Meeting Report
UNOLS FLEET IMPROVEMENT COMMITTEE

NOAA Pacific Marine Center, 2nd Floor
1801 Fairview Drive, E
Seattle, Washington 98109
November 6-7, 1997

Appendices:

November 6, 1997

Opening Remarks - The UNOLS Fleet Improvement Committee (FIC) met in the conference room of NOAA's Pacific Marine Center (PMC), Seattle, WA on 6-7 November 1997. The committee was welcomed to PMC by Captain Taguchi. LCMD John Herring, also of PMC, followed with meeting logistics of the facility and a report on NOAA ship activities.

Larry Atkinson, FIC Chair, opened the meeting by reviewing the Agenda, ***Appendix I***. These minutes reflect the order in which agenda items were addressed. Meeting participants are listed in ***Appendix II***.

Accept Minutes - The FIC minutes from the December 1996 meeting were accepted as written.

UNOLS Report - Ken Johnson, UNOLS Chair, provided the UNOLS Report. Ken presented a table and graph, ***Appendix III***, reflecting the NSF Ocean Science's funding in 1987 and 1996. Science funding increased by 81% while ship operations increased by only 11%. During this period the ship operating days have remained constant.

Ken reviewed the 1998 ship use and cost figures. The 1998 total ship time is down significantly from past years. Ken noted that these totals include the NAVO ship time. In 1998 the large and intermediate ships are under-utilized while the smaller, Class IV vessel ship day totals are remaining constant and the Class < IV are at record capacity. He encouraged the FIC to look at platform characteristics needed for fisheries research vessels. By incorporating these additional features into the intermediate general-purpose class, we may be able to increase our future user base.

Ken questioned if there are any large field programs on the horizon and suggested a need to examine future facility needs. He suggested that today we are running a bigger, better fleet for less money. NSF has been budgeting approximately $32M annually for facilities. This is the first year that they will not be using the entire budget for fleet operations.

Ken continued his discussion by talking about the perception of UNOLS and FIC in the community. Attendance at the UNOLS Annual Meeting was low this year. Ken is in the process of polling members to see why they did not attend. It was recommended that increased outreach is needed between UNOLS and the community. Many people in the community don't know the role and purpose of UNOLS. There are many misconceptions about UNOLS. A town meeting is planned for UNOLS at the 1998 Ocean Sciences meeting in San Diego.

Long-Term FIC Agenda - Larry began this discussion by reading the "purpose of FIC" from the UNOLS Charter. He stated that before the end of the meeting he would like to have a written list of the items that the FIC needs to address in the upcoming years. Some of the items that will need to be addressed include: an updated Fleet Improvement Plan, fisheries Vessel issues, Central Pacific SWATH planning, coastal research vessel design; and an analysis of trends. Considerable discussion revolved around these topics. In particular, the committee discussed fishery vessel plans. Jim CEO, NMFS, stated that NOAA needs to meet their fishery mandates. FIC will need to determine if it is feasible to design a general-purpose oceanographic vessel with a fisheries capability. Additionally, they will need to determine if ship can be economical to both operate and build. A fisheries vessel should be acoustically quiet. It will need to be determined if fisheries work can be conducted from a deck 20-feet above the water surface and if equipment will need to be modified to accommodate fishery programs.

The FIC discussed the fleet planning process. The first step in planning for fleet additions is the development of science mission requirements (SMR) by FIC and/or a subcommittee of the group. Next a concept design is developed based on the SMRs. This is normally tasked to Naval Architecture firm. Following acceptance of the concept design, a preliminary design for the planned vessel is developed by the naval architect. FIC interacts with the architect through both of these phases. These reports have proven to be a valuable reference tool for agencies and the community.

The first item in the long range FIC plan is updating the Fleet Improvement Plan. Ken Johnson explained that this has historically been an influential document. There was discussion on how to approach the real political realities when developing the new plan. It was suggested to acknowledge the political realities and yet look at the trends in use and cost effectiveness of fleet utilization. The FIC needs to identify new proactive and responsive issues.

Presentation by The Glosten Associates, Inc. - Bill Hurley and Duane Laible of Glosten provided a presentation on "Planning Considerations for a New Research Vessel." A sequence of view graphs were presented and are included as ***Appendix IV***. Glosten studied the impact of new regulations on new ship construction. They also looked into the present information on current shipbuilding technology. They studied the pros and cons of various ship procurement methods.

Bill Hurley explained that the regulatory changes studies include the new admeasurement rules, International Maritime Organization (IMO) rules and International Safety Management Code (ISM) requirements. These changes were primarily in response to recent marine disasters involving passenger ships. Implementation of the new rules is rather confusing as a result of two different tonnage measurement systems (domestic and international) and the involvement of multiple rulemakers (IMO, USCG and ABS). First you need to determine which tonnage measurement system applies to your vessel and then determine the which regulations will be associated with these measurements. Bill explained the different measurement systems and provided tables showing the applicable rules associated with the measurements.

These new requirements will most likely require new ships of the intermediate size to be subject to all international regulations. Bill provided a listing of some of the specific regulatory impacts required by SOLAS, ISM, GMDSS MARPOL, STCW and ABS along with their associated costs. Bill pointed out that the new regulations do not require increased manning. In fact, crew on the new vessels could be fewer than on current vessels due to automation and training. Operators would need to negotiate with the USCG on manning requirements.

In total, approximately $800K will be added to the construction cost of a new intermediate vessel to

comply with the new regulations. Glosten estimates that replacement costs for a new intermediate research vessel to be approximately $18M. The relative cost impact of the regulations on a new vessel is minor at about 4% of the entire construction cost. Bill provided a breakdown of the new construction cost allocation.

In Glosten's closing remarks they recommended FIC to embrace SOLAS and re-assess manning requirements. The new regulations will foster greater safety at sea. Currently, the medium sized shipyards dominate shipbuilding activity. Many of these yards are implementing new technology in building. Glosten recommended that it is best to purchase an existing stock design when constructing a new vessel, then define the ship needed.

Lastly, it was noted that it will be very difficult, if not impossible to modify existing ships to meet the new regulations. The changes would be extremely costly. A final report from Glosten should be available soon.

NOAA Fisheries Oceanography/Stock Assessment Needs -

FIC Tasking Summary - Ken Johnson opened the discussion on fisheries oceanography needs. NOAA/OAR and UNOLS have recently signed a Memorandum of Understanding (MOU) for increased cooperation. As part of this MOU, NOAA's newest vessel will be included in the UNOLS ship scheduling process. Over the past year, UNOLS has been communicating with NOAA's NMFS to learn more about their fishery research needs. At the summer Council meeting, Jim Meehan and Jim Coe of NMFS presented NOAA's fishery plans and needs. Ken tasked FIC to determine if it is feasible to integrate a fisheries capability into a general-purpose oceanographic research ship. Also, we should try to determine what NOAA's fisheries research needs for chartering will be in the future.

NOAA/National Marine Fisheries Service Update - Jim Coe from NOAA/NMFS explained their requirements for ship time. NMFS by mandate under the Magnson/Stevens Act has a need for approximately 5000 days at sea of ship time per year with approximately 2,655 for charter. Fishing boats have been used to fulfill some of their charter work which includes stock assessment and gear development. NMFS will be looking for platforms for marine mammal ice surveys and studying ecosystems.

Jim described some of the ship requirements they will be looking for in a fisheries vessel. NMFS is looking for ships that are acoustically quiet. They must be able to pull trawls and be capable of low speed accurate positioning. The ships used for observations should be stable and fast. New ships brought into the process for fish stock assessment should be properly calibrated.

NOAA's fleet is aging and rapidly becoming technically obsolete. The rationale for quiet ships is that noisy ships tend to herd fish and bias the collected data. NOAA requires modern Fisheries Research Vessels (FRVs) to meet their needs. There are no modern FRVs in the U.S. either private, academic, or within NOAA. In assessing ships currently available, including UNOLS vessels, they have found them inadequate in quietness, hydroacoustics, trawling and other gear, marine mammal observation capabilities, and in some cases endurance and dynamic positioning. For new ship design, stability is only second to acoustic quietness as design criteria. If there was a new, acoustically quiet, UNOLS ship available, NOAA would most likely be interested in a long-term charter arrangement. However, it was noted that NMFS' chartering budget is limited.

The 1998 budget presently includes $2.1M for design work on a new class of fisheries research vessels. NOAA is hopeful that the FY99 budget will include construction funds. If built, three FRVs will be assigned to the Atlantic and three to the Pacific. These six FRVs will be fully subscribed by NOAA. The new ships planned will be about 65 meters and are expected to cost $46-50M each.

General discussion followed on the appropriateness of UNOLS to become involved in fisheries research. It was questioned whether a fisheries vessel is a tool that academic scientists need. Can a general-purpose capability be maintained and include a fisheries capability? It was noted that the acoustic characteristics

associated with a fisheries vessel will also be of benefit to other disciplinary research.

ALPHA HELIX Replacement - Tom Weingartner reported on the University of Alaska's plans for a replacement of their vessel ALPHA HELIX which is 30 years old. U. Alaska is focusing on a replacement vessel that would have both oceanographic and fisheries research capabilities. The ship is expected to be intermediate in size and be ice capable for work in the marginal ice zone. University of Alaska has been in communications with NOAA regarding their platform needs. Alaska's ship would be available for both academic and NOAA fisheries research but would not be considered a replacement for a fish assessment vessel for NOAA. By adding a fisheries capability, the vessel will be more capable for a larger user base.

It was recommended that FIC establish an ad hoc committee to develop SMRs for an ALPHA HELIX replacement. Membership to the committee should include representatives with a strong fisheries background, oceanographers, a regional perspective and FIC. The specific tasking statement to the subcommittee is to develop Science Mission Requirements for a fisheries capable, general-purpose oceanographic research vessel for replacement of ALPHA HELIX. The vessel will require ice strengthening for work in the Alaska region. The vessel should be constrained to Class II/III size and should be economically operational. Larry Atkinson and Tom Weingartner will suggest nominations for the ad hoc committee. The meeting participants suggested names of possible candidates. Tom Weingartner agreed to chair the subcommittee. The subcommittee will correspond by e-mail initially. The SMR development effort was estimated to take approximately six months. The group should identify what the trade-off will be in incorporating a fisheries capability into a general-purpose oceanographic vessel. Joe Coburn agreed to assist the subcommittee by providing iterative reviews of their SMR development. He also offered to provide Tom with the current definitions of ice strengthening.

Long Term Agenda Items - The FIC revisited the discussion on long-term agenda items for FIC. It was suggested a that a spreadsheet providing the fleet characteristics would be a useful reference tool for the FIC. It was requested that the UNOLS Office compile this spreadsheet.

The FIC then reviewed a list of potential long-term agenda items:
Updating the Fleet Improvement Plan (FIP)
Coastal Research Vessel planning
Analysis of fleet trends - and distribution of this information to the community through various outreach methods (town meeting)
SMR development for an ALPHA HELIX replacement.
Identification of critical fleet issues
Investigation of fishery vessel needs
Central Pacific R/V planning
Identify new proactive and responsive issues
Planning, analysis and communication

Annette DeSilva provided an example of ship utilization information that can be provided by the UNOLS Office for use in working on the long term items, see ***Appendix V***. The charts show the ship days by year for each Class III and IV vessel for 1993 through 1998. A full operating year for Class III ships is considered 250 days. It was noted that for most Class III vessels operations have been at less than full levels for the past five years. The FIC indicated that this type of information was useful and would be helpful as they address their long-term tasks.

The FIC briefly discussed some of the components that would be important in the update of the FIP. These included cycles for replacement and renovation, a narrative of the present fleet situation and a description of specialized facilities and technologies available.

The FIC identified a schedule in which they would like to complete the various long-term agenda items:

In the next one to two years, they would like to address the following items:
Alaska vessel planning

Central Pacific research vessel planning
Fisheries R/V planning
Coastal R/V
Considerations for MELVILLE/KNORR replacement
Fleet Improvement Plan update - 1999 distribution.

November 7, 1997

Replacement Plans for the OCEANUS Class - Ken Johnson set the stage for a discussion on the replacement of the OCEANUS class intermediate ships by presenting a viewgraph showing the estimated useful life projections of the UNOLS vessels, see ***Appendix VI***. The OCEANUS Class ships are over twenty years old suggesting their replacement should be within the next eight to ten years. Science Mission Requirements will need to be developed. As we look towards replacement, we should consider enhancement to make the vessels more capable while maintaining the general-purpose capability. Some of the enhancements might include fisheries capabilities and or coastal research features. Acoustic issues should be considered. Added features have the benefit of increasing the potential user base for the vessels. Intermediate ships fill a niche of being less expensive than the world ranging Class I and II vessels, yet have significant capabilities for large science parties and multiple disciplines.

In planning for the replacement of the Class III ships, it was recommended to use the existing SMRs for this vessel as a baseline for developing a new one. It was discussed whether there may be interest from "other" agencies for use and construction support of these vessel. Other agencies might include MMS, USGS and EPA.

The FIC needs to look at the future research needs for intermediates. Coastal zones are becoming increasingly more important. Other features which may be attractive for an intermediate vessel (depending on where the vessel will operate) might include: seakindliness, ice strengthening, and acoustic quieting. A comparison chart of the trade-offs of these features along with cost impact would be useful. Arrangement of the afterdeck can be challenging when trying to accommodate fisheries requirements. Acoustic quieting will also be challenging.

It was decided to postpone development of SMRs for the intermediate vessels until the SMR for the ALPHA HELIX replacement is completed. The Alaska vessel will most likely address many of the components identified; such as, general-purpose capability, fisheries capabilities, acoustically quiet, coastal capability and ice strengthening. The Alaska vessel SMRs may serve as a useful tool in planning for the replacement of the intermediate ships.

Coastal Research Vessel Planning - FIC discussed the need for a subcommittee to develop SMRs for coastal research vessels. Initially it was thought that regional consortia would organize working groups and develop SMRs for their specific needs. For a variety of reasons this is not happening. It was the consensus of the meeting participants that FIC should take the responsibility. Attractive features of a coastal vessel would be the ability to work in the coastal zone in rough seas and carry twenty people. It was decided that a subcommittee be established to develop SMRs for a coastal vessel. Various names were suggested as possible members of the subcommittee. Larry Atkinson agreed to serve as chair and will contact the potential candidates for the subcommittee.

Replacement Plans for Skidaway's Vessel, BLUE FIN - The FIC took some time to look over plans for replacement of Skidaway's vessel, BLUE FIN. Skidaway will soon let a contract for a new research vessel to be named R/V SAVANNAH that will replace BLUE FIN. Construction should start late this year (1997). The ship will be a conventional design mono-hull with a length of 91 feet. The design was driven by it planned mission as a "coastal ship" for waters off Georgia. A range of 350-miles is planned. The construction phase should take nine to 11 months with an additional three to four months for outfitting. Construction costs are estimated at $3M. The BLUE FIN will be put up for sale as SAVANNAH comes on-line. No action is needed by FIC on this activity.

AGOR 26 Report - Pat Dennis provided a report on the progress with institution selection, yard selection, design and construction of AGOR 26. Over the past year, the Navy has been determining the

appropriate procurement process for the vessel. The funds for this ship were included in the Navy's 1997 budget. The appropriation of $45M was designated as Ship Construction Navy (SCN) funds which did not allow funding for design efforts. The funds are being moved from SCN funds into Research and Development (R &D) which will allow for design expenditures.

NAVSEA has published, through the Commerce Business Daily, an Announcement for Operator Selection of AGOR 26 (***Appendix VII***). This announcement asks for institutions interested in operating this ship to request an RFP by 17 October 1997. RFPs are to be submitted by interested operators by mid December. A selection panel will be convened in January 1998 for selecting the operating institution. The institution will be required to bring contributions and support for the new vessel. In particular they must give up a Class I or II vessel; they must provide cost sharing; they must provide full time technical assistance to Navy during the design and construction phase of this ship; and they must complete the final outfitting of the vessel.

In another Commerce Business Daily Notice, NAVSEA has published a solicitation for design and construction of a developmental SWATH oceanographic research vessel (***Appendix VIII***). The Navy is implementing a new innovative acquisition process which should provide a more streamlined procedure for yard selection, design and construction. The Oceanographer of the Navy will be the ship's sponsor. The Chief of Naval Research will be the mission sponsor. Pat explained that the Congressional language calls for AGOR 26 to be a SWATH design ship. The mission requirements support this design by having sea keeping as the #1 priority.

There was general discussion on how to keep UNOLS involved in the design and construction process for this new vessel. Pat provided a draft document "SWATH AGOR Desired Operational Capabilities," see ***Appendix IX***. FIC expressed their concern that science input is needed throughout the design and construction phase. It was recommended that the FIC be added to the Navy's e-mail correspondence list for the vessel.

Ken Johnson expressed concern over the acquisition process and technical risk involved in construction of the AGOR SWATH. The Navy is proposing a new design, and new process and a short time line for completion. Each of these element carries an associated risk which has the potential to be compounded when all linked together.

Planning, Analysis and Communications - Larry Atkinson revisited long-term planning for FIC. In particular, "Planning, Analysis and Communications" was addressed. The committee need to focus on the future. It was recommended that an article be submitted to EOS explaining trends research vessel use and capabilities. The UNOLS Office can assist in compiling statistics for this article.

Ken Johnson explained that there were a variety of issues that need to be explained and discussed with the community at large. UNOLS is setting up a "Town Meeting" at the 1998 Ocean Sciences Meeting in San Diego February for this purpose. Issues to be discussed will include defining what UNOLS is and what it does, post cruise assessments, the ship scheduling process, funding issues with respect to UNOLS capacity, and future fleet planning. FIC suggested that UNOLS needs to encourage people to attend their meetings and become more involved in the fleet planning activities. It was suggested that the FIC activities and long-range plans be presented at the Town Meeting. It was also recommended to include a viewgraph providing the points of contacts for the UNOLS Council and committees.

Fleet Improvement Plan - The Fleet Improvement Plan is to intended to document the dynamic currency of the fleet. The FIC has been involved in updating the 1995 Fleet Improvement Plan (FIP) and the updated draft text can be viewed by FIC on the UNOLS home page. It was recommended that the draft be available to the entire community for review and comment. An e-mail notice can be sent to the community informing them about the FIP draft. Additionally, it was suggested to poll the community for their feedback on fleet issues at the Ocean Sciences town meeting. The FIP should address big ship use trends. Tom Crowley offered to investigate the Global Ocean Observing System. A target date of November 1998 has been set for a draft FIP. The final FIP report is planned for November 1999.

Interim Fleet Improvement Plan - The draft Interim FIP prepared by Chris Mooers will be streamlined

and finalized by Ken Johnson.

General Business:

Nominations for a New FIC Member - Suzanne Strom was reappointed to the committee for a second term. It was recommended to place a call for volunteers in the next UNOLS Newsletter. The FIC can call upon these volunteers to serve as committee members and sub-committee members when needed.

Scheduling of Next FIC Meeting - The committee agreed that the next meeting should be held in May 1998 at Woods Hole. Joe Coburn will look into meeting room availability. Potential speakers were discussed. Suggestions included representatives from the SWATH industry, a fisheries oceanographer, and a representative from the AGOR 26 shipyard.

Recap of FIC Action Items regarding SMRs and new ship construction:

Alaska SMR - Tom Weingartner, chair, will establish a subcommittee of six to seven members for development of SMRs for an ALPHA HELIX replacement. This is a high FIC priority. A draft is planned for summer 1998 and the final SMRs are expected in fall 1998.
East Coast SMR - Larry Atkinson will chair a subcommittee for development of a coastal research vessel SMR for East Coast work. The schedule for this effort is the same as for the Alaska SMR.
Fisheries SMR - This item is deferred until after the Alaskan SMRs are complete.
Intermediate SMR - On hold until completion of the other SMRs.
Central Pacific R/V - FIC will participate in the planning process with the Navy via e-mail. It was noted that the FIC ad-hoc group needs to be more closely involved in the process.

The meeting adjourned at 3:00 p.m.

APPENDICES

Appendix I. FIC Meeting Agenda

Fleet Improvement Committee
NOAA Pacific Marine Center, 2nd Floor
1801 Fairview Ave, E
Seattle, Washington 98109
November 6-7, 1997

THURSDAY, 6 November
Morning Session:

8:30 am FIC Welcome and Introduction - Larry Atkinson will welcome the Committee and review the meeting's agenda.

8:35 am NOAA Welcomes the Fleet Improvement Committee to the Pacific Marine Center

8:40 am Accept Minutes - Accept the n-dnutes of the December, 1996 FIC Meeting.

8:45 am UNOLS Report - Ken Johnson will report on UNOLS activities over the past year and plans for the future.

9:00 am Agency Reports - Written reports provided by the agency representatives will be reviewed by

Ken Johnson. A question/answer period will follow.

9:30 am Development of a Long-Term FIC Agenda - Before the meeting, a proposed long-term agenda was distributed via e-mail for review. Additionally, Chris Mooers provided a paper titled, "Reflections on UNOLS/FIC and Council, and on UNOLS Overall" which was distributed via e-mail to FIC. Larry Atkinson will lead a discussion to finalize long-term FIC plans.

10:15 am Break

10:30 am Long-Term FIC Agenda - Discussion wrap-up and agreement on FIC long-term agenda.

11:00 am Presentation by The Glosten Associates, Inc. - A representative from the naval architecture firm, The Glosten Associates, will report on the impact of new US Coast Guard regulations on construction of fiiture intermediate research vessels. (The new regulations call for twice as much crew and considerable structural changes.) These new regulations may place strong constraints on replacement and refit schedules FIC is to develop.

11:30 am FIC Discussion and Question/Answer Period on Impact of New USCG Regulations

12:00 pm Lunch

1:00 pm NOAA Fisheries Oceanography/Stock Assessment Needs - NOAA has drafted a paper titled "Talking Points: Fisheries Research Vessels," see enclosure (1). The paper outlines NOAA's long-term research vessel requirements and plans. They are proposing to build six new vessels to help meet their projected stock assessment needs. Even with six new ships, NOAA projections indicate that there could be additional fisheries oceanography work for outsourcing. The FIC has been tasked to examine the feasibility of building a general purpose fisheries vessel.

- FIC Tasking Summary - Ken Johnson will provide a brief history of the UNOLS activities to date on this topic and review the tasking to the committee.
- NOAA/ National Marine Fisheries Service Update - A representative from the NMFS will conunent on NOAA's Fishery Needs and report on the status of their vessel construction efforts.
- University of Alaska Replacement Plans for ALPHA HELIX - A representative from the University of Alaska will discuss their considerations for replacement of ALPHA HELIX. The University has been increasing its emphasis on fisheries research. In a discussion at the June LTNOLS Council Meeting, it was recommended that the FIC develop SMRs for a research vessel that is:
    1. ice capable;
    2. capable for fisheries research; and
    3. operationally economic. A 1989 UNOLS/FIC report titled, "Science Mission for an Intermediate ke-Capable Research Vesser, is provided as enclosure (2) and "Scientific Mission Requirements for Intermediate ke-Capable, General-purpose Oceanographic Research Ship, " dated February 1989 is provided as enclosure (3).

2:30 pm Break

2:45 pm Fisheries Discussion - Continued

- Research Fishery Needs - Representatives from the research community will discuss their fishery research facility needs and plans for the future.
- FIC Discussion - FIC will outline their plans to study/develop conceptual designs for a general purpose fisheries-capable research vessel.

FRIDAY, 7 November
8:30 am Replacement Plans for the OCEANUS Class - Planning for the replacement of the OCEAN-US Class vessels needs to begin soon. Larry Atkinson will lead a discussion on the initiation of these plans. "Scientific Mission Requirements for an Intermediate GeneralPurpose Oceanographic Research Ship"

dated March 1989 are included as enclosure (4). FIC should be prepared to discuss these SMRS.

10:15 am Break

10:30 am Coastal Research Vessel Planning - Discussion on FIC's role in development of a conceptual design for a coastal vessel.

11:00am AGOR-26Report-TheNavywillbeselectinganoperatorforthenewCentralPacificswath, AGOR 26. FIC has been asked to represent the academic user community during the Science Mission Requirement development and construction phase in cooperation with the operator. Discussion on a proposed way for FIC to do this.

12:00 pm Lunch and Tour of NOAA Pacific Marine Center

1:15 pm Replacement Plans for Skidaway's vessel, BLUE FIN - Skidaway has provided a set of plans and drawings for their new research vessel, SAVANNAH, for FIC review. See enclosure (5).

1:45 pm 1998 Fleet Improvement Plan (FIP98) - Larry Atkinson will discuss plans for completing the FIP98.

2:15 pm Interim Fleet Improvement Plan (IFIP) - Ken Johnson will provide an update on the status of the IFIP.

2:45 pm General Business

- Nominations for a New FIC Member
- Schedu@g of Next Meeting
- Recap of FIC Action Items

Adjourn

Appendix II. Meeting Participants

FIC Attendance - Nov. 6-7, 1997

NAME	INSTITUTION/ ORGANIZATION	PHONE/FAX/E-MAIL
Larry Atkinson	ODU	(757) 683-4926/(757) 683-5550/atkinson@ccpo.odu.edu
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Michele Bullock	NOAA/PMEL	(206) 526-4485/bullock@pmel.noaa.gov
Joe Coburn	WHOI	(508) 289-2624/(508) 540-8675/jcoburn@whoi.edu
Jim Coe	NOAA/NMFS/AFSC	(206) 526-4000/(206) 526-4004/jim.coe@noaa.gov
Tom Crowley	Texas A&M	(409) 845-0795/(409) 847-8879/tcrowley@ocean.tamu.edu
Patrick Dennis	USN Support/CORE	(703) 696-2161/(703) 696-2007/dennisp@onr.navy.mil
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		(914) 365-8566/(914) 365-

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Tom Weingartner	U of Alaska	(907) 474-7993/(907) 474-7204/weingart@ims.alaska.edu

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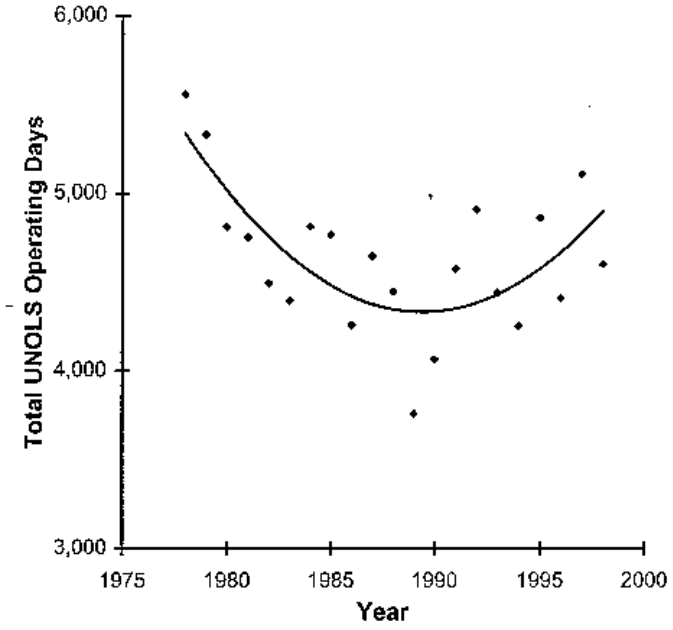
Appendix III. Ship Funding Statistics 1987 and 1996

	1987	1996	96/87
Ocean Science Research Support	$57.8M	104.9	1.81
Ship Operations	28.0	31.1	1.11
Operating Days	~4500	~4500	1.0



BY CLASS

SHIP	**1995**	**1996**	**1997**	**1998**
Atlantis	319	93	185	272
Ewing	310	315	273	91
Knorr	350	279	293	257
Melville	297	297	308	179
Revelle		80	287	280
Thompson	333	246	260	290
CLASS I/II	1609	1310	1606	1369
AVERAGE	322	218	268	228
Edwin Link	175	186	212	238

Endeavor	228	147	201	0
Gyre	122	219	148	18
Moana Wave	195	144	203	185
New Horizon	240	174	262	180
Oceanus	187	168	201	199
Seward Johnson	271	304	290	233
Wecoma	145	198	200	217
CLASS III	1563	1540	1717	1270
AVERAGE	195	193	215	159
Alpha Helix	144	73	120	180
Cape Hatteras	175		230	242
Cape Henlopen	198	185	206	188
Longhorn	72	130	53	40
Pelican	182	201	211	192
Point Sur	164	118	197	195
Sproul	180	132	88	75
Sea Diver	145	155	185	168
Weatherbird II	154	167	150	154
CLASS IV	1414	1161	1440	1434
AVERAGE	157	145	160	159
Barnes	77	86	133	100
Blue Fin	75	96	105	146
Calanus	48	50	115	140
Laurentian	91	72	44	146
Urraca				173
<CLASS IV	291	304	397	705
AVERAGE	58	61	79	141
FLEET TOTAL	4877	4315	5160	4778
FLEET TOTAL (less <class IV)	4586	4011	4763	4073

Summary of Ship Use and Costs
1998
(as of 9/12/97)

	NSF		NAVY		OTHER		TOTAL		DAILY RATE
SHIP	**DAYS**	**$**	**DAYS**	**$**	**DAYS**	**$**	**DAYS**	**$**	
Revelle	127	2,121	135	2,255	18	301	280	4,677	16,704
Melville	172	3,044	0	0	7	124	179	3,166	17,698
Knorr	185	3,034	53	869	19	312	257	4,215	16,400
Atlantis	223	3,524	11	174	38	600	272	4,296	15,801
Ewing	73	1,278	48	840	18	315	139	2,432	17,496

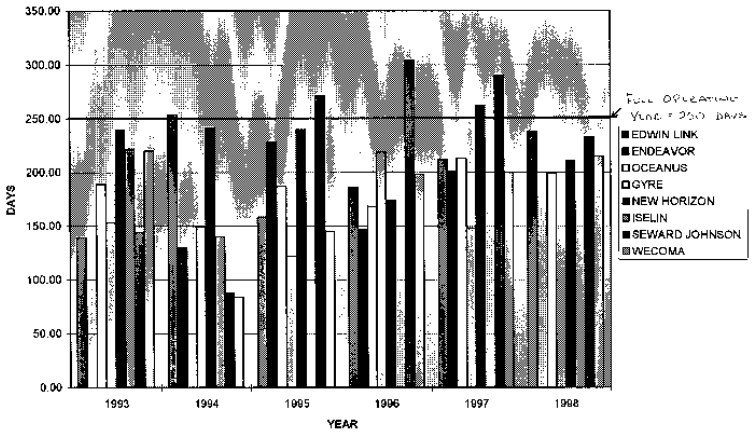
Thompson	112	1,773	76	1,204	34	4538	290	4,591	15,831
Moana wave	104	1,452	16	224	65	907	185	2,583	13,962
Class I/II	996	16,226	339	5,565	199	7,150	1602	25,964	
Avg	142	2,318	48	795	28	1,021	229	3,709	
Edwin Link	29	261	0	0	209	1,881	238	2,142	9,000
Endeavor	0		0		0		0	0	0
Oceanus	152	1,611	40	424	7	74	199	2.109	10,600
Gyre							0	0	0
New Horizon	77	754	97	950	37	362	211	2,066	9,791
Seward Johnson	173	1,678	34	330	26	252	233	2,260	9,700
Wecoma	71	703	58	574	86	851	215	2,128	9,898
Class III	502	5,007	229	2,278	365	3,420	1,096	10,705	
Avg	63	626	29	285	46	428	137	1,338	
Pelican	62	233	25	94	105	394	192	721	3,755
Longhorn	54	216	0	0	30	120	84	336	4,000
Point Sur	121	762	28	176	46	290	195	1,228	6,297
Cape Hatteras	104	724	81	564	57	397	242	1,685	6,963
Alpha Helix	132	1,417	0	0	12	129	144	1,546	10,736
Sproul	81	482	44	262	20	119	145	863	5,952
Cape Henlopen	104	593	68	388	16	91	188	1,072	5,702
Weatherbird	139	1,043	0	0	0	0	139	1,043	7,504
Sea Diver	18	86	22	105	45	214	85	405	4,761
Class IV	815	5,556	268	1,589	331	1,754	1,414	8,899	
Avg	91	617	30	177	37	195	157	989	
Blue Fin							0	0	1,816
Laurentian	140	630	0	0	6	27	146	657	4,500
Barnes	65	99	17	26	18	27	100	152	1,520
Calanus	80	248	0	0	60	186	140	434	0
Urraca							0	0	0
< Class IV	285	977	17	26	84	240	386	1,243	
Avg	57	195	3	5	17	48	77	249	
Fleet Totals	2,598	27,766	853	9,458	2,560	12,564	4,498	46,811	
Avg	90	957	29	326	88	433	155	1,614	

Appendix IV. The Glosten Associates Study

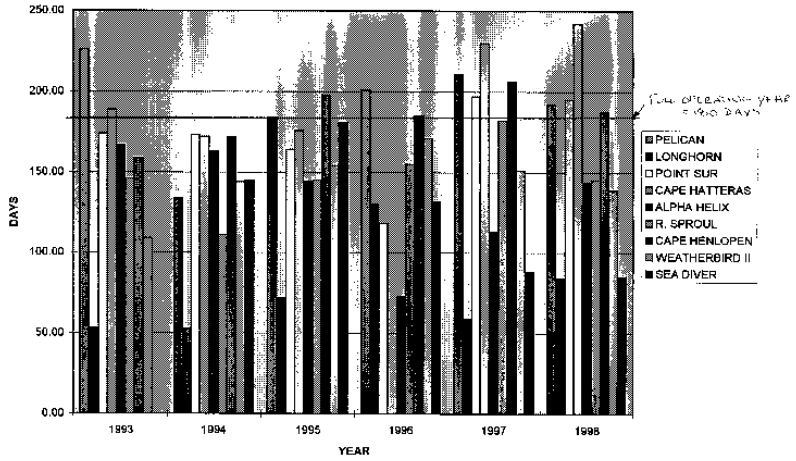
Available fron UNOLS OFFICE

Appendix V. Class III & IV Ship Use: 1993-1998

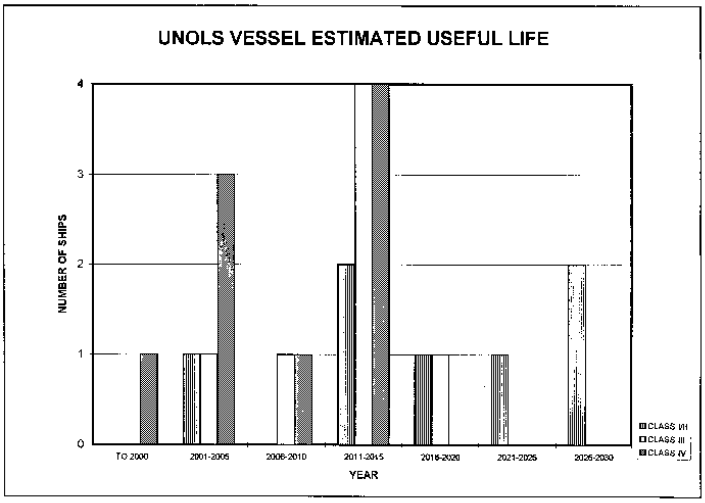
CLASS III SHIP USE: 1993-1998



CLASS IV SHIP USE: 1993-1998



Appendix VI. UNOLS Vessel Estimated Useful Life



Appendix VII. Commerce Business Daily (CBD) SWATH Operator Announcement

CBD ANNOUNCEMENT FOR OPERATOR SELECTION

office of Naval Research, 800 N. Quincy St., Arlington, VA 22217-5660

OPERATION OF ONE OCEANOGRAPIRC RESEARCH VESSEL:

The ship will be constructed as a oeneral purpose oceanographic research vessel, the AGOR 26. To be eligible to operate the vesseli, the offeror must be a member of the University National Oceanographic Laboratory System (UNOLS) or meet the requirements and agree to apply for full membership if selected. In order to maintain the nation's oceanographic fleet at the optimum size, a current CLASS I or CLASS H UNOLS vessel must be retired or otherwise removed from service by the date the AGOR 26 commences operations. Thus, to be eligible for award, the offeror must be able to exchange or retire a CLASS I or CLASS H LNOLS oceanographic research vessel. In addition, the successful offeror is expected to (1) provide cost-sharing annually to defray part of the cost of ship operations; (2) provide technical assistance during the period covering design development through builder selection and vessel delivery; (3) enter into a renewable charter party agreement with the Navy; (4) maintain and operate the ship under sound maritime practices; (5) complete final outfitting of the vessel; (6) undertake a cooperative role in scheduling and operating the ship in the support of Navy programs and the laroer U.S. oceanographic community. Interested parties should request the RFP by 17 October 1997 to be considered further. Send written requests for the RFP to the above address, to the attention of Code 321FT.

Appendix VIII. CBD for SWATH Design and Construction Announcement

Available from UNOLS Office

Appendix IX. DRAFT SWATH AGOR Desired Operational Capabilities Document

Available from UNOLS Office