

**UNOLS SHIP SCHEDULING
COMMITTEE**

Report of Meeting

15 September 1994

**National Science Foundation
4201 Wilson Boulevard, Room 375
Arlington, VA 22230**

SHIP SCHEDULING REVIEW

Report of Meeting

16 September 1994

**National Science Foundation
4201 Wilson Boulevard, Room 730
Arlington, VA 22230**



UNOLS SHIP SCHEDULING MEETING

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INTRODUCTION:

This report is a summary of the discussions at the UNOLS Ship Scheduling Meeting held at the National Science Foundation Building in Arlington, VA on 15 September 1994. The full scheduling committee met to deliberate on the proposed schedules for the UNOLS Fleet in 1995. The meeting agenda was followed except as indicated herein. A copy of the agenda is included as **Appendix I**. A list of attendees which includes ship schedulers, funding agency representatives and program managers is appended as **Appendix II**.

Schedulers provided the UNOLS Office with the latest 1995 proposed schedules. These schedules were posted on the OMNET Bulletin board, SHIP.SCHED95. Schedulers also provided the UNOLS Office their best estimates of the costs to support these schedules. A summary of these costs was distributed to the meeting participants and is included as **Appendix III**. In advance of the meeting the UNOLS Office distributed an inventory list of the 1995 and 1996 ship time requests (form 831) held at the UNOLS Office. Copies of these inventories are included as **Appendix IV** and **Appendix V** respectively.

The meeting was called to order at 0830 by the Ship Scheduling Committee Chair, Ken Palfrey.

REVIEW AND UPDATE OF SCHEDULES: (in order presented)

University of Washington - THOMPSON. Robert Hinton provided the schedules for the University of Washington. Robert reported that the ONR/NRL funding for 1994 cruises presently in progress is not yet in place. The 1995 schedule reflects 331 days of fully funded work, all in the Arabian Sea. The ship will be working the entire year in and out of Muscat. This schedule runs into January 1996. Robert is concerned about the transit back to Seattle and will be seeking work that can be accommodated enroute.

BARNES. BARNES has a light schedule of 77 funded days which should fill out as the year progresses.

Scripps - MELVILLE. Rose Dufour presented the schedule for MELVILLE. This ship begins the year of 1995 in the Indian Ocean with funded cruises taking it all over the Pacific. A total of 311 days have been scheduled. The present schedule ends in Punta Arenas with other southern ocean work possible in 1996. This ship too will need to find work that can bring it home.

Lamont-Doherty Earth Observatory - EWING. Mike Rawson provided a schedule for EWING that started 1995 in the Gulf of Mexico then transited the Panama Canal. The remainder of this schedule is in the Pacific Ocean. The schedule includes work of Liu and Reed in China waters working out of Kaohsiung, Taiwan. As presented this work appears at the end of the year, however, after some discussion it was decided that the work should be done earlier in the year moving the second half of the schedule later. The coring work of Fisher was also discussed. This is presently double booked on WECOMA. Because of ship cost considerations it was felt that the Fisher work should go aboard an intermediate ship if the coring (20 meter) can be accommodated. As with THOMPSON and MELVILLE, EWING will end the year in the South Pacific and will be looking for work north in early 1996.

Woods Hole Oceanographic Institution - KNORR. The KNORR schedule was presented by Don Moller. This ship is fully scheduled with funded WOCE work in the Indian Ocean for 1995. It begins the year in Fremantle and continues with 349 scheduled days ending the schedule in Mombasa in January 1996. The ship is planning to return to WHOI via the Atlantic scheduling two cruises enroute. These are the cruises of Madsen/Grindlay and Michaels. The ship needs to be back in WHOI by April 1996 to commence the overhaul converting KNORR to a submersible handling ship. Don reported that SEA BEAM has been installed in KNORR but is not yet operational.

ATLANTIS II. ATLANTIS II continues with the traditional dive areas for ALVIN starting in the Atlantic, transiting through the Panama Canal, on to the San Diego area, the Juan de Fuca area, then to northern EPR. The schedule is fully funded with 168 dives for ALVIN and 316 operating days. The ship is expected to complete the year in

Panama and return to Woods Hole in early 1996. ATLANTIS II is then scheduled for retirement from the UNOLS Fleet and is available for sale.

University of Hawaii - MOANA WAVE. Jeff Wheat presented the schedule of MOANA WAVE. Jeff first reported that the ship lost over 100 operating days in 1994 because of the last minute loss of the ARPA cruises. This caused a lay-up of the ship and layoff of the crew. Jeff presented a schedule of 244 days for 1995. Two cruises are presently in question. Hildebrand would like to depart in early December 1994, however, the ship can not depart before 28 December. This cruise is presently scheduled for a 4 January departure. The other cruise in question is that of Childress. Childress would like to have a moveable A-frame which is not possible on MOANA WAVE. A resolution of these two problems will be necessary. MOANA WAVE will not be able to do all the HOTS cruises.

University of Alaska - ALPHA HELIX. Tom Royer provided the proposed schedule for ALPHA HELIX. The schedule includes 224 days of ship time with 119 still pending funding. Tom indicated problems with getting Russian clearance for one of his cruises. He reported that there could be up to 100 days of ship time for an intermediate ship for EXXON Valdez work.

Oregon State University - WECOMA. The WECOMA schedule was presented by Ken Palfrey. Ken reported 174 days on his proposed schedule which includes the Fisher work that is double booked on EWING. He suggested that if the Fisher work is done on another ship he could move the first Nittrouer cruise earlier in the summer. Ken suggested that they might be in a position to pick up the EXXON Valdez work if it were to materialize.

Moss Landing Marine Laboratory - POINT SUR. Mike Prince presented the schedule for POINT SUR. He reported that they were having clearance problems with Mexico, however, this should not affect the ship's schedule but an alteration to the science planned. The Childress work is in question since it is tied to the cruise schedule on MOANA WAVE. The ship presently has 173 days scheduled for 1995.

Scripps - NEW HORIZON. The Scripps ships' schedules were presented by Rose Dufour. NEW HORIZON is scheduled for 232 days in 1995. The Bock cruise is a multi-ship cruise and is locked in the schedule and the time indicated. Rose was advised that the Peterson cruise should indicate that its funding is still pending.

SPROUL. The SPROUL schedule reflects 145 funded days with an additional 41 pending. Rose reported that several of the cruises scheduled for SPROUL have been carried forward from the 1994 schedule. This seems to be a continuing procedure for investigators using this ship.

Smithsonian Tropical Research Institute - URRACA. Although URRACA is not a UNOLS vessel, Harry Barnes came to the Scheduling Meeting and gave a brief

summary of this ship's activities. STRI acquired this 96 foot fiberglass research vessel for work in the Panama area. It has undergone some shaft repairs and will soon be ready for science. There is one NSF cruise tentatively planned for URRACA in 1995. The Institute is requesting that an NSF inspection be scheduled in the near future so that this ship will be eligible to take the planned cruise.

University of Michigan - LAURENTIAN. Linda Goad reported on the 1995 schedule for LAURENTIAN. A total of 98 days are presently scheduled. Additional days could materialize as the year progresses. Linda was advised that the Lehman work was declined.

Texas A & M - GYRE. Doug Biggs presented the GYRE schedule which indicated 100 operating days. Several of the cruises were double booked on other ships. Doug was advised that the double bookings would hopefully be resolved during the Schedule Review Meeting on the 16th.

University of Texas - LONGHORN. LONGHORN was not represented at this meeting.

LUMCON - PELICAN. Steve Rabalais reported that no NSF days were presently scheduled for PELICAN in 1995. The ship reflects a schedule of 120 days which include Navy and NOAA time. Steve was advised that the 33 days of time listed as ONR should read NRL. He was also advised that the second Richardson cruise did not exist and should be deleted.

University of Miami - COLUMBUS ISELIN. Ron Hutchinson reported that ISELIN would not operate in 1995. The ship is presently at Atlantic Drydock awaiting repairs.

CALANUS. Ron indicated that CALANUS is scheduled for 53 days for 1995.

Harbor Branch Oceanographic Institution - The schedules for HBOI ships were provided by Tim Askew. Tim reported that Harbor Branch was working with Miami to use SEWARD JOHNSON to complete the ISELIN schedule for 1994. Technicians and science equipment would be provided by Miami.

SEA DIVER. SEA DIVER is presently scheduled for 85 days in 1995 with much of this work pending. Tim anticipates 150-160 days to eventually be scheduled on this ship. All of its operations will be on the East Coast.

EDWIN LINK. EDWIN LINK has a 95 day schedule of mostly NOAA/NURP cruises. This schedule includes work on the East Coast, Gulf of Mexico and in the Gulf of Maine. It was suggested that the Witman work, presently unscheduled, might be done from LINK.

SEWARD JOHNSON. A schedule of 229 days was presented for SEWARD JOHNSON which includes work in the Caribbean and Galapagos. This ship is under consideration for NOAA work on the GLOBEC program which would bring it north off the New England Coast. If this work materializes it may be necessary to transfer the Galapagos work to LINK.

Skidaway - BLUEFIN. BLUEFIN was not represented at this meeting.

Bermuda Biological Station for Research - WEATHERBIRD II. Lee Black provided the schedule for WEATHERBIRD II. A total of 61 cruises totalling 176 days are presently on the schedule many of which are still pending funding. WEATHERBIRD II is scheduled for a yard period late in the year. CAPE HATTERAS is scheduled to fill in during WEATHERBIRD'S absence.

Duke/UNC Oceanographic Consortium - CAPE HATTERAS. Joe Ustach presented the schedule for CAPE HATTERAS. A 1995 schedule of 282 days was presented, however, many of these cruises may need a larger ship. This includes the GLOBEC work as well as the Rossby cruise and possibly the work of Yamamoto. Joe was also informed that Corliss, and McLeave had been declined. These openings could allow HATTERAS time for Witman and Wong.

University of Delaware - CAPE HENLOPEN. A full 193 day 1995 schedule for CAPE HENLOPEN was presented by Tim Pfeiffer. To date 190 of these days are funded.

University of Rhode Island - ENDEAVOR. Bill Hahn provided ENDEAVOR's schedule for 1995. ENDEAVOR is the primary ship for the GLOBEC work which dominates the schedule. Bill was advised that the cruise of Moffett and Olson have been declined.

Woods Hole Oceanographic Institution - OCEANUS. OCEANUS' schedule was presented by Don Moller. Funded work off Brazil takes this ship to the South Atlantic. It was believed that the moorings for this Brazil work needed to come out in early 1995 necessitating an earlier transit south. Don is investigating whether or not this work could be delayed until the fall which would permit OCEANUS to remain north for presently unscheduled work. Don was advised to check the funding status of the Orr work which may be still pending. Cowen's work has been declined.

FEDERAL AGENCY REPORTS.

National Oceanic and Atmospheric Administration - Captain Mulhern provided the Committee with information about the NOAA fleet. NOAA has been directed to look hard at privatization. They will be contracting out nautical charting in Long Island Sound this year. DELAWARE II will be out of service for overhaul during which time

this ship's work will be contracted out. NOAA expects to utilize UNOLS ships for two GLOBEC cruises in 1995. BALDRIDGE is scheduled for deployment to the Indian Ocean in 1995 for GLOBEC and WOCE work. DISCOVERER will operate the entire year in the Pacific on TOGA TAO and Vents projects. The USGS ship WORTHY, that is to operated by NOAA, will not go into service in 1995.

National Science Foundation - Dolly Dieter welcomed the Scheduling Committee to the new NSF building. She announced that Katherine Bouton had been invited to provide a demonstration of the University of Delaware's Internet connection through OCEANIC. This service provides ship schedules and can provide ship characteristics as well as deck layouts. Dolly reported that the NSF 1995 budget was not yet firm, however, it would appear there would be a modest increase over the 1994 budget. OCE is asking for a \$3 M increase in ship operations.

Office of Naval Research - ONR was represented by Annette DeSilva. Annette reported that June Keller departed ONR in June of this year and that Keith Kaulum retired on 26 August. She will be filling in for six months while a new job description is written and a consolidation of the functions of this office are considered. Pat Dennis will be spending 50% of his time working with ONR. Annette reported that the reorganization of ONR is now settling out.

The construction of AGOR 24 is going smoothly and should be delivered in the spring of 1996. The ship will be operated by Scripps and will be named ROGER REVILLE. The keel laying ceremony for AGOR 25 was held in August and construction is proceeding on or ahead of schedule. NAVSEA is still investigating the thruster problem in the Z drive gears of MELVILLE and THOMPSON. KNORR's thrusters have been inspected and appear fine. NAVSEA hopes to improve the inspection procedure during the manufacture of these gears. Annette reported that ONR expected to be level funded at \$5.5 M.

United States Coast Guard - LCDR Bob Garrett provided the USCG update. Bob reported that the Coast Guard was getting a \$100 M cut in their budget which will have an effect throughout their fleet. Both icebreakers, POLAR SEA and POLAR STAR, will be undergoing major overhauls and will be out of service for 13-14 months each. This should extend the life of these ships by 20+ years. Bob said that construction on their new icebreaker, HEALY, had not yet started. They expect some slippage with delivery coming in 1998. Bob presented a series of viewgraphs on HEALY and the icebreaker schedules which are included as **Appendix VII**.

SHIP COST SUMMARY.

Jack Bash provided the summary of estimated ship costs for 1994 and 1995. He noted that the total cost for 1995 of \$49.879 M represented an approximately \$3M shortfall. These summaries are included as **Appendix III**.

ELECTION OF OFFICERS.

An election of both Ship Scheduling Committee Chair and Vice Chair were required this year. The Nominating Committee of Mike Prince and Ron Hutchinson presented the slate of Don Moller for Chair and Robert Hinton for Vice Chair. Nominations were solicited from the floor, none were offered. Don and Robert were elected by acclamation.

OTHER BUSINESS.

A discussion was held regarding the scheduling process and the one general meeting per year trial. It was concluded that the trial was successful and should be continued with one meeting again next year. Discussion also revolved around possibly having the September meeting earlier. The consensus was that September was an appropriate time.

The meeting was adjourned at 1330 hrs.

**Ship Scheduling Review Meeting
National Science Foundation
4201 Wilson Boulevard, Room 730
Arlington, VA 22230**

16 September 1994

A Ship Scheduling Review Meeting was held on 16 September 1994 in Room 730 of the NSF Building to review the schedules presented at the fall Ship Scheduling Meeting held 15 September 1994. Present were Dolly Dieter, NSF; Annette DeSilva, ONR; Marty Mulhern, NOAA; Jack Bash and Mary D'Andrea, UNOLS. Sitting in also were the prospective Chair and Vice Chair of the Ship Scheduling Committee, Don Moller and Robert Hinton.

Two major problem areas dominated the discussion. The first was how to complete the funded science in the South Pacific with EWING, MELVILLE and THOMPSON with an eye toward getting these ships home in 1996 in the most cost effective way. The other problem was the scheduling of GLOBEC and other east coast cruises with the most efficient and cost effective mix of ships.

Below is a ship by ship review with updated funding decisions and recommendations for schedules.

MOANA WAVE - The Hildebrand cruise should be scheduled to start on 28 December 1994. The required equipment from Hildebrand's previous cruise will need to be shipped from an intermediate port. MOANA WAVE is the only UNOLS ship available for the Childress work in 1995. Planning should start on how to work around the fixed A-frame or deferment of the cruise. The July HOTS cruise can not be accommodated on this ship. The Owen/Warren cruise and associated transit will be supported entirely by NSF (not split with the Navy).

ALPHA HELIX - ALPHA HELIX schedule will firm up when OPP funding decisions are made. The Gremeier ONR work is funded. It is understood that Russian clearances may be difficult and although this will affect science it should not affect the ship's schedule.

THOMPSON - The Weidemann and Brink (first cruise) cruises listed as NRL should read ONR. The second cruise for Brink should split the cruise days 50/50 ONR/NRL (13 days each). U of Washington should be planning the ship's 1996 return to Seattle and seeking cruises that will support all or part of the transit.

BARNES - BARNES has a light schedule that will probably fill in as the year progresses.

WECOMA - The coring capability of WECOMA has been questioned with the new deck layout. OSU should evaluate as soon as possible the length of cores that can be taken from WECOMA. The Fisher cruise should remain on WECOMA if 20 meter cores are possible. If the Fisher cruise is lost, Nittrouer could be moved to an earlier slot, however, he should be consulted to ensure this does not conflict with his other cruises. The first Nittrouer cruise should read 24 days vice 2 days and the second should be listed as pending, not funded. A five day Trowbridge/Williams cruise with ONR funding should be added to the schedule. OSU should seek additional work if possible to strengthen a light schedule. The Alaska, EXXON Valdez work is a possibility.

POINT SUR - It is understood that clearance problems with Mexico could cause alterations to the science program for the Fuhrman cruise but should not affect the cruise duration. The Childress work is tied to his cruise on MOANA WAVE and could be deferred if not done on MOANA WAVE. The funding for the Davidson cruise is in question. A four day cruise for van Geen has been funded and should be added to the POINT SUR schedule.

MELVILLE - The Keeling cruise funding has been in question but looks good at the present. The end of the year needs to be reevaluated. It is recommended that LDEO, U of Washington and Scripps work out the best way to handle their late year South Pacific cruises so that the most efficient and cost effective schedules will result with an eye on returning north in 1996. Scientists Lonsdale, Johnson, Sempere, Druffel and Cande will be affected. It is possible that additional southern ocean work could still be funded.

NEW HORIZON - Investigate the possibility of doing the Fisher coring work if it is determined that WECOMA can not handle a 20 meter core. The Peterson cruise should be listed as pending. The Bock work is fixed at the scheduled time because of the multi-ship effort.

SPROUL - Much of the SPROUL schedule remains pending. It is understood that the Azam and Macha work is carry over. No new money will be made available for these cruises. PIs should be encouraged to complete their shiptime in the year funded.

LAURENTIAN - A cruise for Keuhl should be added to the schedule. Lehman has been declined, Green is still pending and Rea has been funded.

LONGHORN - U of Texas is encouraged to submit timely schedules to the UNOLS Office. The cruises of Buffler, Benner and Ingall have been funded.

GYRE - Decisions on the schedule presented for GYRE are still pending.

PELICAN - There are no NSF cruises scheduled aboard PELICAN in 1995. The first Richardson cruise should read NRL pending not ONR and the second cruise is not part of the proposal and should be deleted. Roberts and Paul have been declined.

COLUMBUS ISELIN - COLUMBUS ISELIN will be out of service in 1995.

CALANUS - Reed's grant has expired. Leaman is funded but the number of days are in question. A five day ONR funded cruise for Zika should be added to the schedule.

SEWARD JOHNSON - SEWARD JOHNSON and GYRE are under consideration for GLOBEC work. Final decisions must await funding considerations and further review of the detailed scientific support requirements.

EDWIN LINK - The Galapagos work on JOHNSON should be moved to LINK if JOHNSON participates in the GLOBEC cruises.

SEA DIVER - No comment.

BLUE FIN - Skidaway is encouraged to publish a timely ship schedule for Ship Scheduling Review. The number of days for Weigart need to be confirmed. The Windom work is funded.

CAPE HATTERAS - Several changes have been made to the HATTERAS schedule. Droxler has been declined. Rossby will move to OCEANUS and the GLOBEC work will go to an intermediate ship yet to be named. Corliss has been declined. McLeave has been declined. The Paull work should read Dillon; investigate the funding source for this work. The Yamamoto work will be funded, however, investigate whether his work can be done aboard HATTERAS. If not it will be moved to OCEANUS. Add 14 days for Witman and 10 for Wong. If HATTERAS fills in for BATS work during WEATHERBIRD'S shipyard it should be for one combined 5 day BATS/Hydro cruise then return to Beaufort.

CAPE HENLOPEN - The number of days for Boynton exceed those funded. This should be checked. Also check the days scheduled for Donat and Frew.

EWING - The work of Fisher should go aboard WECOMA or NEW HORIZON if possible. The Liu/Reed work should be done before the monsoon season. Work with Scripps and U of Washington to coordinate end of year schedules.

ENDEAVOR - Moffett and Olsen have been declined and should be removed from the schedule. Townsend has also been declined. Orr should read pending.

OCEANUS - OCEANUS should get underway as early in the year as possible for the Owen/Weatherly work off Brazil. This could cause problems with the clearance process but is necessary to return north as early as possible for the Rossby and Pickart

work. If Yamamoto can not do his work on HATTERAS, OCEANUS should pick this up. The Bock work is still unresolved. The Nittrouer cruise should read 18/Navy and 3/JOI. The Orr, NRL cruise is pending.

KNORR - KNORR's schedule looks fine.

ATLANTIS II - The only recommended changes for ATLANTIS II is to schedule one less dive for Mullineaux and add two dives to Smith.

WEATHERBIRD II - BATS should have 95 days scheduled for 1995. The funding for Dickey has been confirmed. Both Caron and Ammerman are still pending. HATTERAS will pick up one five-day BATS/Hydro station during WEATHERBIRD's shipyard period.

APPENDIX I

TENTATIVE AGENDA

UNOLS SHIP SCHEDULING MEETING

MEETING: UNOLS Scheduling Meeting
DATE: 15 Sep 1994
PLACE: National Science Foundation
4201 Wilson Blvd., Room 375
Arlington, VA
Time: 0830 hrs

The Ship Scheduling meeting will be called into session by Ken Palfrey, Chair.

REVIEW AND UPDATE SCHEDULES. Each scheduler will present and update their respective ship(s) schedule and cost information. Viewgraphs for this presentation are recommended.

IDENTIFY CONFLICTS AND UNSOLVED ISSUES. A discussion on cruises not scheduled and those double booked. (Note: We will attempt to account for all cruises on the inventory list distributed by Jack Bash).

AGENCY PRESENTATIONS. Representatives from NSF, ONR and NOAA will provide scheduling guidance, science program ship requirements and priorities, science funding decisions, ship-ops funding outlook and related matters for the 1995 scheduling year.

COSTS. The UNOLS Office will provide a summary of cost figures.

ELECTION OF OFFICERS. Both the Schedule Committee Chair and Vice Chair are up for election. Neither of the incumbents is eligible for re-election. The nominating committee will present their slate of candidates. Nominations will be accepted from the floor. A condition of a floor nomination is that the candidate offered must have agreed to serve.

PRE-MEETING ACTION. All ship's schedules should be on OMNET SHIP.SCHEDULERS.EAST.GU or SHIP.SCHEDULERS.WEST by 8 Sep '94. Cost figures in the following format for both 1994 and 1995 also should be passed to the UNOLS Office by 8 Sep '94.

1994	NSF	NAVY	OTHER	TOTAL
Ship Days/ Ship \$K				
1995	NSF	NAVY	OTHER	TOTAL
Ship Days/ Ship \$K				

Costs for 1994 should be your latest projection, and consistent with your last negotiation with NSF and/or ONR. Costs for 1995 should be realistic estimates. Track Charts (where appropriate) should also be forwarded to the UNOLS Office via mail or FAX by 8 Sep '94.

WHAT TO BRING TO THE MEETING:

1. Viewgraphs of your 1995 schedule.
2. Viewgraph of a track chart.
3. An extra copy of each Form 831 Ship Time Request not yet submitted to the UNOLS Office.
4. YOU SHOULD HAVE ALREADY SUBMITTED YOUR SCHEDULE AND COST INFORMATION AND SHOULD NOT NEED TO BRING HARD COPIES.

APPENDIX II

Attendees

Affiliation

Neil Anderson	NSF
Tim Askew	HBOI
Rodger Baier	NSF
Harry Barnes	Smithsonian Tropical Research Inst.
John Bash	UNOLS
Bob Beardsley	WHOI
Doug Biggs	Texas A&M
Lee Black	Bermuda Biological Station
Mary D'Andrea	UNOLS
Paul Dauphin	NSF/ODP
Annette DeSilva	ONR
Dolly Dieter	NSF
Rose Dufour	SIO
LCDR Bob Garrett	USCG
Linda Goad	U of Michigan
Bill Hahn	URI
Robert Hinton	U of Washington
Ron Hutchinson	U of Miami
Eric Itsweire	NSF
Dick Lambert	NSF
Bruce Malfit	NSF/ODP
Russell Moll	NSF
Don Moller	WHOI
Marty Mulhern	NOAA
Ken Palfrey	OSU
Bill Peterson	NOAA
Tim Pfeiffer	U of Delaware
David Powell	U of Miami
Mike Prince	MLML
Steve Rabalais	LUMCON
Mike Rawson	LDEO
Elizabeth Rios	SIO
Lisa Rom	NSF
Tom Royer	U of Alaska
Connie Sancetta	NSF/MGG
Alexander Shor	NSF/ODP
Phil Taylor	NSF
Joe Ustach	Duke
Dick West	NSF
Goeff Wheat	U of Hawaii
Stan Winslow	U of Hawaii

APPENDIX III

SUMMARY OF SHIP USE AND COSTS

YEAR: 1994

As of 9/14/94

SHIP/CLASS	NSF		NAVY		OTHER		TOTAL		DAILY RATE
	DAY	\$	DAY	\$	DAY	\$	DAY	\$	
MELVILLE	302	4,832	0	0	1	16	303	4,848	16,000
KNORR	222	3,878	35	611	0	0	257	4,489	17,467
ATLANTIS II	254	3,742	29	427	24	353	307	4,522	14,730
EWING	292	4,300	10	147	6	88	308	4,536	14,726
T.G. THOMPSON	153	2,402	48	754	71	1,115	272	4,271	15,701
MOANA WAVE	140	1610	27	311	48	552	215	2,473	11,502
CLASS II - TOTAL	1,363	20,764	149	2,250	150	2,124	1,662	25,139	--
AVE: (6)	227	3,461	25	375	25	354	277	4,190	--
EDWIN LINK	51	408	9	72	155	1,240	215	1,720	8,000
ENDEAVOR	131	1,650	0	0.0	4	50	135	1,700	12,593
OCEANUS	0	1,000	0	0	0	0	0	1,000	0
GYRE	49	441	1	9	81	729	131	1,179	9,000
ISELIN *	106	1,113	53	557	49	515	208	2,184	10,502
NEW HORIZON	171	1,586	10	93	59	544	239	2,223	9,301
SEWARD JOHNSON	0	0	0	0	70	560	70	560	8,000
WECOMA	78	1,500	10	192	1	0	89	1,692	19,011
CLASS III - TOTAL	586	7,698	83	923	419	3,638	1,087	12,258	--
AVE: (8)	73	962	10	115	52	455	136	1,532	--
PELICAN *	30	120	0	0	75	300	105	420	4,000
LONGHORN *	37	148	0	0	40	160	77	308	4,000
POINT SUR	119	723	51	310	23	140	193	1,173	6,078
CAPE HATTERAS	142	1004	30	203	13	90	185	1,297	7,011
ALPHA HELIX	145	1,256	0	0	18	181	163	1,437	8,815
R. SPROUL	73	415	9	51	30	171	112	637	5,688
CAPE HENLOPEN	131	816	42	262	0	0	173	1,078	6,231
WEATHERBIRD II	147	1,100	0	0.0	4	22.0	151	1,122	7,430
SEA DIVER	8	30	60	228.0	56	212.8	124	471	3,800
CLASS IV - TOTAL	832	5,612	192	1,054	259	1,277	1,283	7,943	--
AVE: (9)	92	624	21	117	29	142	143	883	--
BLUE FIN	47	102	0	0	46	100	93	202	2,172
LAURENTIAN	57	245	0	0	22	92	79	337	4,293
BARNES	56	78	16	21	18	25	90	125	1,393
CALANUS	51	144	2	5	11	31	64	180	2,813
CLASS IV TOTAL	211	569	18	26	97	248	326	844	--
AVE: (4)	53	142	5	7	24	62	81	211	--
Fleet Total	2,992	34,644	442	4,253	924	7,287	4,358	46,184	--
AVE: (27)	111	1,283	16	158	34	270	161	1,711	--

NOTES: a. NSF support for lay-up expenses.
b. NPS (CNOC) days only
* Not updated since the last scheduling meeting.

SUMMARY OF SHIP USE AND COSTS

YEAR: 1995

As of 9/14/94

SHIP/CLASS	NSF		NAVY		OTHER		TOTAL		DAILY RATE			
	DAY	\$	DAY	\$	DAY	\$	DAY	\$				
MELVILLE	277	4,474	34	549	0	0	311	5,023	16,151			
KNORR	349	5,120	0	0	0	0	349	5,120	14,670			
ATLANTIS II	295	4,116	1	14	20	279	316	4,409	13,952			
EWING	195	3,062	0	0	119	1,868	314	4,930	15,701			
T.G. THOMPSON	219	3,073	32	449	80	1,123	331	4,645	14,033			
MOANA WAVE	191	2,210	15	168	39	452	244	2,830	11,598			
CLASS II	1,526	22,055	0	82	1,180	0	258	3,722	0	1,865	26,957	--
AVE: (6)	254	3,676	14	197	43	620	311	4,493	--			
EDWIN LINK	12	96	0	0	95	618	107	714	6,668			
ENDEAVOR	214	2,204	28	288	0	0	242	2,492	10,298			
OCEANUS	170	1,482	119	1,038	0	0	289	2,520	8,721			
GYRE	81	729	0	0	19	171	100	900	9,000			
ISELIN	0	0	0	0	0	0	0	0	0			
NEW HORIZON	187	1,829	12	117	33	323	232	2,269	9,780			
SEWARD JOHNSON	85	680	33	297	111	777	229	1,754	7,659			
WECOMA	86	1,290	88	1,320	0	0	174	2,610	15,000			
CLASS III - TOTAL	835	8,310	0	280	3,060	0	258	1,889	0	1,373	13,259	--
AVE: (8)	104	1,039	0	35	383	0	32	236	0	172	1,657	--
PELICAN	41	172	33	139	46	193	120	504	4,200			
LONGHORN	39	156	0	0	36	144	75	300	4,000			
POINT SUR	101	693	43	295	29	199	173	1,187	6,861			
CAPE HATTERAS	250	1,436	17	102	15	90	282	1,628	5,773			
ALPHA HELIX	84	800	19	181	58	552	161	1,533	9,522			
R. SPROUL	118	637	22	119	5	27	145	783	5,400			
CAPE HENLOPEN	179	1,074	14	84	0	0	193	1,158	6,000			
WEATHERBIRD II	176	1,300	0	0	0	0	176	1,300	7,386			
SEA DIVER	33	122	0	0	52	192	85	315	3,700			
CLASS IV - TOTAL	1,021	6,390	0	148	920	0	241	1,397	0	1,410	8,708	--
AVE: (9)	113	710	0	16	102	0	27	155	0	157	968	--
BLUE FIN	118	214	0	0	9	16	127	230	1,809			
LAURENTIAN	98	421	0	0	0	0	98	421	4,300			
BARNES	87	121	0	0	18	25	105	146	1,390			
CALANUS	52	156	0	0	1	3	53	159	3,000			
CLASS IV TOTAL	355	912	0	0	28	44	383	956	--			
AVE: (4)	89	228	0	0	7	11	96	239	--			
Fleet Total	3,737	37,667	510	5,160	785	7,052	5,031	49,879	--			
AVE: (27)	138	1,395	0	19	191	0	29	261	0	186	1,847	--

NOTES: a. NPS (CNOC) days only

APPENDIX IV

1995 SHIPTIME REQUESTS

26 AUG 94

* THE ASTERISK INDICATES CURRENTLY SCHEDULED

PI	INSTITUTION	AREA	SHIP REQUESTED	OPTIMUM 1995 DATES	SOURCE/FUNDING	DAY
Alldrige, A	UCSB	NP9	POINT SUR*	APR/MAY	NSF/BIO	
Altabet, M	WHOI	NP13	POINT SUR/NH**	JUN	NSF/CHEM	1
Ammerman, J	TAMU	NA6	WEATHERBIRDII*	AUG	NSF/CHE	
Ashjian, C	MIAMI	NA6	ENDEAVOR/OCEAN	APR/SEP	NSF/BIO	
Balch, W	MIAMI	IN1	THOMPSON*	NOV	NSF/BIO	1
Banse, K	UW	NP9	BARNES*	SEP-OCT	NSF/BIO	2
Barber/Johnson	DUKE/MLML	SP3	THOMPSON*	MAY	NSF/ONR	4
Barth, J	OSU	NP9	WECOMA*	MAY/AUG	NSF/PHY	2
Becker, K	MIAMI	NA10	ATLANTIS II*	SPRING/SUM	NSF/ODP	
Becker, K	MIAMI	NA6/9	ATLANTIS II	SPRING	NSF/ODP	
Behrens, W	UT	NA9	GYRE	MAY	NSF/MGG	1
Benner, R	UT	NA9	LONGHORN*	AUG	NSF/CHEM	1
Bernhard, J	WADSWORTH	NP9	SPROUL*	FEB	NSF/BIO	
Bernhard, J	WADSWORTH	NP9	SPROUL*	FEP	NSF/BIO	
Biesiot, P	U SO MISS	NA6	PELICAN	MAY	NSF/BIO	
Blair, N	NCSU	NA6	SEA LINK	JUL	NSF/CHEM	
Blough, N	WHOI	NA6	CAPE HENLOPEN*	JUN/SEP	ONR/CHEM	
Bock, E	WHOI	NA6	NEW HORIZON*	APR	NSF/COOP	2
Bock, E	WHOI	NP9	ISELIN	SEP	ONR	2
Boynton, W	U MD	NA6	CAPE HENLOPEN*	APR/JUL/OCT	NSF/LMER	4
Bradley/Walden	WHOI	ANY	ATLANTIS II	ANY	NSF	
Brown, K	SCRIPPS	NA9	GYRE*	??	NSF/MGG	2
Brown, K	SCRIPPS	NP9	SPROUL*	SUMMER	NSF/MGG	
Bruland, K	UCSC	NP9	POINT SUR	JUL	NSF/CHEM	2
Buffler, R	UT	NA9	LONGHORN*	JUN	NSF/MGG	1
Buffler, R	UT	IN5	MELVILLE	APR/MAY	NSF/MGG	3
Burdige, D	ODU	NA6	CAPE HENLOPEN*	APR/JUL/OCT	NSF/CHEM	1
Burdige, D	ODU	NP6	POINT SUR*	ANY	NSF/CHEM	
Butler/Watts	IRIS/URI	NA6	WEATHERBIRD II	MAY & AUG	NSF/INST	
Campbell, L	HAWAII	NP8/11	MOANA WAVE/A H	JAN/FEB	NSF/BIO	
Cande, S	SCRIPPS	NP9/SP3	MELVILLE*	JAN	NSF/MGG	3
Capone, D	U OF MD	NA9	GYRE*	OCT-DEC	NSF/BIO	3
Caron, D	WHOI	IN1	LARGE	FEB	NSF/JGOFs	?
Caron, D	WHOI	NA6	WEATHERBIRDII*	JUL/AUG	NSF/BIO	2
Catipovic, J	WHOI	NP6	ATLANTIS II	JUN/SEP	NSP	
Chave, A	WHOI	NP6	ATLANTIS II	JUL	NSF/IDP	1
Childress, J	UCSB	NP9	POINT SUR*	WINTER	NSF/BIO	1
Childress, J	UCSB	NP8	NEW HORIZON*	JUL	NSF/BIO	2
Childress, J	UCSB	NP8	SPROUL*	SUMMER	NSF/BIO	
Christensen, J	BIGELOW	NA6	CAPE HATTERAS*	JUL/AUG	NSF/CHEM	3
Christie, D	OSU	NP13	MELVILLE/EWNG**	ANY	NSF/ODP	2
Cifuentes, L	TAMU	NA9	GYRE	MAY	NSF/BIO	1
Coats, W	SMITHSONIAN	NA6	CAPE HENLOPEN*	MAY/OCT	NSF/BIO	3
Cochran, K	LDEO	NP11	MOANA WAVE	MONTHLY	NSF/CHEM	AN

Cochran/et al	LDEO	NA8	EWING	JAN/DEC	NSF/MGG	35
Coffin, M	UT	SP1/NP11	EWING*	JUL/AUG	NSF/ODP	32
Coffin, M	UT	AN2/3/IN9	PALMER	FEB/MAR	NSF/ODP	52
Collier, R	OSU	IN7/IN11	KNORR/MELVILLE	AUSTRAL SUM	NSF/MGG	43
Constable, S	SCRIPPS	NP9	NEW HORIZON*	EARLY95	NSF/RIDGE	47
Cook, S	HBOI	NA9	SEWARD JOHNSON	JUL	HBOI	3
Cowan, E	APPALACHIAN	NP6	ALPHA HELIX	AUG	NSF/GLA	17
Cowen, R	STONY BROOK	NA9	ENDEAVOR*	OCT	NSF/BIO	10
Cowen, R	STONY BROOK	NA9	OCEANUS*	JAN	NSF/BIO	10
Cowen, R	STONY BROOK	NA9	OCEANUS*	APR/MAY	NSF/BIO	25
Cowen, R	STONY BROOK	NA9	ENDEAVOR*	APR/MAY96	NSF/BIO	25
Cowles, T	OSU	NP9	WECOMA	APR/MAY	NSF/BIO	24
Cowles/Moum	OSU	NP9/	WECOMA	ANY	NSF/BIO	5
Cowles/Moum	OSU	NP12	WECOMA	ANY	NSF/BIO	5
Craig, H	SCRIPPS	SP1/2	MELVILLE	AUG	NSF/MGG	36
Cutter, G	ODU	NA6	ENDEAVOR	APR	NSF/CHEM	14
D'Asaro, E	APL,WA	NP9	WECOMA*	JAN/FEB	NSF/	27
Dacey, J	WHOI	NA9	WEATHERBIRDII*	APR/SEP/NOV	NSF/COOP	20
Dacey, J	WHOI	NP9	WECOMA	APR	NSF/COOP	30
Dagg, M	LUMCON	NA9	PELICAN*	AUG	NSF/BIO	10
Dagg, M	LUMCON	NA9	PELICAN*	JUL	NSF/YSCHO	10
Davidson, K	NPG	NP9	POINT SUR	ANY	NRAD	10
Delaney, J	UW	NP9	ATLANTIS II*	JUN/JUL	NSF/MGG	20
Delaney, J	UW	NP9	ATLANTIS II*	MAY/OCT	NSF/MGG	18
Detrick, R	WHOI	NA6/9	EWING	APR/JUN	NSF/RIDGE	38
Detrick, R	WHOI	NP9	EWING*	SUM/FALL	NSF/RIDGE	28
Deuser, W	WHOI	NA6	WEATHERBIRDII*	JAN	NSF/CHEM	6
Devol, A	UW	NP9	BARNES*	TBA	NSF/CHEM	26
Dick, H	WHOI	MA10	KNORR	ANY	NSF/RIDGE	48
Diebold, J	LDEO	NA9	EWING*	JUN94?	NSF/MGG	31
Dillon, T	OSU	NP9	WECOMA*	MAY	NSF/PHY	1
Donat, J	ODU	NA6	CAPE HENLOPEN*	MAR/AUG/OCT	ONR/MEQ	9
Donnelly, T	SUNY BING	NA9	EWING*	1994?	JOI	5
Driscoll, N	LDEO	SA2	EWING*	TBA	NSF/MGG	38
Driscoll, N	LDEO	IN1	EWING*	SPRING	NSF/ODP	30
Droxler, A	RICE	NA9	CAPE HATTERAS*	FEB/MAR	NSF/ODP	31
Druffel, E	UCI	NP9	ATLANTIS II	FEB	NSF/CHEM	5
Druffel, E	UCI	NP9	NEW HORIZON*	JUN	NSF/CHEM	4
Duda, T	WHOI	NA6	WEATHERBIRDII*	JAN	NSF/PHY	5
Dugdale, R	USC	NP9	POINT SUR*	APR/MAY/JUN	NSF/BIO	15
Echman, J	SKIDAWAY	NP9	ATLANTIS II	APR/OCT	NSF/	5/6
Echman, J	SKIDAWAY	NA6	BLUE FIN*	JAN-JUN	NSF/BIO	27
Eckelbarger, K	U OF MAINE	NA6	WEATHERBIRDII*	FEB-DEC	NSF/BIO	24
Edmond, J	MIT	SP3	ATLANTIS II	AUST SUM	NSF/RIDGE	30
Edson, J	BIGELOW	NP9	WECOMA*	APR/MAY	ONR	34
Eslinger, D	ALASKA	NP5/6	ALPHA HELIX*	APR/MAY	NSF	41
Felbeck, H	SCRIPPS	NP13	SPROUL*	FALL	NSF/BIO	6
Fenical, W	SCRIPPS	NA9	ISELIN*	SUMMER	NSF/CHEM	21
Fisher, A	IND GEO SUR	NP9	WECOMA*	SUMMER	NSF/RIDGE	28
Fisher, C	PENN STATE	NA9	ATLANTIS II	SUMMER	NSF/BIO	8
Fisher, C	PENN STATE	NP13	ATLANTIS II	MID YEAR	NSF/BIO	1
Fisher, C	PENN STATE	NP9	ATLANTIS II	JUL	NSF/BIO	14
Flood, R	STONY BROOK	NA10	EWING	MAR	NSF/MGG	30
Fornari, D	WHOI	MA7	KNORR	JUL	NSF/RIDGE	31

Forsyth, D	BROWN	SP3	MELVILLE*	OCT-NOV	NSF/RIDGE	4
Frank, T	HBOI	NP9	EDWIN LINK*	MAY/AUG	NSF/BIO	1
Frank, T	HBOI	NP9	SEA DIVER*	FEB/OCT	NSF/BIO	
Frew, N	WHOI	NA6	CAPE HENLOPEN*	SEP	ONR	1
Frstrup/Watk	WHOI	NA9	CHARTER	???	NSF/BIO	?
Fuhrman, J	USC	NP9	POINT SUR*	JUN/JUL/AUG	NSF/BIO	1
Gallager, S	WHOI	NA6	ENDEAVOR*	???	NSF/GLOBEC	
Garcia, M	HAWAII	NPT2	MOANA WAVE*	SUMMER	NSF/MGG	
Gardner, W	TAMU	IN	THOMPSON*	ANY	NSF/JGOFs	5
Geider, R	U DEL	NA6	CAPE HENLOPEN*	SPRING/SUM	NSF/BIO	1
George, R	UNC	NA6	CAPE HATTERAS	JUL/DEC	NSF/BIO	1
Giese, B.	TAMU	???	???	???	??	
Glynn, P	MIAMI	NP13	URRZCZ	JUL	NSF/BIO	1
Godfrey, L	CORNELL	ANY	ANY	ANY	NSF	AN
Gorsline D	USC	NP9	EWING	WINTER94/95	NSF/MGG	1
Gorsline D	USC	NP9	EWING*	WINTER95/96	NSF/MGG	1
Green, T	MUSKEGON	GL4	LAURENTIAN*	AUG	NSF/TE	
Hansell, D	BBS	NA6	WEATHERBIRD II	ALL MOS	NSF/CHEM	1
Harper, D	TAMU	NA9	PELICAN*	AUG	NSF/ECOL	
Haury, L	SCRIPPS	NP9	NEW HORIZON*	SUM/WIN	NSF/BIO	1
Herber, T	NPG	NP9	POINT SUR*	FEB/JUN	NAVY	
Highsmith, R	UA	NP2/4	ALPHA HELIX*	JUN-SEP	NSF/DPP	5
Hildebrand, J	SCRIPPS	SP1	MOANA WAVE*	JAN/FEB	NSF/MGG	1
Hildebrand, J	SCRIPPS	NP9	NEW HORIZON*	JUL	NSF/MGG	
Hildebrand, J	SCRIPPS	NP9	NEW HORIZON*	MAR	NSF/MGG	
Hildebrand, J	SCRIPPS	NP13	NEW HORIZON*	ANY	NSF/RIDGE	2
Hochstaedter, A	U SO FL	NP7	MOANA WAVE*	SPRING	NSF/MGG	2
Hodell, D	U FL	SA4,6	EWING*	JAN-MAR	NSF/ODP	5
Hogg, N	WHOI	NA6	OCEANUS	APR	ONR	1
Holbrook, S	WHOI	NP5-NP6	ALPHA HELIX	JUL/AUG	NSF/MGG	3
Holbrook, S	WHOI	NA1/4	EWING	SEP	NSF/ODP	4
Holbrook, S	WHOI	NA6	EWING*	JUL	NSF/MGG	2
Honjo, S	WHOI	IN	THOMPSON	MAY/OCT		AN
Houghton, R	LDEO	NA6	OCEANUS/END/CH	MAY	NSF/PHY	1
Humphris, S	WHOI	NA10	ATLANTIS II	MAR/MAY	NSF/ODP	3
Ingall, E	UT	NA9	LONGHORN*	JUL	NSF/CHEM	1
Irish, et al	WHOI	NA6	OCEANUS	???	NSF/GLOBEC	?
Jenkins, W	WHOI	NA6	CAPE HENLOPEN*	APR-JUN	NSF/CHEM	2
Johnson, K	MLML	SP3	LARGE	MAY	ONR/NSF	4
Johnson, K	BISHOP MU HI	IN3/4/7	MELVILLE	DEC	NSF/RIDGE	5
Johnson, K	MLML	NP9	POINT SUR*	JUN	NSF/CHEM	2
Johnson, P	UW	NP9	ATLANTIS II*	JUN-AUG	NSF/MGG	2
Johnson, P	UW	NP10	EWING/A II	SUMMER	NSF/MGG	1
Johnson, P	UW	NP9	BARNES	SPRING	NSF	
Joyce, T	WHOI	NP9	WECOMA	APRIL	NSF/RIDGE	1
Jumars, P	UW	NP6	BARNES*	EACH QTR	NSF/BIO	1
Karl, D	HAWAII	NP12/9	MOANA WAVE*	AUG&SEP	NSF/BIO	5
Katz, E	LDEO	NA4-7	MEDIUM	SPRING/SUM	NSF/PHY	
Keeling, C	SCRIPPS	SP2	MELVILLE*	MAR/APR	NSF/ATM	
Kent, G	WHOI	NA6/7	EWING*	FALL	NSF/RIDGE	
Kiene, R	U GEORGIA	NA6	CAPE HATTERAS*	JUN	NSF/BIO	:
Kirchman, D	U DEL	NA6	CAPE HENLOPEN*	APR/AUG	NSF/BIO	:
Klimley, P	SCRIPPS	NP9	SPROUL*	JAN/APR	NSF/TECH	
Klinkhammer, G	OSU	NP6	EWING/THOMPSON	ANY	NSF/CHEM	

Klinkhammer, G	OSU	IN10	MELVILLE	AUST SUM	NSF/MGG	35
Klinkhammer, G	OSU	NP6	WECOMA*	SUMMER	ONR	3
Knap, A	BBSR	NA6	WEATHERBIRDII*	ALL	NSF/CHEM	110
Kong, L	USGS/HAWAII	NP12	EWING*	SPRING	USGS	1
Kosro, R M	OSU	IN1	MELVILLE	APR-JUN	NSF/WOCE	50
Landry/Campbel	HAWAII	IN1	THOMPSON	APR-AUG	NSF/CHEM	60
Langmuir, C	LDEO	NP13	MELVILLE	???	NSF/MGG	3
Latz, M	SCRIPPS	NP9	SPROUL*	EA MONTH	NSF/BIO	15
Ledwell, J	WHOI	NA6	ANY	MAY	NSF/WOCE	8
Ledwell, J	WHOI	SA1	OCEANUS	OCT	NSF/PHY	25
Lehman, J	U MICH	GL4	LAURENTIAN*	JUN/JUL/AUG	NSF/BIO	24
Lessard, E	UW	IN1	LARGE	APR	NSF/JGOF5	32
Lessard, E	UW	IN1	LARGE	AUG	NSF/JGOF5	32
Light, K	MBARI	NP9	POINT SUR*	EA QUARTER	MBARI	10
Lilley, M	UW	NP13	ATLANTIS II*	LATE95	NSF/CHEM	36
Lindstrom, E	WOCE	IN1/2	MELVILLE	SEP-OCT	NSF/WOCE	54
Lindstrom, E	WOCE	IN2/4/7	MELVILLE	MAR-APR	NSF/WOCE	42
Lindstrom, E	WOCE	IN3/1	MELVILLE	JUL-SEP	NSF/WOCE	45
Lindstrom, E	WOCE	IN3/6	MELVILLE	JUN-JUL	NSF/WOCE	35
Lindstrom, E	WOCE	IN4/3	MELVILLE	NOV-DEC	NSF/WOCE	57
Lindstrom, E	WOCE	IN5/4/3	MELVILLE	APR-JUN	NSF/WOCE	50
Lindstrom, E	WOCE	IN7/4/2	MELVILLE	JAN-MAR	NSF/WOCE	46
Lipschultz, F	BBS	NP9	POINT SUR	JUN/JUL	NSF	28
Littler, D&M	HBOI	NA9	SEA DIVER*	MAY	NSF/BIO	2
Livermore, R	NERC	SA3	EWING	AUST SUM	NERC	35
Locker/Hine	U OF SO FL	NA9	CAPE HATTERAS*	SPRING	NSF/MGG	15
Lonsdale, P	SCRIPPS	SP6/9	MELVILLE*	FEB	NSF/GEO	35
Love, R	NRL	NP9	WECOMA*	JUL/AUG	NRL	2
Lukas, R	HAWAII	NP12	MOANA WAVE*	EACH MOS	NSF/HOTS	60
Luther, D	HAWAII	IN11	MELVILLE*	JAN	NSF/PHY	3
Luther, G	U DEL	NA6	CAPE HENLOPEN*	AUG	NSF/CHEM	7
Lyle, M	BOISE ST	NP9	EWING*	SEP	NSF/ODP	28
Lynch/Irish	WHOI	NP9	WECOMA*	MAY	ONR	5
Macdonald, K	UCSB	SP3/6	MELVILLE	NOV/APR	NSF/MGG	42
Madin et al	WHOI	IN1	THOMPSON	FEB-MAR	NSF/JGOF5	10
Madin, L	WHOI	IN1	BALDRIDGE	???	NSF/BIO	60
Madsen, J	DEL	SA4/6IN6/9	KNORR	JAN/FEB	NSF/RIDGE	48
Mann, P	UT	NA9	EWING*	APR/OCT	NSF/MGG	28
Mann, P	UT	NA9	OCEANUS	FEB/AUG	NSF/ODP	16
Martens, C	UNC	NA6	CAPE HATTERAS*	SEP	NSF	14
Martin, W	WHOI	NA6	SEWARD JHNSON*	JUL	NSF/CHEM	10
Martinez, F	HAWAII	NP10	MOANA WAVE*	JUN	NSF/MGG	25
Matrai, P	MIAMI	IN1	LARGE	NOV	NSF/CHEM	30
McCartney, M	WHOI	IN11/AN4/5	KNORR*	JAN	NSF/WOCE	49
McCartney, M	WHOI	SP1	KNORR*	MAR (94)	NSF/PHY	8
McCleave, J	MAINE	NA6/9	CAPE HATTERAS*	OCT	NSF/BIO	30
McCorkle, D	WHOI	IN5	KNORR	NOV/DEC	NSF/MGG	2
McIntosh, K	INST OF GEO	NP9/13	EWING*	DEC94/JAN95	NSF/MGG	3
McNutt, M	MIT	SP2	EWING*	AUST SUM	NSF/MGG	4
Michael, P	TULSA	SA1-4	EWING*	DEC93?-94?	NSF/RIDGE	4
Michaels, A	BBS	NA6	WEATHERBIRD II	APR-JUL	NSF/CHEM	2
Miller, K	UT	NP9	NEW HORIZON*	MAR	NSF/GEOPHY	1
Miller/Coffin	OKLAHOMA ST	NA9	GYRE*	JUL/DEC	NSF/BIO	1
Milliman, J	ALASKA	NP6	ALPHA HELIX	JUN	NSF/CLI	2

Mitchell, G	SCRIPPS	NP6	NEW HORIZON	ANY	ONR	
Moffett/Buess	WHOI	NA6	OCEANUS*	OCT	NSF/CHEM	
Moore, G	HAWAII	NP11	EWING*	JUN-NOV	NSF/MGG	2
Moore, W	U OF SO CAR	NA9	CAPE HATTERAS*	JUL	NSF/CHEM	1
Moum, J	OSU	NP9	WECOMA*	AUG&NOV	NSF/PHY	
Mullineau, L	WHOI	NP13	ATLANTIS II*	OCT	NSF/BIO	1
Munk, W	SCRIPPS	NP6	ALPHA HELIX*	JUN	ARPA	1
Murray, J	UW	NP6	BARNES*	ANY	NSF/CHEM	2
Mutter, C	LDEO	NP13	EWING*	FEB/JUN	NSF/MGG	1
Mutter, J	LDEO	SP3	EWING*	MAY-SEP	NSF/RIDGE	2
Mutter, J	LDEO	NA9	EWING*	JAN-APR	NSF/MGG	2
N.P.G.School	NPG	NP9	POINT SUR	APR	NAVY	
N.P.G.School	NPG	NP9	POINT SUR	OCT	NAVY	
N.P.G.School	NPG	NP9	POINT SUR	FEB/MAR/AUG	NAVY	
Nagihara, S	SCRIPPS	IN5	MELVILLE	DEC	NSF/MGG	2
Nelson, J	SKIDAWAY	NA6	BLUE FIN*	APR-SEP	NSF/BIO	1
Nittrouer, C	STONY BROOK	NA10	CAPE HATTERAS	JAN-JUN	NSF/GEO	4
Nittrouer, C	STONY BROOK	NP6	ALPHA HELIX*	JUL	NSF/GEO	2
Nittrouer, C	STONY BROOK	NP9	WECOMA*	JUN/DEC	ONR	3
Nittrouer, C	STONY BROOK	NA6	ENDEAVOR*	SUMMER	ONR	2
Norris, R	WHOI	IN1	THOMPSON	APR/AUG	NSF/JGOFs	?
Nowlin, W	TAMU	IN3/4/5	KNORR*	APR-JUN	NSF/WOCE	4
Olson, R	WHOI	IN1	KNORR*	APR	NSF/JGOFs	3
Olson, R	WHOI	NA6	OCEANUS*	OCT	NSF/BIO	1
Orcutt/Harding	SCRIPPS	NP9	EWING*	JUN/JUL	NSF/RIDGE	1
Orr, M	NRL	NA6	OCEANUS	JUL/AUG	ONR	2
Orr, M	NRL	NA6	ENDEAVOR	JUL/AUG	ONR	2
Osgood, K	SCRIPPS	NP9	SPROUL*	JAN/APR/JUL	NSF/BIO	2
Owens, B	WHOI	SA1	OCEANUS*	MAR/APR	NSF/	4
Owens/Warren	WHOI	NP7	MOANA WAVE*	JUL	NSF	1
Paden, C	OSU	NP9	FRANCISCO	AUG	NSF/PHY	
Paffenhofer, G	SKIDAWAY	NA6	BLUE FIN*	??	NSF/BIO	4
Paul, A	ALASKA	NP6	ALPHA HELIX*	AUG/SEP	NSF	2
Paul, J	U SO FL	NA6	CAPE HATTERAS*	JUN	NSF/BIO	
Paul, J	U SO FL	NA9	PELICAN*	JUL	NSF/BIO	1
Pearl, H	UNC	NA6	CAPE HATTERAS*	MAY/AUG	NSF/BIO	1
Phillips, J	UT	NA9	GYRE*	NOV-APR	NSF/MGG	2
Pickart, R	WHOI	NA6	OCEANUS	APR	NSF/PHY	2
Pieper, R	USC	NP9	NEW HORIZON*	EVEN MOS	NSF/BIO	3
Pillsbury, R	OSU	IN5/4/3	MELVILLE	APR-JUN	NSF/WOCE	
Pratson, L	LDEO	NA9	EWING*	MAR	NSF/MGG	2
Purdy, G	WHOI	MA10	EWING*	SUMMER	NSF/ODP	3
Reed, D	SAN JOSE ST	NP10	EWING*	MAY	NSF/MGG	1
Repeta, D	WHOI	NA6	ENDEAVOR	APR	DOE	1
Rine, J	U SO CAR	NA6	CAPE HATTERAS	JUN	NSF/MGG	1
Roberts, H	LSU	NA9	PELICAN*	JUL/AUG	NSF/GEOPHY	2
Rona, P	RUTGERS	NA10	ATLANTIS II	MAR-JUL	NSF	3
Rosby/Hebert	URI	NA6	ENDEAVOR*	AUG/SEP	NSF/PHY	1
Rowe, Gil	TAMU	NA9	GYRE*	MAY-AUG	NSF/BIO	1
Royer, T	ALASKA	NP6	ALPHA HELIX*	APR/AUG/DEC	NSF/PHY	1
Sandwell, D	SCRIPPS	SP6	MELVILLE	SEP/DEC	NSF/MGG	1
Sanford, T	UW/APL	NP9	POINT SUR	FEP	NSF/TECH	
Sansone, F	HAWAII	NP9	ATLANTIS II	SUMMER	NSF/MGG	
Santschi, P	TAMU	NA9	GYRE*	OCT	NSF/CHEM	

Sawyer, D	RICE	NA7	EWING*	MAY/AUG	NSF/MGG	25
Sayles, F	WHOI	NA6	WEATHERBIRDII*	ALL	NSF/CHEM	47
Schell, D	ALASKA	NP6	ALPHA HELIX*	AUG/SEP	NSF/BIO	8
Schelske, C	U FL	GL4	LAURNETIAN*	APR/AUG/SEM	NSF/MGG	20
Schmitt, R	WHOI	NA10	OCEANUS/END	SEP/OCT	ONR	25
Schmitt/Toole	WHOI	SA1/3	MEDIUM/ISELIN	JAN/APR	NSF/PHY	ANC
Schmitt/Toole	WHOI	NA6	OCEANUS/END	OCT	ONR	25
Schneider, D	WHOI	NP9	ATLANTIS II	SUMMER	NSF/MGG	3
Sempere, JC	UW	IN8/11	MELVILLE	AUST SUM	NSF/ODP	33
Sempere, JC	UW	IN8/11	MELVILLE	NOV94	NSF/RIDGE	6
Sempere, JC	UW	NA6/10	OCEANUS*	SUMMER	NSF/RIDGE	35
Sharp, J	U DEL	NA6	CAPE HENLOPEN*	JUL	NSF/REU	3
Sharp, J	U DEL	NA6	CAPE HENLOPEN*	APR	NSF/CHEM	6
Shenker, J	FIT	NA6/9	????	JAN/FEB	NSF/BIO	14
Shiller, A	U SO MISS	NA9	PELICAN*	NOV	NSF/CHEM	15
Siebenaller, J	LSU	NP9	WECOMA*	MAY	NSF/BIO	10
Siegel, D	UCSB	NA6	WEATHERBIRDII*	JUN/SEP	NSF	12
Simenstad/Jay	UW	NP9	BARNES/SPRUL**	MAY	NSF/LMER	30
Simoneit, B	OSU	HP9/13	ATLANTIS II	SUMMER	NSF/CHEM	5
Smith, C	HAWAII	NP13/9	ATLANTIS II	JUL-DEC	NSF/BIO	12
Smith, D	WHOI	NA9	KNORR	MAR-JUL	NSF/MGG	28
Smith, K	SCRIPPS	NP9	ATLANTIS II*	FEB/JUN/OCT	NSF/BIO	10
Smith, K	SCRIPPS	NP9	NEW HORIZON*	FEB/JUN/OCT	NSF/BIO	15
Smith, S	BROOKHAVEN	IN1/3	THOMPSON*	FEB-DEC	NSF/JGOPS	210
Sambrotto, R	LDEO	NA6	CAPE HATTERAS	JUN/JUL	NSF/BIO	11
Spiess/Hbrand	SCRIPPS	NP6/9	MELLVILLE*	SUMMER	NSF	14
Spiess/Hbrand	SCRIPPS	NP6/9	NEW HORIZON	SPRING	NSF	5
Stanton, T	NPG	NP9	POINT SUR*	APR	ONR	3
Sturz, A	U SAN DIEGO	NP9	SPROUL*	JUN	JUN	2
Suttle, C	UT	NA9	LONGHORN	APR/JUL	NSF/BIO	21
Suttle, C	UT	NA9	LONGHORN	AUG	NSF/BIO	10
Swift,et al	SCRIPPS	IN1-11AN4/5	KNORR	JAN-DEC	NSF/WOCE	365
Taylor, B	HAWAII	SP1	MOANA WAVE*	EARLY95	NSF/MGG	33
Taylor/Wirsen	WHOI	NP9/SP3	ATLANTIS II	FALL	NSF/RIDGE	11
Tindale, N	TAMU	IN8/11/SP4	LARGE	JAN	ONR/NSF	45
Tivey, M	WHOI	NP9	ATLANTIS II*	SUM/FALL	NSF/MGG	25
Toole, J	WHOI	IN1,2	KNORR*	SEP/OCT	NSF/PHY	54
Toole, J	WHOI	IN3-6	MELVILLE	JUN-JUL	NSF/PHY	35
Toole, J	WHOI	NA6	WEATHERBIRDII*	MAR/JUN	NSF/INST	2
Toomey, D	U OF OREGON	NA7	EWING*	APR	NSF/RIDGE	7
Toomey, D	U OF OREGON	NA7	OCEANUS	???	NSF/RIDGE	12
Townsend, D	MAINE	NA6	ENDEAVOR	APR/MAY	NSF/BIO	20
Trehu, A	OSU	NP9	WECOMA*	???	NSF/MGG	6
Tucholke, B	WHOI	NA10	THOMPSON/EWING	MAY-JUL	NSF/RIDGE	37
Twilley, R	U SW LA	NA9	PELICAN	JAN/MAY/AUG	NSF/LMER	48
Van Dover, C	WHOI	NP9	ATLANTIS II	SUMMER	NSF/RIDGE	6
Van Geen, A	LDEO	NP9	PT SUR	MAY	NSF/MGG	8
Vogt, P	NRL	NA2/AR2	EWING*	JUL/AUG94?	NRL	31
Von Herzen, R	WHOI	NA10	ATLANTIS II*	JAN/MAR	NSF/MGG	14
Vrijenhoek/Ltz	RUTGERS	NA6	ATLANTIS II	JUL	NSF/RIDGE	18
Walsh, J	U SO FL	NA9	PELICAN*	MA/JU/SE/DE	NSF/LMER	40
Ward, B	UCSC	NP9/12/13	NEW HORIZON*	JUN	NSF/BIO	31
Warren, B	WHOI	NP7	MOANA WAVE	JUN	NSF/OSR	10
Warren, B	WHOI	IN3/4/5	MELVILLE	APR-JUN	NSF/WOCE	51

Warren, B	WHOI	IN3/4/5	MELVILLE	NOV-DEC	NSF/WOCE	58
Washburn, L	UCSB	NA6	WEATHERBIRDII*	JUL	NSF	23
Waterbury, J	WHOI	IN1	LARGE	FEB/AUG	NSF/JGOFSS	128
Watts, R	URI	NA6	WEATHERBIRDII*	JAN/JUL	NSF/ONR/NO	33
Weatherly, G	FSU	SA1	OCEANUS*	MAR/JUN	NSF/PHY	17
Weller, R	WHOI	IN1	LARGE	OCT	ONR	10
Weller, R	WHOI	IN1	THOMPSON*	APR	ONR	10
Whitledge, T	UT	NA9	LONGHORN*	JUL	NSF/REU	6
Whitworth, T	TAMU	IN7-11AN4/5	KNORR	DEC94/JAN95	NSF/WOCE	49
Whitworth, T	TAMU	IN5/4/3	MELVILLE	APR-JUN	NSF/WOCE	4
Wiebe, W	U OF GA	NA6	BLUE FIN*	MAY/JUL	NSF/BIO	10
Wiengartner, T	UA	NP2/3	ALPHA HELIX*	SEP/OCT	NSF/OPP	20
Wilcock, W	UW	NP9	WECOMA	JUL	NSF/RIDGE	9
Wilcock, W	UW	NP9	WECOMA*	SEP	NSF/RIDGE	6
Wilson, D	UCSB	NP13/SP3A	MELVILLE	ANY	NSF/RIDGE	28
Windom, H	SKIDAWAY	NA6/9	BLUE FIN*	MAR/APR	NSF/CHEM	5
Wong	U DEL	NA6	CAPE HENLOPEN*	MAR-AUG	NSF/PHY	20
Wong/Dunstan	ODU	NA6	ENDEAVOR	APR/MAY	NSF	10
Yamamoto,	MIAMI	NA6	OCEANUS	SUMMER	ONR	
Yayanos, A	SCRIPPS	NP9	NEW HORIZON*	JUL	NSF/INST	
Zafiriou, O	WHOI	NA6	WEATHERBIRD II	AUG	NSF/CHEM	
Zafiriou, O	WHOI	NA6	WEATHERBIRDII*	JUN	NSF/CHEM	
Zehr, J	STONY BROOK	NA9	GYRE/EN**	JAN/FEB	NSF/BIO	2
Zumberge, M	SCRIPPS	NA9	NEW HORIZON*	SUMMER	ONR	

APPENDIX V

1996 SHIPTIME REQUESTS

25 AUG 94

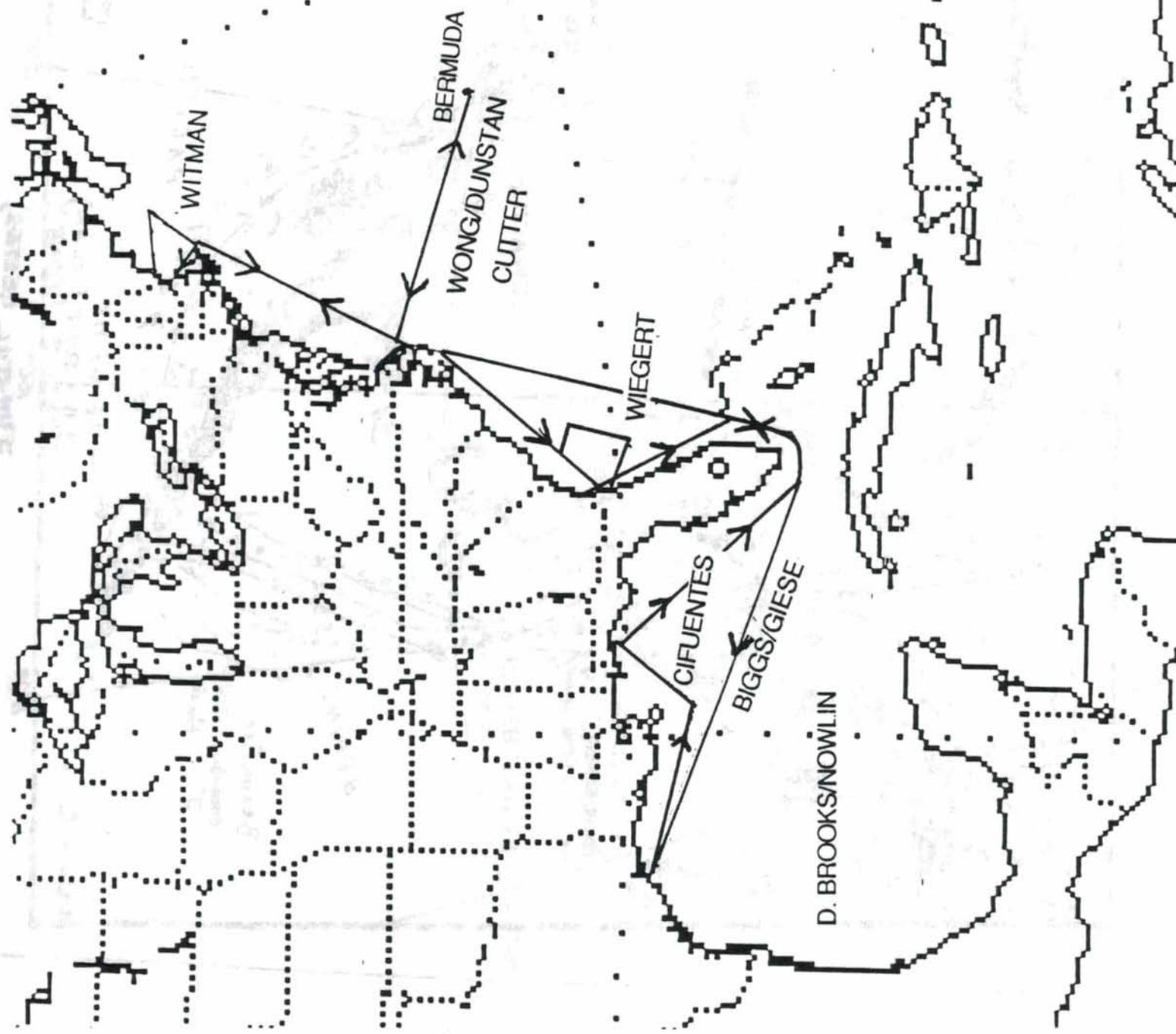
PI	INSTITUTION	AREA	SHIP REQUESTED	OPTIMUM	SOURCE/ FUNDING	DAYS
				1996 DATES		
Allison, M	WHOI	NA10	CAPE HATTERAS	FEB	NSF/MGG	14
Ammerman, J	TAMU	NA6	CAPE HATTERAS	FEB	NSF/CHEM	10
Ammerman, J	TAMU	NA6	CAPE HATTERAS	AUG	NSF/CHEM	7
Ammerman, J	TAMU	NA6	WEATHERBIRD II	AUG	NSF/BIO	7
Bacon/Francois	WHOI	NA6	OCEANUS	JUL/AUG	NSF/CHEM	10
Banse, K	UW	NP9	BARNES	SEP/OCT	NSF/BIO	20
Banse, K	UW	NP9	MEDIUM	JUL	NSF/BIO	9
Becker, K	MIAMI	NA6	ATLANTIS II	SPR/SUM	NSF/ODP	3
Bernhard, J	WADSWORTH	NP9	SPROUL	OCT	NSF/BIO	2
Biesiot, P	U OF S M	NA6	CAPE HATTERAS	SEP	NSF/BIO	2
Brown, K	SCRIPPS	NP13	MELVILLE	SUMMER/FALL	NSF/MGG	12
Brown, K	SCRIPPS	NP9	SPROUL	SPRING/SUM	NSF/MGG	2
Bruiland, K	UCSC	NP9	POINT SUR	JUN-JUL	NSF/CHEM	28
Burdige, D	ODU	NA6	CAPE HENLOPEN	APR	NSF/CHEM	4
Buskey, E	UT	NA9	LONGHORN	MAY	NSF/BIO	7
Butler, R	???	NP9	MELVILLE	JUL	NSF/OTECH	18
Cai/Sayles	WHOI	NA6	MEDIUM	MAR/APR	NSF/CHEM	10
Cai/Sayles	WHOI	NA6	MEDIUM	AUG	NSF/CHEM	10
Capone, D	U MD	NA9/10	ISELIN	AUG-OCT	NSF/BIO	20
Catipovic, J	WHOI	NP6	ATLANTIS II	JUN/SEP	NSF	4
Chave, A	WHOI	NP6/7	ATLANTIS II	APR	NSF/IDP	22
Childress, J	UCSB	NP9	NEW HORIZON	WINTER&JUN	NSF/BIO	24
Chisholm, S	MIT	NA6	OCEANUS	JUN(FROM94)	NSF/BIO	10
Chisholm, S	MIT	NA6	OCEANUS	JAN	NSF/BIO	10
Cifuentes, L	TAMU	NA9	GYRE	JAN	NSF/BIO	10
Coats, D W	SMITHSONIAN	NA6	CAPE HENLOPEN	MAY/OCT	NSF/BIO	30
Cochran, K	STONY BROOK	NP11	MOANA WAVE	MONTHLY	NSF/CHEM	6
Cook, S	HBIO	NA9	SEWARD JOHNSON	JUL	???	3
Cowen, R	STONY BROOK	NA9	ENDEAVOR	APR/MAY	NSF/BIO/PH	25
Cowles/Moum	OSU	NP9/12	WECOMA	MAY/SEP	NSF/BIO	30
Dacey, J	WHOI	NA9	WEATHERBIRD II	SEP/NOV	NSF/CHEM	20
Dagg, M	LUMCON	NA9	PELICAN	JUL	NSF/BIO	10
Delaney, J	UW	NP9	THOMPSON	SUMMER	NSF/RIDGE	22
Deuser, W	WHOI	NA6	WEATHERBIRD II	MAR-NOV	NSF/CHEM	6
Devol, A	UW	NP9	NEW HORIZON	FEB	NSF/CHEM	30
Druffel, E	UCI	IN9	MELVILLE	FEB	NSF/CHEM	33
Dugdale, R	USC	NP9	POINT SUR	APR/MAY/JUN	NSF/BIO	15
Eckelbarger, K	U OF MAINE	NA6	WEATHERBIRD II	FEB-DEC	NSF/BIO	24
Eckman, J	SKIDAWAY	NA6	BLUE FIN	APR/JUL/SEP	NSF/BIO	60
Eckman, J	SKIDAWAY	NA6	BLUE FIN	JUN/AUG	NSF/BIO	4
Fenical, W	SCRIPPS	NA9	ISELIN	SUMMER	NSF/CHEM	21
Forsyth, D	BROWN	SP3	MELVILLE	MAY/JUN	NSF/RIDGE	48
Frank, T	HBOI	NA6/9/13	SEA DIVER	FEB/OCT	NSF/BIO	7
Frank, T	HBOI	NA6/9/13	SEWARD JOHNSON	JUN	NSF/BIO	11
Gallager, S	WHOI	NA6	ENDEAVOR/OCEA	MAR	NSF/BIO	4
Gallager, S	WHOI	NA6	ENDEAVOR/OCEA	MAR	NSF/BIO	4
Glynn, P	MIAMI	NP13	URRZCZ	JUL	NSF/BIO	12
Goad, L	U MICH	GL4	LAURENTIAN	JUL	NSF/TEP	9
Goericke, R	SCRIPPS	NP9	NEW HORIZON	ANY?	NSF/BIO	2

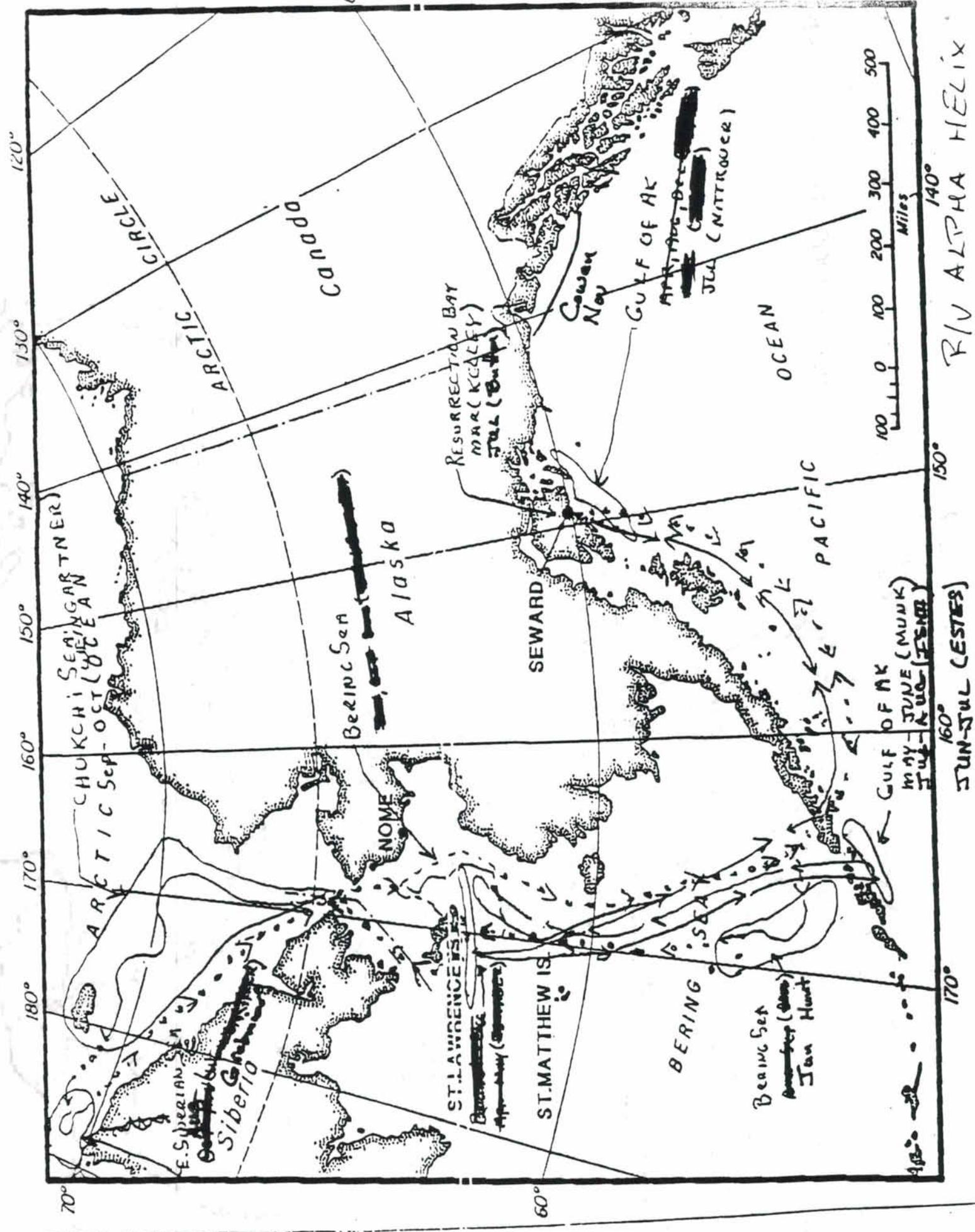
Green, T	MUSKEGON	GL4	LAURENTIAN	AUG	NSF/TE	3
Gregg, M	UW-APL	NP9	BARNES	MAY	??	15
Halfman, J	NOTRE DAME	GL4	LAURENTIAN	AUG	NSF/MGG	2
Hansell, D	BBS	NA6	WEATHERBIRD II	FEB-OCT	NSF/CHEM	12
Hildebrand, J	SCRIPPS	NP9	MEDIUM/LARGE	JUL	NSF/MGG	6
Honjo, S	WHOI	IN1	THOMPSON	OCT	NSF/JGOFSS	ANC
Ingall, E	UT	NA9	LONGHORN	AUG	NSF/CHEM	10
Ingall, E	UT	NP9	SMALL	MAY	NSF/CHEM	12
Johnson, P	UW	NP9	THOMPSON/JAS	SUMMER	NSF	12
Karl, D	HAWAII	NP12/9	MOANA WAVE	MAY&JUN	NSF/BIO	56
Kirchman, D	U DEL	NA6	CAPE HENLOPEN	APR/AUG	NSF/BIO	10
Klinkhammer, G	OSU	SP3	THOMPSON	??	NSF/CHEM	4
Knap, A	BBS	NA6	WEATHERBIRD II	MONTHLY	NSF/CHEM	110
Langmuir, C	LDEO	NP13	MELVILLE	ANY	NSF/MGG	35
Latz, M	SCRIPPS	NP9	SPROUL	MONTHLY	NSF/BIO	15
Ledwell, J	WHOI	SA1	OCEANUS	FEB	NSF/PHY	36
Lehman, J	U MICH	GL4	LAURENTIAN	JUN/JUL/AUG	NSF/BIO	24
Lonsdale, P	SCRIPPS	SP9	MELVILLE	JAN	NSF/MGG	35
MacDonald, K	UCSB	SP3	MELVILLE	NOV	NSF/MGG	43
Martin, W	WHOI	NA6	KNORR	JUL	NSF/CHEM	10
McCleave, J	MAINE	NA6/9	CAPE HATTERAS	FEB	NSF/BIO	30
McCorkle, D	WHOI	NP13/SP3	MELVILLE	OCT/NOV	NSF/MGG	24
Michaels, A	BBS	NA6	WEATHERBIRD II	MAR/APR/JUN	NSF/CHEM	20
Michaels, A	BBS	NA6	WEATHERBIRD II	MAR/MAY	NSF/CHEM	14
Mitchell, G	SCRIPPS	NP9	NEW HORIZON	ANY	ONR	2
Moffett/Busler	WHOI	NA6	WEATHERBIRD II	APR	NSF/CHEM	5
Moun, J	OSU	NP9	WECOMA	AUG	NSF/PHY	10
Muramoto, J	WHOI	IN1	THOMPSON	JAN/FEB	NSF/JGOFSS	??
Murray, J	UW	NP9	BARNES	AUG	NSF/CHEM	7
Murray, J	UW	NP9	BARNES	TBA	NSF/CHEM	25
Mutter, C	LDEO	NP10	EWING	APR	NSF/MGG	46
Nelson, J	SKIDAWAY	NA6	BLUE FIN	JAN/MAR	NSF/BIO	20
Nittrouer, C	STONY BROOK	NA6	CAPE HATTERAS	JUL-DEC	NSF/MGG	49
Nittrouer, C	STONY BROOK	NP9	WECOMA	JAN&MAR	ONR	14
Nittrouer, C	STONY BROOK	NA6	OCEANUS	SUMMER	ONR	20
Norris, R	WHOI	IN1	THOMPSON	JAN/FEB	NSF/JGOFSS	??
Olson, R	WHOI	NA6	OCEANUS	MAR	NSF/BIO	14
Orcutt/Vernon	SCRIPPS	NP11	MELVILLE	SPRING/SUM	NSF/ODP	15
Paffenoffer	SKIDAWAY	NA6	BLUE FIN	ALL	NSF/BIO	48
Paul, A	ALASKA	NP6	ALPHA HELIX	AUG/SEP	NSF	21
Richardson, P	WHOI	SA2	MEDIUM/LARGE	MAY/JUN	NSF/PHY	19
Rowe, G	TAMU	NA9	GYRE	MAY-AUG	NSF/BIO	10
Royer, T	ALASKA	NP6	ALPHA HELIX	APR/AUG/DEC	NSF/PHY	15
Sambrotto, R	LDEO	NA6	CAPE HATTERAS	APR/MAY	NSF/BIO	21
Sanford, T	UW-APL	NP9	MEDIUM	AUG	NSF/PHY	23
Santschi, P	TAMU	NA9	GYRE	MAR/OCT	NSF/CHEM	15
Sawyer, D	RICE	NA7	EWING	MAY-AUG	NSF/MGG	25
Sayles, F	WHOI	NA6	WEATHERBIRD II	ALL	NSF/CHEM	28
Schneider, D	WHOI	NP13	ATLANTIS II	ANY	NSF/MGG	20
Sharp, J	DEL	NA6	CAPE HENLOPEN	JUL	NSF/REU	3
Shiller, A	U OF S M	NA9	PELICAN	JUN	NSF/CHEM	15
Siegel, D	UCSB	NA6	WEATHERBIRD II	MAR/AUG	NSF/	12
Sieracki, M	BIGELOW	NA6	CAPE HATTERAS	JUL	NSF	12
Simenstad, C	UW	NP9	BARNES	JUL	NSF/LMER	30

Smith, C	HAWAII	NP13	ATLANTIS II	JUL-DEC	NSF/BIO	12
Smith, C	HAWAII	NP9	ATLANTIS II	JAN-AUG	NSF/BIO	2
Spiess/Hildbd	SCRIPPS	NP9	MELVILLE/N H	SUMMER	???	14
Suttle, C	UT	NA9	LONGHORN	AUG	NSF/BIO	10
Taylor/Wirsen	WHOI	NP9/13	ATLANTIS II	SPRING	NSF/RIDGE	8
Toole, J	WHOI	IN7	FRANKLIN	FALL	NSF/PHY	21
Townsend, D	MAINE	NA6	ENDEAVOR	APR&MAY	NSF/BIO	20
Turner, R	LSU	NA9	PELICAN	JAN-OCT	NSF/LMER	96
Van Dover, C	ALASKA	NA6	ATLANTIS II	JAN/FEB	NSF/RIDGE	8
van Green, A	LDEO	NP9	POINT SUR	NOV	NSF/MGG	4
Vrijenhoik/Ltz	RUTGERS	NP9	KNORR/ALVIN	EARLY/LATE	NSF/RIDGE	19
Walsh, J	U OF S FL	NA9	ISELIN/PELICAN	FEB/MAR/APR	NSF/LMER	30
Washburn, L	UCSB	NA6	ENDEAVOR	JUN	NSF	19
Whitworth, T	TAMU	AN2/3/4	PALMER	JAN	NSF/WOCE	53
Whitledge, T	UT	NA9	LONGHORN	JUL	NSF/REU	6
Wiebe, W	U OF GA	NA6	BLUE FIN	MAR/JUL	NSF/BIO	10
Windom, H	SKIDAWAY	NA6	BLUE FIN	JUL/AUG	NSF/CHEM	5
Zafirou, O	WHOI	NA6	MEDIUM	AUG	NSF/CHEM	3
Zafirou, O	WHOI	NA6	WEATHERBIRD II	JUN	NSF/CHEM	3
Zafirou, O	WHOI	NP6	MOANA WAVE	OCT	NSF/CHEM	3
Zumberge, M	SCRIPPS	NP9	NEW HORIZON	SUMMER	ONR/MGG	5

APPENDIX VI

R/V GYRE
TEXAS A&M UNIVERSITY
1995 PROPOSED CRUISE TRACK





R/V ALPHA HELIX

JUN-JUL (ESTES)

170°

160°

150°

140°

130°

70°

60°

120°

130°

140°

150°

160°

170°

180°

ARCTIC CIRCLE

ARCTIC OCEAN

CHUKCHI SEA

BERING SEA

Alaska

NOME

ST. LAWRENCE IS.

ST. MATTHEW IS.

SEWARD

RESURRECTION BAY
MAR (KALEY)
JUL (BUTLER)

Cowardin

GULF OF AK

BERING SEA

Bering Sea
MAY-JUNE (MUNK)
JUL-AUG (ESNER)

Miles
0 100 200 300 400 500

PACIFIC OCEAN

GULF OF AK
MAY-JUNE (MUNK)
JUL-AUG (ESNER)

JUN-JUL (ESTES)

Siberia
E. SIBERIAN SEA
GULF OF AK

BERING SEA
MAY-JUNE (MUNK)
JUL-AUG (ESNER)

BERING SEA

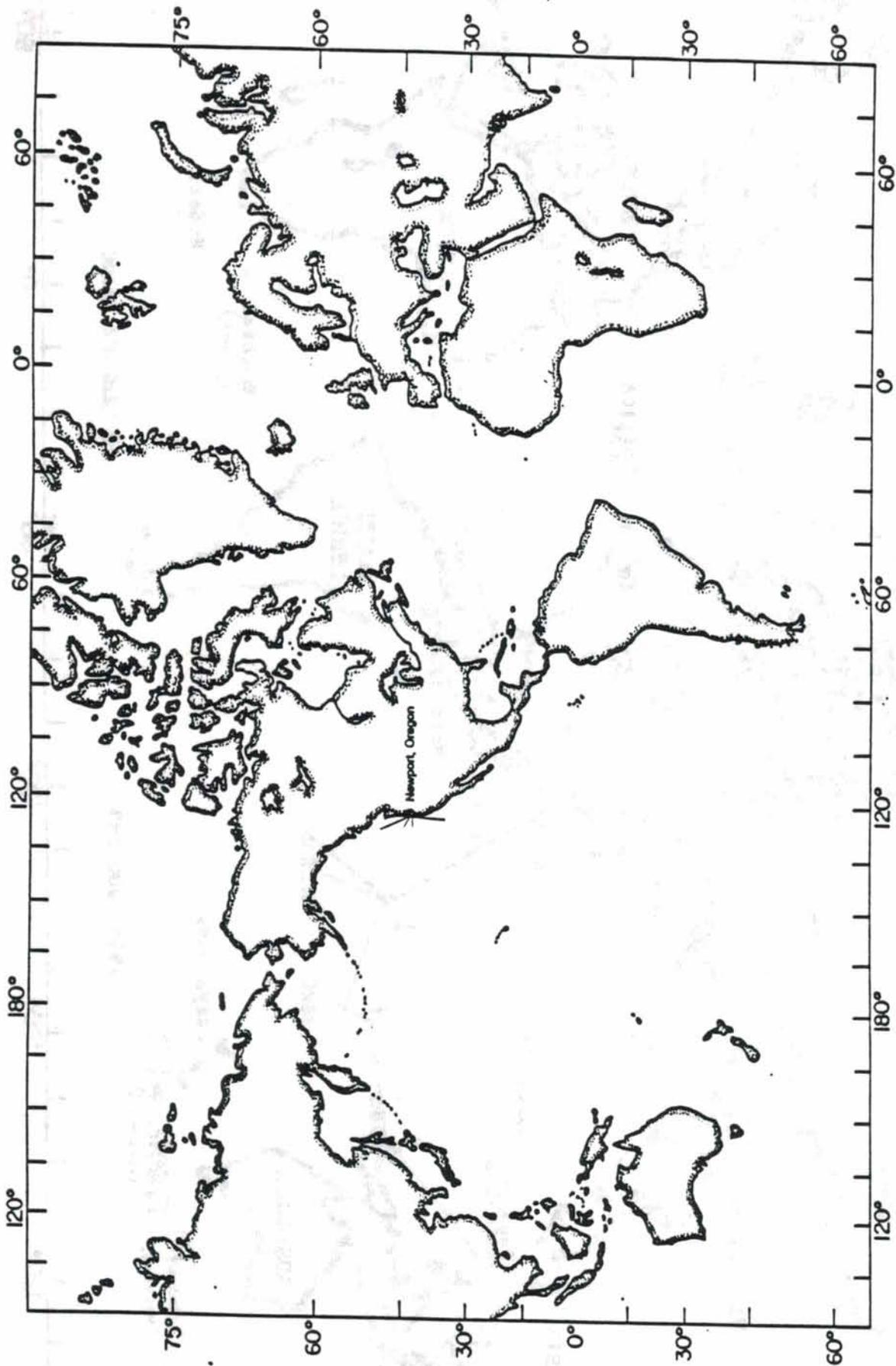
Bering Sea
MAY-JUNE (MUNK)
JUL-AUG (ESNER)

Miles
0 100 200 300 400 500

PACIFIC OCEAN

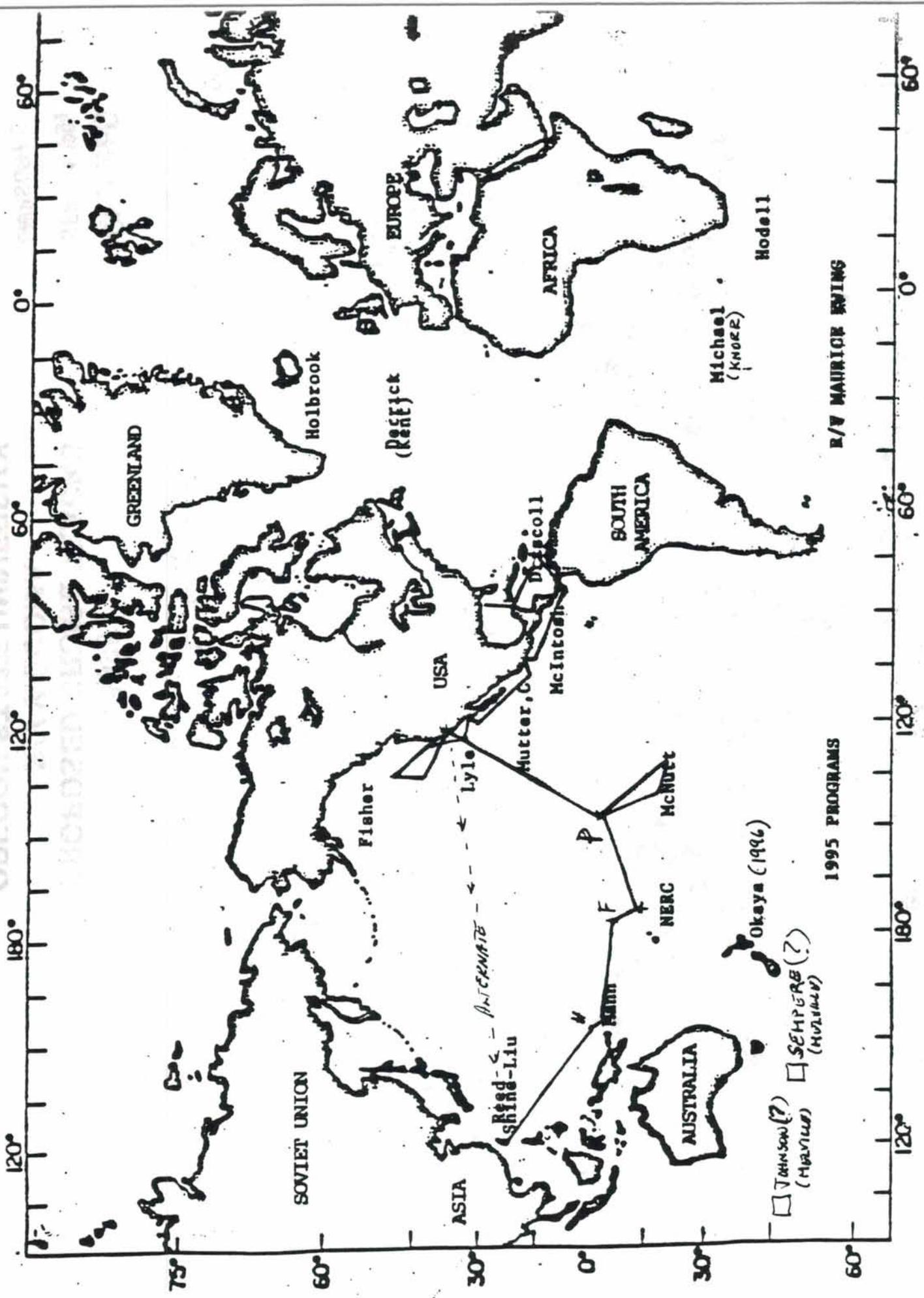
GULF OF AK
MAY-JUNE (MUNK)
JUL-AUG (ESNER)

JUN-JUL (ESTES)



RECEIVED
SEP 1 1994
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1995
PROPOSED CRUISE TRACKS
RV WECOMA
OREGON STATE UNIVERSITY



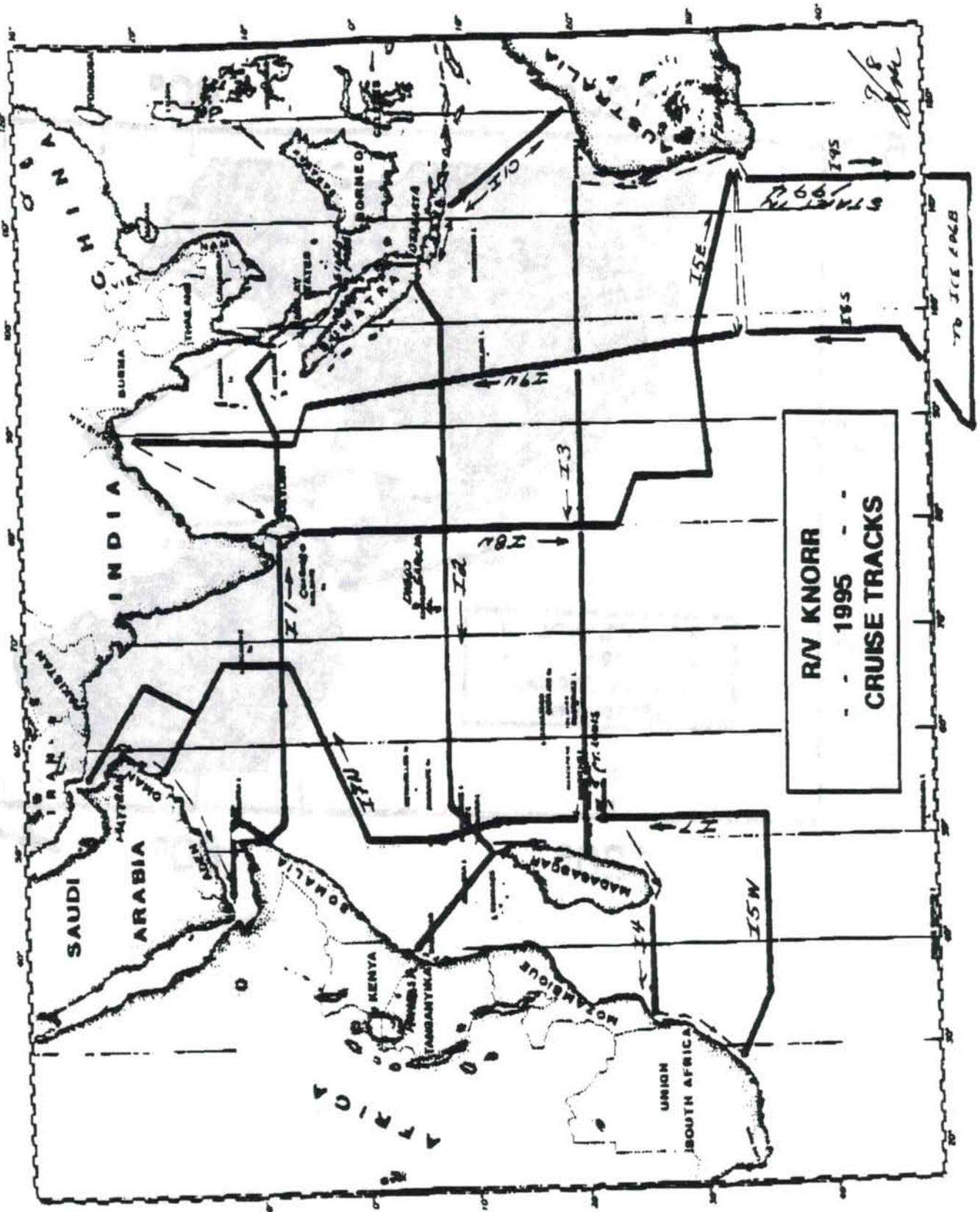
R/V MAURICE EWING

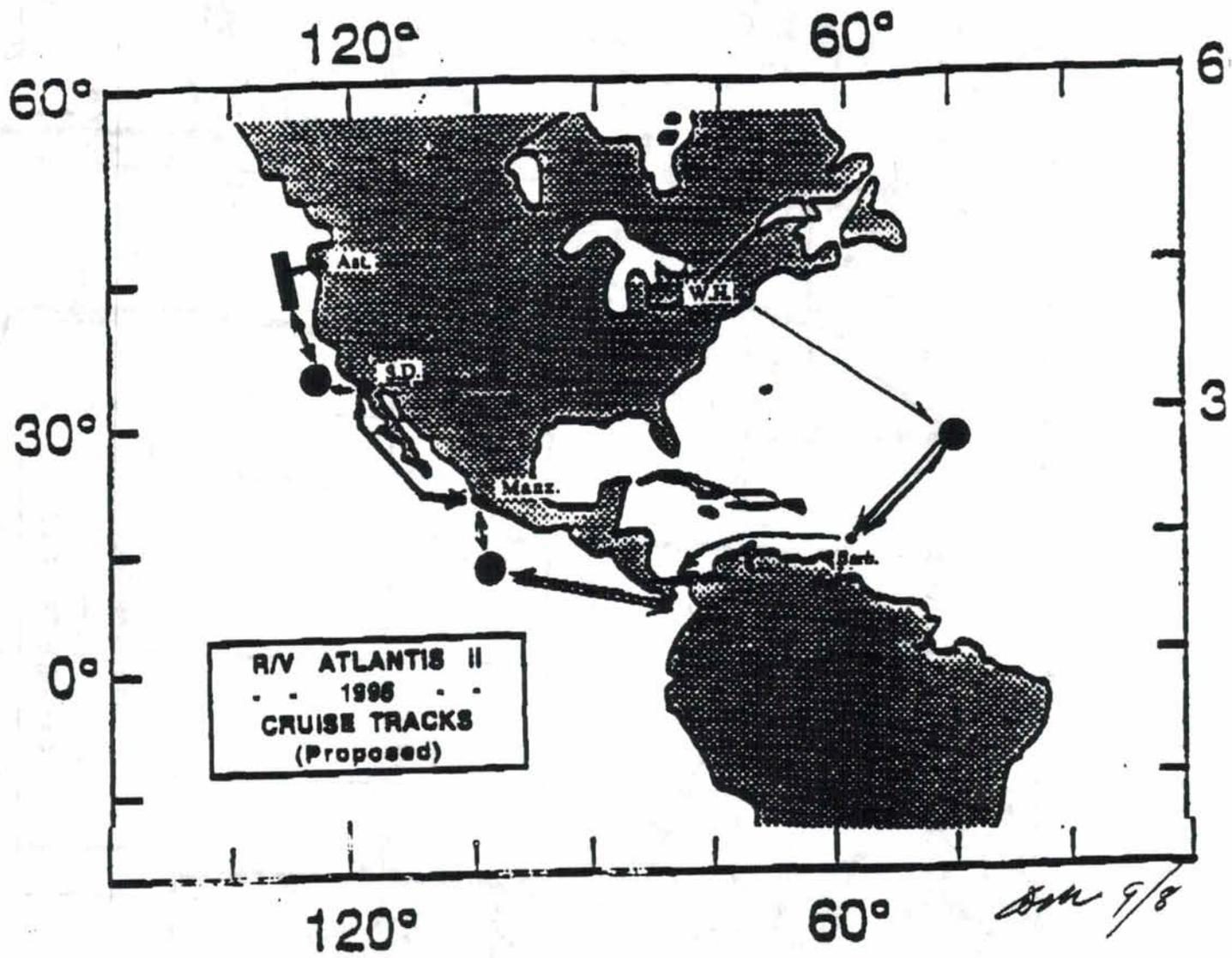
1995 PROGRAMS

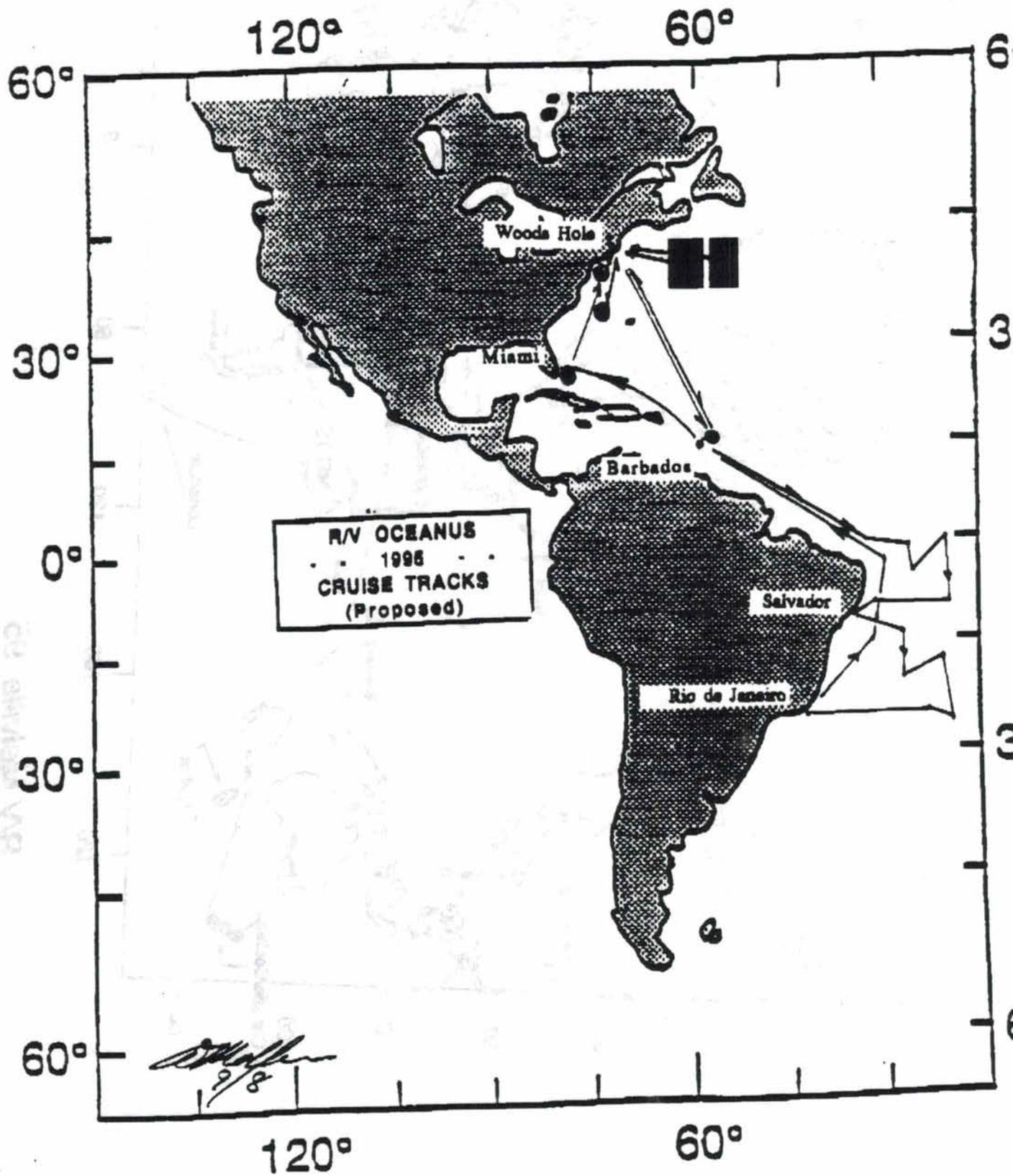
TRACK CHART

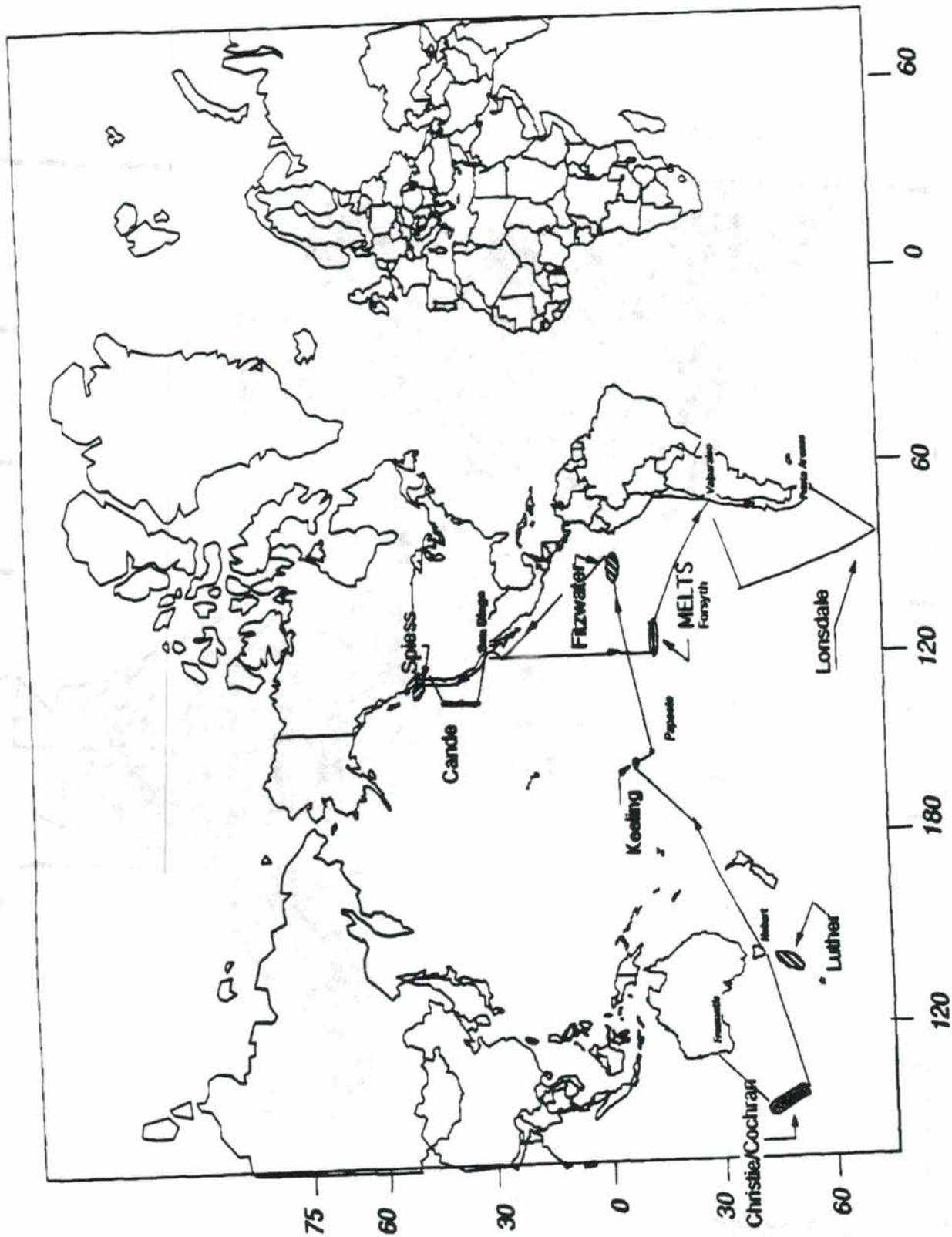
Rosen 9/11

ET 11116

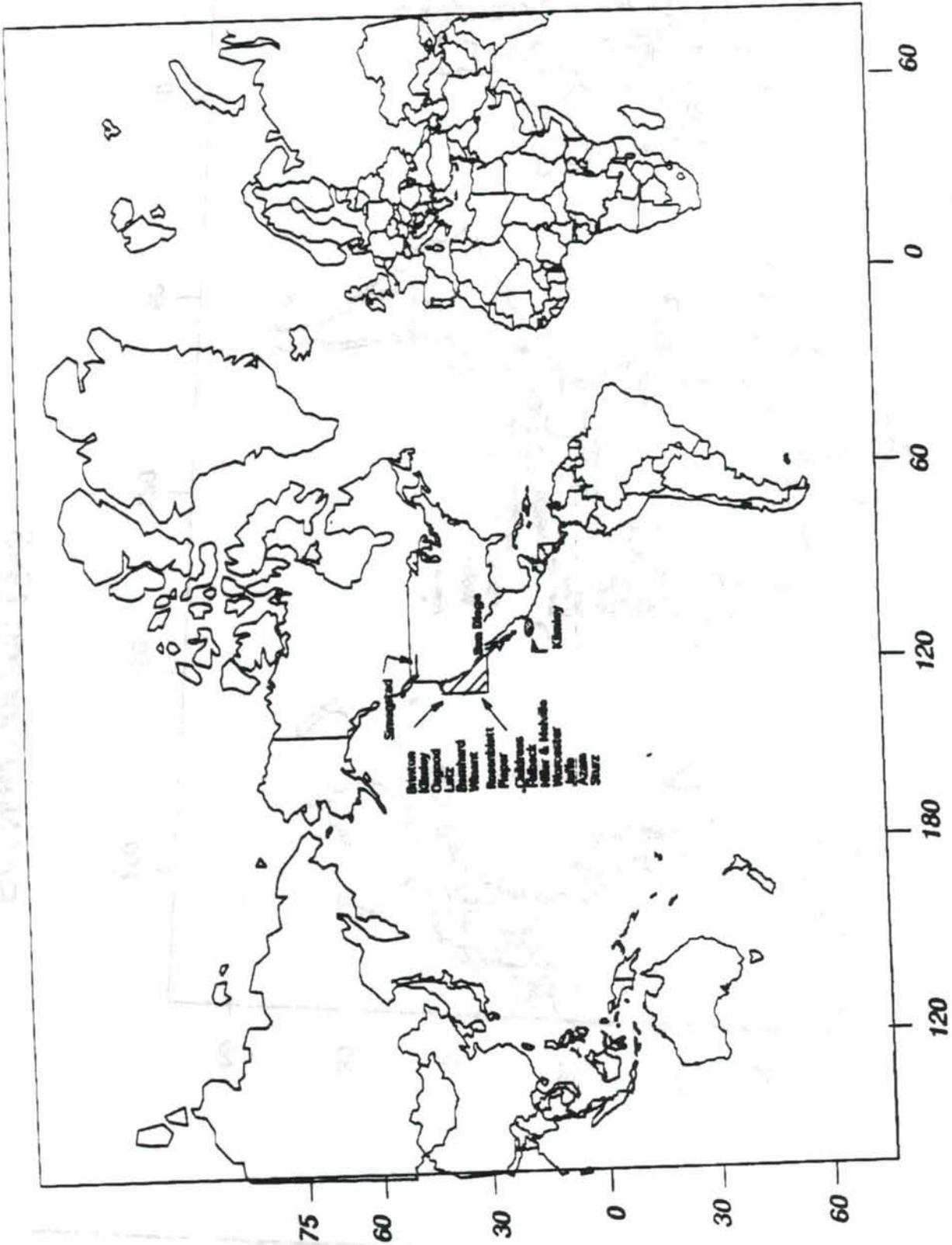






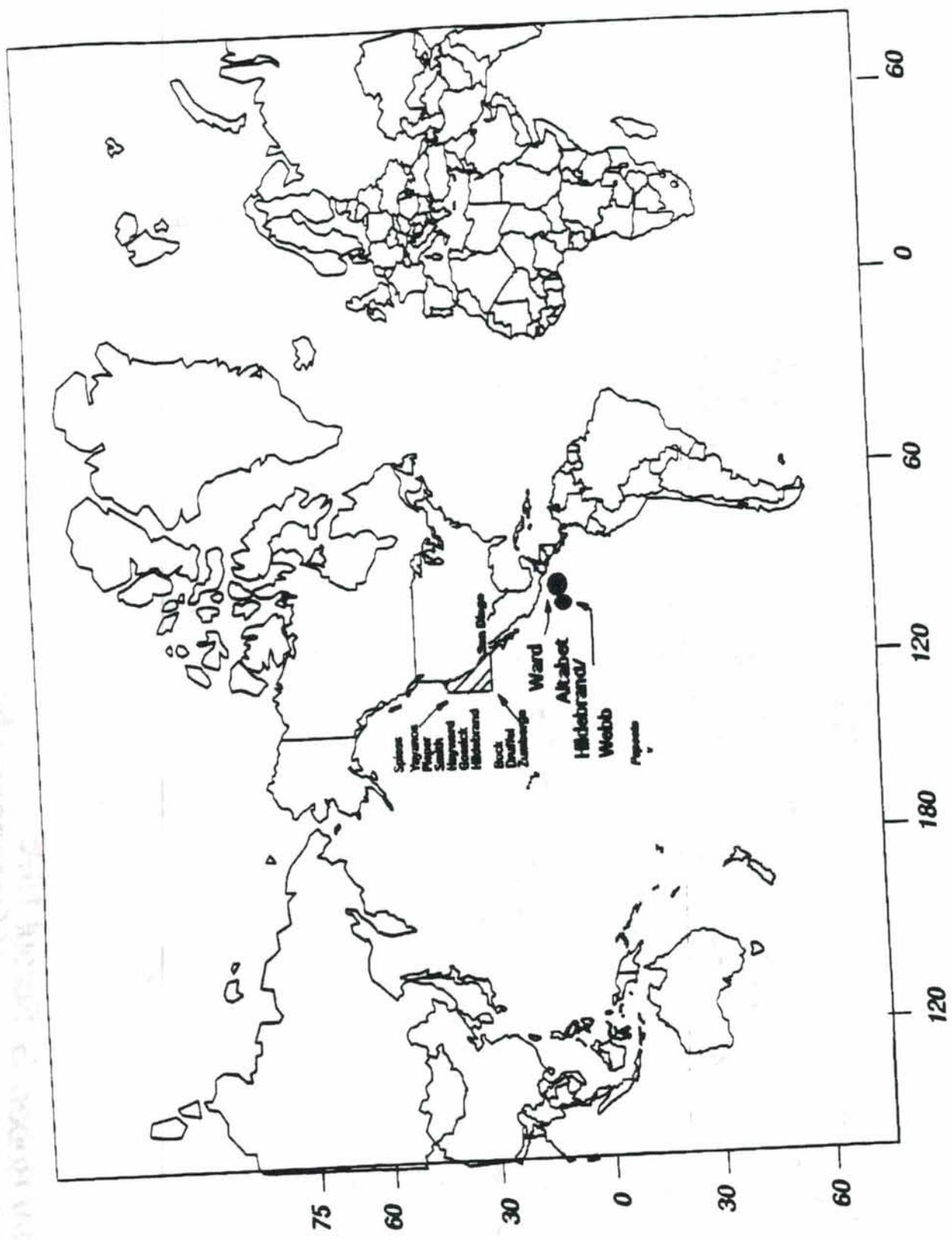


R/V Melville 95
 Scripps Institution of Oceanography



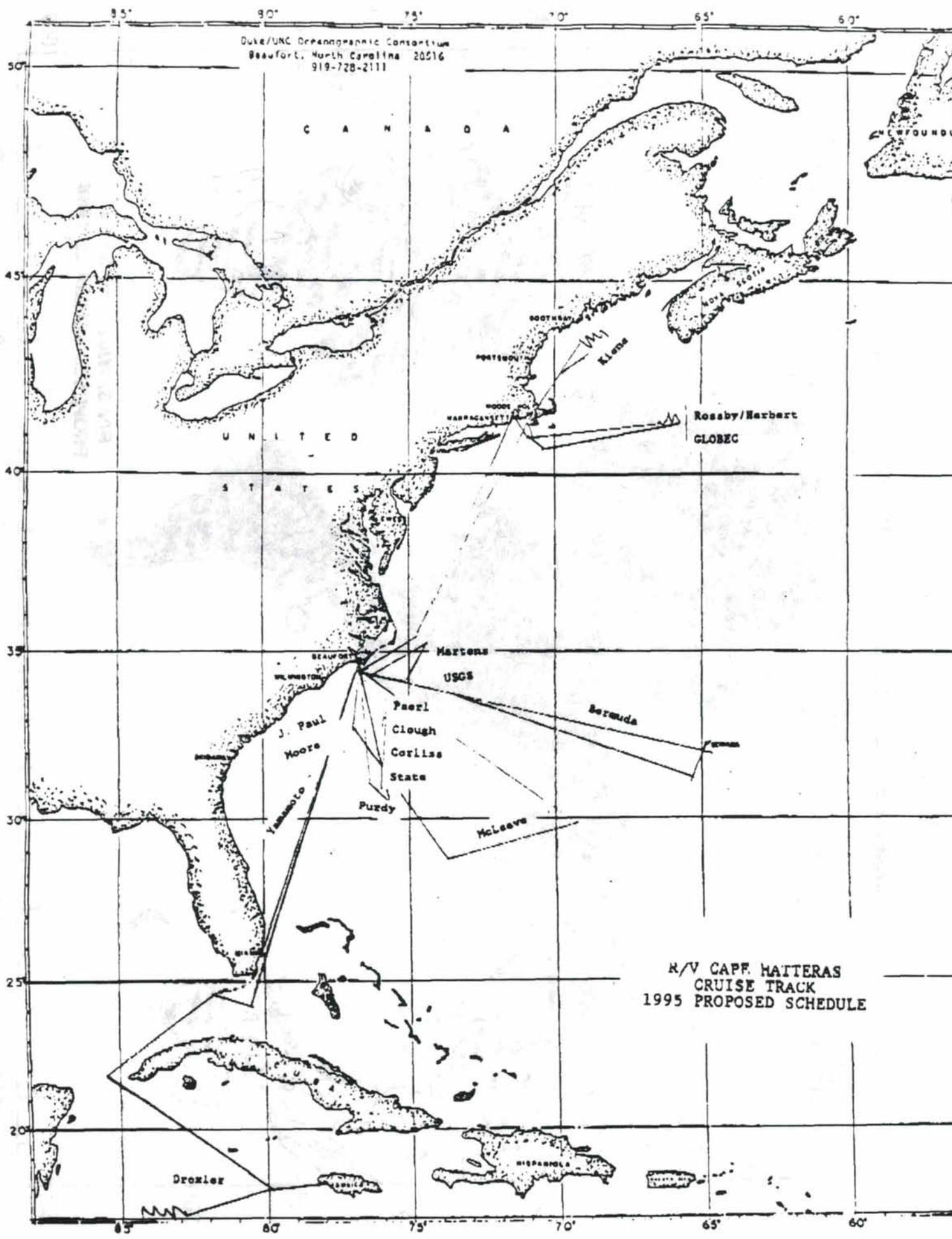
***R/V Robert G. Sproul 1995
Scripps Institution of Oceanography***

Scrubber vegetation on (P. persimilis) - 11
2000-2001 - 3 1000m x 1000m



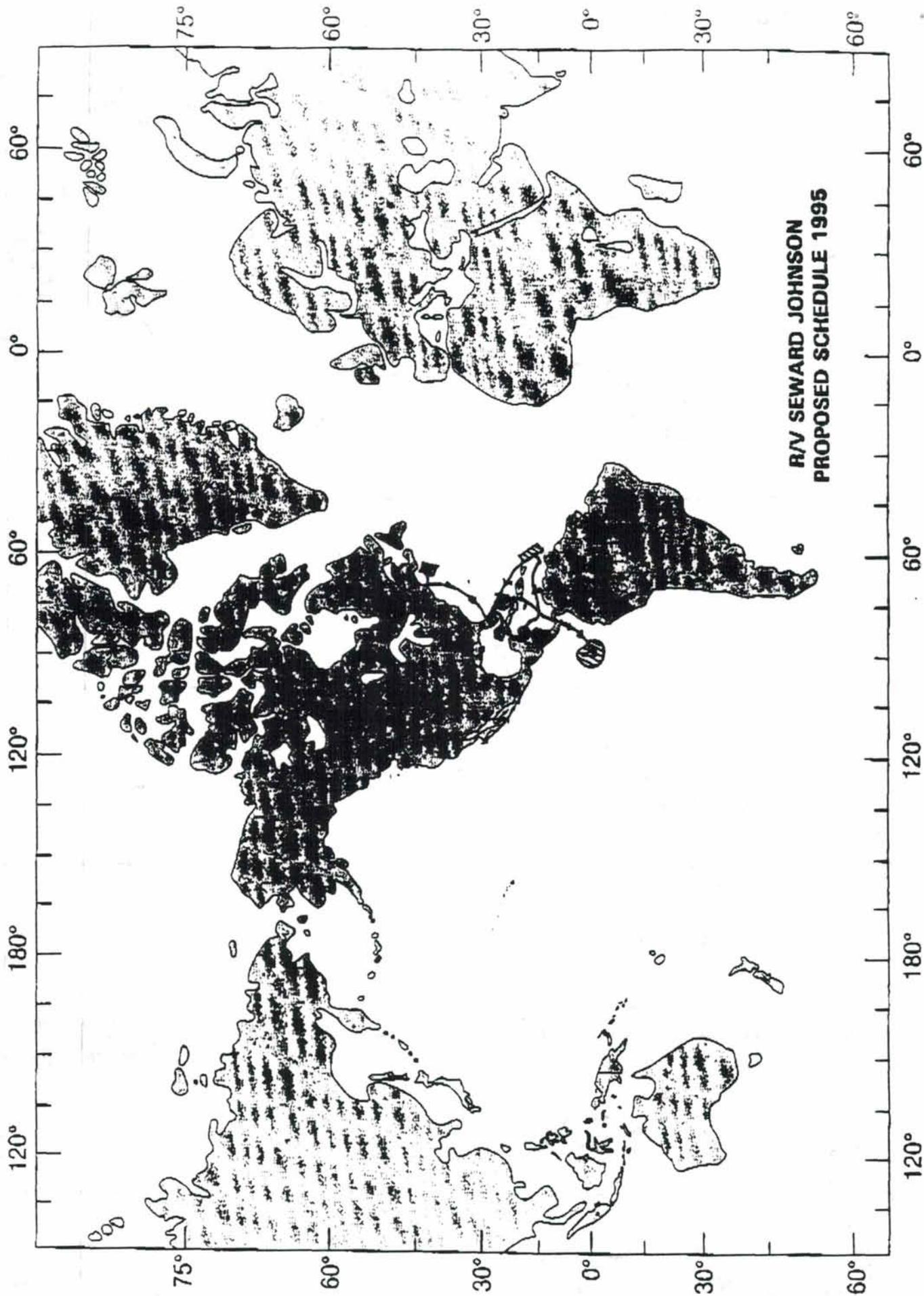
R/V New Horizon 1995
Scripps Institution of Oceanography

Duke/UNC Oceanographic Consortium
Beaufort, North Carolina 28516
919-728-2111



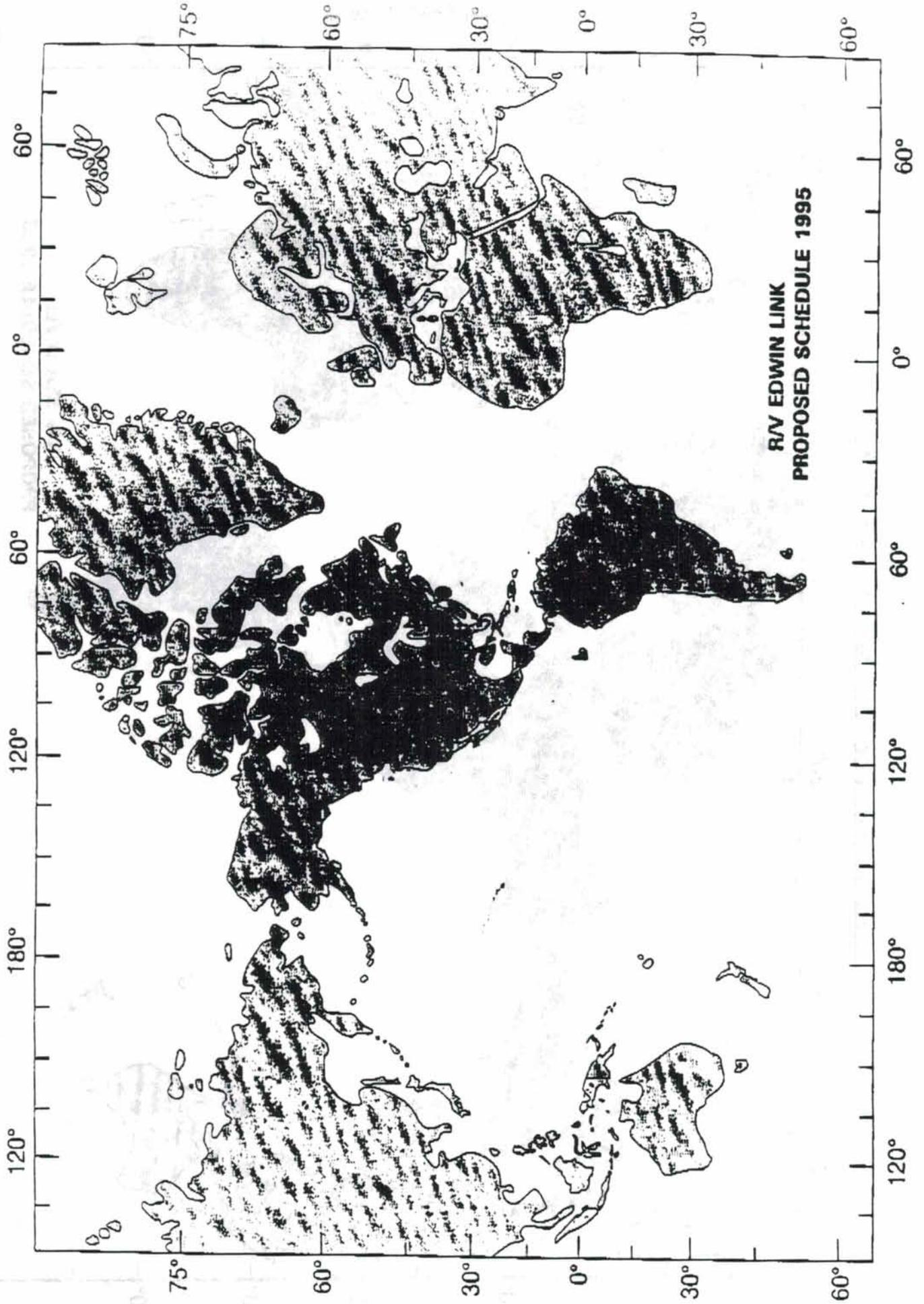
R/V CAPE MATTERAS
CRUISE TRACK
1995 PROPOSED SCHEDULE

HARBOR BRANCH OCEANOGRAPHIC INSTITUTION, INC.



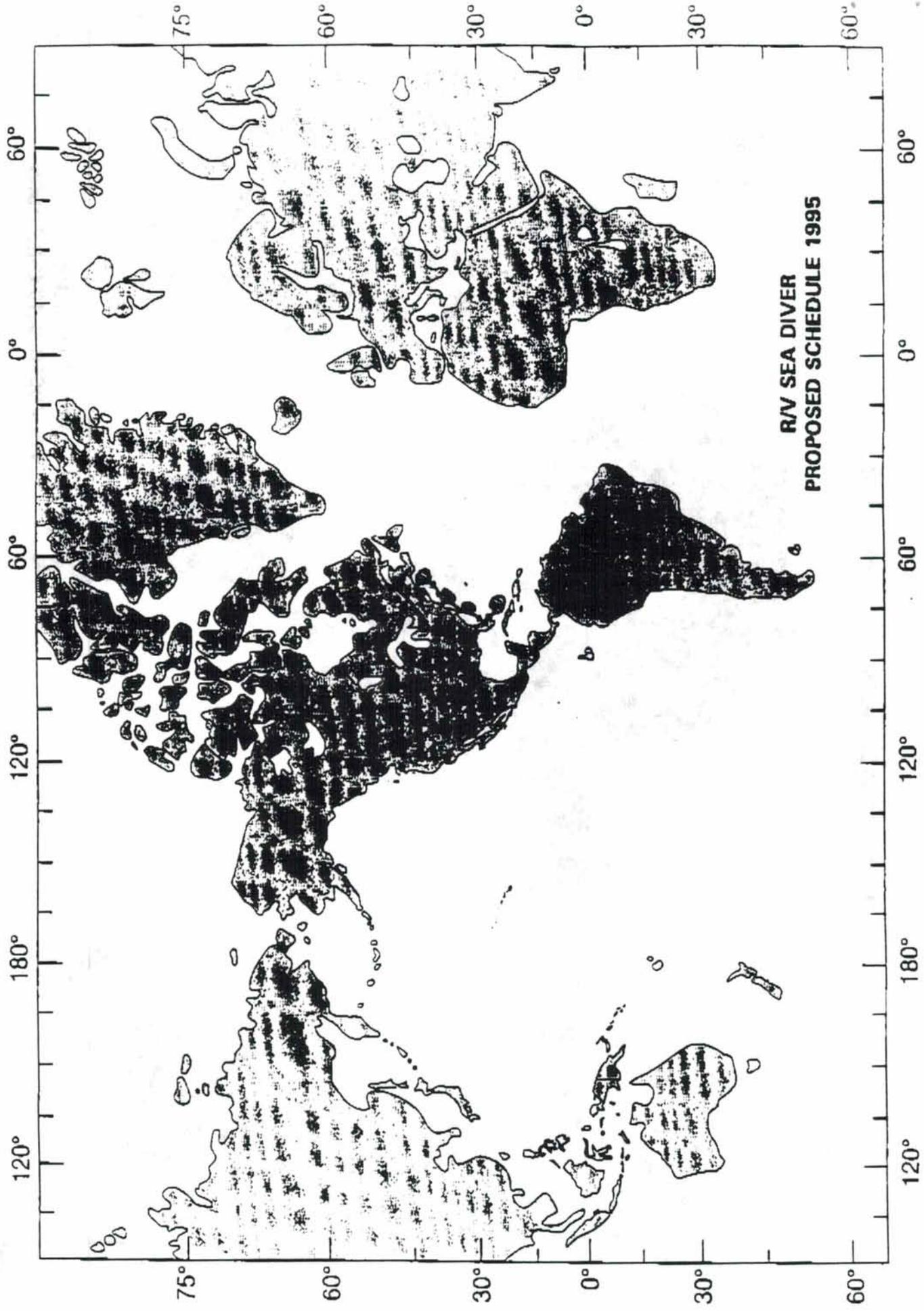
R/V SEWARD JOHNSON
PROPOSED SCHEDULE 1995

HARBOR BRANCH OCEANOGRAPHIC INSTITUTION, INC.

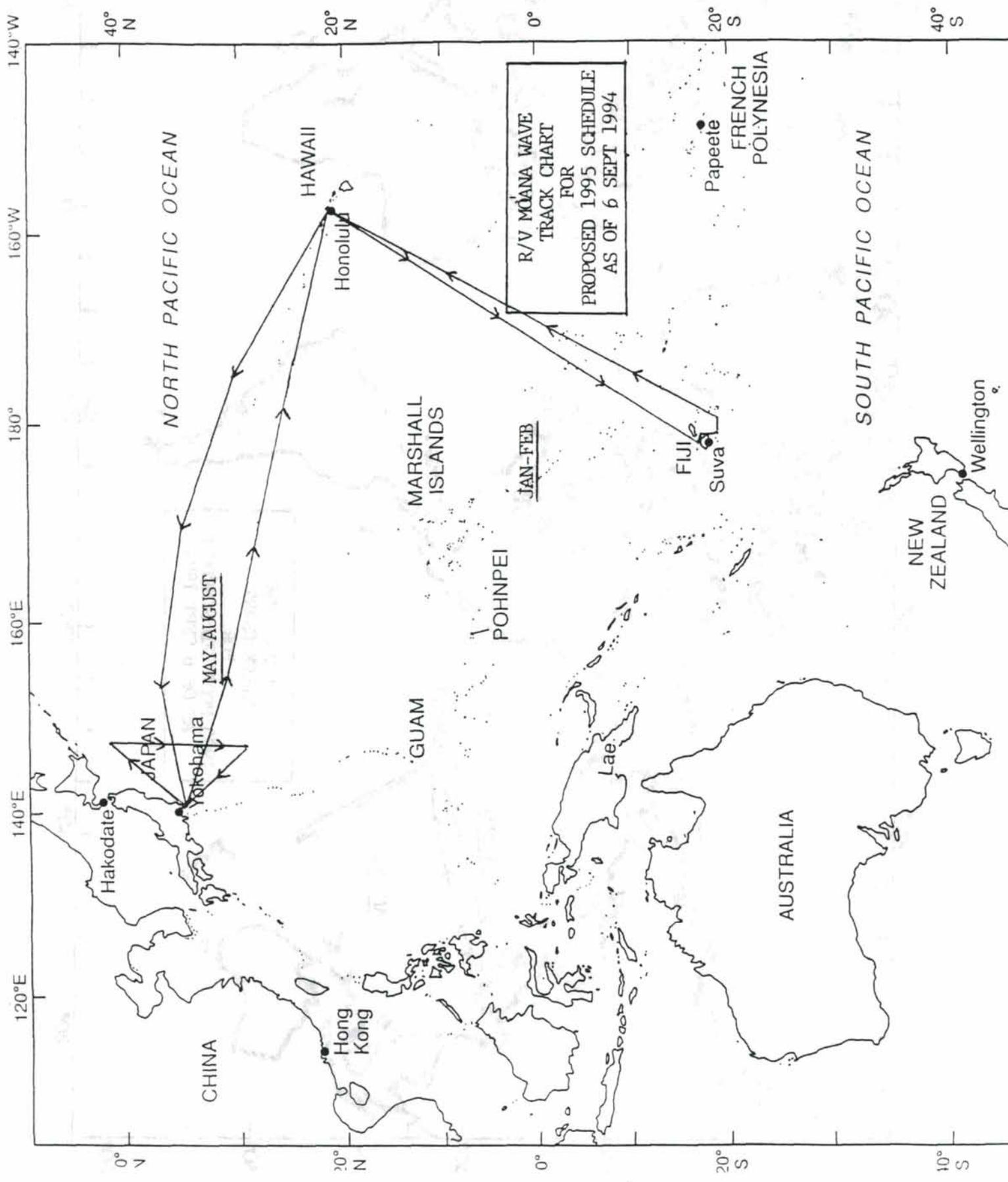


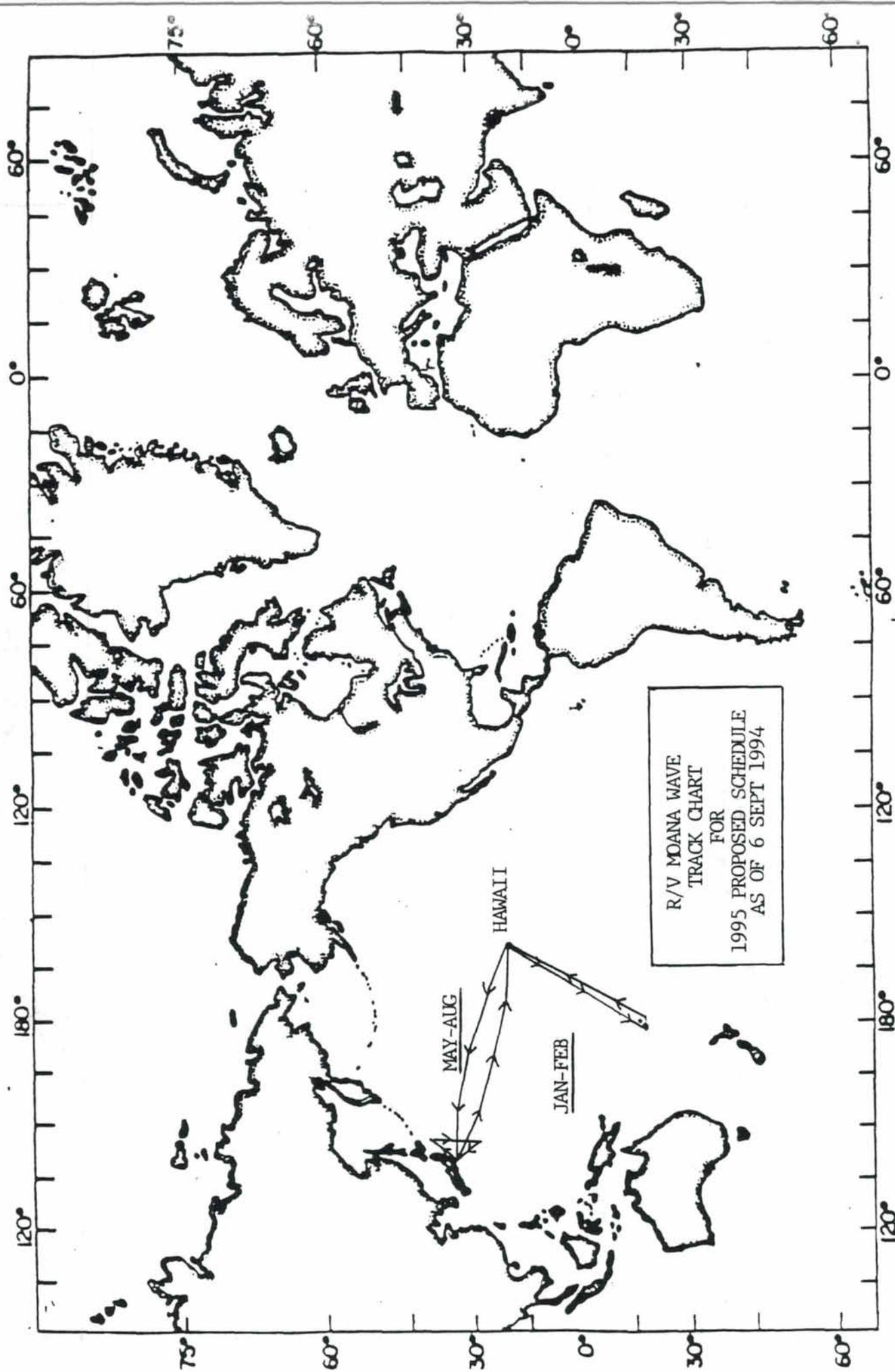
R/V EDWIN LINK
PROPOSED SCHEDULE 1995

HARBOR BRANCH OCEANOGRAPHIC INSTITUTION, INC.



R/V SEA DIVER
PROPOSED SCHEDULE 1995

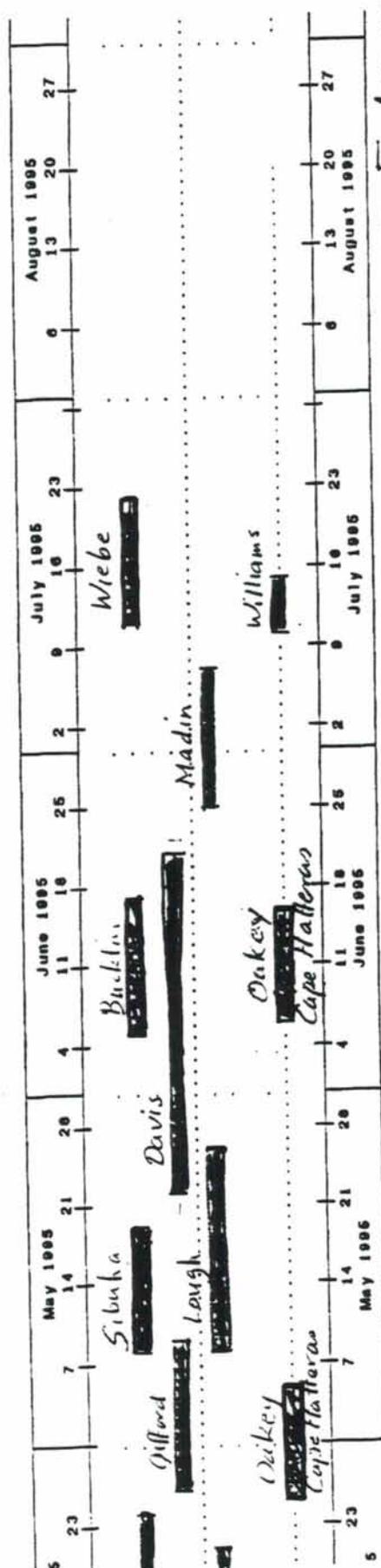
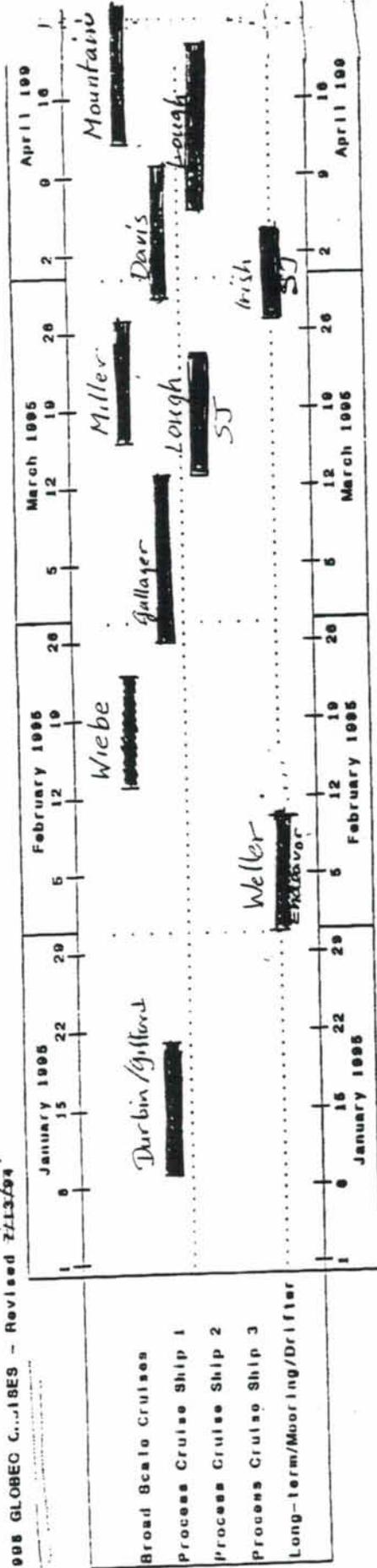




August 16, 1995

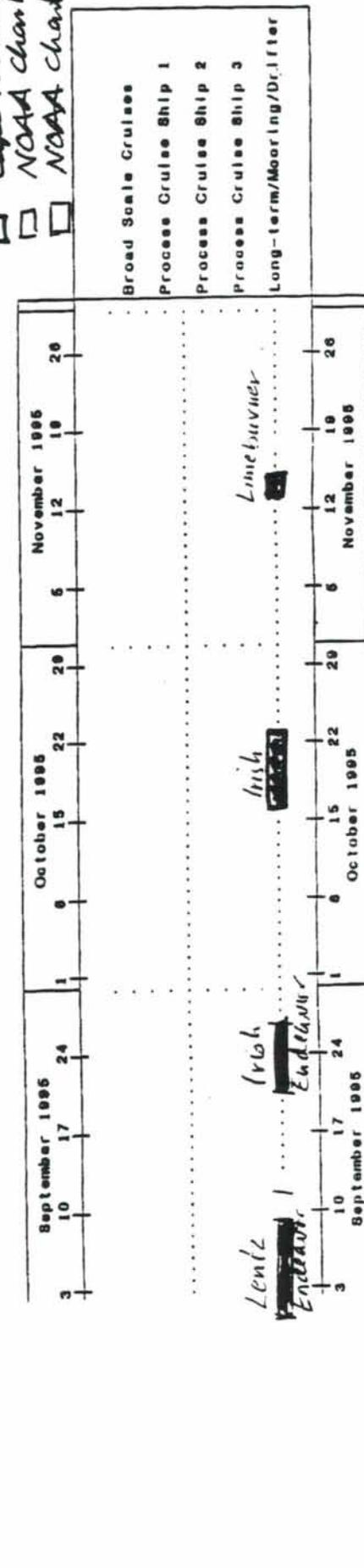
9/12/94

1995 GLOBEC C...18ES - Revised 7/13/94



SJ = Seward Johnson (NOAA charter 1)

Endeavor
Albatross
Cape Hatteras
NOAA charter 1
NOAA charter 2



APPENDIX VII

**COAST GUARD
WAGB 20
POLAR ICEBREAKER
REVIEW**

SEPTEMBER 1994

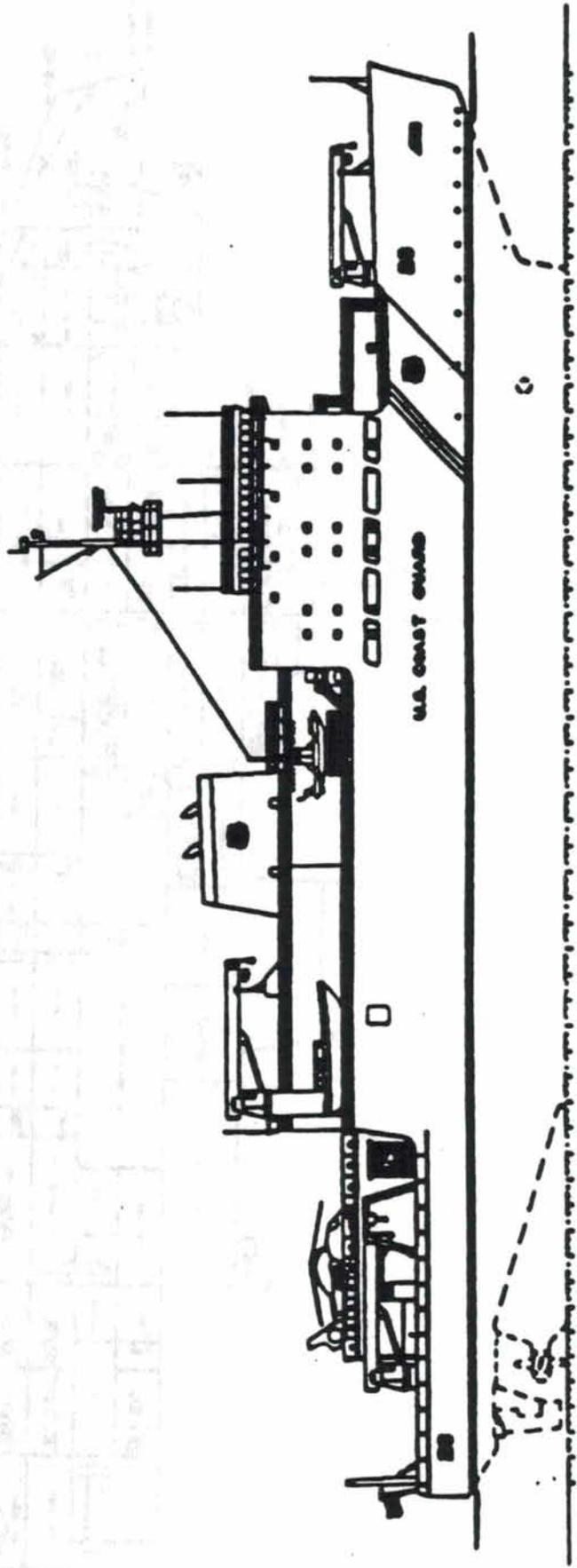
POLAR ICEBREAKER - WAGB 20

420, 400 & 269 WAGB SHIP CHARACTERISTICS

	<u>HEALY</u>	<u>POLAR</u>	<u>WIND</u>
LENGTH (OVERALL)	420'	400'	269'
BEAM (EXTREME)	82'	78	63' 6"
DRAFT (FULL LOAD)	29' (MAX)	28'	29'
DISPLACEMENT (FULL LOAD)	16303 TONS	12,200 TONS	6,500 TONS
TYPE PROPULSION	DIESEL ELECTRIC (AC - AC CYCLO CONVERTER)	GAS TURBINE OR DIESEL / ELECTRIC (AC - DC) (AC - DC)	DIESEL / ELECTRIC (DC - DC)
SHAFT HP / NO.	30,000 / 2	60,000 / 3 (GT)	10,000 / 2
SCREWS		18,000 / 3 (D / E)	
SPEED (SUSTAINED)	12.5 KNOTS	12.5 KNOTS	12.0 KNOTS
ENDURANCE	16,000 NM AT 12.5 KT	28,000 NM AT 12.0 KT	38,000 NM AT 10.0 KT
ICEBREAKING	4.5FT AT 3 KT	6FT AT 3 KT	3FT AT 3 KT
SCIENTISTS	35 + 15	20	10
CREW + AVDET	<u>75</u>	<u>152</u>	<u>180</u>
ACCOMMODATIONS	110 + 15	172	190

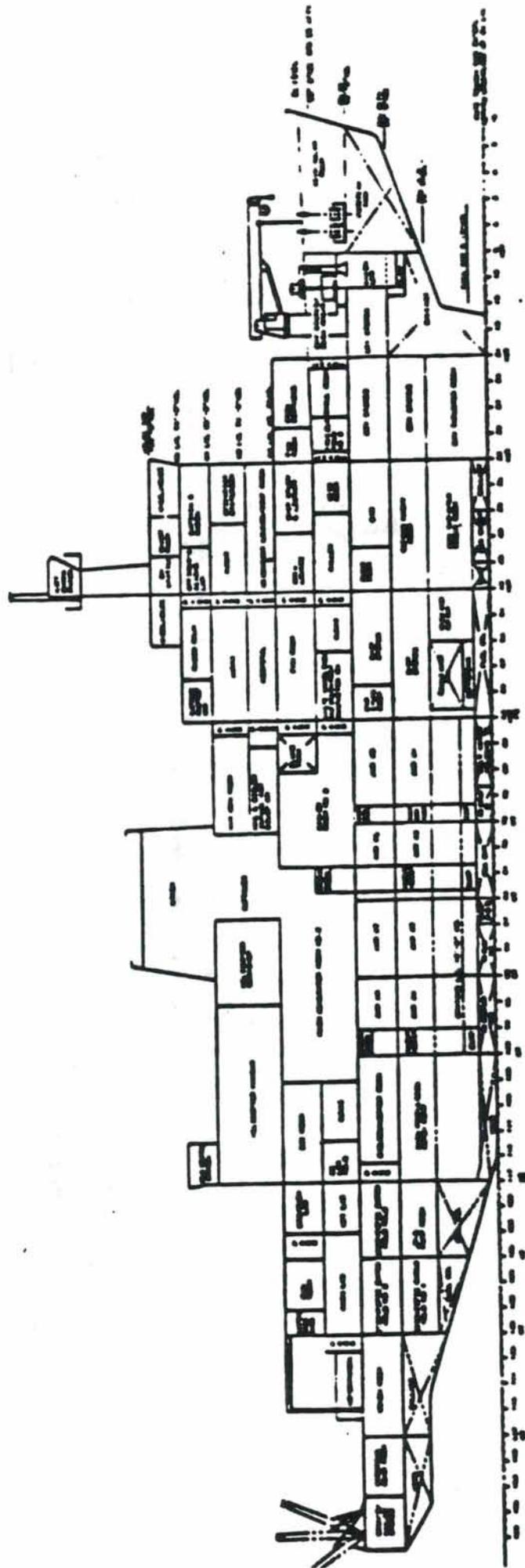
POLAR ICEBREAKER - WAGB 20

OUTBOARD PROFILE



POLAR ICEBREAKER - WAGB 20

INBOARD PROFILE



POLAR ICEBREAKER - WAGB 20 ICEBREAKING

REQUIREMENTS:

- 4.5 FEET LEVEL ICE AT 3 KNOTS**
- 8 FEET LEVEL ICE BACK AND RAM**
- ICE FLEXURE STRENGTH: 100PSI (706 KPA) ICE
NOT LESS THAN 30,000 SHP INSTALLED
CONVENTIONAL HULL FORM**

EXTENSIVE VALIDATION

METHODS OF KEINONNEN AND LEWIS

VALIDATED TIME SIMULATIONS

MODEL TESTS

CONSERVATIVE ASSUMPTIONS

POLAR ICE BREAKER - WAGB 20 SERVICES

ACCOMMODATIONS

ALL IN FORWARD SUPERSTRUCTURE

BLOCKS FOR ACCESS

**35 SCIENTISTS
15 SCIENTISTS (SURGE)
22 OFFICERS & CPO'S
54 E-6 & BELOW**

SCIENCE LIBRARY CONFERENCE ROOM FOR 50

COMMUNICATION ROOM

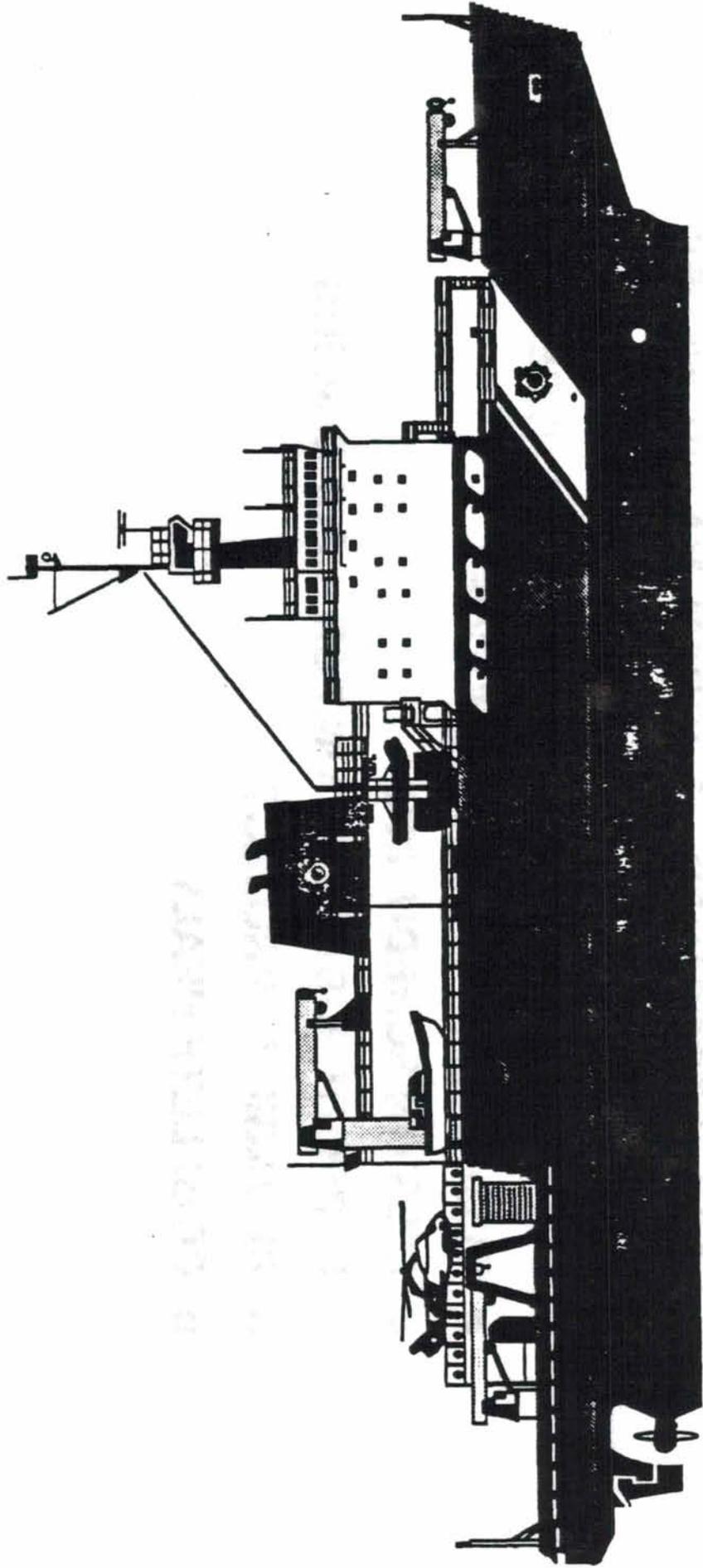
MESSING SIMILAR TO NAVOCEANO SHIPS

STORES FOR 180 DAYS

ENDURANCE PROFILE

POLAR ICEBREAKER - WAGB 20

SUMMARY



USCG ICEBREAKER PROGRAM MAJOR ISSUES

- **SUPPORT NATIONAL HIGH LATITUDE RESEARCH**
- **DECREMENTAL AGENCY BUDGET**
- **MISSION SCHEDULING**
- **SUPPORT/JUSTIFICATION FOR ICEBREAKERS**
- **RELIABILITY PROJECT**
- **COMPLETE HEALY**

USCG ICEBREAKER FY94 - 96 SCHEDULE

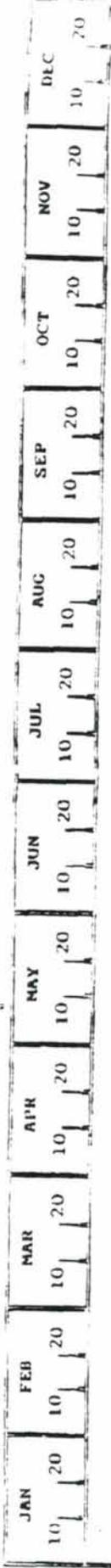
<u>DATES</u>	<u>MISSION</u>	<u>AREA</u>	<u>SPONSOR</u>	<u>SHIP</u>
NOV 94 - MAY 95	DEEP FREEZE	ANTARCTICA	NSF	POLAR STAR
JUL 94 - OCT 94	AOS 94	ARCTIC	NSF	POLAR SEA
NOV 95 - APR 96	DEEP FREEZE	ANTARCTICA	NSF	POLAR SEA
^{AUG} JUN 95 - OCT 95	AVAILABLE	T B D	T B D	POLAR SEA
JUL 96 - SEP 96	T B D	T B D	T B D	POLAR STAR
NOV 96 - APR 97	DEEP FREEZE	ANTARCTICA	NSF	POLAR STAR

USCG ICEBREAKER 1994-1995 SCHEDULE

	NSF	NAVY	USCG	TOTAL
1994				
SHIP DAYS	150	23	79	252
SHIP \$K	\$2,880	\$750	\$0	\$3,629
FY95				
SHIP DAYS	194	0	57	251
SHIP \$K	\$3,400			\$3,400

OPTIMUM UTILIZATION: 370 DAYS/YEAR

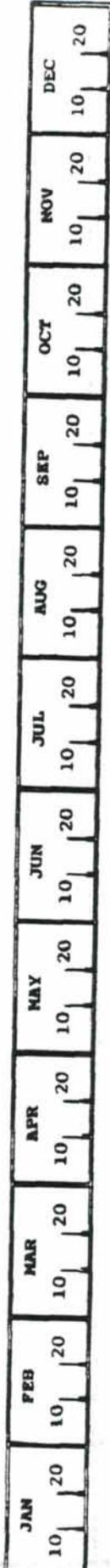
POLAR STAR 1995



DEEP FREEZE 95

><RIP

POLAR SEA 1995



><< MAINTENANCE

DOCK CHECKS

SEA TRIALS

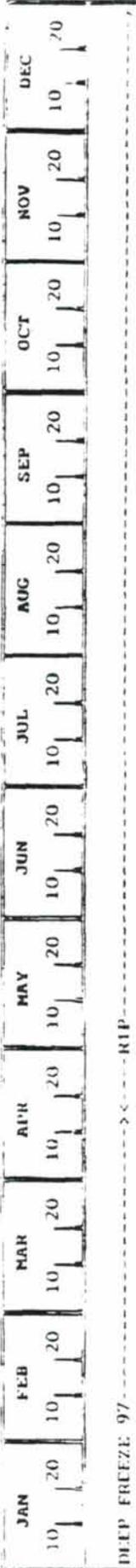
DRYDOCK DATE TBD

ICE TRIALS

CART 20-24

><<RFS><T><TSTA><DF 96

POLAR STAR 1997

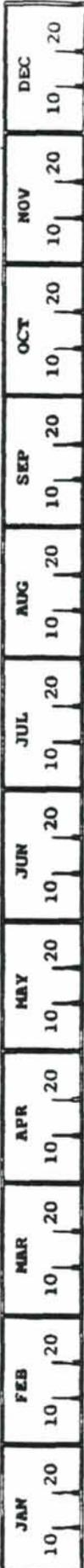


DEEP FREEZE 97

RIP

TO 15 FEB 98

POLAR SEA 1997



<RIP> <RFS> <TSTA> <OPERATIONAL WINDOW> <RFS> <DEEP FREEZE 98>

T

CART 14-18

DEEP FREEZE STANDBY 01 JAN-20 FEB

TO 15 APR 98