CRUISE REPORT

File-

SHIP UTILIZATION DATA

UNOLS
REV. 5/76

SHIP NAME OCEANUS	OPERATING INST. W.H.O.I.	PARTICIPATING PERSONNEL
CRUISE (LEG) NO. 13 Leg III	DATES 13 Aug - 23 Aug 1976	
AREA OF OPERATIONS: North Atlantic Ocean (Woods Hole-Woods Hole)	PORT CALLS: PLACE / DATES	
DAYS AT SEA 11 / DAYS IN PORT 0		

CODE	NAME	TITLE	AFFILIATION
1.	Dr. Robert C. Beardsley	Assoc. Scientist	WHOI
2.	Dr. David Folger	Geologist	USGS
3.	Ms. Marline Noble	Physicist	"
4.	Dr. John Milliman	Assoc. Scientist	WHOI
5.	Ms. Carol Parmenter	Research Asst.	"
6.	Mr. Frederick Faller	Guest Student	"
7.	Dr. Bradford Butman	Oceanographer	USGS

(13 Aug - 23 Aug 76)

PRIMARY PROJECTS (those which govern the principal operations, area and movements of the ship)

PROJECT TITLE AND PRINCIPAL INVESTIGATOR	SPONSORING ACTIVITY	GRANT OR CONTRACT NUMBER	PARTICIPATING PERSONNEL (AS CODED ABOVE)
"USGS Sediment Dynamics" Dr. Bradford Butman	USGS	14-08-0001-15615 USGS	1, 4, 5, 6, 8, 11 2, 3, 7, 9, 10, 12

ANCILLARY PROJECTS (which are accomplished on a not-to-interfere basis and contribute to the overall effectiveness of the cruise)

PROJECT TITLE AND PRINCIPAL INVESTIGATOR	SPONSORING ACTIVITY	GRANT OR CONTRACT NUMBER	PARTICIPATING PERSONNEL (AS CODED ABOVE)
"Physical Oceanography of the Outer Mid-Atlantic Bight" Dr. Robert C. Beardsley	NSF	OCE76-01813	1, 8

SIGNATURE Robert C Beardsley DATE 11/22/76
CHIEF SCIENTIST - Robert C. Beardsley

(Continue personnel and project listings on reverse if additional space needed)

ATTACH PAGE SIZE CRUISE TRACK

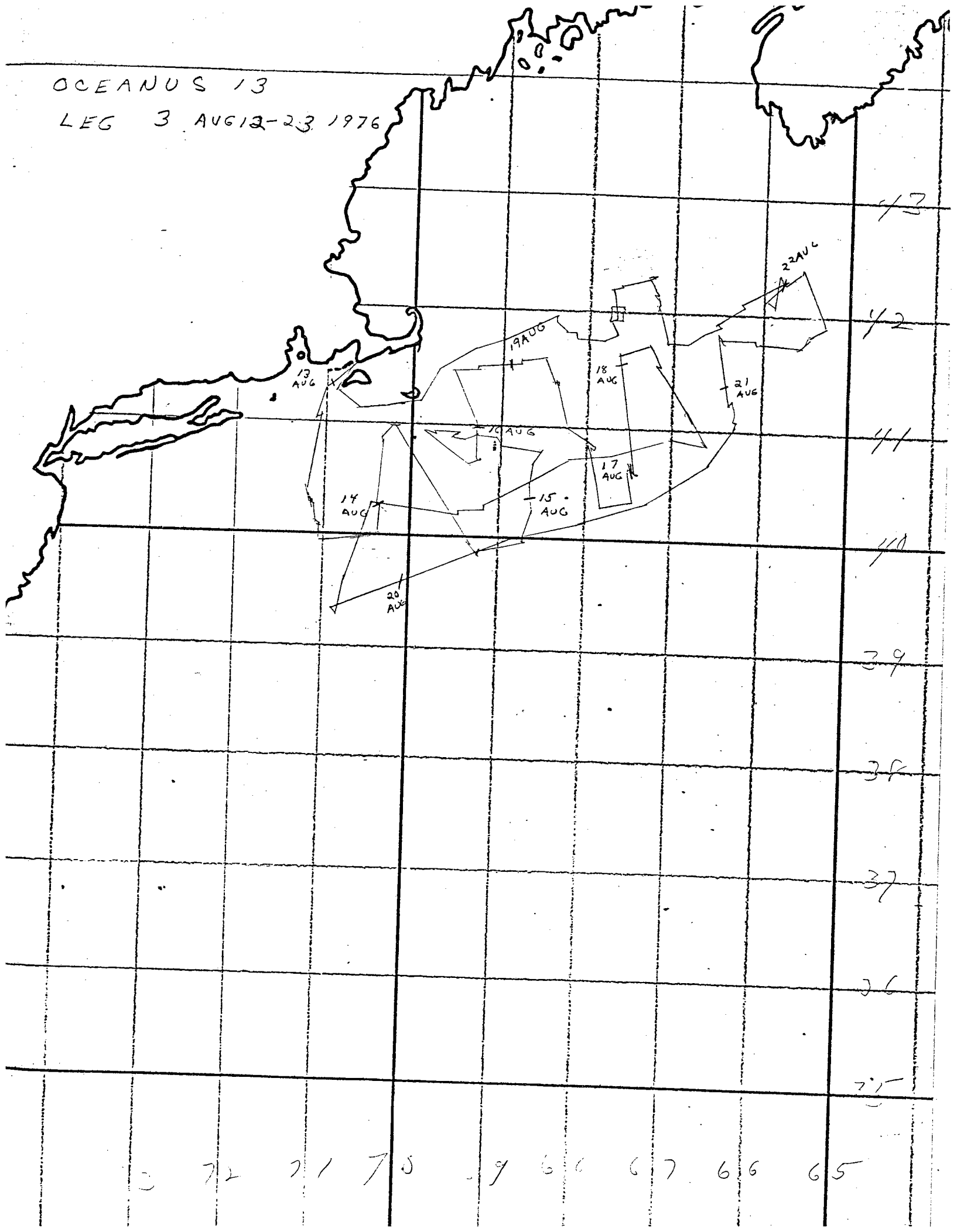
COST ALLOCATION DATA

DAYS CHARGED	AGENCY OR ACTIVITY CHARGED	GRANT OR CONTRACT NO.
2	National Science Foundation	OCE76-00062
9	U.S. Geological Survey	14-08-0001-15615

SIGNATURE R. P. Dinsmore DATE Nov. 29, 1976
Institution Official - R. P. Dinsmore

8. Mr. John Vermersch	Research Associate	WHOI
9. Mr. Andrew Eliason	Technical Representative	Eliason Data Services, Falmouth
10. Dr. Michael Bothner	Geologist	USGS
11. Mr. Richard Limeburner	Graduate Student	*WHOI/MIT JP
12. Mr. Randy Fabro	Physical Science Technician	USGS

*Woods Hole Oceanographic Institution/Massachusetts Institute of Technology Joint Program


OCEANUS 13
LEG 3 AUG 12-23 1976
13 AUG
14 AUG
15 AUG
16 AUG
17 AUG
18 AUG
19 AUG
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21 AUG
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WOODS HOLE OCEANOGRAPHIC INSTITUTION
WOODS HOLE, MASSACHUSETTS 02543

Phone (617) 548-1400
TWX 710-346-6601

4 August 1976

Captain Michael Palmieri
Research Vessel OCEANUS
Woods Hole, Massachusetts

Dear Captain Palmieri:

On or about 6 August 1976, your vessel being ready for sea and weather permitting, you will depart Woods Hole on Voyage #13. This voyage will consist of four legs, all of which will commence and terminate in Woods Hole. The scientific personnel and program for the four legs will be:

Leg I
6 August

Dr. Carl Wunsch, Chief Scientist (MIT)
Mr. John Shillingford (Draper Lab)
Mr. Colin J. Dahlen (Draper Lab)
Mr. Edward Scioli (Draper Lab)
Dr. Robert C. Beardsley
Mr. John Calman (MIT)
Mr. Robert W. Reid (Draper Lab)
Mr. Charles Eriksen
~~Mr. John Vermersch~~
Ms. Elizabeth Stommel

Leg II
7 August - 11 August

Dr. Robert C. Beardsley, Chief Scientist
Mr. Keith Bradley
Mr. Ed LaCoursiere
Mr. Patrick O'Malley
Ms. Kathleen Daly
Mr. Eric Swenson
Mr. John Vermersch
Mr. Wendell Brown
Mr. William Ostrom
Ms. Jennifer Traschen
Ms. Leigh Stoecker

Leg III 25
12 August - ~~24~~ August

Dr. Robert C. Beardsley, Chief Scientist
Mr. Dave Folger, Chief Scientist (USGS)
Ms. Marlene Noble (USGS)
Mr. John Milliman
Ms. Carol Parmenter
Mr. Frederick Faller (MIT)
Mr. Bradford Butman, Chief Scientist (USGS)
Mr. John Vermersch
Mr. Andrew Eliason (USGS)
Mr. Michael Bothner (USGS)
Mr. Richard Limeburner
Mr. Randy Fabro (USGS)

26 Leg IV 27
~~25~~ August - ~~26~~ August

~~Dr. Carl Wunsch, Chief Scientist (MIT)~~
Mr. John Shillingford (Draper Lab) CS
Mr. Colin J. Dahlen (Draper Lab)
Mr. Edward Scioli (Draper Lab)
Dr. Robert C. Beardsley
~~Laurence Armi~~
Dean Roemmich
~~Nancy Gray~~
Mr. John Calman (MIT)
Mr. Robert W. Reid (Draper Lab)
~~Mr. Charles Eriksen~~
Mr. John Vermersch
Gordon Brown (MIT)
~~Michael Champ~~
Bradford Butman
John Pike

OCEANUS

The scientific program for Leg I will be the deployment of the Draper Lab M.S.A. instrument.

The purpose of Leg II will be the recovery of moorings at Sites NE1, NE2W, NE3A, 3B, 3E, 4 and 5.

The program for Leg III will consist of hydrography, suspended sediment analysis and USGS mooring operations.

Leg IV will entail the recovery of WHOI Shelf/Slope moorings and the Draper Lab M.S.A. instrument.

Please advise the Port Office of any changes in personnel prior to departure Woods Hole, maintain twice daily SSB schedules with KXC713 on assigned frequencies and forward twice weekly position reports.

I wish you a pleasant and successful voyage.

Yours very truly,

Carl Wunsch
Chief Scientist
Leg I & Leg IV

Robert Beardsley
Chief Scientist
Leg II & Leg III

Bradford Butman
Chief Scientist
Leg III

David Folger
Chief Scientist
Leg III

Michael Palmieri
Master/R.V. OCEANUS

R.S. Edwards
Marine Superintendent

FORM APPROVED: OMB NO. 41-R2765 – EXPIRES : 12-31-79

NOAA FORM 24-23
(1-76)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
ENVIRONMENTAL DATA SERVICE
NATIONAL OCEANOGRAPHIC DATA CENTER

A00 DATA CENTER

A40 REFERENCE NUMBER

OCEANOGRAPHY – GENERAL CRUISE INVENTORY
(ROSCOP – II)

1 EXPEDITION/PROJECT

A11 CRUISE NUMBER OR NAME: 13 LEG 3

A02 SHIP OR PLATFORM: R/V OCEANUS

A12 PLATFORM TYPE: 01

	YES	NO	PART	
A91 Declared national program?		✓		
A81 Exchange restricted?		✓		
A92 Co-operative program?		✓	A72 NAME	
A82 Co-ordinated internationally?		✓	A62 BY WHOM?	

A03 COUNTRY: USA

A04 ORGANIZATION: WOODS HOLE OCEANOGRAPHIC INSTITUTION

A05 CHIEF SCIENTIST(S): DR. ROBERT BEARDSLEY

A06 NAME AND ADDRESSES OF ORGANIZATIONS AND PERSONS

WHOM TO QUERY	FINAL DISPOSITION OF DATA
A1 BRAD BUTMAN, USGS, WOODS HOLE	A2 USGS, WOODS HOLE / BLM
B1 ROBERT BEARDSLEY, WHOI	B2 WHOI
C1	C2 NODC, WASHINGTON, D.C.
D1	D2
E1	E2

DATE	DAY	MONTH	YEAR
A07 FROM	14	08	76
A17 TO	23	08	76

A08 GENERAL OCEAN AREAS: 23 B

A09 TYPE(S) OF MARINE ZONE(S): 7

GEOGRAPHIC AREA
If data were collected at a fixed station, fill in the co-ordinates

A10 LATITUDE ° ' " N/S

A20 LONGITUDE ° ' " E/W

A15 FEDERAL SUPPORT NSF OCE 76-01813 AND USGS 14-08-0001-15615

A25 REMARKS

USGS CURRENT METER ARRAY ON GEORGES BANK RECOVERED AND A SECOND ARRAY DEPLOYED.

DISCIPLINE AND TYPE OF MEASUREMENTS	Index 10° x 10° Qc	L	G	G	INDEX 1° x 1°	DISCIPLINE AND TYPE OF MEASUREMENTS	Index 10° x 10° Qc	L	G	G	INDEX 1° x 1°
A B						A B					
A D, H, P B	7	4	0	6	08, 09, 17-19, 26-28	A B					
A D, H, P B	7	4	0	7	00-02	A B					
A B						A B					
B						A B					
A B						A B					
A B						A B					

G – GEOLOGY GEOPHYSICS

GL MEASUREMENTS MADE AT A SPECIFIC LOCATION	NUMBER	i	l	FORMAT
G01 Dredge				
G02 Grab				
G03 Core rock *(no. of cores)*				
G04 Core–soft bottom *(no. of cores)*				
G05 Sampling by divers				
G06 Sampling by submersible				
G07 Drilling				
G08 Bottom photography				
G09 Sea floor temperature *(≤ 1 m from bottom)*				
G10 Accoustical properties of the sea floor				
G11 Engineering properties of the sea floor				
G12 Magnetic properties of the sea floor				
G13 Gravimetric properties of the sea floor				
G14 Radioactivity measurements				
G70 Other measurements				

GU MEASUREMENTS UNDERWAY				
G21 Motion picture of sea floor *(No. of nautical miles)*				
G22 Bathymetry-wide beam *(no. of nautical miles)*				
G23 Bathymetry-narrow beam *(no. of nautical miles)*				
G24 Side scan sonor *(no. of nautical miles)*				
G25 Seismic reflection *(no. of nautical miles)*				
G26 Seismic refraction *(no. of nautical miles)*				
G27 Gravimetry				
G28 Magnetism				
G29 Other measurements				

G – GEOLOGY GEOPHYSICS *(Continued)* GS TYPES OF STUDIES	NUMBER	i	l	FORMAT
G31 Physical analysis of sediments				
G32 Chemical analysis of sediments				
G33 Paleothermy				
G34 Paleomagnetism and rock magnetism				
G35 Paleontology				
G36 Geothermy				
G37 Geochronology				
G38 Mineral and fossil resources				
G39 Litteral zone studies				
G90 Other measurements				

D – DYNAMICS

D01 Current meters *(no. of stat.)*	1	A 1	A 2	7
D02 Current meters *(Average duration of measurement days)*				
D03 Currents measured from ship drift				
D04 GEK				
D05 Drifters *(number)*				
D06 Swallow floats *(number)*				
D07 Drift cards *(no. released)*				
D08 Bottom drifters *(no. released)*				
D09 Tidal observation *(duration)*				
D10 Sea and swell *(no. of observations)*				
D90 Other measurements				

M – METEOROLOGY

M01 Upper air observations				
M02 Incident radiation				
M03 Air–sea interface studies				
M04 Ice observations				
M05 Occasional standard measurements				
M06 Systematic standard measurements				
M90 Other measurements				

H– HYDROGRAPHY

S SURFACE	NUMBER	i	l	FORMAT
H01 Continuous temperature recording				
H02 Continuous salinity recording	~~25~~	~~A 1~~	~~A 2~~	~~1~~
H03 Discrete temperature measurements	25	A 1	A 2	1
H04 Discrete salinity measurements	25	A 1	A 2	1
NEAR SEA FLOOR (≤ 10 m)				
H05 Continuous temperature recording				
H06 Continuous salinity recording				
H07 Discrete temperature measurements	25	A 1	A 2	1
H08 Discrete salinity measurements	25	A 1	A 2	1
HP PHYSICAL				
H09 Classical oceanographic stations				
H10 Vertical profiles (STD/CTD)	109	B 1	B 2	7
H11 Sub–surface measurements underway				
H12 Mechanical bathythermograph (No. of drops)				
H13 Bathythermograph–expendable (No. of drops)	141	B 1	C 2	3
H14 Sound velocity stations				
H15 Acoustic stations				
H16 Transparency				
H17 Optics (NEPHELOMETER)	50	A 1	A 2	1
H18 Diffusion (Dynamic)				
H80 Other measurements				
HC CHEMICAL				
H21 Oxygen				
H22 Phosphates				
H23 Total–P				
H24 Nitrates				
H25 Nitrites				

HC CHEMICAL	NUMBER	i	l	FORMAT
H26 Silicates				
H27 Alkalinity				
H28 pH				
H29 Chlorinity				
H30 Trace elements				
H31 Radioactivity				
H32 Isotopes				
H33 Dissolved gases				
H90 Other measurements				

P – POLLUTION	NUMBER	i	l	FORMAT
P01 Suspended solids	50	A 1	A 2	1
P02 Heavy metals				
P03 Petroleum residues				
P04 Chlorinated hydrocarbons				
P05 Other dissolved substances				
P06 Thermal pollution				
P07 Waste water: BOD				
P08 Waste water: Nitrates				
P09 Waste water: Microbiology				
P10 Waste water: Other				
P11 Discolored water				
P12 Bottom deposits				
P13 Contaminated organisms				
P90 Other measurements				

G – GEOLOGY GEOPHYSICS

GL MEASUREMENTS MADE AT A SPECIFIC LOCATION	NUMBER	i	l	FORMAT
G01 Dredge				
G02 Grab				
G03 Core rock *(no. of cores)*				
G04 Core–soft bottom *(no. of cores)*				
G05 Sampling by divers				
G06 Sampling by submersible				
G07 Drilling				
G08 Bottom photography				
G09 Sea floor temperature *(≤ 1 m from bottom)*				
G10 Accoustical properties of the sea floor				
G11 Engineering properties of the sea floor				
G12 Magnetic properties of the sea floor				
G13 Gravimetric properties of the sea floor				
G14 Radioactivity measurements				
G70 Other measurements				

GU MEASUREMENTS UNDERWAY				
G21 Motion picture of sea floor *(No. of nautical miles)*				
G22 Bathymetry-wide beam *(no. of nautical miles)*				
G23 Bathymetry-narrow beam *(no. of nautical miles)*				
G24 Side scan sonor *(no. of nautical miles)*				
G25 Seismic reflection *(no. of nautical miles)*				
G26 Seismic refraction *(no. of nautical miles)*				
G27 Gravimetry				
G28 Magnetism				
G29 Other measurements				

G – GEOLOGY GEOPHYSICS *(Continued)*

GS TYPES OF STUDIES	NUMBER	i	l	F
G31 Physical analysis of sediments				
G32 Chemical analysis of sediments				
G33 Paleothermy				
G34 Paleomagnetism and rock magnetism				
G35 Paleontology				
G36 Geothermy				
G37 Geochronology				
G38 Mineral and fossil resources				
G39 Litteral zone studies				
G90 Other measurements				

D – DYNAMICS

D01 Current meters *(no. of stat.)*	5 MOORED	A1 ARRAYS	A2	7
D02 Current meters *(Average duration of measurement days)*	150 DAYS	"	"	
D03 Currents measured from ship drift				
D04 GEK				
D05 Drifters *(number)*				
D06 Swallow floats *(number)*				
D07 Drift cards *(no. released)*				
D08 Bottom drifters *(no. released)*				
D09 Tidal observation *(duration)*				
D10 Sea and swell *(no. of observations)*				
D90 Other measurements	3	B 1	B 2	7

M – METEOROLOGY

M01 Upper air observations				
M02 Incident radiation				
M03 Air–sea interface studies				
M04 Ice observations				
M05 Occasional standard measurements				
M06 Systematic standard measurements				
M90 Other measurements				

OCEANUS Cruise

5-22 August 1976

The cruise will be divided into three legs, each Woods Hole to Woods Hole. Cruise tracks for each leg are attached.

LEG 1 - 5 August

Objective - Deployment of Draper Lab M.S.A. instrument.

Hopefully, the ship could be loaded on 4 August with equipment for both Leg 1 and Leg 2. It would be ideal to depart Woods Hole ∿2300 4 August to be on station at first light on 5 August.

The ship would return to Woods Hole late in the evening on 5 August. Prior to departure, Draper Lab engineers will meet with the ship's personnel to discuss deployment strategy.

LEG 2 - 6 August-17 August

Objectives - Hydrography, suspended sediment analysis, USGS mooring operations.

The ship would be in Woods Hole between Legs 1 and 2 only long enough to change passengers.

The ship would return to Woods Hole ∿0800 17 August, offload, and load gear for Leg 3.

LEG 3 - 17 August-22 August

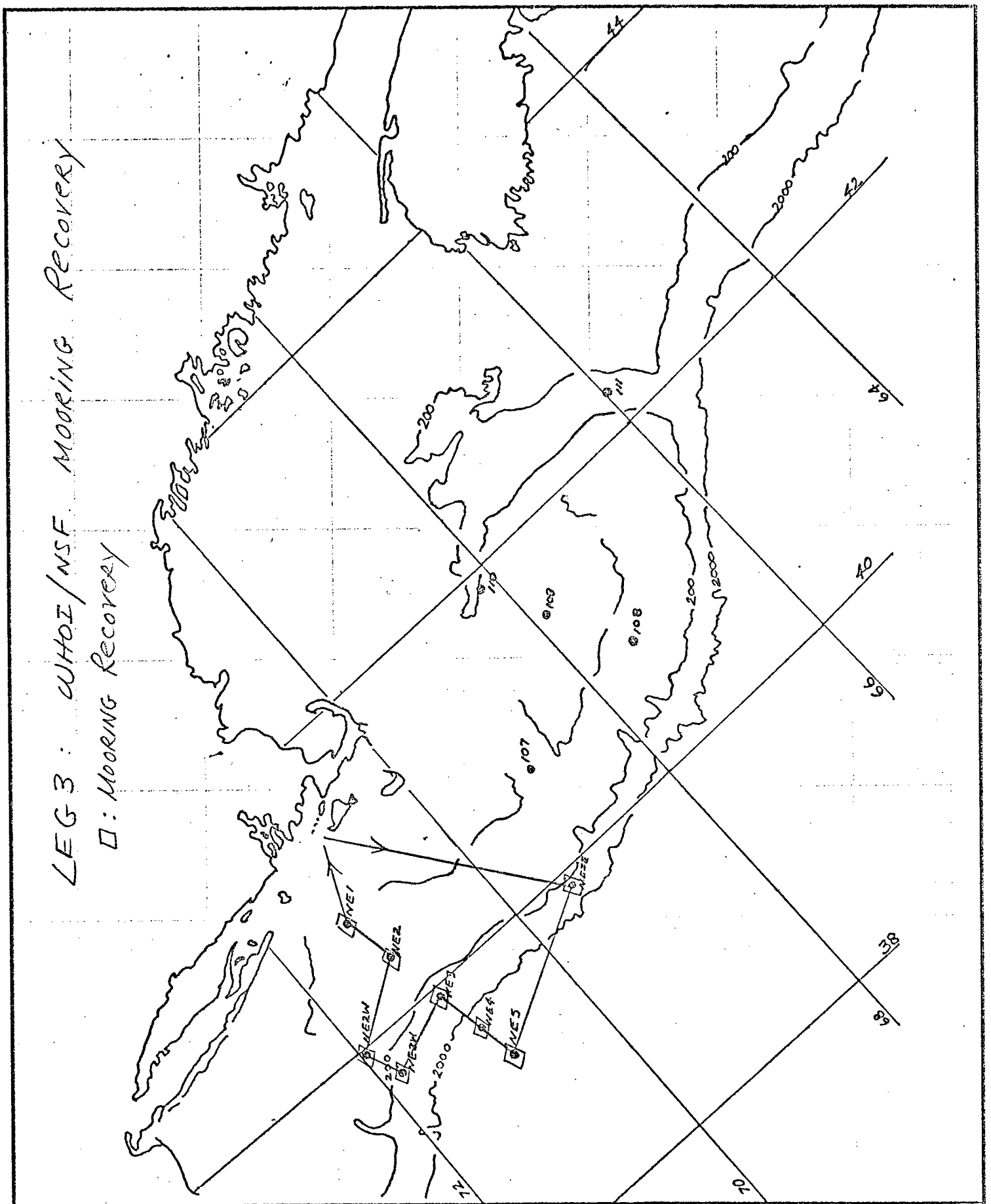
Objectives - Recovery of WHOI-NSF Shelf/Slope moorings. Recovery of Draper Lab M.S.A. instrument.

The ship would depart Woods Hole as soon as the mooring recovery gear is loaded, and return late on 22 August.

Equipment Requirements

5-22 August

LEG 1:	5 August	Ship's crane, A-frame
LEG 2:	5-17 August	Ship's crane, A-frame, Meter block with counter, Hydro davit, Scientific party will provide CTD system with 220 V winch, XBT system, and nephelometer system
LEG 3:	17-22 August	Ship's crane, A-frame Scientific party will provide mooring recovery winch (gasoline powered)



WOODS HOLE OCEANOGRAPHIC INSTITUTION
WOODS HOLE, MASS. 02543

PROJ. 20/1813 BY J. Vermersch

SHEET ____ OF ____ DATE APRIL 76

TITLE

1976 MOORING DEPLOYMENT

SP 11208A

Office Memorandum • WOODS HOLE OCEANOGRAPHIC INSTITUTION

TO : R. P. Dinsmore, R. S. Edwards, M. Palmieri, List

DATE: 15 July 1976

FROM : John Vermersch and R. C. Beardsley

SUBJECT: 6-26 August 1976 OCEANUS Cruise

Enclosed is a statement of objectives, a personnel list, and cruise track (rough) for each leg of the cruise.

This memo updates the previous version of 14 June 1976.

JV:dh
Enc.

OCEANUS CRUISE 6-26 August 1976

This cruise is divided into 4 legs, each Woods Hole to Woods Hole.

Leg 1. Draper/MIT M.S.A. Deployment at Site NE2

6 August (Figure 1)
The ship would depart very early on 6 August (subject to negotiations between Draper Lab and OCEANUS) to deploy the M.S.A. Roundtrip Steaming time to Site NE2 is about 11 hours.

Leg 2. Mooring Recoveries at Sites NE1, NE2W, NE3A, 3B,3E, 4, 5

7-11 August (Figure 2)
The ship would depart Woods Hole early on 7 August, recover 7 moorings and return. The Buoy Group gasoline powered rehaul winch will be installed on the fantail for this leg.

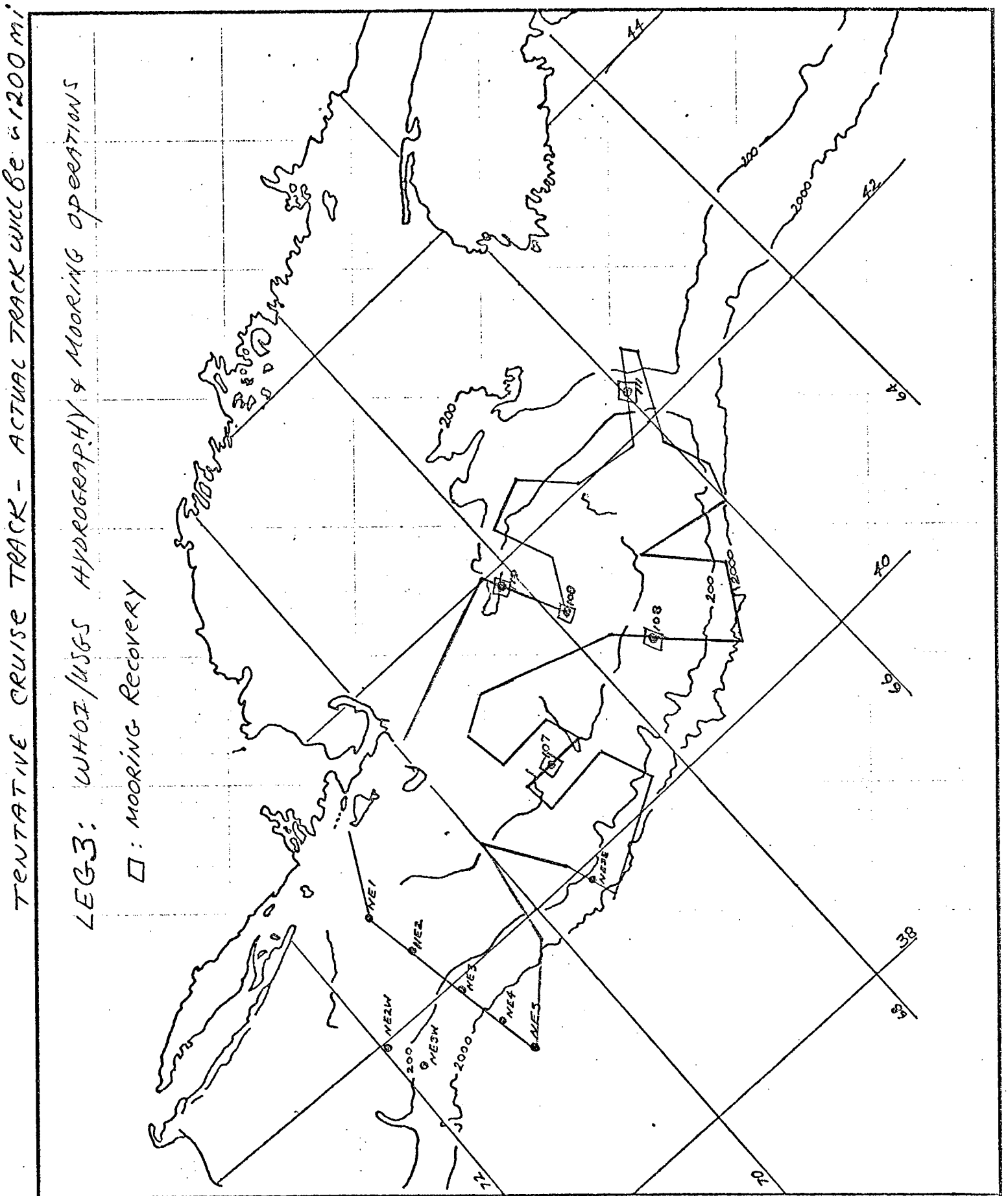
Leg 3. WHOI/USGS Hydrographic Cruise and Georges Bank Mooring Recoveries

12-24 August (Figure 3)
The ship would depart early on 12 August and proceed along the hydrographic cruise track. As the Georges Bank mooring sites are encountered, the moorings will be recovered.

Leg 4. Draper/MIT MSA Recovery and WHOI Mooring NE2 Recovery

25-26 August (Same cruise track as Figure 1)

8 USGS
1 Draper
NSF remainder



WOODS HOLE OCEANOGRAPHIC INSTITUTION WOODS HOLE, MASS. 02543 PROJ. 20/1813 BY J. Vermersch SHEET ____ OF ____ DATE APRIL 76	TITLE 1976 MOORING DEPLOYMENT FIGURE 3

SP 1120KA