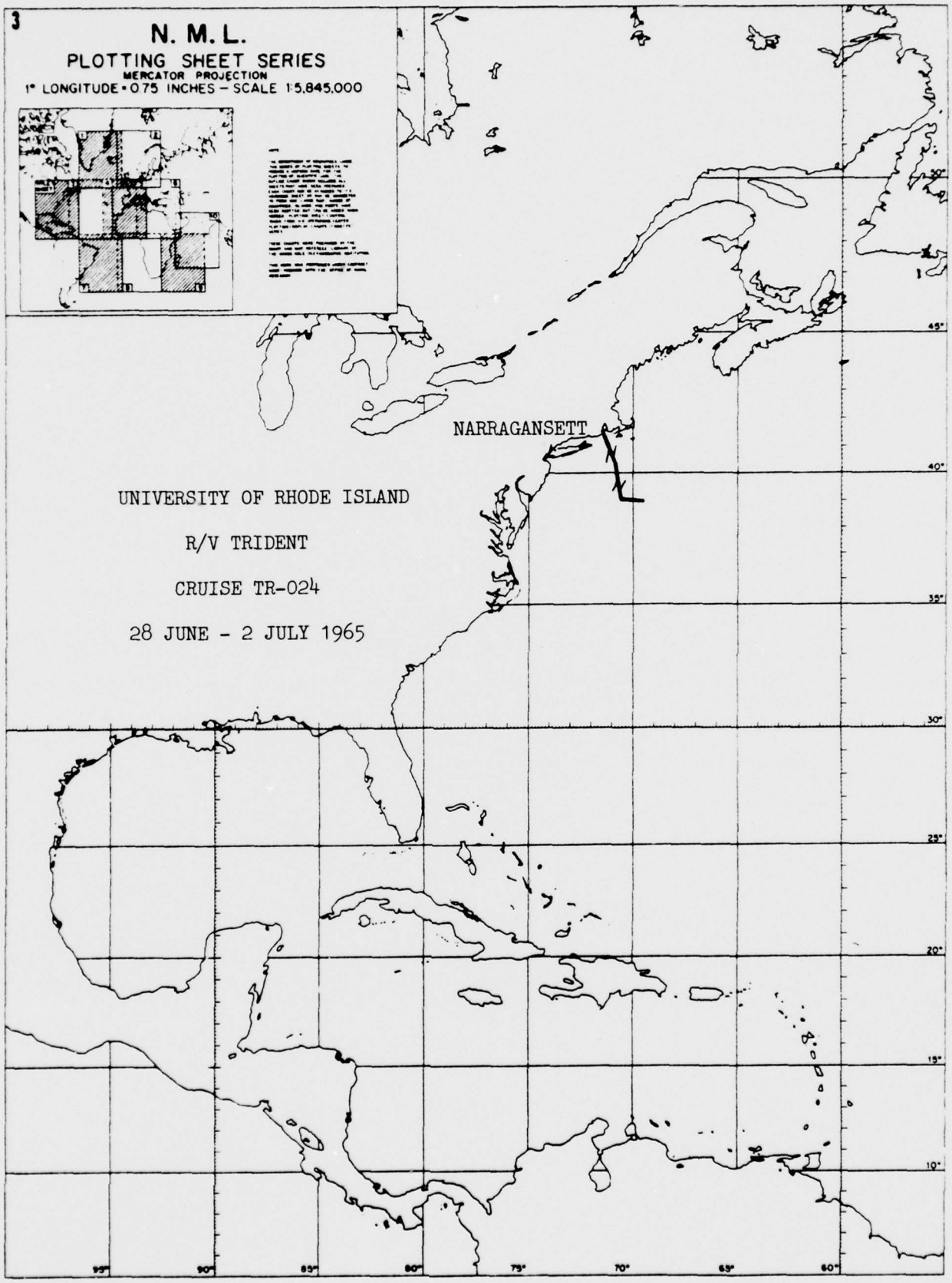
a) to familiarize oceanographic students with shipboard scientific techniques

Data Collected

1) The following experiments were run: plankton sampling, trawls, neuston tows, hydrocasts, MBT's, echo studies, bathymetry, coring and bioacoustic recording

Participants

Dr. D. Krause	Co-Chief Scientist	U.R.I.
Mr. M. Chramiec	Co-Chief Scientist	U.R.I.
Ms. L. Alzara	Graduate Student	U.R.I.
Mr. J. Fish	Graduate Student	U.R.I.
Mr. J. Frey	Graduate Student	U.R.I.
Mr. L. Huff	Graduate Student	U.R.I.
Mr. L. Igniatades	Graduate Student	U.R.I.
Ms. B. McGregor	Graduate Student	U.R.I.
Mr. J. Pesch	Graduate Student	U.R.I.
Mr. G. Walsh	Graduate Student	U.R.I.
Mr. R. Wilcox	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-024
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Cruise No.: TR-025

Dates: 9 July 1965

Area of Operation: Northwest Atlantic Ocean

Days at sea: 1

Funding: NSF

Program Description

The main purpose of this cruise was

a) an orientation for an NSF-sponsored summer institute for high school biology teachers

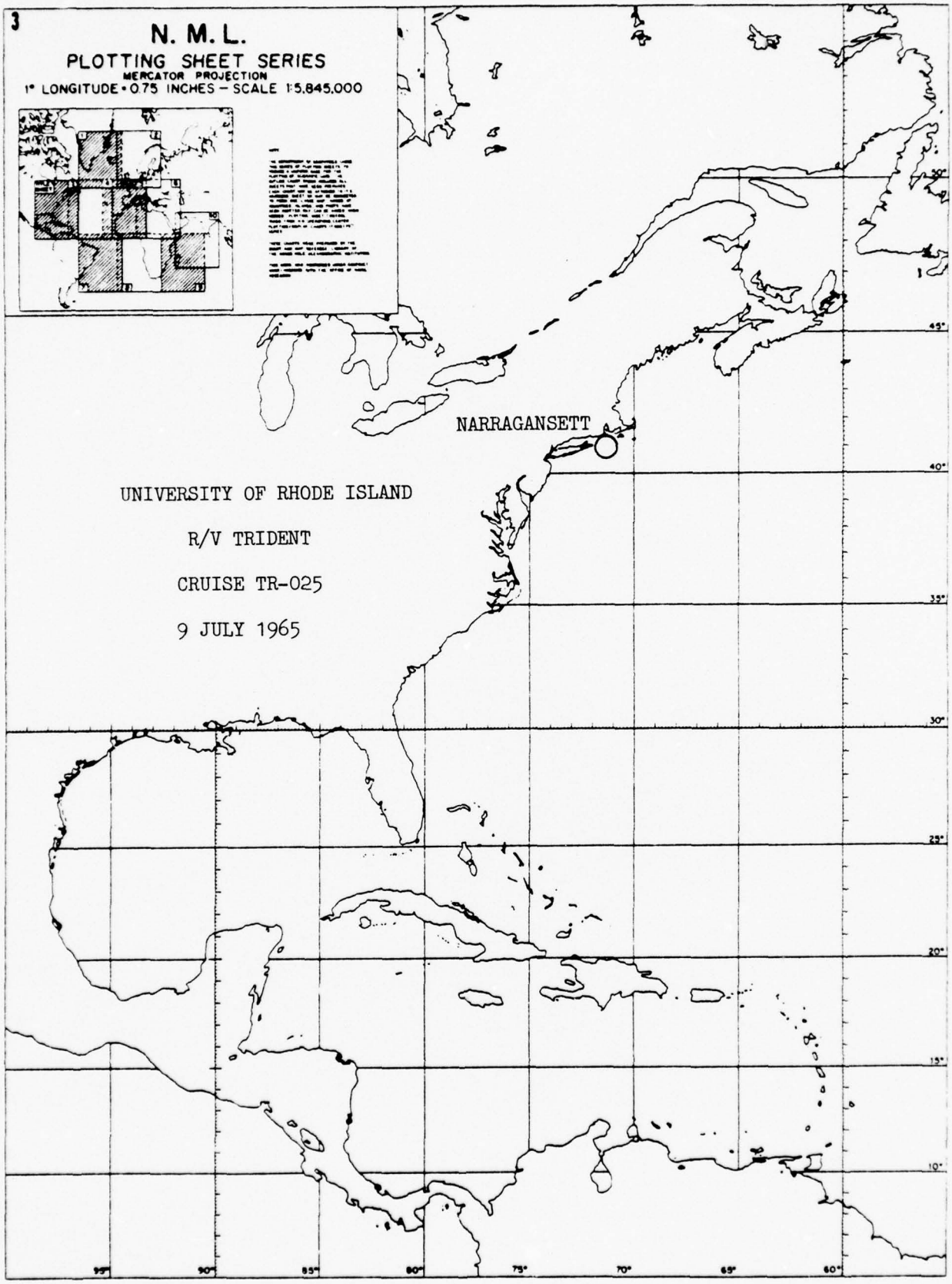
Data Collected

1) Equipment demonstrated

No samples collected

Participants

Dr. H. P. Jeffries	Chief Scientist	U.R.I.
Biology teachers		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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-025
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Cruise No.: TR-026

Dates: 13 July - 13 August 1965 Area of Operation: Northwest Atlantic Ocean

Days at sea: 32

Funding: ONR

Program Description

The main purpose of this cruise was

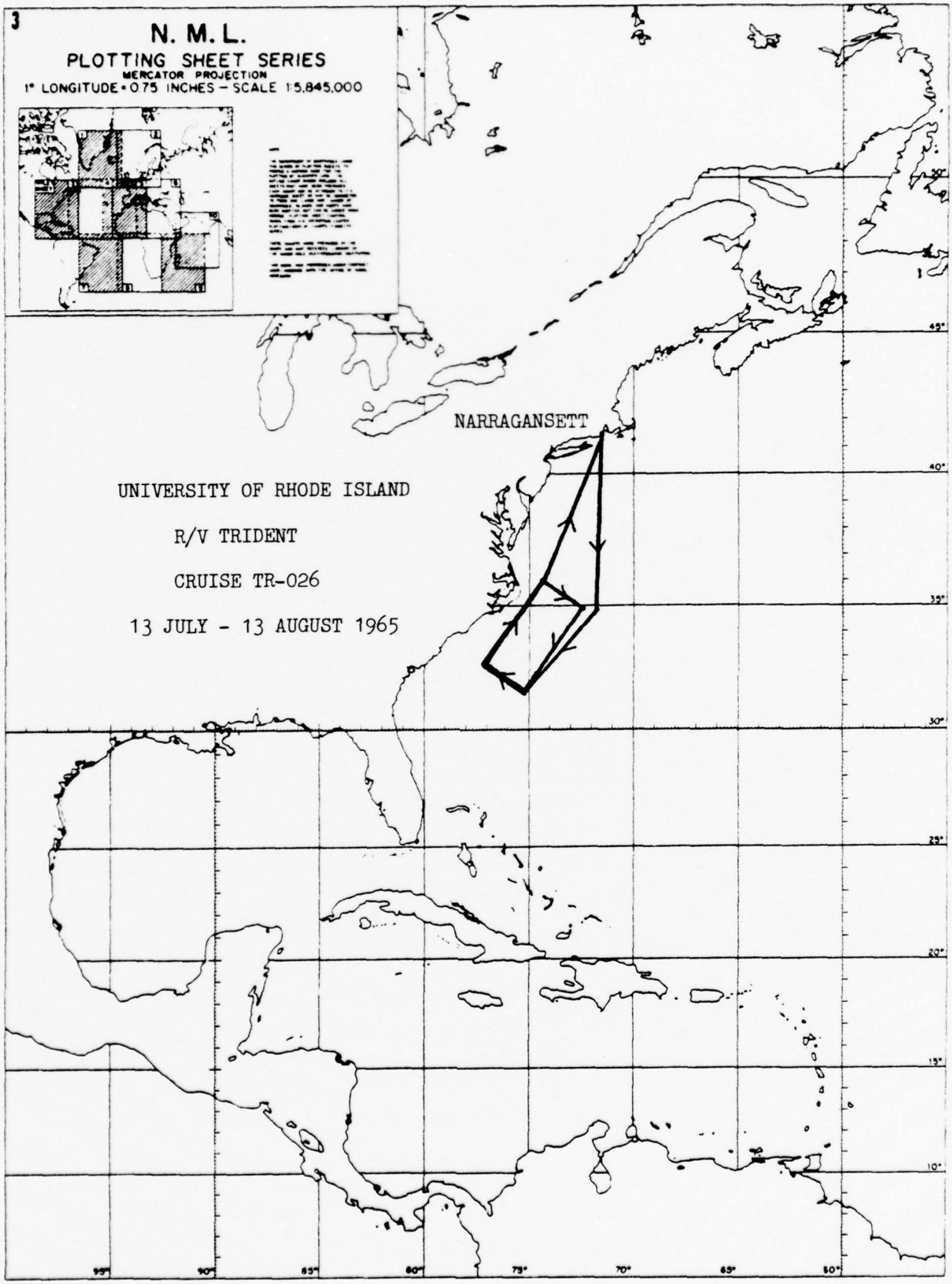
a) to measure the physical characteristics of the Gulf Stream by studying the transport and near-bottom currents

Data Collected

1) 24 hydrographic stations were occupied
2) 51 transport measurements were made
3) 16 bottom current meters were deployed
4) 16 GEK runs were made

Participants

Dr. John A. Knauss	Chief Scientist	U.R.I.
Mr. Philip P. Bedard	Electronics Engineer	U.R.I.
Mr. Wing Grist	Oceanographic Specialist	U.R.I.
Mr. John Piety	Oceanographic Specialist	U.R.I.
Mr. Paul J. Peterson	Electronics Technician	U.R.I.
Mr. Franz Van De Kop	Engineer	General Precision-Decca Corp.
Mr. William Durgin	Graduate Student	U.R.I.
Mr. Gino Mecarini	Graduate Student	U.R.I.
Mr. Thomas Osborne	Graduate Student	S.I.O.
Mr. Robert K. Sexton	Graduate Student	U.R.I.
Mr. Georges L. Weatherly	Graduate Student	Harvard University


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-026
13 JULY - 13 AUGUST 1965
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Cruise No.: TR-027

Dates: 19 August - 2 September 1965 Area of Operation: Northwest Atlantic Ocean

Days at sea: 15

Funding: ONR

Program Description

The main purposes of this cruise were

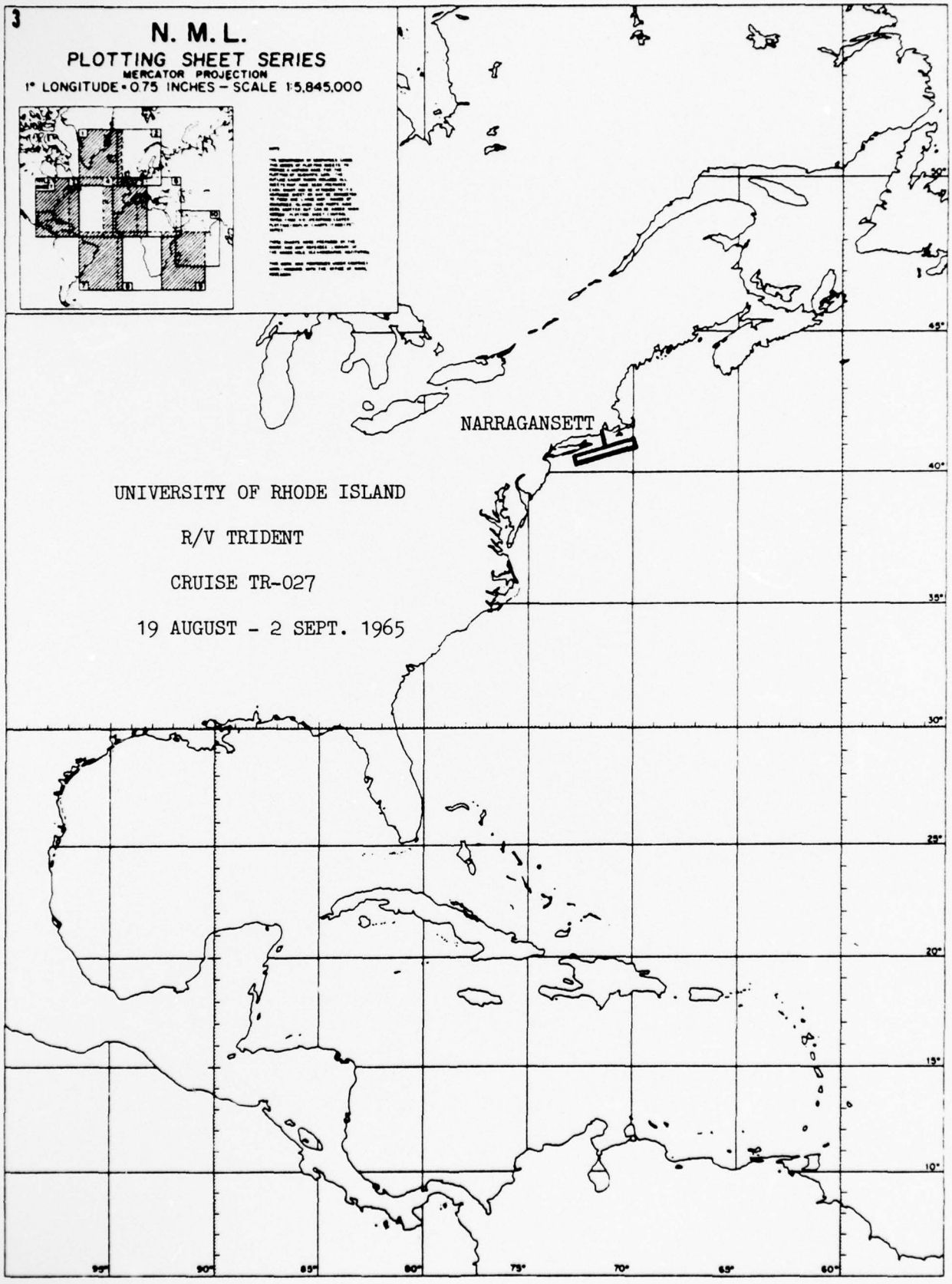
a) to conduct geological and geophysical studies of the continental shelf off New England

Data Collected

1) 1,200 n.m. of bathymetric profiles were run
2) 950 n.m. of magnetic lines were run
3) 435 n.m. of seismic reflection lines were run
4) 17 grabs were collected
5) 19 cores were taken
6) two dredges were recovered
7) 10 seabed drifters were deployed

Participants

Dr. Robert L. McMaster	Chief Scientist	U,R.I.
Mr. Louis E. Garrison	Graduate Student	U.R.I.
Mr. William P. Dillon	Graduate Student	U.R.I.
Mr. Sheldon Pratt	Graduate Student	U.R.I.
Mr. Ronald Smith	Graduate Student	U.R.I.
Mr. John Piety	Oceanographic Specialist	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-027
19 AUGUST - 2 SEPT. 1965
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Cruise No.: TR-028A

Dates: 8 - 10 October 1965

Area of Operation: Northwest Atlantic Ocean

Days at sea: 3

Funding: ONR

Program Description

The main purpose of this cruise was

a) to perform geophysical profiling equipment tests

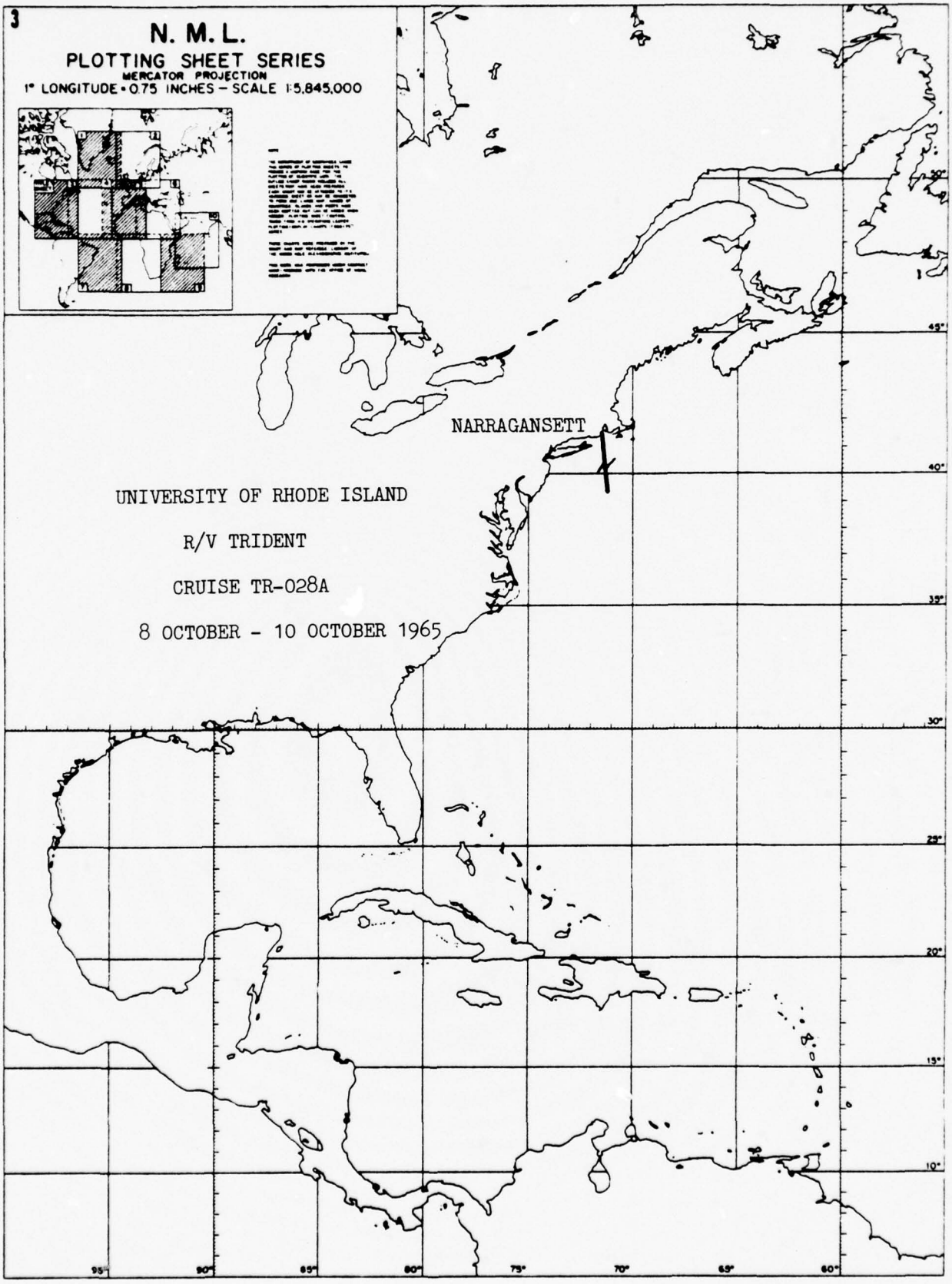
Data Collected

1) 11 n.m. of seismic reflection profiles were run

2) Raytheon and Bolt equipment was tested

Participants

Dr. Dale C. Krause	Chief Scientist	U.R.I.
Mr. Gil Fain	Electrical Engineering	U.R.I.
Mr. Donald Corrigan	Graduate Student	U.R.I.
Mr. Mark Chramiec	Scientist	Raytheon Co.
Mr. Ed Shore	Scientist	Raytheon Co.
Mr. George Walsh	Scientist	Raytheon Co.
Mr. Serge Wisotsky	Scientist	Raytheon Co.
Mr. Antony Delano	Scientist	Bolt Associates
Mr. John Gilbert	Scientist	Bolt Associates


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-028A
8 OCTOBER - 10 OCTOBER 1965
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Cruise No.: TR-028

Dates: 11 October - 20 December 1965 Area of Operation: North Atlantic Ocean

Days at sea: 66

Funding: ONR

Program Description

The main purposes of this cruise were

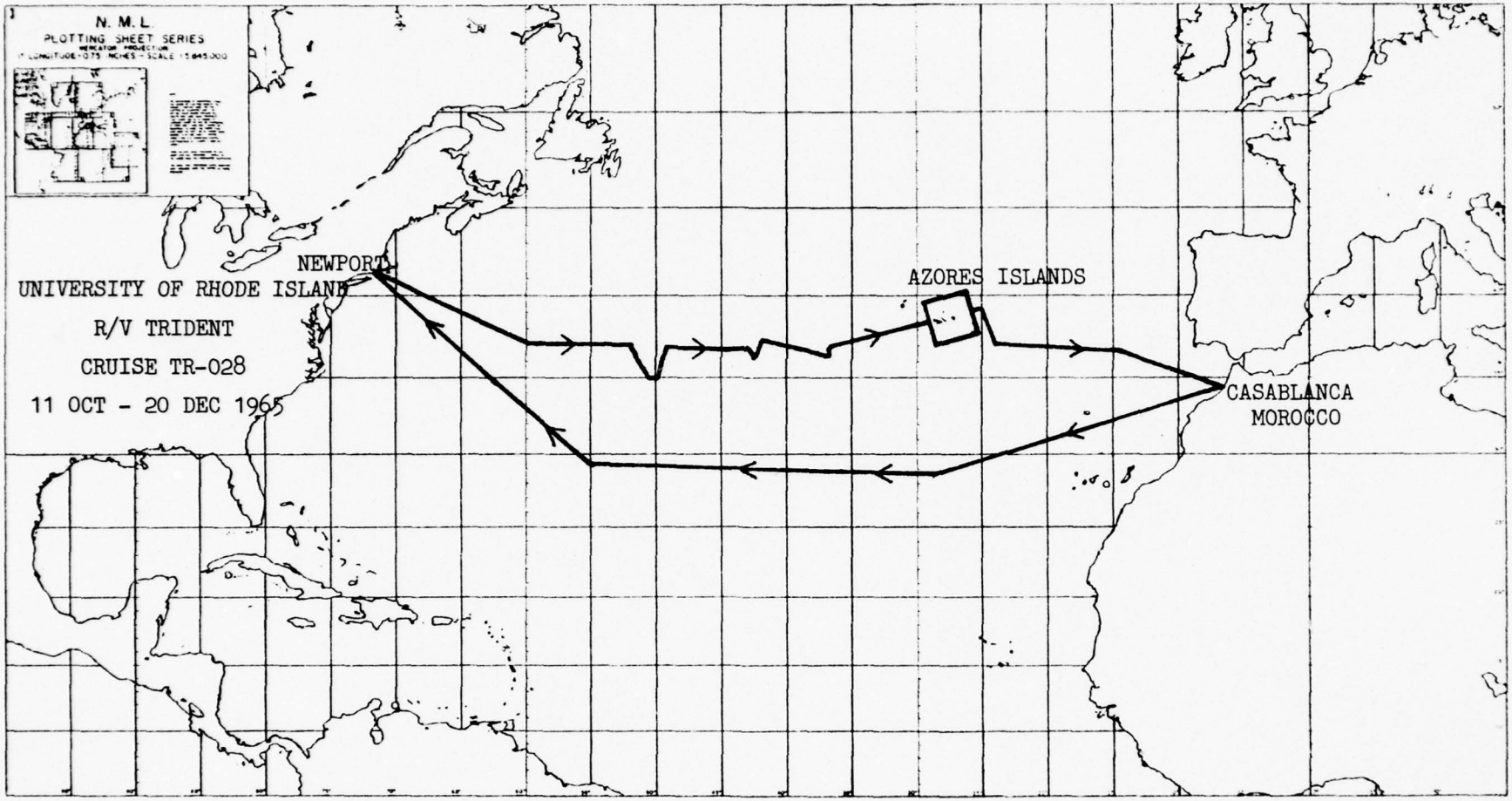
a) to perform geological, geochemical and biological studies

Data Collected

1) 8,600 n.m. each of bathymetric and magnetic profiles were run
2) 700 n.m. of seismic reflection profiles were collected
3) 11 cores were taken
4) eight dredge hauls were recovered
5) five camera stations were occupied
6) 28 hydrographic stations were taken
7) 24 biological stations were run

Participants

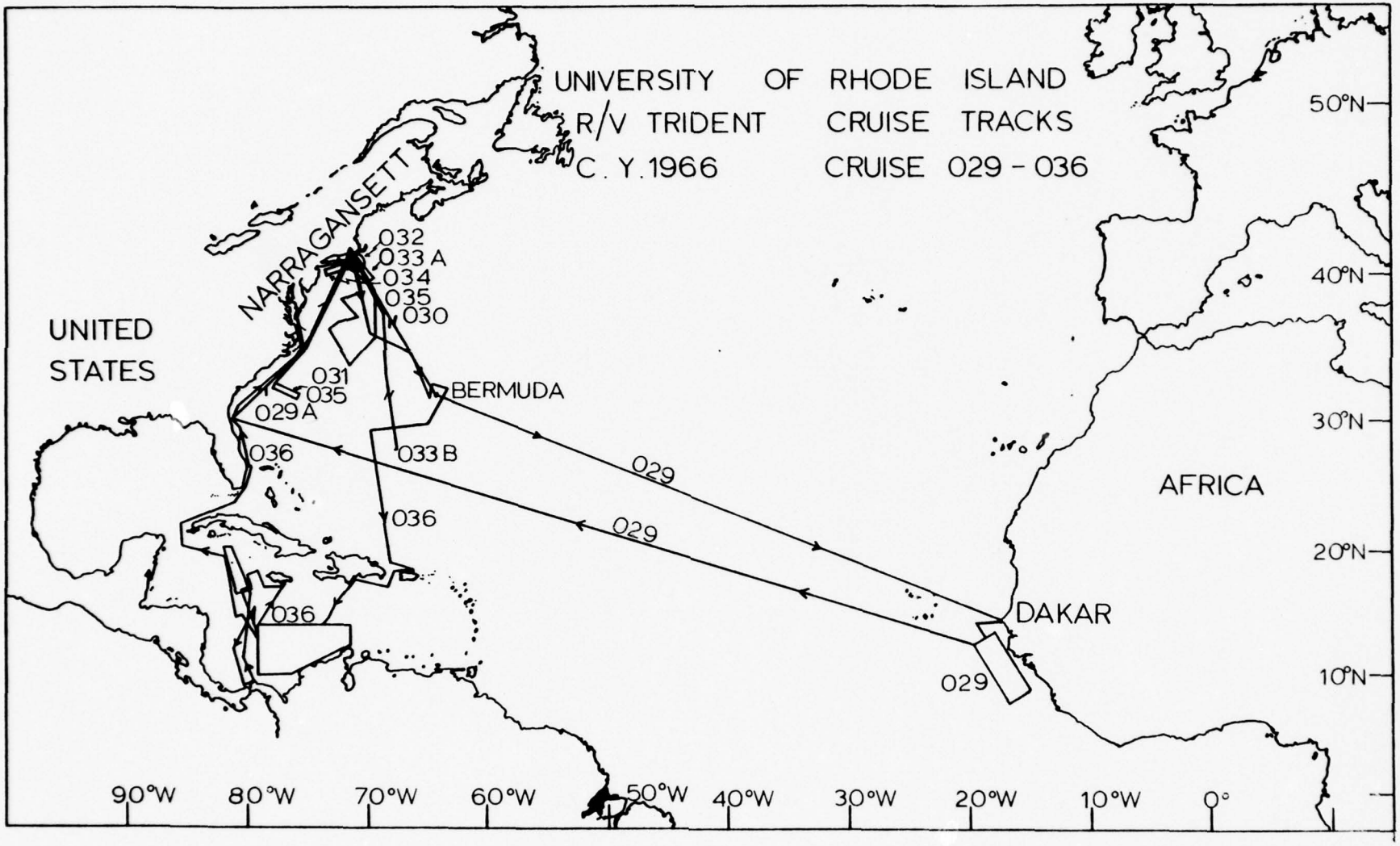
Dr. Dale C. Krause	Chief Scientist	U.R.I.
Dr. Frederico Machado	Volcanologist	Junta de Investigacoes do Ultramar, Lisbon
Mr. Joao Pacheco	Geologist	Junta de Investigacoes do Ultramar, Lisbon
Mr. Arthur Buddington	Oceanographic Specialist	U.R.I.
Mr. George F. Hoskins	Oceanographic Specialist	U.R.I.
Mr. John P. Piety	Oceanographic Specialist	U.R.I.
Mr. Kent A. Fanning	Graduate Student	U.R.I.
Mr. Robert O. Fournier	Graduate Student	U.R.I.
Mr. Arthur Gaines	Graduate Student	U.R.I.
Ms. Bonnie McGregor	Graduate Student	U.R.I.


N. M. L.
PLOTTING SHEET SERIES
NEWPORT
AZORES ISLANDS
CASABLANCA
MOROCCO
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-028
11 OCT - 20 DEC 1965

R/V TRIDENT Cruises - CY 1966

Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
029	14 Mar. - 20 May	64	North Atlantic	McMaster
029A	22-28 May	7	NW Atlantic	Fish
030	2-11 June	10	NW Atlantic	Schneider/LDGO
031	20-28 June	9	NW Atlantic	Napora, Crandall
032	7 July	1	NW Atlantic	Jeffries
033A	11-15 July	5	NW Atlantic	Marshall
033B	17-29 July	13	NW Atlantic	Wheeler
034	3-16 Aug.	14	NW Atlantic	Garrison
035	1-20 Sept.	20	NW Atlantic	Knauss
036	26 Sept. - 19 Dec.	75	NW Atlantic, Caribbean	Krause, Corless

*GSO/URI unless otherwise noted


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C. Y. 1966 CRUISE 029 - 036
NARRAGANSETT
UNITED STATES
032
033 A
034
035
030
031
035
029 A
036
033 B
036
036
BERMUDA
029
029
AFRICA
DAKAR
029
50°N
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Cruise No.: TR-029

Dates: 14 March - 20 May 1966

Area of Operation: Northwest and Northeast Atlantic Ocean

Days at sea: 64

Funding: ONR

Program Description

The main purposes of this cruise were

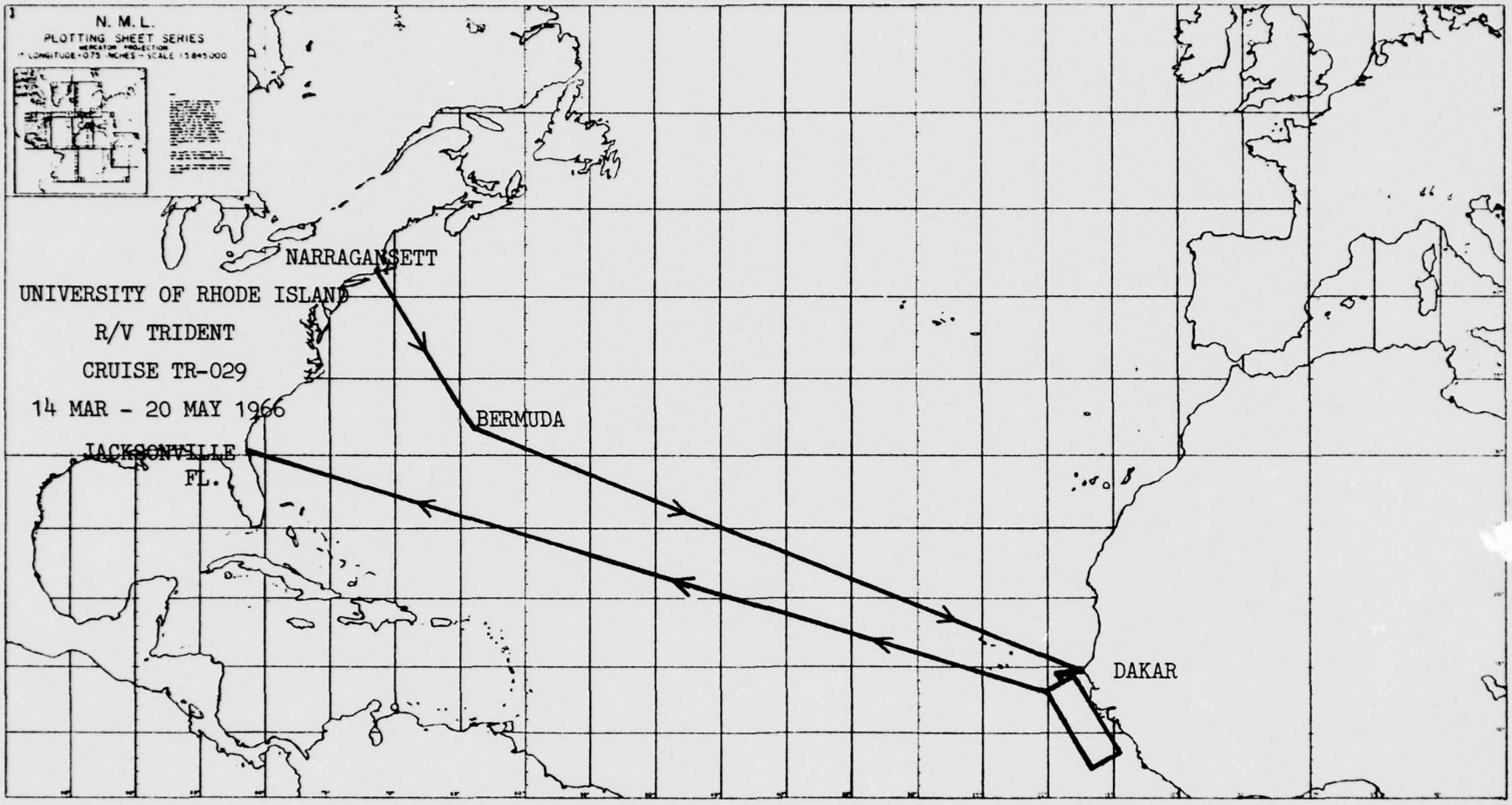
a) to perform geological and geophysical survey off the coast of Guinea-Sierra Leone and on two transects across the North Atlantic Ocean

Data Collected

1) 10,540 n.m. of bathymetric profiles were run
2) 8,420 n.m. of magnetic lines were recorded
3) 560 n.m. of seismic reflection profiles were run
4) 117 grab samples were collected
5) six cores were taken
6) 11 dredge tows were collected
7) 20 camera stations were occupied
8) 60 MBT's were taken

Participants

Dr. R. L. McMaster	Chief Scientist	U.R.I.
Mr. A. Ashraf	Graduate Student	U.R.I.
Mr. A. Buddington	Marine Technician	U.R.I.
Mr. T. Kennard	Marine Technician	U.R.I.
Mr. J. Dodson	Electronic Technician	Electric Boat, General Dynamics
Mr. P. Petersen	Electronics Technician	U.R.I.
Mr. D. Smith	Student	U.R.I.


N. M. L.
PLOTTING SHEET SERIES
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-029
14 MAR - 20 MAY 1966
JACKSONVILLE
FL.
BERMUDA
DAKAR

Cruise No.: TR-029A

Dates: 22 - 28 May 1966

Area of Operation: Northwest Atlantic Ocean

Days at sea: 7

Funding: ONR

Program Description

The main purposes of this cruise were

a) to run several bioacoustic stations along the ship's track

b) to maintain whale and porpoise watches

c) to run night-lighted fishing stations

Data Collected

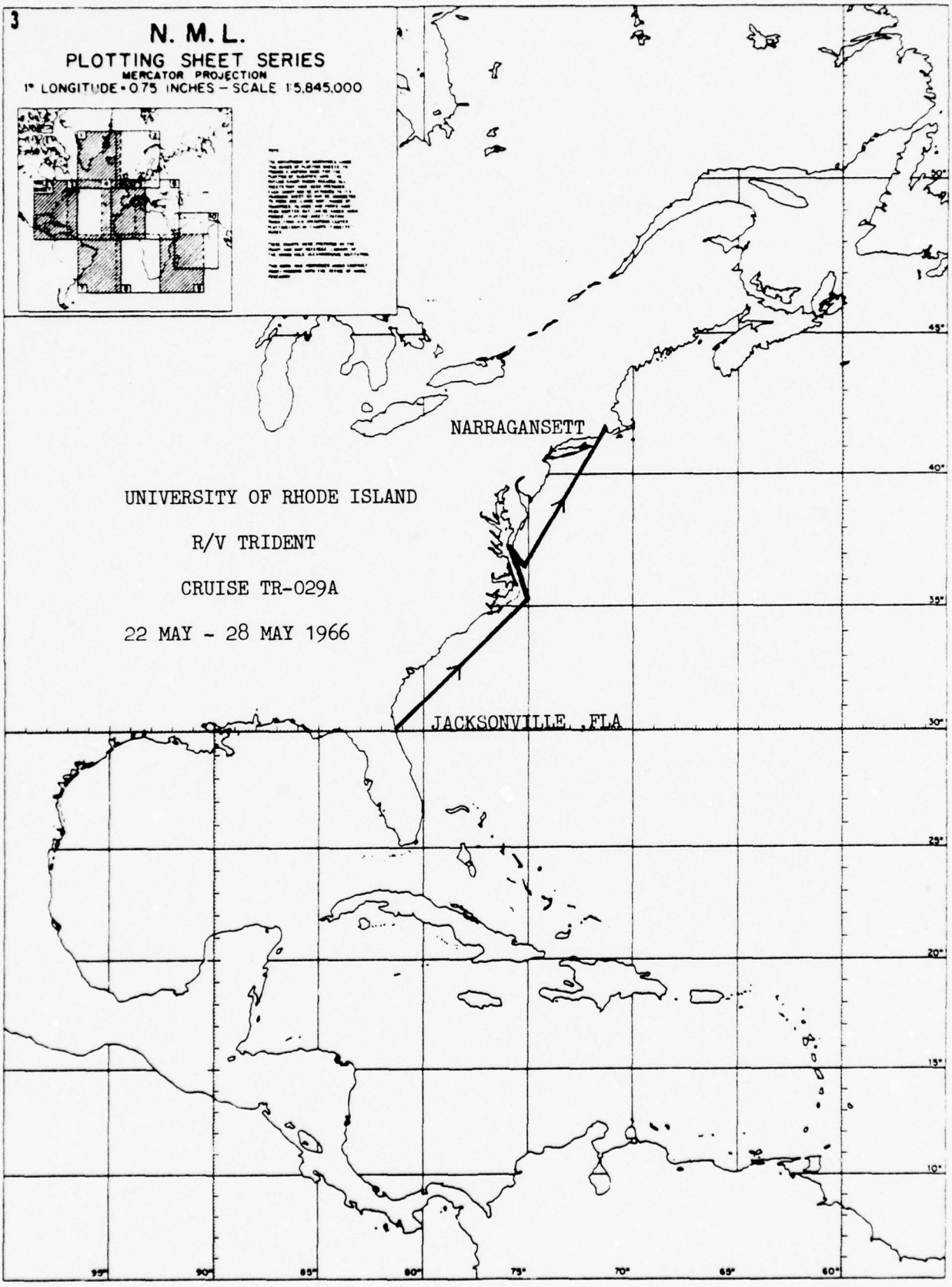
1) seven bioacoustic stations were run

2) two night-lighted stations were occupied

3) a continuous whale/porpoise watch was kept

Participants

Dr. Charles J. Fish	Chief Scientist	U.R.I.
Dr. Marie P. Fish	Scientist	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Arthur B. Buddington	Oceanographic Specialist	U.R.I.
Mr. Timothy Kennard	Oceanographic Specialist	U.R.I.
Mr. Asaf Ashraf	Graduate Student	U.R.I.
Mr. J. Lawrence Dunn	Graduate Student	U.R.I.
Mr. David M. Smith	Oceanographic Assistant	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-029A
22 MAY - 28 MAY 1966
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Cruise No.: TR-030

Dates: 2 - 11 June 1966

Area of Operation: Northwest Atlantic Ocean

Days at sea: 10

Funding: ONR, NSF

Program Description

The main purpose of this cruise was

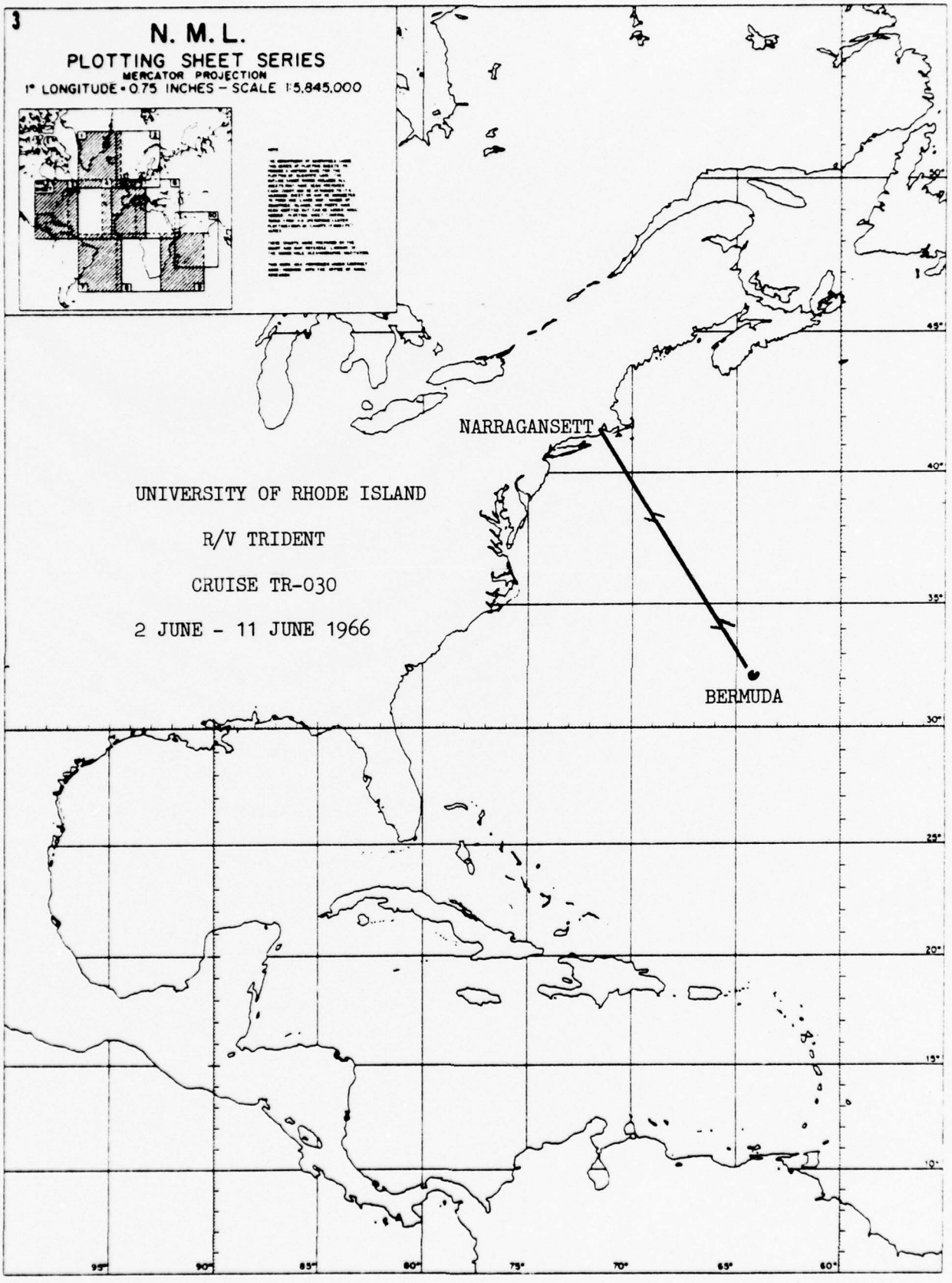
a) to study bottom currents and geology between Narragansett, R. I., and Bermuda using bottom photographs

Data Collected

1) 36 bottom photography stations were occupied

Participants

Mr. Eric Schneider	Chief Scientist	L.G.O.
Dr. D. Chou	Professor	L.G.O.
Mr. Marish Chamberlain	Graduate Student	L.G.O.
Mr. John Damuth	Graduate Student	L.G.O.
Mr. Edward Escowitz	Graduate Student	L.G.O.
Mr. John Foster	Graduate Student	L.G.O.
Mr. Paul J. Fox	Graduate Student	L.G.O.
Ms. Hester Harding	Graduate Student	L.G.O.
Ms. Marily Hightower	Graduate Student	L.G.O.
Mr. Allen Lowrie, Jr.	Graduate Student	L.G.O.
Mr. David Needham	Graduate Student	L.G.O.
Mr. Donald Pine	Graduate Student	L.G.O.
Mr. Robert Sheridan	Graduate Student	L.G.O.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
BERMUDA
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-030
2 JUNE - 11 JUNE 1966
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Cruise No.: TR-031

Dates: 20 - 28 June 1966

Area of Operation: Northwest Atlantic Ocean

Days at sea: 9

Funding: ONR

Program Description

The main purpose of this cruise was

a) to familiarize oceanographic students with research vessel methods

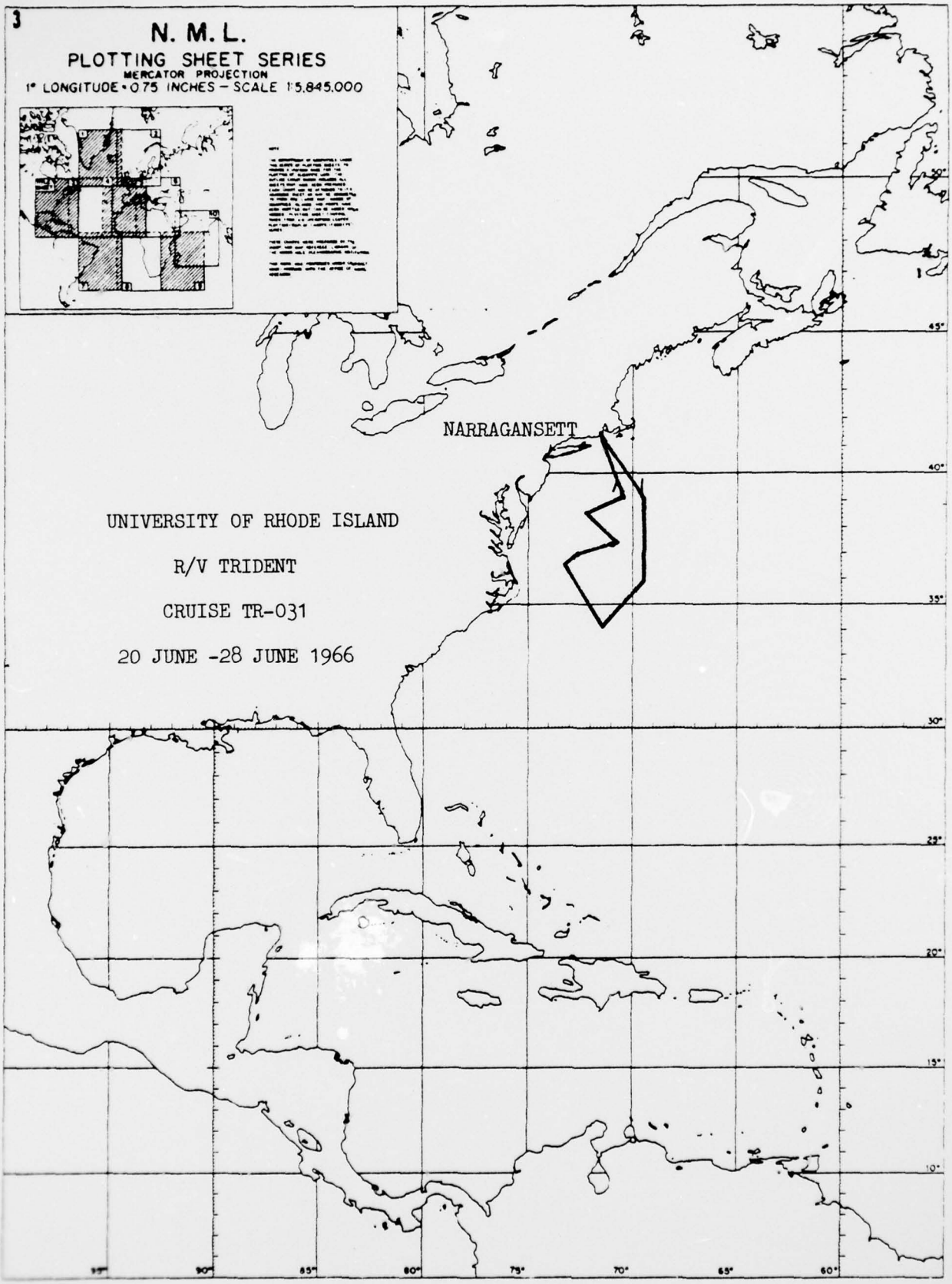
Data Collected

1) The following were accomplished:

hydrographic station, MBT's, phytoplankton tows, camera station, grab samples, neuston tow, net tows

Participants

Dr. T. Napora	Co-Chief Scientist	U.R.I.
Mr. D. Crandall	Co-Chief Scientist	U.R.I.
Mr. S. Cobb	Graduate Student	U.R.I.
Mr. M. Fecher	Graduate Student	U.R.I.
Mr. J. Frey	Graduate Student	U.R.I.
Ms. B. Mitchell-Innes	Graduate Student	U.R.I.
Mr. G. Offutt	Graduate Student	U.R.I.
Mr. T. Polgar	Graduate Student	U.R.I.
Mr. B. Reynolds	Graduate Student	U.R.I.
Mr. C. Robinson	Graduate Student	U.R.I.
Mr. M. Shalem	Graduate Student	U.R.I.
Mr. E. H. Wheeler	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-031
20 JUNE -28 JUNE 1966
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Cruise No.: TR-032

Dates: 7 July 1966

Area of Operation: Northwest Atlantic Ocean

Days at sea: 1

Funding: ONR

Program Description

The main purpose of this cruise was

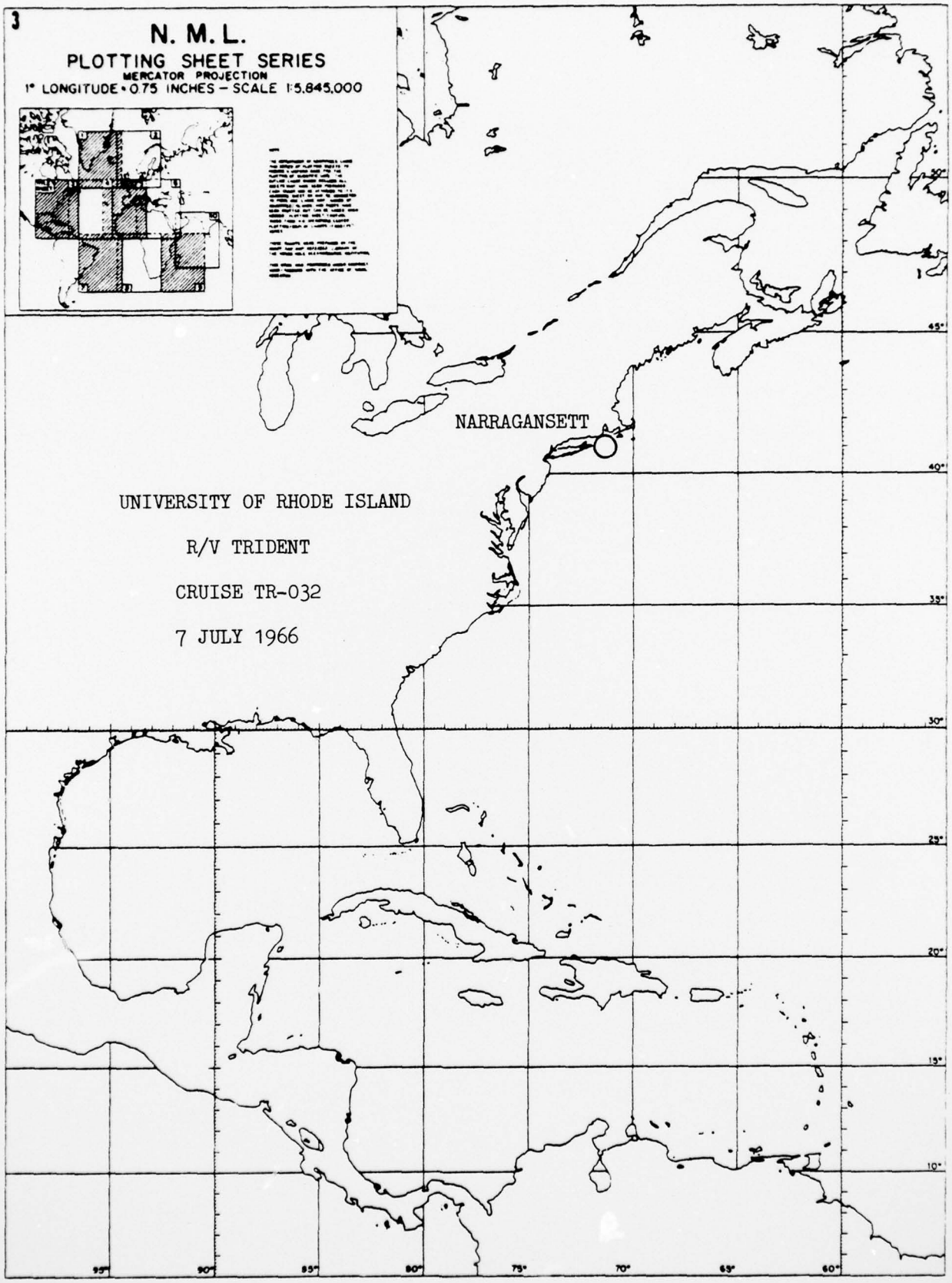
a) to provide a one-day orientation cruise for the biology teachers' summer institute

Data Collected

None

Participants

Dr. H. P. Jeffries	Chief Scientist	U.R.I.
Biology teachers		


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-032
7 JULY 1966
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Cruise No.: TR-033A

Dates: 11 - 15 July 1966

Area of Operation: Northwest Atlantic Ocean

Days at sea: 5

Funding: NSF

Program Description

The main purpose of this cruise was

a) to ascertain the distribution of larvae of the inshore lobster population

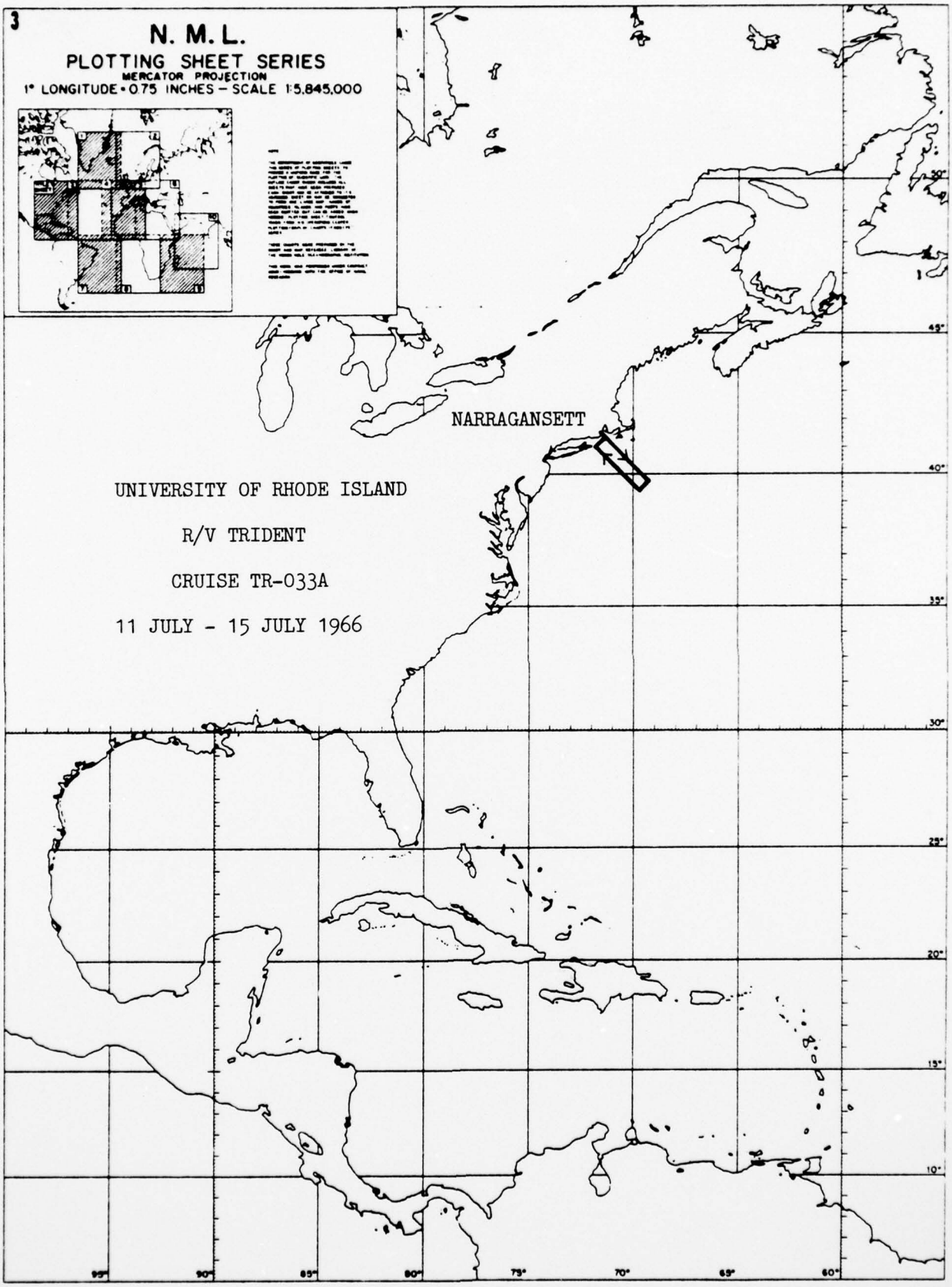
Data Collected

1) nine tow stations with associated hydrocasts and MBT's were occupied

2) bottom photographs and grab samples were obtained

Participants

Dr. Nelson Marshall	Chief Scientist	U.R.I.
Dr. Daniel Sass	Professor	Alfred University
Mr. Paul Gaffney II	Midshipman 2nd Class	Annapolis
Mr. Robert Burgio	Scientist	Hittman Associates, Inc., Baltimore
Mr. Arthur Buddington	Oceanographic Specialist	U.R.I.
Mr. Timothy Kennard	Oceanographic Specialist	U.R.I.
Mr. Bruce Reynolds	Research Assistant	U.R.I.
Mr. Stanley Cobb	Graduate Student	U.R.I.
Mr. John French	Graduate Student	U.R.I.
Ms. Carolyn Robinson	Graduate Student	U.R.I.
Mr. Robert Singletary	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-033A
11 JULY - 15 JULY 1966

Cruise No.: TR-033B

Dates: 17 - 29 July 1966

Area of Operation: Northwest Atlantic Ocean

Days at sea: 13

Funding: ONR

Program Description

The main purpose of this cruise was

a) to collect biological samples on the shelf and southeast of the Gulf Stream

Data Collected

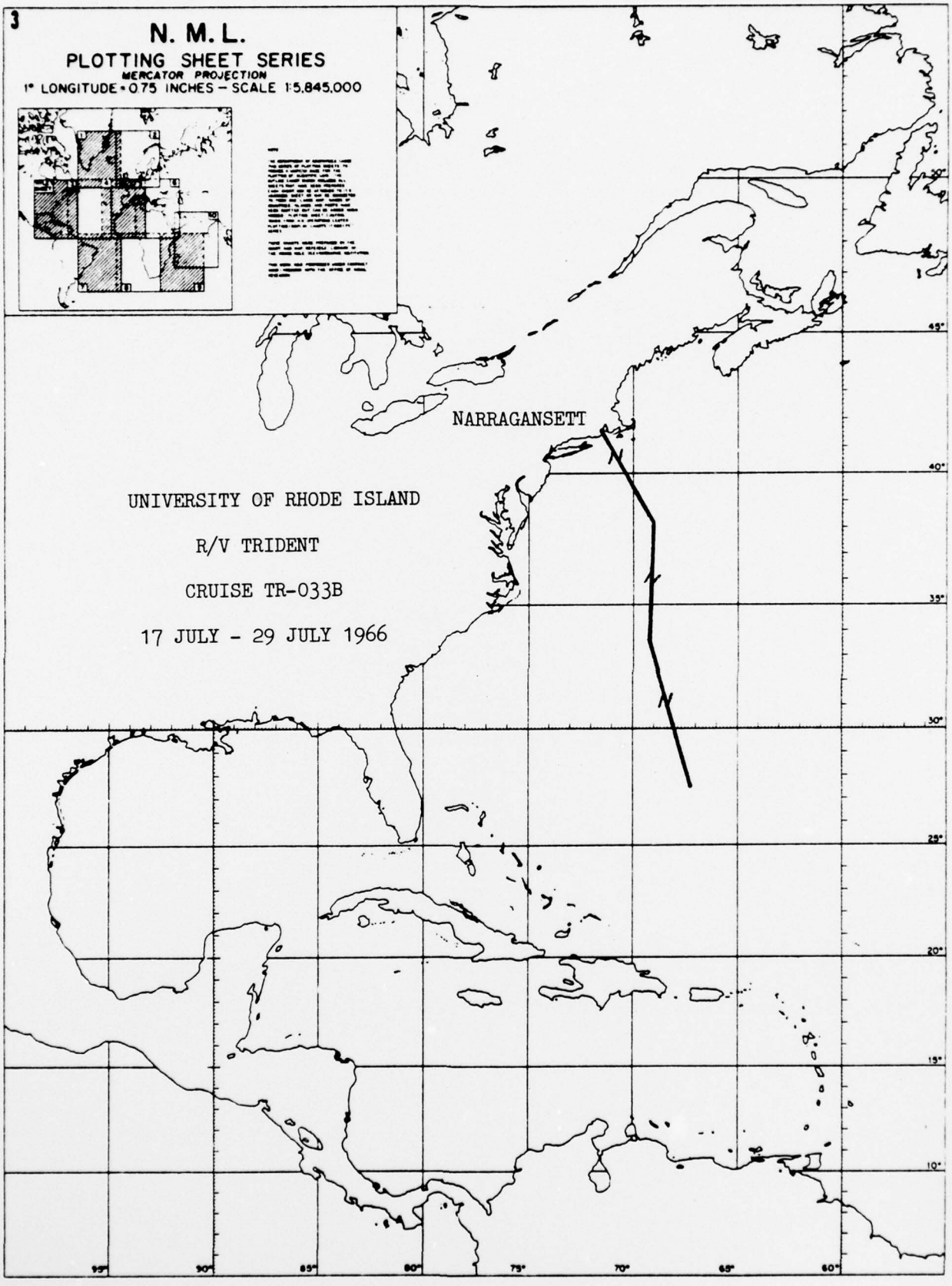
1) two shelf stations were occupied

2) noon surface tows were made

3) two trawl hauls were made

Participants

Mr. E. H. Wheeler	Chief Scientist	U.R.I.
Ms. L. Alzara	Graduate Student	U.R.I.
Mr. C. Robinson	Graduate Student	U.R.I.
Mr. W. Widmer	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES — SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-033B
17 JULY - 29 JULY 1966
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-034

Dates: 3 - 16 August 1966 Area of Operation: Northwest Atlantic Ocean

Days at sea: 14

Funding: ONR

Program Description

The main purpose of this cruise was

a) to investigate the geology of the continental shelf south of New England

b) to occupy biological/hydrographic stations

Data Collected

1) 1,000 n.m. each of bathymetric and seismic reflection profiles were run

2) eight grabs were taken

3) six cores were taken

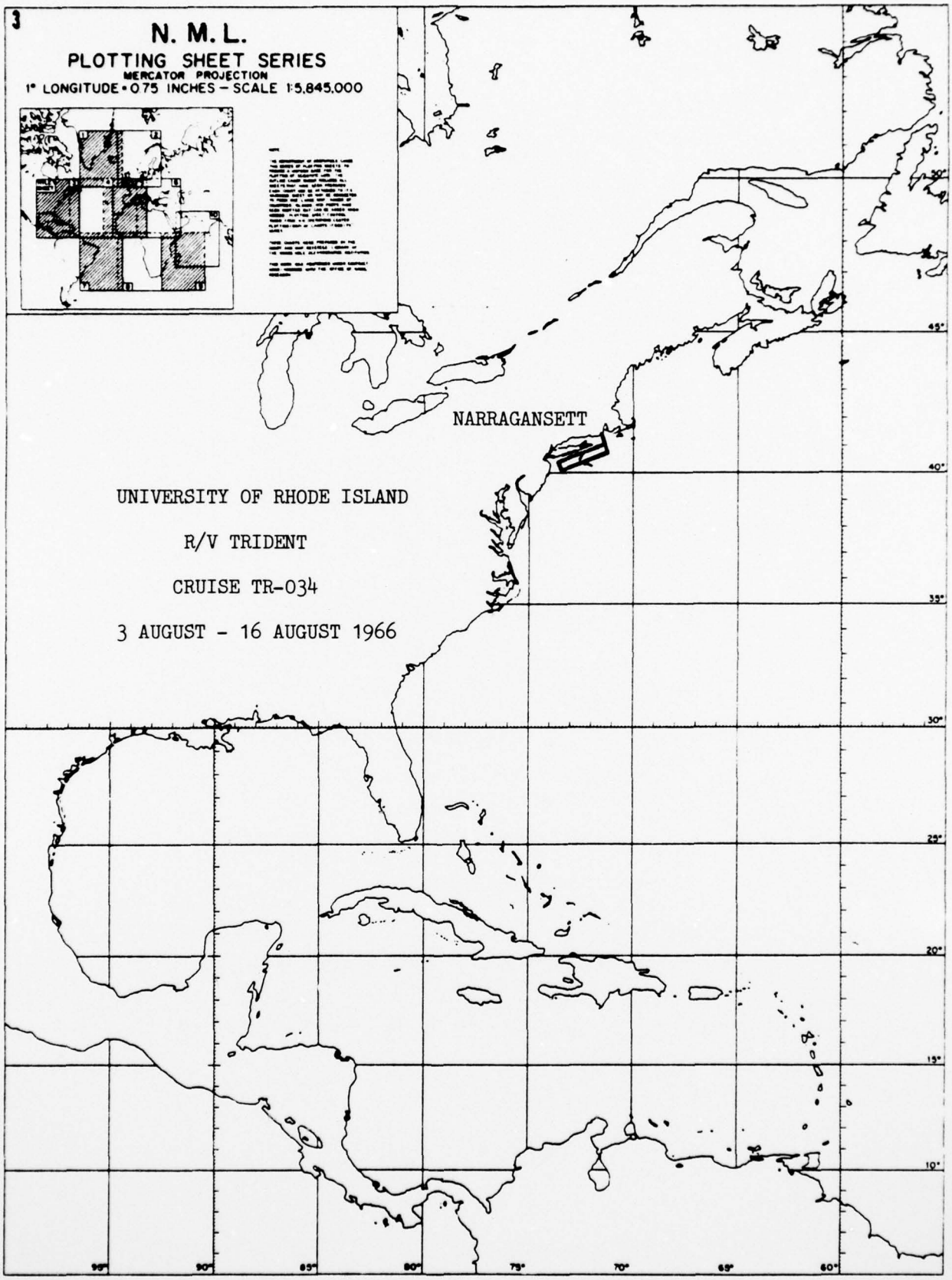
4) eight hydrographic stations were occupied

5) 10 MBT's were taken

6) 10 net tows were made

Participants

Mr. L. Garrison	Chief Scientist	U.R.I.
Dr. D. Krause	Professor	U.R.I.
Mr. A. Buddington	Marine Technician	U.R.I.
Mr. A. Ashraf	Graduate Student	U.R.I.
Mr. J. Curtin	Graduate Student	U.R.I.
Mr. R. Radulski	Graduate Student	U.R.I.
Mr. H. Russell	Graduate Student	U.R.I.
Mr. N. Williams	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-034
3 AUGUST - 16 AUGUST 1966
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-035

Dates: 1 - 20 September 1966

Area of Operation: Northwest Atlantic Ocean

Days at sea: 20

Funding: ONR

Program Description

The main purpose of this cruise was

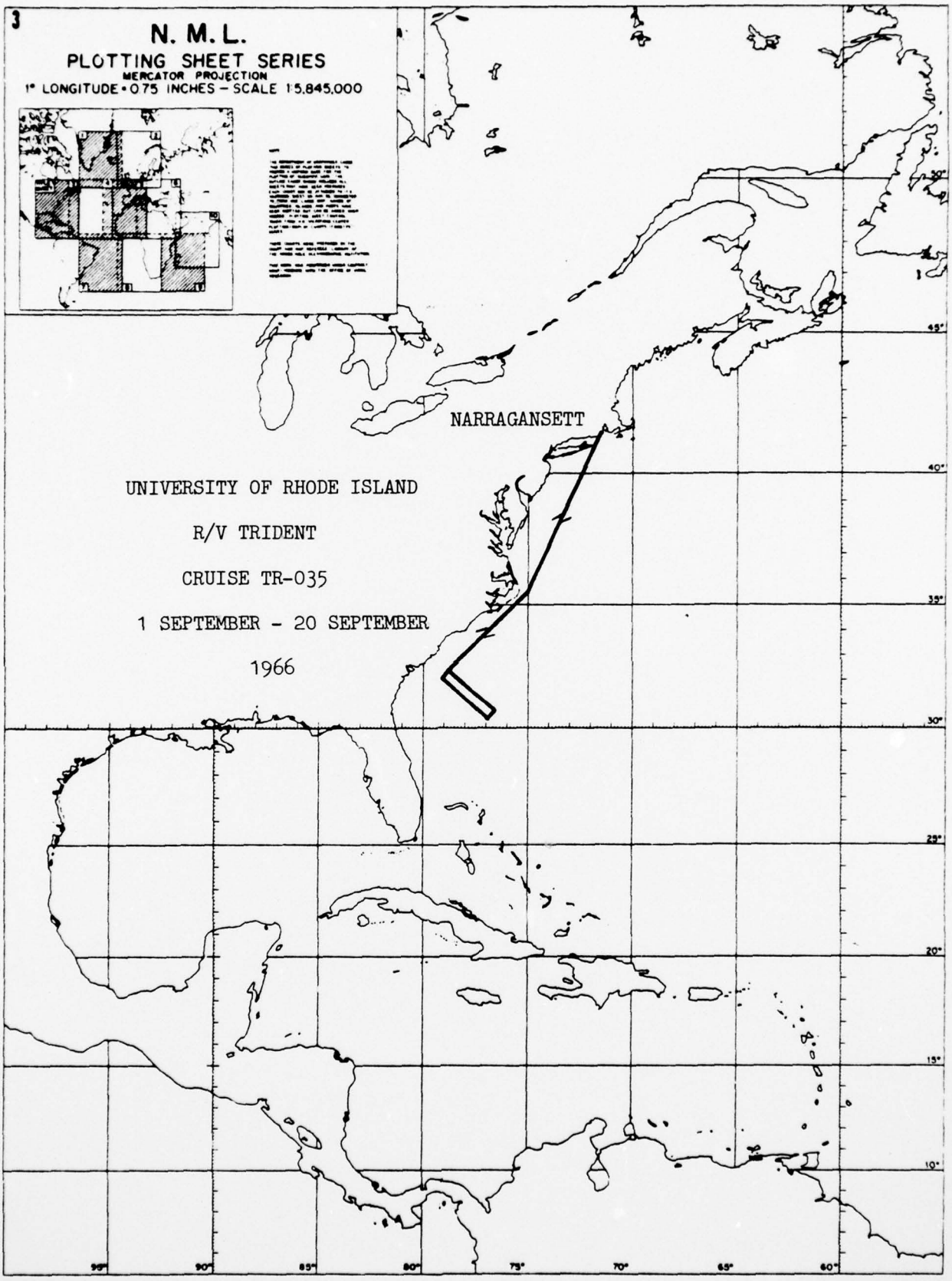
a) to investigate the structure and transport of the Gulf Stream

Data Collected

1) 17 hydrographic stations were occupied
2) 41 direct transport floats were launched and recovered
3) five bottom current meters were deployed with four being recovered
4) XBT's were taken

Participants

Dr. John A. Knauss	Chief Scientist	U.R.I.
Dr. Melvin E. Stern	Professor	U.R.I.
Mr. Philip Bedard	Electronics Engineer	U.R.I.
Mr. Paul J. Peterson	Electronics Technician	U.R.I.
Mr. Robert K. Sexton	Research Assistant	U.R.I.
Mr. Arthur Buddington	Oceanographic Specialist	U.R.I.
Mr. Charles V. Beckers	Graduate Student	U.R.I.
Mr. Michael Fecher	Graduate Student	U.R.I.
Mr. Tibor Polgar	Graduate Student	U.R.I.
Mr. Irving Sheldon	Student	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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-035
1 SEPTEMBER - 20 SEPTEMBER
1966
50°
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-036

Dates: 26 September - 19 December 1966 Area of Operation: Northwest Atlantic Ocean and Caribbean Sea

Days at sea: 75

Funding: ONR

Program Description

The main purposes of this cruise were

a) to perform geological/geophysical studies

b) to make biological and biogeochemical analyses

Data Collected

1) 6,150 n.m. of bathymetric and magnetic profiles were run

2) 900 n.m. of seismic reflection profiles were run

3) three cores were taken

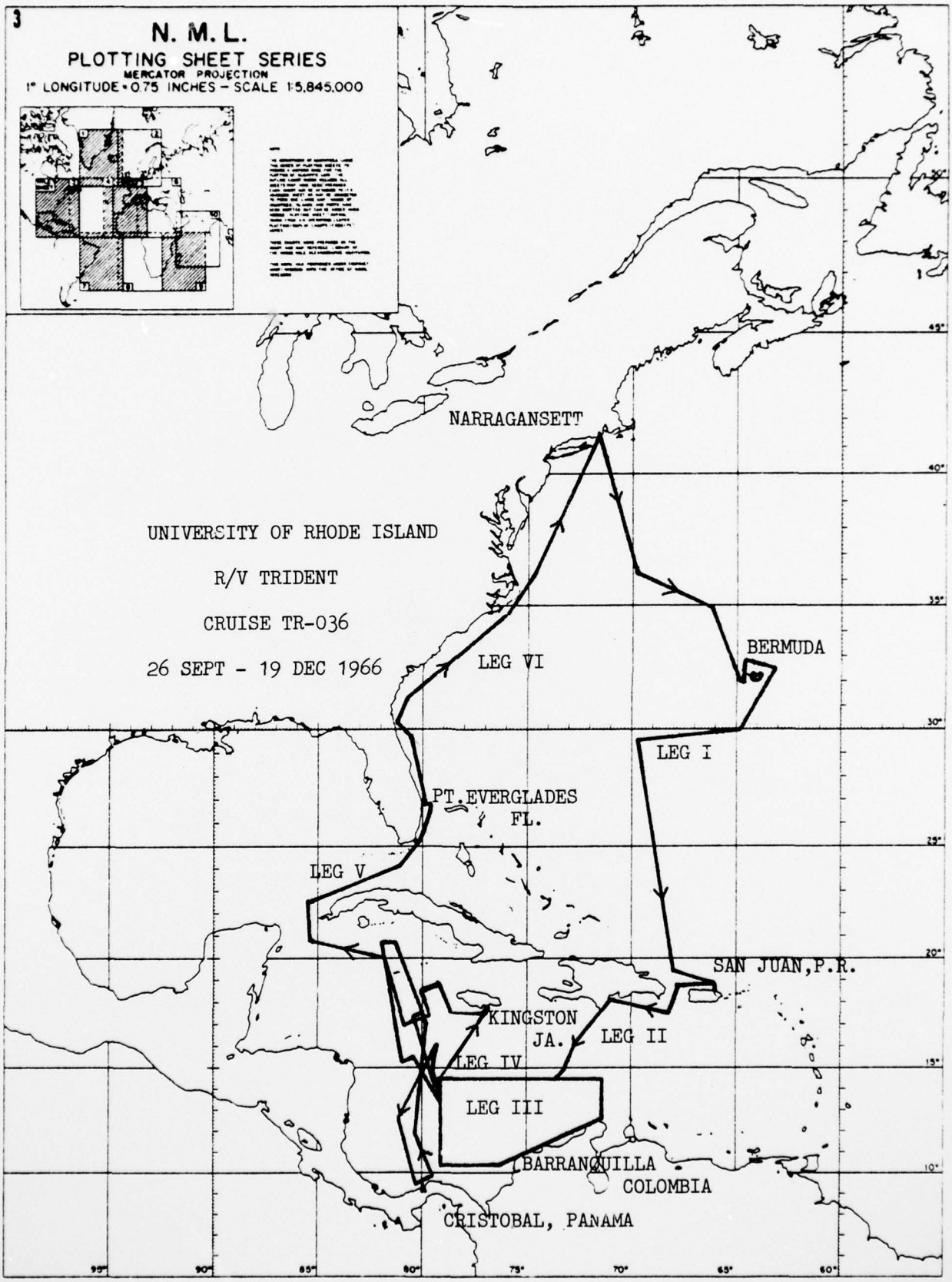
4) three dredges were recovered

5) 20 biogeochemical stations were occupied

6) six bioacoustic stations were occupied

Participants

Dr. Dale C. Krause	Co-Chief Scientist	U.R.I.
Dr. James Corless	Co-Chief Scientist	U.R.I.
Dr. Jason Morgan	Professor	Princeton University
Dr. Keith Chave	Professor	Lehigh University
Mr. Arthur Buddington	Oceanographic Specialist	U.R.I.
Mr. Timothy Kennard	Oceanographic Specialist	U.R.I.
Mr. Paul Perkins	Oceanographic Specialist	U.R.I.
Ms. Susan Betzer	Graduate Student	U.R.I.
Mr. Peter Betzer	Graduate Student	U.R.I.
Mr. Stanley Cobb	Graduate Student	U.R.I.
Mr. Robert O. Fournier	Graduate Student	U.R.I.
Mr. David Hallett	Graduate Student	U.R.I.
Mr. James Hedberg	Graduate Student	Princeton University
Mr. Robert Howe	Graduate Student	U.R.I.
Mr. Bruce Keck	Graduate Student	U.R.I.
Mr. Ronald Lewis	Graduate Student	Princeton University
Ms. Bonnie McGregor	Graduate Student	U.R.I.
Mr. Donald Roy	Graduate Student	U.R.I.
Mr. Steve Smith	Graduate Student	Lehigh University
Mr. Ellsworth Wheeler	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-036
26 SEPT - 19 DEC 1966
LEG VI
BERMUDA
LEG I
PT. EVERGLADES
FL.
LEG V
SAN JUAN, P.R.
KINGSTON
JA.
LEG II
LEG IV
LEG III
BARRANQUILLA
COLOMBIA
CRISTOBAL, PANAMA
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

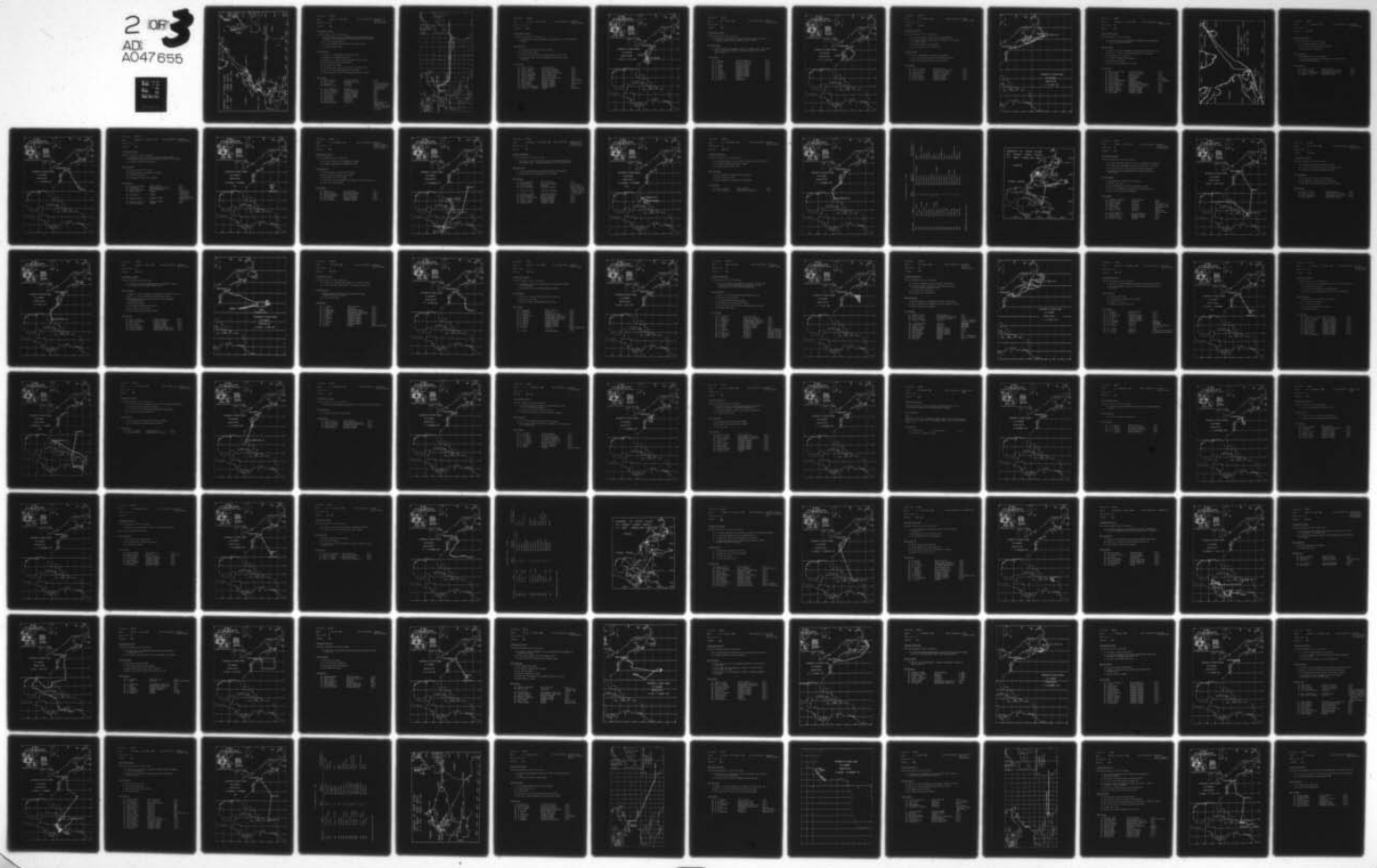
R/V TRIDENT Cruises - CY 1967

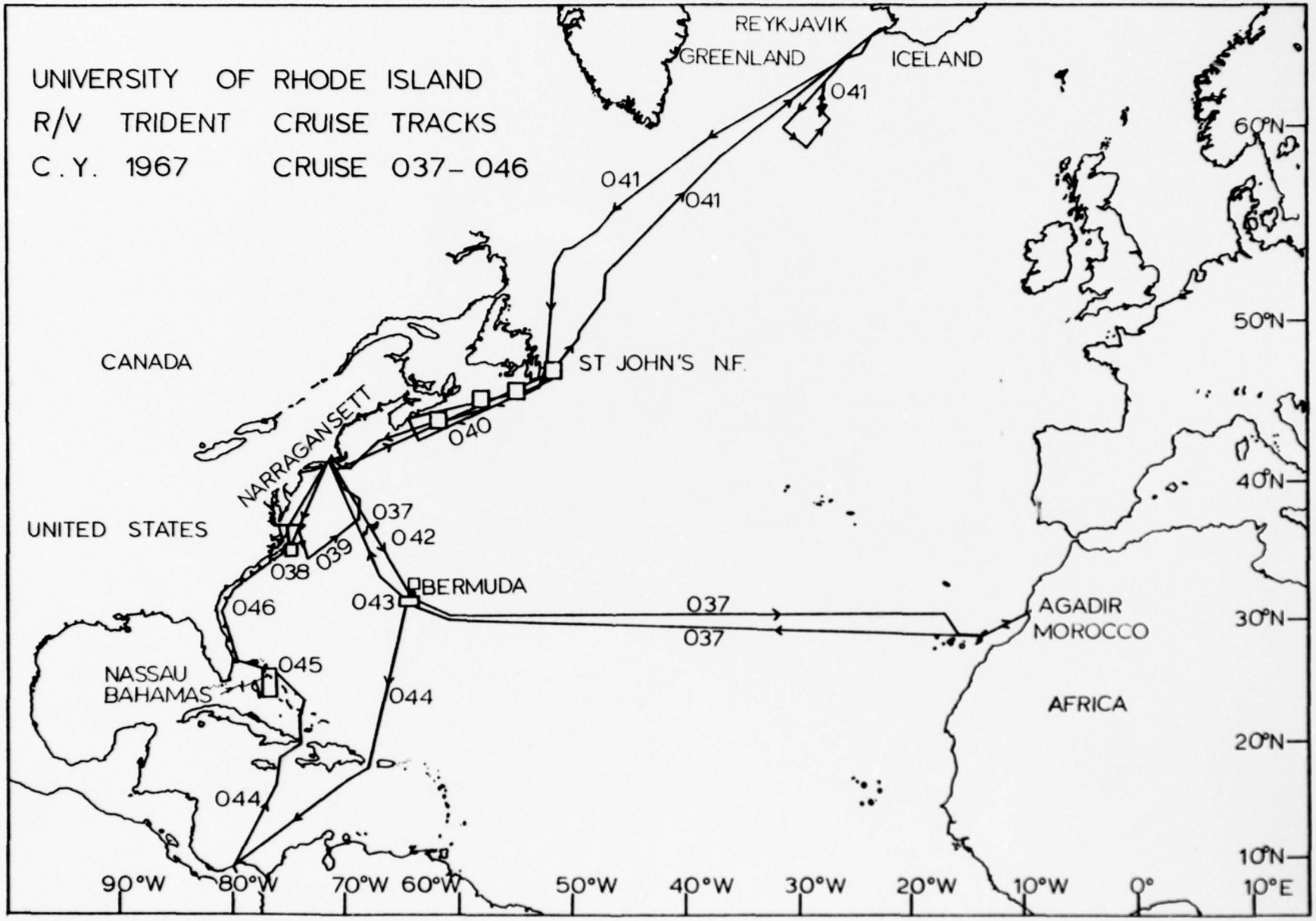
Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
037	9 Mar - 10 May	60	North Atlantic	McMaster, Krause
038	23 June - 4 July	27	NW Atlantic	Krause
039	20-27 July	8	NW Atlantic	Napora, Miller
040	5-18 August	14	North Atlantic	Winn
041	20 Aug. - 1 Oct.	40	North Atlantic	Schilling, Krause
042	18-24 Oct.	7	NW Atlantic	Fish
043	26 Oct. - 2 Nov.	8	NW Atlantic	Napora
044	5-27 Nov.	21	NW Atlantic, Caribbean, Gulf of Panama	Frey
045	29 Nov. - 12 Dec.	14	Bahama Islands NW Atlantic	Marshall
046	14-23 Dec.	10	NW Atlantic	Perkins

*All GSO/URI

AD-A047 655 RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF OCEANO--ETC F/G 13/10
R/V TRIDENT CRUISE SUMMARIES CY 1962 THROUGH CY 1971.(U)
NOV 77 E M WILLIAMS N00014-76-C-0226
UNCLASSIFIED URI/GSO-REF-77-4 NL

2 OF 3
AD A047655




UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C.Y. 1967 CRUISE 037-046
REYKJAVIK
GREENLAND
ICELAND
041
041
041
CANADA
ST JOHN'S N.F.
040
NARRAGANSETT
UNITED STATES
037
042
039
038
BERMUDA
043
046
037
037
AGADIR
MOROCCO
045
NASSAU
BAHAMAS
044
AFRICA
044
60°N
50°N
40°N
30°N
20°N
10°N
90°W
80°W
70°W
60°W
50°W
40°W
30°W
20°W
10°W
0°
10°E

Cruise No.: TR-037

Dates: 9 March - 10 May 1967

Area of Operation: Northwest and Northeast Atlantic Oceans

Days at sea: 60

Funding: ONR

Program Description

The main purposes of this cruise were

a) to study the geological and geophysical characteristics off Morocco and on two transects across the North Atlantic Ocean

b) to take plankton samples

c) to study surface water samples for tritium tracers

d) to make equipment tests

Data Collected

1) 7,205 n.m. of bathymetric profiles were run

2) 6,995 n.m. of magnetics were run

3) 1,350 n.m. of seismic reflection profiles were taken

4) nine dredge stations were occupied

5) five grabs were taken

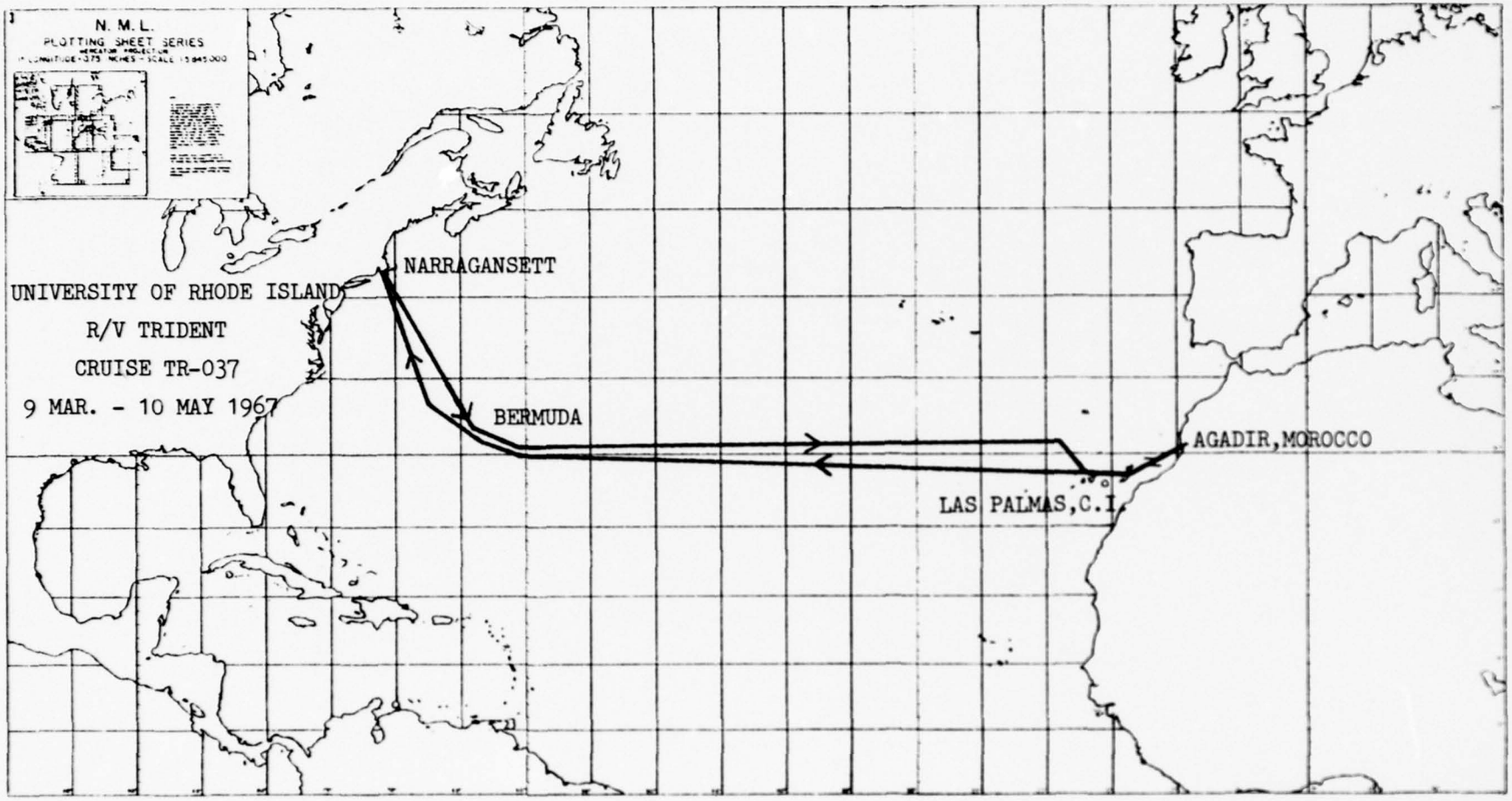
6) 22 surface water samples were taken to study tritium

7) 14 vertical plankton samples were collected

8) an experimental seismic reflection profiler was tested

Participants

Dr. Robert McMaster	Co-Chief Scientist	U.R.I.
Dr. Dale Krause	Co-Chief Scientist	U.R.I.
Dr. Ryan Drum	Professor	U. of Massachusetts
Pedro Balle-Cruellas	Scientist	Instituto Espanio Oceanografica
Mr. Larry McDonald	Scientist	Raytheon Corp.
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Timothy Kennard	Marine Technician	U.R.I.
Mr. William Dillon	Graduate Student	U.R.I.
Mr. James Robb	Graduate Student	U.R.I.
Mr. George Walsh	Graduate Student	U.R.I.
Mr. Harold Marsh	Technician	U.R.I.
Mr. David Smith	Technician	U.R.I.
Ahmed Haddar Demnati	Scientist	Departement de la Geophysique, Direction des Mines et de la Geologie du Maroc


N. M. L.
PLOTTING SHEET SERIES
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-037
9 MAR. - 10 MAY 1967
BERMUDA
AGADIR, MOROCCO
LAS PALMAS, C.I.

Cruise No.: TR-038

Dates: 23 June - 19 July 1967

Area of Operation: Northwest Atlantic Ocean

Days at sea: 27

Funding: ONR

Program Description

The main purpose of this cruise was

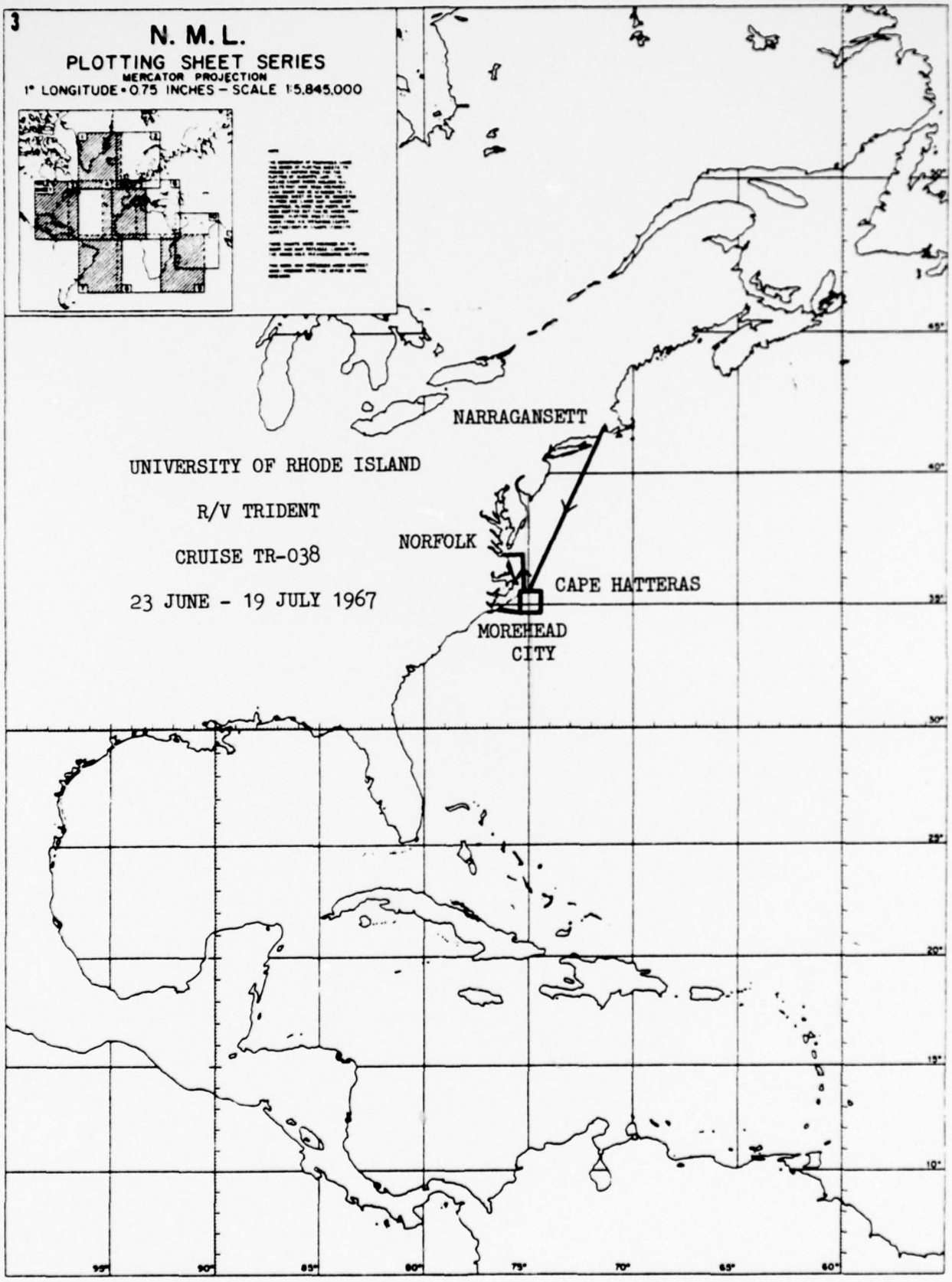
a) to investigate the Gulf Stream off Cape Hatteras using hydrographic methods

Data Collected

1) 14 hydrographic stations were occupied
2) 147 XBT's were taken
3) 87 direct volume transport measurements were successful
4) five current meters were deployed with one current meter recovered

Participants

Dr. John A. Knauss	Chief Scientist	U.R.I.
Dr. Wilton Sturges III	Assistant Professor	U.R.I.
Mr. Philip Bedard	Electronics Engineer	U.R.I.
Mr. Robert K. Sexton	Senior Marine Technician	U.R.I.
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Timothy Kennard	Marine Technician	U.R.I.
Mr. James I. Sammons	Electronics Technician	U.R.I.
Mr. William Boicourt	Graduate Student	Johns Hopkins
Mr. Robert Cooke	Graduate Student	U.R.I.
Mr. Mark Houston	Graduate Student	Johns Hopkins
Mr. David Morgan	Graduate Student	U.R.I.
Mr. Philip L. Richardson	Graduate Student	U.R.I.
Mr. Charles F. Zimmerman	Student	Brown Univ.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-038
23 JUNE - 19 JULY 1967
NORFOLK
CAPE HATTERAS
MOREHEAD CITY
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-039

Dates: 20 - 27 July 1967

Area of Operation: Northwest Atlantic Ocean

Days at sea: 8

Funding: ONR

Program Description

The main purpose of this cruise was

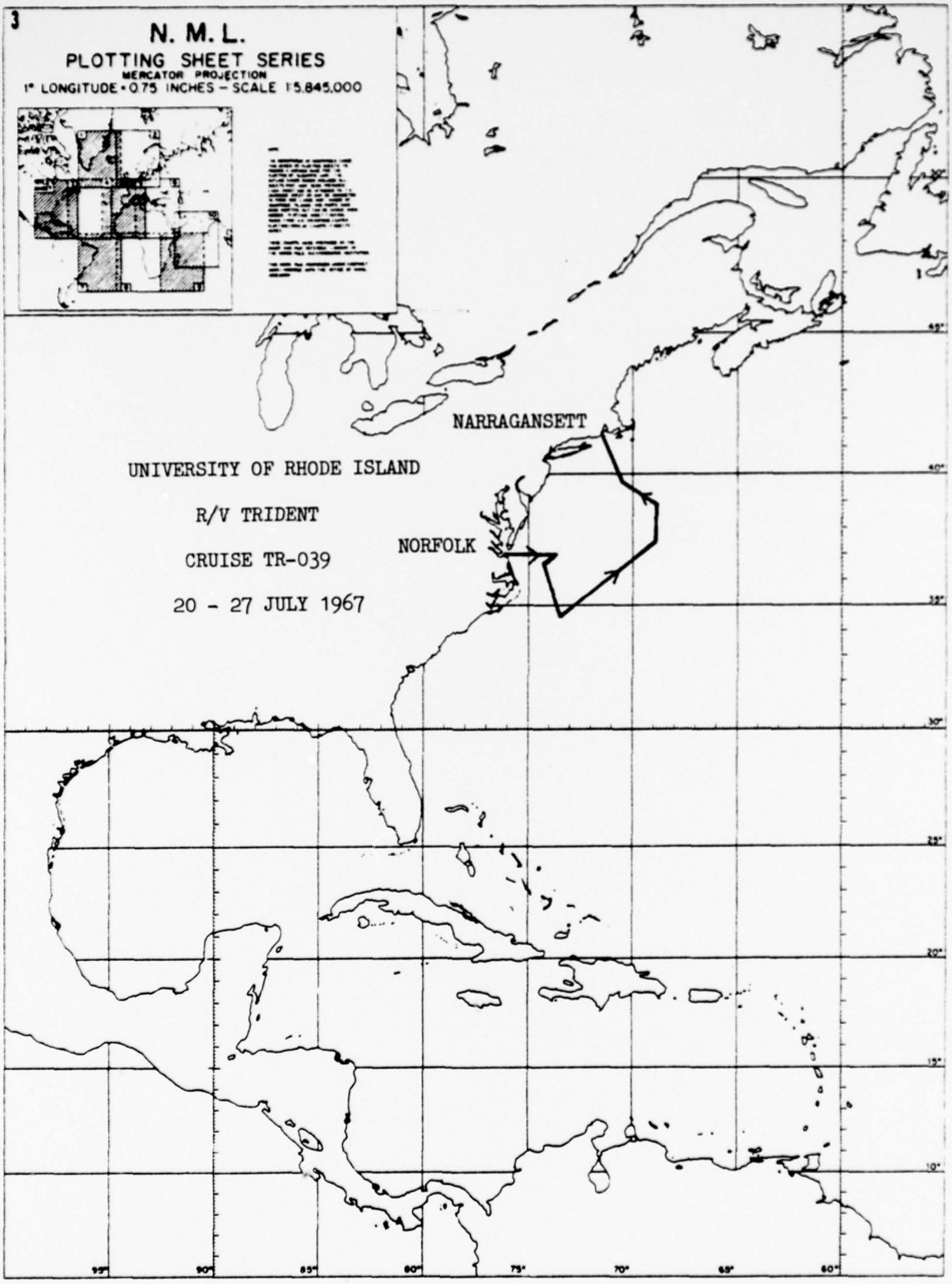
a) to acquaint oceanographic students with the various types of equipment used in over-the-side scientific studies

Data Collected

1) the main pieces of equipment used were: Nansen cast, Isaacs Kidd trawl, Clarke Bumpus sampler, piston and gravity corers and bottom camera

Participants

Dr. T. Napora	Co-Chief Scientist	U.R.I.
Mr. G. Miller	Co-Chief Scientist	U.R.I.
Mr. J. Frey	Research Associate	U.R.I.
Mr. L. Ardwin	Graduate Student	U.R.I.
Mr. N. Blake	Graduate Student	U.R.I.
Mr. C. Chee	Graduate Student	U.R.I.
Mr. J. Dawson	Graduate Student	U.R.I.
Mr. R. Fragalla	Graduate Student	U.R.I.
Mr. K. Lukas	Graduate Student	U.R.I.
Mr. J. Van Ryzin	Graduate Student	U.R.I.
Mr. R. Barletta	Student	U.R.I.
Mr. R. Izzo	Photographer	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-039
20 - 27 JULY 1967
NORFOLK
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-040

Dates: 5 - 18 August 1967

Area of Operation: North Atlantic Ocean

Days at sea: 14

Funding: ONR, NSF

Program Description

The main purposes of this cruise were

a) to record/transmit sounds of whale and porpoises

b) to maintain whale, propose and fish watches, and attempt to catch porpoise

c) to collect eels, fish and squid

d) to set longlines for various fish

Data Collected

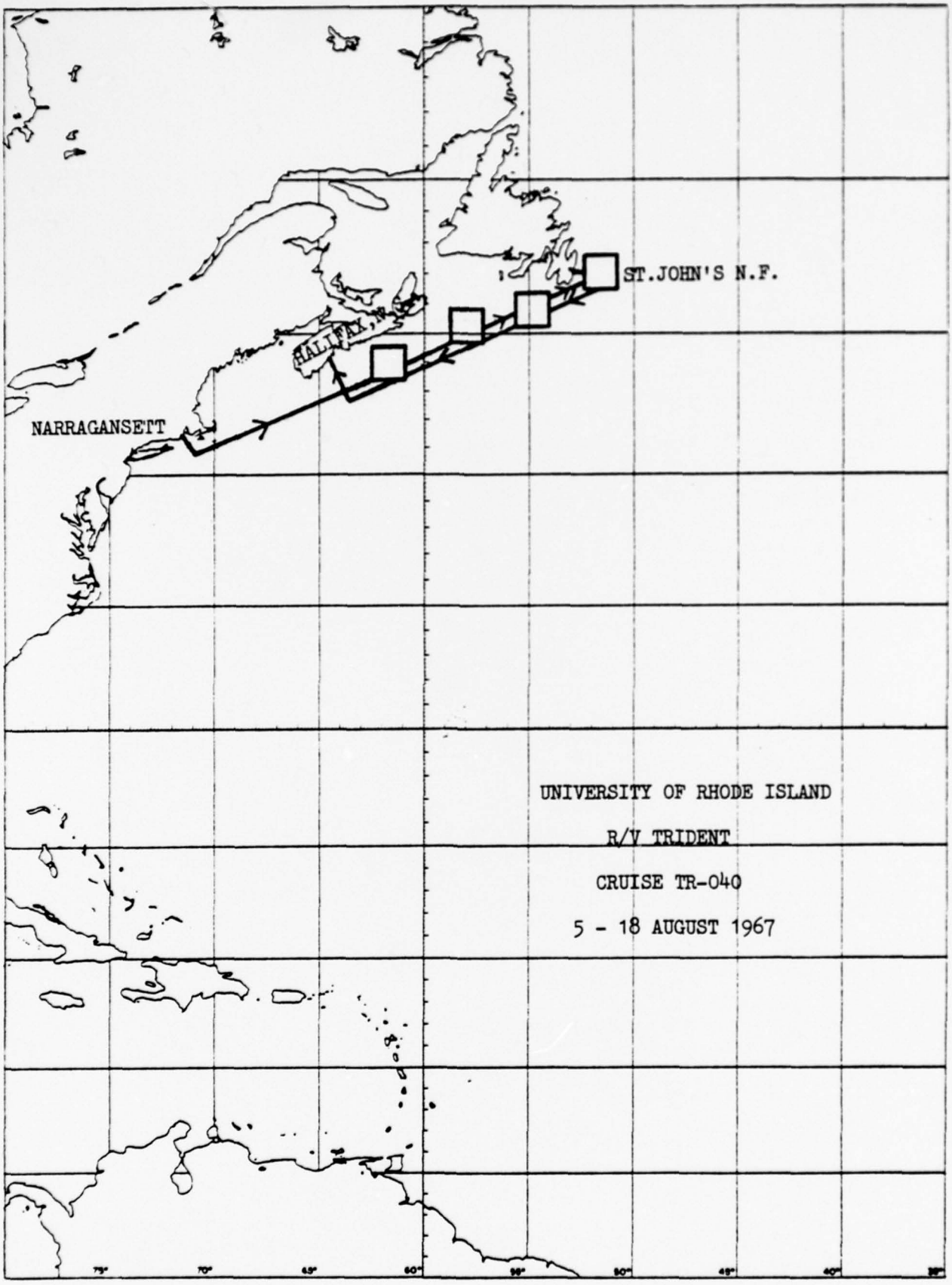
1) four record/transmit stations were occupied

2) the porpoise catching/survival technique was used

3) whale and porpoise watches were maintained

Participants

Dr. Howard E. Winn	Chief Scientist	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Raymond Kenney	Technical Assistant	U.R.I.
Mr. James Pratt	Technical Assistant	U.R.I.
Mr. David Morgan	Graduate Student	U.R.I.
Mr. Thayer Shafer	Graduate Student	U.R.I.
Mr. Bruce Thunberg	Graduate Student	U.R.I.


ST.JOHN'S N.F.
HALIFAX
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-040
5 - 18 AUGUST 1967

Cruise No.: TR-041

Dates: 20 August - 1 October 1967 Area of Operation: North Atlantic Ocean

Days at sea: 40

Funding: ONR

Program Description

The main purpose of this cruise was

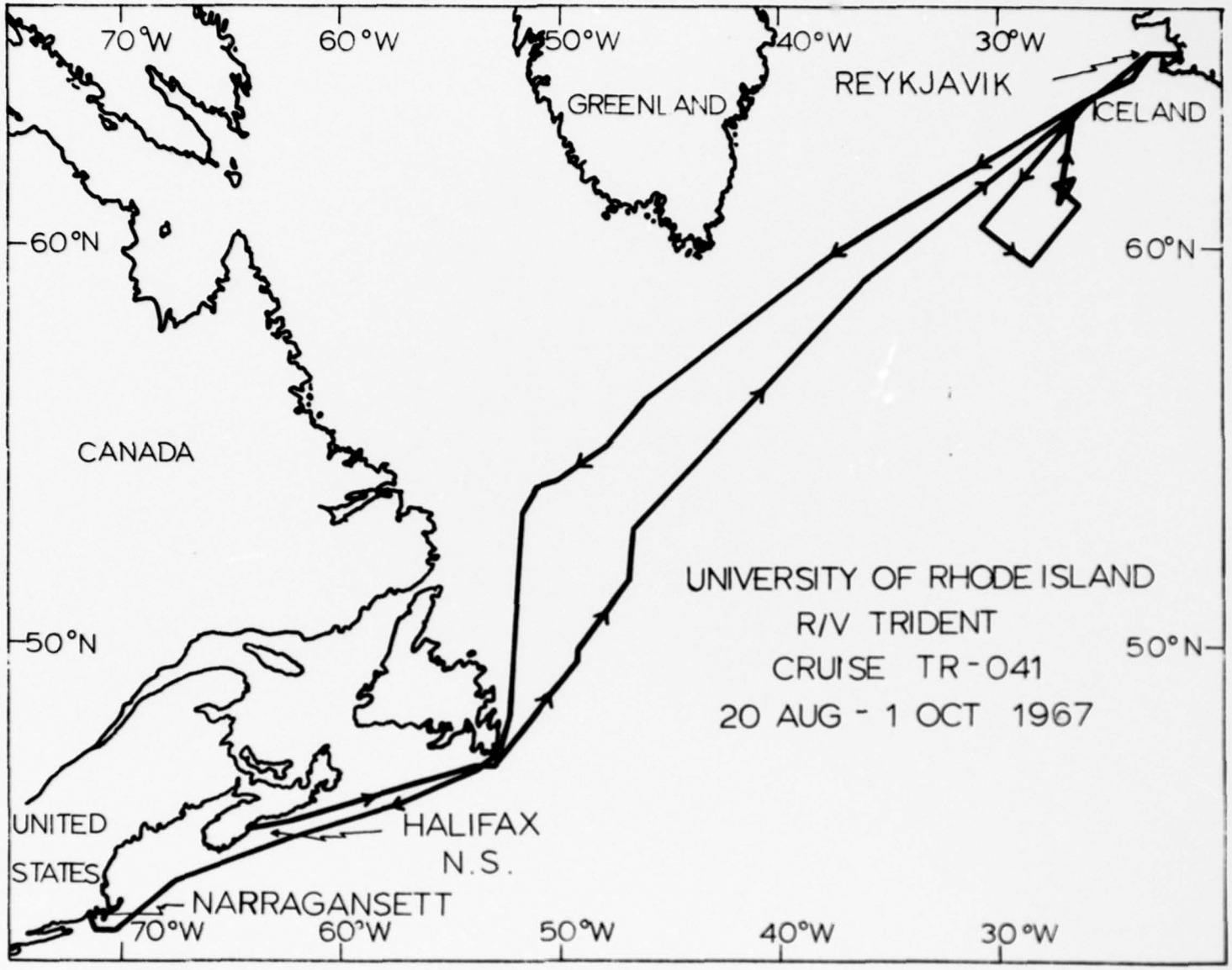
a) to perform a detailed geological, geochemical and geophysical study of the Reykjanes Ridge

Data Collected

1) 5,700 n.m. each of bathymetric and magnetic profiles were run
2) 150 n.m. of seismic reflection profiles were obtained
3) 22 dredges were recovered
4) 14 camera stations were occupied
5) two cores were taken
6) 10 heatflow measurements were made

Participants

Dr. Jean-Guy Schilling	Co-Chief Scientist	U.R.I.
Dr. Dale Krause	Co-Chief Scientist	U.R.I.
Dr. Ki-iti Horai	Geophysicist	M.I.T.
Dr. James Moore	Volcanologist	U.S.G.S.
Dr. Gregory Webb	Geologist	U. of Mass.
Mr. Karlis Muehlenbachs	Geochemist	U. of Chicago
Ms. Mary Chessman	Graduate Student	M.I.T.
Mr. Arthur Buddington	Oceanographic Specialist	U.R.I.
Mr. Timothy Kennard	Oceanographic Specialist	U.R.I.
Mr. Robert Cooke	Graduate Student	U.R.I.
Mr. Thomas Johnston	Graduate Student	U.R.I.
Ms. Bonnie McGregor	Graduate Student	U.R.I.
Mr. David Pope	Graduate Student	U.R.I.


70°W
60°W
50°W
40°W
30°W
GREENLAND
REYKJAVIK
ICELAND
60°N
60°N
CANADA
50°N
50°N
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-041
20 AUG - 1 OCT 1967
UNITED
STATES
HALIFAX
N.S.
NARRAGANSETT
70°W
60°W
50°W
40°W
30°W

Cruise No.: TR-042

Dates: 18 - 24 October 1967

Area of Operation: Northwest Atlantic Ocean

Days at sea: 7

Funding: ONR, NSF

Program Description

The main purposes of this cruise were .

a) to perform bioacoustic studies

b) to maintain whale and porpoise watches

c) to field test plankton nets

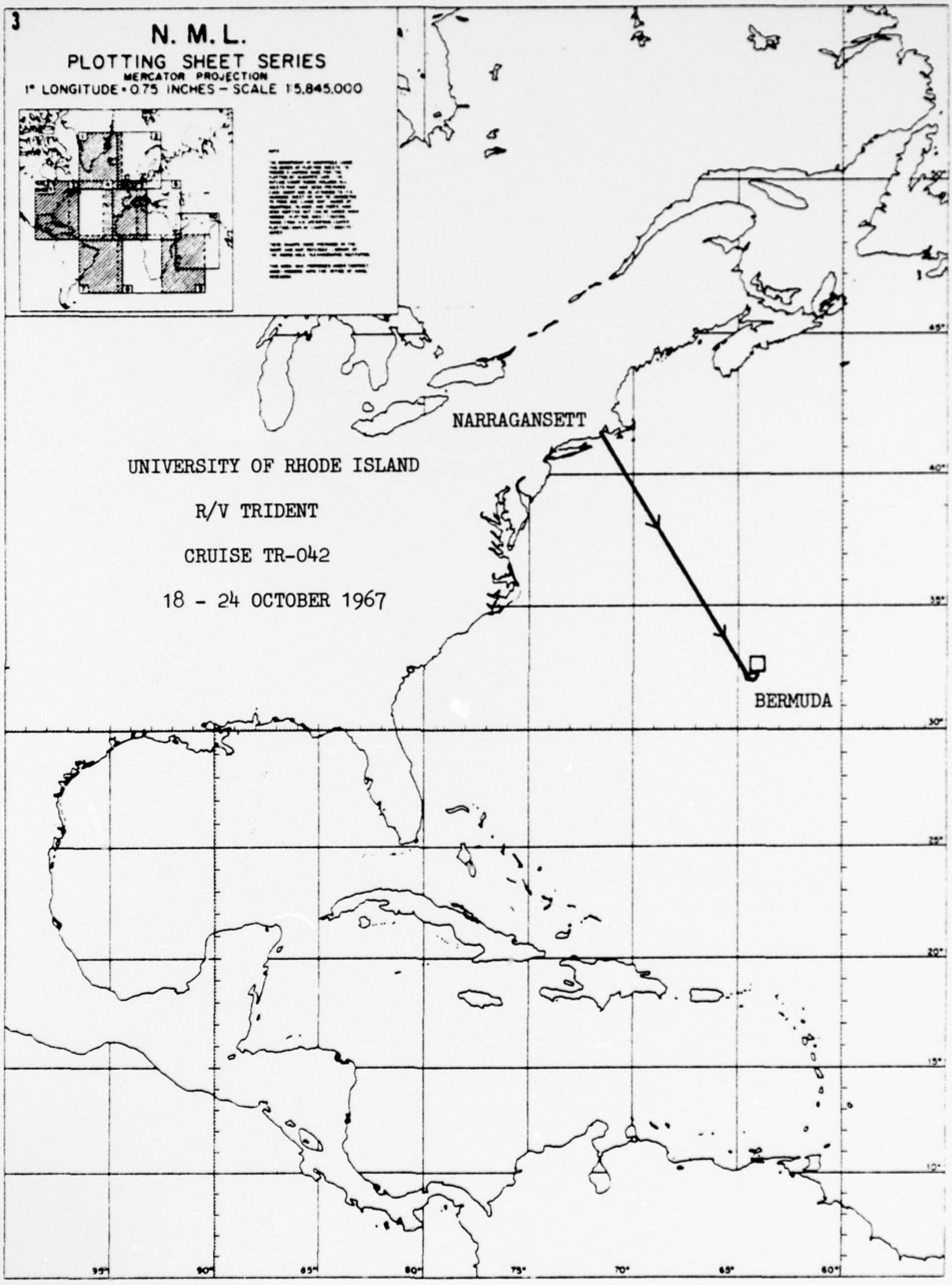
Data Collected

1) two plankton net tows were made

2) the ship program was limited because of winch problems and hurricane warnings

Participants

Dr. Charles J. Fish	Chief Scientist	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Arthur B. Buddington	Oceanographic Specialist	U.R.I.
Mr. Howard J. Russell	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-042
18 - 24 OCTOBER 1967
BERMUDA
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-043

Dates: 26 October - 2 November 1967 Area of Operation: Northwest Atlantic Ocean

Days at sea: 8

Funding: ONR

Program Description

The main purposes of this cruise were

a) to partake in the initiation of the Ocean Acre Program during which extensive serial biological studies will be made

b) to study a modified trawl design

Data Collected

1) thirty-one trawls were taken

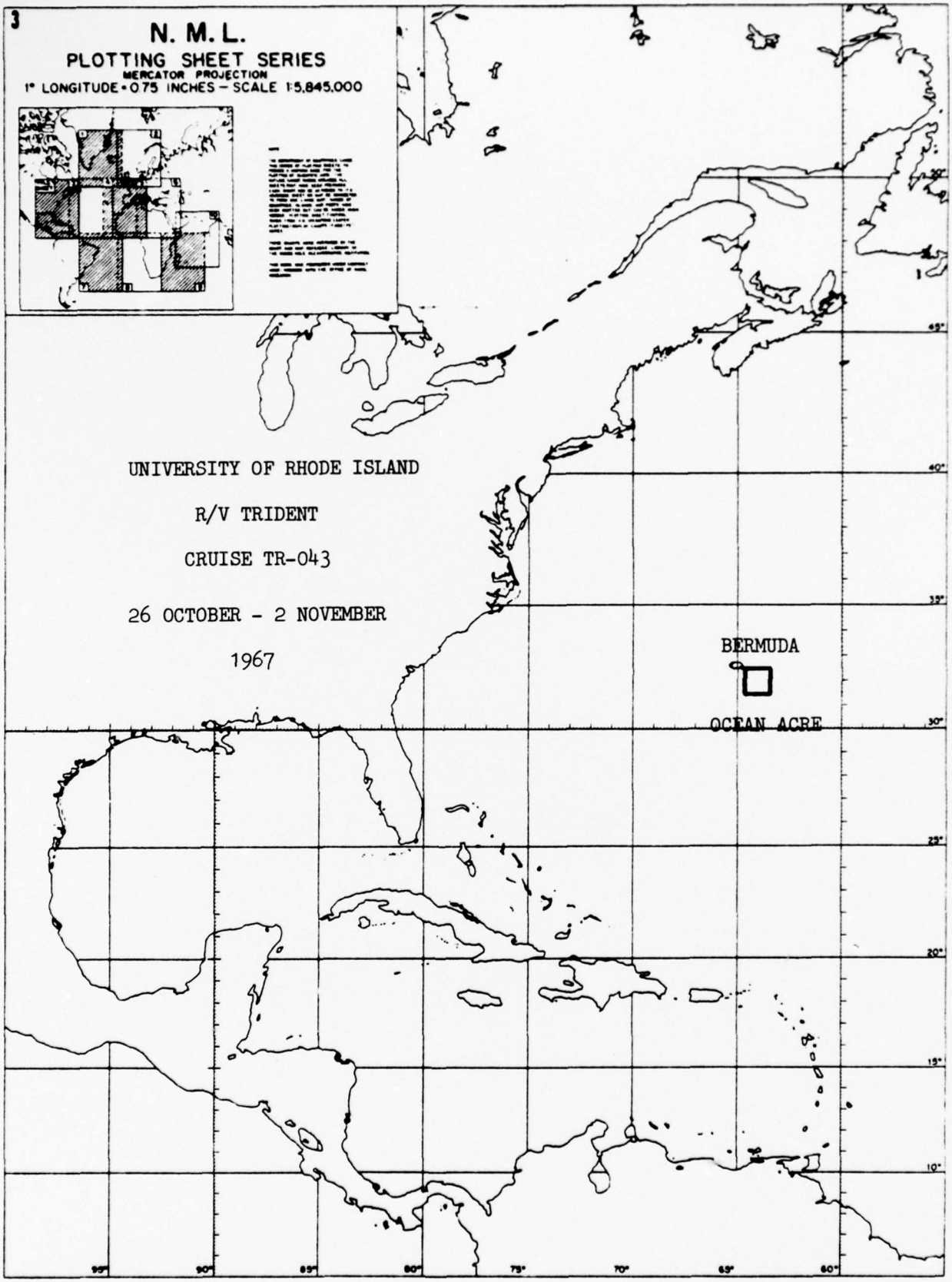
2) two hydrographic stations were occupied

3) 10 XBT's were taken

4) two pumping stations were occupied

Participants

Dr. Theodore A. Napora	Chief Scientist	U.R.I.
Mr. Paul Perkins	Oceanographic Specialist	U.R.I.
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Robert Gibbs	Student	Smithsonian Institution
Mr. Clyde Roper	Student	Smithsonian Institution
Mr. Richard Goodyear	Graduate Student	George Washington University
Mr. Gerard R. Miller, Jr.	Graduate Student	U.R.I.
Mr. William Krueger	Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES — SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-043
26 OCTOBER - 2 NOVEMBER
1967
BERMUDA
OCEAN ACRE
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-044

Dates: 5 - 27 November 1967

Days at sea: 21

Funding: ONR

Area of Operation: Northwest Atlantic Ocean, Caribbean Sea and Gulf of Panama

Program Description

The main purposes of this cruise were

a) to take biological and hydrographic samples

b) to obtain geological and geophysical data

Data Collected

1) 33 hydrographic stations were occupied

2) four sea surface samples were taken

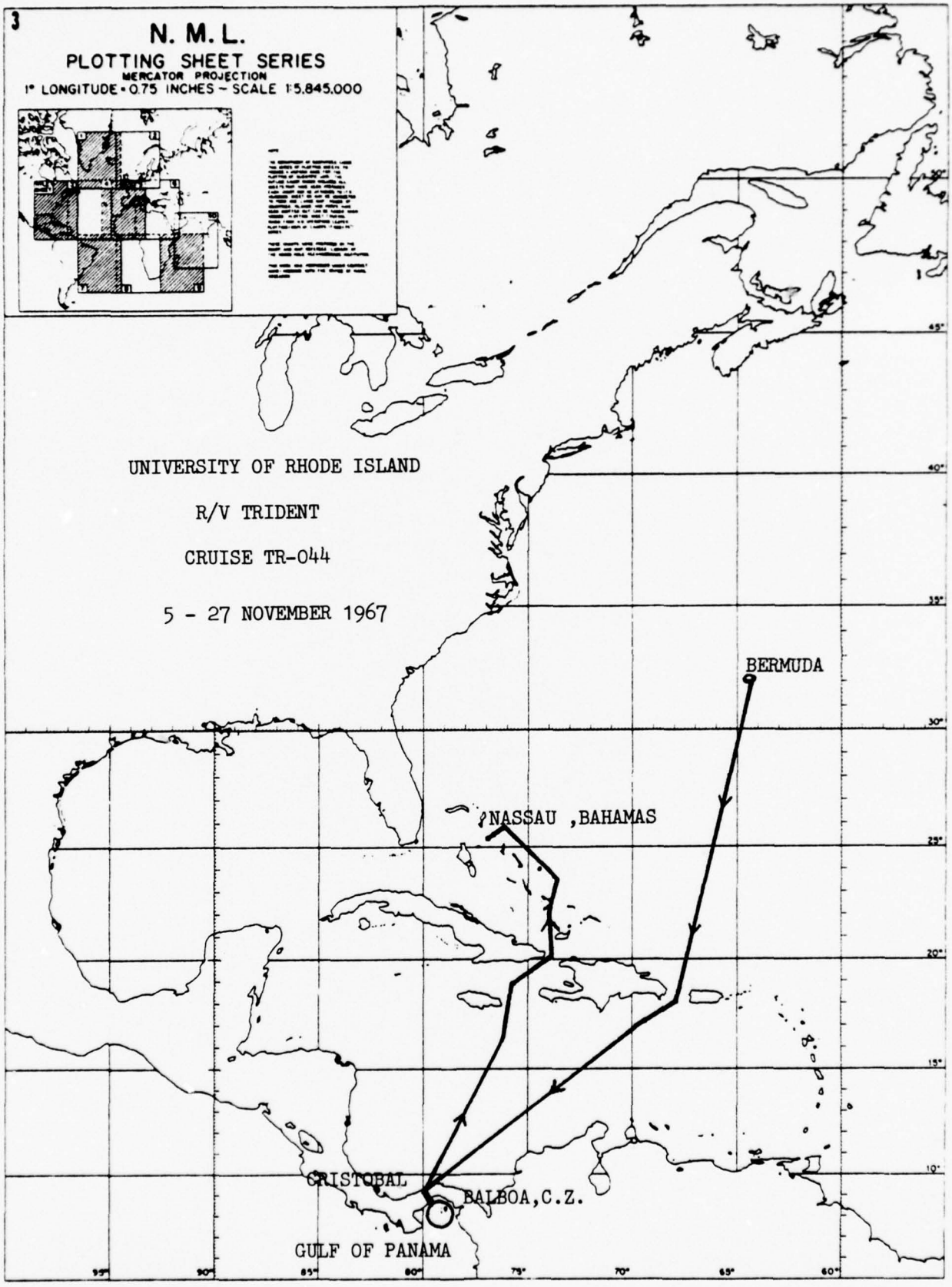
3) 12 biological tows were made

4) 1,560 n.m. each of bathymetric and magnetic profiles were run

5) four cores were obtained

Participants

Mr. James Frey	Chief Scientist	U.R.I.
Dr. Michael Pilson	Assistant Professor	U.R.I.
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Timothy Kennard	Marine Technician	U.R.I.
Mr. Kent Fanning	Graduate Student	U.R.I.
Mr. David Johnson	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-044
5 - 27 NOVEMBER 1967
BERMUDA
NASSAU ,BAHAMAS
CRISTOBAL
BALBOA,C.Z.
GULF OF PANAMA

Cruise No.: TR-045

Dates: 29 November - 12 December 1967 Area of Operation: Bahama Islands and Northwest Atlantic Ocean

Days at sea: 14

Funding: NSF

Program Description

The main purposes of this cruise were

a) to observe the utilization of nutrients and various forms of particulate food in the nourishment of coral reef communities

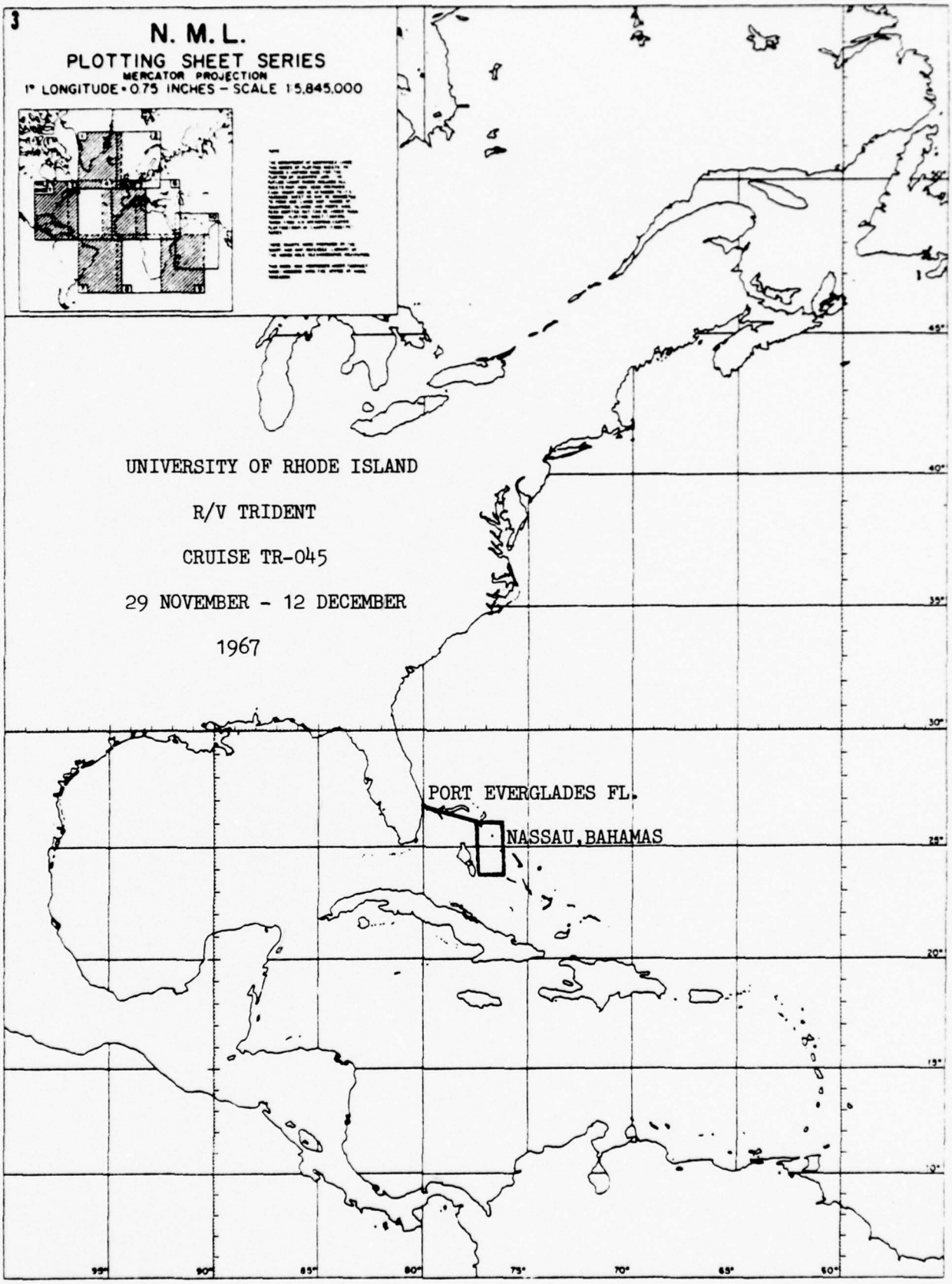
Data Collected

1) six chemical/biological sampling stations were occupied

2) many coral reef and lagoon studies were made

Participants

Dr. Nelson Marshall	Chief Scientist	U.R.I.
Dr. Michael Pilson	Assistant Professor	U.R.I.
Dr. R. E. Johannes	Professor	U. of Georgia
Dr. Philip Helfrich	Associate Director	Hawaii Inst. of Marine Biology
Dr. Kenneth L. Webb	Assistant Professor	Virginia Inst. of Marine Science
Dr. William J. Wiebe	Assistant Professor	U. of Georgia
Mr. Timothy Kennard	Marine Technician	U.R.I.
Ms. B. A. Mitchell-Innes	Graduate Student	U.R.I.
Mr. Allen C. Myers	Graduate Student	U.R.I.
Ms. Karen J. Lukas	Graduate Student	U.R.I.
Mr. Stephen Coles	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-045
29 NOVEMBER - 12 DECEMBER
1967
PORT EVERGLADES FL.
NASSAU, BAHAMAS
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Cruise No.: TR-046

Dates: 14 - 23 December 1967

Area of Operation: Northwest Atlantic Ocean

Days at sea: 10

Funding: ONR, NSF

Program Description

The main purposes of this cruise were

a) to perform bioacoustical surveys of whales, porpoises and fish

b) to maintain whale and porpoise watches

c) to catch eels and other fish

Data Collected

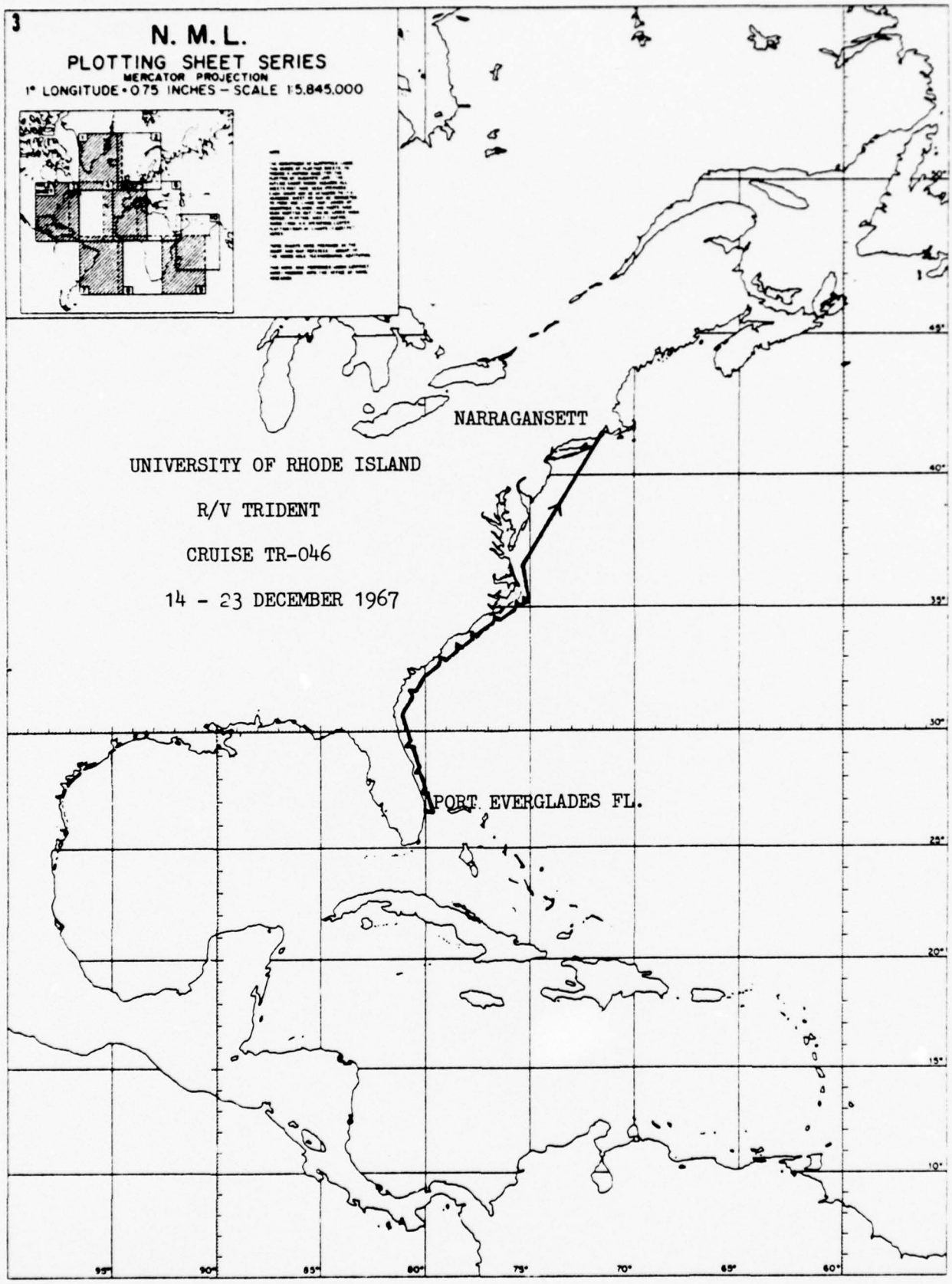
1) nine listen/record stations were occupied

2) fish catches were made

3) whale and porpoise watches were maintained

Participants

Mr. Paul J. Perkins	Chief Scientist	U.R.I.
Mr. Timothy Kennard	Oceanographic Specialist	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-046
14 - 23 DECEMBER 1967
PORT EVERGLADES FL.
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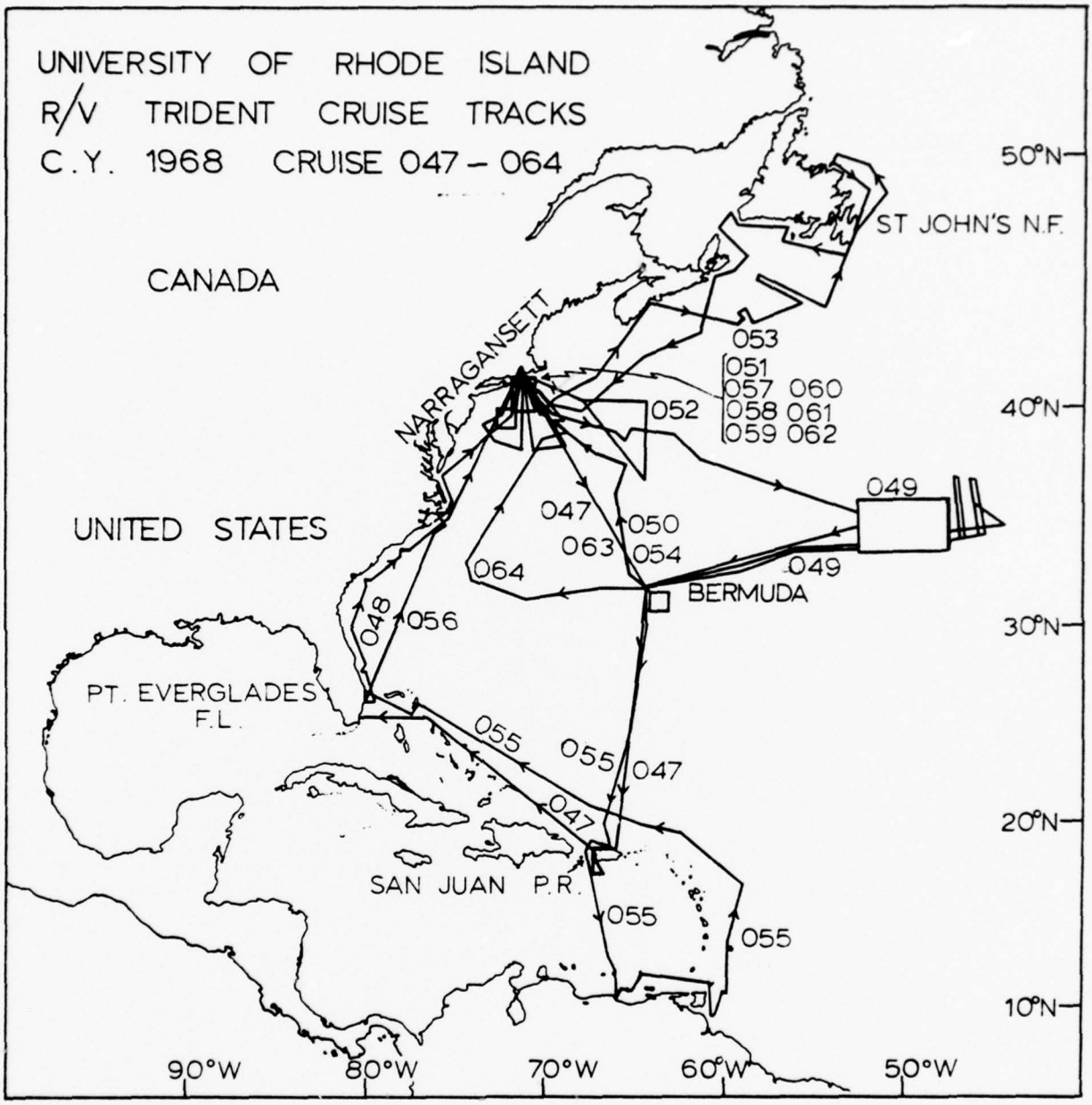
R/V TRIDENT Cruises - CY 1968

Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
047	2 Mar. - 4 Apr.	27	NW Atlantic, Caribbean	Napora
048	6-14 Apr.	9	NW Atlantic	Fish
049	22 Apr. - 10 June	48	NW Atlantic	Krause, McGregor
050	13-18 June	6	NW Atlantic	Corless
051	28 June - 7 July	10	NW Atlantic	McMaster
052	8-24 July	17	NW Atlantic	Zimmerman
053	3-23 Aug.	20	North Atlantic	Winn
054	28 Aug. - 9 Sept.	13	NW Atlantic	Napora
055	12 Sept. - 11 Oct.	29	NW Atlantic, Caribbean	Pilson
056	13-19 Oct.	7	NW Atlantic	Perkins
057	8-10 Nov.	3	NW Atlantic	Smith/OE, URI
058	11-14 Nov.	4	NW Atlantic	Knauss
059	16-21 Nov.	6	NW Atlantic	Winn
060	22 Nov.	1	Block Island Sound	Pratt
061	23-25 Nov.	3	NW Atlantic	Knauss
062	25-26 Nov.	1	Rhode Island Sound	Schenck/OE, URI
063	2-12 Dec.	10	NW Atlantic	Napora
064	14-21 Dec.	8	NW Atlantic	Kupferman

*GSO/URI unless otherwise noted


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C.Y. 1968 CRUISE 047 – 064
CANADA
UNITED STATES
NARRAGANSETT
ST JOHN'S N.F.
BERMUDA
PT. EVERGLADES F.L.
SAN JUAN P.R.
053
051
057 060
058 061
059 062
052
049
047
050
063
054
064
049
048
056
055
055
047
047
055
055
50°N
40°N
30°N
20°N
10°N
90°W
80°W
70°W
60°W
50°W

Cruise No.: TR-047

Dates: 2 March - 4 April 1968

Area of Operation: Northwest Atlantic Ocean, Caribbean Sea

Days at sea: 27

Funding: ONR

Program Description

The major programs on this cruise were:

a) to take biological samples as part of the Ocean Acre program

b) to study the biogeochemical cycling of elements in seawater

c) to study water for particulate and organic aggregates

d) to perform a geological/geophysical survey through the Mona passage

Data Collected

1) 16 hydrographic stations were occupied

2) 19 XBTs were taken

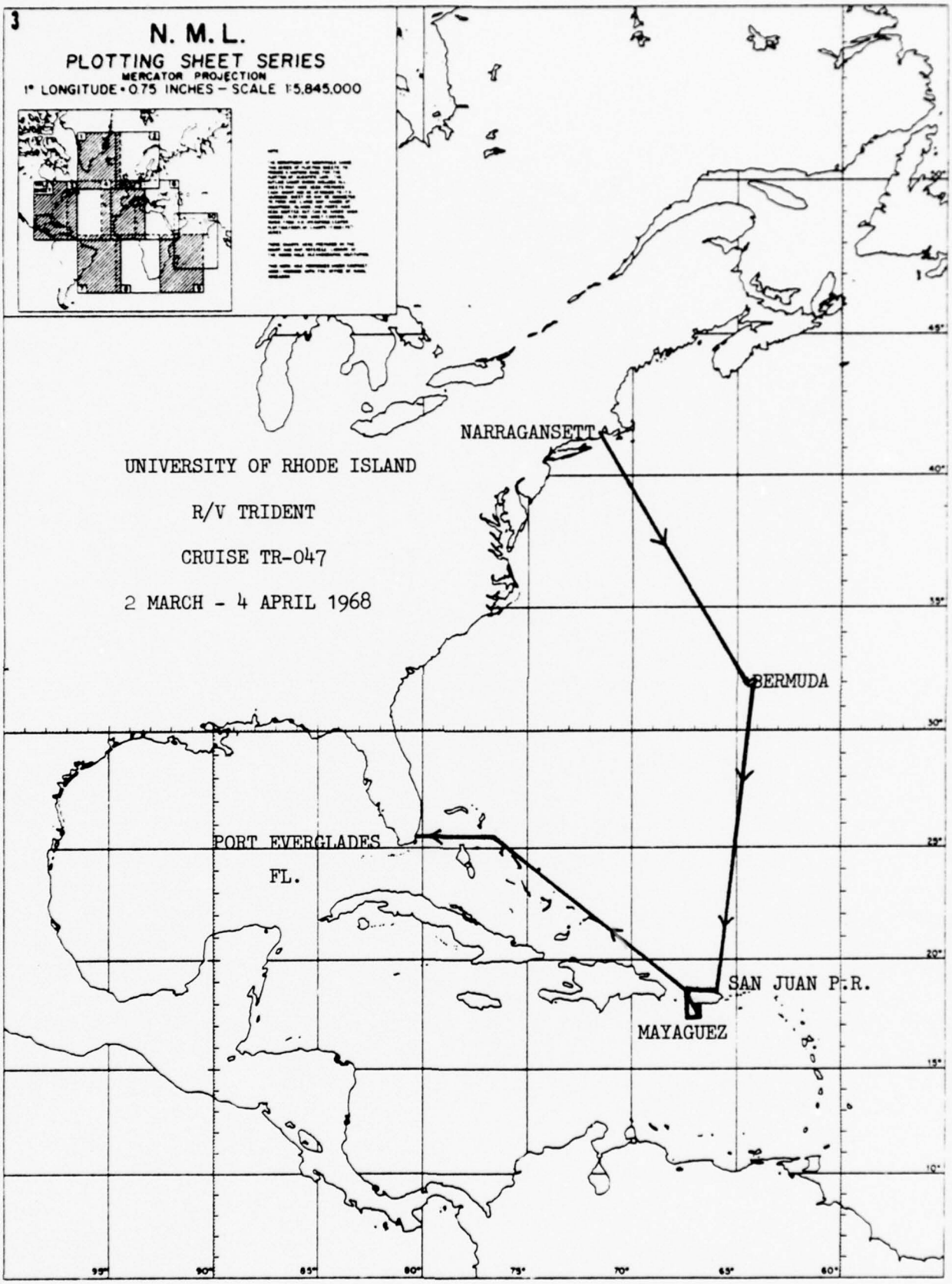
3) seven zooplankton collection stations were made

4) 92 n.m. of bathymetric and magnetic profiles were run

5) four trawl stations were occupied

Participants

Dr. Theodore A. Napora	Chief Scientist	U.R.I.
Mr. Louis Garrison	Scientist	USGS
Mr. George Clipper	Scientist	Smithsonian Inst.
Mr. Robert Gibbs	Scientist	Smithsonian Inst.
Mr. Clyde Roper	Scientist	Smithsonian Inst.
Mr. David Guiliano	Scientist	USN/USL
Mr. John H. Martin	Scientist	Puerto Rico Nuclear Center
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Michael Keene	Graduate Student	U.R.I.
Mr. Gerard R. Miller	Graduate Student	U.R.I.
Mr. William Krueger	Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-047
2 MARCH - 4 APRIL 1968
BERMUDA
PORT EVERGLADES
FL.
SAN JUAN P.R.
MAYAGUEZ

Cruise No.: TR-048

Dates: 6 - 14 April 1968

Area of Operation: Northwest Atlantic Ocean

Days at Sea: 9

Funding: ONR, NSF

Program Description

The major purposes of this cruise were

a) to continue seasonal bioacoustic surveys

b) to maintain a continuous whale and porpoise watch

c) to test an electronic zooplankton sampler

Data Collected

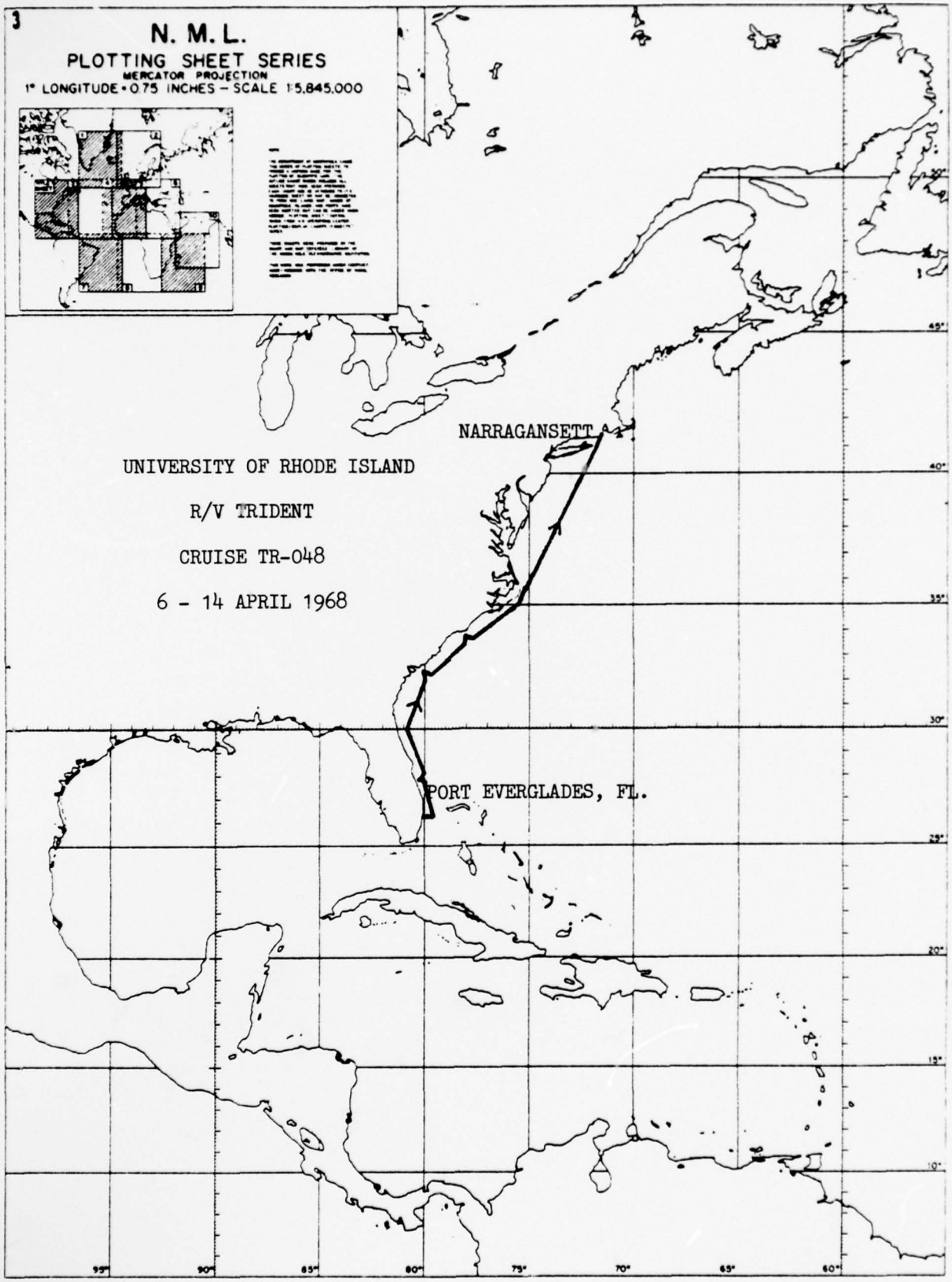
1) six bioacoustic stations were occupied

2) two electronic sampler stations were taken

3) continuous whale and porpoise watches were made

Participants

Dr. Charles J. Fish	Chief Scientist	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Arthur Buddington	Oceanographic Specialist	U.R.I.
Mr. David Morgan	Graduate Assistant	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-048
6 - 14 APRIL 1968
PORT EVERGLADES, FL.
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Cruise No.: TR-049

Dates: 22 April - 10 June 1968 Area of Operation: Northwest Atlantic Ocean

Days at sea: 48

Funding: ONR, NSF

Program Description

The main purpose of this cruise was

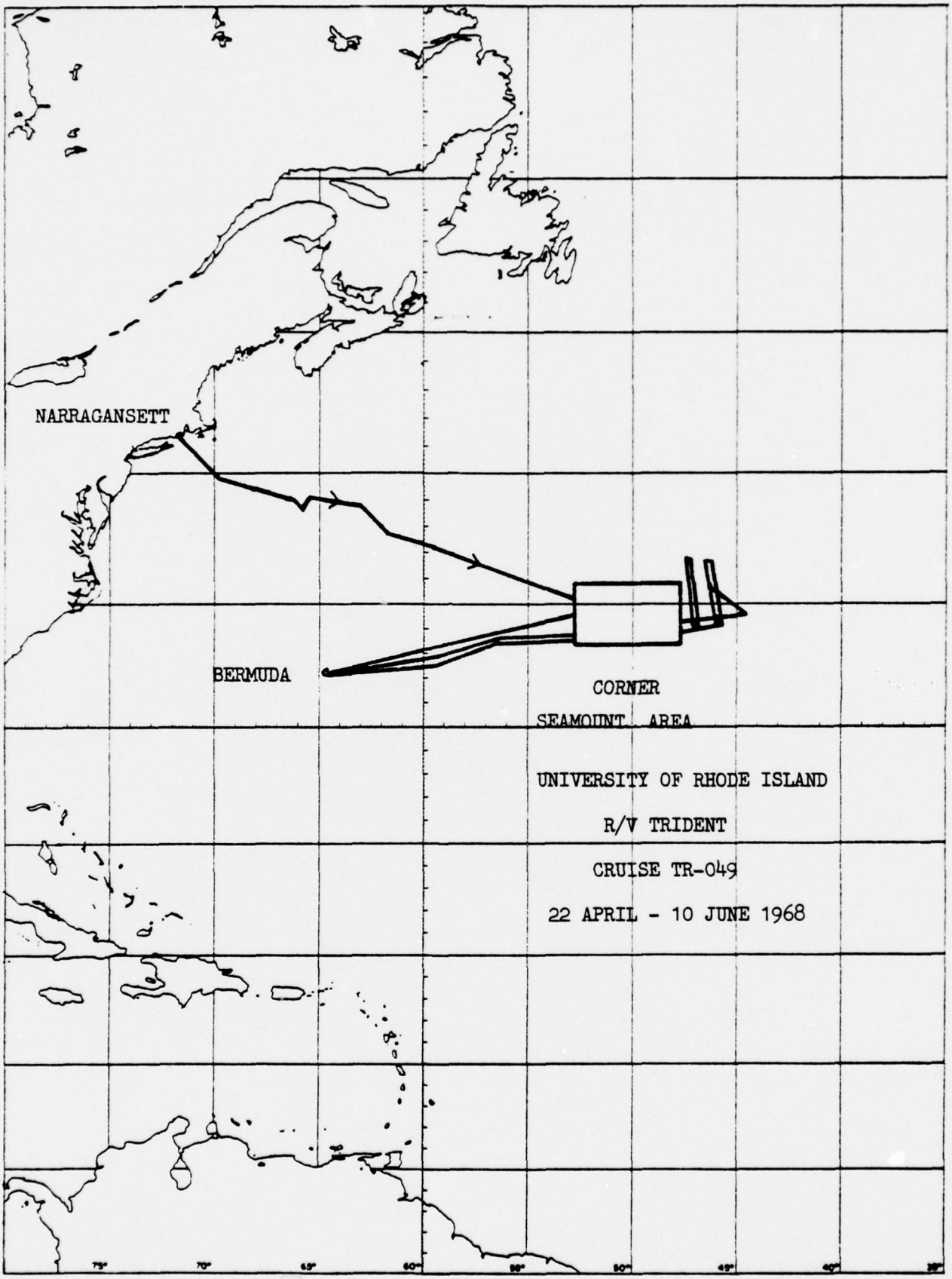
a) to conduct geological, geophysical and geochemical studies, particularly in the Corner Seamount area

Data Collected

1) 4,500 n.m. each of bathymetric and magnetic profiles were run
2) 630 n.m. of seismic reflection profiles were taken
3) 38 hydrographic stations were taken to study suspended particulate matter
4) two XBTs were taken
5) five dredge stations were occupied
6) three cores were retrieved
7) three camera stations were occupied

Participants

Dr. Dale C. Krause	Co-Chief Scientist	U.R.I.
Ms. Bonnie A. McGregor	Co-Chief Scientist	U.R.I.
Mr. Peter Betzer	Graduate Student	U.R.I.
Mr. George Steele	Graduate Student	U.R.I.
Ms. Christine Trmal	Graduate Student	U.R.I.
Mr. Arthur Buddington	Oceanographic Specialist	U.R.I.
Mr. Timothy Kennard	Oceanographic Specialist	U.R.I.


NARRAGANSETT
BERMUDA
CORNER
SEAMOUNT AREA
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-049
22 APRIL - 10 JUNE 1968

Cruise No.: TR-050

Dates: 13-18 June 1968

Area of Operation: Northwest Atlantic Ocean

Days at sea: 6

Funding: ONR, NSF

Program Description

The main purposes of this cruise were

a) to study the suspended particulates in the water column

b) to take cores and study them for trace metals and silica

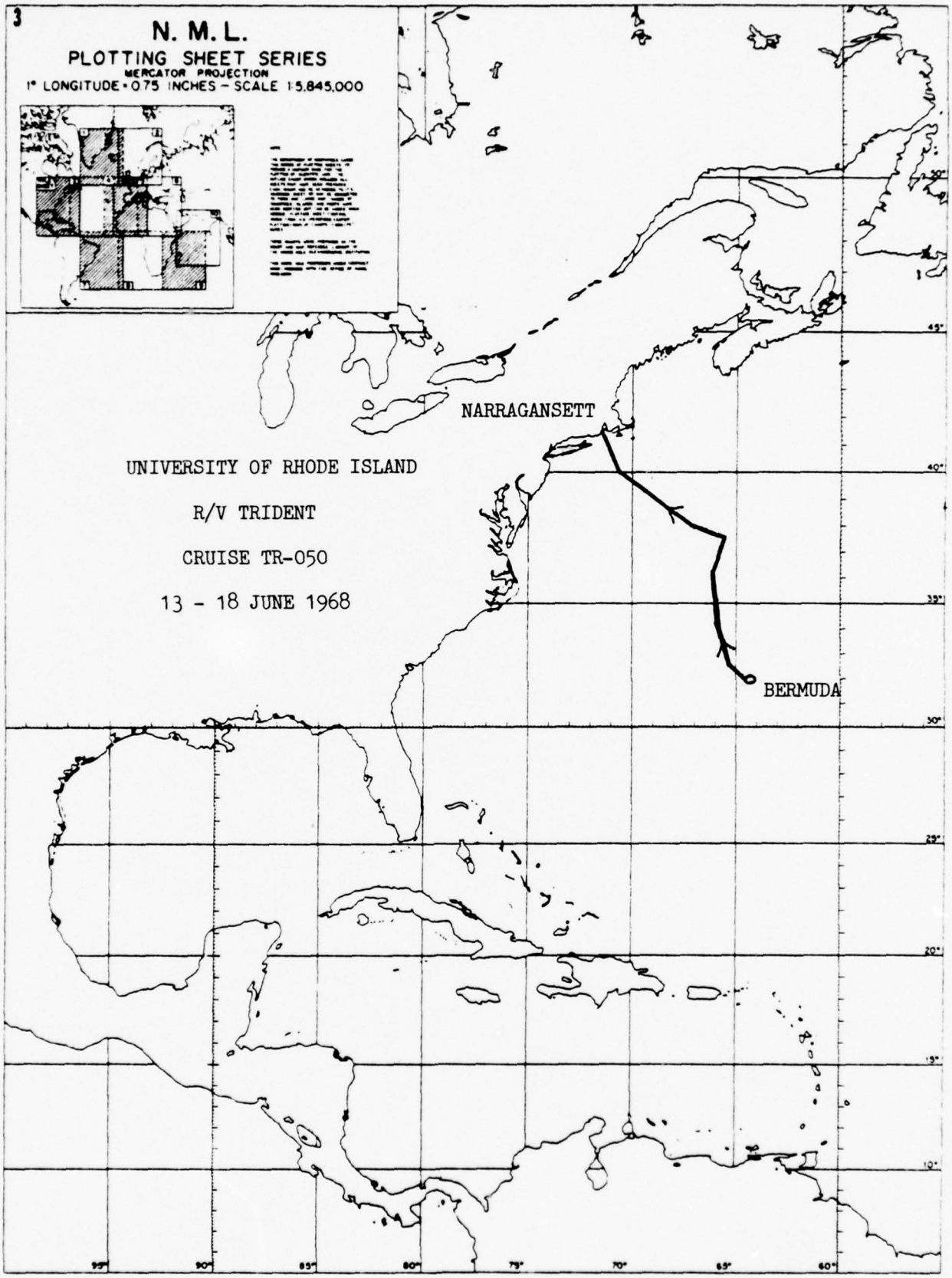
Data Collected

1) Eight hydrographic stations were occupied to study suspended particulate matter

2) 11 cores were taken

Participants

Dr. J. Corless	Chief Scientist	U.R.I.
Dr. V. Rose	Professor	U.R.I.
Dr. S. Kupferman	Research Associate	U.R.I.
Mr. A. Buddington	Oceanographic Specialist	U.R.I.
Mr. T. Kennard	Oceanographic Specialist	U.R.I.
Mr. P. Betzer	Graduate Student	U.R.I.
Mr. D. Bressan	Graduate Student	U.R.I.
Mr. K. Fanning	Graduate Student	U.R.I.
Mr. B. Keck	Graduate Student	U.R.I.
Mr. T. O'Connor	Graduate Student	U.R.I.
Mr. D. Roy	Graduate Student	U.R.I.
Mr. W. Moore	Student	SUNY, Stoneybrook


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-050
13 - 18 JUNE 1968
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Cruise No.: TR-051

Dates: 28 June - 7 July 1968 Area of Operation: Northwest Atlantic Ocean

Days at sea: 10

Funding: ONR, NSF

Program Description

The main purposes of this cruise were

a) to perform geological and geophysical studies on the shelf of New England

b) to perform seismic profiling equipment studies

Data Collected

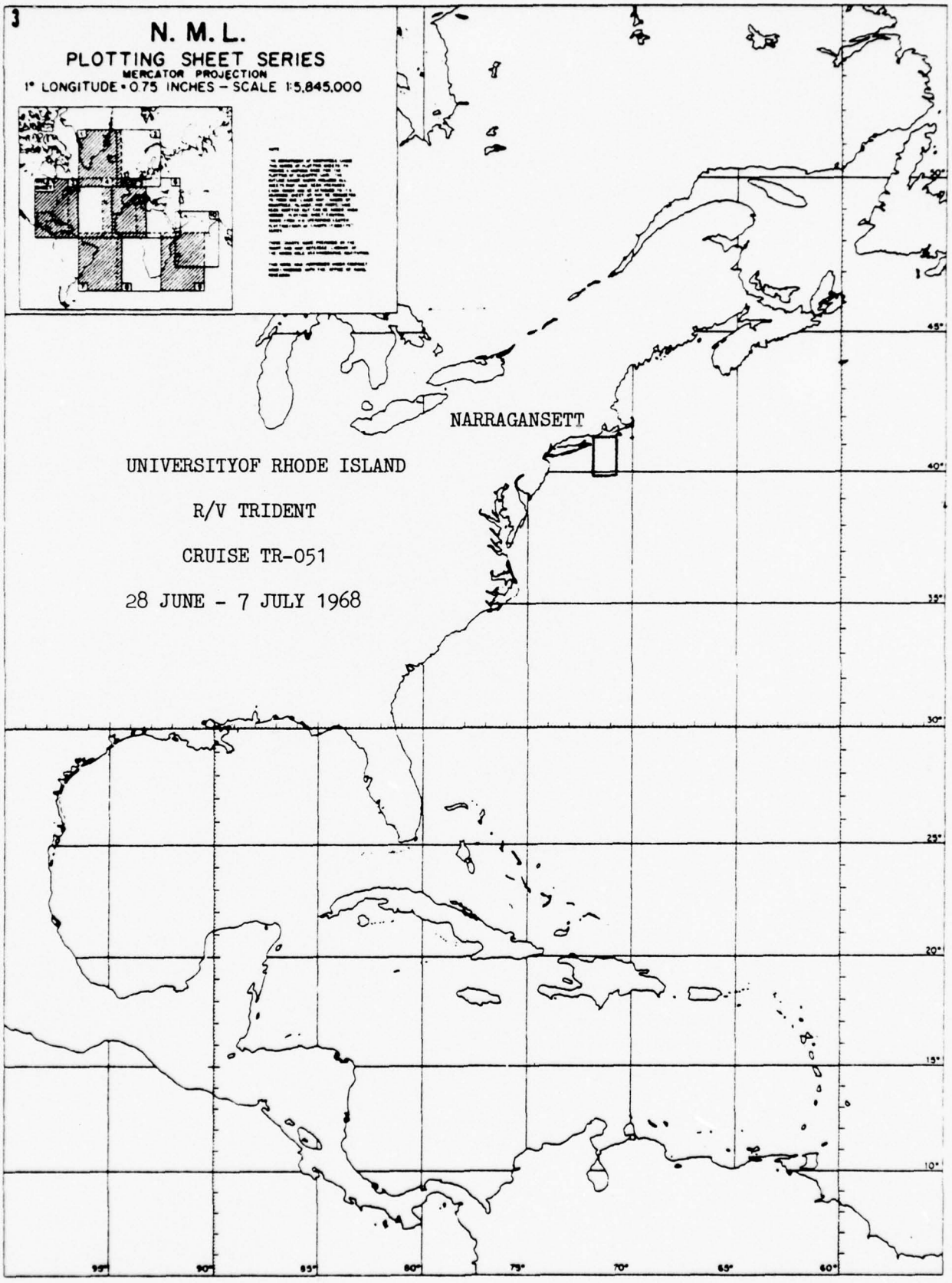
1) 782 n.m. of seismic reflection profiles were run

2) four cores were taken

3) seismic airguns and hydrophones were tested

Participants

Dr. R. McMaster	Chief Scientist	U.R.I.
Dr. F. Middleton	Professor	U.R.I.
Mr. A. Ashraf	Research Assistant	U.R.I.
Mr. A. Buddington	Oceanographic Specialist	U.R.I.
Mr. T. Kennard	Oceanographic Specialist	U.R.I.
Mr. R. Sexton	Oceanographic Specialist	U.R.I.
Mr. A. Barrett	Graduate Student	U.R.I.
Mr. M. Barros	Graduate Student	U.R.I.
Mr. W. Dillon	Graduate Student	U.R.I.
Mr. G. Eller	Graduate Student	U.R.I.
Mr. H. Ryder	Scientist	Sanders Associates Inc.
Mr. L. Smith	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITYOF RHODE ISLAND
R/V TRIDENT
CRUISE TR-051
28 JUNE - 7 JULY 1968
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Cruise No.: TR-052

Dates: 8-24 July 1968

Area of Operation: Northwest Atlantic Ocean

Days at sea: 17

Funding: ONR

Program Description

The main purpose of this cruise was

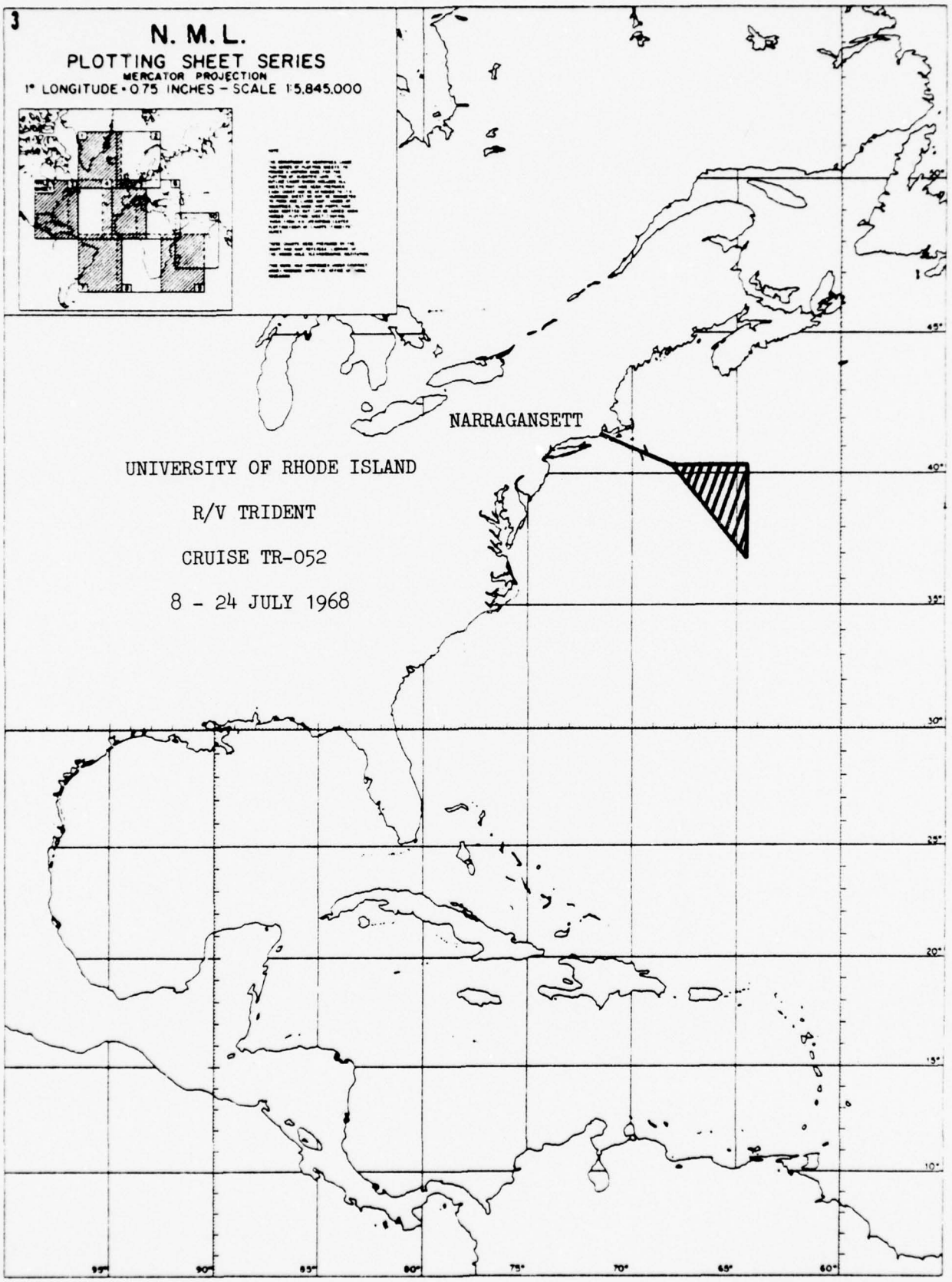
a) to use geological and geophysical studies to define the processes and environments of sedimentation on the continental rise off the New England coast

Data Collected

1) 450 n.m. of seismic reflection profiles were run
2) 20 cores were recovered
3) 12 camera stations were occupied
4) 16 hydrographic stations were taken
5) three current meter arrays were deployed and recovered
6) two XBTs were taken

Participants

Mr. H. Zimmerman	Chief Scientist	U.R.I.
Mr. P. Bedard	Electronic Engineer	U.R.I.
Mr. A. Buddington	Oceanographic Specialist	U.R.I.
Mr. T. Kennard	Oceanographic Specialist	U.R.I.
Mr. J. Sammons	Research Technician	U.R.I.
Mr. M. Barros	Graduate Student	U.R.I.
Mr. P. Pinet	Graduate Student	U.R.I.
Mr. P. deNyse	Scientist	SUNY, Stonybrook
Mr. S. Sellinger	Scientist	Brooklyn College
Mr. W. Smit	Scientist	Brooklyn College
Mr. A. Stegmuller	Scientist	Brooklyn College
Mr. P. Wasserman	Scientist	Brooklyn College
Mr. R. Young	Scientist	Brooklyn College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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-052
8 - 24 JULY 1968
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Cruise No.: TR-053

Dates: 3-23 August 1968

Area of Operation: North and Northwest Atlantic Ocean

Days at sea: 20

Funding: ONR

Program Description

The main purposes of this cruise were

a) to record underwater sounds of whales and dolphins

b) to follow a pod of whales for a two-day period using a helium balloon, light and radar

c) to collect eels and squid

d) to deploy two current meters

Data Collected

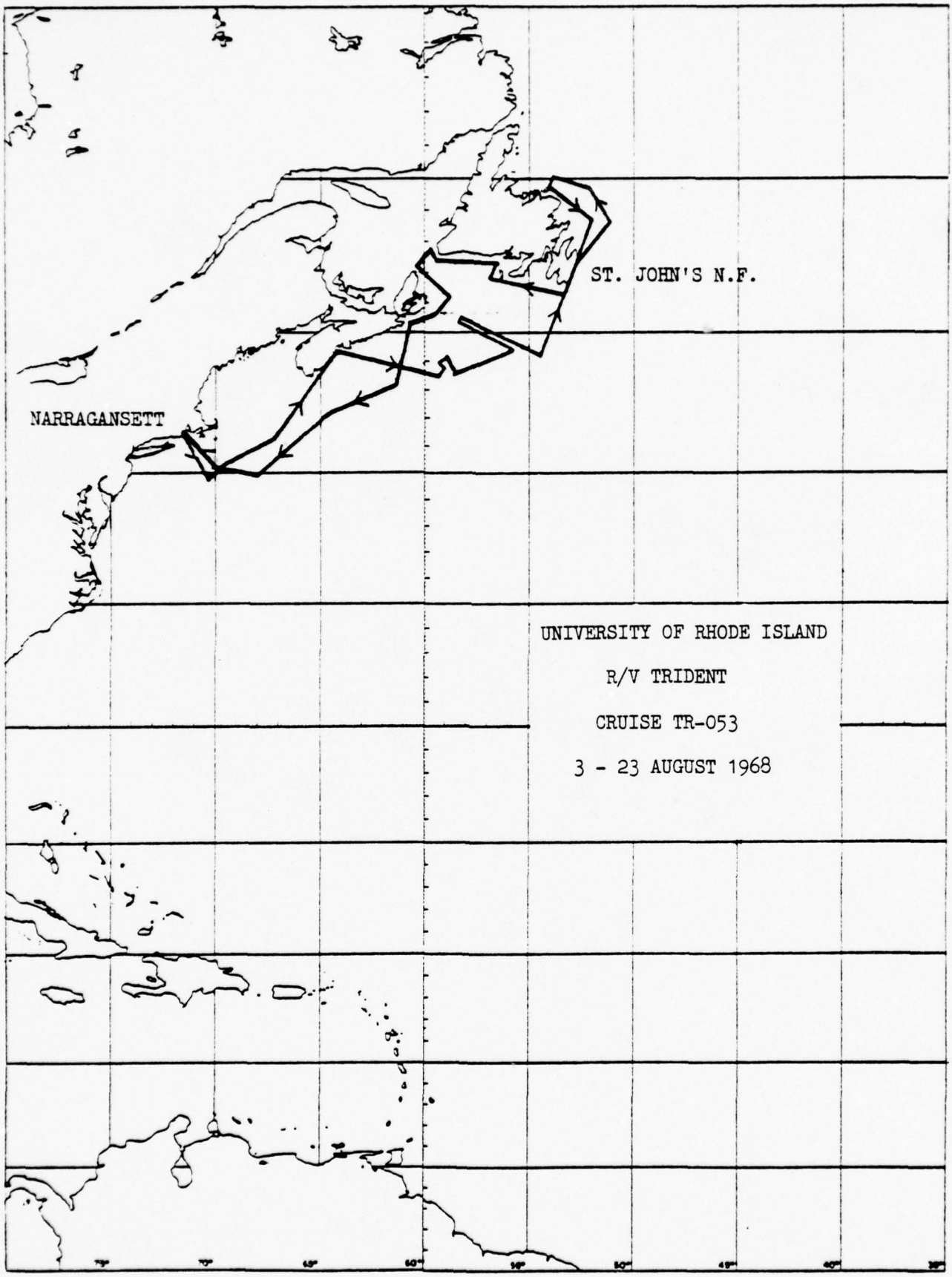
1) 23 whale/dolphin listen/record stations were occupied

2) pods of whales were followed for various lengths of time

3) current meters were deployed

Participants

Dr. Howard E. Winn	Chief Scientist	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Philip Bedard	Electronics Engineer	U.R.I.
Mr. David E. Sergeant	Scientist	Fisheries Research Board of Canada
Mr. J. Lawrence Dunn	Scientist	NAVOCEANO
Mr. Richard Love	Scientist	NAVOCEANO
Mr. Frank R. Taylor	Scientist	NAVOCEANO
Mr. Raymond Kenney	Graduate Student	U.R.I.
Mr. David Morgan	Graduate Student	U.R.I.
Ms. Myra Morgan	Graduate Student	U.R.I.
Mr. Wilfred Savard	Graduate Student	U.R.I.
Ms. Lynn Haines	Student	Univ. of Rochester
Mr. Robin Ross	Student	Univ. of Rochester
Mr. Eric Winn	Student	U.R.I.


ST. JOHN'S N.F.
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-053
3 - 23 AUGUST 1968

Cruise No.: TR-054

Dates: 28 August - 9 September 1968 Area of Operation: Northwest Atlantic Ocean

Days at sea: 13

Funding: ONR, NSF

Program Description

The main purposes of this cruise were:

a) to perform biological/chemical sampling in the Ocean Acre area

b) to take bathymetric data for the Naval Underwater Sound Lab, New London

Data Collected

1) 30 trawls were made

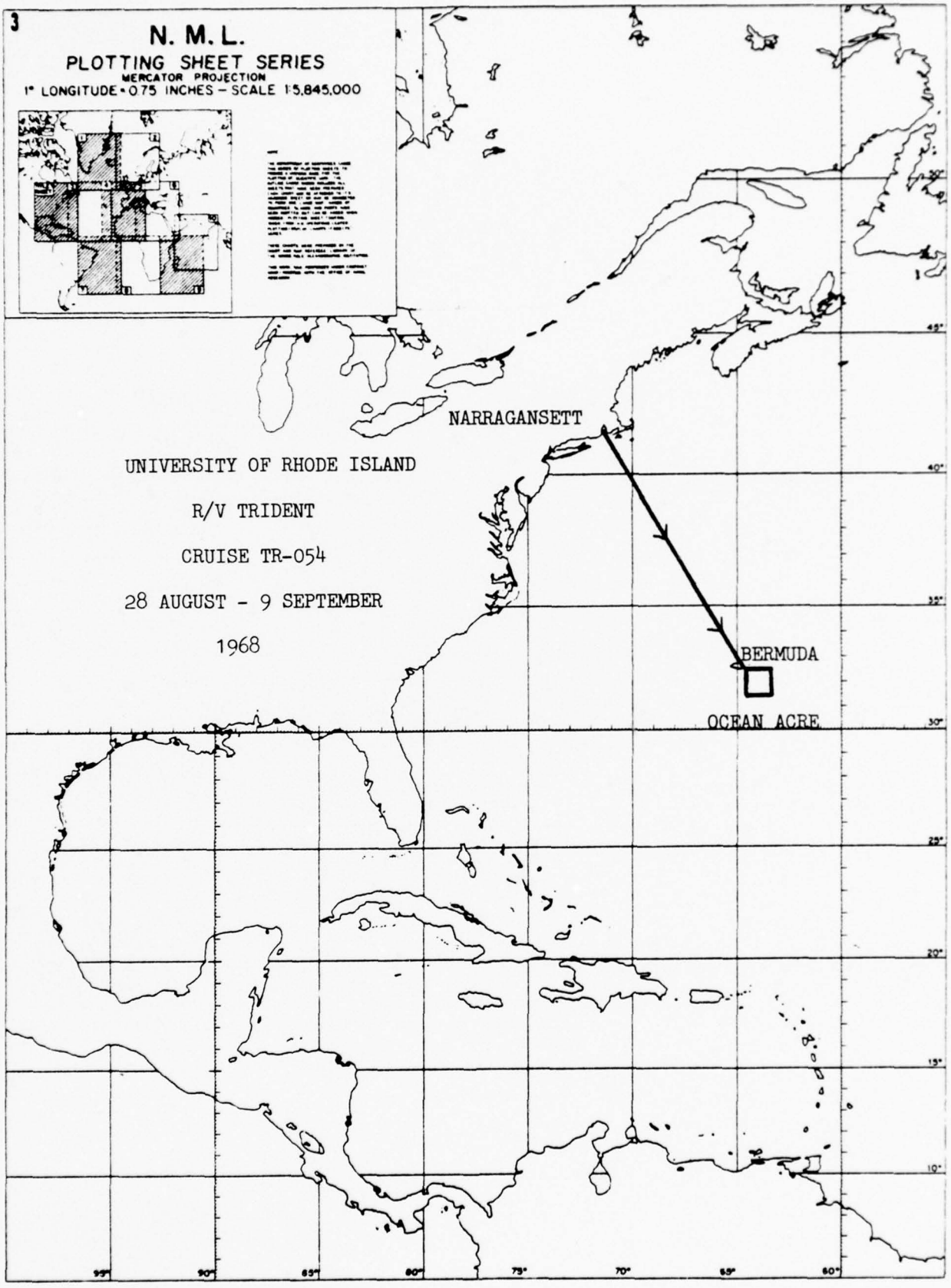
2) 2 hydrographic stations were occupied

3) 10 XBTs were taken

4) bathymetry profiles were run

Participants

Dr. T. A. Napora	Chief Scientist	U.R.I.
Mr. T. Kennard	Technician	U.R.I.
Mr. H. A. Donaldson	Graduate Student	U.R.I.
Mr. M. J. Keene	Graduate Student	U.R.I.
Mr. J. Krout	Graduate Student	U.R.I.
Mr. W. H. Krueger	Graduate Student	U.R.I.
Mr. G. B. Farguhar	Scientist	NAVOCEANO
Mr. B. Shearer	Scientist	NAVOCEANO
Mr. G. L. Clipper	Scientist	Bureau of Commercial Fisheries
Mr. A. L. Brooks	Scientist	NUSL
Mr. R. H. Gibbs	Scientist	Smithsonian Institution
Mr. C. F. Roper	Scientist	Smithsonian Institution


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-054
28 AUGUST - 9 SEPTEMBER
1968
BERMUDA
OCEAN ACRE
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Cruise No.: TR-055

Dates: 12 September - 11 October 1968

Area of Operation: Northwest Atlantic Ocean, Caribbean Sea

Days at sea: 29

Funding: ONR

Program Description

The main purposes of this cruise were:

a) to investigate the seawater chemistry in the Cariaco Trench

b) to study core chemistry

c) to collect zooplankton and phytoplankton

d) to investigate seawater chemistry off the Orinoco River

Data Collected

1) 44 hydrographic stations were occupied

2) 17 cores were recovered

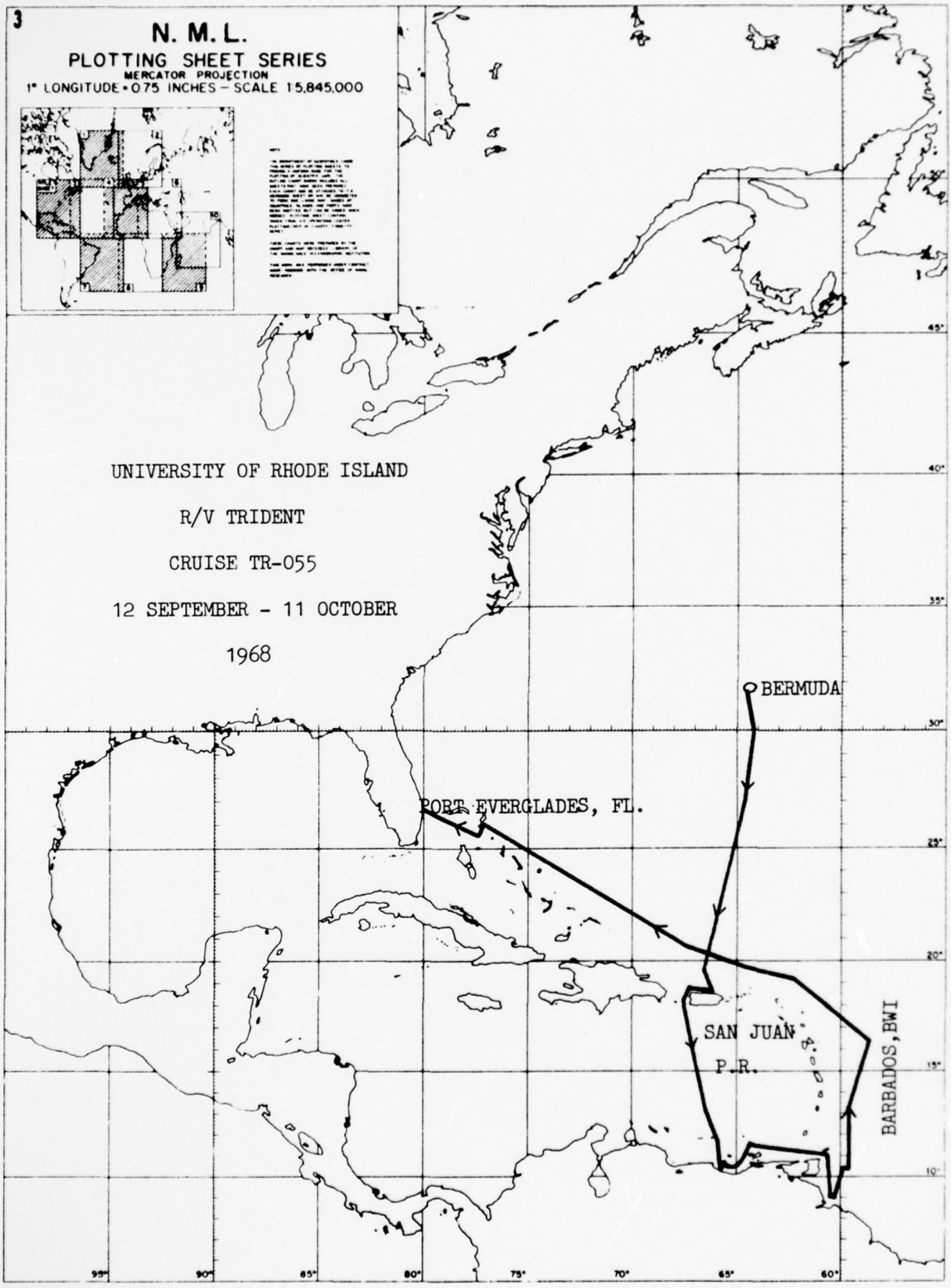
3) six grabs were taken

4) two camera stations were occupied

5) 24 XBTs were taken

Participants

Dr. Michael E. Q. Pilson	Chief Scientist	U.R.I.
Dr. George T. Felbeck	Assoc. Professor	U.R.I.
Mr. Timothy Kennard	Marine Technician	U.R.I.
Mr. Peter Betzer	Graduate Student	U.R.I.
Mr. Kent Fanning	Graduate Student	U.R.I.
Mr. David Johnson	Graduate Student	U.R.I.
Mr. Jason Krout	Graduate Student	U.R.I.
Mr. Gerard Miller	Graduate Student	U.R.I.
Mr. Gabriel Vargo	Graduate Student	U.R.I.
Ms. Sandy Vargo	Graduate Student	U.R.I.
Mr. Kenneth Wolgemuth	Graduate Student	L.G.O.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-055
12 SEPTEMBER - 11 OCTOBER
1968
BERMUDA
PORT EVERGLADES, FL.
SAN JUAN
P.R.
BARBADOS, BWI
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Cruise No.: TR-056

Dates: 13 - 19 October 1968

Area of Operation: Northwest Atlantic Ocean

Days at sea: 7

Funding: ONR

Program Description

The main purposes of this cruise were:

a) to study and record seasonal variations of biological sound levels

b) to maintain whale and porpoise watches

c) to fish while on station and coordinate with sound data

d) to catch migrating American eels

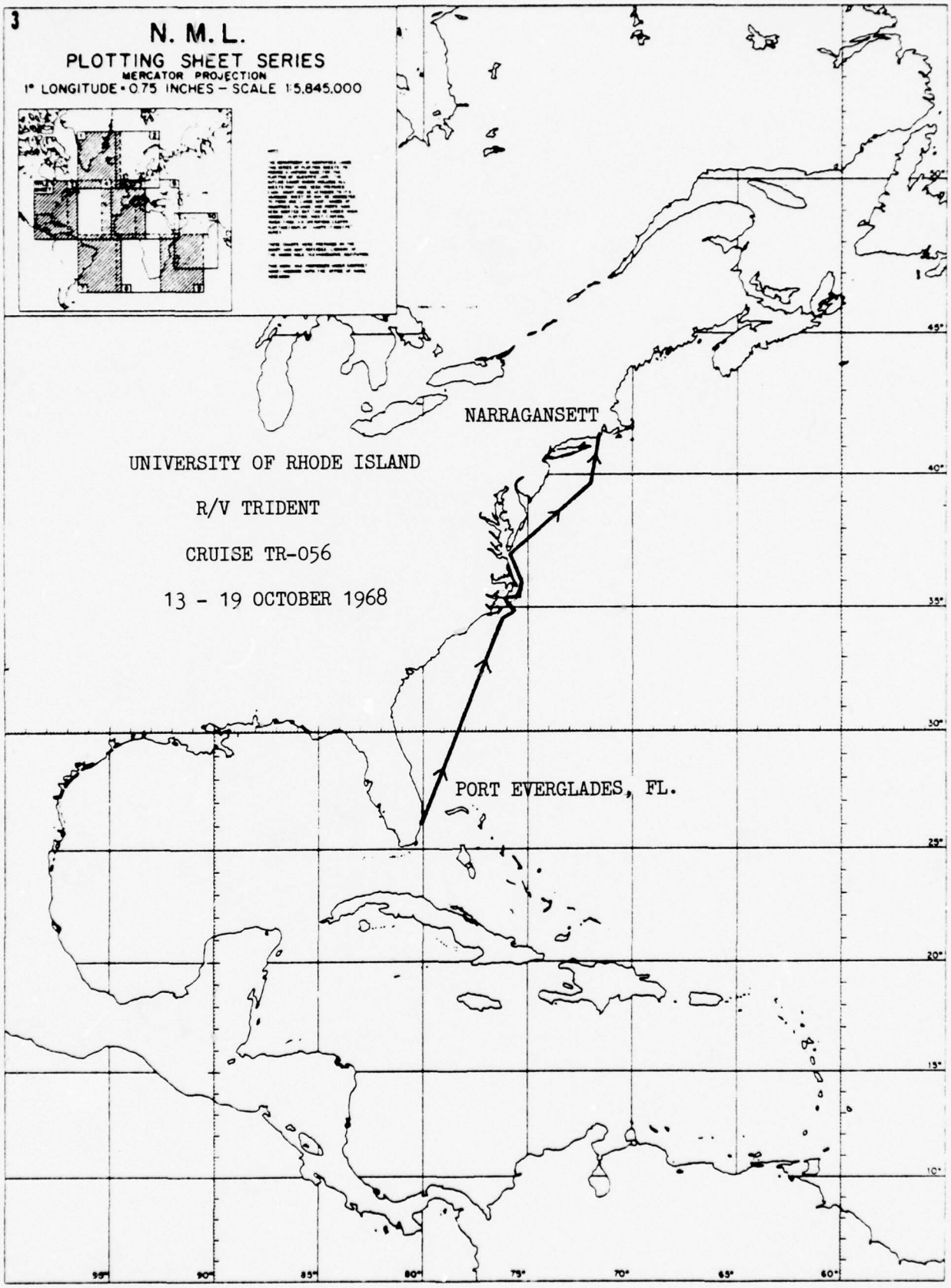
Data Collected

1) four bioacoustic/fishing stations were occupied

2) whale and porpoise watches were maintained

Participants

Mr. Paul J. Perkins	Chief Scientist	U.R.I.
Mr. Timothy Kennard	Oceanographic Specialist	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-056
13 - 19 OCTOBER 1968
PORT EVERGLADES, FL.
45°
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Cruise No.: TR-057

Dates: 8 - 10 November 1968

Area of Operation: Northwest Atlantic Ocean

Days at sea: 3

Funding: ONR

Program Description

The main purpose of this cruise was

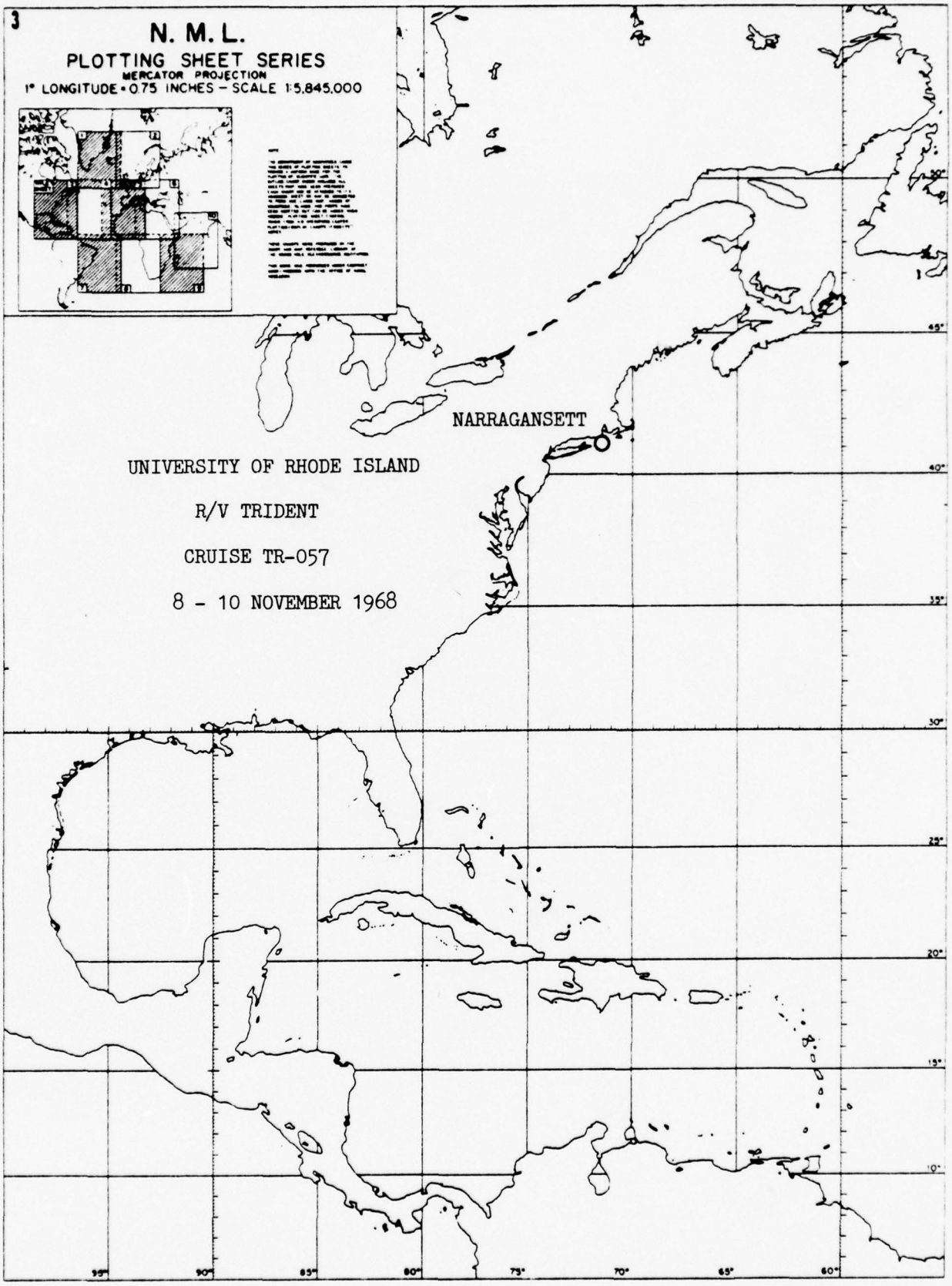
a) to test the hydrodynamic performance of a towed instrument platform

Data Collected

1) equipment tests were carried out

Participants

Mr. Russell Smith	Chief Scientist	U.R.I.
Mr. Rodger Greenhall	Oceanographic Specialist	U.R.I.
Mr. Timothy Kennard	Oceanographic Specialist	U.R.I.
Mr. Hagop Arakelian	Graduate Student	U.R.I.
Mr. Robert Watson	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-057
8 - 10 NOVEMBER 1968
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Cruise No.: TR-058

Dates: 11 - 14 November 1968 Area of Operation: Northwest Atlantic Ocean

Days at sea: 4

Funding: ONR, NSF

Program Description

The main purposes of this cruise were

a) to define bottom circulation on the continental slope near the Hydrographer Canyon

b) to measure variation in fallout cesium

c) to obtain a vertical profile of reactive arsenate

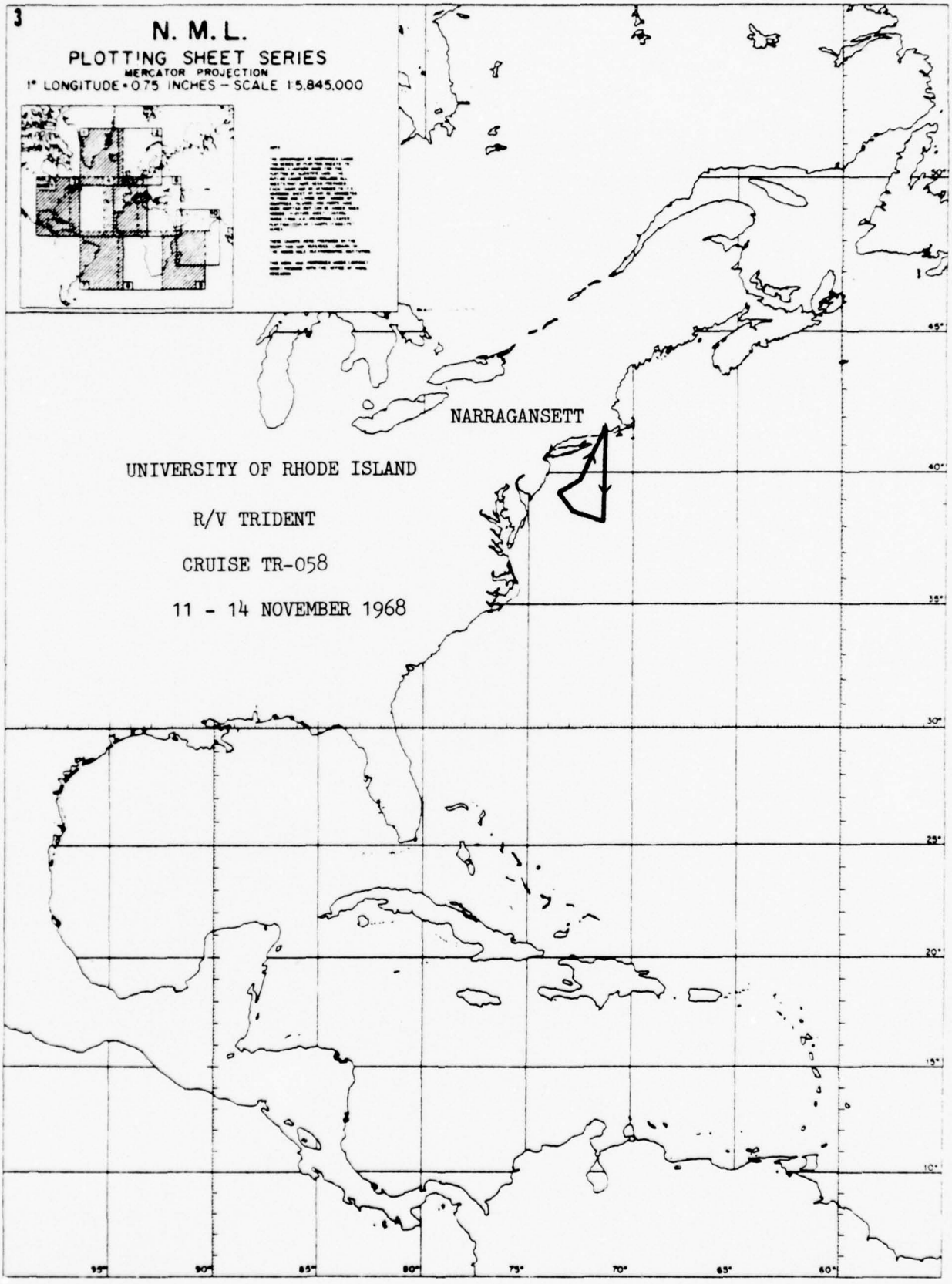
Data Collected

1) two surface samples of cesium were collected

2) due to very high winds and seas, no other cruise objectives were accomplished

Participants

Dr. J. A. Knauss	Chief Scientist	U.R.I.
Dr. W. Sturges	Assistant Professor	U.R.I.
Mr. P. P. Bedard	Electronics Engineer	U.R.I.
Mr. R. K. Sexton	Sr. Marine Technician	U.R.I.
Mr. J. I. Sammons	Electronics Technician	U.R.I.
Mr. R. K. Greenall	Marine Technician	U.R.I.
Mr. S. Kupferman	Research Associate	U.R.I.
Mr. D. Johnson	Graduate Student	U.R.I.
Mr. L. Miller	Student	Antioch College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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-058
11 - 14 NOVEMBER 1968
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Cruise No.: TR-059

Dates: 16 - 21 November 1968 Area of Operation: Northwest Atlantic Ocean

Days at sea: 6

Funding: ONR

Program Description

The main purposes of this cruise were

a) to perform several transmit/record acoustic stations for whales and dolphins in the Hudson Canyon area

b) to maintain underway watches for whales and dolphins

c) to catch American eels

Data Collected

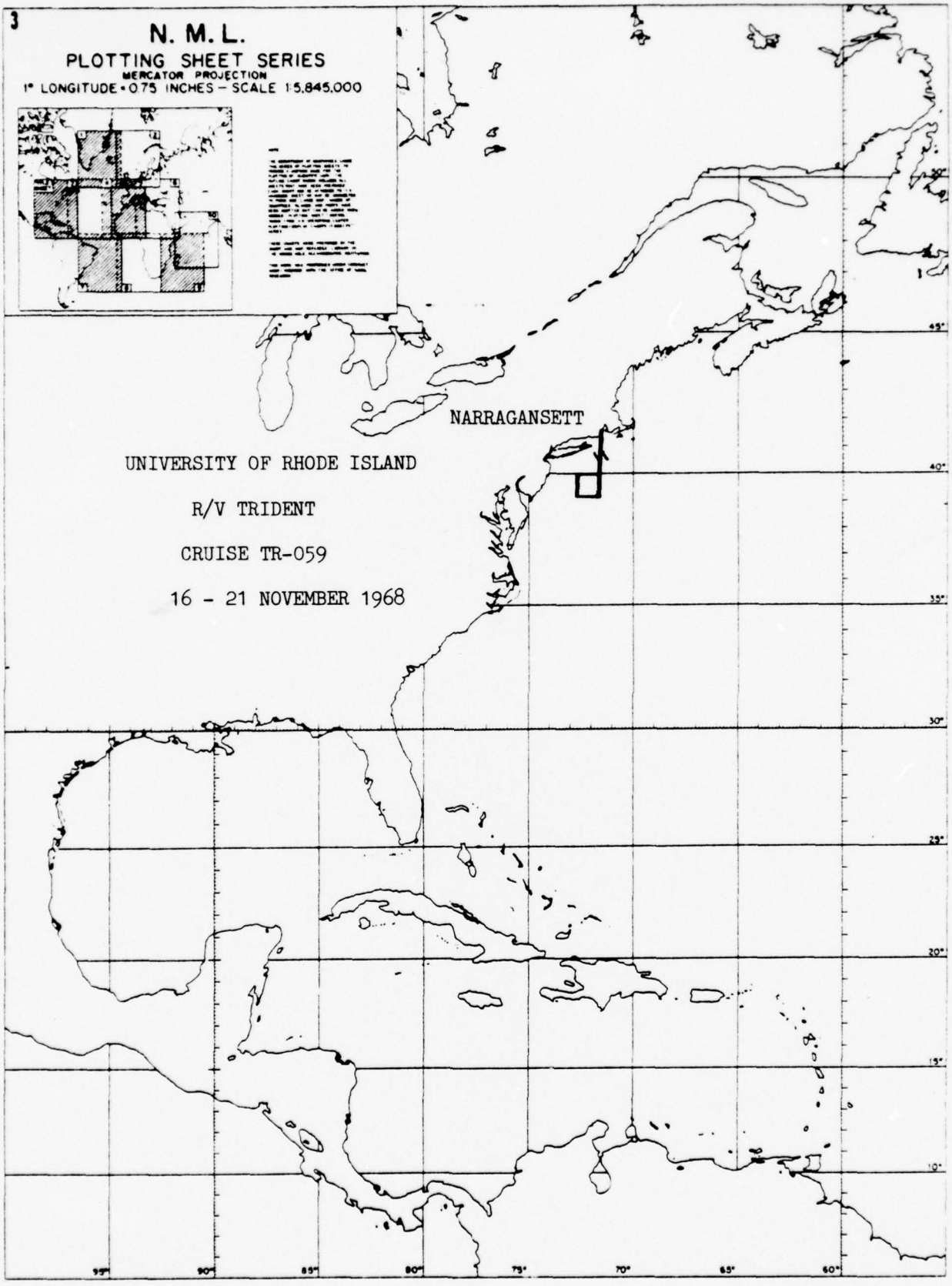
1) One playback/record station was made

2) many whales and porpoise were sighted

3) eels were seen

Participants

Dr. Howard E. Winn	Chief Scientist	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Pierce Fenhagen	Oceanographic Specialist	U.R.I.
Mr. James Fish	Graduate Student	U.R.I.
Mr. George Fulk	Graduate Student	U.R.I.
Mr. John C. Mallett	Graduate Student	U.R.I.
Mr. Dave Morgan	Graduate Student	U.R.I.
Mr. George Offutt	Graduate Student	U.R.I.
Mr. William Richkus	Graduate Student	U.R.I.
Mr. Gregory Winn	Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-059
16 - 21 NOVEMBER 1968
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65°
60°

Cruise No. TR-060

Dates: 22 November 1968

Area of Operation: Block Island Sound

Days at sea: 1

Funding: ONR

Program Description

The main objective of this cruise was to demonstrate the use of oceanographic equipment to URI oceanographic students.

Data Collected

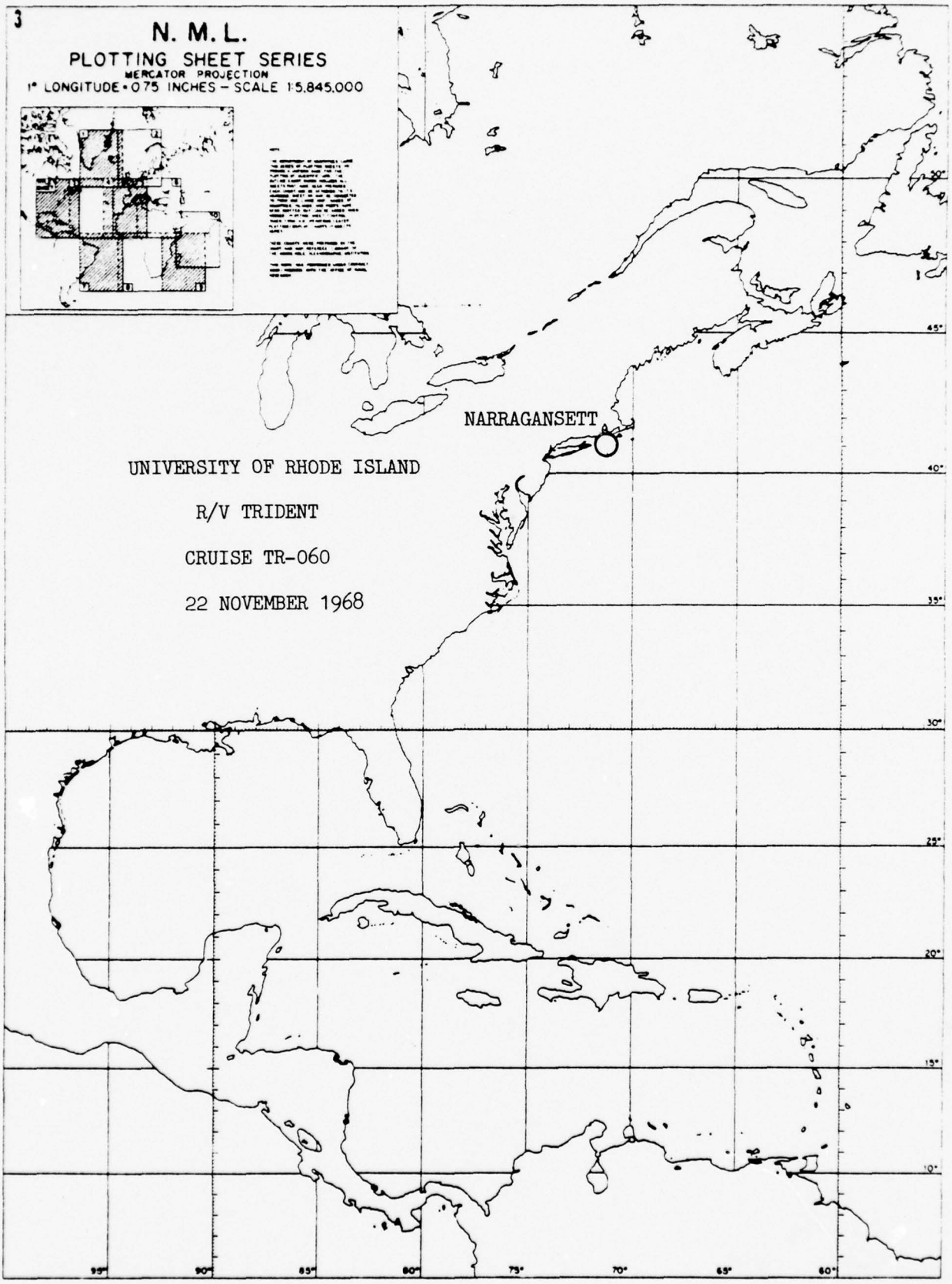
None.

Equipment demonstrated: Nansen and Niskin casts, XBT, current drogue, neuston net, van Veen grab, Clarke-Bumpus sampler, sterile water sampler, phleger core

Participants

Dr. David Pratt Chief Scientist U.R.I.

44 students in scientific party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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-060
22 NOVEMBER 1968
45°
40°
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65°
60°

Cruise No.: TR-061

Dates: 23 - 25 November 1968

Area of Operation: Northwest Atlantic Ocean

Days at sea: 3

Funding: ONR

Program Description

The main purpose of this cruise was

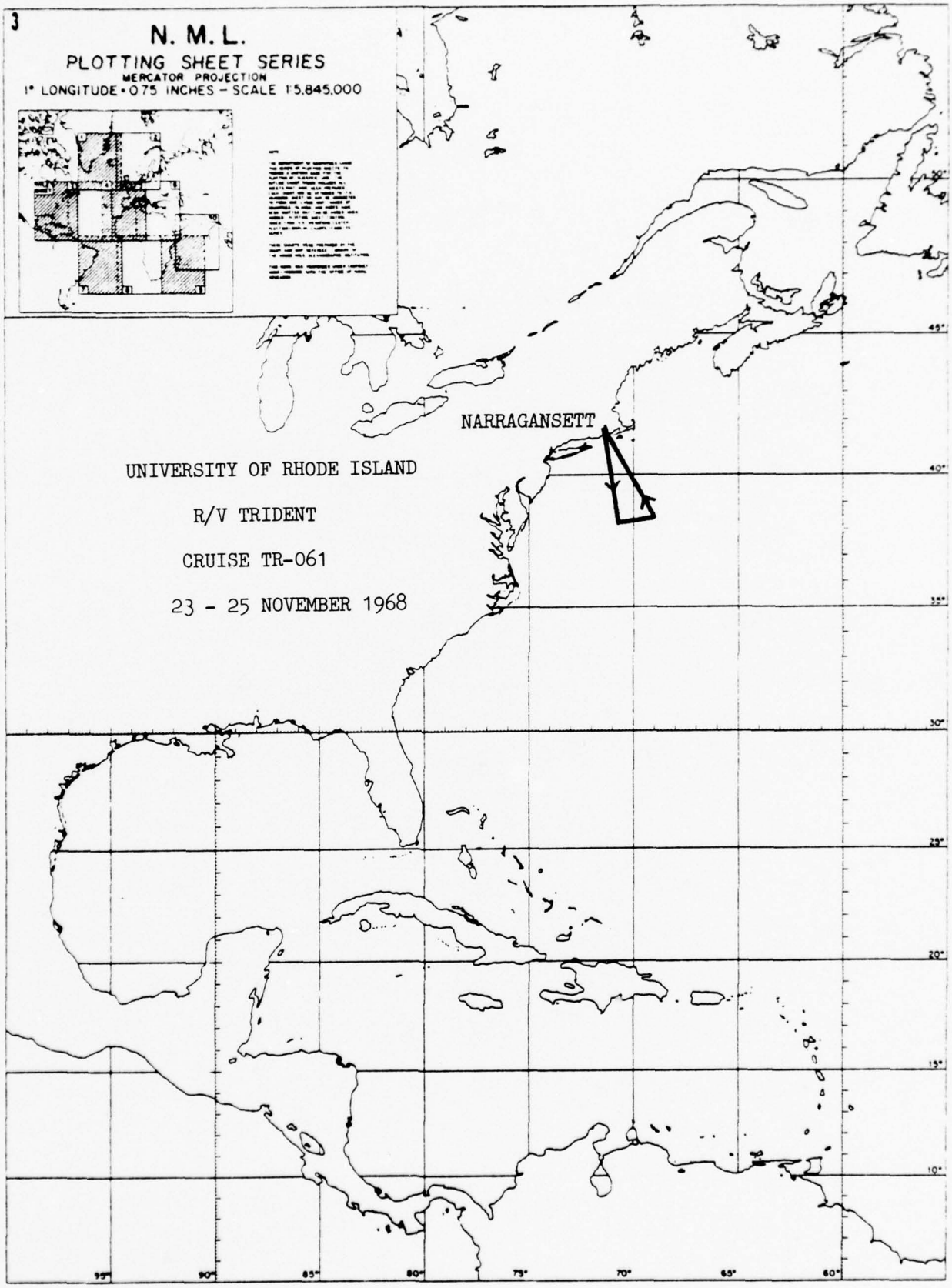
a) to deploy two near-bottom current meters near the Hydrographer Canyon

Data Collected

1) Two current meters were deployed

Participants

Dr. J. A. Knauss	Chief Scientist	U.R.I.
Mr. P. P. Bedard	Electronic Engineer	U.R.I.
Mr. J. I. Sammons	Electronic Technician	U.R.I.
Mr. R. K. Greenall	Marine Technician	U.R.I.
Mr. T. C. Kennard	Marine Technician	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 075 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-061
23 - 25 NOVEMBER 1968
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-062

Dates: 25 - 26 November 1968 Area of Operation: Rhode Island Sound

Days at sea: 1

Funding: ONR

Program Description

The main purpose of this cruise was

a) to test oceanographic equipment at sea

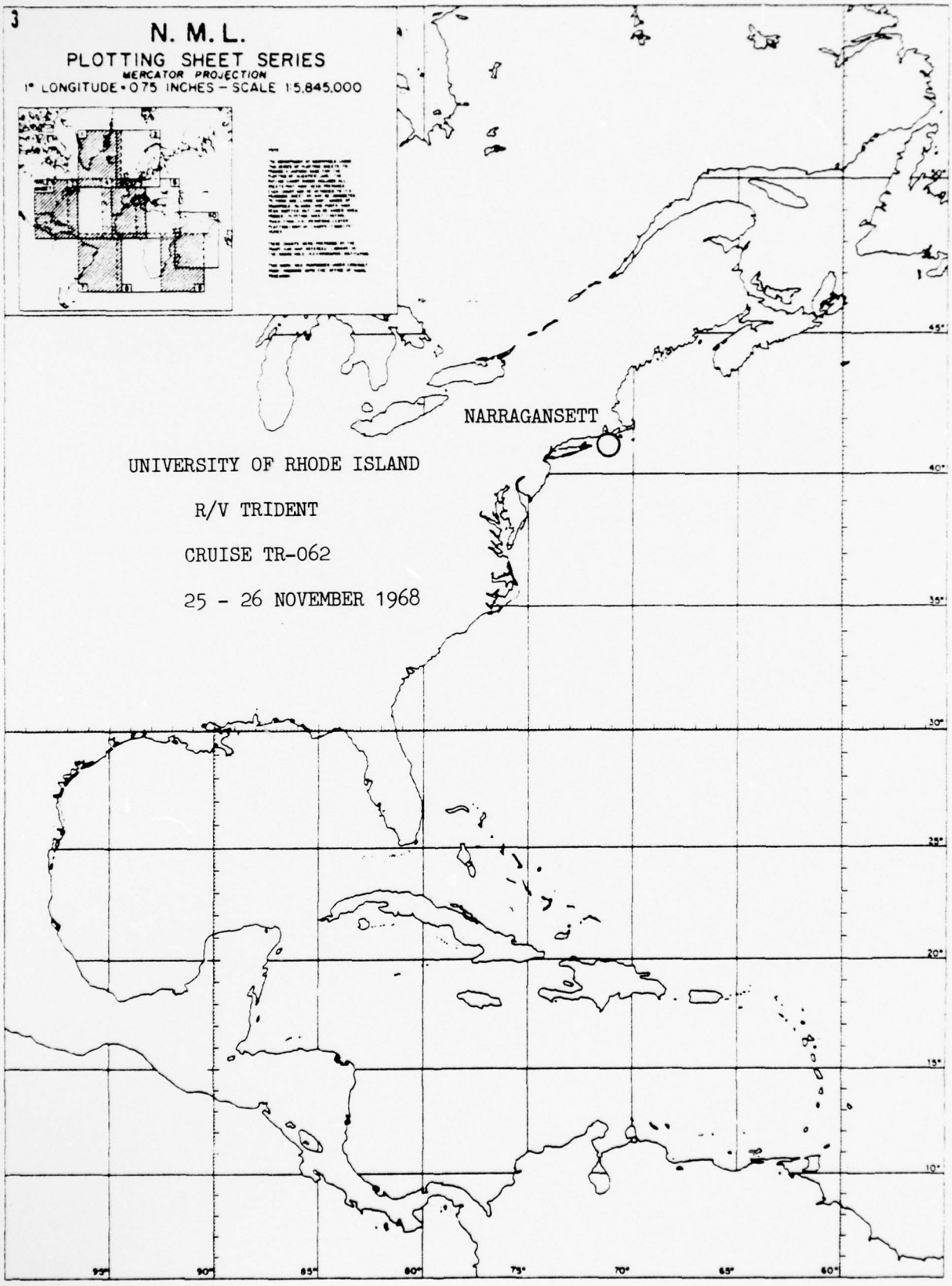
Data Collected

1) A towed fish was tested at varying depths

2) Timed sphere buoy to record waves was tested

Participants

Dr. Hilbert Schenck	Chief Scientist	U.R.I.
Mr. Tim Kennard	Oceanographic Technician	U.R.I.
Mr. Al Blott	Graduate Student	U.R.I.
Mr. Bruce Crawford	Graduate Student	U.R.I.
Mr. Wilson Lamb	Graduate Student	U.R.I.
Mr. Russell Smith	Graduate Student	U.R.I.
Mr. Douglas Teeson	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 075 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-062
25 - 26 NOVEMBER 1968
45°
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Cruise No.: TR-063

Dates: 2 - 12 December 1968 Area of Operation: Northwest Atlantic Ocean

Days at Sea: 10

Funding:

Program Description

The main purposes of this cruise were

a) to make biological/chemical studies in the Ocean Acre area

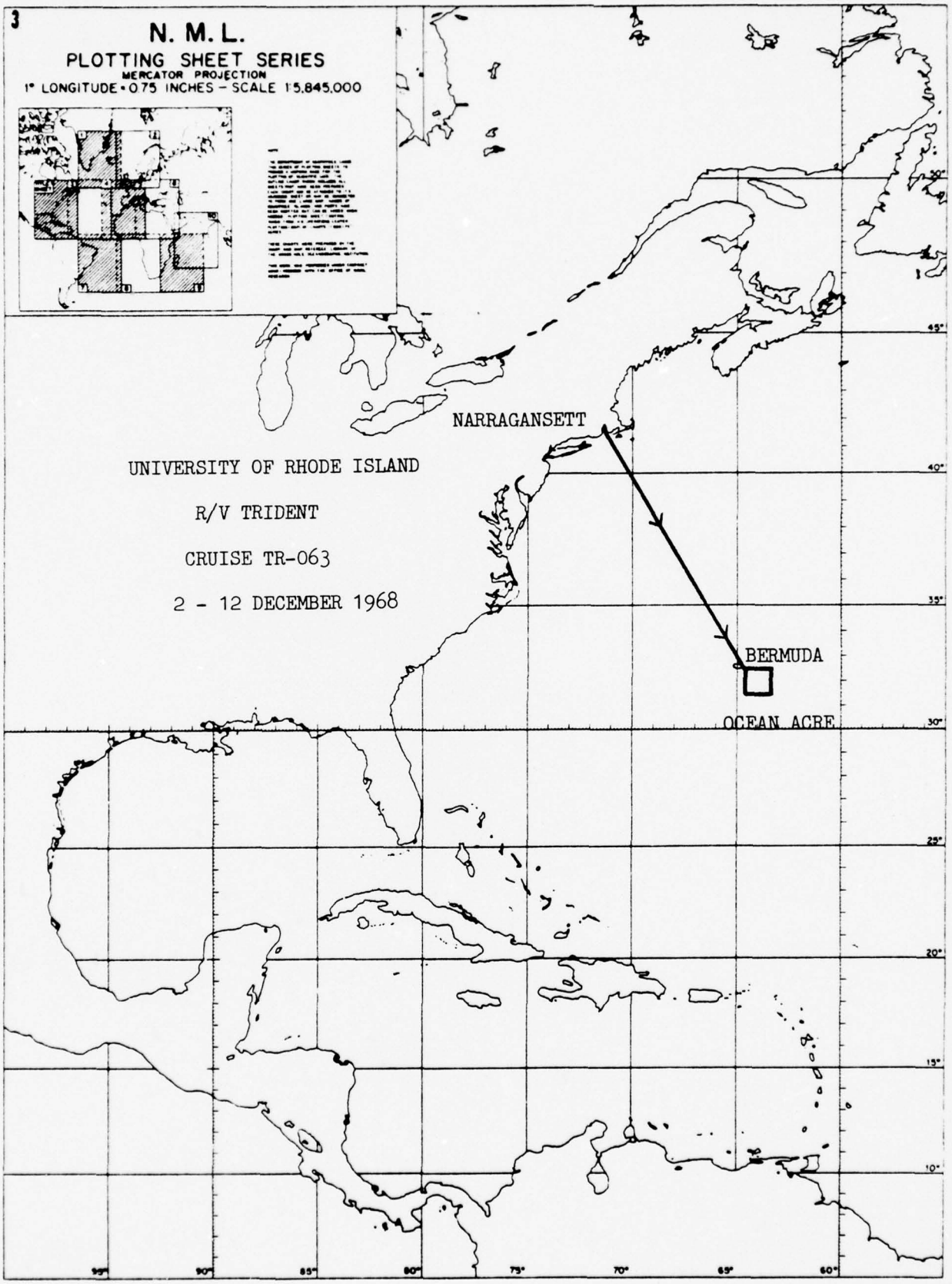
Poor weather reduced station time.

Data Collected

1) four trawl stations were made
2) one hydrographic station was occupied
3) two XBT's were taken

Participants

Dr. Theodore Napora	Chief Scientist	U.R.I.
Mr. Albert Brooks	Scientist	U.S.N.-U.S.L.
Mr. Roger Greenall	Marine Technician	U.R.I.
Mr. Richard Beider	Graduate Student	U.R.I.
Mr. George Bond	Graduate Student	U.R.I.
Mr. Henry Donaldson	Graduate Student	U.R.I.
Mr. Michael Keene	Graduate Student	U.R.I.
Mr. John Mason	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-063
2 - 12 DECEMBER 1968
BERMUDA
OCEAN ACRE
45°
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Cruise No.: TR-064

Dates: 14 - 21 December 1968 Area of Operation: Northwest Atlantic Ocean

Days at sea: 8

Funding: ONR, NSF

Program Description

The main purposes of this cruise were

a) to recover two current meter arrays deployed on TR-061

b) to study cesium 137 at the surface and at depths

Data Collected

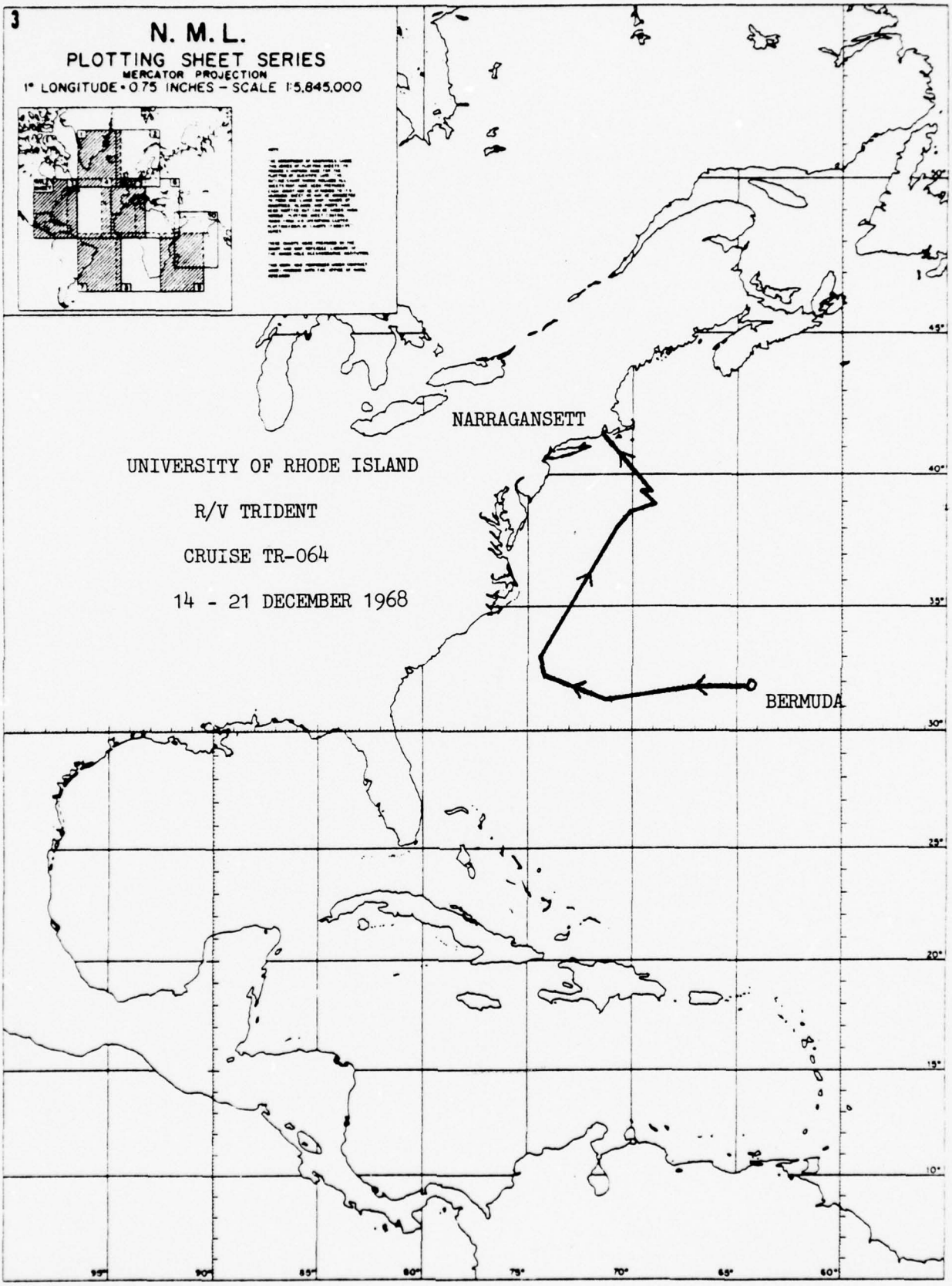
1) two hydrostations were occupied

2) 15 XBT's were taken

3) 12 surface cesium 137 samples were taken of about six hours' duration each

Participants

Dr. Stuart L. Kupferman	Chief Scientist	U.R.I.
Mr. Philip P. Bedard	Electronics Engineer	U.R.I.
Mr. Roger K. Greenall, Jr.	Marine Technician	U.R.I.
Mr. James I. Sammons	Electronics Technician	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-064
14 - 21 DECEMBER 1968
BERMUDA
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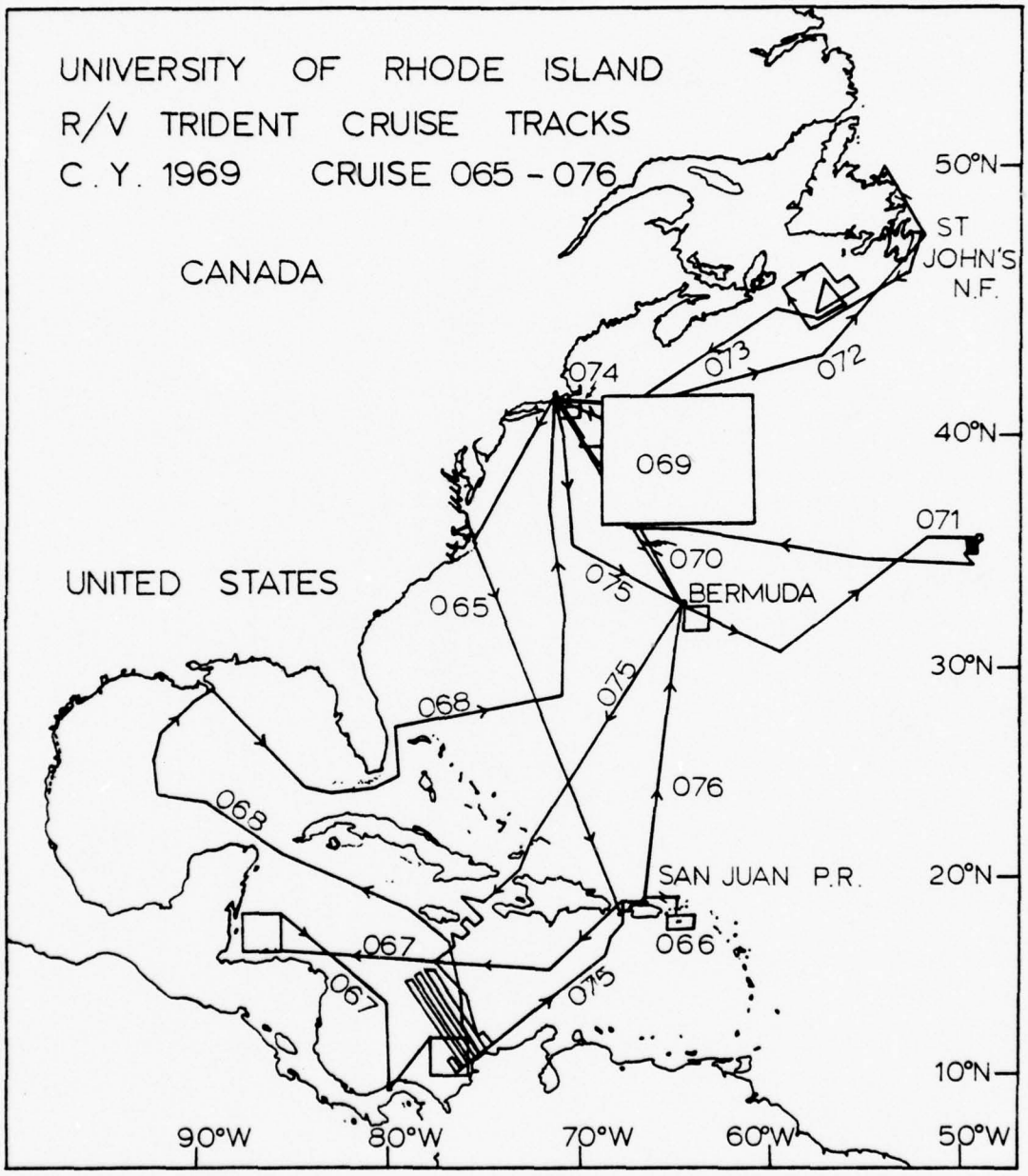
R/V TRIDENT Cruises - CY 1969

Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
065	24 Jan. - 9 Feb.	17	NW Atlantic, Caribbean	Winn
066	11-18 Feb.	8	Caribbean	Sturges
067	20 Feb. - 6 Apr.	43	Caribbean	Pilson
068	13 Apr. - 4 May	22	Caribbean Gulf of Mexico NW Atlantic	D. L. Johnson
069	16 June - 3 July	18	NW Atlantic	Zimmerman
070	9-29 July	20	NW Atlantic	Napora
071	30 July - 13 Aug.	15	NW Atlantic	McGregor
072	18-29 Aug.	12	North Atlantic	Winn
073	1-9 Sept.	9	North Atlantic	Webb/U. Mass.
074	5-6 Oct.	2	NW Atlantic	Schenck/OE, URI
075	9 Oct. - 12 Nov.	35	North Atlantic Caribbean	Krause, Betzer
076	15 Nov. - 3 Dec.	17	NW Atlantic	Napora

*GSO/URI unless otherwise noted


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C. Y. 1969 CRUISE 065 - 076
CANADA
UNITED STATES
ST JOHN'S N.F.
BERMUDA
SAN JUAN P.R.
065
066
067
068
069
070
071
072
073
074
075
076
50°N
40°N
30°N
20°N
10°N
90°W
80°W
70°W
60°W
50°W

Cruise No.: TR-065

Dates: 24 January - 9 February 1969

Area of Operation: Northwest Atlantic Ocean and Caribbean Sea

Days at sea: 17

Funding: ONR
NSF

Program Description

The major objectives of this cruise were:

a) to conduct behavioral and bioacoustic studies of whales and dolphins

b) to study the spawning area of the American eel

c) to obtain net tows of small deep-sea fish species

d) to accomodate University of Puerto Rico scientists taking of XBTs, net tows and dredges

Data Collected

1) 36 bioacoustic stations were made

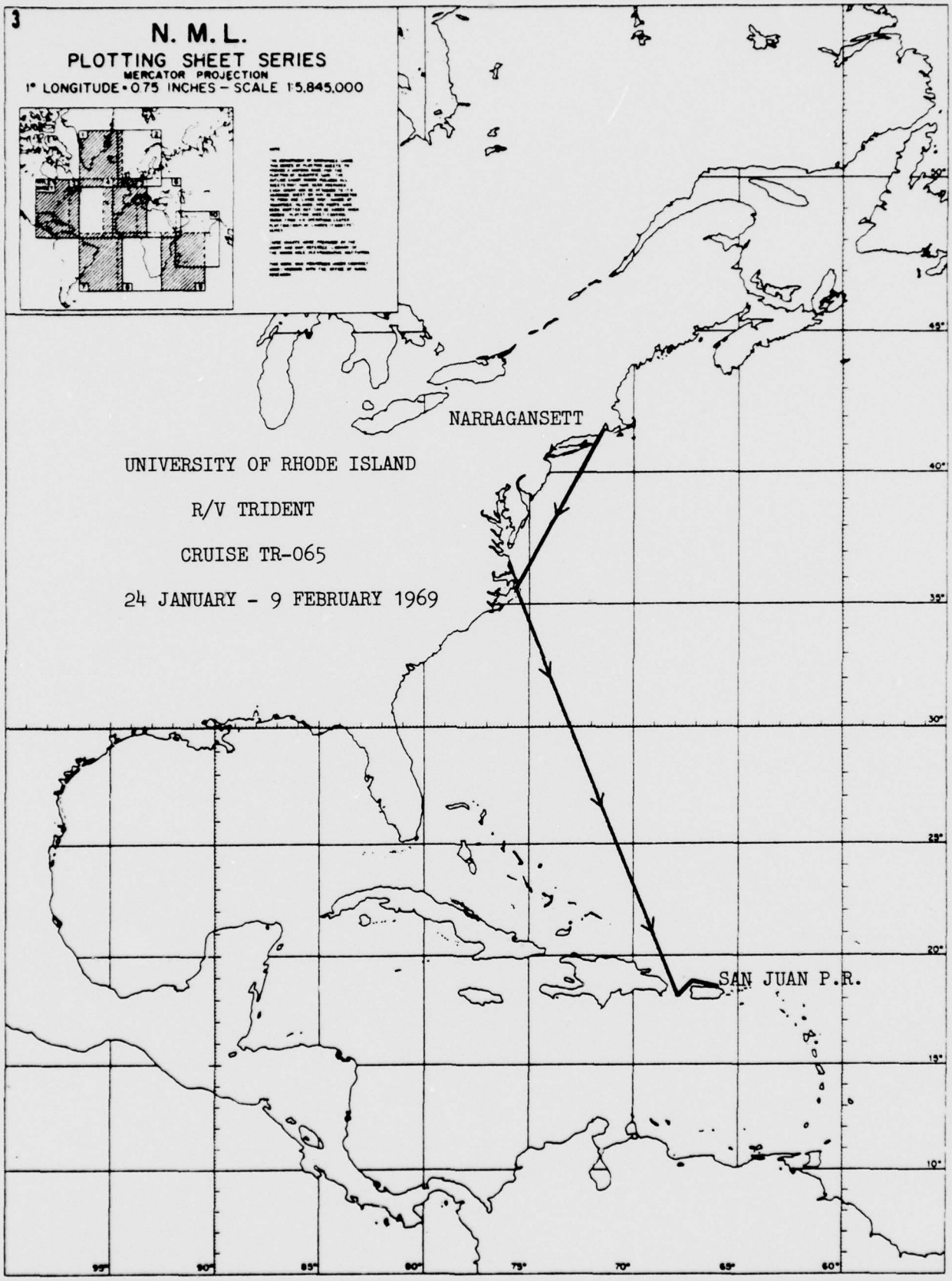
2) numerous eel stations were occupied

3) 11 XBTs were taken

4) Item (d) was carried out

Participants

Dr. Howard E. Winn	Chief Scientist	U.R.I.
Dr. Joseph Marshall	Asst. Professor	W. Virginia Univ.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. James Fish	Graduate Student	U.R.I.
Ms. Susan Hammen	Graduate Student	U.R.I.
Ms. Deborah Kennedy	Biological Illustrator	U.R.I.
Mr. Vic Kennedy	Graduate Student	U.R.I.
Mr. David Morgan	Graduate Student	U.R.I.
Mr. Steve Rebach	Graduate Student	U.R.I.
Mr. William Richkus	Graduate Student	U.R.I.
Mr. John Brittain, Jr.	Research Assistant	Oberlin College
Ms. Lynn Haines	Research Assistant	Univ. of Rochester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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-065
24 JANUARY - 9 FEBRUARY 1969
SAN JUAN P.R.
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Cruise No.: TR-066

Dates: 11 - 18 February 1969 Area of Operation: Caribbean Sea

Days at sea: 8

Funding: ONR, NSF

Program Description

The main objectives of this cruise were:

a) to study deepwater and bottom currents in the Jungfern Passage by

b) deploying bottom current meters and

c) STP and Nansen casts and bathymetry

Data Collected

1) 19 STD stations were occupied

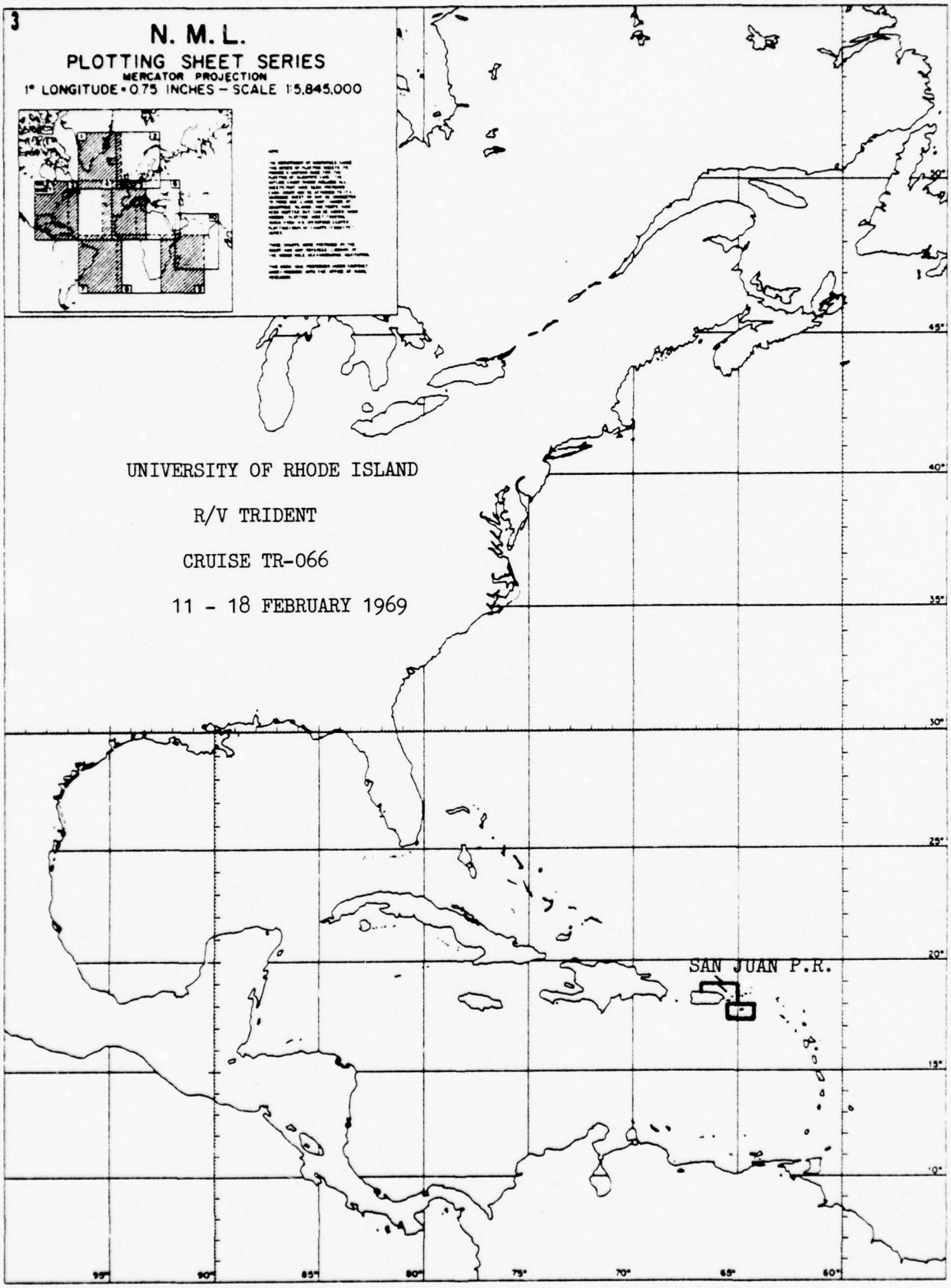
2) 17 hydrographic stations were taken

3) three current meters were deployed and recovered

4) bathymetry profiles were run

Participants

Dr. W. Sturges	Chief Scientist	U.R.I.
Mr. P. Bedard	Electronics Engineer	U.R.I.
Mr. R. E. Smith	Oceanographic Specialist	U.R.I.
Mr. R. K. Sexton	Sr. Marine Technician	U.R.I.
Mr. M. Harvey	Marine Technician	U.R.I.
Mr. T. Kennard	Marine Technician	U.R.I.
Mr. J. Sammons	Research Technician	U.R.I.
Mr. J. Demendow	Graduate Student	U.R.I.
Mr. R. Heavers	Graduate Student	U.R.I.
Mr. D. E. Moore	Graduate Student	Johns Hopkins Univ.
Mr. P. L. Richardson	Graduate Student	U.R.I.
Mr. J. Tapiro	Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 075 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-066
11 - 18 FEBRUARY 1969
SAN JUAN P.R.
45°
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20°
15°
10°
95°
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75°
70°
65°
60°

Cruise No.: TR-067

Dates: 20 February - 6 April 1969 Area of Operation: Caribbean Sea

Days at sea: 43

Funding: ONR

Program Description

The major programs on this cruise were:

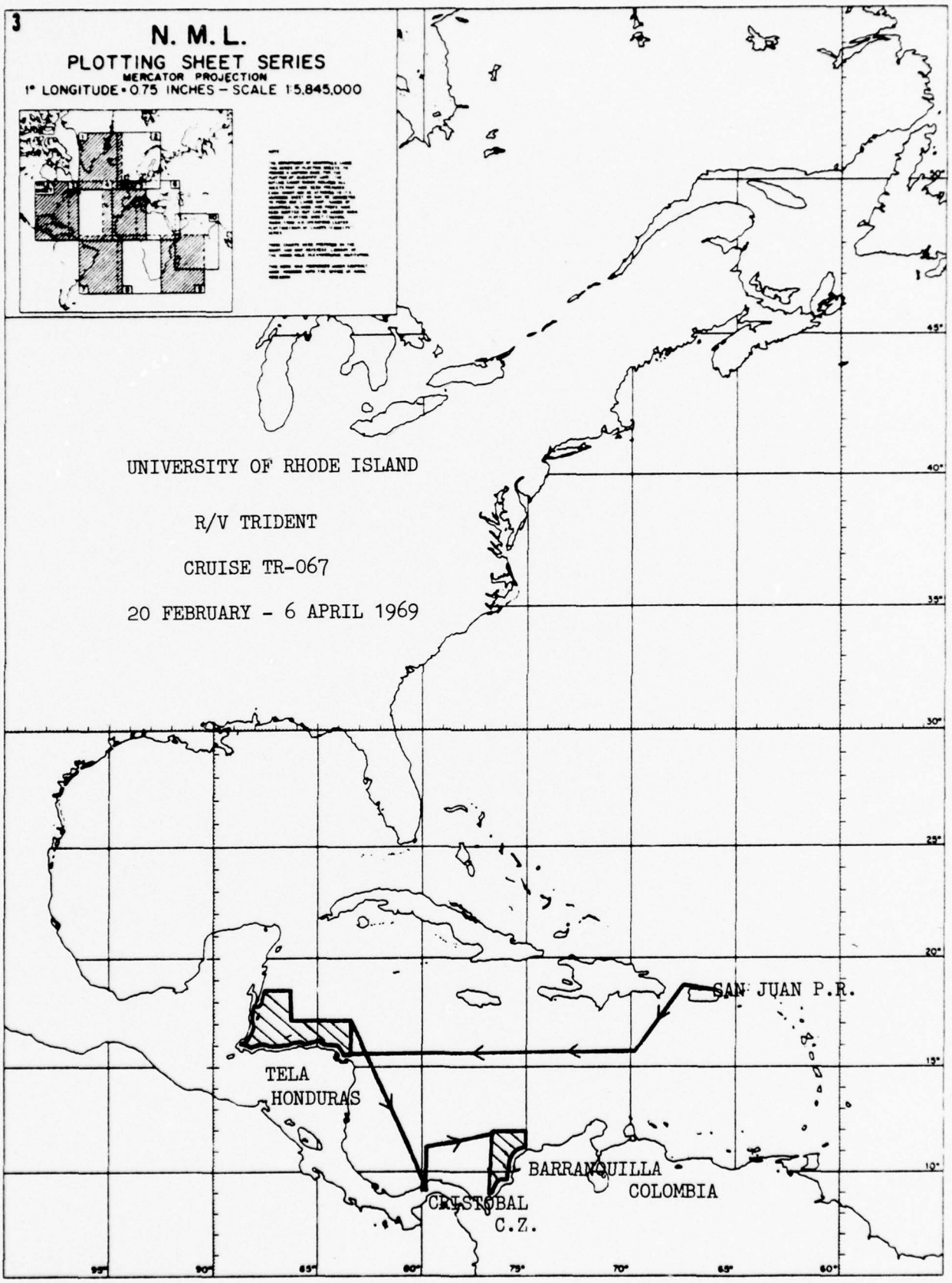
a) to perform geophysical and geological surveys off Honduras and British Honduras and off the northwest coast of Colombia

Data Collected

1) 4,245 n.m. of bathymetric and magnetic profiles were taken
2) 1,785 n.m. of seismic reflection profiles were run
3) four dredge stations were occupied

Participants

Mr. William Dillon	Chief Scientist	U.R.I.
Mr. Eric Christofferson	Co-Investigator	U.R.I.
Mr. Paul Pinet	Co-Investigator	U.R.I.
Ms. Christine Trmal	Technician	U.R.I.
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Michael Harvey	Marine Technician	U.R.I.
Mr. Timothy Kennard	Marine Technician	U.R.I.
Mr. Jim Tapper	Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-067
20 FEBRUARY - 6 APRIL 1969
SAN JUAN P.R.
TELA
HONDURAS
BARRANQUILLA
COLOMBIA
CRISTOBAL
C.Z.

Cruise No.: TR-068

Dates: 13 April - 4 May 1969

Area of Operation: Caribbean Sea, Gulf of Mexico and Northwest Atlantic Ocean

Days at sea: 22

Funding: ONR, NSF

Program Description

The major programs on this cruise were:

a) to investigate the regional variability of particulate iron and trace metals in the study areas

b) to sample for chemical analysis off the Magdalena and Mississippi River mouths

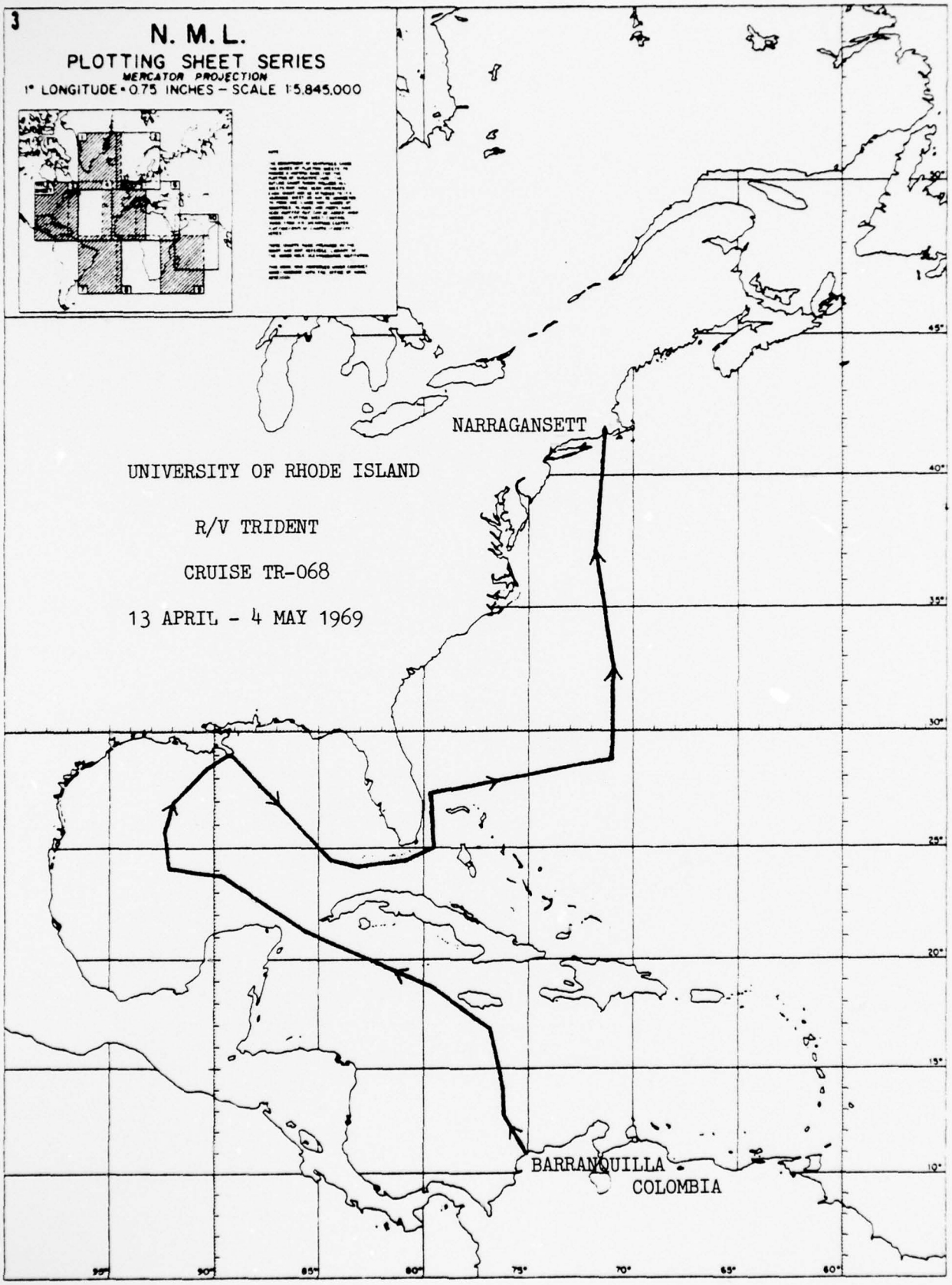
Data Collected

1) 58 hydrostations were occupied

2) 12 XBTs were taken

Participants

Mr. David L. Johnson	Chief Scientist	U.R.I.
Mr. Peter Betzer	Graduate Student	U.R.I.
Mr. Sam Miller	Associate Fellow	Inst. for Policy Studies
Mr. T. C. Kennard	Marine Technician	U.R.I.
Mr. Frank Rose	Marine Technician	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-068
13 APRIL - 4 MAY 1969
BARRANQUILLA
COLOMBIA
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-069

Dates: 16 June - 3 July 1969

Area of Operation: Northwest Atlantic Ocean

Days at sea: 18

Funding: ONR

Program Description

The major programs on this cruise were:

a) to investigate the sedimentary processes and environment on the continental rise

b) to complete seismic studies of the inner Rhode Island shelf

Data Collected

1) 20 gravity cores were taken

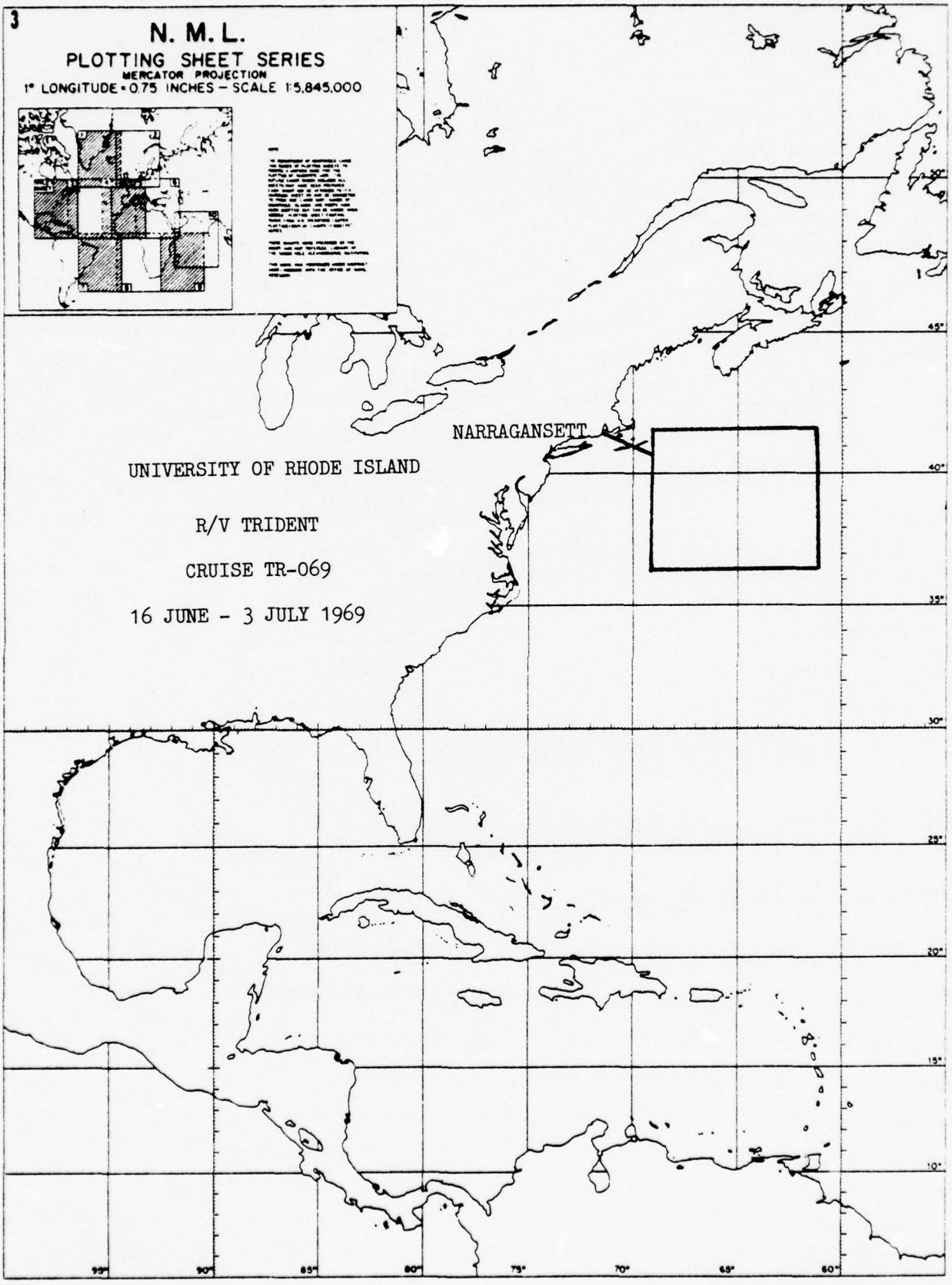
2) four camera stations were occupied

3) three current meter arrays were recovered

4) 885 n.m. of seismic reflection profiles were run

Participants

Mr. H. Zimmerman	Chief Scientist	U.R.I.
Dr. F. Haley	Professor	Keene State College, N.H.
Mr. A. Buddington	Oceanographic Specialist	U.R.I.
Mr. F. Rose	Oceanographic Specialist	U.R.I.
Mr. J. Sammons	Research Technician	U.R.I.
Mr. C. McClennen	Graduate Student	U.R.I.
Mr. H. Garabedian	Student	U. Mass.
Mr. P. Mushovic	Student	U. Mass.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-069
16 JUNE - 3 JULY 1969
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-070

Dates: 9 - 29 July 1969

Area of Operation: Northwest Atlantic Ocean

Days at sea: 20

Funding: ONR

Program Description

The major programs on this cruise were:

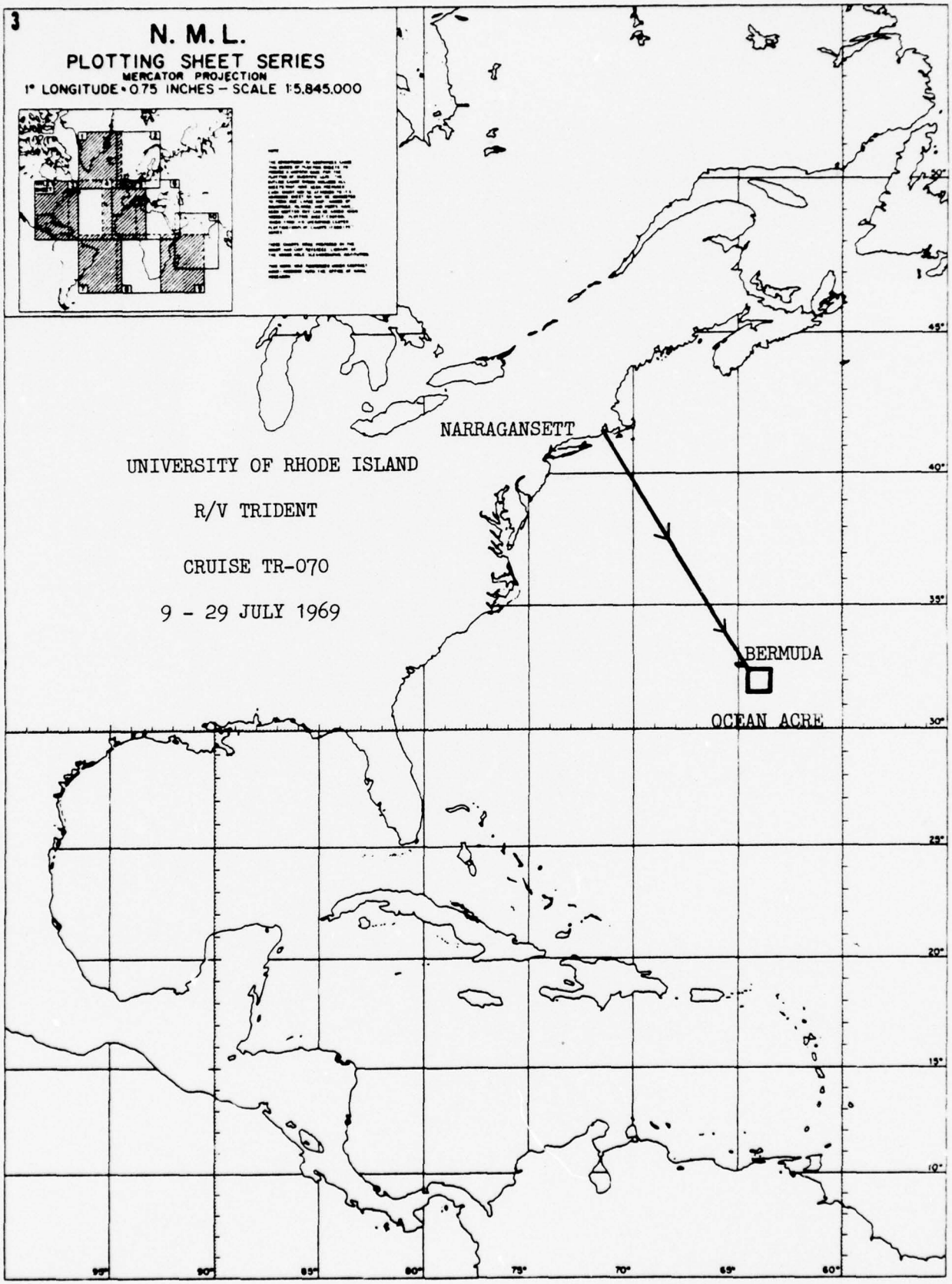
a) to continue the Ocean Acre program by making biological studies in the area

Data Collected

1) 18 trawls were taken
2) 11 net tows were recovered
3) one hydrostation was occupied
4) eight XBTs were taken

Participants

Dr. Theodore Napora	Chief Scientist	U.R.I.
Dr. Elijah Swift	Assistant Professor	U.R.I.
Mr. Albert Brooks	Scientist	NUSL
Mr. James Lamoureau	Scientist	NUSL
Mr. William Hahn	Marine Technician	U.R.I.
Mr. Timothy Kennard	Marine Technician	U.R.I.
Mr. Henry Donaldson	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-070
9 - 29 JULY 1969
BERMUDA
OCEAN ACRE
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-071

Dates: 30 July - 13 August 1969

Area of Operation: Northwest Atlantic Ocean

Days at sea: 15

Funding: ONR

Program Description

The major purposes of this cruise were:

a) to study the Corner Seamount area using geological and geophysical sampling techniques

b) to take grab samples on the continental shelf

c) to run a BT profile across the continental slope

Data Collected

1) five dredges were taken

2) five camera stations were occupied

3) one core was taken

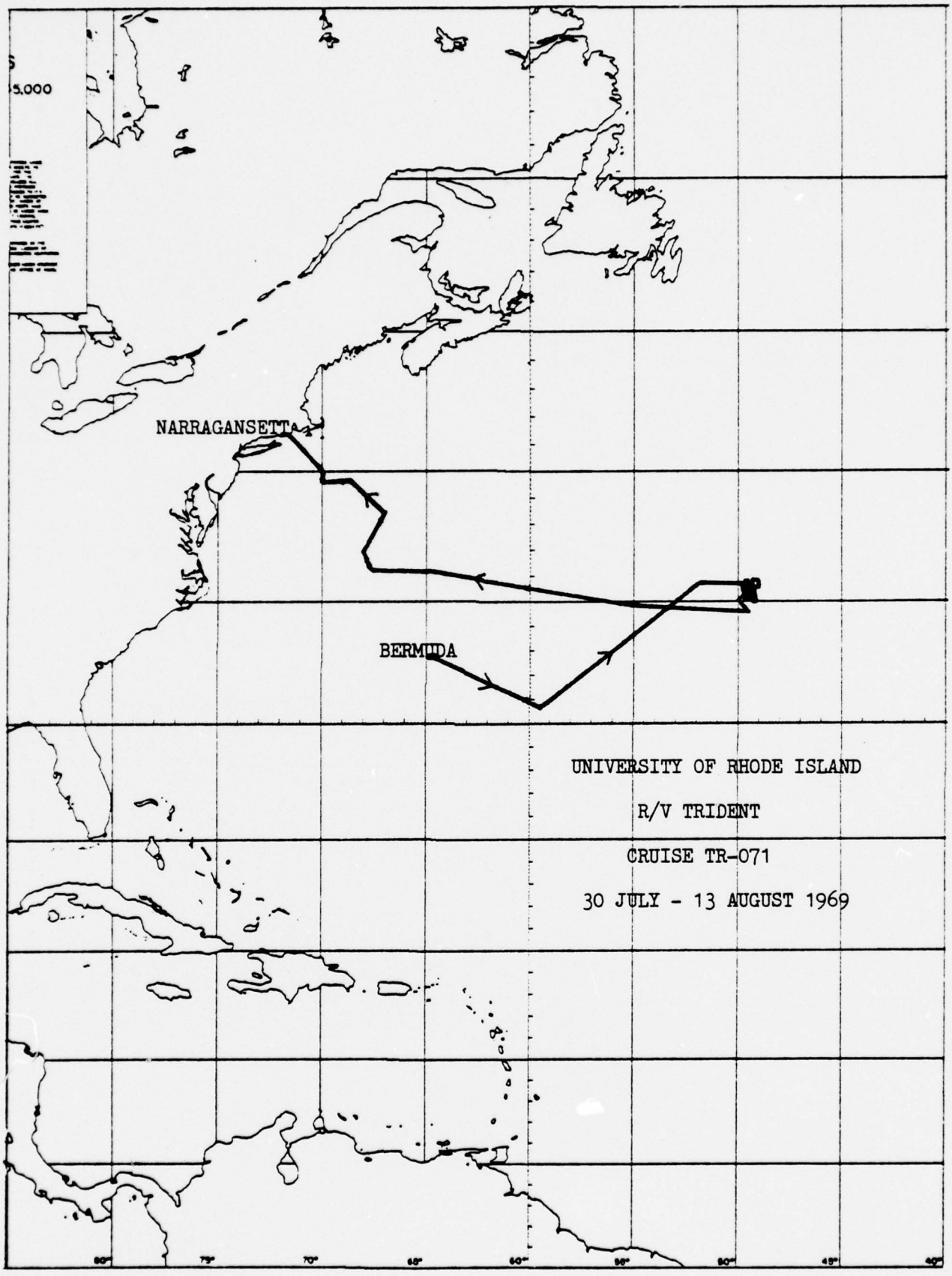
4) two grab samples were taken

5) 2,460 n.m. of bathymetric and magnetic profiles were run

6) seven XBTs were taken

Participants

Ms. Bonnie A. McGregor	Chief Scientist	U.R.I.
Mr. Robert Cooke	Geochemist	International Nickel, Inc.
Mr. William Hahn	Oceanographic Specialist	U.R.I.
Mr. Timothy Kennard	Oceanographic Specialist	U.R.I.
Mr. John Farrington	Graduate Student	U.R.I.
Mr. Thomas A. Johnston	Graduate Student	U.R.I.
Mr. Philip Meyers	Graduate Student	U.R.I.
Ms. Doris Smith	Student	Hope College
Mr. Richard Sugatt	Student	Wesleyan Univ.


NARRAGANSETT
BERMUDA
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-071
30 JULY - 13 AUGUST 1969

Cruise No.: TR-072

Dates: 18 - 29 August 1969

Area of Operation: North and Northwest Atlantic Ocean

Days at sea: 12

Funding: ONR

Program Description

The major programs on this cruise were:

a) to record/playback sounds to pilot whales and other cetaceans

b) to follow whales for a one-day period

Data Collected

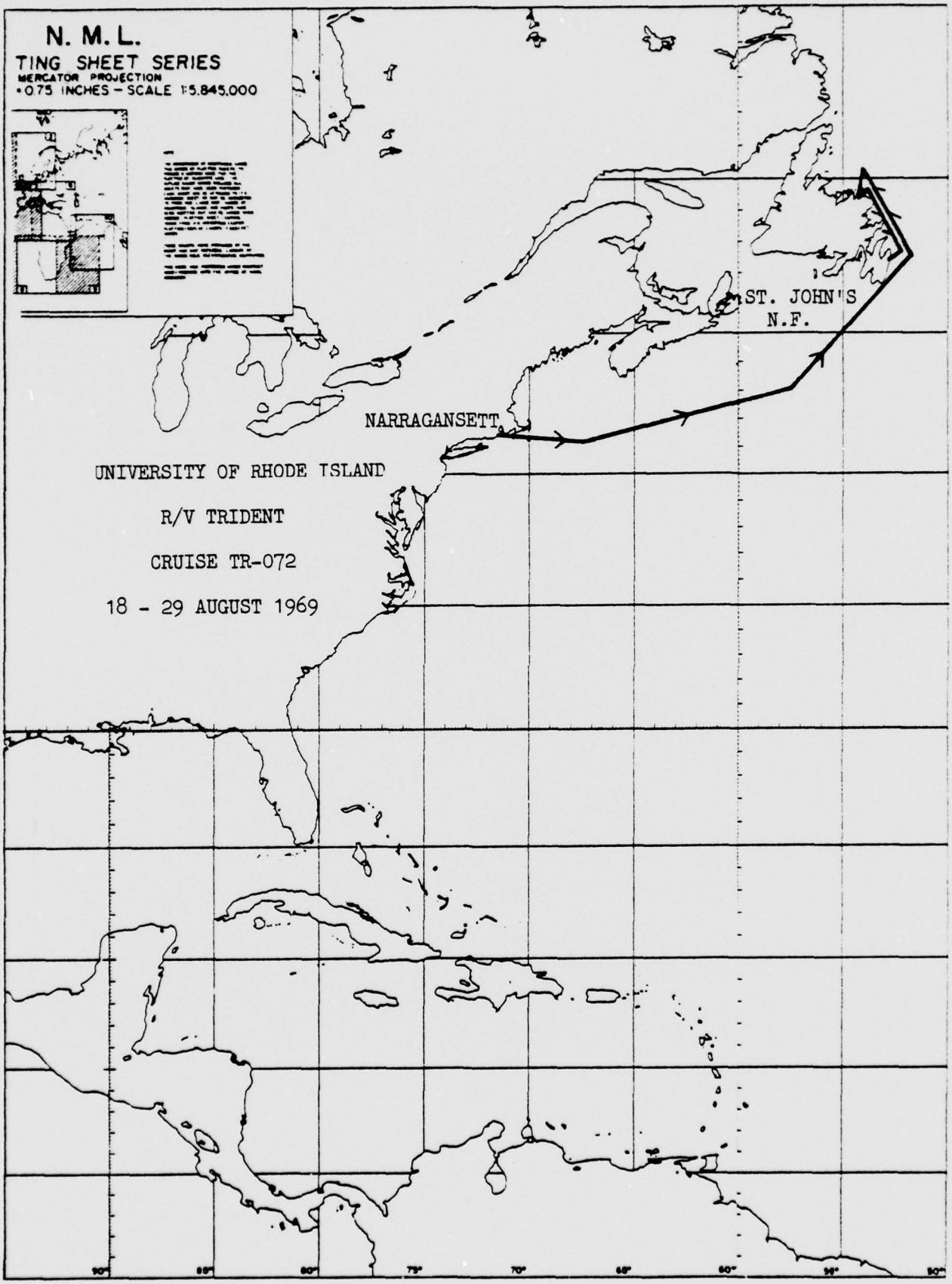
1) seven replicate series of playback sounds were transmitted to pilot whales

2) a continuous one-day sampling of sounds of a large herd of pilot whales was made

3) observations of a large number of whales, porpoises/dolphins were made

Participants

Dr. Howard E. Winn	Chief Scientist	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Pierce Fenhagen	Oceanographic Specialist	U.R.I.
Ms. Alexandra Chaffee	Graduate Student	U.R.I.
Ms. Rosalind Cohen	Graduate Student	U.R.I.
Mr. James Hain	Graduate Student	U.R.I.
Mr. Jeffrey Jackerson	Graduate Student	U.R.I.
Ms. Suzanne Smith	Graduate Student	U.R.I.
Mr. Raymond Kenney	Student	U.R.I.
Ms. Lois Knight	Student	U.R.I.
Mr. Gregory Winn	Assistant	U.R.I.


N. M. L.
TING SHEET SERIES
MERCATOR PROJECTION
•0.75 INCHES – SCALE 1:5,845,000
ST. JOHN'S
N.F.
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-072
18 - 29 AUGUST 1969

Cruise No.: TR-073

Dates: 1 - 9 September 1969

Area of Operation: North Atlantic Ocean

Days at sea: 9

Funding: NSF

Program Description

The major purposes of this cruise were

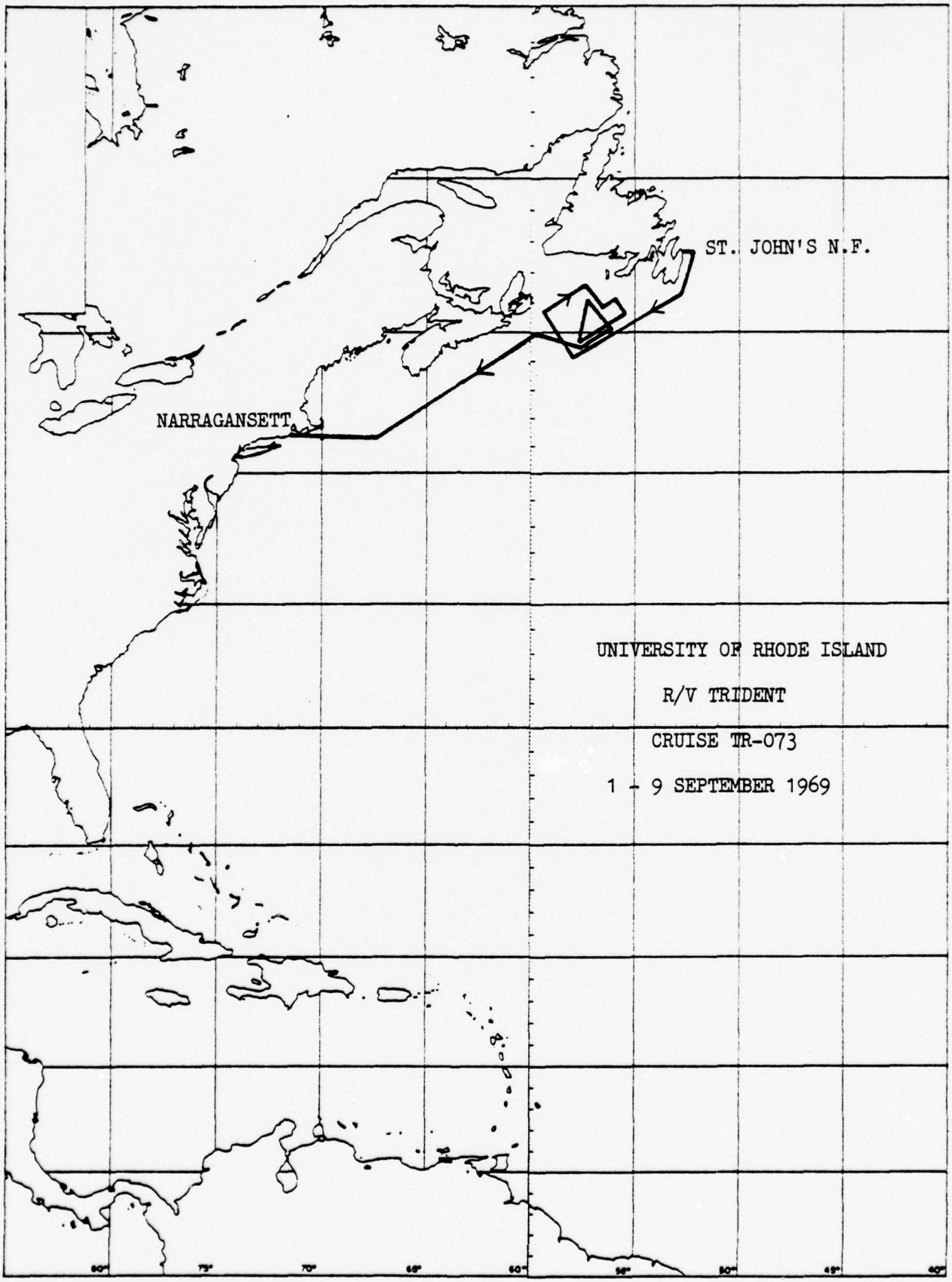
a) to perform geological/geophysical studies of the Laurentian channel portion of the continental shelf south of Newfoundland

Data Collected

1) 750 n.m. each of bathymetric, magnetic and seismic reflection profiles were run

Participants

Dr. Gregory W. Webb	Chief Scientist	U. Mass.
Mr. Frederich Frodyma	Engineer	U. Mass.
Mr. Michael Page	Scientist	U. Mass.
Mr. Frank J. Raffaldi	Scientist	U. Mass.
Mr. James M. Wessel	Scientist	U. Mass.
Mr. William Hahn	Oceanographic Specialist	U.R.I.
Mr. Frank Rose	Oceanographic Specialist	U.R.I.


ST. JOHN'S N.F.
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-073
1 - 9 SEPTEMBER 1969

Cruise No.: TR-074

Dates: 5 - 6 October 1969

Area of Operation: Northwest Atlantic Ocean

Days at sea: 2

Funding: ONR

Program Description

The purposes of this cruise were

a) to obtain a bottom grab sample

b) to correlate offshore white light transparency (alpha) and and scalar irradiance attenuation (K)

c) to test a timed sphere wave buoy

Data Collected

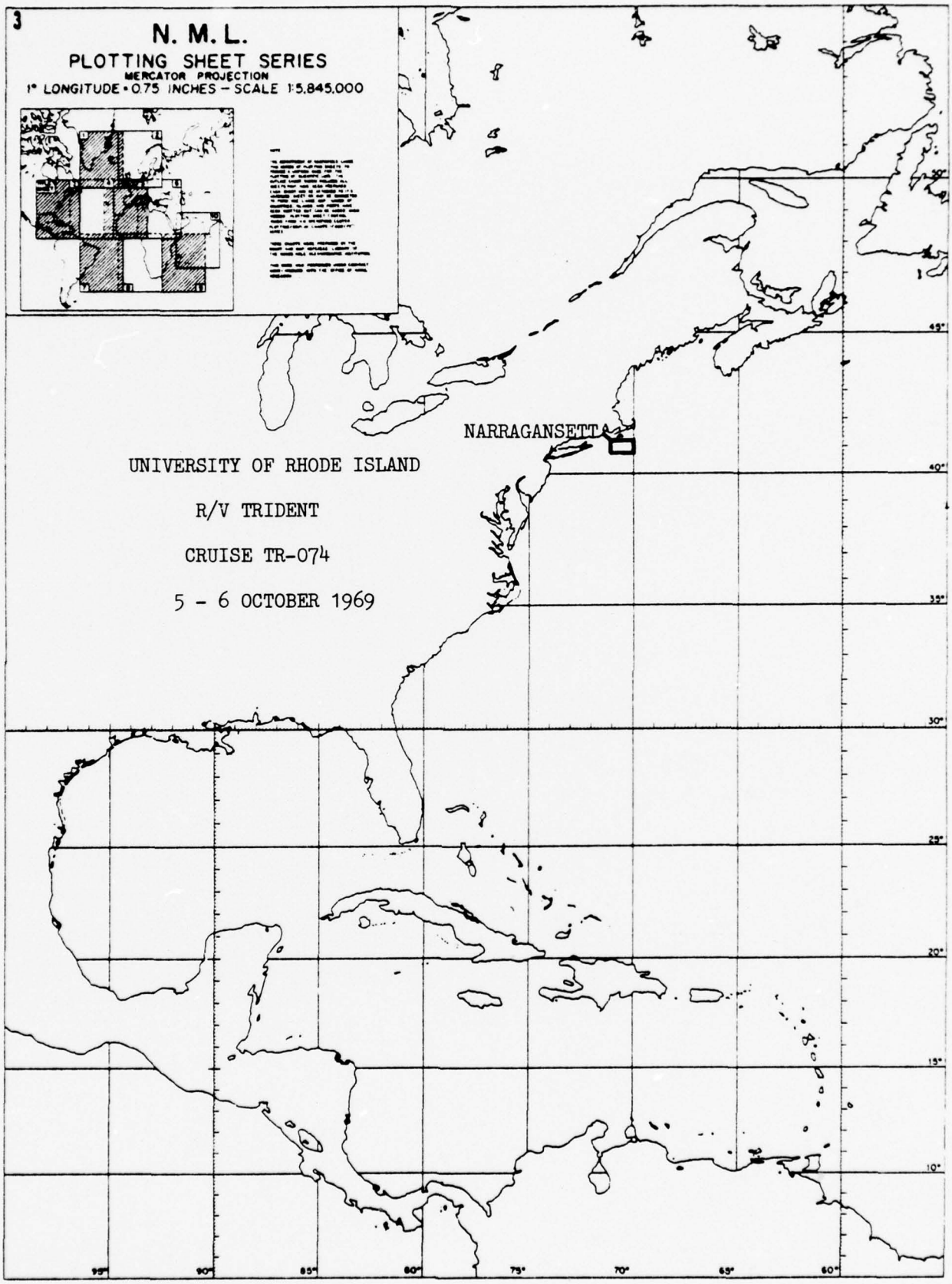
1) one bottom sample was obtained

2) readings of alpha and K were obtained on outward and inward tracks

3) the wave buoy was tested

Participants

Dr. Hilbert Schenck, Jr.	Chief Scientist	U.R.I.
Mr. F. Rose	Marine Technician	U.R.I.
Mr. Robert Beach	Graduate Student	U.R.I.
Mr. Alan Blott	Graduate Student	U.R.I.
Mr. Joseph Dawson	Graduate Student	U.R.I.
Mr. Edward Doolan	Graduate Student	U.R.I.
Mr. Gregory Grimsrud	Graduate Student	U.R.I.
Mr. Gary Hyslop	Graduate Student	U.R.I.
Mr. Michael Krabach	Graduate Student	U.R.I.
Mr. Thomas Leggiere	Graduate Student	U.R.I.
Mr. John P. Levin	Graduate Student	U.R.I.
Mr. Richard Peyser	Graduate Student	U.R.I.
Mr. Jene Richart	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETTA
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-074
5 - 6 OCTOBER 1969
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-075

Dates: 9 October - 12 November 1969

Area of Operation: Northwest Atlantic Ocean, Caribbean Sea

Days at sea: 35

Funding: ONR

Program Description

The major programs on this cruise were

a) to run geological/geophysical programs

b) to set a current meter and take an associated hydrographic station and XBT

c) to study water chemistry in the Caribbean Sea

Data Collected

1) 4,770 n.m. each of bathymetric and magnetic profiles were run

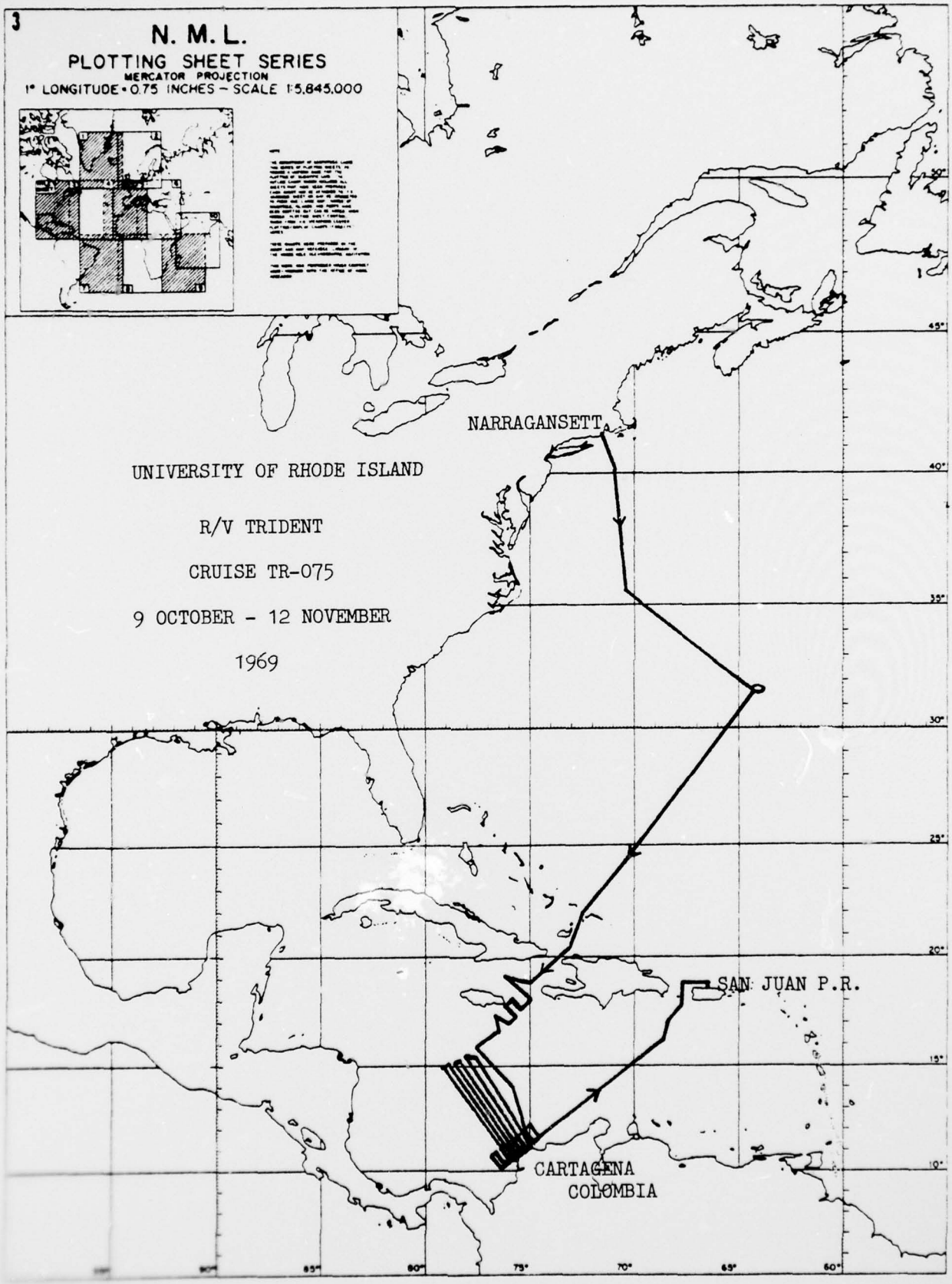
2) 890 n.m. of seismic reflection profiles were obtained

3) 15 suspended particulate matter stations were occupied

4) one current meter was deployed with an associated hydrographic station and XBT taken

Participants

Dr. Dale Krause	Co-Chief Scientist	U.R.I.
Mr. Peter Betzer	Co-Chief Scientist	U.R.I.
Dr. Wilton Sturges	Associate Professor	U.R.I.
Dr. Luis Guillermo Duran	Professor	Universidad Nacional, Bogota, Colombia
Lt. Comm. Edgar Garay	Colombian Navy	Cartagena, Colombia
Fr. Rene von Hissenhoven	Scientist	Inst. of Geophysics, Pontificia Univ. Javeriana, Bogota, Colombia
Mr. Fehti Ozpolat	Marine Geology & Geophysics	Turkey
Mr. Philip Bedard	Electronic Specialist	U.R.I.
Mr. William Hahn	Marine Technician	U.R.I.
Mr. Frank Rose	Marine Technician	U.R.I.
Mr. James Sammons	Electronic Technician	U.R.I.
Mr. Eric Christofferson	Graduate Student	U.R.I.
Mr. Gary Eggleston	Graduate Student	U.R.I.
Mr. Robert Betzer	Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-075
9 OCTOBER - 12 NOVEMBER
1969
SAN JUAN P.R.
CARTAGENA
COLOMBIA
45°
40°
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30°
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10°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-076

Dates: 15 November - 3 December 1969 Area of Operation: Northwest Atlantic Ocean

Days at sea: 17

Funding: ONR

Program Description

The major programs on this cruise were

a) to continue the Ocean Acre program by taking biological samples in the prescribed area

b) to carry out a plankton sampling program with associated chemical studies

Data Collected

1) One trawl was obtained

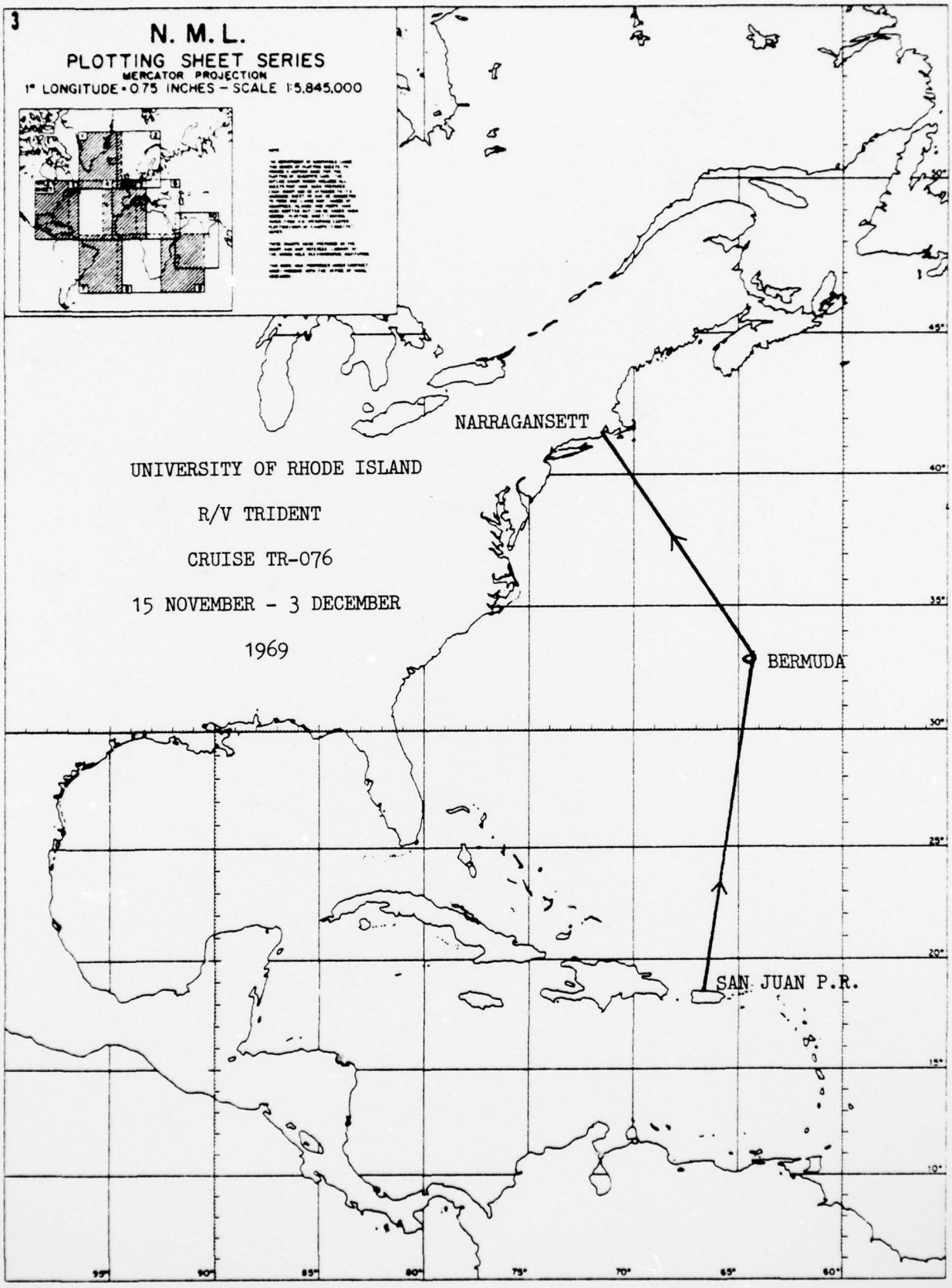
2) Two net tows were made

3) Two hydrostations were occupied

4) One XBT was taken

Participants

Dr. Theodore Napora	Chief Scientist	U.R.I.
Dr. Elijah Swift	Asst. Professor	U.R.I.
Mr. Philip Bedard	Electronic Engineer	U.R.I.
Mr. Ralph Austin	Scientist	NUSL
Mr. George Battesta	Scientist	NUSL
Mr. Gene Bissett	Scientist	NUSL
Mr. Albert Brooks	Scientist	NUSL
Mr. Charles Brown	Scientist	NUSL
Mr. Stanley Cobb	Scientist	Smithsonian Inst.
Mr. David Guiliano	Scientist	NUSL
Mr. Joseph Majewski	Scientist	NUSL
Mr. William Hahn	Marine Technician	U.R.I.
Mr. James Sammons	Electronic Technician	U.R.I.
Mr. Richard Beider	Graduate Student	U.R.I.
Mr. George Bond	Graduate Student	U.R.I.
Mr. Henry Donaldson	Graduate Student	U.R.I.
Mr. Gerard Miller	Graduate Student	U.R.I.
Mr. Marc Stuart	Graduate Student	U.R.I.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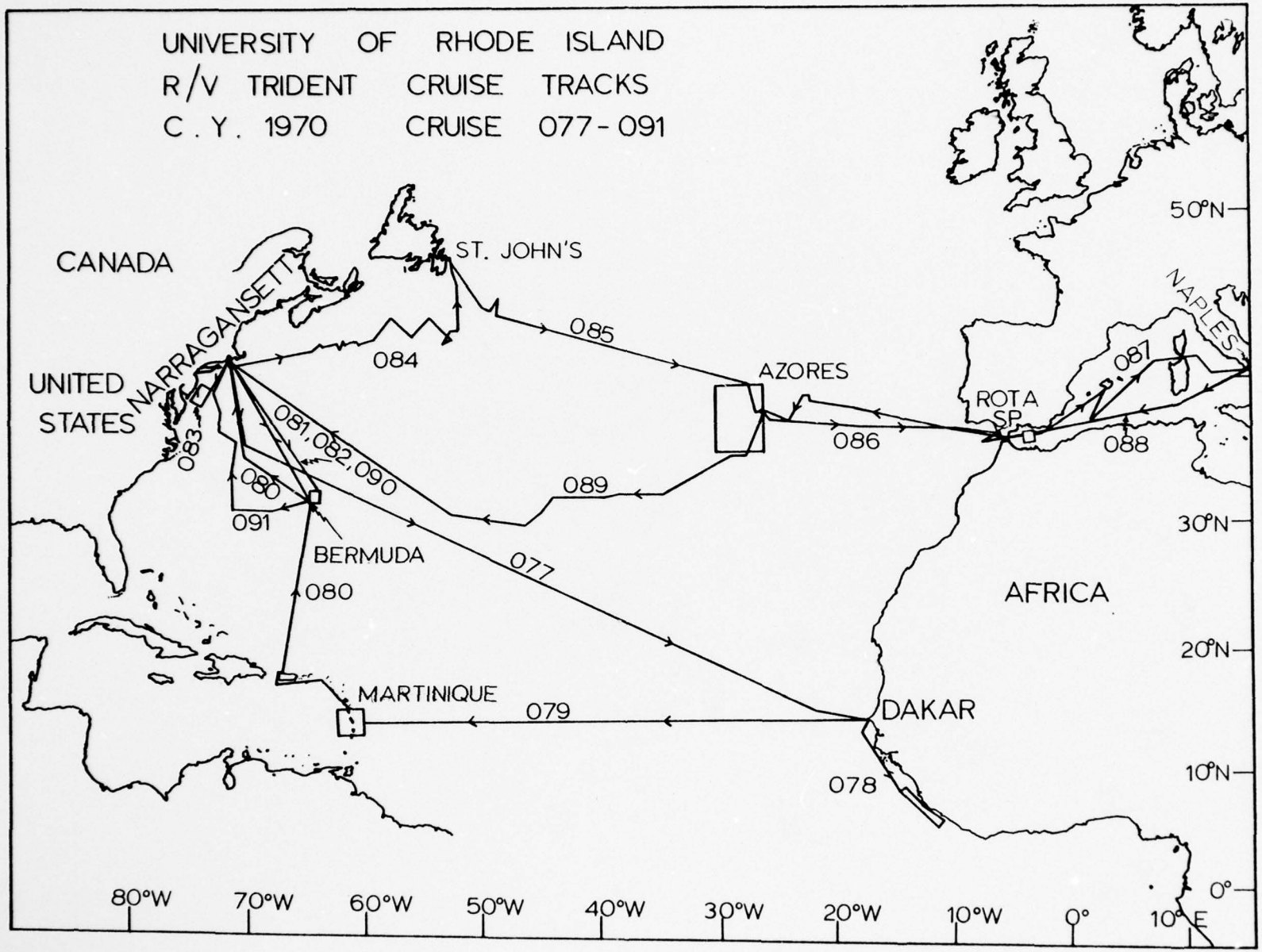
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-076
15 NOVEMBER - 3 DECEMBER
1969
BERMUDA
SAN JUAN P.R.
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

R/V TRIDENT Cruises - CY 1970

Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
077	3-26 January	23	North Atlantic	Swift, Sturges
078	31 Jan. - 26 Feb.	26	NE Atlantic	McMaster
079	1-22 Mar.	21	N. Atlantic Caribbean	Schilling
080	25 Mar. - 18 Apr.	24	NW Atlantic Caribbean	Winn
081	2-14 May	13	NW Atlantic	Napora
082	17-25 May	9	NW Atlantic	Swift
083	27 May - 10 June	15	NW Atlantic	McClennen
084	29 June - 8 July	10	North Atlantic	Webb/U. Mass.
085	10-21 July	12	North Atlantic	Kester
086	23 July - 10 Aug.	18	North Atlantic	Krause, Schilling
087	14 Aug. - 10 Sept.	27	Mediterranean	Gibbs/Smithsonian
088	18 Sept. - 2 Oct.	15	Mediterranean North Atlantic	Swift
089	5 Oct. - 10 Nov.	34	North Atlantic	Schilling, Krause
090	27 Nov. - 9 Dec.	13	NW Atlantic	Napora
091	11-19 Dec.	9	NW Atlantic	Pilson

*GSO/URI unless otherwise noted


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C. Y. 1970 CRUISE 077 - 091
CANADA
UNITED STATES
NARRAGANSETT
ST. JOHN'S
AZORES
ROTA SP
NAPLES
BERMUDA
MARTINIQUE
DAKAR
AFRICA
077
078
079
080
081, 082, 090
083
084
085
086
087
088
089
091
50°N
30°N
20°N
10°N
0°
80°W
70°W
60°W
50°W
40°W
30°W
20°W
10°W
0°
10° E

Cruise No.: TR-077

Dates: 3 - 26 January 1970

Area of Operation: Northwest and Northeast Atlantic Ocean

Days at sea: 23

Funding: ONR

Program Description

The major objectives of this cruise were:

a) to collect phytoplankton samples and study the associated water column

b) to deploy and recover current meters

Data Collected

1) 11 plankton pumping stations were occupied

2) 11 hydrostations made

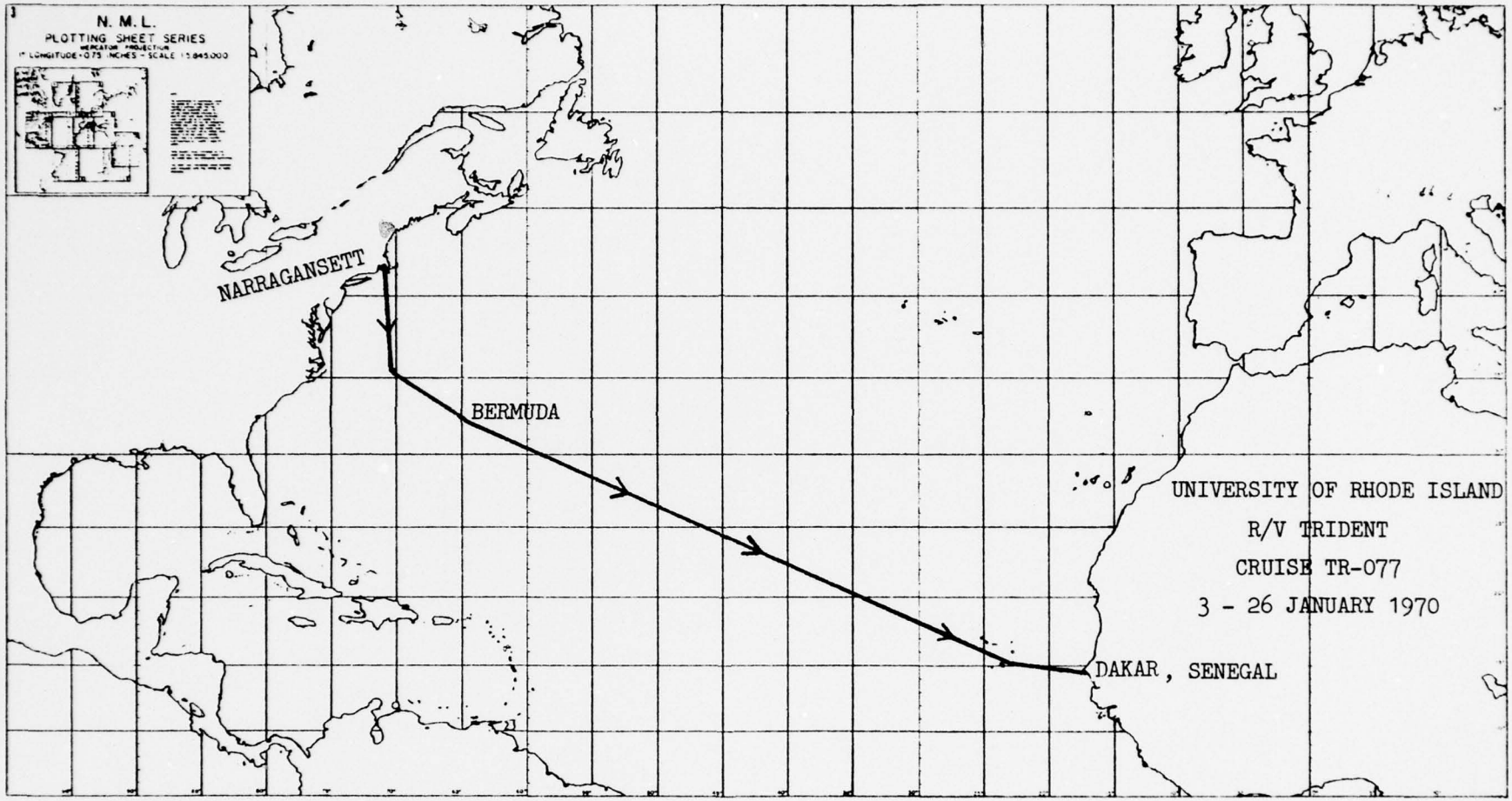
3) 12 XBTs taken

4) one current meter was deployed and one recovered

5) continuous surface temperature recordings were made

Participants

Dr. Elijah Swift	Co-Chief Scientist	U.R.I.
Dr. Wilton Sturges	Co-Chief Scientist	U.R.I.
Mr. Philip Bedard	Electronics Engineer	U.R.I.
Mr. R. E. Smith	Oceanographic Specialist	U.R.I.
Mr. T. Kennard	Marine Technician	U.R.I.
Mr. F. Rose	Marine Technician	U.R.I.
Mr. H. Garabedian	Graduate Student	U. Mass.
Mr. B. Gardner	Graduate Student	Johns Hopkins
Mr. R. Weisberg	Graduate Student	U.R.I.
Mr. J. Sammons	Electronics Technician	U.R.I.


N. M. L.
PLOTTING SHEET SERIES
NARRAGANSETT
BERMUDA
DAKAR, SENEGAL
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-077
3 - 26 JANUARY 1970

Cruise No.: TR-078

Dates: 31 January - 26 February 1970 Area of Operation: Northeast Atlantic Ocean

Days at sea: 26

Funding: ONR

Program Description

The primary objectives of this cruise were:

a) to determine the bathymetry of the continental shelf and slope off Sierra Leone and Liberia

b) to define the structural framework of the same area

Data Collected

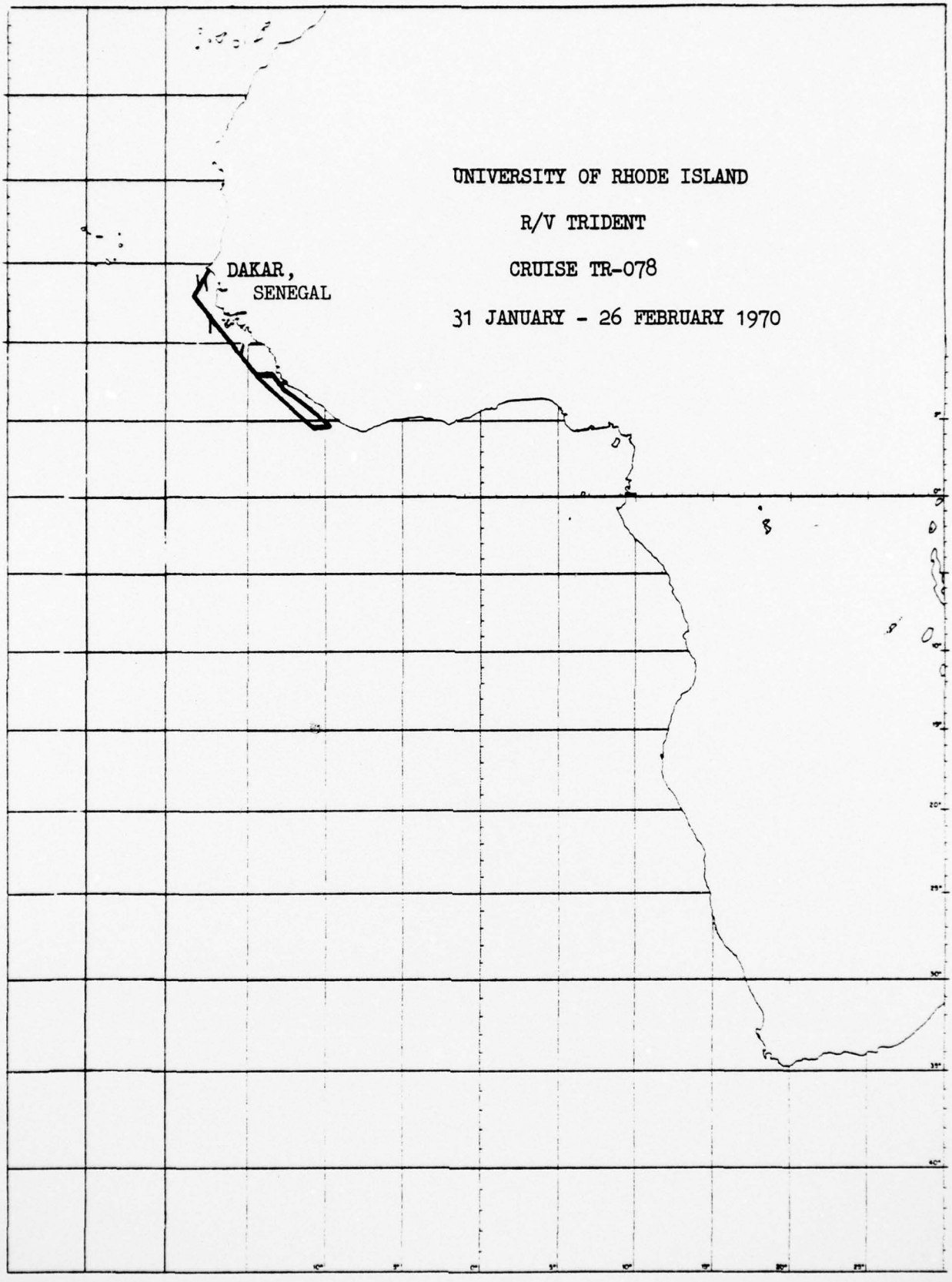
1) 3,360 n.m. each of bathymetry and magnetic profiles were run

2) 900 n.m. of seismic reflection profiles were taken

3) four grabs were taken for the University of Nigeria

Participants

Dr. R. L. McMaster	Chief Scientist	U.R.I.
Mr. A. Ashraf	Research Assistant	U.R.I.
Mr. A. B. Buddington	Research Assistant	U.R.I.
Mr. T. C. Kennard	Oceanographic Specialist	U.R.I.
Mr. F. Rose	Oceanographic Specialist	U.R.I.
Mr. J. C. Behrendt	Scientist	USGS/Monrovia
Mr. B. Pass	Physicist	Univ. of Nigeria
Mr. C. S. Wotorson	Scientist	USGS/Monrovia


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-078
31 JANUARY - 26 FEBRUARY 1970
DAKAR,
SENEGAL

Cruise No.: TR-079

Dates: 1 - 22 March 1970

Area of Operation: North Atlantic Ocean and Caribbean Sea

Days at sea: 21

Funding: ONR

Program Description

The major purpose of this cruise was:

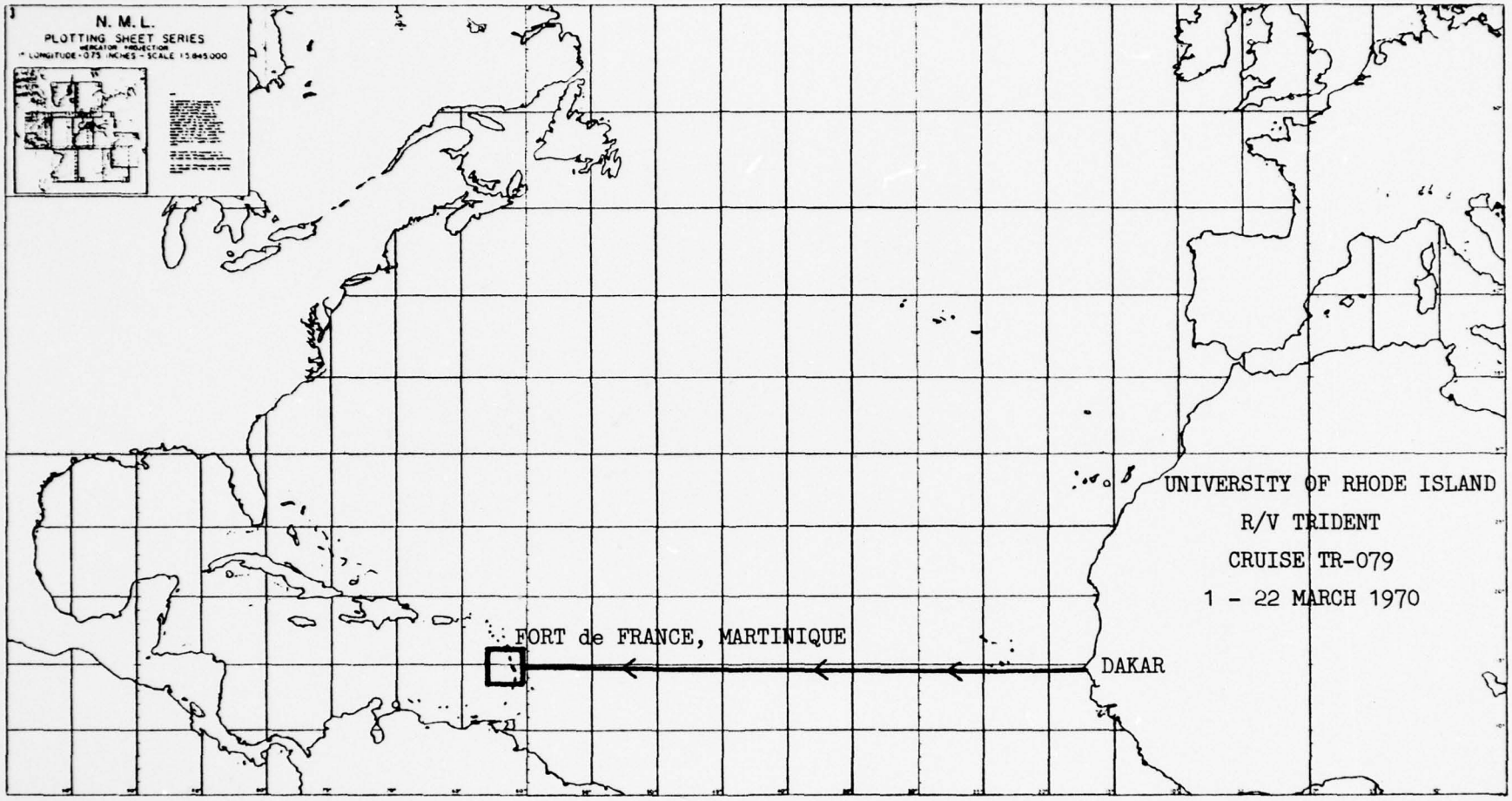
a) to dredge and take geophysical measurements along a profile across the Lesser Antilles Island Arc

Data Collected

1) 3,000 n.m. each of bathymetry and magnetic profiles were run
2) 320 n.m. of seismic reflection profiles were taken
3) 12 dredges were successful
4) one camera station was occupied

Participants

Dr. Jean-Guy Schilling	*Chief Scientist*	U.R.I.
Dr. L. K. Fink	Geologist	Univ. of Maine
Dr. Yoshio Oji	Geologist	Fukuoka Univ.
Dr. John Robinson	Professor	U.R.I.
Mr. Pierre-Marie Thibaut	Scientist	Bur. Geologic Research & Mines, Martinique
Mr. Thomas Johnston	Graduate Student	U.R.I.
Ms. Ann Gall	Biology Student	U.R.I.
Ms. Helene Robinson	Student	U.R.I.
Ms. Elizabeth Sekator	Oceanographic Technician	U.R.I.
Ms. Diane Wolf	Geology Student	U.R.I.
Mr. Timothy Kennard	Marine Technician	U.R.I.
Mr. Frank Rose	Marine Technician	U.R.I.


N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES - SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-079
1 - 22 MARCH 1970
FORT de FRANCE, MARTINIQUE
DAKAR

Cruise No.: TR-080

Dates: 25 March - 18 April 1970

Area of Operation: Northwest Atlantic Ocean and Caribbean Sea

Days at Sea: 24

Funding: ONR

Program Description

The major programs on this cruise were:

a) to study the movements, sound production and behavior of whales and dolphins

b) to maintain a daylight whale and wildlife watch

c) to collect eels using long-line techniques

d) to conduct swordfish and shark studies for the U. S. Bureau of Sports Fisheries (USBSF)

e) to recover a current meter array and deploy one

f) to run a short seismic reflection profile

Data Collected

1) 104 bioacoustic stations were occupied

2) four long-line fishing stations were conducted

3) one current meter was recovered and one deployed at $35^{o}45'N$, $70^{o}30'W$

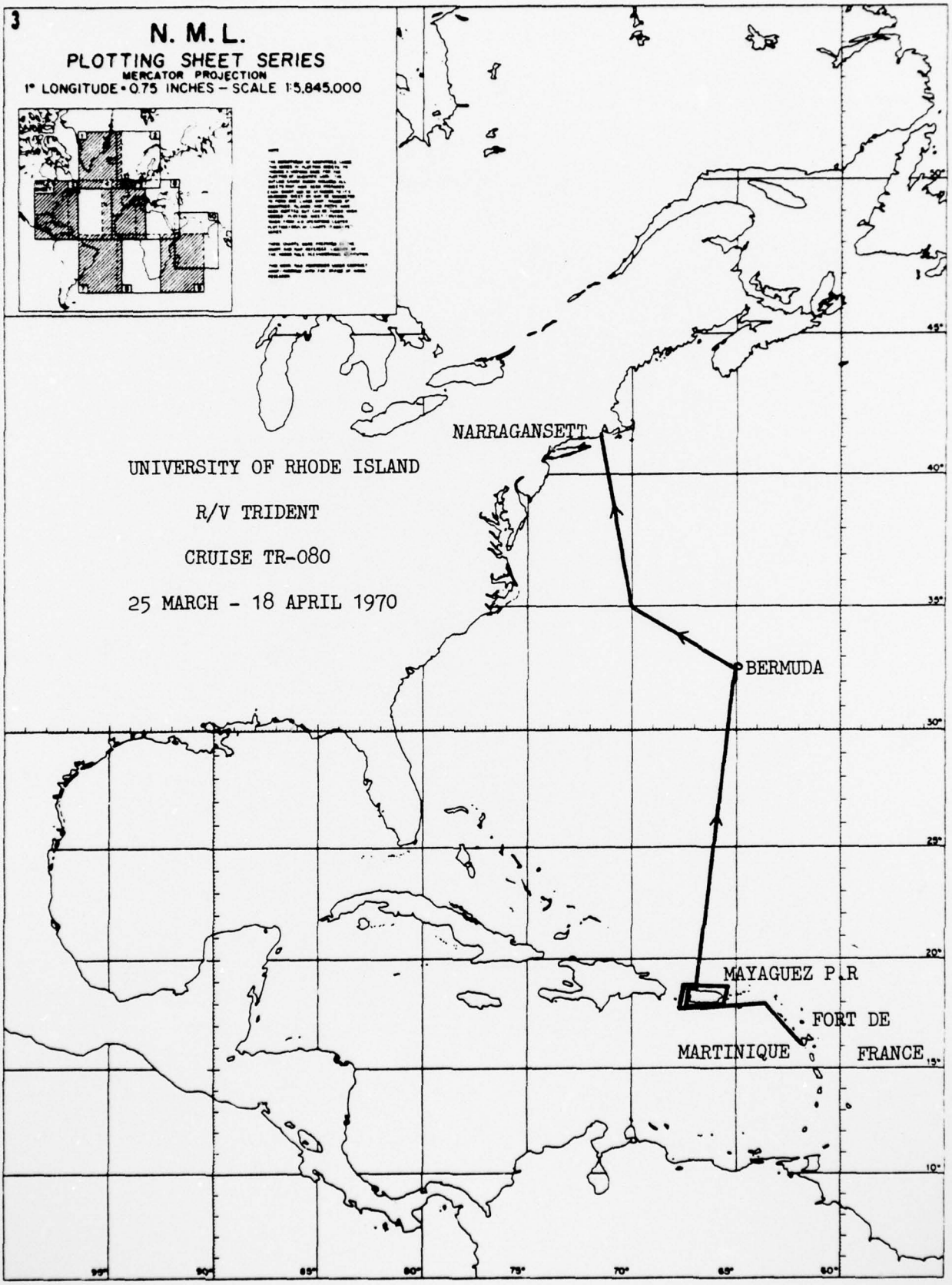
4) 18 n.m. of seismic reflection profiles were taken

5) 14 XBTs were taken

6) continue sea surface temperatures were run

Participants

Dr. Howard E. Winn	Chief Scientist	U.R.I.
Dr. Joseph Marshall	Visiting Scientist	Univ. W. Virginia
Mr. Paul Perkins	Oceanographic Specialist	U.R.I.
Mr. Pierce Fenhagen	Oceanographic Specialist	U.R.I.
Mr. Raymond Kenney	Research Assistant	U.R.I.
Ms. Lois Knight	Biological Technician	U.R.I.
Mr. Harold Pratt	Scientist	USBSF&W
Mr. William Hahn	Marine Technician	U.R.I.
Ms. Rosalind Cohen	Graduate Student	U.R.I.
Mr. Richard Edel	Graduate Student	U.R.I.
Mr. David Morgan	Graduate Student	U.R.I.
Mr. John Mason	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-080
25 MARCH - 18 APRIL 1970
BERMUDA
MAYAGUEZ P.R
FORT DE
MARTINIQUE
FRANCE
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-081

Dates: 2 - 14 May 1970

Area of Operation: Northwest Atlantic Ocean

Days at sea: 13

Funding: NSF

Program Description

This was a continuation of the Ocean Acre program whose main objectives were:

a) to run trawl stations in the area and study the biological community

b) to sample phytoplankton and sargassum weed

Data Collected

1) 14 trawl stations were run

2) (b) above was accomplished

Participants

Dr. Theodore Napora	Chief Scientist	U.R.I.
Dr. Theodore Smayda	Professor	U.R.I.
Dr. Elijah Swift	Assistant Professor	U.R.I.
Mr. Timothy Kennard	Technician	U.R.I.
Mr. Henry Donaldson	Graduate Student	U.R.I.
Mr. Gerard Miller	Graduate Student	U.R.I.
Mr. George Tremblay	Biochemistry Student	U.R.I.

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R/V TRIDENT CRUISE SUMMARIES CY 1962 THROUGH CY 1971.(U)
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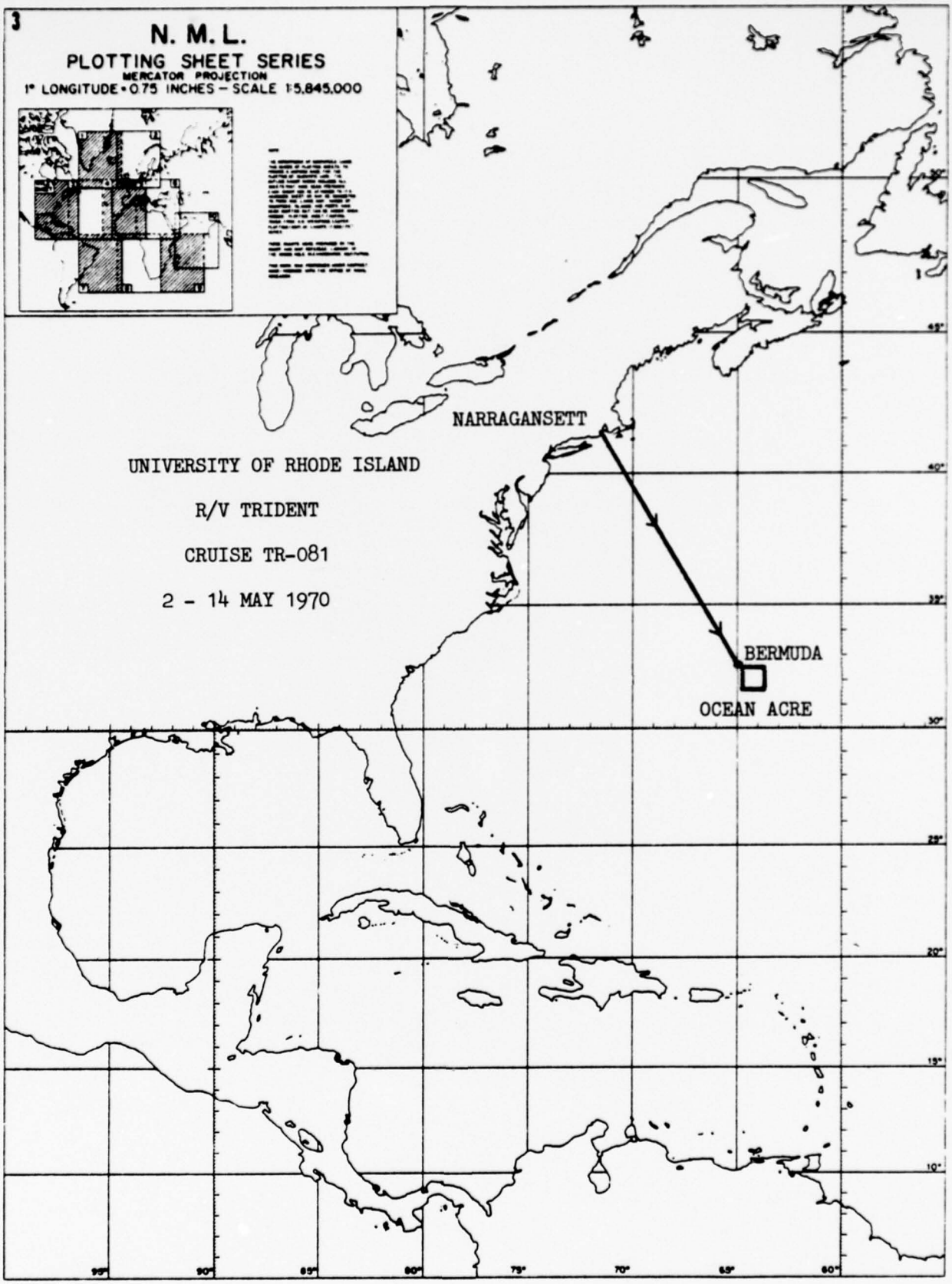
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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-081
2 - 14 MAY 1970
BERMUDA
OCEAN ACRE

Cruise No.: TR-082

Dates: 17 - 25 May 1970

Area of Operation: Northwest Atlantic Ocean

Days at sea: 9

Funding: NSF

Program Description

Major programs studied were:

a) vertical distribution of phytoplankton using nets and pumping stations; the associated water column was also sampled

b) sargassum weed community was studied

c) equipment tests were run

Data Collected

1) nine phytoplankton vertical net tows were made

2) four hydrographic stations were taken

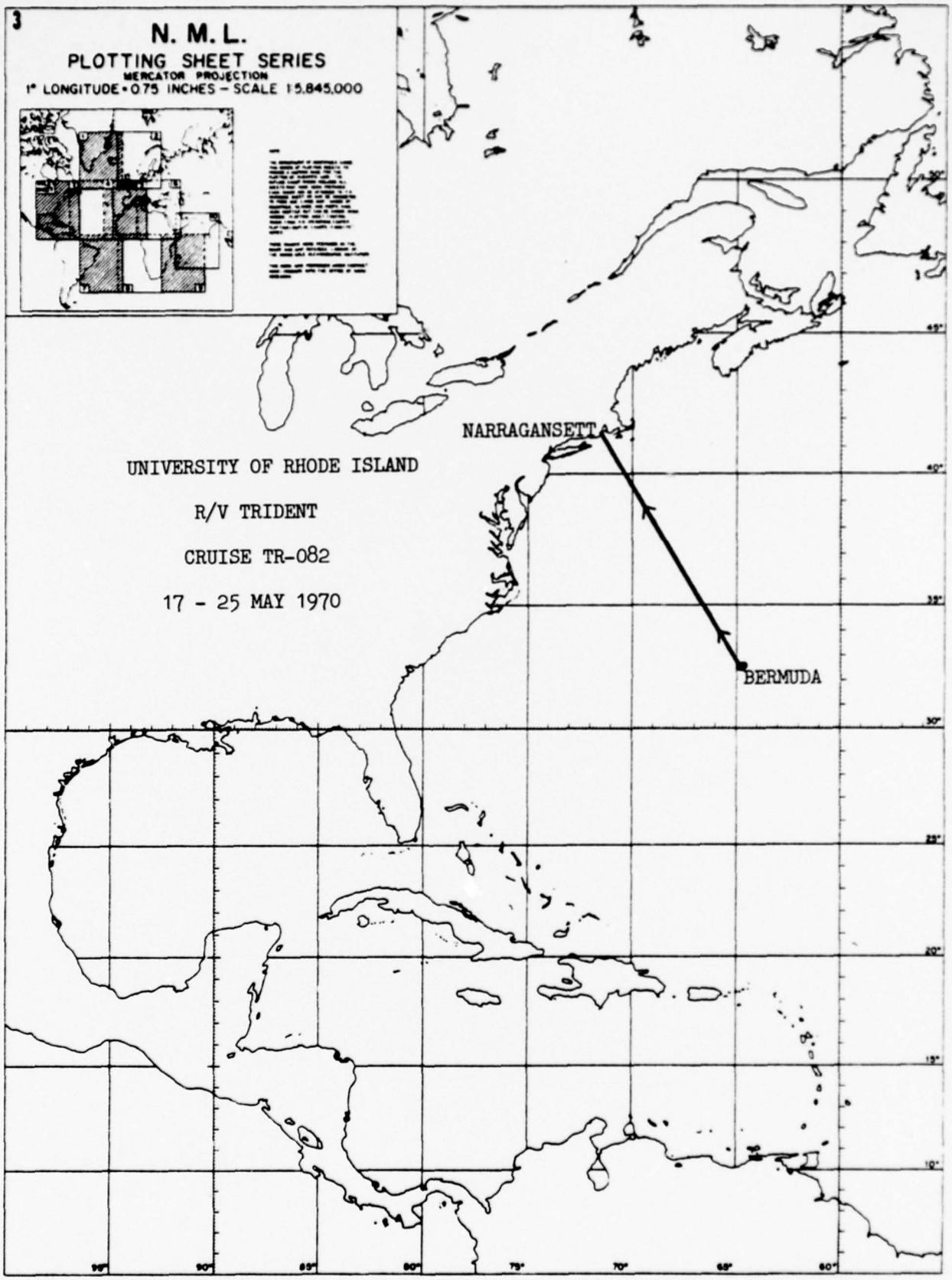
3) five XBTs were run

4) sargassum weed was studied

5) underway air sampling and water pumping systems were tested

Participants

Dr. E. Swift	Chief Scientist	U.R.I.
Dr. T. J. Smayda	Professor	U.R.I.
Mr. J. Moyers	Research Associate	U.R.I.
Mr. T. Kennard	Oceanographic Specialist	U.R.I.
Ms. M. L. Bannister	Graduate Student	U.R.I.
Mr. C. J. Fontaineau	Graduate Student	U.R.I.
Mr. B. Thorne	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-082
17 - 25 MAY 1970
BERMUDA

Cruise No.: TR-083

Dates: 27 May - 10 June 1970

Area of Operation: Northwest Atlantic Ocean

Days at sea: 15

Funding: ONR

Program Description

The major objectives of this cruise were:

a) to study the bathymetry, seismic reflection and the bottom currents on the continental shelf and slope off the New Jersey coast

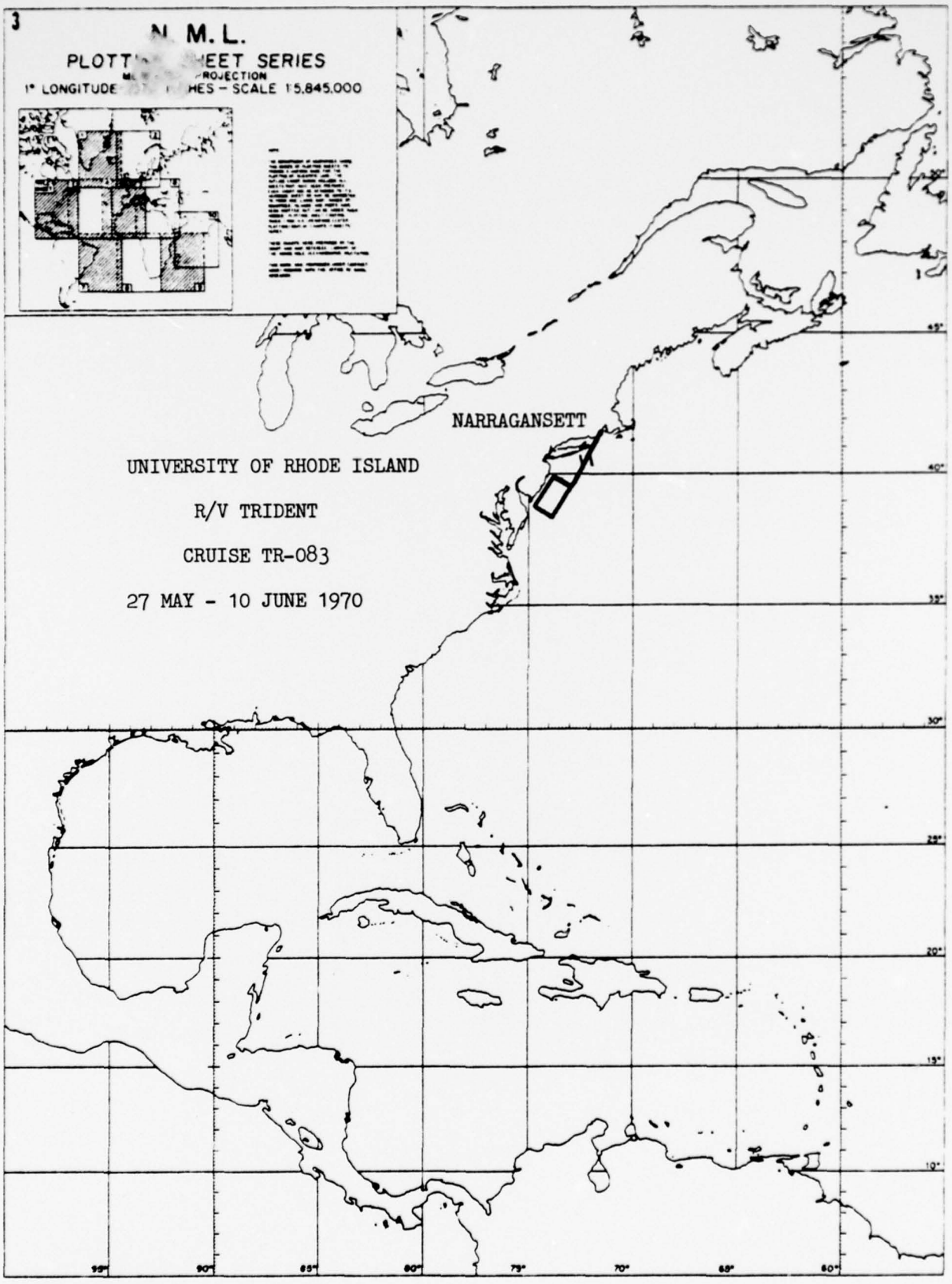
b) to determine the structure and the environment of the near bottom sediments in the same area

Data Collected

1) 2,500 n.m. of bathymetry profiles were run
2) 440 n.m. of seismic reflection profiles were taken
3) 17 grabs were taken
4) eight cores were taken
5) 32 bottom camera stations were occupied
6) four XBTs were run
7) three current meters were deployed and two recovered

Participants

Mr. C. E. McClennen	Chief Scientist	U.R.I.
Dr. R. L. McMaster	Professor	U.R.I.
Mr. J. J. Fisher	Geologist	U.R.I.
Mr. A. W. Prichard	Electrical Engineer	Raytheon Corp.
Mr. A. B. Buddington	Marine Technician	U.R.I.
Mr. W. Hahn	Marine Technician	U.R.I.
Mr. F. Rose	Marine Technician	U.R.I.
Mr. J. Sammons	Oceanographic Specialist	U.R.I.
Mr. W. Davis	Graduate Student	U.R.I.
Mr. C. Cicciarella	Student	Northeastern Univ.
Mr. R. England	Student	Northeastern Univ.
Mr. P. Pizzaruso	Student	Northeastern Univ.
Mr. T. Townsend	Student	Northeastern Univ.
Mr. J. Jackerson	Student	Case Western Reserve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N. M. L.
PLOTTING SHEET SERIES
PROJECTION
1° LONGITUDE
HES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-083
27 MAY - 10 JUNE 1970
45°
40°
35°
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25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-084

Dates: 29 June - 8 July 1970

Area of Operation: North Atlantic Ocean

Days at sea: 10

Funding: NSF

Program Description

The main purpose of this cruise was:

a) to run geophysical studies south and southeast of the Laurentian Channel area

b) to run seismic profiles in Cape Cod Bay

c) to occupy hydro stations south of the Grand Banks

Data Collected

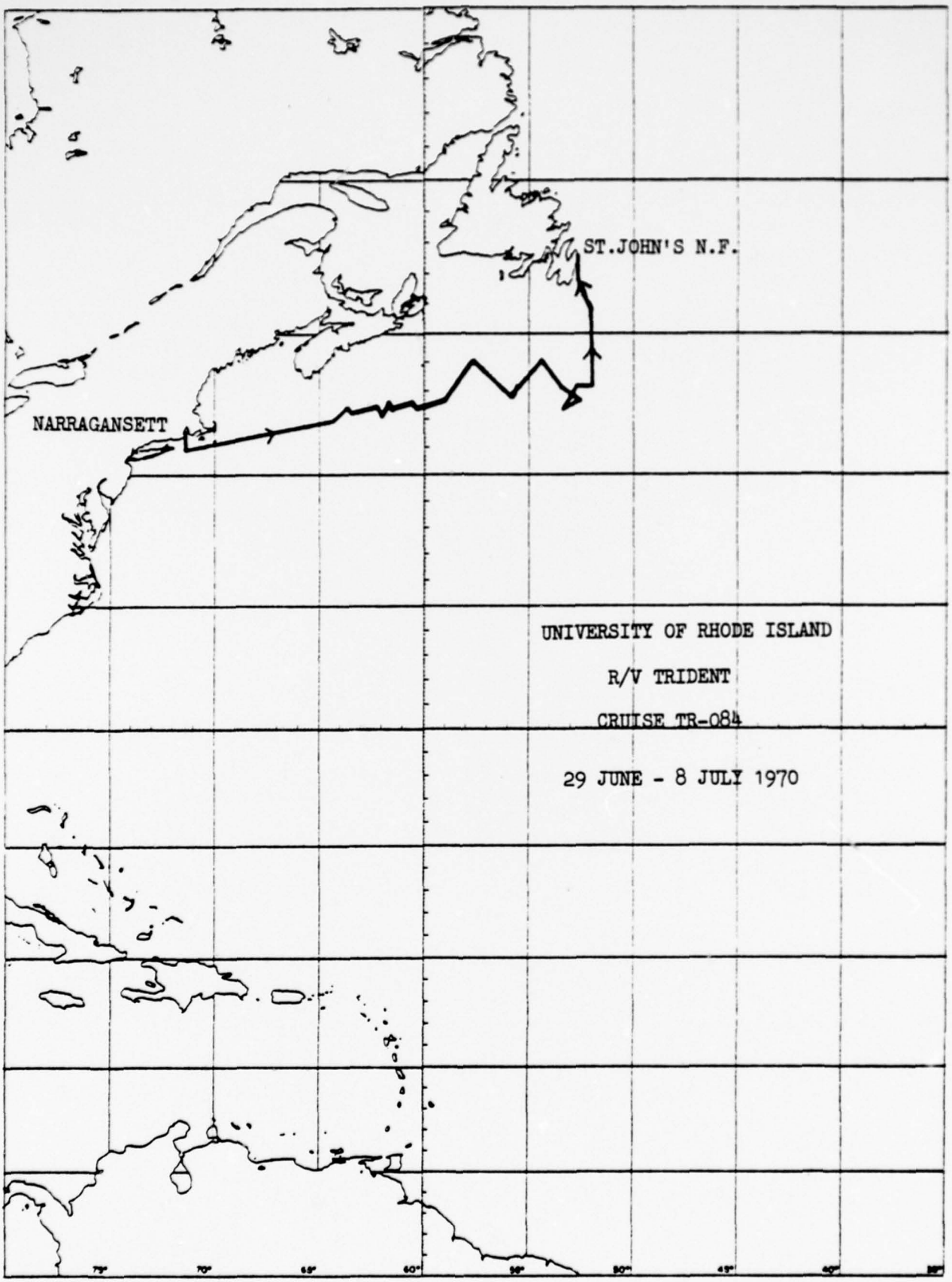
1) 1,035 n.m. each of bathymetry and magnetic profiles were run

2) 1,047 n.m. of seismic reflection profiles were run

3) two hydrographic stations were occupied

Participants

Dr. Gregory W. Webb	Chief Scientist	U. Mass.
Dr. Dana Kester	Associate Professor	U.R.I.
Mr. William Hahn	Oceanographic Specialist	U.R.I.
Mr. Joel Knee	Oceanographic Specialist	U.R.I.
Mr. Robert Byrne	Graduate Student	U.R.I.
Mr. Brendan Doherty	Graduate Student	U.R.I.
Mr. Martin Fisk	Graduate Student	U.R.I.
Mr. Frederick Haug	Geology Student	U.N.H.
Mr. John Richmond	Geology Student	U.R.I.
Mr. Thomas Casadevall	Geology Student	U.R.I.


ST.JOHN'S N.F.
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-084
29 JUNE - 8 JULY 1970

Cruise No.: TR-085

Dates: 10 - 21 July 1970

Area of Operation: Northwest and Northeast Atlantic Oceans

Days at sea: 12

Funding: ONR, NSF

Program Description

The major goals of this cruise were:

a) to investigate the use of several chemical parameters as tracers of deep water between the Grand Banks and the mid-Atlantic Ridge

b) to study chemical interactions between sediments and seawater

c) to examine the occurrence of various trace elements in atmospheric particulate matter

d) to obtain continuous observations of depth and total magnetic intensity between St. John's and Ponta Delgada

Data Collected

1) 1,500 n.m. of bathymetry and magnetic profiles were run

2) 11 hydrographic stations were occupied

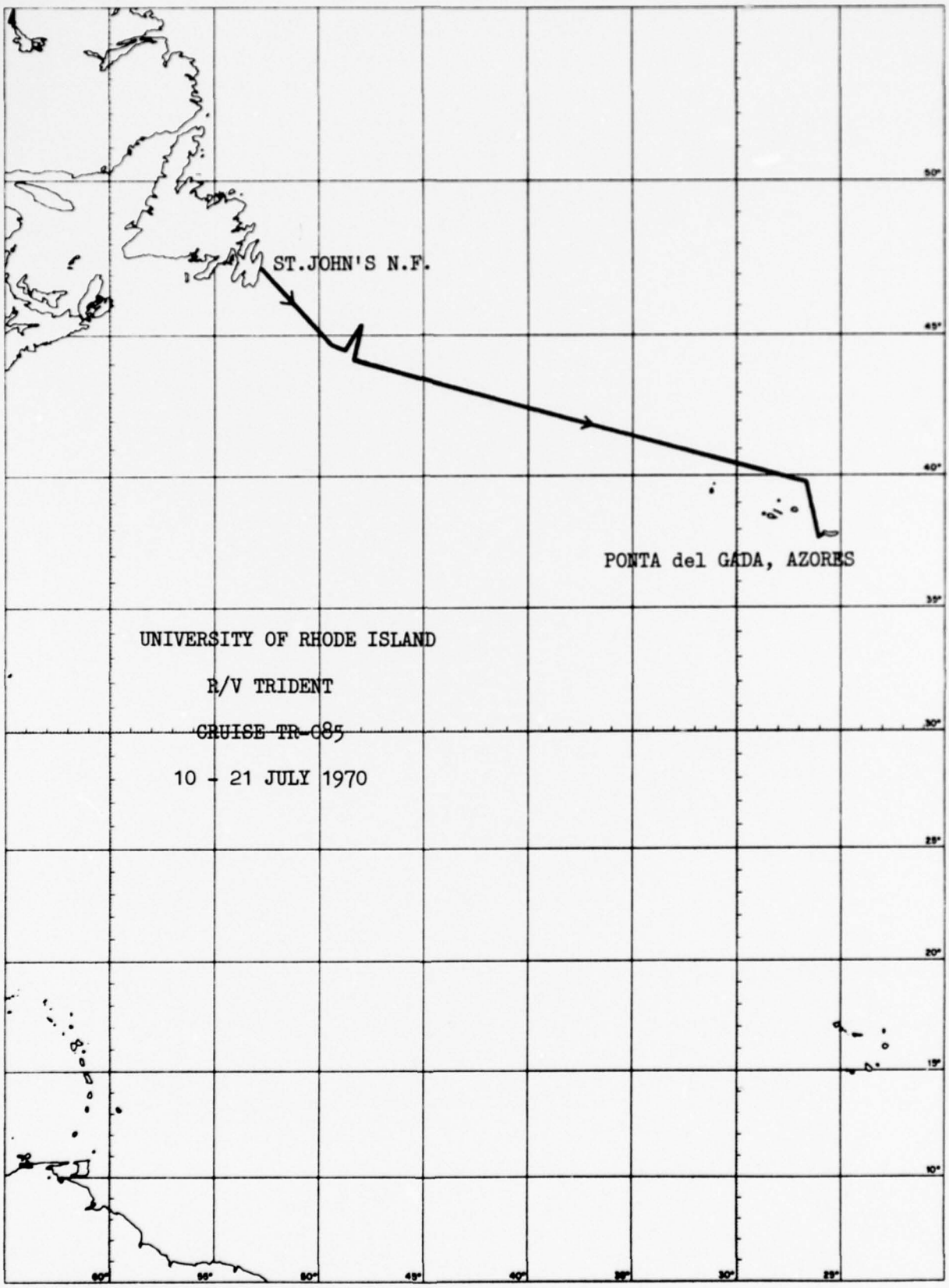
3) 10 XBTs were taken

4) 11 cores were taken

5) samples were collected on Sao Miguel, Azores, for chemical analysis

Participants

Dr. Dana R. Kester	Chief Scientist	U.R.I.
Dr. Michael E. Q. Pilson	Co-Investigator	U.R.I.
Mr. Jarvis Moyers	Research Associate	U.R.I.
Mr. Robert H. Byrne, Jr.	Research Assistant	U.R.I.
Mr. Brendan T. Doherty	Research Assistant	U.R.I.
Mr. Kent A. Fanning	Research Assistant	U.R.I.
Mr. Martin R. Fisk	Research Assistant	U.R.I.
Mr. David L. Johnson	Research Assistant	U.R.I.
Mr. John Richmond	Research Assistant	U.R.I.
Mr. William Hahn	Oceanographic Specialist	U.R.I.
Mr. Joel Knee	Oceanographic Specialist	U.R.I.
Mr. Thomas Casadevall	Graduate Student	U.R.I.
Mr. Frederick Haug	Graduate Student	U.N.H.


ST.JOHN'S N.F.
PONTA del GADA, AZORES
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-085
10 - 21 JULY 1970
50°
45°
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35°
30°
25°
20°
15°
10°
60°
55°
50°
45°
40°
35°
30°
25°

Cruise No.: TR-086

Dates: 23 July - 10 August 1970

Area of Operation: North and Northeast Atlantic Ocean

Days at sea: 18

Funding: NSF, ONR

Program Description

The main purposes of this cruise were:

a) to study the crustal junctions and the geological/geophysical features of the Azores Islands and in transit to Rota, Spain

b) to collect bottom samples to assist in the analysis

Data Collected

1) 2,100 n.m. each of bathymetry and magnetic profiles were made

2) 1,640 n.m. of seismic reflection profiles were taken

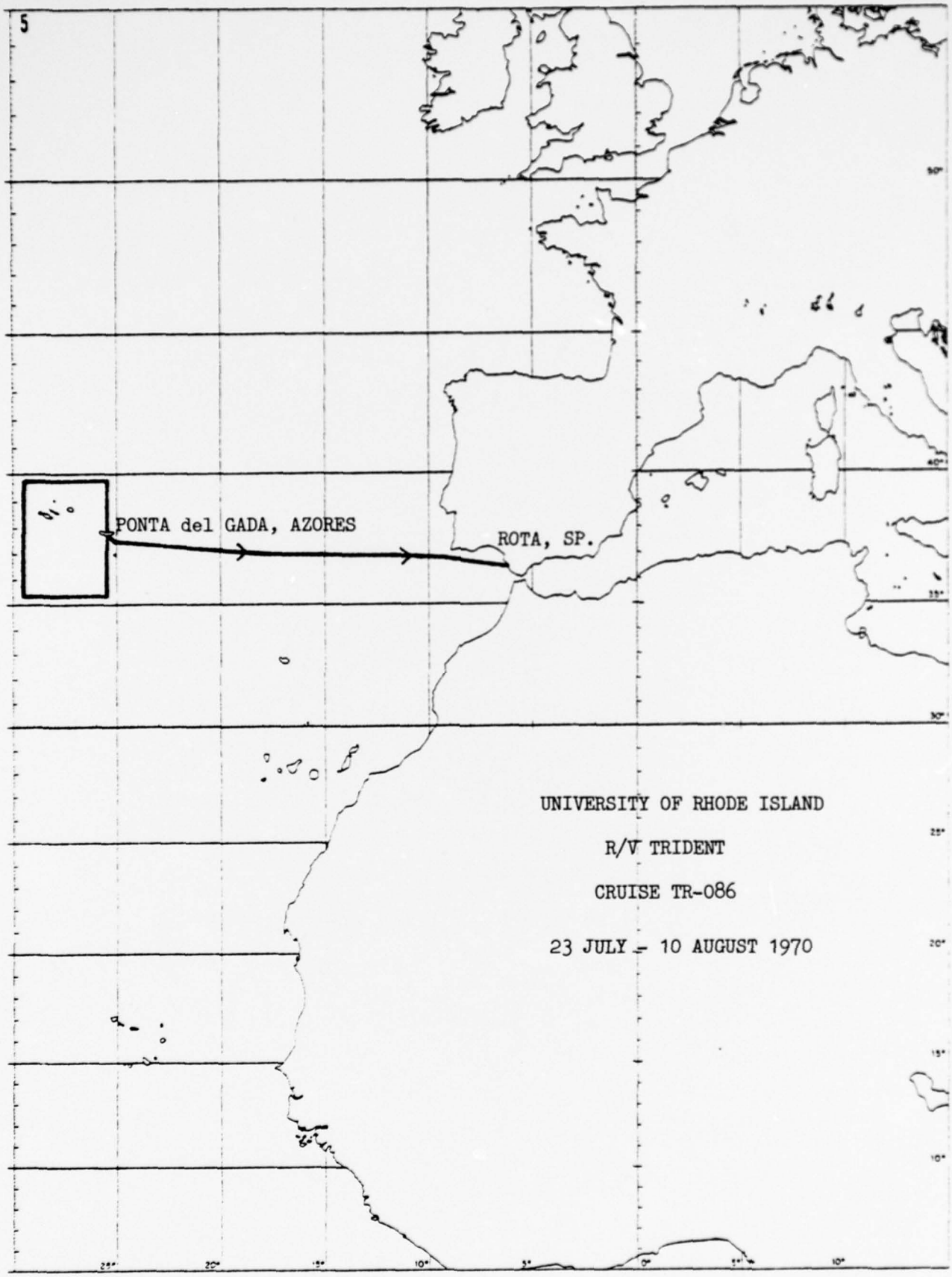
3) eight dredges were taken

4) one core was taken

5) one camera station was occupied

Participants

Dr. Dale C. Krause	Co-Chief Scientist	U.R.I.
Dr. Jean-Guy Schilling	Co-Chief Scientist	U.R.I.
Dr. Frederico Machado	Volcanologist	Ministerio do Untramar, Portugal
Mr. J. Hipolito Monteiro	Geologist	Instituto Hidrografico, Portugal
Mr. William Hahn	Oceanographic Technician	U.R.I.
Mr. Joel Knee	Oceanographic Technician	U.R.I.
Mr. Fred W. Haug, Jr.	Graduate Student	U.N.H.
Mr. John W. Richmond, Jr.	Graduate Student	U.R.I.


PONTA del GADA, AZORES
ROTA, SP.
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-086
23 JULY - 10 AUGUST 1970

Cruise No, TR-087

Dates: 14 August - 10 September 1970

Area of Operation: Mediterranean Sea

Days at sea: 27

Funding: NSF

Program Description

The main objectives of this cruise were:

a) to sample the water column at discrete depths using trawls, hydrographic techniques

b) to sample the air-water interface

c) to take continuous echo-sounding records during trawls

Data Collected

1) 60 trawls were taken

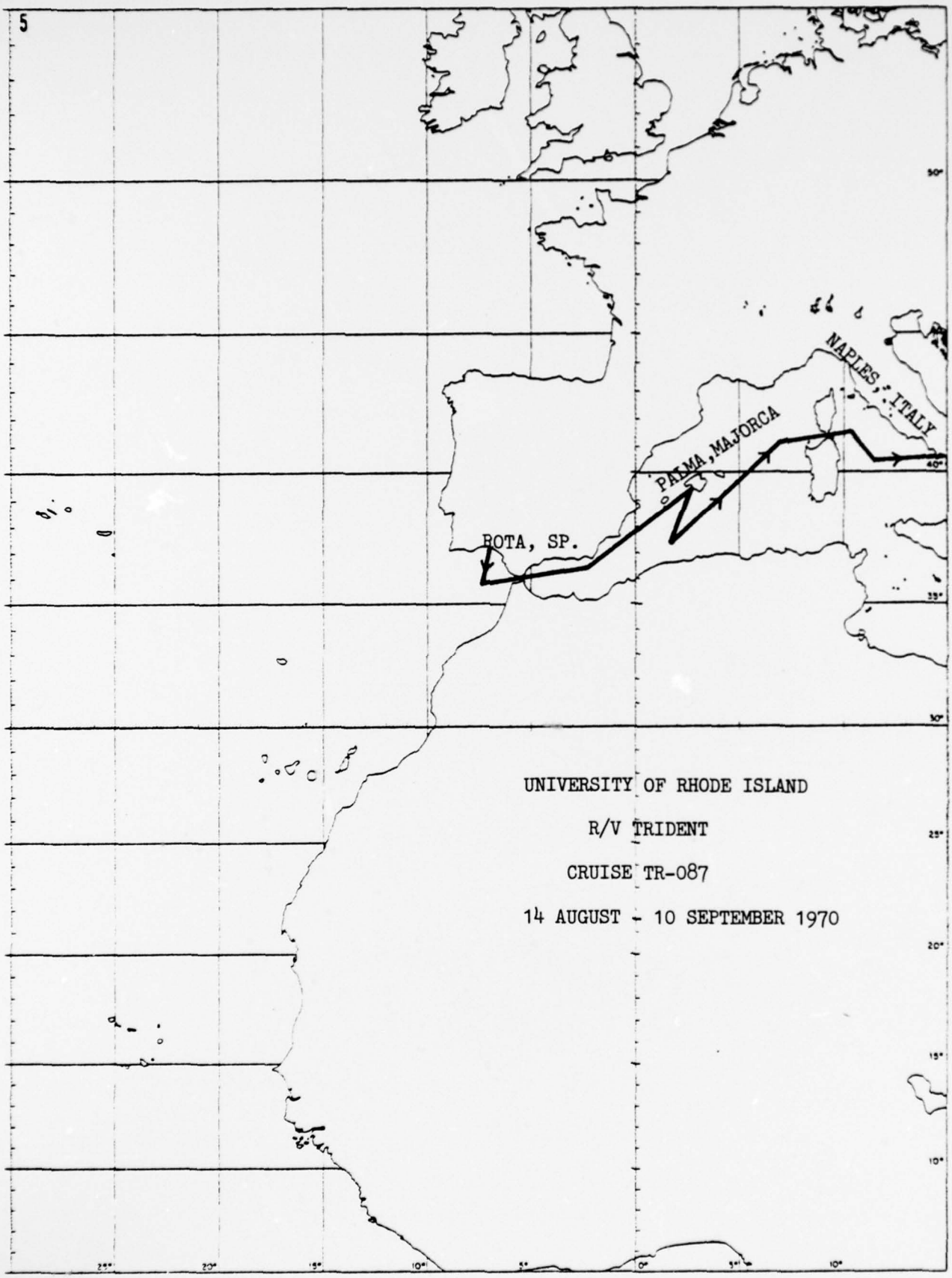
2) 100 neuston tows were recovered

3) two hydrographic stations were completed

4) 76 XBTs were taken

Participants

Dr. R. H. Gibbs, Jr,	Chief Scientist	Smithsonian
Mr. G. Alley	Scientist	NOIC
Mr. J. S. Bercaw	Scientist	General Motors
Mr. R. D. Gatton	Scientist	Smithsonian
Mr. R. H. Goodyear	Scientist	Smithsonian
Mr. W. Hoffman	Scientist	General Motors
Mr. C. Karnella	Scientist	Smithsonian
Mr. M. J. Keene	Scientist	Smithsonian
Mr. R. C. Kleckner	Scientist	Smithsonian
Mr. W. L. Pugh	Scientist	Navoceano
Mr. B. J. Zahurance	Scientist	Navoceano
Mr. J. Taylor	Scientist	Navoceano
Mr. W. Hahn	Marine Technician	U.R.I.
Mr. J. Knee	Marine Technician	U.R.I.
Mr. R. Sexton	Marine Technician	U.R.I.



UNIVERSITY OF RHODE ISLAND

R/V TRIDENT

CRUISE TR-087

14 AUGUST - 10 SEPTEMBER 1970

Cruise No.: TR-088

Dates: 18 September - 2 October 1970

Area of Operation: Mediterranean Sea and North Atlantic Ocean

Days at sea: 15

Funding: NSF

Program Description

The major programs of this cruise were:

a) studies of phytoplankton communities and bioluminescent intensity

b) geophysical surveys of drill sites for JOIDES (Joint Oceanographic Institutions Deep Earth Sampling)

c) testing of a new satellite navigation system

Data Collected

1) Plankton stations were occupied

2) Six hydrographic stations were made

3) 24 XBTs were taken

4) 1,080 n.m. of bathymetry and magnetic profiles were run

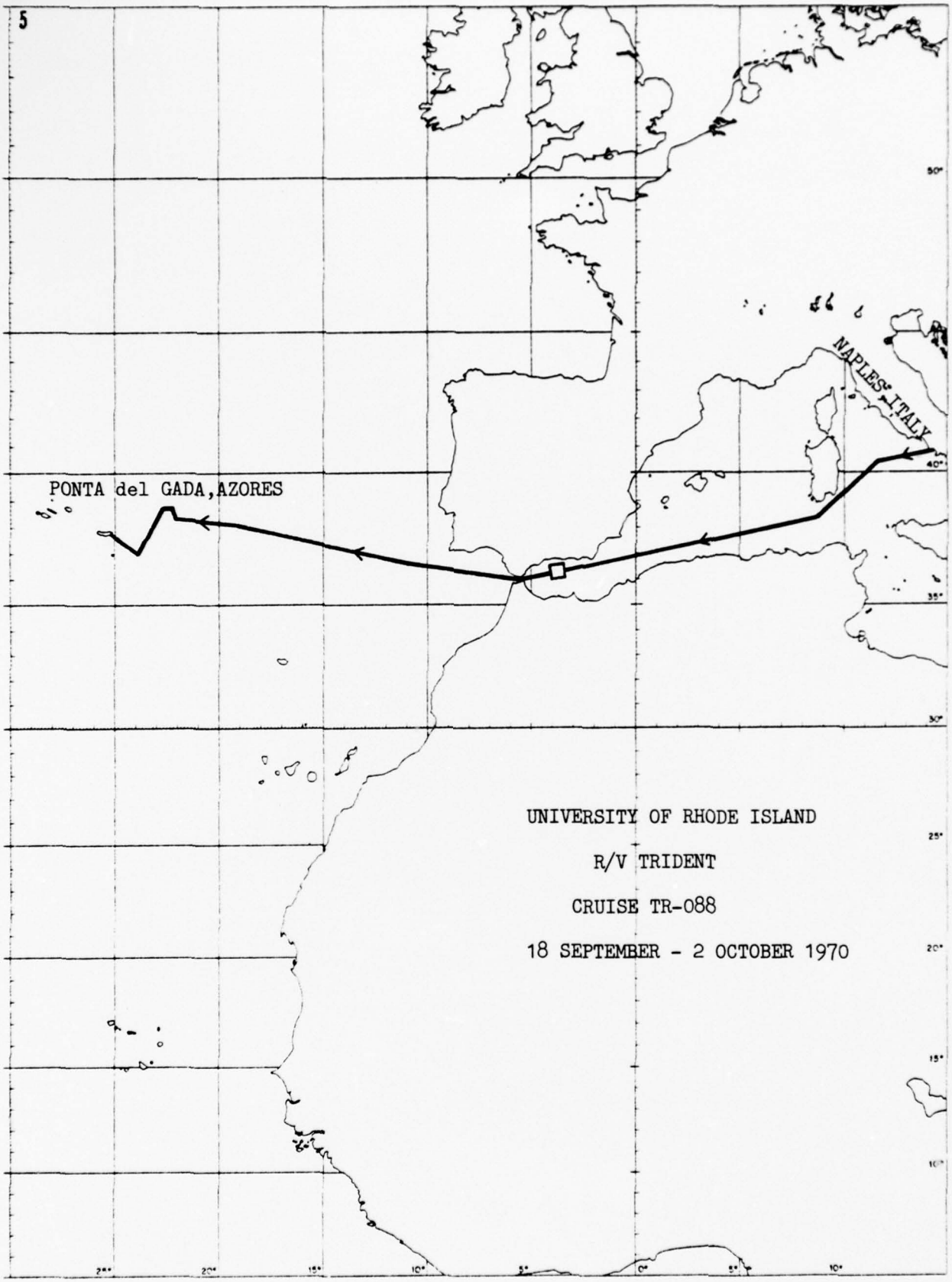
5) 195 n.m. of seismic reflection profiles were run

6) three cores were taken

7) two sediment heat flow measurements were made

Participants

Dr. Elijah Swift	Chief Scientist	U.R.I.
Mr. F. Rose	Oceanographic Specialist	U.R.I.
Mr. E. Christofferson	Graduate Student	U.R.I.
Mr. E. G. Durbin	Graduate Student	U.R.I.
Mr. M. Fisk	Graduate Student	U.R.I.
Ms. E. Papworth	Graduate Student	M.I.T.


5
NAPLES, ITALY
PONTA del GADA, AZORES
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-088
18 SEPTEMBER - 2 OCTOBER 1970

Cruise No.: TR-089

Dates: 5 October - 10 November 1970

Days at sea: 34

Funding: NSF

Area of Operation: Azores Islands area, Northeast and Northwest Atlantic Ocean

Program Description

The main objectives of this cruise were:

a) to collect geological and geophysical samples and data in the Azores Islands area and across the North Atlantic Ocean

Data Collected

1) 3,240 n.m. of bathymetry and magnetic profiles were run

2) 1,303 n.m. of seismic reflection profiles were taken

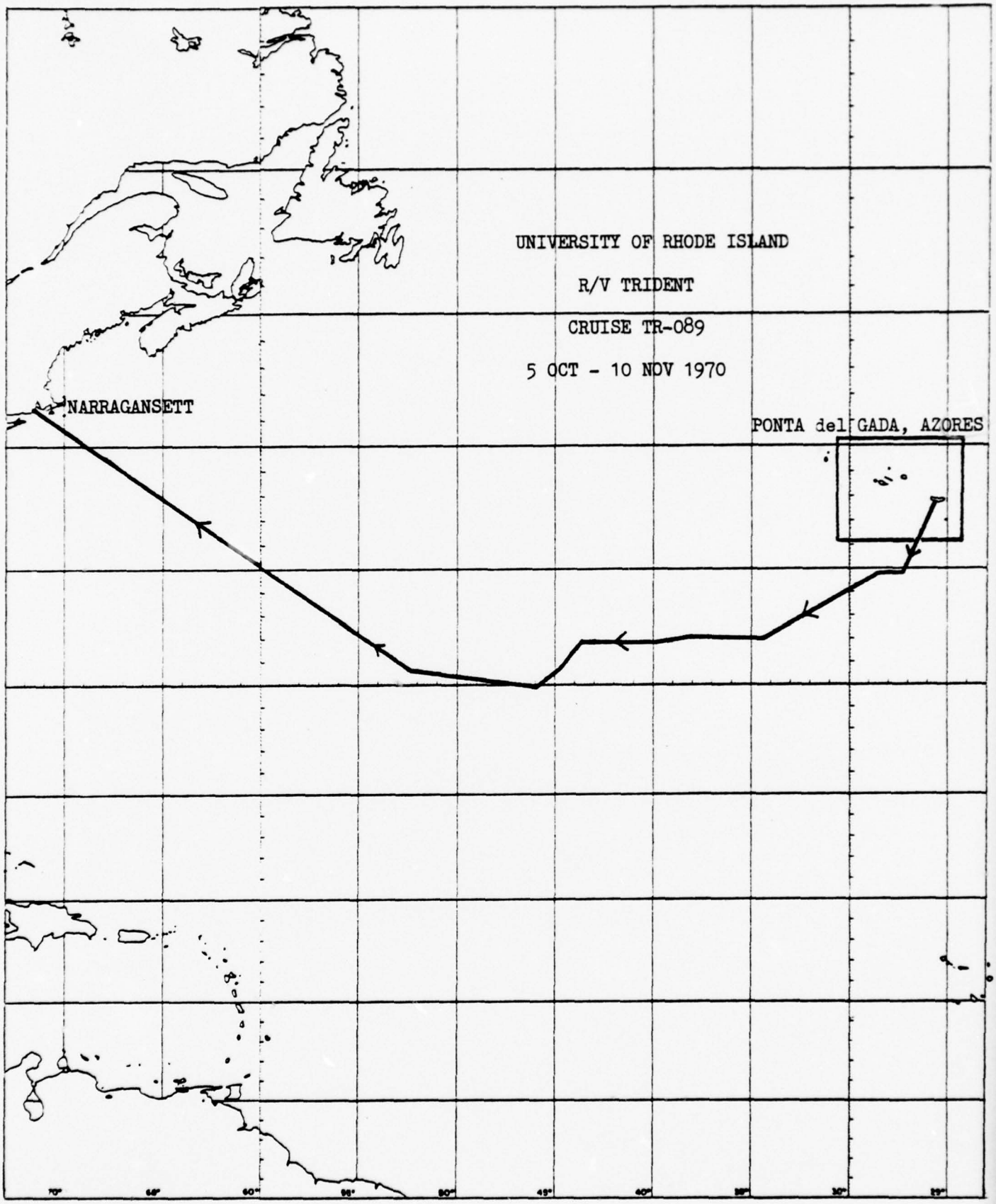
3) 12 rock dredges were taken

4) 12 cores with associated heat flow measurements were collected

5) one hydrographic station was made

Participants

Dr. Jean-Guy Schilling	Co-Chief Scientist	U.R.I.
Dr. Dale C. Krause	Co-Chief Scientist	U.R.I.
Dr. Yoshio Oji	Petrologist	U.R.I./Fukuoka University, Japan
Mr. Philip P. Bedard	Electronics Engineer	U.R.I.
Mr. Robert Stevens	Engineer	M.I.T.
Ms. Bonnie A. McGregor	Research Assistant	U.R.I.
Mr. Frank Rose	Marine Technician	U.R.I.
Mr. Thomas Johnston	Graduate Student	U.R.I.
Ms. Elaine Papworth	Graduate Student	M.I.T.
Ms. Dolores Martinez Tapia	Graduate Student	University of Madrid


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-089
5 OCT - 10 NOV 1970
NARRAGANSETT
PONTA del GADA, AZORES

Cruise No.: TR-090

Area of Operation: Northwest Atlantic Ocean

Dates: 27 November - 9 December 1970

Days at sea: 13

Funding: NSF

Program Description

The main objectives of this cruise were:

a) to collect biological samples for the Ocean Acre area (31°30' - 32°31' N, 63°30' - 64°30' W), representative of the pelagic fauna in November-December,

b) to conduct bacteriological and light measurement studies

c) to sample Sargassum weed

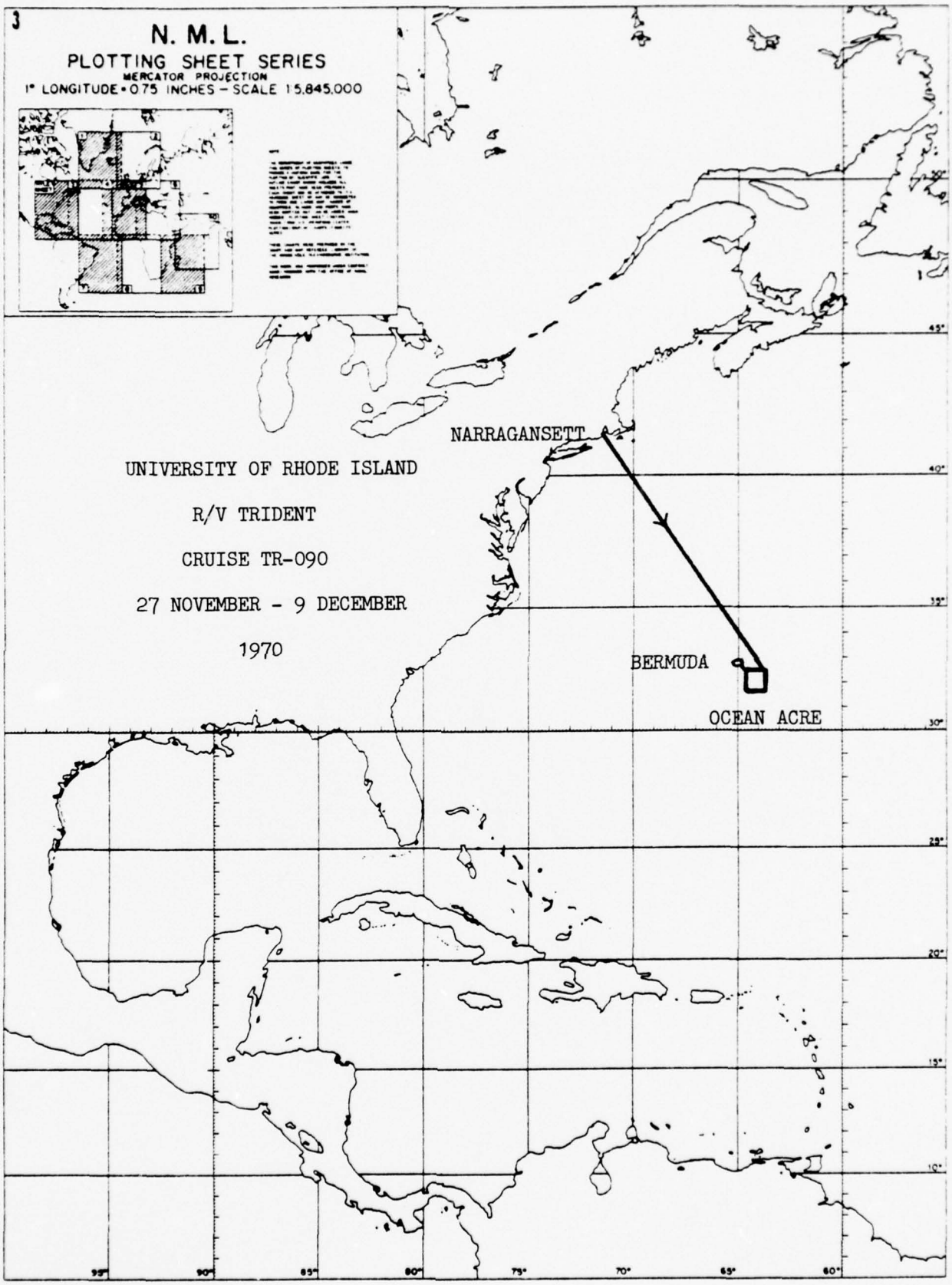
Data Collected

1) 11 Isaacs-Kidd midwater trawls were taken

2) Studies (a) and (b) above were performed

Participants

Dr. Theodore Napora	Chief Scientist	U.R.I.
Dr. Theodore Smayda	Professor	U.R.I.
Dr. Jack Willis	Asst. Professor/Physics	U.R.I.
Dr. Ellsworth Wheeler	Zoology Dept.	U.N.H.
Mr. William Hahn	Marine Technician	U.R.I.
Mr. Lloyd Balderston	Graduate Student	U.R.I.
Mr. Henry Donaldson	Graduate Student	U.R.I.
Mr. Gerard Hoffman	Graduate Student	University of Hawaii
Mr. William Plank	Graduate Student	University of Oregon


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-090
27 NOVEMBER - 9 DECEMBER
1970
BERMUDA
OCEAN ACRE
45°
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20°
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85°
80°
75°
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65°
60°

Cruise No.: TR-091

Dates: 11-19 December 1970

Area of Operation: Northwest Atlantic Ocean

Days at sea: 9

Funding: NSF, ONR

Program Description

The main programs on this cruise were:

a) collection of water samples for chemical analysis

b) to take cores on the Bermuda rise and Hatteras Abyssal Plain for chemical, physical and biological analyses

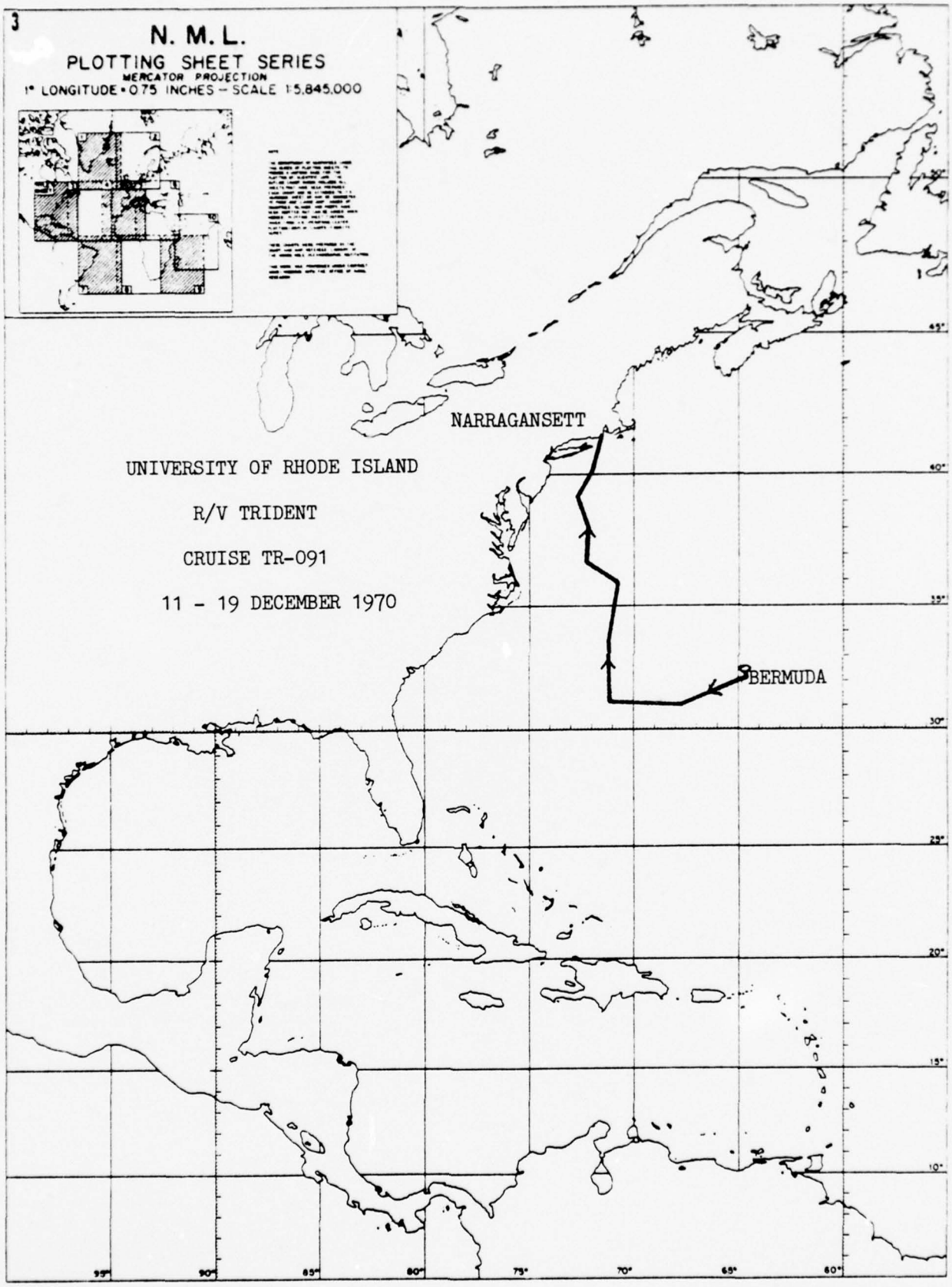
Data Collected

1) Six hydrographic stations were occupied

2) Nine sediment cores were taken

Participants

Dr. Michael E. Q. Pilson	Chief Scientist	U.R.I.
Mr. William Hahn	Marine Technician	U.R.I.
Ms. Frances Steinhilper	Marine Technician	U.R.I.
Mr. Peter Betzer	Graduate Student	U.R.I.
Mr. Kent Fanning	Graduate Student	U.R.I.
Mr. William Plank	Graduate Student	Oregon State Univ.
Mr. John Rehlen	Graduate Student	U.R.I.
Mr. Robert Betzer	Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES — SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-091
11 - 19 DECEMBER 1970
BERMUDA
45°
40°
35°
30°
25°
20°
15°
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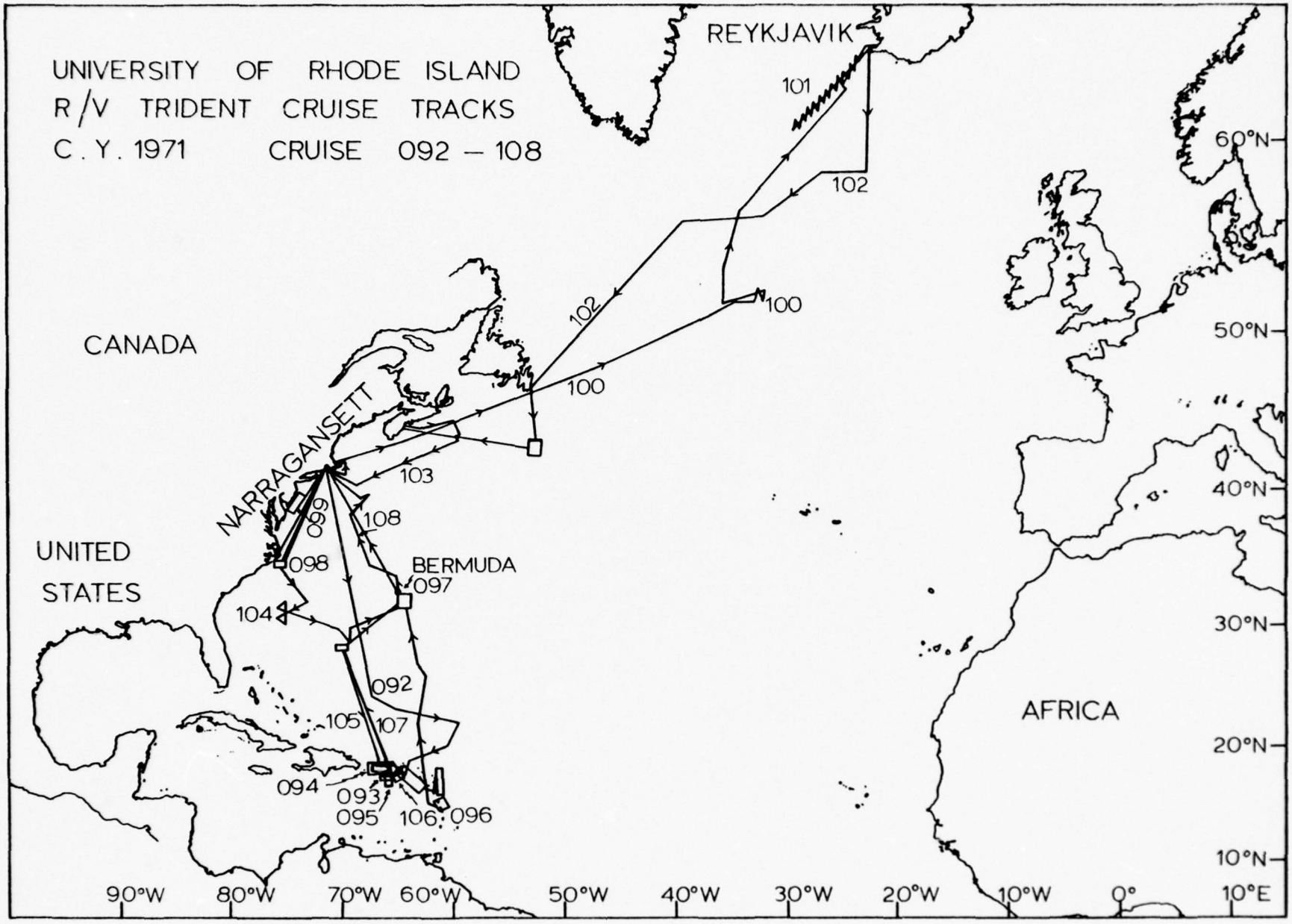
95°
90°
85°
80°
75°
70°
65°
60°

R/V TRIDENT Cruises - CY 1971

Cruise No.	Dates	Days at Sea	Area of Operation	Chief Scientist/ Affiliation*
092	3-19 January	17	NW Atlantic and Caribbean	Winn
093	21-23 January	3	Caribbean Venezuela Basin	Sturges
094	24 Jan. - 1 Feb.	9	Caribbean and Sargasso	Winn
095	3-17 February	15	Caribbean	Sturges
096	21 Feb. - 28 Mar.	35	Caribbean	Fink/U. Maine
097	31 Mar. - 19 Apr.	19	NW Atlantic	Donaldson
098	5 May - 4 June	31	NW Atlantic	Richardson
099	6-18 June	13	NE Continental Shelf	McClennen
100	26 June - 15 July	20	North Atlantic	D.G. Johnson Schnitker/U. Maine
101	17-29 July	13	North Atlantic	Schilling
102	2-24 August	21	North Atlantic	Kester
103	26 Aug. - 8 Sept.	14	North Atlantic	Winn
104	17 Oct. - 2 Nov.	17	NW Atlantic	Lambert
105	4-20 Nov.	17	NW Atlantic	Scarlet/M.I.T.
106	23-30 Nov.	8	Caribbean	Lambert
107	4-15 Dec.	12	NW Atlantic	Scarlet/M.I.T.
108	17-22 Dec.	6	NW Atlantic	Kester

*GSO/URI unless otherwise noted


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT CRUISE TRACKS
C.Y. 1971 CRUISE 092 – 108
REYKJAVIK
101
102
102
100
100
CANADA
NARRAGANSETT
103
099
108
UNITED
STATES
098
BERMUDA
097
104
092
105
107
094
093
095
106
096
AFRICA
60°N
50°N
40°N
30°N
20°N
10°N
90°W
80°W
70°W
60°W
50°W
40°W
30°W
20°W
10°W
0°
10°E

Cruise No.: TR-092

Dates: 3 - 19 January 1971

Area of Operation: Northwest Atlantic Ocean and Caribbean Sea

Days at sea: 17

Funding: ONR

Program Description

The main objectives of this cruise were:

a) to continue whale and porpoise studies by transmitting and recording underwater sounds

b) to attempt to collect eels in the Sargasso Sea

Data Collected

1) 172 underwater sound stop/listen stations were occupied for search, detection and tracking of numerous species of whales and porpoise

2) underwater sound recordings were made of whales and dolphins

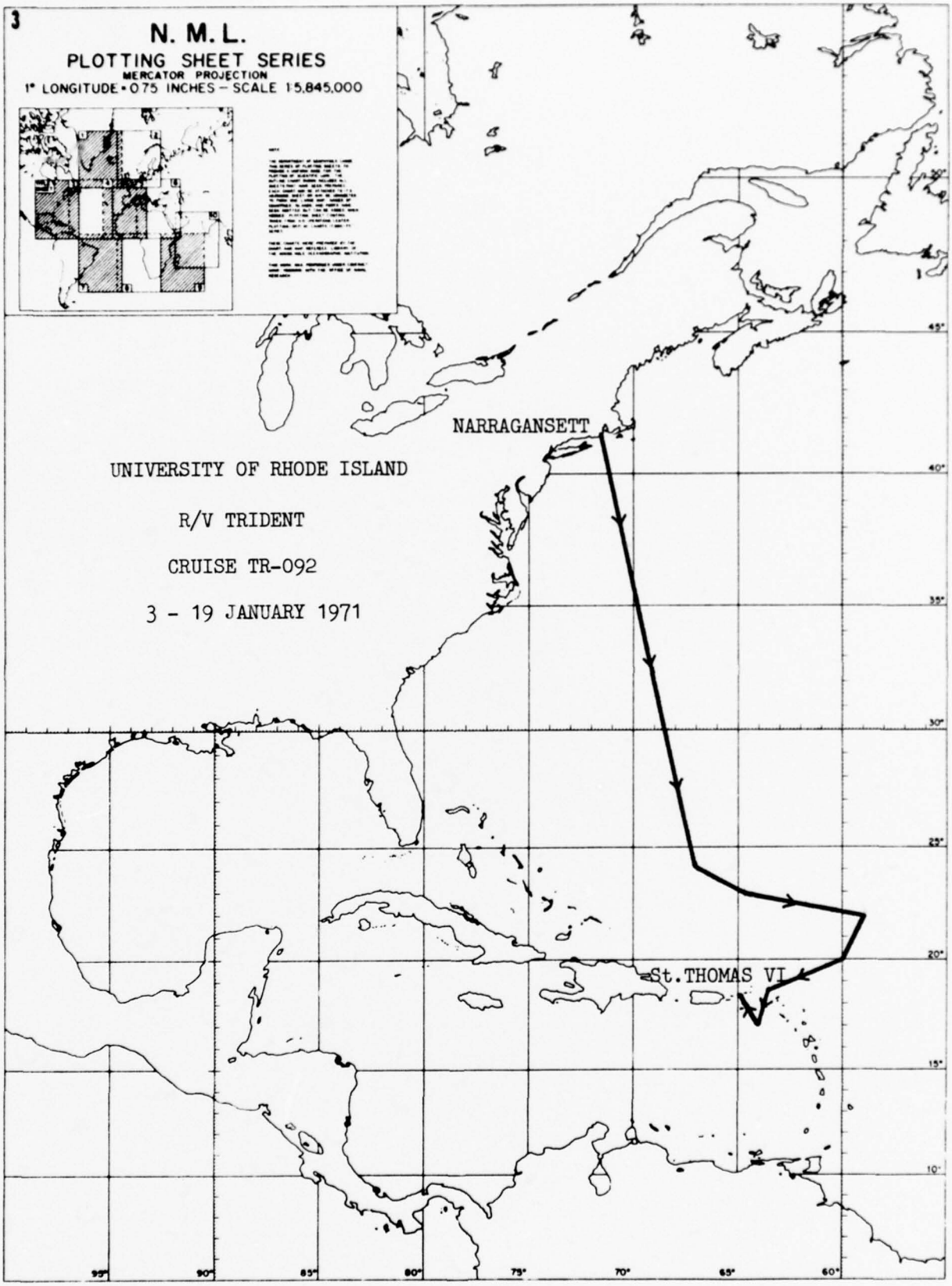
3) TV records, 35 mm and movie films were made of pods of whale species

4) six longline sets caught a total of 65 shark, swordfish, tuna and other fish

5) 33 XBTs were taken

Participants

Dr. Howard E. Winn	Chief Scientist	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. Richard Edel	Graduate Student	U.R.I.
Mr. Michael Fine	Graduate Student	U.R.I.
Mr. James Hain	Graduate Student	U.R.I.
Mr. Martin Hyman	Graduate Student	U.R.I.
Mr. John Mason	Graduate Student	U.R.I.
Mr. James Parrish	Graduate Student	U.R.I.
Mr. Robert Pikanowski	Graduate Student	U.R.I.
Mr. Algis Taruski	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 075 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-092
3 - 19 JANUARY 1971
St. THOMAS VI
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-093

Dates: 21 - 23 January 1971

Area of Operation: Caribbean Sea and Venezuela Basin

Days at sea: 3

Funding: ONR

Program Description

The main objectives of this cruise were:

a) to set an array of five current meters with a precision temperature recorder at the bottom

b) to run a bathymetry pattern in the Venezuela Basin (weather permitted a limited pattern only)

Data Collected

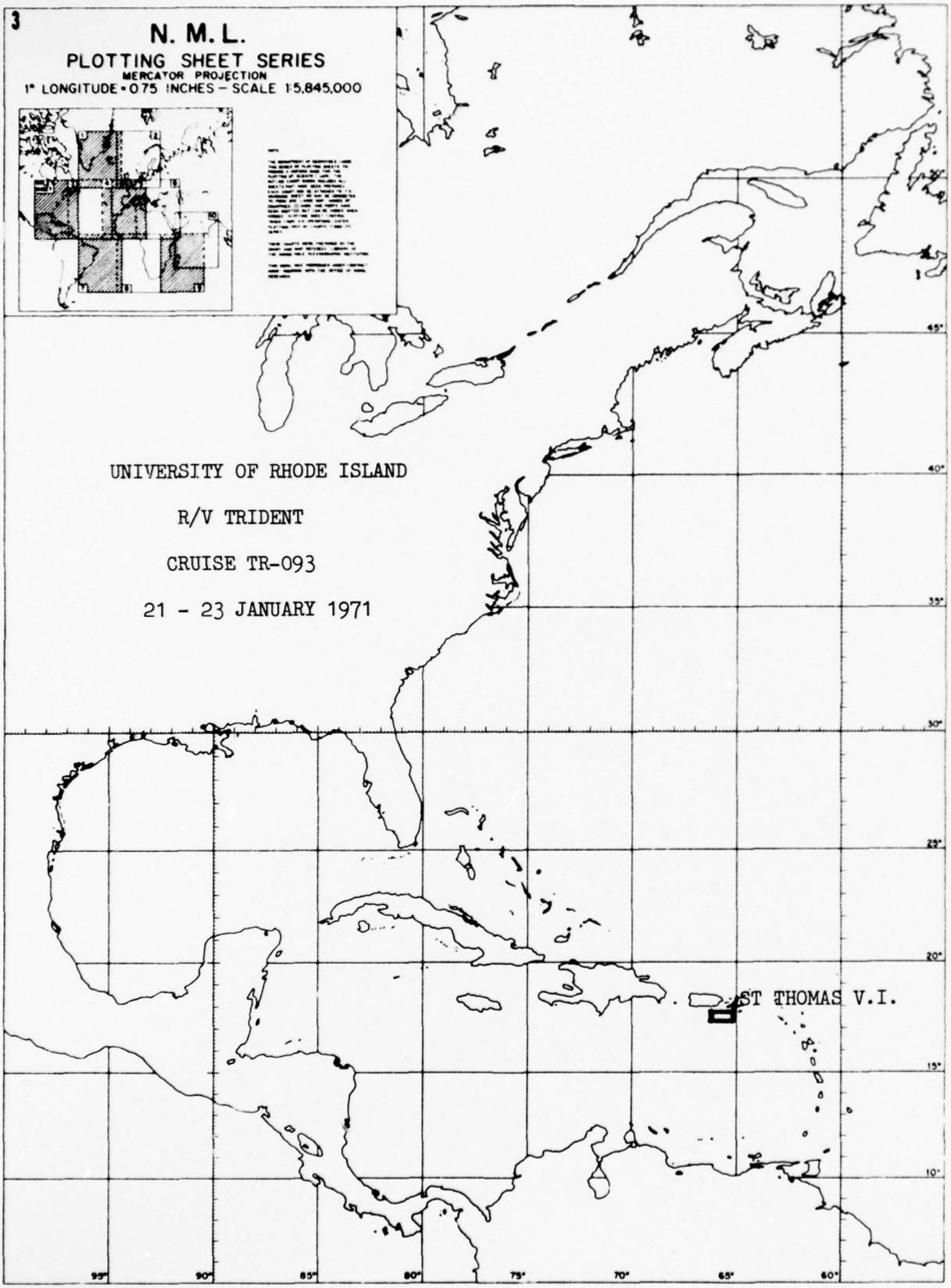
1) five current meter arrays with six current meters and accompanying precision temperature recorders were deployed

2) bathymetric profiles were run in the Venezuela Basin

3) acoustic releases and an STD were tested

Participants

Dr. Wilton Sturges, III	Chief Scientist	U.R.I.
Mr. Philip Bedard	Electronics Technician	U.R.I.
Mr. R. E. Smith	Research Technician	U.R.I.
Mr. William Hahn	Marine Technician	U.R.I.
Mr. James Sammons	Electronics Technician	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-093
21 - 23 JANUARY 1971
ST THOMAS V.I.
45°
40°
35°
30°
25°
20°
15°
10°
99°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-094

Dates: 24 January - 1 February 1971 Area of Operation: Caribbean Sea and Sargasso Sea

Days at sea: 9

Funding: ONR

Program Description

The main objectives of this cruise were:

a) to continue the study of humpback whales

b) to maintain a continuous whale and porpoise watch

c) to collect spawning eels in the Sargasso Sea area

d) to conduct night underwater listening stations in conjunction with (a) and (b)

e) to attempt to locate Echo Bank

Data Collected

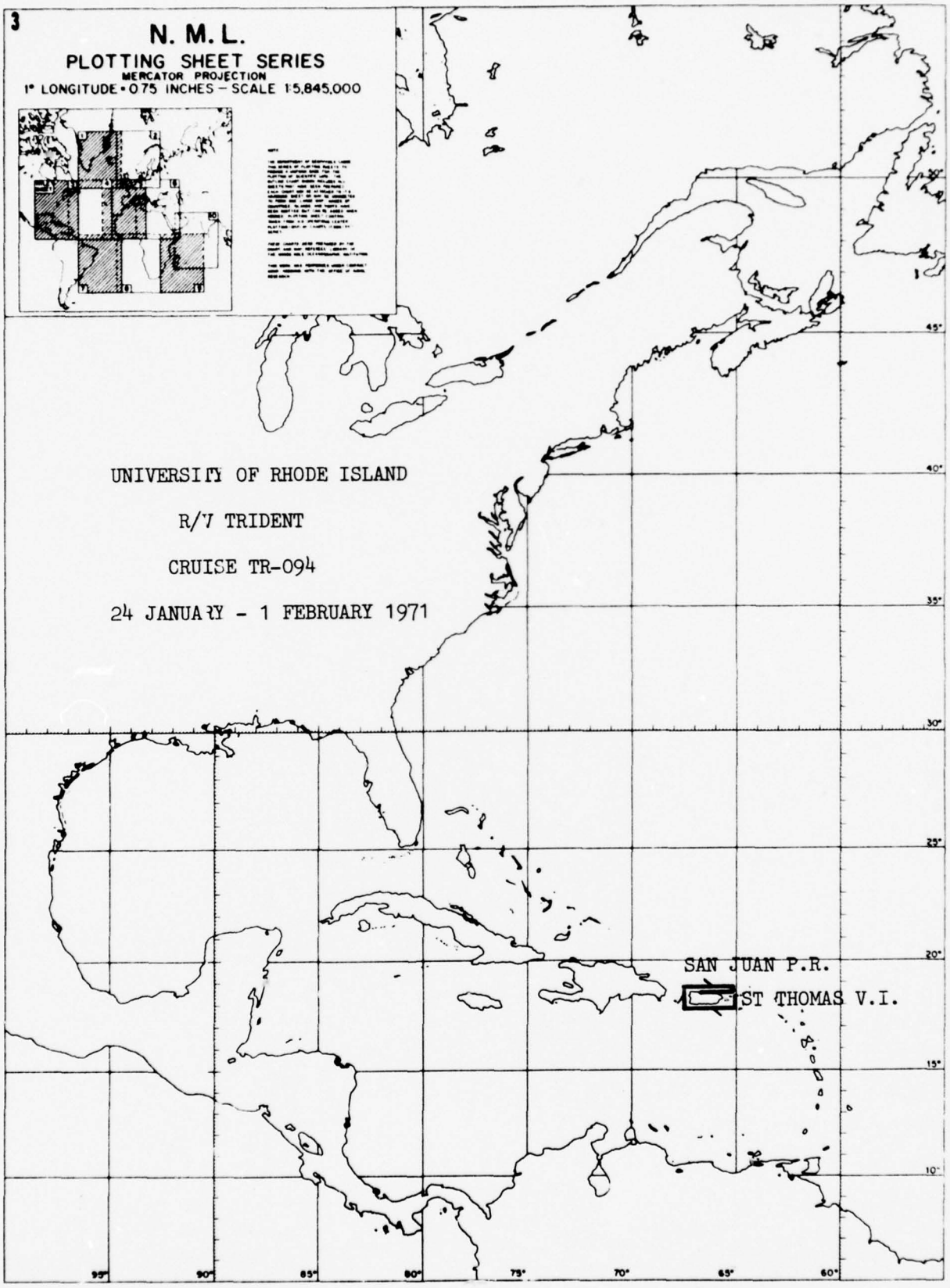
1) 172 underwater sound stop/listen stations were occupied for search, detection of whales and porpoises

2) underwater sound recordings were made of calling whales and porpoises

3) four XBTs were taken

Participants

Dr. Howard E. Winn	Chief Scientist	U.R.I.
Mr. Paul J. Perkins	Oceanographic Specialist	U.R.I.
Mr. John Casey	Field Party Chief	NMFS
Mr. Charles Stillwell	Fisheries Biologist	NMFS
Mr. Harold Pratt	Fisheries Biologist	NMFS
Mr. Richard Edel	Graduate Student	U.R.I.
Mr. Michael Fine	Graduate Student	U.R.I.
Mr. James Hain	Graduate Student	U.R.I.
Mr. Martin Hyman	Graduate Student	U.R.I.
Mr. John Mason	Graduate Student	U.R.I.
Mr. James Parrish	Graduate Student	U.R.I.
Mr. Robert Pikanowski	Graduate Student	U.R.I.
Mr. Algis Taruski	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 075 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-094
24 JANUARY - 1 FEBRUARY 1971
SAN JUAN P.R.
ST THOMAS V.I.
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-095

Dates: 3 - 17 February 1971 Area of Operation: Caribbean Sea

Days at sea: 15

Funding: ONR

Program Description

The main objectives of this cruise were:

a) to observe deep water inflow into the Caribbean Sea

b) to observe mixing and entrainment as the renewal water sinks down the sloping bottom

c) to observe temperature and salinity microstructure in the upper 600 to 700 meters

d) to occupy several whale listening stations in the Mona Passage

e) to recover current meters from TR-093

f) to launch seven current meter arrays

Data Collected

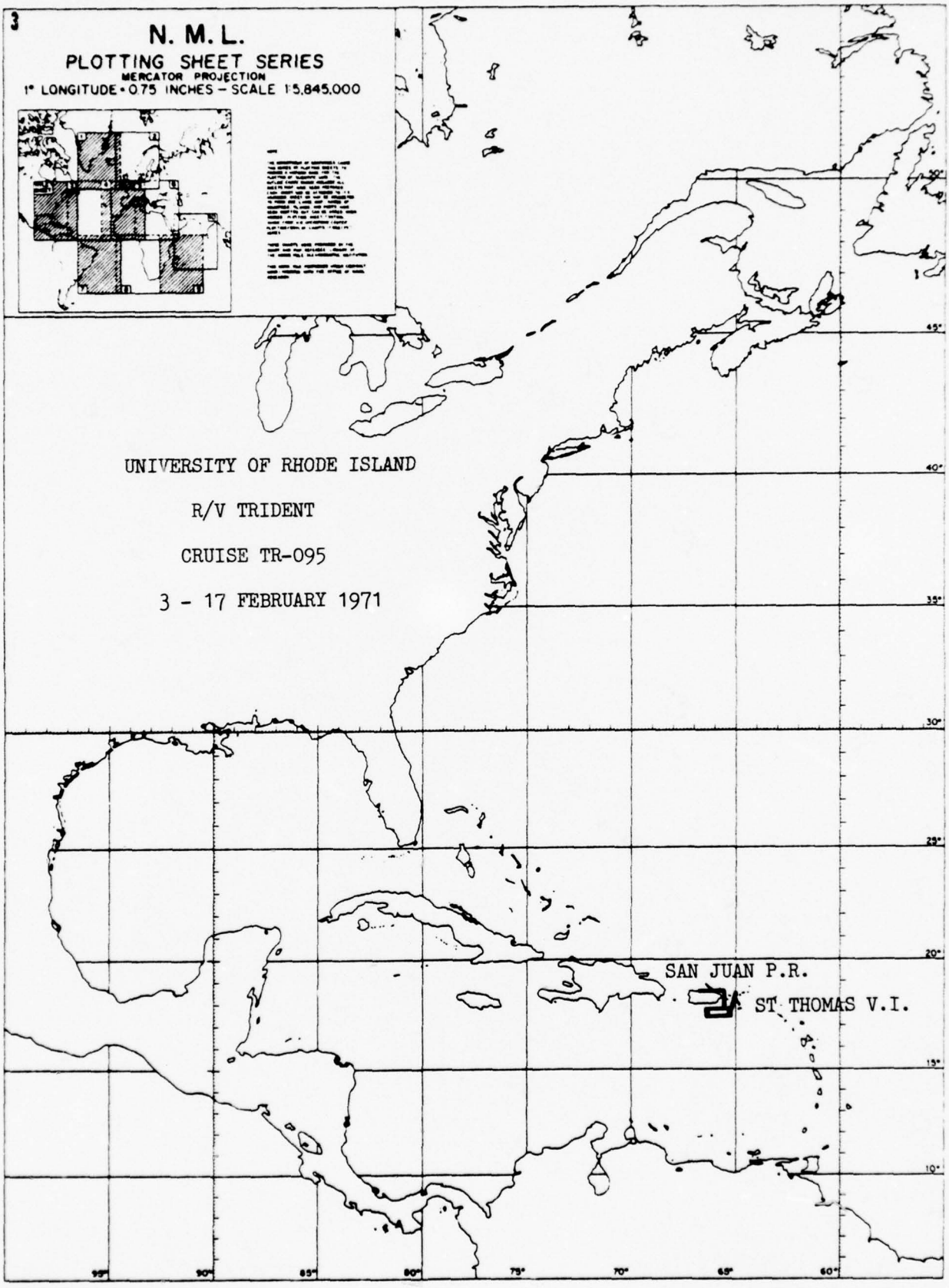
1) three of five current meter arrays from TR-093 retrieved

2) seven current meter arrays launched with a total of nine current meters

3) five drifting STD stations occupied

Participants

Dr. W. Sturges, III	Chief Scientist	U.R.I.
Dr. R. B. Lambert	Assistant Professor	U.R.I.
Mr. P. Bedard	Electronics Engineer	U.R.I.
Mr. W. P. Kramer	Research Associate	U.R.I.
Mr. R. Smith	Oceanographic Specialist	U.R.I.
Mr. R. K. Sexton	Senior Marine Technician	U.R.I.
Mr. W. Hahn	Marine Technician	U.R.I.
Mr. J. Sammons	Electronics Technician	U.R.I.
Ms. F. Steinhilper	Marine Technician	U.R.I.
Mr. M. Weishan	Marine Technician	U.R.I.
Ms. E. Jernigan	Graduate Student	U.R.I.
Mr. L. Miller	Graduate Student	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-095
3 - 17 FEBRUARY 1971
SAN JUAN P.R.
ST THOMAS V.I.
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-096

Dates: Leg I: 21 February - 10 March 1971
Leg II: 12 - 28 March 1971

Area of Operation: Caribbean Sea

Days at sea: Leg I: 18
Leg II: 17

Funding: ONR
NSF

Program Description

The main objectives of this cruise were:

a) to study the Lesser Antilles Arc Region and the Aves Ridge Section:

1) bathymetric, magnetic and seismic profiles were studied to:

2) obtain the best dredging sites

Data Collected

1) 1,800 n.m. each of bathymetric and magnetic profiles were run

2) 1,700 n.m. of seismic reflection profiles were obtained

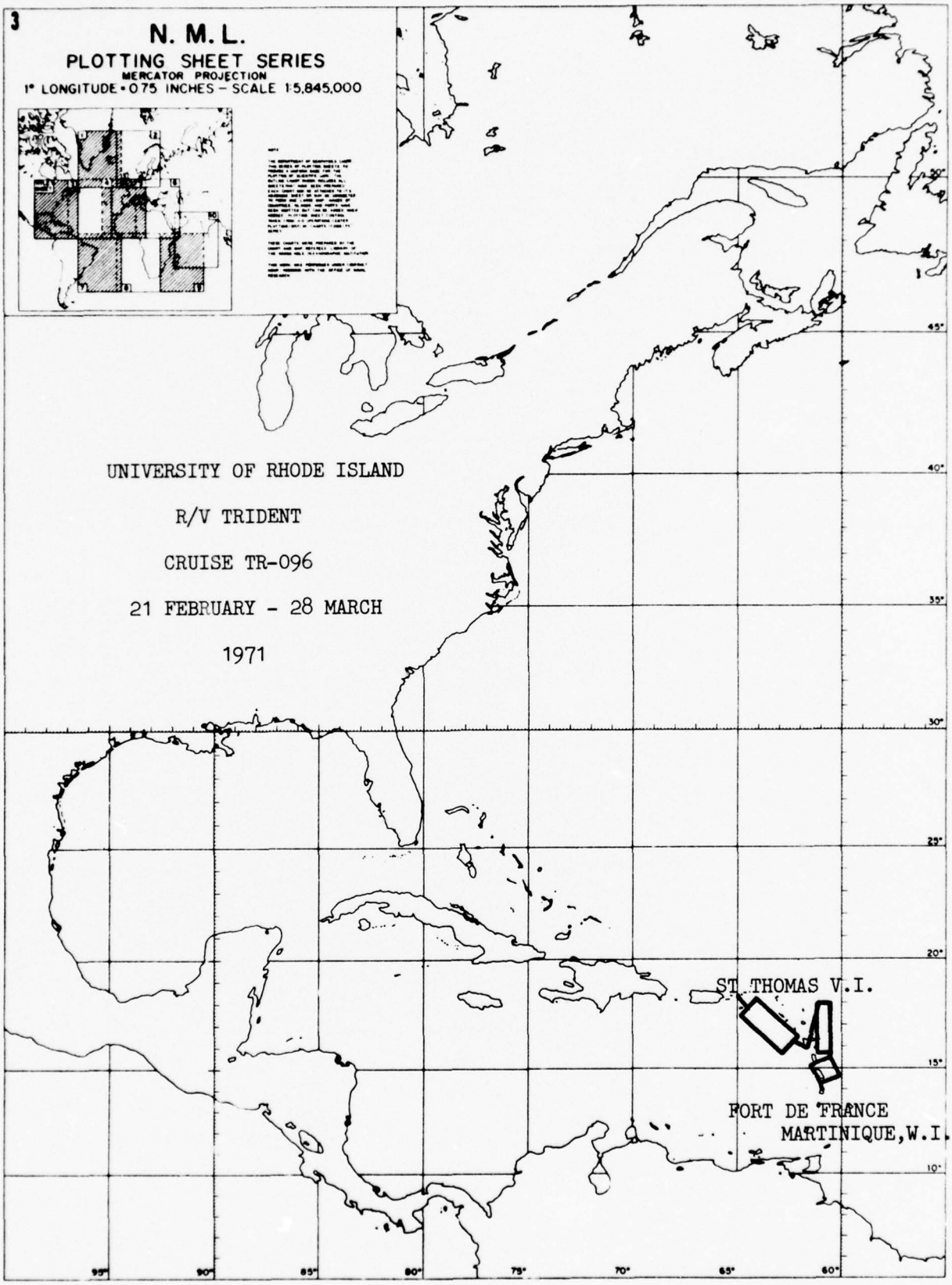
3) 17 dredge stations were occupied

4) three cores were taken

5) three camera stations were occupied

Participants

Dr. L. K. Fink, Jr.	Chief Scientist, Leg I	U. of Maine
Mr. Thomas H. Johnston	Chief Scientist, Leg II	U.R.I.
Dr. Detmar Schnitker	Professor	U. of Maine
Dr. Michel Feuillard	Professor	U. of Paris
Dr. Haraldur Sigurdsson	Professor	U. of West Indies
Mr. Francois LeLann	Research Associate	BGRM, Orleans
Mr. P.-M. Thibaut	Research Associate	BGRM, Martinique
Mr. Thomas Davis	Graduate Student	U.R.I.
Mr. Charles Heinonen	Graduate Student	U. of Maine
Mr. David G. Johnson	Graduate Student	U.R.I.
Mr. C. K. Unni	Graduate Student	U.R.I.
Mr. James Martell	Student	Geo. Washington Univ.
Mr. Paul Rusanowski	Student	U. of Maine
Mr. Art Buddington	Marine Technician	U.R.I.
Mr. Mark Weishan	Marine Technician	U.R.I.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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-096
21 FEBRUARY - 28 MARCH
1971
ST. THOMAS V.I.
FORT DE FRANCE
MARTINIQUE, W.I.
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-097

Dates: 31 March - 19 April 1971 Area of Operation: Northwest Atlantic Ocean

Days at sea: 19

Funding: ONR

Program Description

The primary objectives of this cruise, in support of the Ocean Acre program, were:

a) to observe the faunal and temperature changes between Martinique and Bermuda

b) to collect crustaceans for chemical analysis in the area

c) to study eel larvae and sargassum weed

Data Collected

1) six XBTs were taken

2) nine hydrostations were made with phosphate and nitrate samples collected

3) 15 midwater trawls were taken

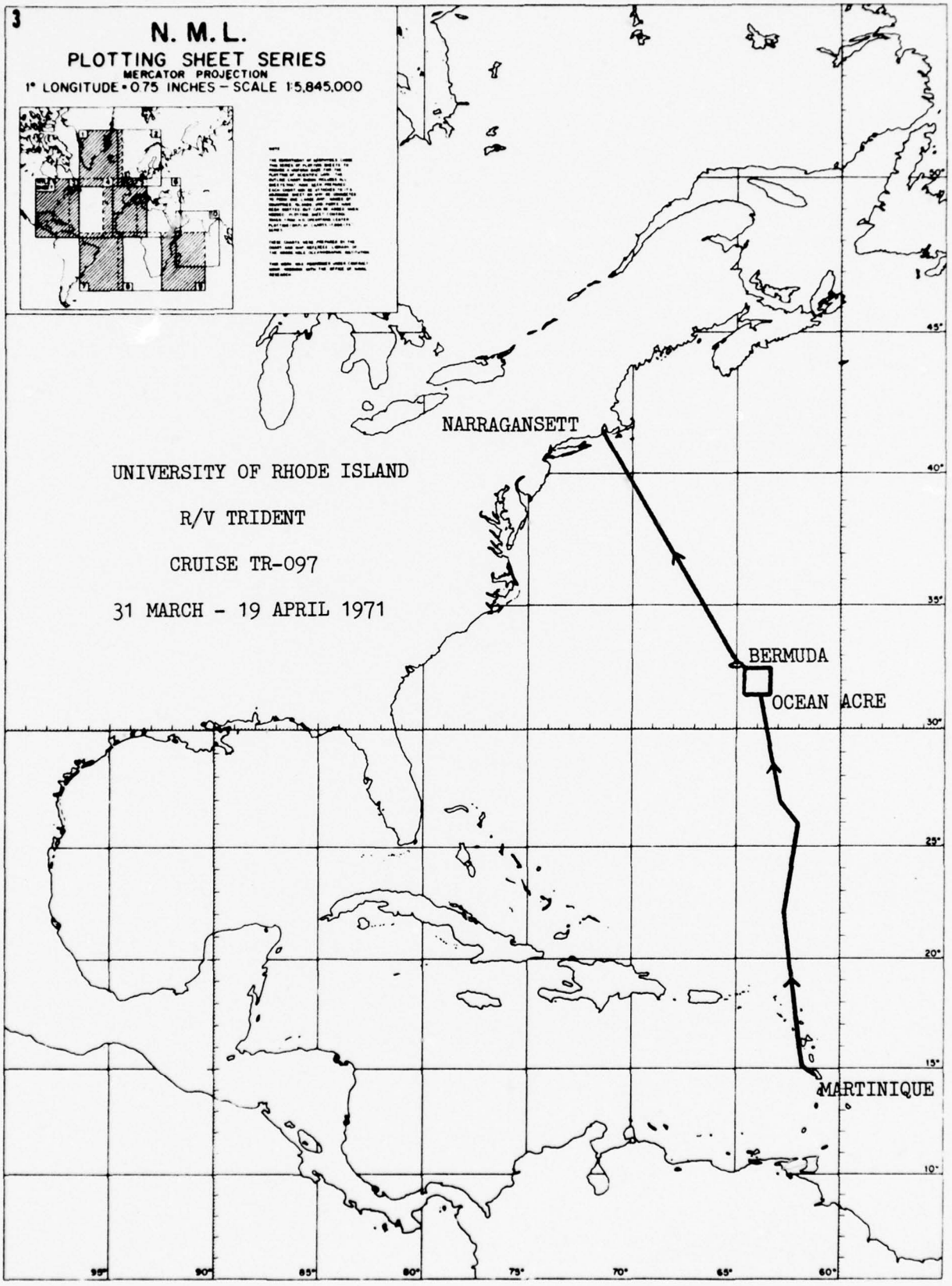
4) 39 phytoplankton tows were made

5) 19 zooplankton net tows were made

6) two sargassum weed areas were studied

Participants

Mr. Henry Donaldson	Chief Scientist	U.R.I.
Dr. Elijah Swift	Associate Professor	U.R.I.
Dr. Theodore J. Smayda	Professor	U.R.I.
Mr. Albert Brooks	Research Associate	NUSL
Mr. Charles Brown	Research Associate	NUSL
Mr. William Hahn	Marine Technician	U.R.I.
Mr. Mark Weishan	Marine Technician	U.R.I.
Mr. Ray Gerber	Graduate Student	U.R.I.
Mr. James Hain	Graduate Student	U.R.I.
Mr. Gary Hitchcock	Graduate Student	U.R.I.
Mr. Raja Seshadri	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-097
31 MARCH - 19 APRIL 1971
BERMUDA
OCEAN ACRE
MARTINIQUE
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-098

Dates: 5 May - 4 June 1971 Area of Operation: Northwest Atlantic Ocean

Days at sea: 31

Funding: ONR

Program Description

The main purposes of this cruise were:

a) to study the Gulf Stream deep and surface currents off Cape Hatteras by hydrographic measurements

b) obtain evidence of bottom transport by taking cores and bottom photographs

Data Collected

1) eight current meter moorings with three temperature sensors were deployed

2) 272 XBTs were taken

3) 67 GEK measurements were made

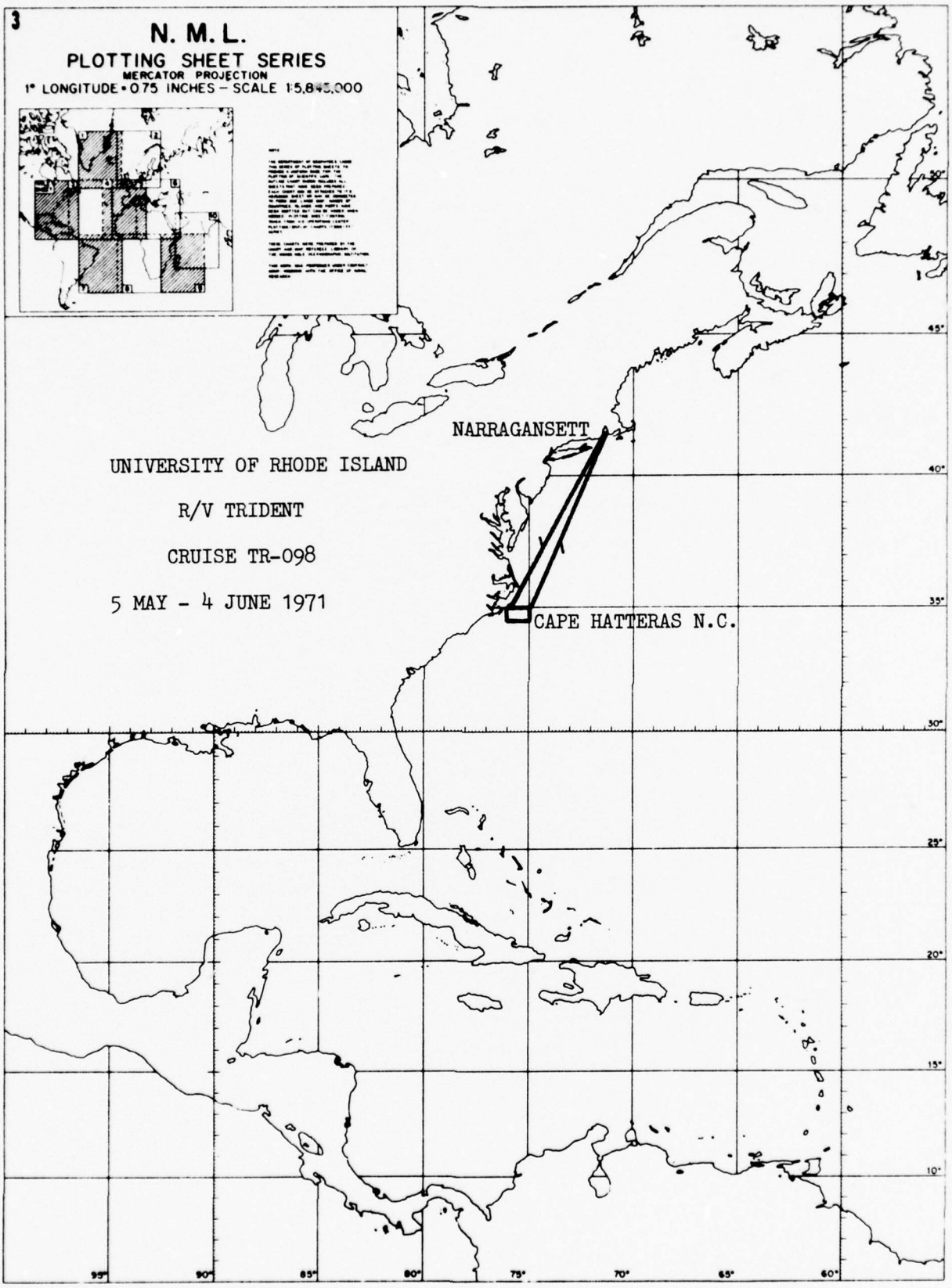
4) 51 hydrographic stations were taken

5) 11 cores were taken

6) 5 camera stations were occupied

Participants

Mr. Philip Richardson	Chief Scientist	URI
Dr. Herman Zimmerman	Asst. Professor	Union College
Mr. Philip Isaacson	Project Engineer	UNH
Mr. Philip Bedard	Electronics Engineer	URI
Mr. Roger Smith	Oceanographic Specialist	URI
Mr. William Hahn	Marine Technician	URI
Mr. Jeff Parker	Marine Technician	URI
Mr. James Sammons	Electronics Technician	URI
Ms. Frances Steinhilper	Marine Technician	URI
Mr. Peter Betzer	Graduate Student	URI
Mr. David Gray	Graduate Student	URI
Mr. Gregory Han	Graduate Student	Johns Hopkins Univ.
Mr. Philip Meyers	Graduate Student	URI
Mr. Pablo Frank	Student	Vermont
Ms. Mary Moore	Student	Tufts Univ.
Mr. Timothy Staley	Student	Narragansett, R. I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-098
5 MAY - 4 JUNE 1971
CAPE HATTERAS N.C.
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-099

Dates: 6 - 18 June 1971

Area of Operation: Continental Shelf from New Jersey to Rhode Island

Days at sea: 13

Funding: ONR

Program Description

The main objectives of this cruise were:

a) to perform a broad geologic and geophysical study of the Continental Shelf

b) to study the relationship of shelf morphology to the surface and subsurface sediments

c) to test the U.R.I. vibracorer

d) to collect trace metal samples in the water column, zooplankton and sediments for the National Marine Water Quality Laboratory

Data Collected

1) 1,320 n.m. of seismic reflection profiles were taken

2) 2,670 n.m. of bathymetry records were run

3) 26 cores taken (w/vibracorer and box corer, 13 each)

4) 15 grab samples

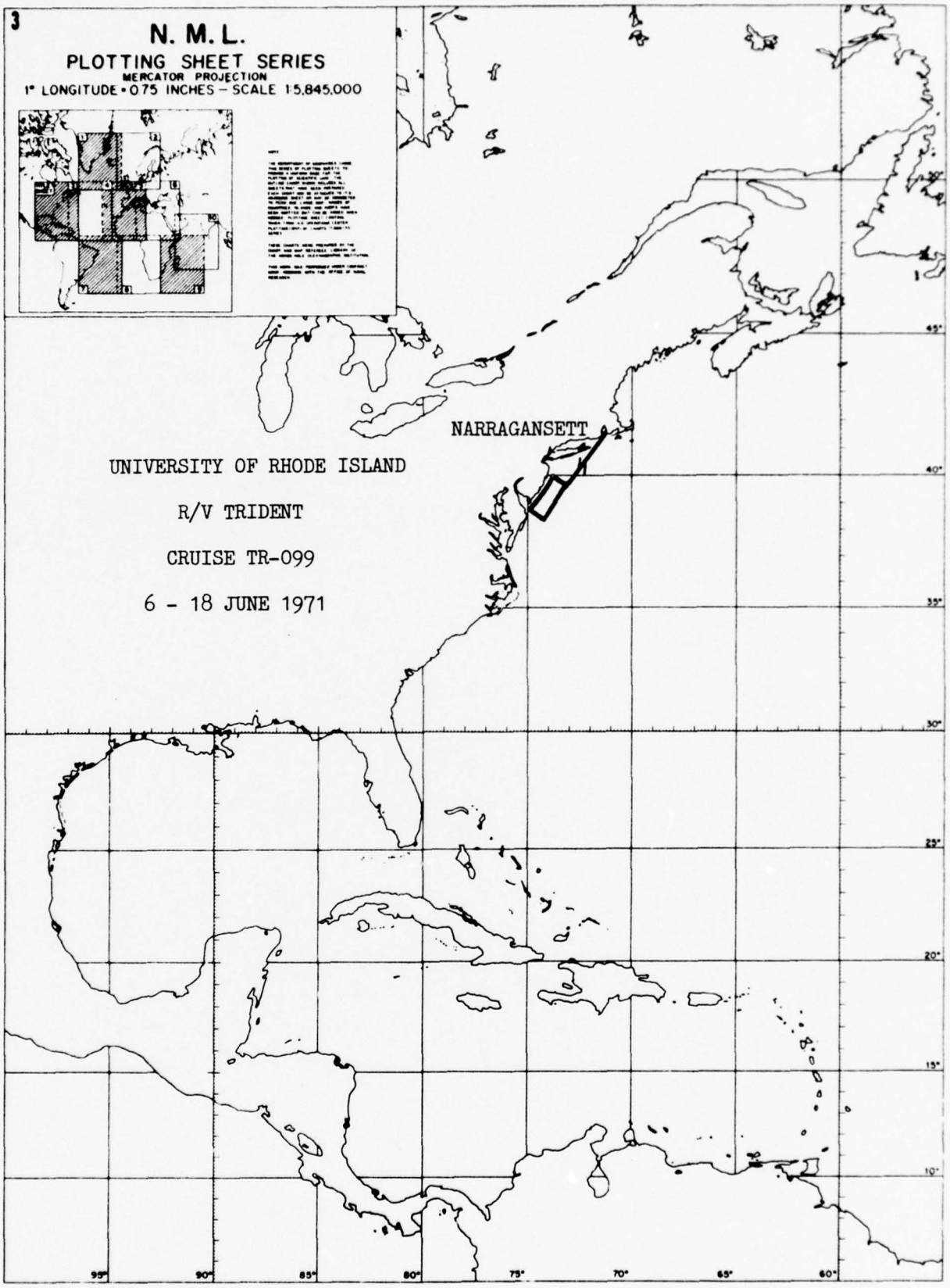
5) 13 camera stations

6) 10 hydrocasts made

7) three current meters deployed, two recovered, one lost

Participants

Mr. C. E. McClennen	Chief Scientist	U.R.I.
Dr. M. A. Hampton	Professor	U.R.I.
Mr. W. D. Davis	Research Assistant	NMWQL, Kingston, R. I.
Mr. R. Laplan	Research Assistant	NMWQL, Kingston, R. I.
Mr. A. B. Buddington	Marine Technician	U.R.I.
Mr. J. Parker	Marine Technician	U.R.I.
Mr. M. Weishan	Marine Technician	U.R.I.
Mr. D. L. Johnson	Graduate Student	U.R.I.
Mr. R. Pierce	Graduate Student	U.R.I.
Mr. J. W. Vogel	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 075 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-099
6 - 18 JUNE 1971
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-100

Dates: 26 June - 15 July 1971

Area of operation: North and Northwest Atlantic Ocean

Days at sea: 20

Funding: ONR

Program Description

The main objectives of this cruise were:

a) to study the Gibbs Fracture Zone with bathymetry, magnetics and seismic profiles

b) to take cores from the Flemish Cap to the Gibbs Fracture Zone

c) to take dredge stations on the southern section of the Reykjanes Ridge

Auxiliary objectives:

d) to study abyssal foraminifera in the Northwest Atlantic

e) to take rock dredges of the oceanic crust

Data Collected

1) 2,730 n.m. of bathymetry were taken

2) 2,730 n.m. of magnetics were run

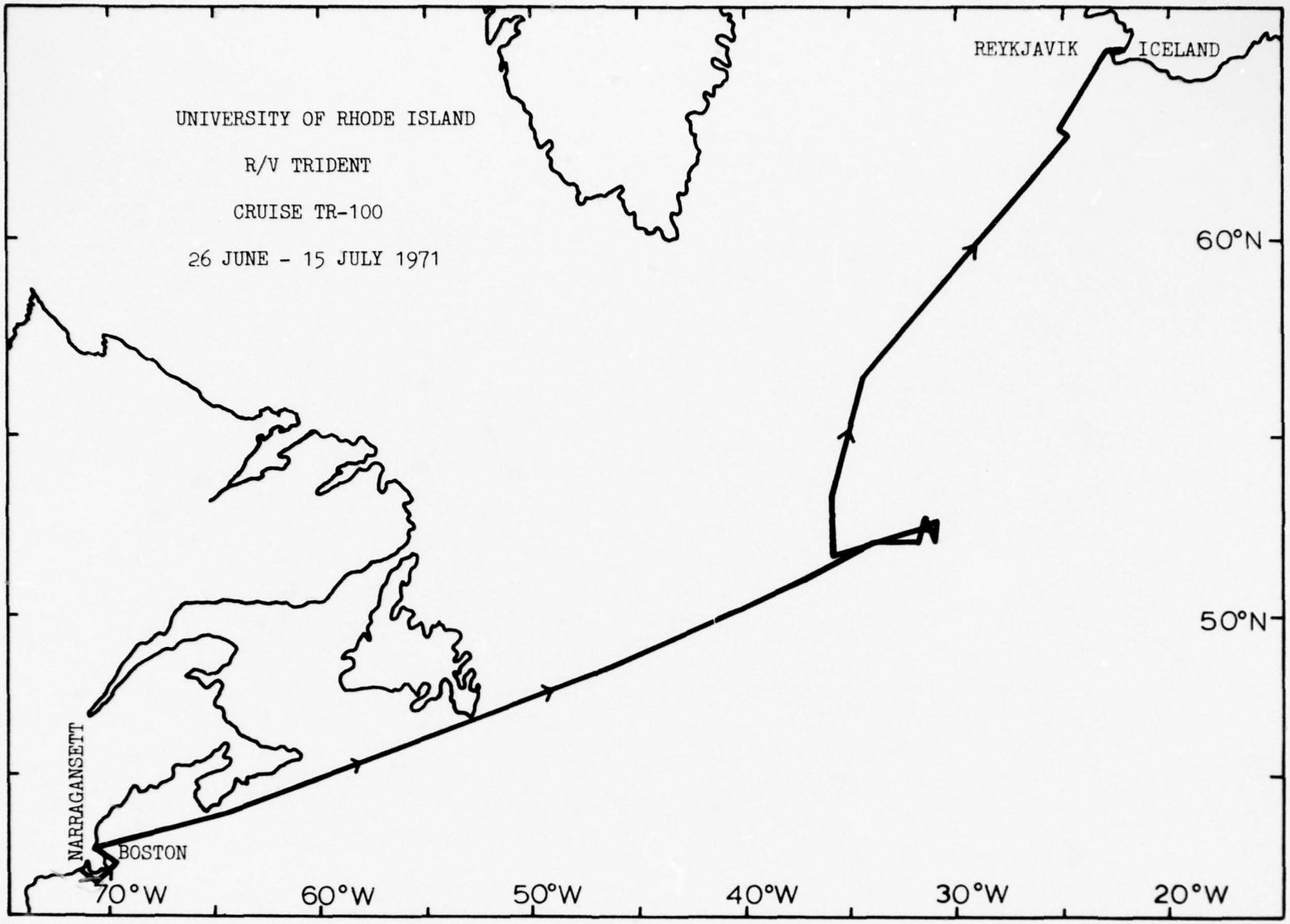
3) 108 n.m. of seismic reflection profiles

4) 12 cores were taken

5) seven dredges were recovered

Participants

Mr. David G. Johnson	Co-Chief Scientist	U.R.I.
Dr. Detmar Schnitker	Co-Chief Scientist	U. of Maine
Mr. Kip Barkley	Ocean Engineer	U.R.I.
Mr. James Cullen	Geologist	Wesleyan U.
Mr. Richard Plumb	Geophysicist	Wesleyan U.
Ms. Elsa Froberg	Graduate Student	U.R.I.
Mr. Thomas Johnston	Graduate Student	U.R.I.
Mr. Jeff Parker	Marine Technician	U.R.I.
Mr. Mark Weishan	Marine Technician	U.R.I.
Ms. Dorothy Hansen	Marine Technician	U.R.I.


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-100
26 JUNE - 15 JULY 1971
REYKJAVIK
ICELAND
60°N
50°N
NARRAGANSETT
BOSTON
70°W
60°W
50°W
40°W
30°W
20°W

Cruise No.: TR-101

Dates: 17 - 29 July 1971

Area of Operation: North Atlantic Ocean

Days at sea: 13

Funding: ONR

Program Description

The major objective of this cruise was to study the Reykjanes Ridge crest to the southeast tip of Iceland by:

a) a detailed rock sampling with extensive dredging

b) a marine geological/geophysical investigation of the ridge crest extension over the southeast Icelandic shelf

Data Collected

1) 1,500 n.m. of bathymetry and magnetic profiles were run

2) 645 n.m. of seismic reflection profiles were taken

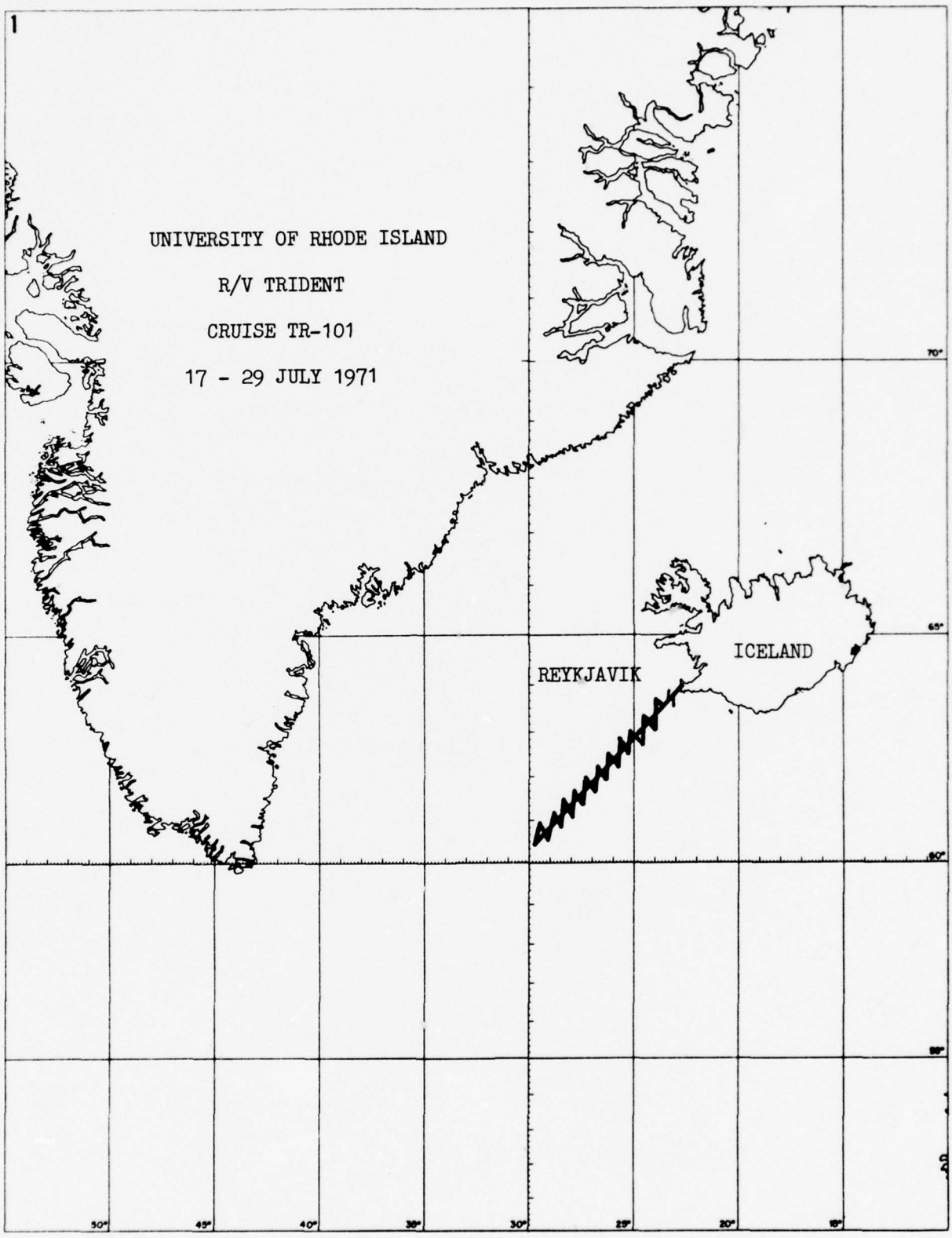
3) 30 dredges were recovered

4) two gravity cores were taken

5) three camera stations were occupied

Participants

Dr. Jean-Guy Schilling	Chief Scientist	U.R.I.
Dr. Yoshio Oji	Volcanologist	U.R.I./Japan
Dr. David Gottfried	Geochemist	U.S.G.S.
Mr. James Cullen	Geologist	Wesleyan U.
Mr. Richard Plumb	Geophysicist	Wesleyan U.
Mr. Sigurdur Steinthorsson	Geologist	Univ. of Iceland
Mr. Kip Barkley	Ocean Engineer	U.R.I.
Mr. Jeffrey Parker	Marine Technician	U.R.I.
Mr. Marc Weishan	Marine Technician	U.R.I.
Mr. Thomas H. Johnston	Graduate Student	U.R.I.
Ms. Diane Wolf	Graduate Student	U.R.I.
Ms. Dorothy Hansen	Technician	U.R.I.


1
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-101
17 - 29 JULY 1971
ICELAND
REYKJAVIK
70°
65°
60°
55°
50°
45°
40°
35°
30°
25°
20°
15°

Cruise No.: TR-102

Dates: 2 - 24 August 1971

Area of Operation: North and Northwest Atlantic Ocean

Days at sea: 21

Funding: ONR
NSF

Program Description

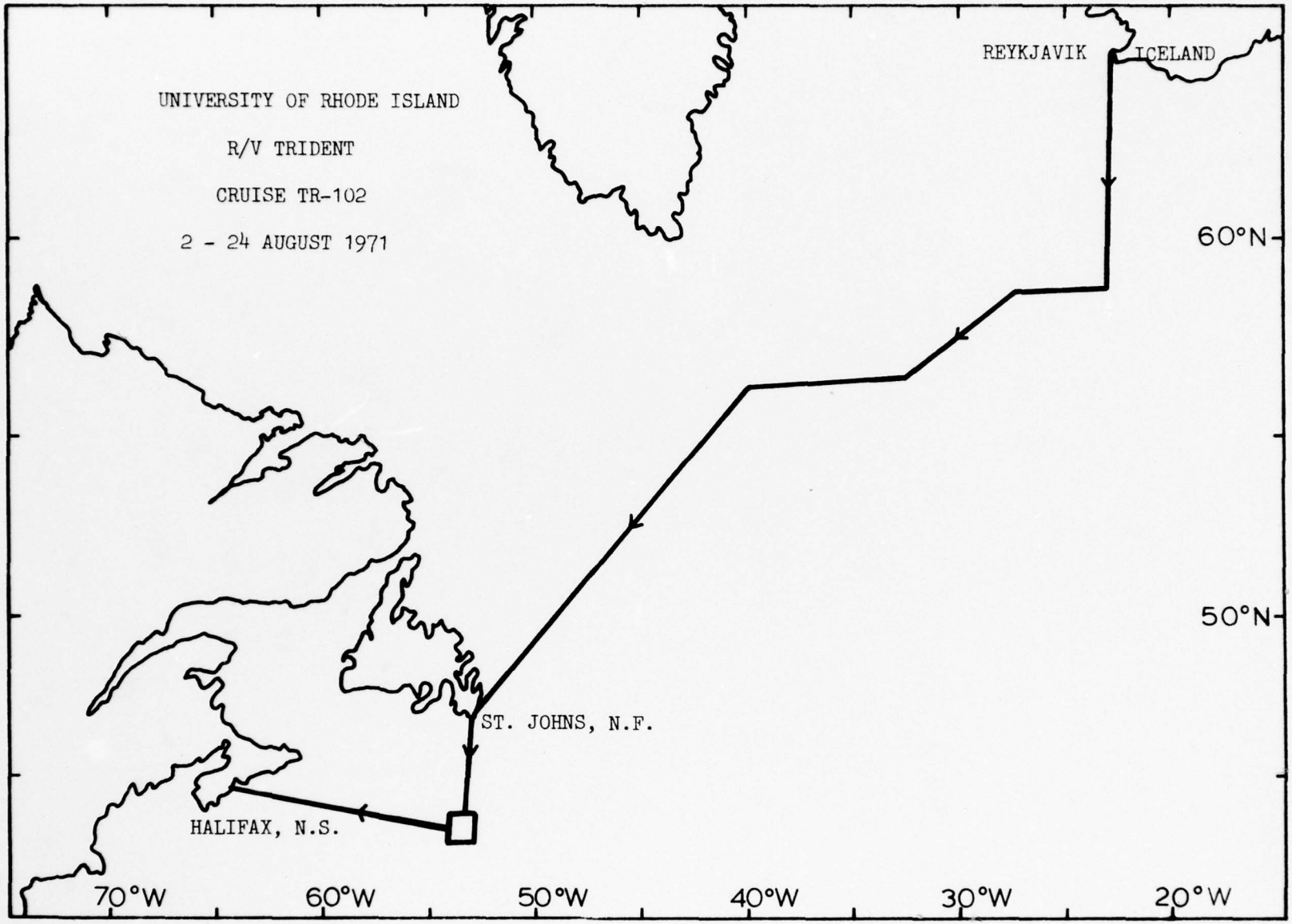
The NORDIC (Northern Oceanic Research on Deep and Interfacial Chemistry) sampling program included hydrographic, STD-O_2 and sound speed work. Sea surface film was also collected.

Data Collected

1) 25 hydrographic stations were occupied and water studied for temperature, salinity, O_2, fluoride, iron and silicates
2) 32 STD O_2 and sound speed stations were occupied
3) 27 XBTs were taken
4) eight sea surface film samples were collected
5) atmospheric particulate matter was sampled continuously

Participants

Dr. Dana R. Kester	Chief Scientist	U.R.I.
Dr. Donald N. Connors	Co-Investigator	NUSC, Newport
Dr. Gerald Hoffman	Co-Investigator	U.R.I.
Dr. Kern E. Kenyon	Co-Investigator	U.R.I.
Dr. Michael E. Q. Pilson	Co-Investigator	U.R.I.
Mr. Kimball Crocker	Oceanographer	NUSC, Newport
Mr. Robert H. Byrne	Research Associate	U.R.I.
Mr. Ken Johnson	Research Associate	U.R.I.
Mr. Gerard Miller	Research Associate	U.R.I.
Mr. Kenneth Mooney	Research Associate	U.R.I.
Mr. David Schultz	Research Associate	U.R.I.
Mr. William Hahn	Sr. Oceanographic Technician	U.R.I.
Ms. Frances Steinhilper	Oceanographic Technician II	U.R.I.


UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-102
2 - 24 AUGUST 1971
REYKJAVIK
ICELAND
60°N
50°N
ST. JOHNS, N.F.
HALIFAX, N.S.
70°W
60°W
50°W
40°W
30°W
20°W

Cruise No.: TR-103

Dates: 26 August - 8 September 1971 Area of Operation: North and Northwest Atlantic Ocean

Days at sea: 14

Funding: ONR

Program Description

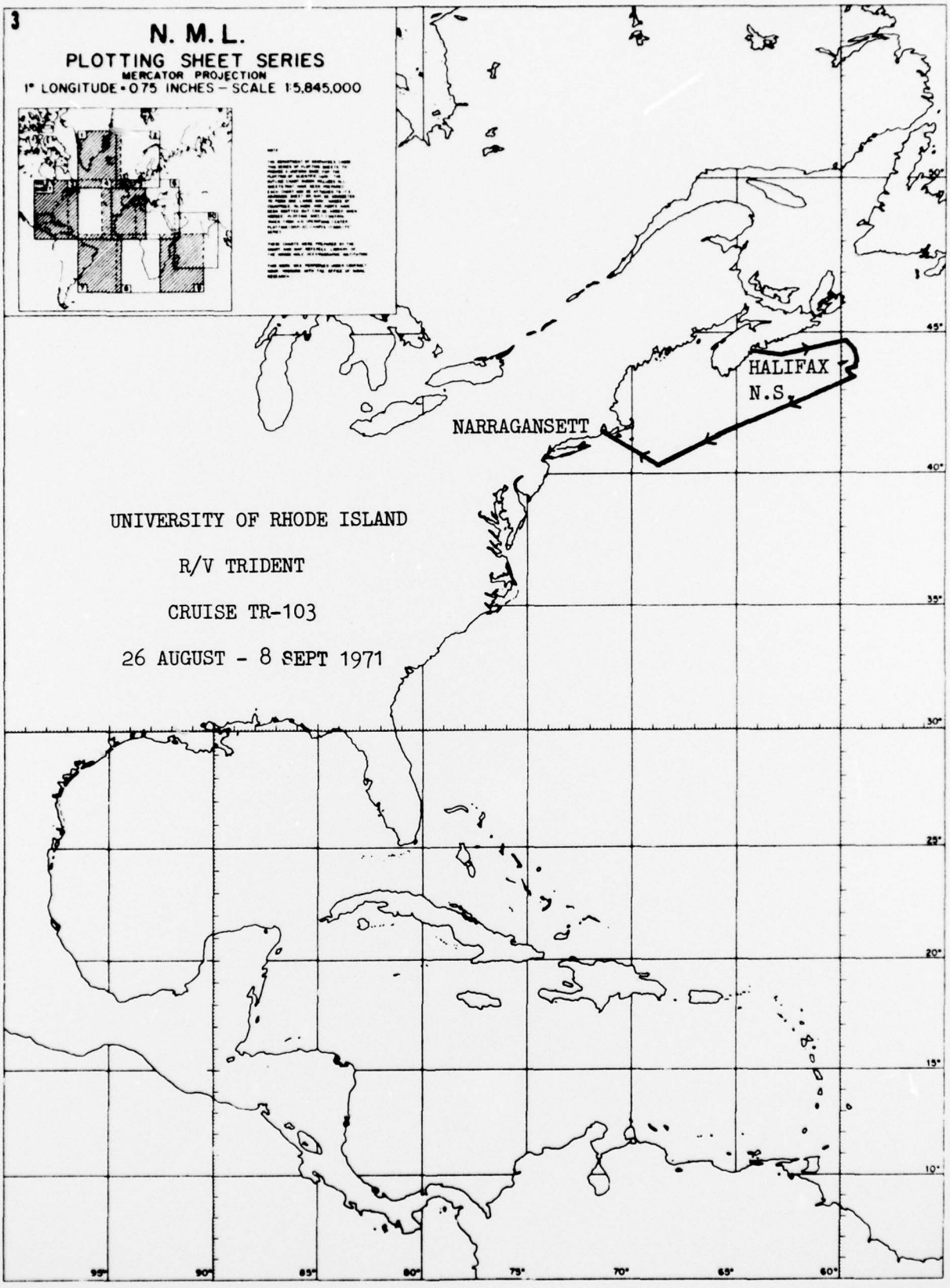
The main objectives of this cruise were to continue whale and porpoise studies by transmitting and recording underwater sounds. A secondary study of locating and recording killer and sperm whales was undertaken.

Data Collected

1) 30 hours of underwater sound recordings were made
2) continuous daylight whale and wildlife observations were made
3) sea surface temperature was recorded continuously
4) eight XBTs were taken

Participants

Dr. Howard E. Winn	Chief Scientist	U.R.I.
Mr. Paul Perkins	Oceanographic Specialist	U.R.I.
Ms. Lois Winn	Special Assistant	U.R.I.
Mr. Richard Edel	Research Assistant	U.R.I.
Mr. Martin Hyman	Research Assistant	U.R.I.
Mr. Jack Schneider	Research Assistant	U.R.I.
Mr. Algis Taruski	Research Assistant	U.R.I.
Mr. Herbert Hays	Graduate Assistant	W. Virginia Univ.
Mr. Louis Rigley	Graduate Assistant	W. Virginia Univ.
Mr. William Hahn	Marine Technician	U.R.I.
Mr. James Griffin	Graduate Student	U.R.I.
Ms. Patricia Taruski	Graduate Student	U.R.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE • 075 INCHES – SCALE 1:5,845,000
HALIFAX
N.S.
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-103
26 AUGUST - 8 SEPT 1971
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-104

Dates: 17 October - 2 November 1971 Area of Operation: Northwest Atlantic Ocean

Days at sea: 17

Funding: ONR
NSF

Program Description

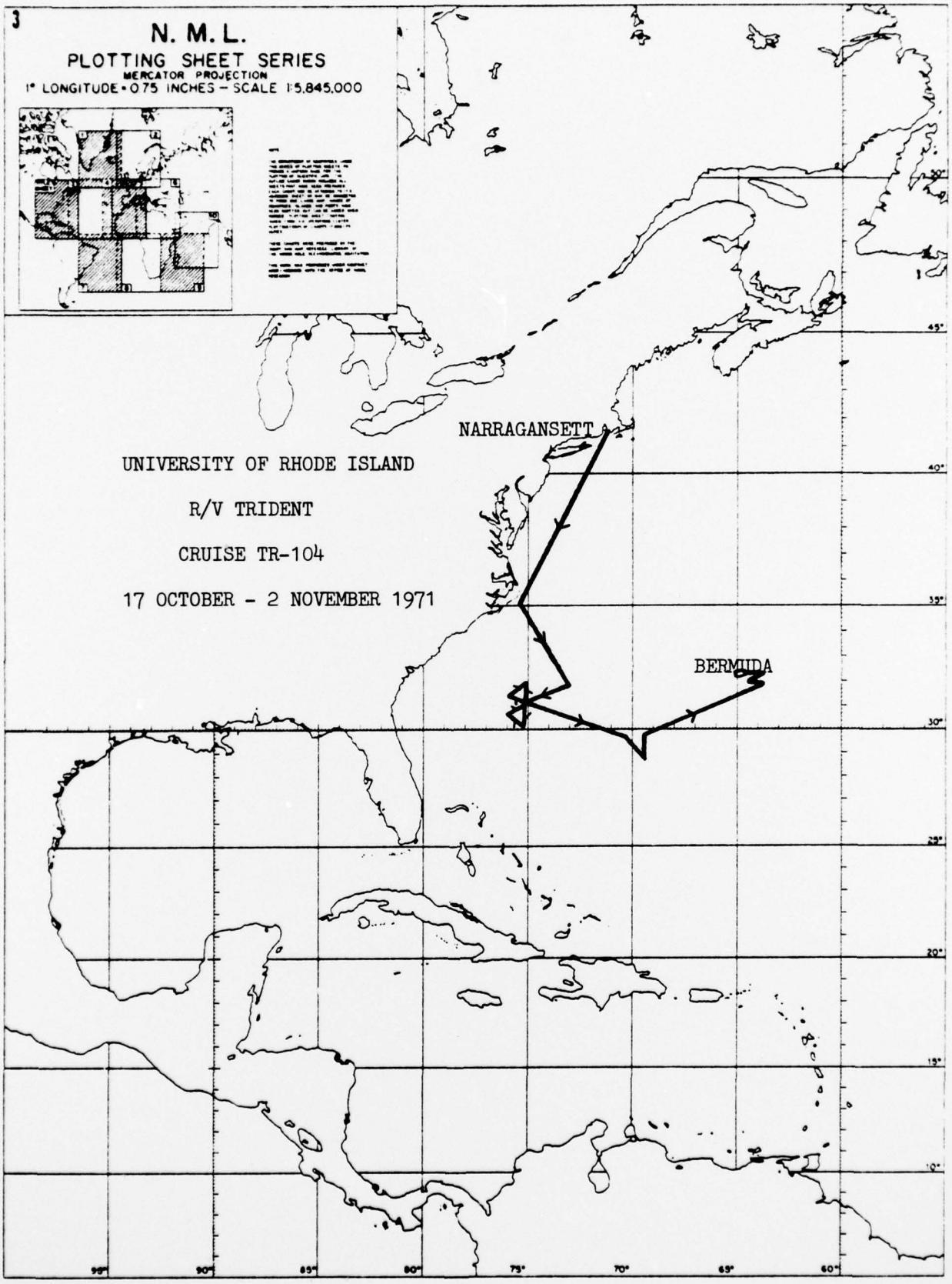
The main purpose of this cruise was to obtain STD-O_2 profiles in the Northwest Atlantic. A cold-core eddy was tracked and current meter arrays were deployed for the pre-MODE (Mid-Ocean Dynamics Experiment) program. Secondary studies of arsenate, isotopes and sargassum biology were made.

Data Collected

1) 27 STD-O_2 stations were made
2) 77 XBTs were taken
3) eight hydrographic stations were occupied
4) eight arsenate, arsenite-arsenic stations were taken
5) three current meter arrays were deployed
6) 195 sargassum studies were made
7) seismic profiling equipment was tested

Participants

Dr. Richard B. Lambert, Jr.	Chief Scientist	U.R.I.
Mr. David L. Johnson	Co-Investigator	U.R.I.
Dr. Stuart Kupferman	Co-Investigator	Univ. of Delaware
Mr. Philip L. Richardson	Co-Investigator	U.R.I.
Dr. Theodore J. Smayda	Co-Investigator	U.R.I.
Mr. Philip Bedard	Electronics Engineer	U.R.I.
Mr. Gary Hitchcock	Research Assistant	U.R.I.
Mr. Carmelo Tomas	Research Assistant	U.R.I.
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Mark Weishan	Marine Technician	U.R.I.
Mr. Edward Weitzner	Marine Technician	U.R.I.
Mr. James Sammons	Electronics Technician	U.R.I.
Ms. Frances Steinhilper	Research Technician	U.R.I.
Mr. Laurence Murphy	Research Technician	Univ. of Delaware
Ms. D. Hansen	Assistant	Narragansett
Mr. Timothy Staley	Assistant	Saunderstown


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
NARRAGANSETT
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-104
17 OCTOBER - 2 NOVEMBER 1971
BERMUDA
45°
40°
35°
30°
25°
20°
15°
10°
95°
90°
85°
80°
75°
70°
65°
60°

Cruise No.: TR-105

Dates: 4 - 20 November 1971

Area of Operation: Northwest Atlantic Ocean

Days at sea: 17

Funding: NSF

Program Description

The main purpose of this cruise was a study of the applicability of density measurements and geostrophic current calculations to mesoscale, short-term water motion in the deep ocean. Current meter arrays are being maintained in the same area for intercomparison.

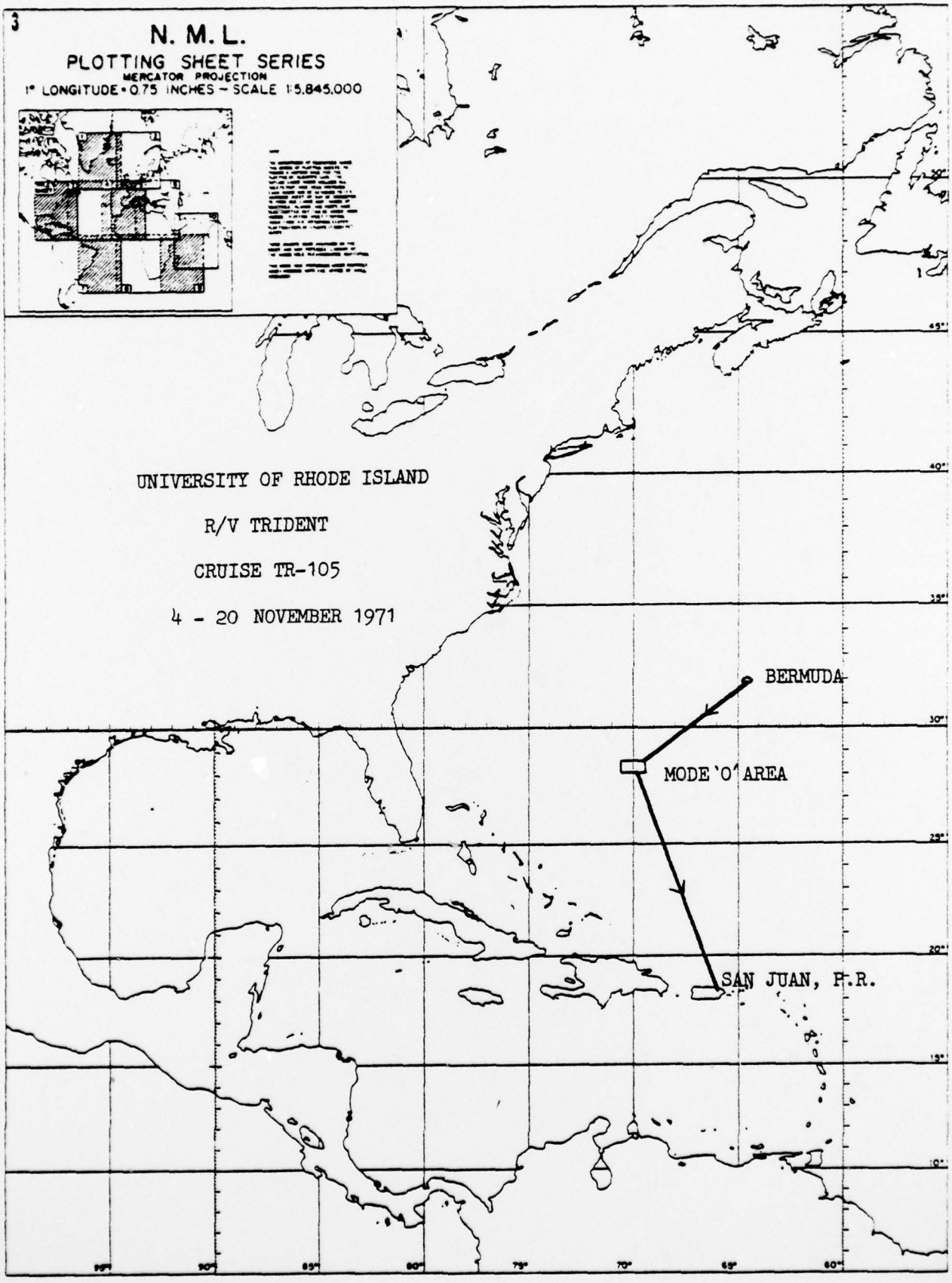
Data Collected

1) 51 STD stations were made

2) three hydrographic stations were occupied

Participants

Dr. Richard Scarlet	Chief Scientist	M.I.T.
Dr. Ants Leetmaa	Scientist	M.I.T.
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Edward Weitzner	Marine Technician	U.R.I.
Mr. Jack Lucas	Marine Technician	S.I.O.
Mr. David Nergaard	Marine Technician	M.I.T.
Mr. William Ackerman	Student	M.I.T.
Ms. Barbara Altenburg	Student	M.I.T.
Mr. James Broda	Student	W.H.O.I.
Ms. Adela Hadiwono	Student	M.I.T.
Mr. Alfred Picardi	Student	M.I.T.
Mr. Stephen Poole	Student	M.I.T.
Ms. Dorothy Hansen	Assistant	W.H.O.I.


3
N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-105
4 - 20 NOVEMBER 1971
BERMUDA
MODE 'O' AREA
SAN JUAN, P.R.

Cruise No.: TR-106

Dates: 23 - 30 November 1971 Area of Operation: Caribbean Sea

Days at sea: 8

Funding: ONR
NSF

Program Description

The main purpose of this cruise was to study the physical structure of the water in the passages north and south of St. Croix, V. I.

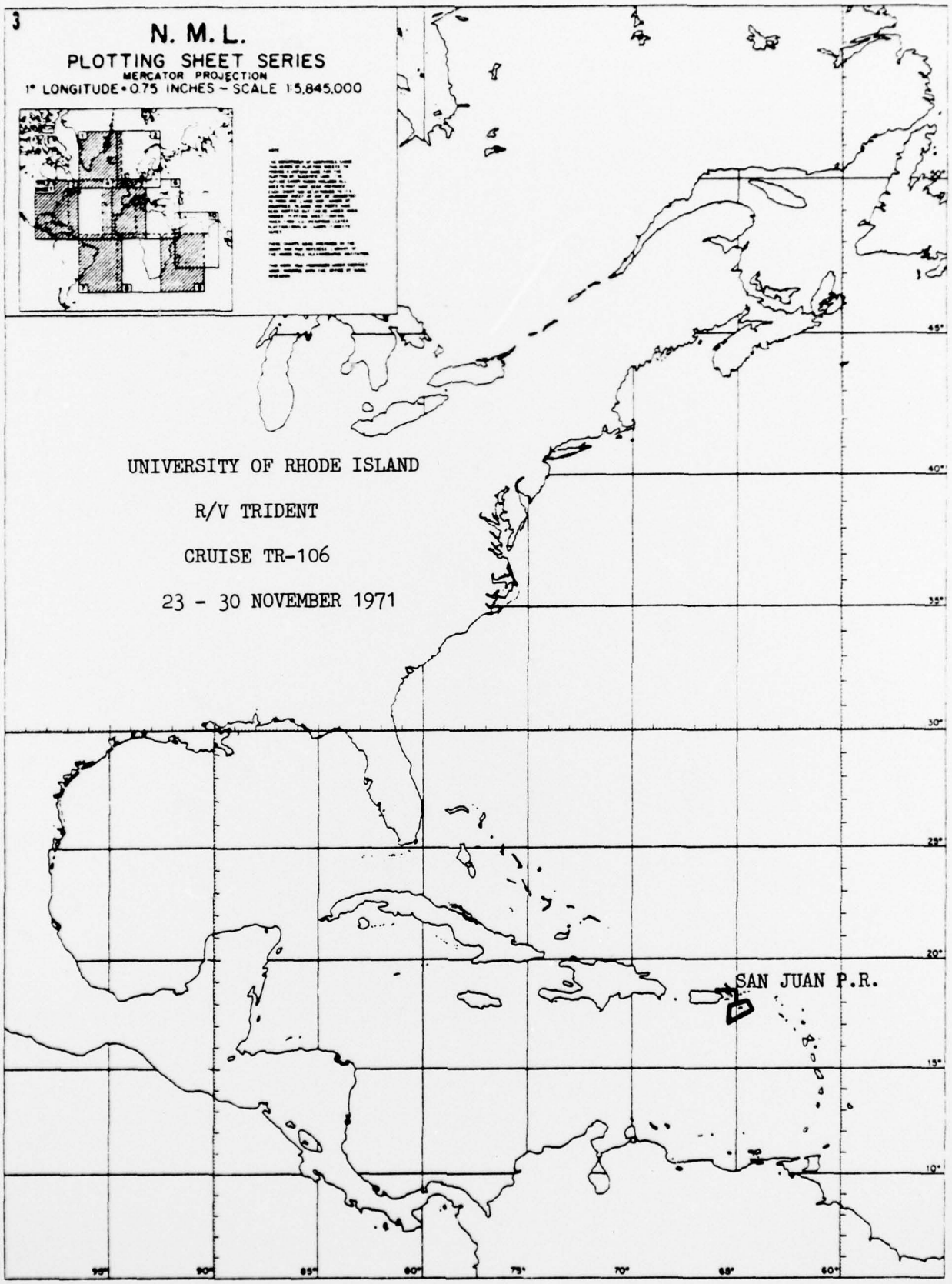
Data Collected

1) 32 STD stations were occupied

2) 23 XBTs were taken

Participants

Dr. Richard B. Lambert, Jr.	Chief Scientist	U.R.I.
Dr. S. V. Letcher	Physicist	U.R.I.
Dr. Kim D. Saunders	Oceanographer	M.I.T.
Mrs. Barbara B. Saunders	Chemist	Harvard
Mr. Kimball Crocker	Oceanographer	NUSC, Newport
Mr. John Timar	Ocean Engineer	Univ. of Massachusetts
Mr. R. Cheney	Research Assistant	U.R.I.
Mr. David Evans	Research Assistant	U.R.I.
Mr. Paul Temple	Research Assistant	U.R.I.
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Edward Weitzner	Marine Technician	U.R.I.
Mr. John Harvey	Technician	LDGO
Mr. Julian Hillegas	Technician	LDGO
Mrs. D. Hansen	Assistant	Narragansett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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-106
23 - 30 NOVEMBER 1971
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Cruise No.: TR-107

Dates: 4 - 15 December 1971

Area of Operation: Northwest Atlantic Ocean

Days at sea: 12

Funding: NSF

Program Description

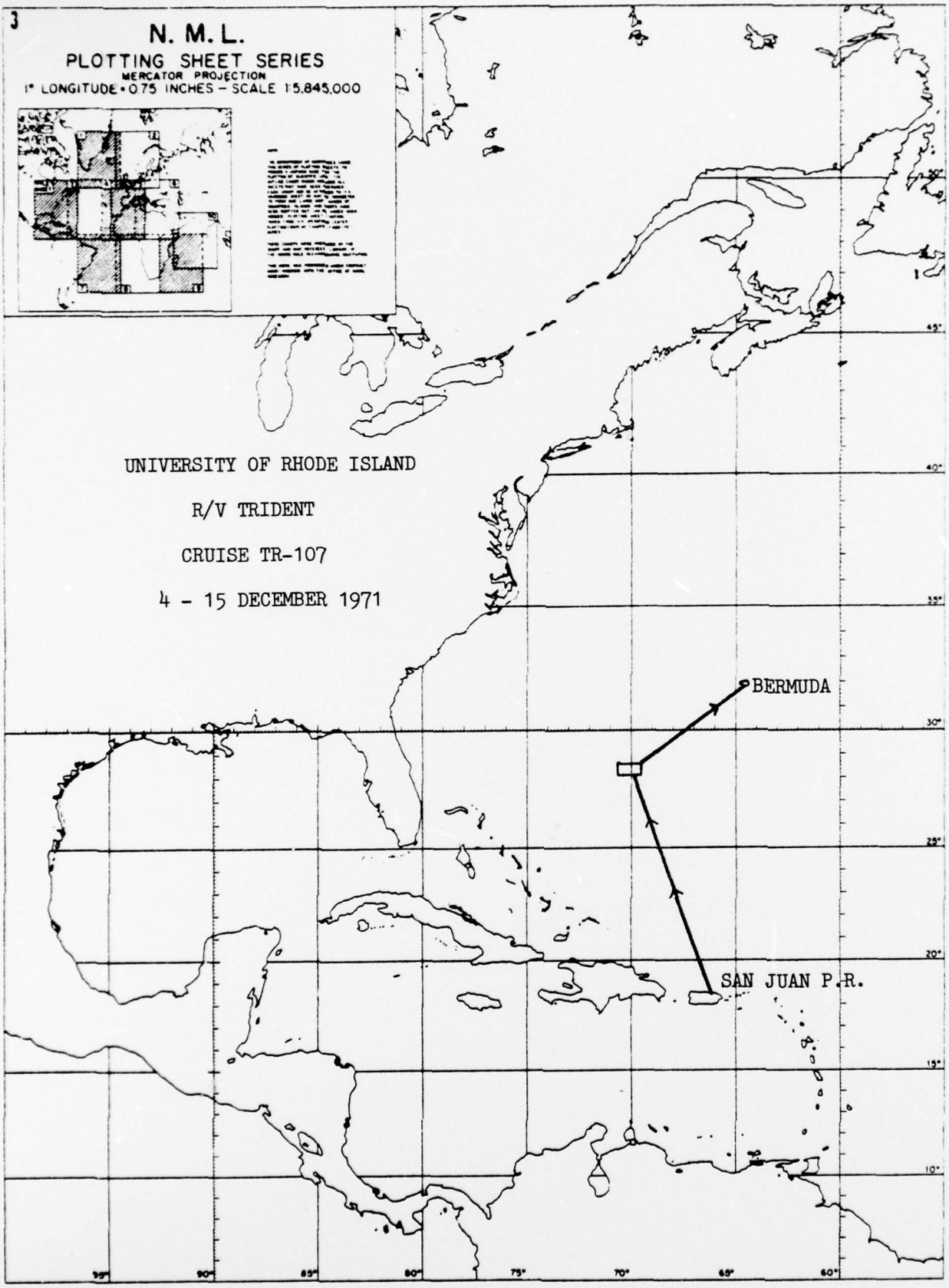
The main purpose of this cruise was a study of the applicability of density measurements and geostrophic current calculations to mesoscale, short-term water motion in the deep ocean. Current meter arrays are being maintained in the same area for intercomparison.

Data Collected

1) 55 CSTD stations were occupied

Participants

Dr. Richard Scarlet	Chief Scientist	M.I.T.
Dr. James McWilliams	Scientist	Harvard
Mr. Arthur Buddington	Marine Technician	U.R.I.
Mr. Edward Weitzner	Marine Technician	U.R.I.
Mr. Jack Lucas	Marine Technician	S.I.O.
Mr. David Nergaard	Marine Technician	M.I.T.
Ms. Lee Dantzler	Student	Johns Hopkins
Ms. Dorothy Hansen	Student	W.H.O.I.
Mr. John Lockwood	Student	W.H.O.I.
Mr. Peter Smith	Student	Nova University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N. M. L.
PLOTTING SHEET SERIES
MERCATOR PROJECTION
1° LONGITUDE = 0.75 INCHES – SCALE 1:5,845,000
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-107
4 - 15 DECEMBER 1971
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Cruise No.: TR-108

Dates: 17 - 22 December 1971

Area of Operation: Northwest Atlantic Ocean

Days at sea: 6

Funding: ONR

Program Description

An attempt was made to study Gulf Stream eddies, but several storms reduced over-the-side work to the use of XBTs and net tows.

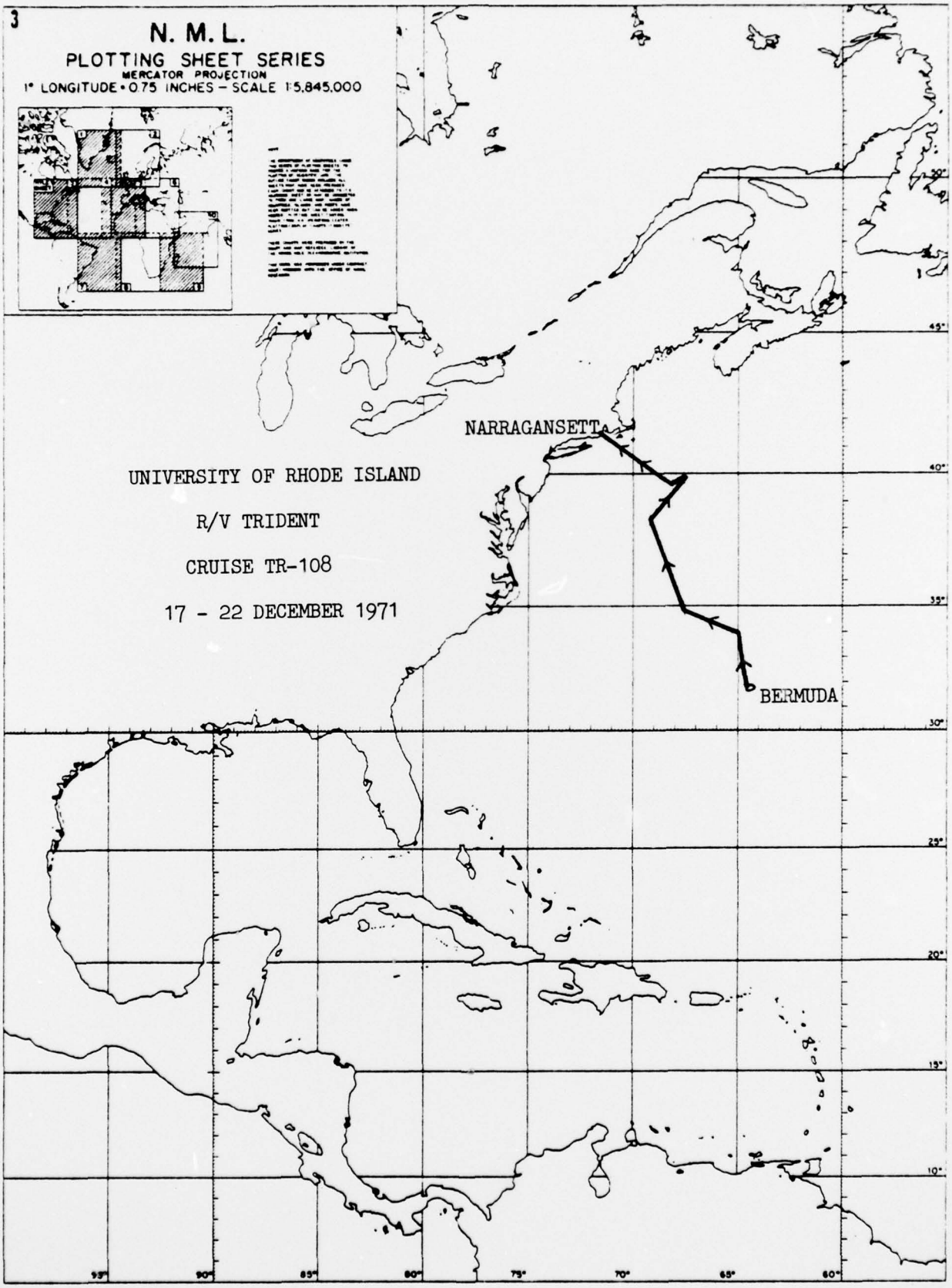
Data Collected

1) 62 XBTs were taken across the Gulf Stream

2) two net tow stations were made

Participants

Dr. Dana R. Kester	Chief Scientist	U.R.I.
Dr. Michael E. Q. Pilson	Co-Investigator	U.R.I.
Dr. Richard Lambert, Jr.	Co-Investigator	U.R.I.
Mr. James F. Holzgraf	Research Technician	U.R.I.
Mr. Edward Weitzner	Marine Technician	U.R.I.
Mr. Elanijikal Chacko	Student	Univ. of Massachusetts
Mr. Carl Fonteneau	Student	U.R.I.
Mr. Kevin Kelly	Former Student	U.R.I.
Mr. John Patton	Student	U.R.I.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NARRAGANSETT
BERMUDA
UNIVERSITY OF RHODE ISLAND
R/V TRIDENT
CRUISE TR-108
17 - 22 DECEMBER 1971
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