UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ADVISORY COUNCIL MEETING
August 22, 23, 1985
College of Marine Studies - University of Delaware
Lewes, Delaware

Advisory Council members together with representatives of the National Science Foundation, Office of Naval Research, Minerals Management Service, U.S. Geological Survey and National Oceanic and Atmospheric Administration met at the University of Delaware's College of Marine Studies. Ferris Webster, on behalf of Dean Carolyn Thoroughgood, welcomed the Council to the University of Delaware. Chairman Charles B. Miller called the meeting to order and presented the agenda (Appendix I).

Attendees

Advisory Council

Charles B. Miller, Chairman
Robertson P. Dinsmore
Carl Lorenzen
John H. Martin
Christopher N. K. Mooers
Robert W. Corell, ex-officio
Ferris Webster, ex-officio

(Unable to attend):
Thomas C. Malone
Harris B. Stewart
Arthur E. Maxwell

Observers

Grant Gross, NSF
Sandra Toye, NSF
Richard West, NSF
Keith Kaulum, ONR
John Albright, NOAA
John Bossler, NOAA
Hawley Thomas, MMS
Robert Rowland, USGS

UNOLS Office

William D. Barbee

Rear Admiral John D. Bossler, Director, Charting and Geodetic Services, National Ocean Services, National Oceanic and Atmospheric Administration made a presentation: NOAA's EEZ Program-Opportunities for UNOLS. (The presentation was advanced in the agenda to accommodate Admiral Bossler and the Council.) A summary of the presentation is Appendix II.

The United States' Exclusive Economic Zone (EEZ) was established by Presidential Proclamation in March, 1983. NOAA has a service oriented role to help facilitate wise management, advance the development of research and promote protection of the marine environment. A NOAA-USGS Memorandum of Understanding has been reached concerning the respective agencies' complementary roles in the EEZ. The NOAA role includes surveying, mapping, oceanographic analysis, fisheries management, analysis of resources and environmental services. A NOAA EEZ Program Office has been established to specify bathymetric and geophysical products, specify survey requirements, implement observational (survey) projects and promote the maximum use of assigned NOAA ships. The goal of the bathymetric surveys project is to produce modern swath echo sounding coverage of detail and accuracy to allow compilation of maps useful in the development and environmental protection of the EEZ. The approach is to obtain SEABEAM soundings in deep water and the Bathymetric Swath Sounding System (BS^3) in shallower water. Navigation will be by shorebased electronic survey systems until 1987 and by G.P.S. thereafter. Two NOAA ships, the SURVEYOR and the DAVIDSON are presently equipped and devoted to EEZ surveys. Additional ships will be used in the future.

Plans for 1985 through 1991 are to survey areas off California, Washington and Oregon, off Alaska (Bering Sea and south of the Alaskan Peninsula) and south and southwest of the island of Hawaii.

Examples are available showing the utility of swath survey data on the EEZ. At the Council's behest, Admiral Bossler described the security issue that has been raised concerning swath bathymetric of the EEZ. The Department of Defense position has been that the data base for EEZ swath bathymetric surveys can pose a security risk and should be classified. The issue will be determined by the National Security Council, National Operations Security Advisory Committee. Recommendations to NOAC are that the data base be classified, users with a valid need be allowed access to the classified data base and that NOAA be allowed to issue products at a full resolution in non-sensitive areas and product filtered to an agreed threshold (that would not misrepresent features) in sensitive areas. Final decisions have not been made on filters or level of classification, and NOAA is pressing for decisions that would allow use of the data for research as well as other purposes.

These EEZ surveys could be of interest from two aspects: possible participation by UNOLS institutions, ships or individual investigators, and the EEZ data base and products as research resources. UNOLS ships equipped with SEABEAM and GPS could participate under a variety of modes in surveys. Institutions and investigators could assist in interpreting and analyzing data. NOAA is interested in co-operative or sponsored efforts.

The Advisory Council was enthusiastic concerning the NOAA program and opportunity for UNOLS participation. They reached the following resolution.

On Thursday, 22 August 1985, we received an interesting and informative presentation on NOAA's EEZ Program by Rear Admiral John Bossler. He especially emphasized the BS^3 and SEABEAM bathymetric survey of the U.S. EEZ planned for the next several years. This survey will bring forward a great advance in bathymetric resolution and precision for the benefit of basic research as well as practical applications. Admiral Bossler noted the UNOLS community could participate with NOAA in this important enterprise. This is an exciting opportunity for the Ocean Science Community, and for UNOLS. Building upon existing collaboration between the UNOLS community and NOAA the Advisory Council of UNOLS encourages response to this opportunity to join NOAA in the bathymetric survey of the EEZ. Further, other opportunities could develop such as UNOLS fleet participation in the SEAS automated data acquisition and real-time reporting system of NOAA, and in the GPS navigation systems.

Hence, we recommend that the Chairman of the UNOLS Advisory Council contact Admiral Bossler at the earliest opportunity to establish a joint NOAA/UNOLS EEZ Working Group. This working group should include, but not be limited to, representation from those UNOLS institutions equipped with SEABEAM systems, or processing facilities: L-DGO, URI, Scripps and WHOI. (Correspondence has been initiated between Charles Miller and Admiral Bossler.)

Selection of Chairman, Vice Chairman. The Council unanimously selected Charles Miller, Chairman and Thomas Malone, Vice Chairman for the 1985-86 UNOLS year. The Council thanked Dr. Miller and Dr. Stewart for their service as Chairman and Vice Chairman during 1984-85.

Consideration of Standing Roles. Chairman Miller led the Council in discussion concerning anticipated Council activities for the coming year and how the Council might structure itself to conduct those activities. The Council also identified a number of issues, both general and specific, that should be addressed.

General issues of concern to the UNOLS community and to the Advisory Council:

A decline in funding and support for the science programs that are the source for ship requirements, support and related technology. Mechanisms to address the issue. Mechanisms for the cooperative management of advanced technical oceanographic facilities (e.g., supercomputers, MCS ships, color imagery processing). Potential UNOLS roles in such management.

The need for UNOLS to interact with other segments of the oceanographic community, funding agencies, advisory bodies, associations, panels and committees. Goal to achieve an effective voice for ocean research.

Specific issues included:

Improvements to ship scheduling and planning by establishing scientific program facility requirements. (This might also apply to planning for instrumentation, equipment and special facility acquisition.)

Requirements, acquisition plans, and general support, for big ships verses that for small ships. Operational effectiveness of big ships versus small ships.

Improvements of methods for assessing fleet and individual ship effectiveness. Need for more strategic assessments. Possibility of establishing useful productivity measures.

Need (within the oceanographic community) to establish mechanisms for clearing information on ocean research in foreign jurisdictions; clearances, obligations, foreign contacts, cooperative research opportunities. After discussion the Council drafted a statement outlining their agenda for 1985-86 and realigned internal organization:

PURPOSE AND ORGANIZATION OF THE UNOLS ADVISORY COUNCIL

The University National Oceanographic Laboratory System (UNOLS) was founded to create a mechanism for coordinated utilization of and planning for oceanographic facilities, especially, ships. UNOLS also promotes Federal and other support for academic oceanography, thereby maintaining and enhancing the excellence of this nation's oceanographic program. An underlying principal is that control of operations and scheduling remains with operating institutions, thereby maintaining the close coupling between fleet users and operators. It promotes cooperative scheduling, financial efficiency, operator accountability, fleet maintenance and replacement, safety, and access to the fleet for scientists outside the institutions. UNOLS plays a key part in most decisions affecting the fleet.

Oceanography no longer is pursued only from ships. Our community is acquiring other large assets that will require information exchange and cooperative management. These include super-computers, imagery analysis systems, seismic arrays, and bio-technical laboratories. UNOLS now is organizing to assist the community with acquisition and cooperative management of these new sorts of facilities.

Most of the day-to-day work of UNOLS is done by the executive office under Captain William Barbee, located at the School of Oceanography of the University of Washington. He is provided direction on a regular basis by the UNOLS Advisory Council composed of eight scientists elected by the UNOLS Members and Associate Members, plus the Chairman and Vice Chairman of UNOLS. The Advisory Council has organized for its tasks by assigning to its members a set of standing roles described below. Council members stay current with developments related to their standing roles, and acting upon that information they promote changes and activities that will improve fleet and facility operations.

We seek the assistance of the UNOLS community, both administrators and scientists, with fulfilling these standing roles. We hope you will contact Advisory Council Members when your concern match their assignment. Our names and addresses are at the end of this essay. We are all on telemail with boxes addressed as C.Lorenzen, F.Webster, etc., and the whole Council can be reached as

ADVISORY.COUNCIL. The Chairman will be glad to assist you in communicating with the Council. It is a way of communicating with the whole oceanographic community.

UNOLS Advisory Council Standing Roles

A. Roles regarding effective operation and management of the UNOLS fleet:

1. Oversight of the joint scheduling process
   East Coast scheduling committee - Harris Stewart
   West Coast scheduling committee - John Martin
   University National Expeditionary Planning - Robert Corell
   ALVIN Review Committee - Robert Corell

2. Fleet effectiveness review
   User assessment forms - Carl Lorenzen
   Vessel inspection process - Robert Dinsmore
   Preparation for triennial review - Charles Miller

3. Fleet Replacement - Robert Dinsmore

4. Shipboard scientific instrumentation, technician programs and user manuals - John Martin

B. Roles in communications and liaison

5. Editing the UNOLS News - Thomas Malone

6. Minutes, Advisory Council Resolutions, Direct Correspondence with the membership - Charles Miller, William Barbee

7. Oversight of the UNOLS and federal agency statistical base - Ferris Webster

8. International Restrictions to Ocean Science Committee - Harris Stewart, Robert Corell

9. Mechanisms for acquisition and management of advanced technical facilities - Charles Miller, Chris Mooers

10. Forecast of scientific and governmental trends through federal agency contact - Chris Mooers, Art Maxwell, Ferris Webster

The Council directed that their statement of purpose and organization be included in the next UNOLS NEWS.

Status of Standing Roles.

Fleet Efficiency and Effectiveness. Carl Lorenzen noted the Summary of UNOLS Cruise Assessment reports for first quarter, 1985. According to that summary there are no problems with UNOLS fleet operations; most reports include commendations of operating personnel, equipment maintenance and vessel capability. However, there is reason to believe that assessments are biased toward favorable reports.

The Council expressed their concern that Cruise Assessment reports are not as useful as they could be, and concluded that a better method for assessment is required.

The Council asked Carl Lorenzen, working with the UNOLS Office, to devise a system for cruise assessments by principal investigators (or chief scientists) that could result in more strategic and constructive assessment. The system should be based on:

- direct communication between the UNOLS Office and individual investigators,
- provide feedback to investigators who submit reports, and
- at least a section of the report that could remain confidential from the operating institution's marine personnel (both ashore and aboard ship).

At the same time, the Council recognized the advantages of the current system wherein operators have opportunity for rapid response to constructive suggestions. The Council suggested that a multi-copy manifold form be devised that could be used to furnish copies of most of the report to the UNOLS Office (for Advisory Council use) to the operators, the ship and for the reporting scientist. The Council noted that the UNOLS membership would be informed of any changes before they are implemented.

Specialize Instrument and Non-traditional Facilities:

Specialized instrumentation and non-traditional facilities remain of interest to the Council, but effective means for addressing problems and issues have not yet been implemented. The Council and UNOLS deferred action for several months because a subcommittee of the Advisory Committee to NSF's Ocean Sciences Division was examining technology-for-oceanography issues. That Subcommittee reported in May, 1985, citing needs for state-of-the-art multi channel seismic facilities, for satellite data and satellite imagery facilities and a variety of facilities to address regional needs in ocean research.

The Council urged that the subcommittee on Advanced Technical Oceanographic Facilities be established without delay. This working group would examine existing facilities and estimate future needs, suggest mechanisms for managing facilities and recommend possible UNOLS roles. (See Advisory Council report for May 20, 1985.)

Cooperative management of advanced technical ocean facilities will be a major issue for UNOLS and the Advisory Council. Charles Miller led the Council in discussion of the three main issues concerning advanced technical facilities:

identification of the need in ocean research for special instrument facilities, and how to acquire them;

development of schemes for managing these facilities effectively and making their use broadly available throughout the ocean community; and

identifying UNOLS roles (if any) in this facilities management and recommending schemes for implementation.

NSF Staff re-iterated that agency's interest in hearing UNOLS recommendations on these issues.

International Restrictions to Ocean Science. In the absence of Harris Stewart, Chairman, IROSC, Robert Corell led discussions on international regimes for ocean science, and the effectiveness (or ineffectiveness) of mechanisms in the ocean community for dealing with research in foreign jurisdictions. Under existing and emerging international regimes more and more ocean research of interest to U.S. scientists requires the cooperation of and permission from foreign states. Clearance permits and post cruise obligations are approached through the Department of State. There are problems and issues connected to those processes, but they are being addressed. However, the approach to other aspects of cooperation with foreign countries and interaction with their oceanographic communities is fragmented. Although many U.S. institutions and individual scientists have valuable experience and contacts, and may be aware of attractive foreign research opportunities, the information is not communicated effectively.

The recent experience in obtaining clearance for ALVIN-ATLANTIS II for work in Mexican waters was a case in point. Only extraordinary last minute efforts finally led to clearance. Until those efforts were successful, a major part of the ALVIN-ATLANTIS II program for 1985 was at risk. Such risks are unacceptable.

It was the sense of the Advisory Council that a mechanism is needed to foster communications on the mechanics of research clearances and cooperation with oceanographic communities. The Center for International Marine Science Cooperation, earlier proposed by David Ross might be a model.

The Advisory Council Chairman will change the International Restrictions on Ocean Science Committee (IROSC) to recommend a specific organizational structure by which information on research clearance mechanics and cooperative arrangements can be exchanged. (The charge is in Appendix III.)

Fleet Management: Robertson Dinsmore reported on activities of the Fleet Replacement Committee and on other aspects of UNOLS fleet status.

As a part of their initiatives for research vessel construction, oceanographic fleet replacement and renovation, the Navy, through ONR, has commissioned an engineering study for modification or replacement of the propulsion systems in AGOR-14 class vessels (the MELVILLE and KNORR). This corresponds to the item for modernization of two class I/II ships as shown in preliminary UNOLS Fleet Replacement Committee plans. A Request for Proposals has been prepared by a WHOI and Scripps group (for issue by WHOI).

In specifying the study, AGOR-14 requirements are based on those originally set in 1965: cruising speed 12 Kts, 10,000 mile endurance at 12 Kts, 28,000 lb tow pull at 8 Kts, change and maintain heading and

speed from zero to full speed for extended periods, hold ship broadside against a 35,000 lb lateral force and ice strengthening. In addition, open deck space, flexibility for accommodating scientific outfitting would be maintained, and an acoustically more quiet ship is desired.

Repowering alternatives should be considered, including: upgrading cycloids, convert to conventional twin screws with modern thrusters, Z-drive, etc. In general, solutions will be sought so that these ships can be reasonably expected to achieve a 30-40 year service life.

Other events affecting the UNOLS Fleet:

USC has OSPREY and is proceeding with conversion to research vessel. Decision is pending on their proposal to NSF for outfitting and equipment to complete the conversion.

The recently stretched MOANA WAVE is operating satisfactorily. Speed has increased by about 1/2 Kt. This was a good renovation and has helped provide a valuable research vessel.

Over the summer the ALPHA HELIX was nearly beset in the ice and later hit a pinnacle. Although each was serious, neither incident took the ship out of service.

RSMAS has proposed changes to increase (scientific) berths on the ISELIN.

The CAPE HENLOPEN is experiencing problems with main propulsion GM 149 engines.

The conversion of the SPROUL is nearly complete, and is excellent. The SPROUL has the same main engines as does the CAPE HENLOPEN.

The Fleet Replacement Committee continues its work along three general fronts:

development of Science Requirements for a new generation of oceanographic research vessels,

conceptual design studies of new types of ships, and

a Plan for Fleet Replacement.

Science requirements have been or are being repaired for at least six classes of research ship. These requirements are circulated throughout the community, and are continually reviewed and revised as new comments and recommendations are received.

Within the overall UNOLS effort about eleven conceptual design studies are underway. All are large ships, because, in the present fleet, large ships are the oldest and more obsolete.

The plan for fleet replacement has not changed significantly since early reports: The number and mix of ships would remain about as present, but ships would be relatively larger and more capable. The plan is outlined in the table below.

Outline of Plan

Fleet replacement by five-year increments is given by the following table:

Time Frame	Class I & II	Class III	Class IV	Specialized
1985-89	2 new (modernize 2)		1 new	1 G&G
1990-94	1 new		1 new	1 Polar R/V
1995-1999	1 new	2 new	1 new	1 Sub Handling 1 G&G
2000-2004		2 new	2 new	
2005-2009		3 new		
2010-2014	2 new		2 new	
Total	6	7	7	4

The FRC's schedule for completing the Research Vessel Replacement Plan would have a second draft distributed, all conceptual design studies completed and regional reviews accomplished by late October or early November. A third draft report to include the results of regional reviews would be prepared for the community-wide (national) workshop in late November. The final Report on Research Vessel Replacement would be delivered to UNOLS and sponsoring agencies early in 1986.

ALVIN Review Committee. Robert Corell, Chairman reported that a Prospectus on Long Range Planning for ALVIN-supported Oceanographic Systems had been prepared and distributed. This prospectus outlines the ARC planning and schedule recommending process outlines interest, intent and tentative plans for ALVIN use 1985-1987.

One aspect of the planning process for ALVIN-supported programs is a series of annual workshops to elicit notices of intent or interest in using ALVIN during out-planning years. Two workshops will be held during this year's cycle: December 8, 1985 just before the Fall AGU meeting in San Francisco and January 12, 1986 just prior to the AGU/ASLO Ocean Sciences meeting in New Orleans.

The ARC also agreed to provide an oversight review of the ALVIN program. A special ALVIN study committee chaired by Dirk Frankenberg is being formed to conduct the review. Their review will cover:

ALVIN supported science programs and activities,
Management and Operation of the ALVIN system,

ALVIN program planning, oversight procedures and review policies, and additional issues such as relationships with Navy submersibles.

Dirk Frankenberg will meet with sponsoring agency officials early in September and the special committee will meet in October.

UNEPC Report. The last meeting of UNEPC was reported to the May UNOLS semiannual meeting.

Advisory Committee to Ocean Sciences Division. - Robert Corell, Chairman of the OCE Advisory Committee reported that their long range plan had been delivered and that he had made a special presentation on it to NSF Director Erich Bloch. Director Bloch was generally receptive to the report, and has arranged for its presentation at a meeting of the heads of the principal federal agencies in oceanography. Potentially, this plan, together with allied efforts, may help produce a broader support base for oceanography and help assure the continued health and vitality of ocean research.

Dr. Corell also informed the Council of an Ocean Forum to be held September 10, in Washington. This forum is organized by NASULGC around major new developments in oceanography, discussed by key participants.

Ship Scheduling. In discussions among NSF personnel and Robert Dinsmore, Chair, East Coast Scheduling Group, it was agreed that the special scheduling meeting set for September 24 to discuss potential layups in 1986 should be deferred. Although the potential for layups has not diminished, the Special Panel to OCFS (reviewing the possible transfer of a ship from the east to the west coast, the OSPREY conversion and related matters) will not yet have made their recommendations.

Sponsoring Agency Information, Grant Gross, Sandra Toye, and Richard West provided information for NSF.

Budget estimates were provided for NSF's Ocean Sciences Division, including details of Oceanographic Facilities Support (OFS).

BUDGET ESTIMATES
FY 1986-87
(in $M)

	1985 Actual	1986 Request	* 1986 Estimate	** 1987 Estimate
OCEAN SCIENCE DIVISION				
Ocean Science Research	58.2	59.9	59.0	61.5
Oceanographic Facilities	34.9	36.8	35.4	36.9
Ocean Drilling	27.6	28.9	28.9	30.1
	$120.7M	125.6	123.3	128.5
OFS Breakout				
Operations				
Ships Ops	23.8			
Other Ops & Misc.	2.9			
Marine techs	2.4			
Subtotal	29.1	29.5	29.5	30.8
Acquisitions & Development				
Shipboard Equipment	1.7			
Instrumentation	1.8			
Technology Develop.	1.6			
Ship and Shore Constr./conv.	.7			
Subtotal	5.8	7.3	5.9	6.1
Total	$ 34.9M	36.8	35.4	36.9

*Best Guess (prior to final congressional action)
** 1987 is 1986 + 4.2% inflation

There is little reason to expect significant increases in either 1986 or 1987. Although OCE's long range plans and various initiatives are being will received, even well-sold meritorious programs are unlikely to result in increases; concern over the budget deficit dominates the appropriations process.

OCFS funding for ship operations in 1986 (and 1987) will be similar to that for 1985. In 1985 the UNOLS fleet experienced about 2.5 years' layup. In May, and July, 1985, UNOLS institutions proposed total fleet costs of $41.7M for 5900 days. That total included $32.7M requested from NSF. NSF's ship operating funds, including funds from ODP and DPP will not exceed $26M. Thus layups comparable to those in 1985 are likely.

OCE/OCFS had called a Special Panel to review various issues concerning the management, utilization and assigned location of some ships in the UNOLS fleet. Among the issues to be reviewed: Advisory Council recommendations for the formation of a central California consortium, transfer of a ship from the University of Miami to the west coast, and on USC's conversion of the OSPREY. Other reports to the panel might include USC's proposal to NSF for outfitting and equipping the OSPREY, a CENCAL proposal to operate a ship larger than the CAYUSE, ship operations proposals to NSF from USC, CENCAL and the University of Miami and the up-for-renewal NSF-University of Miami charter party agreement for operation of the CAPE FLORIDA.

Since most of the Advisory Council recommendations are conditional on past, present or projected patterns of ship use and on the Council's sense of regional ship requirements, the Council Chairman, Charles Miller, has been asked to present Council views to the Special Panel.

The panel will be reviewing a set of often-conflicting proposals, recommendations and factors. In a sense they will act as an arbitration panel. Their findings are anticipated during September. NSF's response to those findings may not be complete until later.

If a ship is transferred to the west coast for operation by CENCAL, recommendations may be sought for a new home for the CAYUSE.

OCE is encouraging the exchange of shiptime with both the French and British, as a means of providing shiptime not otherwise available, and, hopefully, to make more efficient schedules. An exchange with the French has already been make.

Richard West presented statistics and analyses on the Core Academic Fleet, Compositions and Trends, 1970 to 1985 (Appendix IV) and An Overview of the Shipboard Scientific Support Equipment Program (Appendix V).

Note that in the first of these reviews the core academic fleet is essentially defined as of those ships receiving NSF, ONR and other support through a ship operations proposal. The study does not include either the LAURENTIAN or the MOORE (hence, only 24 ships in 1985). Trends in financial support, number of ships, total tonnage, average age of ships, total numbers of crew and scientists are shown.

The overview of the shipboard equipment program began with a statement of the program objective: to maintain and improve the quality of shipboard equipment for ocean science research. Types of equipment include deck (winches, wire, etc., cranes and frames) navigation, communication and other (boats, motors, service electronics).

Awards and requests are analyzed for FY-1983 and 1985. The NSF ship inspection program is described, together with results from that program. (The program is considered to be successful. Sea worthiness and capabilities of ships are showing improvement. Operators are receptive to the program.)

The very successful wire and cable pool is also described. Over 1,000,000 ft. of wire rope and 750,000 ft. of E-M cable have been purchased. The pool allows rapid response to emergency needs, and bulk purchasing have resulted in cost saving of about 44%. Analysis of NSF funding since 1979 shows that winches and wire have, together accounted for more than half of all expenditures. Wire is, to a degree, an expendable, and expenditures will remain significant. NSF funding, together with significant ONR funding for winches has nearly re-equipped the fleet; a much lower funding level is anticipated over the next several years. There is reason to anticipate that the fleet need for cranes might require high funding levels over the next few years.

Other significant equipment requirements forecast over the next several years include motion compensated winches, kevlar cable, NAVSTAR/GPS navigation and Inmarsat communications.

The Council found both presentations of interest. They suggested that ship use statistics from the UNOLS Office might be analyzed in a manner similar to what was done on financial support, etc. for ships. They also endorsed efforts and results of the ship inspection and other aspects of the ship equipment program.

Robert Rowland reported on the status of USGS marine programs, and anticipated use for UNOLS ships. In 1986, funding for USGS marine programs will be about $25M. This is a recovery to approximate 1982 levels, but includes the Survey's EEZ program, and does not represent as much flexibility in field operations as earlier. Contracts for GLORIA surveys will use most marine field operations funding for the next three years.

The USGS, in 1983, supported conversion of the OSPREY, anticipated two to three months' use per year, and signed the CENCAL agreement. Because of changes in program/funding structure, they now anticipate much less use, at least until GLORIA contracts are completed. There will also be much-reduced USGS use of UNOLS ships off the East Coast.

Hawley Thomas described funded Minerals Management Service use of UNOLS ships in 1986. One project has been funded to the University of South Florida for phosphate studies. A second project is in final negotiation with Oregon State University for work supporting Environmental Impact Studies and using the WECOMA for 20 days.

Commander John Albright reported on the status of NOAA/NOS funding for their ship operations in 1986. The funding outlook remains unclear, although it is nearly certain that NOAA will begin FY-1986 under a continuing resolution (funding as in 1985). NOS hopes to bring the OCEANOGRAPHER back into operation, at least for sufficient time to offset that lost while the DISCOVERER is out of service for midlife refit. Uncertainties over whether this can be done reflect mostly on NOAA's ocean science/research programs.

Keith Kaulum reported on various Navy and ONR matters of interest to UNOLS. His status report on ONR and Navy efforts in support of research vessel construction initiatives emphasized the need to maintain close coordination between the Navy and UNOLS (FRC) in formulating science requirements concept and design for new ships. Although ONR still endorses a scheme wherein an outside (UNOLS ?) institution could manage design and construction of a ship for academic research, NAVSEA is also pushing for that direction. They have advanced concepts that would cost a lot, and there is concern that a ship might be built that would not adequately match academic research needs.

Several organizational changes have been made in the Navy's structure for research and technology. These changes may affect the conduct of the Navy's ocean research (and interface with the academic community) but to an as yet unknown degree. Among the changes:

The Chief of Naval Research is responsible for Naval Laboratories.

An Ocean Science and Technology Directorate has been established, reporting to the Chief of Naval Research/Chief of Naval Development through the ONR Technical Director and the Director, Office of Naval Technology.

An Ocean Science and Technology Advisory Board, advisory to CNR and OSTD, is being established.

The Advisory Council's report on Composition, Distribution and Management of the UNOLS Fleet-1985 has been reviewed. It is a good report.

Proposed Charter Amendment: UNOLS Chairman Ferris Webster proposed an amendment to the UNOLS Charter, as follows:

Under Charter Section 2, Organization, paragraph (f):

(f) The Chairman of UNOLS will be elected from among the Member Institutions. The Vice Chairman may be elected from among the Associate Member Institutions. Each will serve for a term of two years and will not serve more than two successive terms. The Vice Chairman will serve in the absence of the Chairman. If neither the Chairman nor Vice Chairman are present at a meeting, the members present shall elect an Acting Chairman for the duration of the meeting.

The purpose of the amendment would be to lengthen the assured terms for UNOLS Chairman and Vice Chairman, thereby providing better continuity among UNOLS Officers and on the Executive Committee. It is introduced now so that it could be acted on by UNOLS in October, 1985 and be in effect for May, 1986 elections.

The Advisory Council recommended that the charter amendment, as submitted be distributed to UNOLS Members so that it can be introduced for adoption at the Semiannual meeting in October, 1985.

Applications for Associate Membership. The Advisory Council reviewed applications for Associate Membership from Harvard University, Committee on Oceanography, and from the University of South Carolina, Marine Science Program.

The Advisory Council recommended Harvard University and the University of South Carolina for Associate Membership and directed that their applications be distributed and introduced to members at the October, 1985 Semiannual Meeting.

Other Business. The Advisory Council agreed that they would make a general review of UNOLS membership and the designation of UNOLS ships on a two year cycle (next in 1986).

The meeting was adjourned at 12:15 p.m., August 23.

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Agenda
Advisory Council Meeting
Virden Center - University of Delaware
Lewes, Delaware
8:30 a.m. - 5:00 p.m., 22 August 1985
8:00 a.m. - 12 Noon, 23 August 1985

Accept minutes of May 20, 1985 A/C Meeting.

Choose 1985 Chairman, Vice-Chairman, Advisory Council. Chosen annually by A/C. Incumbents Charles Miller, Harris Stewart remain members of the Council. (Note: Charlie Miller will not stand for re-election, and members should give some thought to appropriate nominees. Individuals you intend to nominate should be asked beforehand whether they are willing to serve.)

Both UNOLS and Advisory Council Chairmen believe that the main point of this meeting should be to begin to develop the Council's action agenda for 1985-86, and to reorganize the A/C for new and directed action. Items on A/C Standing Roles should be considered on the basis of questions: What does the Council intend to do? Are standing roles an effective way of proceeding? Are these the right standing roles?

Advisory Council Standing Roles. With two new Council Members, some Standing Roles have no one associated with them; also, at least John Martin and Chris Mooers do not have Roles now. Council should decide what roles might be important for 1985/86, who might take each Role, and address continuing issues concerning some roles. Note that reports from standing committees (ARC, IROSC, FRC, UNEPC and Ship Sched) are included in Standing Roles.

Fleet Efficiency and Effectiveness - C. Lorenzen. Summaries of Cruise Assessments, First Quarter, 1985 will be available. The issue has been raised, both in the Council's Fleet Report and at the May Semiannual meeting, that assessments are becoming Mom and apple pie. The Council may wish to address this, and discuss possible procedural changes.

Access for Ocean Research (and IROSC) - Harris B. Stewart will not be present. IROSC Member Robert Corell will brief Council on recent (and potential) problems in obtaining clearances for research in foreign jurisdictions, and on what actions the A/C and UNOLS might take. Other issues at the May 20 Council meeting that might deserve follow up: responsibility for monitoring discharge of post cruise obligations, UNOLS Chairman response to John Knauss on proposed center for marine science cooperation, and classification/control of swath-system bathymetric data in the EEZ.

Specialized Instrumentation Facilities - C. Miller and F. Webster. Status of the A/C Subcommittee on Advanced Technical Oceanographic Facilities. Formed? Active? Other issues concerning specialized instrumentation facilities. Future activities concerning this role?

Fleet Replacement (and Fleet Replacement Committee) - R. Dinsmore, FRC Chairman will report on activities of FRC, and status of proposals and plans for fleet replacement. He will brief the Council on the plan for modification of KNORR/MELVILLE (some material already distributed to the Council).

Fleet Management (and A/C Report). The report was sent to UNOLS Member Institutions and Federal funding agencies on June 28, 1985. Agency comments have been received from NSF (letter dated July 11). C. Miller will report on A/C interaction with NSF/OCFS and the OCFS special panel examining ships and ship assignments of CENCAL, USC and RSMAS. Bruce Robison had this role earlier. New arrangements?

Regional Ship Scheduling Groups - Robison is gone and Stewart will not be at this meeting. Reports on the May 21 Ship Scheduling meeting and the September 24 meeting that will address potential lay-ups, sort out schedules. The A/C position has been that their observers to Ship Scheduling Groups should be from Associate Member Institutions. New appointments?

ALVIN Review Committee - R. Corell - Review of ARC actions since May UNOLS meetings. (Issuance of Planning Prospectus, Letters on ARC schedule recommendations, Report on May 6, 7 ARC meeting, Other.)

UNEPC - R. Corell is A/C rep to UNEPC. Report on May 21 meeting. Discussion of how UNEPC is going and of recommendations for more effective process.

Communications - T. Malone is at sea. UNOLS NEWS, V. 2, N. 2 was distributed in July, 1985. Target date for V. 2, N. 3 is September 1985 Distribution is now about 750.

Sponsoring Agency Information To Advisory Council - Rear Admiral John Bossler, Director, Charting and Geodetic Services, NOS, NOAA, will make a presentation: NOAA's EEZ Program - Opportunities for UNOLS. This will provide an update of the program and activities since NOAA's workshop (and information to the Council on January 21, 22). Discussion invited.

Sandra Toye and Dick West, NSF/OCFS will attend. Dick West will present two reports: Status and History of Shipboard Equipment, and History of UNOLS Fleet, 1970 - 1985.

R. R. LaCount or A. F. Betzel will provide a status report on the POLAR DUKE.

Sandra Toye will provide information on OCFS and other NSF or OCE matters pertinent to UNOLS.

Keith Kaulum on ONR and other Navy matters.

Robert Rowland on USGS program and requirements.

Minerals Management Service - Representative from Environmental Studies, MMS on various matters, especially requirements for UNOLS ships on West Coast programs. (Correspondence between Robert Dill, MMS, Grant Gross and Sandra Toye, NSF.)

Dean Carolyn Thoroughgood, College of Marine Studies, University of Delaware will host the Advisory Council for cocktails and dinner at Marine Studies Center, Lewes, at 6:00 p.m.

August 23, 1985
8: a.m. - 12 Noon

UNOLS Membership -- Review application for Associate Membership from Harvard University, and form recommendation for UNOLS. There may be a second application, from Ohio State University.

The A/C is obligated to review Membership and Associate Membership periodically. It was last done June, 1984. Is annually too often? If not, here's where to begin. (Note: Same question regarding designation of ships.)

UNOLS Chairman's items. Ferris Webster is preparing a Charter amendment for introduction to UNOLS: To give the Chairman and Vice Chairman, UNOLS concurrent two year terms, with a limit of one re-election. He seeks A/C endorsement so that the amendment can go before UNOLS for action at the October meeting.

Examine agenda of September 25-27 RVOC meeting.

Other Business - I have nothing right now, but there are several potential items:

1. UNOLS Office has had several recent inquiries concerning (a) releases required to be signed by some institutions before embarking on UNOLS vessels, and (b) requirements that scientific party NOT FROM THE OPERATING INSTITUTION document their employee coverage, take out trip insurance, etc. These are both risk management issues that the A/C may want to be alerted to.

APPENDIX II

NOAA'S EEZ BATHYMETRIC MAPPING PROGRAM AND RELATIONSHIP WITH UNOLS

presented by

John D. Bossler

Director, Charting and Geodetic Services

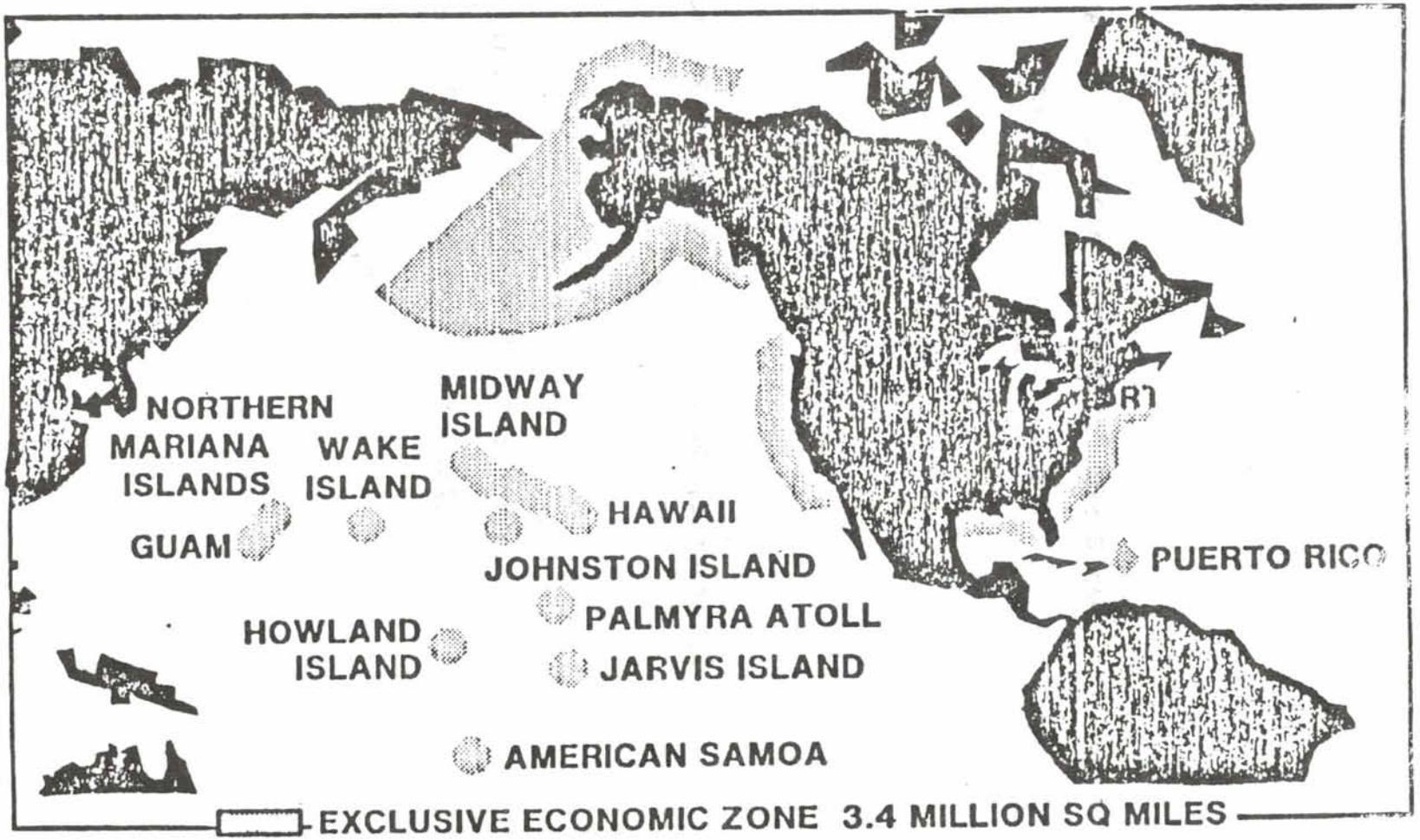
to the

University-National Oceanographic Laboratory System (UNOLS)

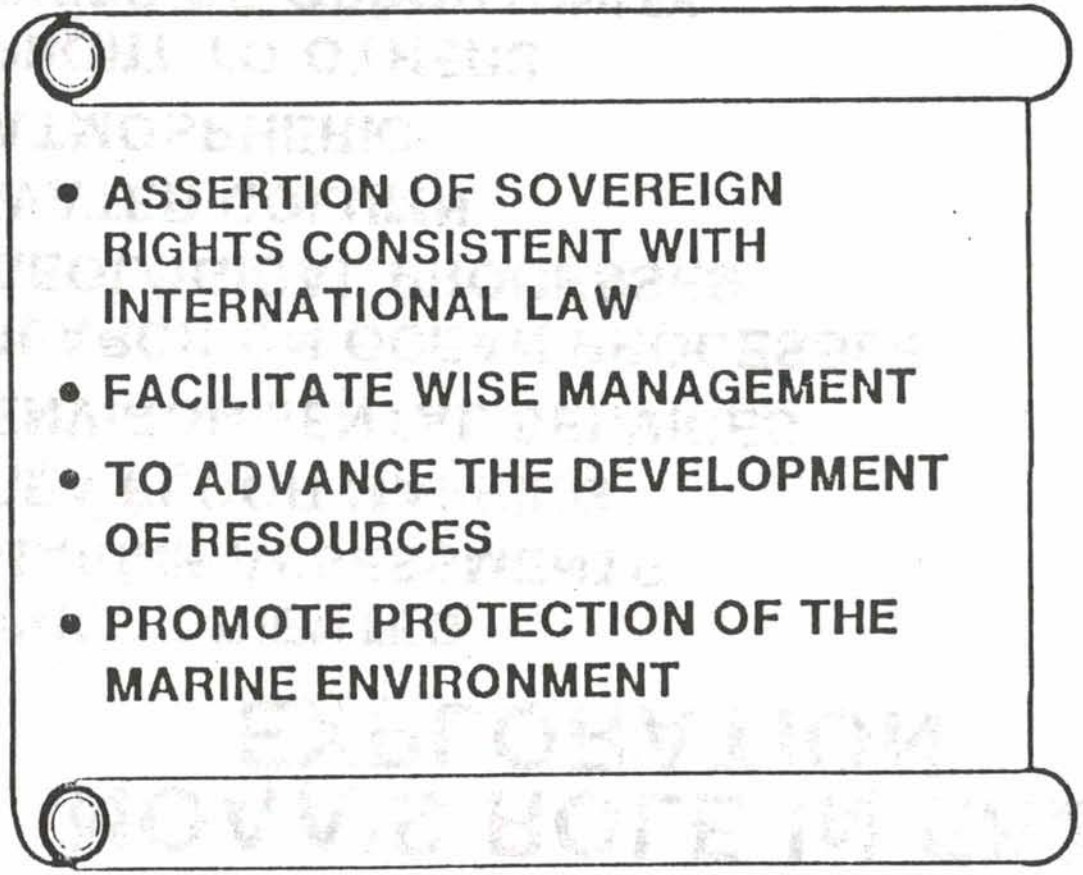
August 22, 1985

Lewes, Delaware 19958

UNITED STATES
EXCLUSIVE ECONOMIC ZONE



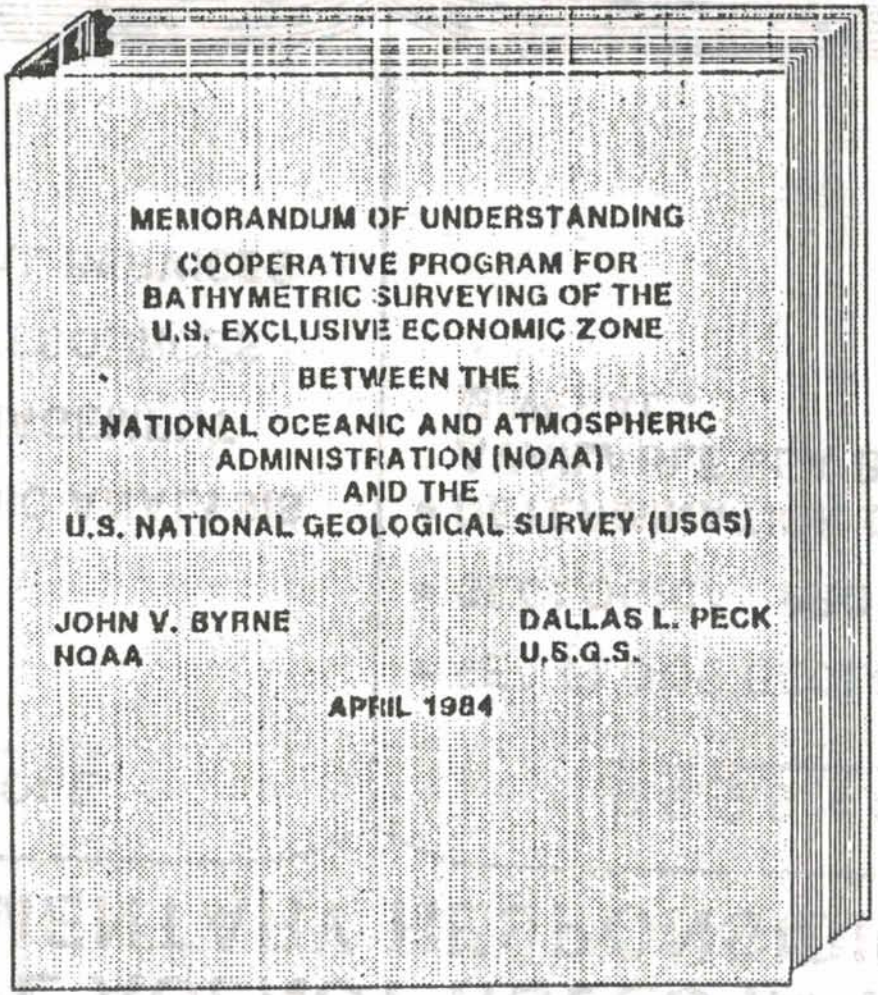
THE EXCLUSIVE ECONOMIC ZONE PROCLAMATION BY THE PRESIDENT OF THE UNITED STATES



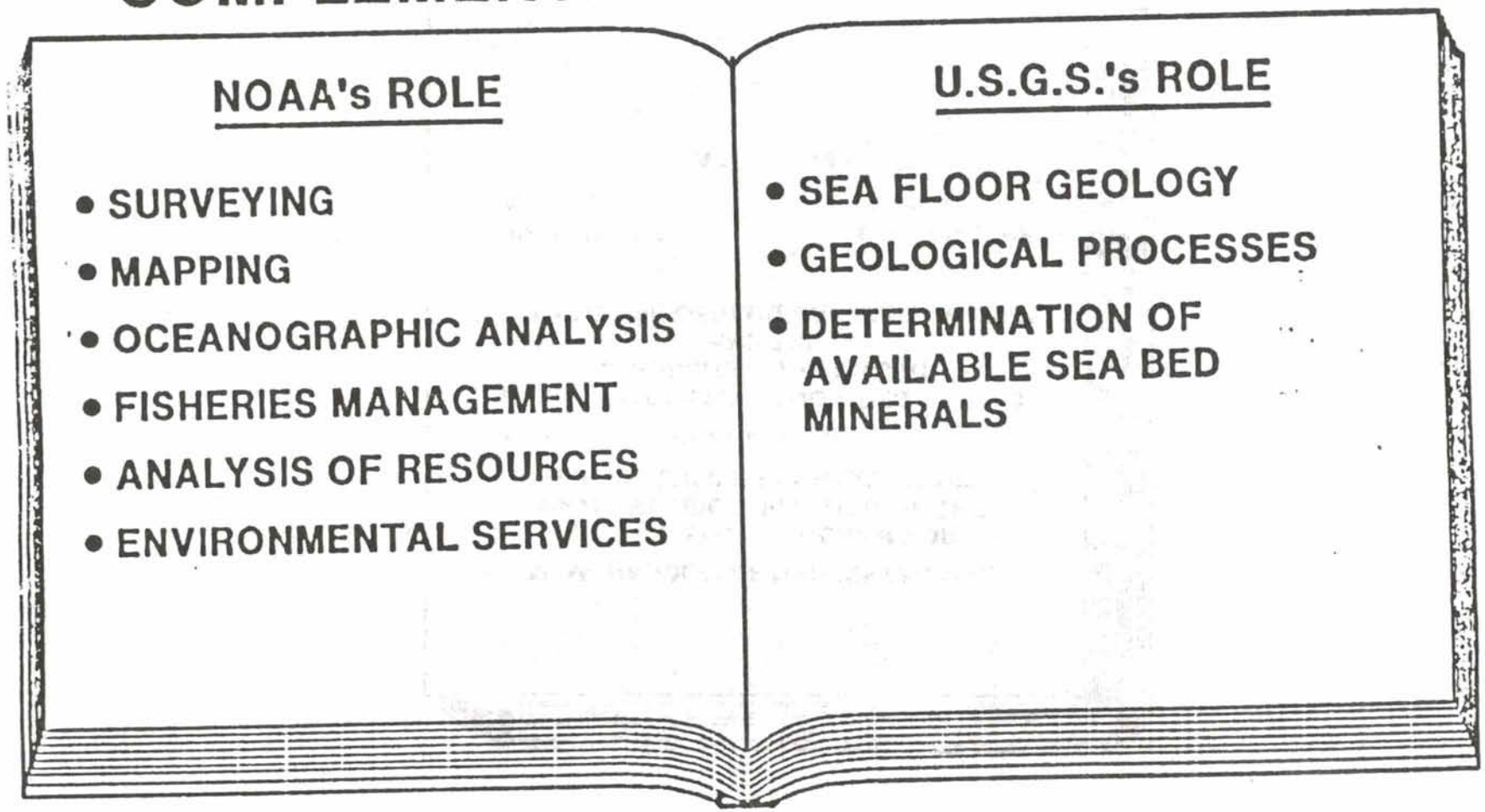
RONALD REAGAN, MARCH 10, 1983

NOAA'S ROLE IN EEZ EXPLORATION

- SERVICE ORIENTED
  - MARINE ASSESSMENTS
  - SEA FLOOR MAPPING
  - ENVIRONMENTAL SERVICES
- RESEARCH ON OCEAN PROCESSES
  - GEOLOGICAL PROCESSES
  - WATER COLUMN
  - ATMOSPHERIC
- SUPPORT TO OTHERS
  - SHIPS OF OPPORTUNITY
  - GOV'T/ACADEMIC/INDUSRTY CONSORTIUM
  - SPECIALIZED PRODUCTS OR INTERPRETATION

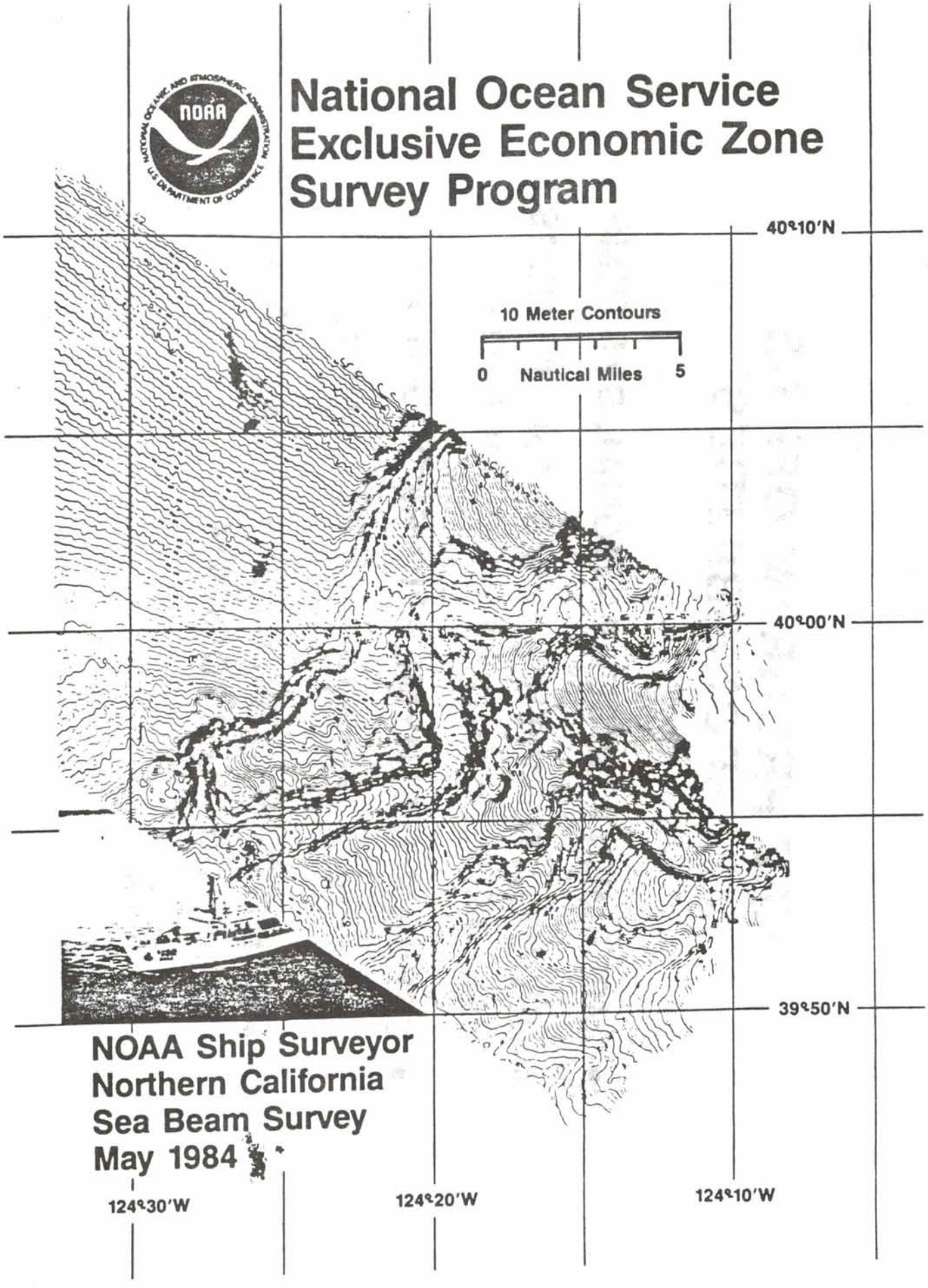

MEMORANDUM OF UNDERSTANDING
COOPERATIVE PROGRAM FOR
BATHYMETRIC SURVEYING OF THE
U.S. EXCLUSIVE ECONOMIC ZONE
BETWEEN THE
NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION (NOAA)
AND THE
U.S. NATIONAL GEOLOGICAL SURVEY (USGS)
JOHN V. BYRNE
NOAA
DALLAS L. PECK
U.S.G.S.
APRIL 1984

RESPECTIVE AGENCY ROLES IN THE EEZ
COMPLEMENTARY RESPONSIBILITIES



EEZ PROGRAM OFFICE RESPONSIBILITIES

- IMPLEMENT OBSERVATIONAL SYSTEMS
- NEGOTIATE WITH U.S.G.S. AND OTHERS REGARDING SURVEY REQUIREMNTS
- SPECIFY BATHYMETRIC PRODUCTS
- SPECIFY GEOPHYSICAL PRODUCTS
- PROMOTE MAXIMUM USE OF NOAA SHIPS ASSIGNED TO PROGRAM


National Ocean Service
Exclusive Economic Zone
Survey Program
40°10'N
10 Meter Contours
0 Nautical Miles 5
40°00'N
39°50'N
NOAA Ship Surveyor
Northern California
Sea Beam Survey
May 1984
124°30'W
124°20'W
124°10'W

RESOURCES REQUIREMENTS SUMMARY

	FY 1985	FY 1986	FY 1987	FY 1988
SHIP REQUIREMENTS (Days at Sea)				
SURVEYOR	140	135	170	210
DAVIDSON	180	180	250	210
DISCOVERER		55	200	210
Annual Ship Expenses ($M)	4.5	6.3	7.4	7.6
BATHYMETRIC MAPPING				
Ship Equipment	.3	1.7	1.8	1.2
Map Preparation, Data Processing and Dissemination	.9	1.1	2.4	2.4
TOTAL PROGRAM COSTS ($M)	5.7	9.1	11.6	11.2

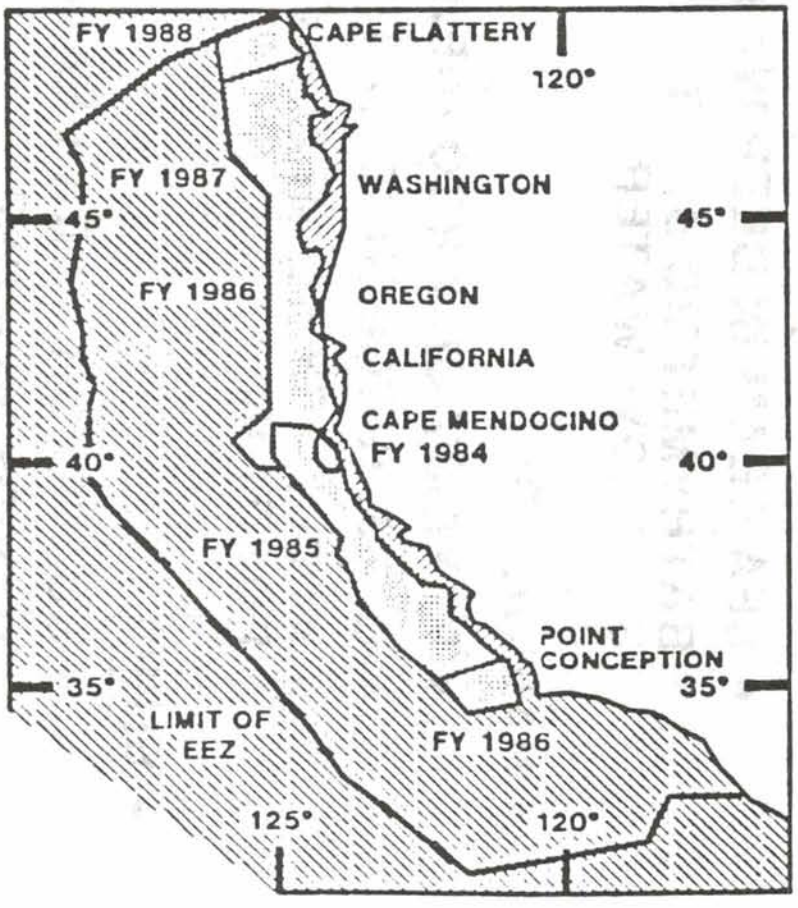
BATHYMETRIC SURVEYS

GOAL - MODERN SWATH ECHO SOUNDING COVERAGE IN DETAIL TO ALLOW COMPILATION OF MAPS FOR USE IN THE DEVELOPMENT AND ENVIRONMENTAL PROTECTION OF THE EEZ

TECHNICAL APPROACH

- SWATH SURVEYS UTILIZING
  - SEA BEAM IN DEEP WATER
  - BATHYMETRIC SWATH SURVEY SYSTEM, IN SHALLOW WATER
- NAVIGATION
  - RAYDIST OR ARGO (NEAR TERM TO 1987)
  - G.P.S. (BEGINNING IN 1987)
  - ACCURACY 50 METER CIRCULAR ERROR OF POSITION
- <u>SHIPS</u>
  - SURVEYOR - SEA BEAM
  - DAVIDSON - BS^3
  - OTHERS TO BE ASSIGNED IN FY 86-87

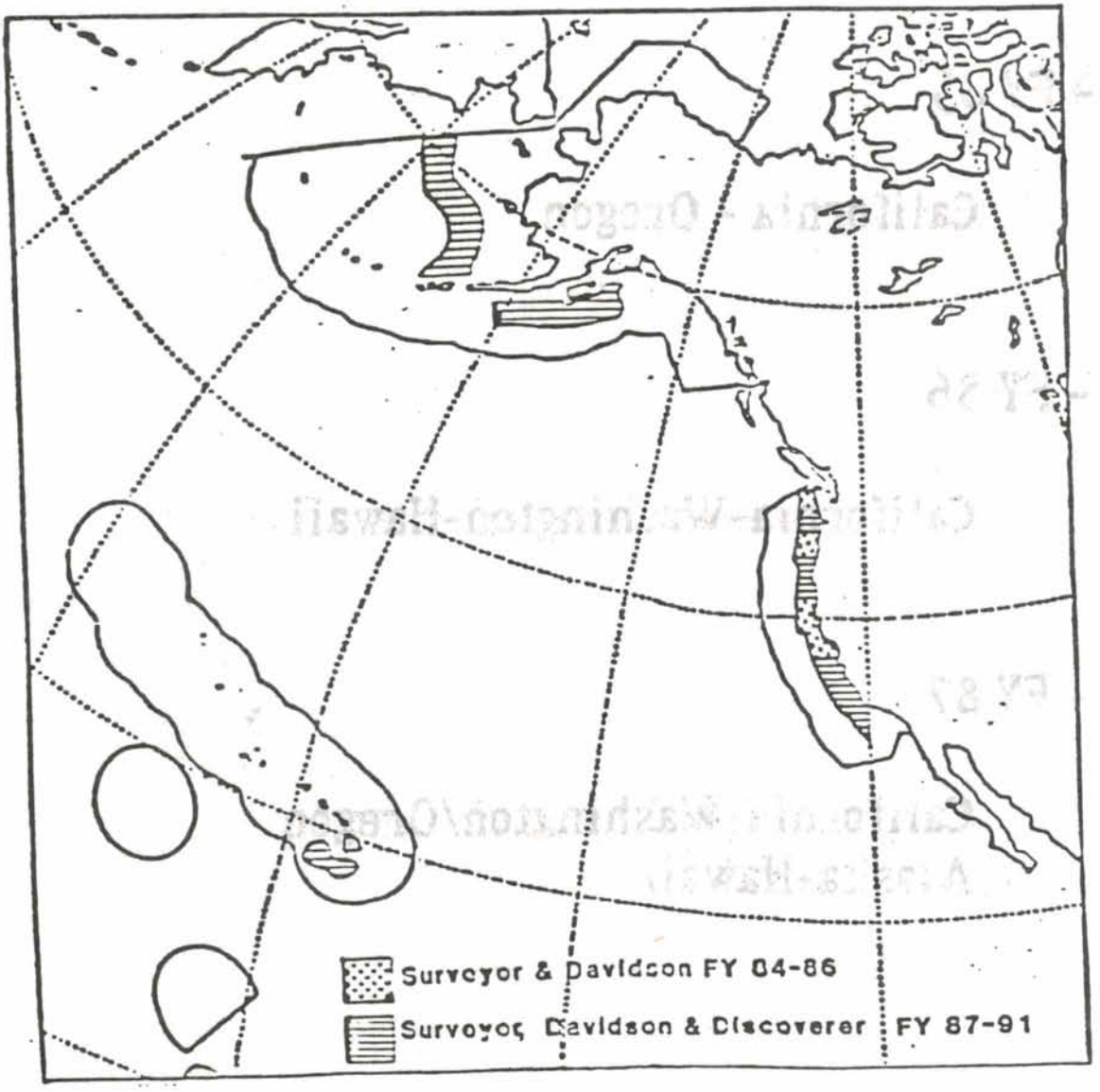
INITIAL EEZ SURVEYS IN PACIFIC OCEAN (NOAA SHIPS SURVEYOR AND DAVIDSON)



EXCLUSIVE ECONOMIC ZONE

BATHYMETRIC MAPPING SCHEDULE

PROJECTED AREAS FY 87-91, 3 SHIPS



PROGRAM PLANS

- FY 85

  California - Oregon

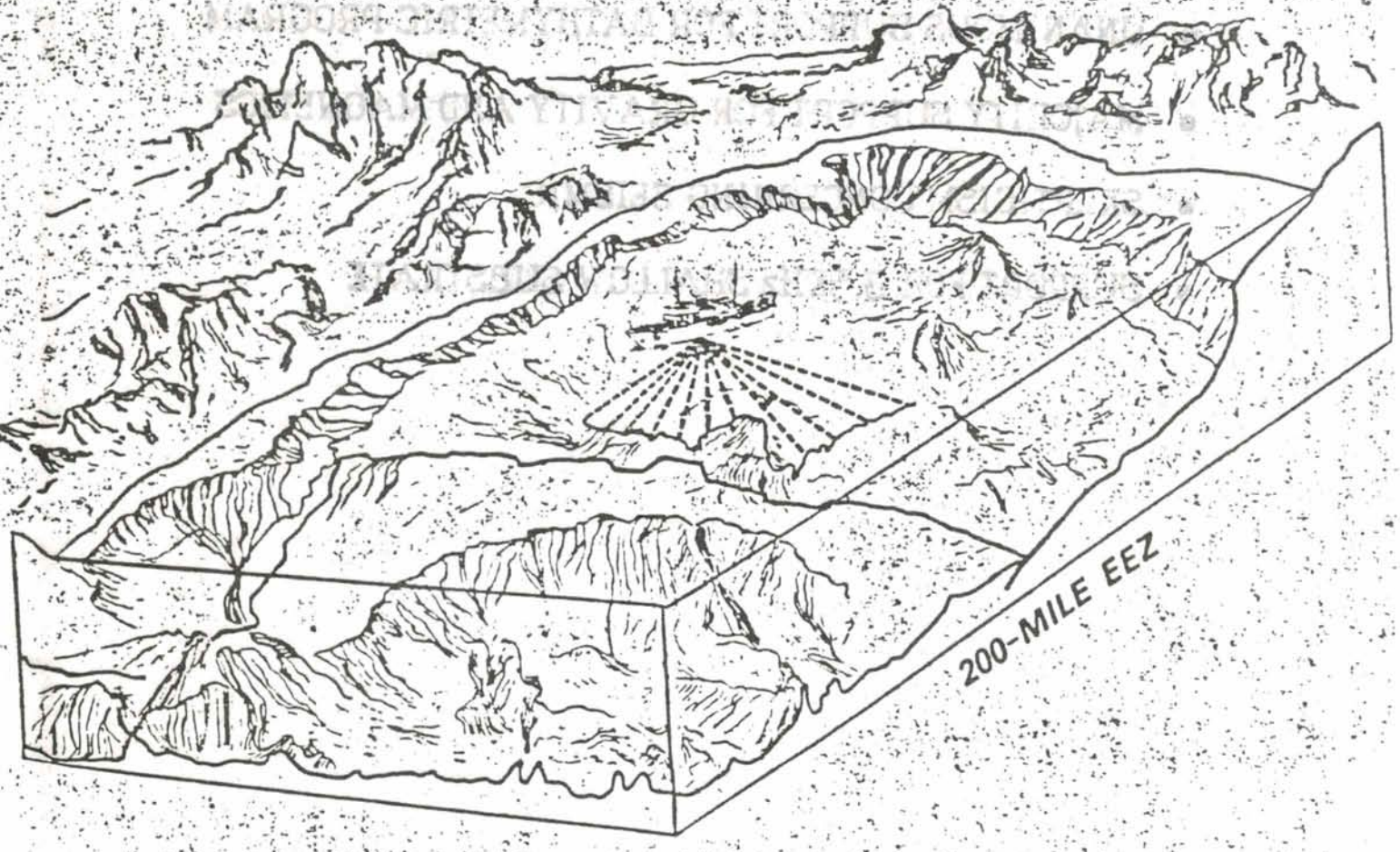
- FY 86

  California-Washington-Hawaii

- FY 87

  California-Washington/Oregon
  Alaska-Hawaii

Report of the NOAA Exclusive Economic Zone Bathymetric and Geophysical Survey Workshop



U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Charting and Geodetic Services

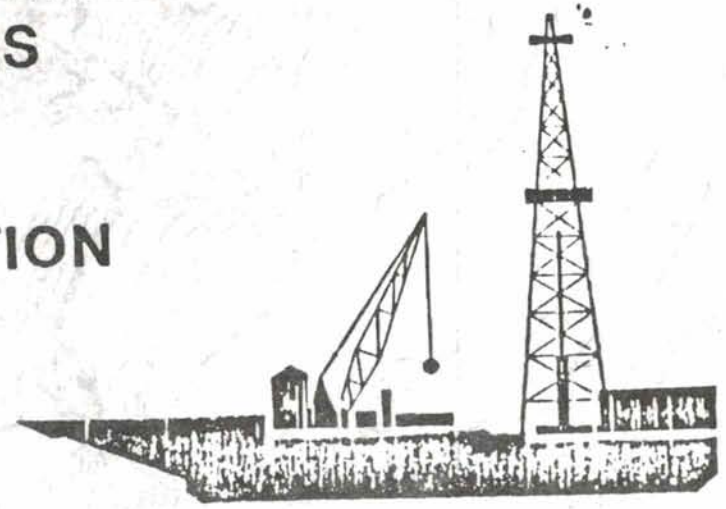
NOAA EEZ WORKSHOP

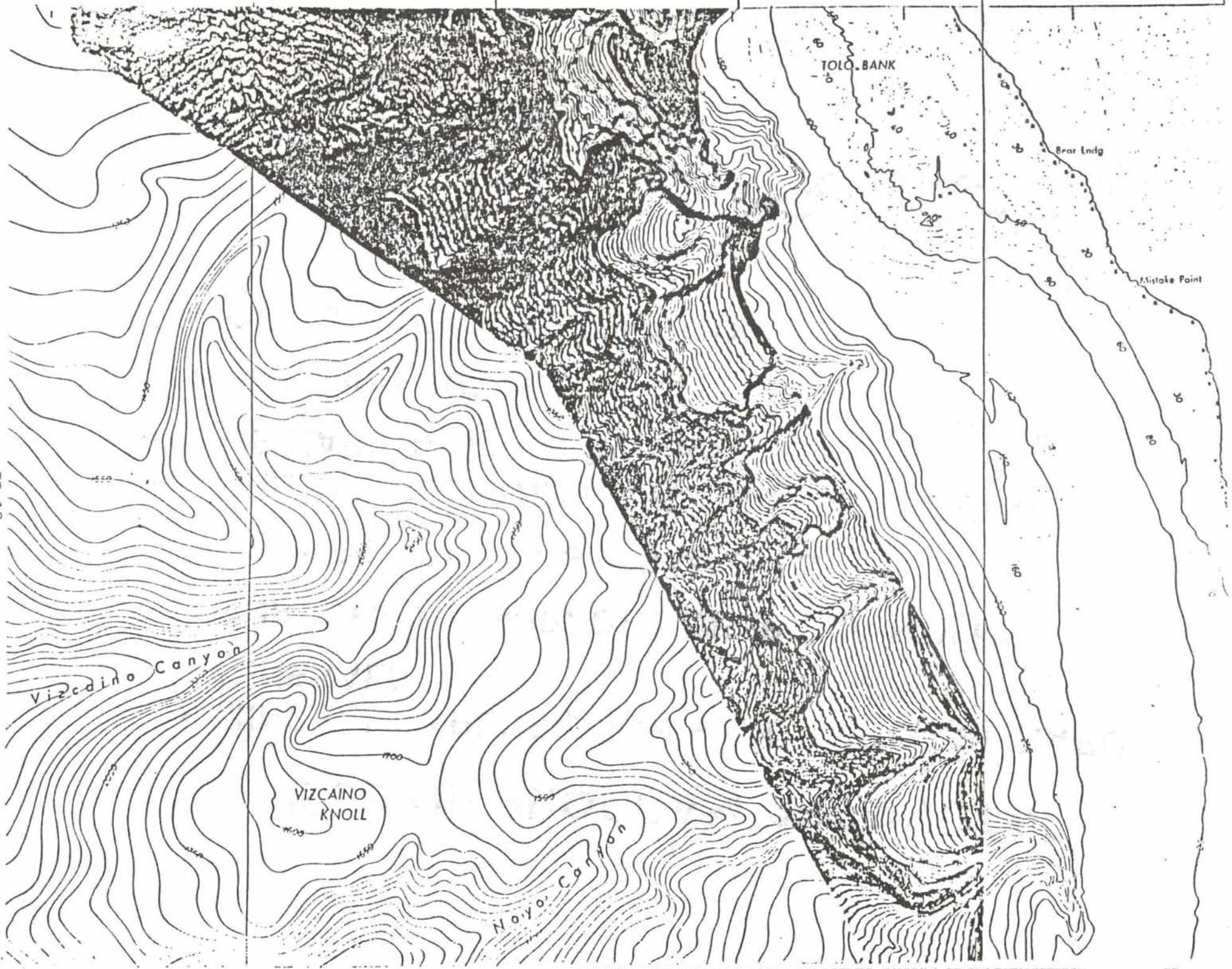
DECEMBER 1984

- UNANIMOUS SUPPORT FOR BATHYMETRIC PROGRAM
- MAJORITY SUPPORT FOR GRAVITY AND MAGNETICS
- SKEPTICISM CONCERNING SEISMIC
- SUPPORT FOR 3.5KHz SHALLOW SUBSTRATE

USES OF PROGRAM PRODUCTS

- MINERAL EXPLORATION - OIL AND GAS; HARD MINERALS
- SURVEYS TO SUPPORT DEEP SEA MINING
- TANKER ROUTE ASSESSMENTS
- PRE-DREDGE AND POST DREDGE SURVEY OF HARBORS AND RIVERS
- PIPE LINE SURVEY
- OFF SHORE CONSTRUCTION

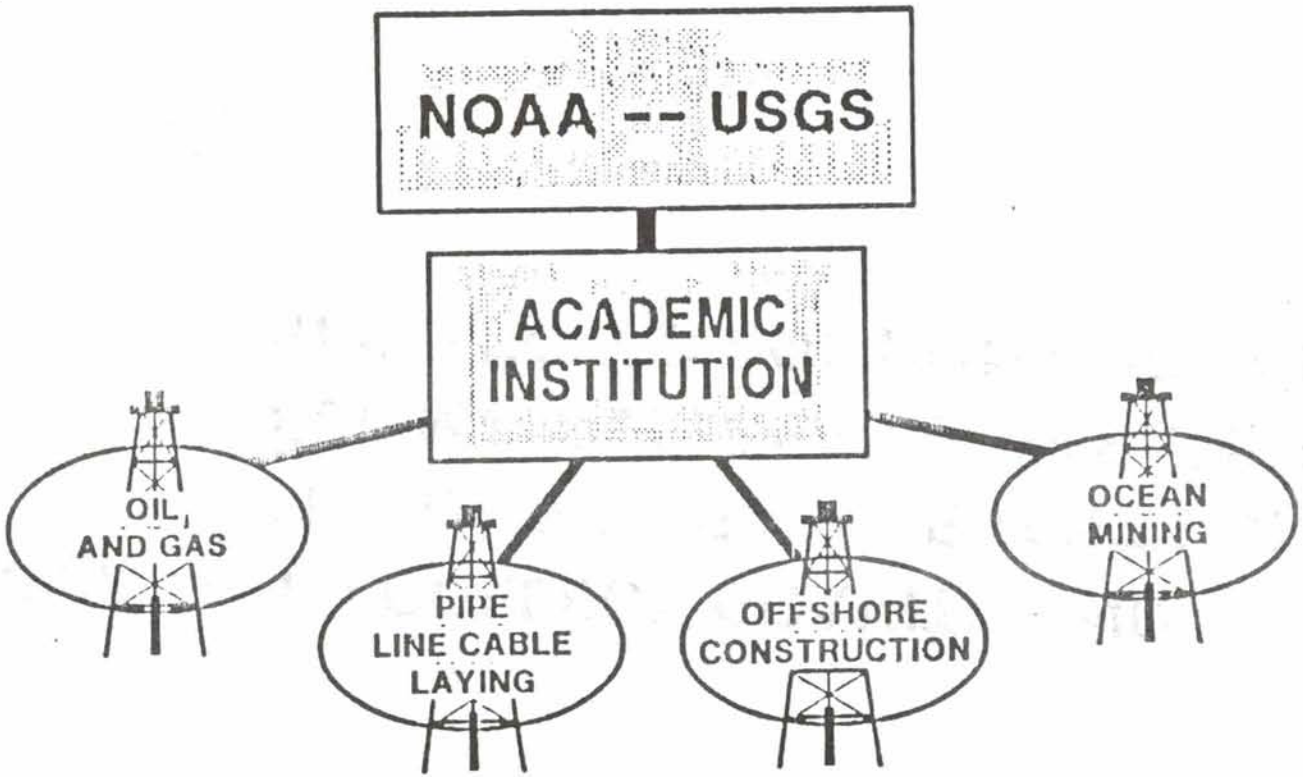



TOLO BANK
Bear Ledg
Mistake Point
Vizcaino Canyon
VIZCAINO KNOLL
Noyo Canyon

GEOPHYSICAL MAPPING

GOAL - TO COLLECT GRAVITY AND MAGNETIC MEASUREMENTS AND SEISMIC REFLECTION PARAMETERS IN SELECTED PORTIONS OF THE EEZ

FEDERAL/ACADEMIA/INDUSTRY SPONSORSHIP



SPONSORS

STATUS OF
EEZ GEOPHYSICS PROGRAM

- o PRESENTLY ONLY SUBSTRATE PROFILING (3.5 kHz) IS BEING CONDUCTED FROM NOAA SHIPS.

- o COLORADO SCHOOL OF MINES (CSM) HAS DEVELOPED A PROPOSAL TO PRESENT TO NOAA WHICH WOULD PROVIDE FOR CERTAIN OTHER TYPES OF GEOPHYSICAL OBSERVATIONS. THE PROPOSAL IS STRUCTURED AS FOLLOWS:

  -CSM WOULD FORMALLY ESTABLISH AN EEZ RESEARCH CENTER AND FORM AN ACADEMIC CONSORTIUM TO PROVIDE FOR PARTICIPATION OF OTHER ACADEMIC INSTITUTIONS.

  -CSM WILL DEMONSTRATE WHETHER OR NOT SUFFICIENT PRIVATE SECTOR INTEREST/FUNDING IS AVAILABLE TO SUPPORT CONDUCT OF GEOPHYSICAL MEASUREMENTS IN CONJUNCTION WITH NOAA'S EEZ BATHYMETRIC PROGRAM SUCH THAT NO ADDED EXPENSE NEED BE INCURRED BY NOAA FOR CONDUCT OF THE SURVEYS (THEY SAY THERE IS ALOT OF INTEREST).

  -THERE IS NO LIMIT TO THE NUMBER OF PRIVATE SPONSOR'S, BUT A MINIMUM OF 15 IS NECESSARY FOR THE PROGRAM TO BE VIABLE.

  -CSM AGREES TO ABIDE BY LEGAL AND STATUTORY REQUIREMENTS AND WILL WORK WITH DATA AT THE CONFIDENTIAL LEVEL.

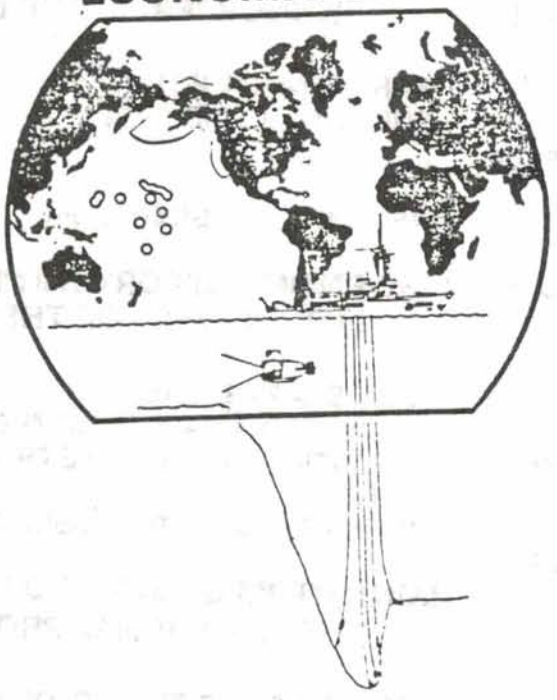
- DATA WILL BE PROCESSED FOR COMPANIES VIA THE RESEARCH CENTER/CONSORTIUM, BUT WILL BE MAINTAINED AS PROPRIETARY DATA FOR FIVE YEARS AFTER WHICH IT WOULD BE TURNED OVER TO NOAA.

- GRAVITY, MAGNETIC, AND POSSIBLY SOME LIMITED SEISMIC OBSERVATIONS (RECONNAISANCE) ARE ENVISIONED.

SYMPOSIUM ANNOUNCEMENT

SMITHSONIAN INSTITUTION
WASHINGTON, D.C.
OCTOBER 2-3, 1985

THE EXCLUSIVE ECONOMIC ZONE:



EXPLORING THE NEW OCEAN FRONTIER

Sponsored By:
U.S. DEPARTMENT OF THE INTERIOR
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
SMITHSONIAN INSTITUTION

⊢ TENTATIVE PROGRAM ⊣

WEDNESDAY OCTOBER 2, 1985

MORNING SESSION 9 am

OVERVIEW OF THE NATIONAL PROGRAM

STATUS OF FEDERAL ACTIVITIES
RESEARCH ON MINERAL AND ENERGY POTENTIAL OF THE EEZ
INDUSTRY AND ACADEMIC INVOLVEMENT
STATUS OF EEZ LEASING PROGRAM

AFTERNOON SESSION 2 pm

SCIENTIFIC DISCOVERIES

MAPPING THE WEST COAST EEZ
GORDA RIDGE SPREADING CENTER RESEARCH
COBALT ENRICHED CRUSTS
CHEMOSYNTHETIC BENTHIC COMMUNITIES
PLACER DEPOSITS

Reception 6-8 pm

HALL OF LIFE IN THE SEA
NATIONAL MUSEUM OF NATURAL HISTORY

THURSDAY OCTOBER 3, 1985

MORNING SESSION 9 am

RESOURCES OF THE EEZ

HARD MINERAL POTENTIAL
ENERGY (OIL AND GAS)

AFTERNOON SESSION 2 pm

SCIENTIFIC OPPORTUNITIES AND FUTURE USES OF THE EEZ

DEEP SEA HABITATS
PHARMACEUTICALS FROM THE SEA
POTENTIAL MARICULTURE FROM THE EEZ
"SPIN-OFF" SCIENTIFIC DISCOVERIES

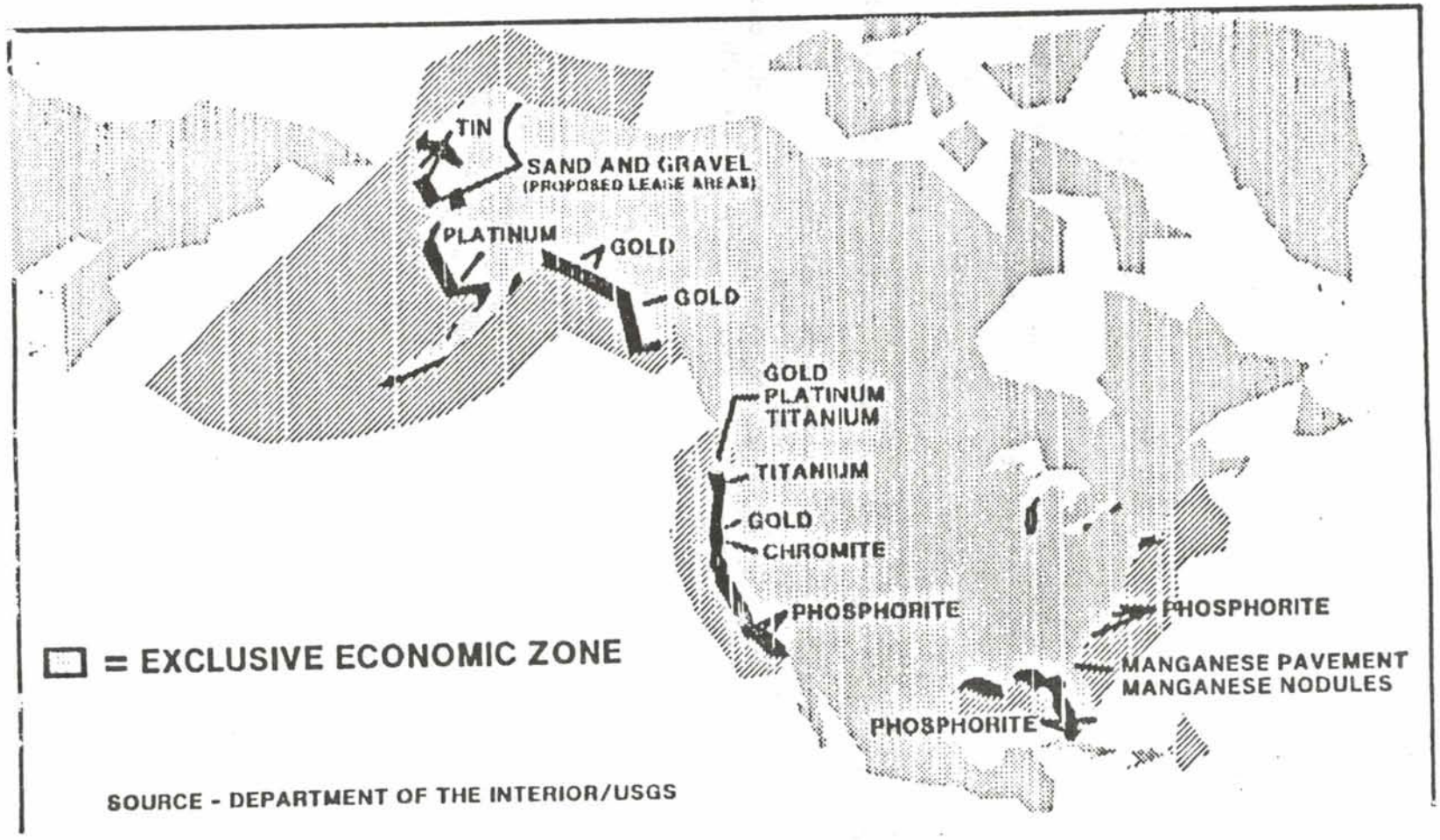
LONG-TERM GOALS AND BENEFITS OF THE NATIONAL PROGRAM

SCIENTIFIC AND TECHNOLOGICAL POLICY
RESOURCE ECONOMICS—BENEFITS TO THE NATIONAL ECONOMY
ENVIRONMENTAL CONSIDERATIONS
LEGISLATIVE VIEW

Conclusions/Summary 6 pm

Technical Assistance Provided by: The Marine Technology Society's Committee on Economic Potential of the Ocean

HARD MINERAL RESOURCES OF THE EEZ



PRELIMINARY PROGRAM OUTLINE

The Exclusive Economic Zone Symposium:
Exploring the New Ocean Frontier

October 2-3, 1985

***** NOTE: Panel member assignments and presentation topics are tentative and have not been confirmed in all cases*****

Location: Smithsonian Institution
Baird Auditorium
National Museum of Natural History
10th. and Constitution Ave. NW

WEDNESDAY OCTOBER 2, 1985

8-9:00 Registration in the Learning Center (with coffee and doughnuts)

9:00 INTRODUCTION - Admiral John Bossler - NOAA
Symposium Moderator

9:05 WELCOME - Smithsonian Representative

9:15 KEYNOTE ADDRESS -

Why the EEZ is important
Purpose of the Symposium

9:45 What is currently being done and why?

MODERATOR: Wayne Marchant-Department of the Interior

This session will be the essence of the current National program as it is related to the EEZ Proclamation

Presentations: (Approximately 15 minutes each)

NOAA - Paul Wolff
DOI - Dallas Peck, USGS
William Bettenberg, MMS
Academic Programs -
Industry - Jim Alexander - NOIA
State Involvement - Gary Magnusen - CSO
Environmental Issues - Clifford Curtis

10:30 BREAK - 30 minutes- (approximately mid-way thru the a.m. session)

11:00 Continue current program presentations

12:00 Panel Discussion - Moderator and Panel

Have we responded correctly?

12:30 LUNCH BREAK - 1 Hr. and 30 minutes

2:00 What have we found scientifically in the 2 years since the Proclamation was issued?

MODERATOR: Steven Hammond - NOAA

Presentations: (Approximately 15 minutes each)

Mapping Results: Steve Hammond - NOAA
Gary Hill - USGS
Polymetallic Sulfide Research - John Delaney
Cobalt Crusts- Frank Manheim
Phosphorites- Stan Riggs
Oil and Gas: Deep Water - Bill Dillon
Placers- Ed Escowitz
Biological (Chemosynthetic) Communities - Meredith Jones

3:15 BREAK - 30 Minutes (approximately midway thru p.m. session)

3:45 Continue Scientific Discovery presentations

5:15 Panel Discussions: Is this information useful?
Is it in the right place/time?

5:45 Summary of Day 1

6:00 End of Day 1

6-8pm

There will be an evening reception session in the Hall of Life in the Sea (Whale Hall) immediately following the conclusion of the first day. (Included in registration fee)

THURSDAY October 3, 1985

8-9:00 Registration, etc., (with coffee and doughnuts)

9:00 Welcome to Day 2: -

Keynote: The need for scientific information for resource assessment and management

9:15 How does what we have found translate into economic potential of hard mineral resources and how has industry and government utilized this information?

MODERATOR: J. Robert Moore - University of Texas

Presentations: Phosphorites- William Burnett
Environmental Concerns- John Paden
Nodules, Crusts, and PMS - W. Siapno

10:15 Panel Discussions - Moderator and Panel

Are we on the right track or do we need to consider additional types of information?

10:30 BREAK - 30 Minutes

11:00 How does what we have found translate into economic potential of oil and gas resources and how has industry and government utilized this information?

MODERATOR: James Wood, EXXON

Presentations: Approximately 15 minutes each

Deep Water formations - Jerry Neff
Frontier Areas - Richard Meek
Mature areas - Roy Rodefir
New Technology - Jack Street

12:00 Panel Disucssions - Moderator and Panel

Are we on the right track and do we need to consider additional types of information?

12:30 LUNCH BREAK - 1 Hour and 30 Minutes

2:00 Long term goals and implementation strategy of the National EEZ Program and How do we get there?

Moderator: Michael Champ - Environmental Protection Agency

Panelists: Approximately 15 minutes per presentation

Results of NACOA Panel - Jack Flipse
Implementation Strategy - E.D. Stanley
Pacific and Trust Territories - John Craven
Legislative Initiatives - Tom Kitsos
Legal Considerations-
Conflict Resolution- Dan Nyhart
Ocean Industry Perspective- Charles Matthews

4:30 Panel Discussions: Moderators and Panel

What do we need to do and where do we go from here? What are the long-term goals of the National Program?

5:00 Summary & Closing Remarks by Symposium Moderator

END OF SYMPOSIUM

UNOLS RELATIONSHIPS

- SEA BEAM SURVEYS - Three UNOLS Ships

  ATLANTIS - WHOI
  CONRAD - LDGO
  THOMAS WASHINGTON - SIO

WHERE: OUTER LIMITS OF THE EEZ
TRANSIT LINES/CROSS CHECKS
EAST COAST

WHEN: WHEN GPS IS AVAILABLE

HOW: EXCHANGE 5-YEAR PLANS

- DEVELOPMENT OF STANDARDS, OPERATING PROCEDURES, AND DATA REDUCTION/MANAGEMENT FOR SEA BEAM SYSTEMS

WHAT: - STANDARD NAVIGATION CONTROL

- RESOLUTION OF DATA ARTIFACTS

- COMMON REFERENCE TERMS

- DATA EXCHANGE

HOW: FORM TECHNICAL WORKING GROUP

UNOLS RELATIONSHIPS

o RELATIONSHIP WITH THE COLORADO SCHOOL OF MINES AND MARINE GEOPHYSICS PROGRAM

WHAT:
- CONDUCT MULTI-CHANNEL SEISMIC SURVEYS
- RECOMMEND OPTIMAL OBSERVATION SUITE
- SUPPORT GRADUATE RESEARCH STUDIES
- PROVIDE DATA EXCHANGE

HOW: CONTACT COLORADO SCHOOL OF MINES OR EEZ PROGRAM OFFICE

o OCEAN OBSERVATIONS

WHAT:
- SEAS - XBT PROGRAM
- SHIP WEATHER OBSERVATIONS
- COOPERATIVE PROJECTS AND SHIPS OF OPPORTUNITIES - Status and Trends

HOW: CONTACT OFFICE OF MARINE OPERATIONS OR NOAA EEZ PROGRAM OFFICE

APPENDIX III

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

An association of Institutions
for the coordination and support
of university oceanographic facilities

26 August 1985

Dr. Harris B. Stewart Jr.
Chair, International Restrictions to Ocean Science Committee
Department of Oceanography
Old Dominion University

Dear Stew:

The UNOLS Advisory Council missed your wise council at the last meeting, and you missed a marvelous crab feast at Lewes, Delaware. We spent some energy reorganizing the A/C for future action. In doing so we left you in the standing role of keeping pace with developments in the IROSC area. You were not re-elected vice-chair, a change which may set your professional ambitions back three years. However, elections are tough things, and we had to chose among our several absent members. Malone got the nod. Thanks for serving in that role the last two years. Now, the real business in hand.

We discussed the recurring issue of restrictions to ocean science in foreign exclusive economic zones. There is continuing need for a formal mechanism by which information on research clearance mechanics can be exchanged among scientists, institutes, and agencies. Please accept a charge to IROSC to recommend a specific organizational structure for this exchange. We hope your recommendation can be ready in time for a report by the 21 October UNOLS meetings in Washington.

It will be obvious to you that a Center for International Marine Science Cooperation, as proposed by Dr. David Ross late last year, could be the structure required. However, we think a sharp, critical analysis of this proposal should be made by IROSC. That proposal should be compared to other potential structures for streamlining the clearance process and for improving the exchange of pertinent information. If establishing a center for cooperation appears to IROSC to be a positive and cost-effective step, we would like you to arrange for preparation of a specific proposal, to identify potential funding sources, and to supervise proposal submission. Please keep in mind that many oceanographic institutes may want to participate in operation or management of the center and that a suitable, fair selection scheme must be devised.

Thanks for fitting this into your busy schedule. The A/C imagines that an actual meeting of IROSC will be required. You should contact Capt. Barbee at the UNOLS Office about the necessary resources.

Regards,

Charlie

Charles B. Miller
Chair, UNOLS Advisory Council

Copy to Capt. Barbee

APPENDIX IV

THE

CORE ACADEMIC FLEET

COMPOSITION AND TRENDS

1970 TO 1985

AUGUST 1985

RICHARD W. WEST

DEFINITIONS

CORE ACADEMIC FLEET

SHIPS RECEIVING SIGNIFICANT AND SUSTAINED NSF SUPPORT

CLASS

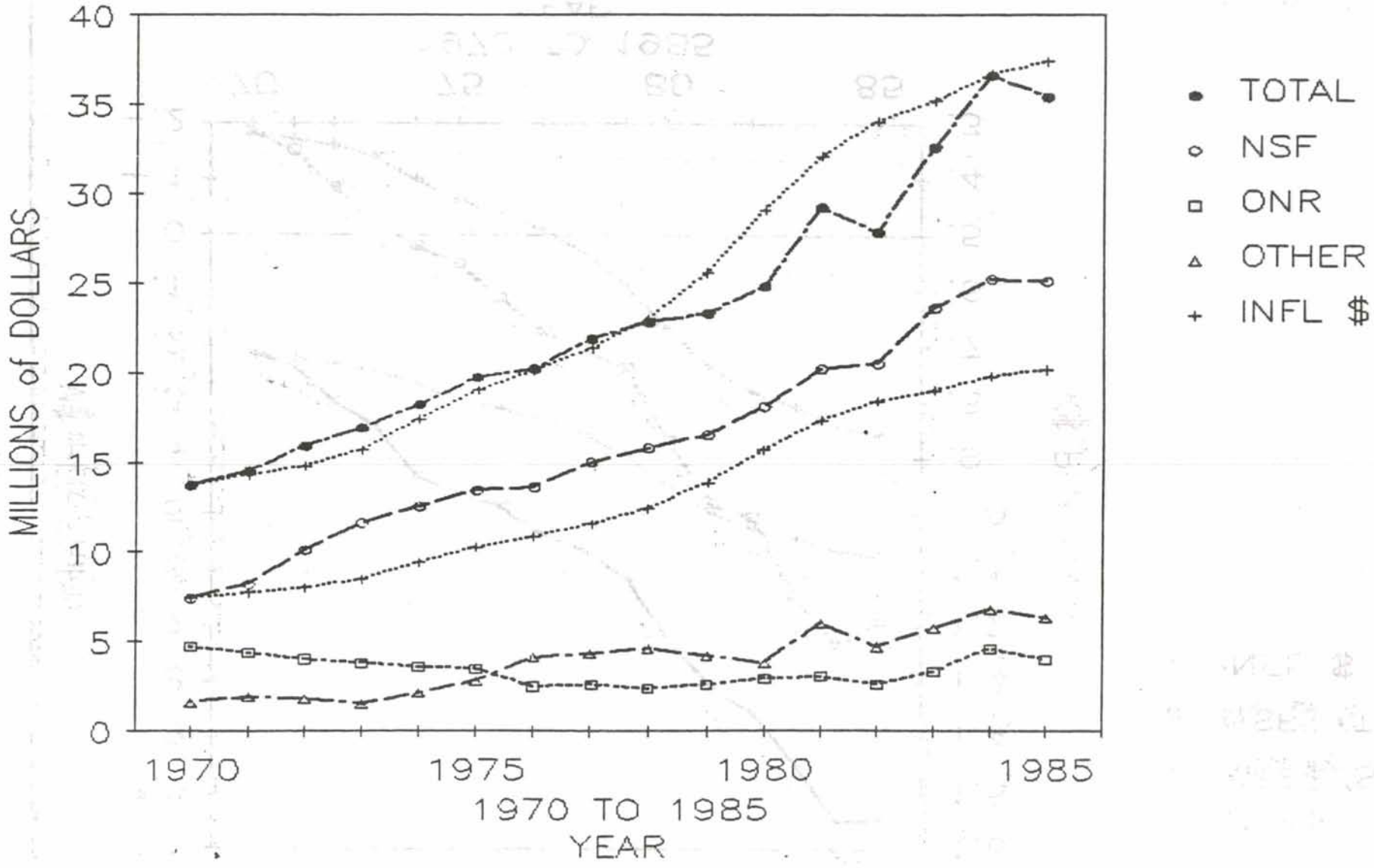
II	200 TO 274 FEET LOA
III	150 TO 199
IV	100 TO 149
V	< 100

OPERATOR ######	SHIP	BUILT YR	LOA ft	CLASS	DSPL LT	CRW	SCI	BRTH	CORE ACADEMIC FLEET 1970	1975	1980	1985
ALASKA	ACONA	1961	80	V	179	6	9	15	X X X X X X X X X X			
	ALPHA HELIX	1966	133	IV	554	9	15	24			X X X X X X	
DELAWARE	C HENLOPEN	1975	120	IV	178	6	12	18				X X X
DUKE U	EASTWARD	1964	118	IV	610	15	15	30	X X X X X X X X X X X			
	C HATTERAS	1981	135	IV	539	10	12	22			X X X X X	
F S U	TURSIOPS	1954	65	V	95	3	5	8	X X X X			
HAWAII	TERITU	1953	90	V	136	9	6	15	X X X X			
	KANA KEOKI	1967	156	III	900	12	16	28	X X X X X X X X X X X X X X X			
	MOANA WAVE	1973	174	III	980	11	10	21	X X X X X			
	MOANA WAVE	1973	213	II	1263	13	19	32				X
J H U	MAURY	1950	65	V	95	2	4	6	X X X X X X X X X			
	R. WARFIELD	1967	106	IV	162	7	10	17	X X X X X X X X X X X X X X X			
L-D G O	VEMA	1923	197	III	743	21	14	35	X X X X X X X X X X X			
	CONRAD	1962	209	II	1425	22	21	43	X X X X X X X X X X X X X X X			
M L M L	CAYUSE	1968	80	V	173	7	8	15			X X X X X X X	
MIAMI	PILLSBURY	1944	176	III	935	22	13	35	X X			
	GERDA	1947	76	V	213	5	8	13	X X			
	GILLISS	1962	208	II	1370	22	17	39	X X X X X X X X			
	CALANUS	1970	63	V	111	2	6	8	X X X X X X X X X X X X X X X			
	C ISELIN	1972	170	III	830	12	13	25	X X X X X X X X X X X X			
	C ISELIN	1972	170	III	830	12	16	28			X X X	
	C FLORIDA	1981	135	IV	539	9	12	21			X X X X X	
MICHIGAN	INLAND SEAS	1943	114	IV	500	7	12	16	X X X X			
	MYSIS	1963	50	V	35	2	3	5	X X X X			
NOVA U	GULFSTREAM	1963	55	V	40	1	5	6	X X X X X			
O S U	YAQUINA	1944	180	III	865	17	18	35	X X X X X X			
	CAYUSE	1968	80	V	173	7	8	15	X X X X X X X X X			
	WECOMA	1975	177	III	1015	12	16	28		X X X X X X X X X X		
RHODE ISL	TRIDENT	1944	180	III	1021	18	13	31	X X X X X X X			
	ENDEAVOR	1976	177	III	972	12	16	28		X X X X X X X X X		
SCRIPPS	AGASSIZ	1944	180	III	866	18	13	31	X X X X X X X			
	OCONOSTOTA	1944	102	IV	328	8	6	14	X X X X			
	E B SCRIPPS	1965	95	V	287	5	8	13	X X X X X X X X X X X X X X X			
	WASHINGTON	1965	209	II	1362	23	19	42	X X X X X X X X X X X X X X			
	WASHINGTON	1965	209	II	1362	23	22	45				X X
	ALPHA HELIX	1966	133	IV	512	12	12	24	X X X X X X X X X X			
	MELVILLE	1969	245	II	2075	23	29	52	X X X X X X X X X X X X X X X			
	N HORIZON	1978	170	III	1080	12	13	25			X X X X X X X	
	R B SPROUL	1981	125	IV	500	5	12	17				X
SKIDAWAY	KIT JONES	1938	64	V	90	3	5	8	X X X X X X			
	BLUE FIN	1972	72	V	86	4	8	12		X X X X X X X X X X		
SO CALIF	VELERO IV	1948	110	IV	650	11	12	23	X X X X X X X X X X X X X X X			
STANFORD	PROTEUS	1946	100	IV	186	6	9	15	X X			
T A&M U	ALAMINOS	1945	180	III	850	17	14	31	X X X X			
	GYRE	1973	174	III	980	10	18	28		X X X X X X X X X		
	GYRE	1973	182	III	980	10	20	30				X X X X
TEXAS	LONGHORN	1971	85	V	200	5	10	15		X X X X X X X X		
WASH	HOH	1943	65	V	91	2	6	8	X X X X X X X X X X X X X X			
	ONAR	1954	65	V	95	2	6	8	X X X X X X X X X X X X X X			
	THOMPSON	1965	209	II	1302	22	19	41	X X X X X X X X X X X X X			
	THOMPSON	1965	209	II	1302	22	22	44				X X X X
	BARNES	1966	65	V	86	2	6	8				X X
WHOI	GOSNOLD	1944	99	V	300	9	8	17	X X X X			
	CHAIN	1944	213	II	2100	31	26	57	X X X X X X			
	ATLANTIS II	1963	210	II	2300	30	25	55	X X X X X X X X X			
	ATLANTIS II	1963	210	II	2300	25	25	50			X X X X X	
	ATLANTIS II	1963	210	II	2300	35	15	50				X X
	KNORR	1969	245	II	1915	25	24	49	X X X X X X X X X X X X X X X X X			
	OCEANUS	1975	177	III	960	12	12	24		X X X X X X X X X X		

	OPERATOR	SHIP	BUILT	FEET	CLASS	TONS	CRW	SCI	TTL	1970	1975	1980	1985
1	MIAMI	PILLSBURY	1944	176	III	935	22	13	35	X X			
2	STANFORD	PROTEUS	1946	100	IV	186	6	9	15	X X			
3	MIAMI	GERDA	1947	76	V	213	5	8	13	X X			
4	MICHIGAN	INLAND SEAS	1943	114	IV	500	7	12	16	X X X X			
5	WHOI	GOSNOLD	1944	99	V	300	9	8	17	X X X X			
6	SCRIPPS	OCONOSTOTA	1944	102	IV	328	8	6	14	X X X X			
7	T A&M U	ALAMINOS	1945	180	III	850	17	14	31	X X X X			
8	HAWAII	TERITU	1953	90	V	136	9	6	15	X X X X			
9	F S U	TURSIOPS	1954	65	V	95	3	5	8	X X X X			
10	MICHIGAN	MYSIS	1963	50	V	35	2	3	5	X X X X			
11	NOVA U	GULFSTREAM	1963	55	V	40	1	5	6	X X X X X			
12	SKIDAWAY	KIT JONES	1938	64	V	90	3	5	8	X X X X X X			
13	WHOI	CHAIN	1944	213	II	2100	31	26	57	X X X X X X			
14	RHODE ISL	TRIDENT	1944	180	III	1021	18	13	31	X X X X X X			
15	O S U	YAQUINA	1944	180	III	865	17	18	35	X X X X X X			
16	SCRIPPS	AGASSIZ	1944	180	III	866	18	13	31	X X X X X X X			
17	J H U	MAURY	1950	65	V	95	2	4	6	X X X X X X X X X			
18	ALASKA	ACONA	1961	80	V	179	6	9	15	X X X X X X X X X X			
19	L-D G O	VEMA	1923	197	III	743	21	14	35	X X X X X X X X X X X			
20	DUKE U	EASTWARD	1964	118	IV	610	15	15	30	X X X X X X X X X X X			
21	WASH	HOH	1943	65	V	91	2	6	8	X X X X X X X X X X X X X X			
22	WASH	ONAR	1954	65	V	95	2	6	8	X X X X X X X X X X X X X X			
23	SCRIPPS	E B SCRIPPS	1965	95	V	287	5	8	13	X X X X X X X X X X X X X X			
24	HAWAII	KANA KEOKI	1967	156	III	900	12	16	28	X X X X X X X X X X X X X X			
1	SO CALIF	VELERO IV	1948	110	IV	650	11	12	23	X X X X X X X X X X X X X X X			
2	L-D G O	CONRAD	1962	209	II	1425	22	21	43	X X X X X X X X X X X X X X X			
3	WHOI	ATLANTIS II	1963	210	II	2300	25	25	50	X X X X X X X X X X X X X X X			
4	SCRIPPS	WASHINGTON	1965	209	II	1362	23	19	42	X X X X X X X X X X X X X X X			
5	WASH	THOMPSON	1965	209	II	1302	22	19	41	X X X X X X X X X X X X X X X			
6	SIO/AK	ALPHA HELIX	1966	133	IV	512	12	12	24	X X X X X X X X X X X X X X X			
7	J H U	WARFIELD	1967	106	IV	162	7	10	17	X X X X X X X X X X X X X X X			
8	OSU/MLML	CAYUSE	1968	80	V	173	7	8	15	X X X X X X X X X X X X X X X			
9	SCRIPPS	MELVILLE	1969	245	II	2075	23	29	52	X X X X X X X X X X X X X X X			
10	WHOI	KNORR	1969	245	II	1915	25	24	49	X X X X X X X X X X X X X X X			
11	MIAMI	CALANUS	1970	63	V	111	2	6	8	X X X X X X X X X X X X X X X			
1	MIAMI	ISELIN	1972	170	III	830	12	13	25	X X X X X X X X X X X X X X X			
2	T A&M U	GYRE	1973	174	III	980	10	18	28	X X X X X X X X X X X X X X X			
3	WHOI	OCEANUS	1975	177	III	960	12	12	24	X X X X X X X X X X X X X X X			
4	SKIDAWAY	BLUE FIN	1972	72	V	86	4	8	12	X X X X X X X X X X X X X X X			
5	O S U	WECOMA	1975	177	III	1015	12	16	28	X X X X X X X X X X X X X X X			
6	RHODE ISL	ENDEAVOR	1976	177	III	972	12	16	28	X X X X X X X X X X X X X X X			
7	SCRIPPS	N HORIZON	1978	170	III	1080	12	13	25	X X X X X X X X X X X X X X X			
8	DUKE U	C HATTERAS	1981	135	IV	539	10	12	22	X X X X X X X X X X X X X X X			
9	MIAMI	C FLORIDA	1981	135	IV	539	9	12	21	X X X X X X X X X X X X X X X			
10	DELAWARE	C HENLOPEN	1975	120	IV	178	6	12	18	X X X X X X X X X X X X X X X			
11	WASH	BARNES	1966	65	V	86	2	6	8	X X X X X X X X X X X X X X X			
12	SCRIPPS	R G SPROUL	1981	125	IV	500	5	12	17	X X X X X X X X X X X X X X X			
1	HAWAII	MOANA WAVE	1973	174	III	980	11	10	21	X X X X X X X X X X X X X X X			
2	TEXAS	LONGHORN	1971	85	V	200	5	10	15	X X X X X X X X X X X X X X X			
3	MIAMI	GILLISS	1962	208	II	1370	22	17	39	X X X X X X X X X X X X X X X			

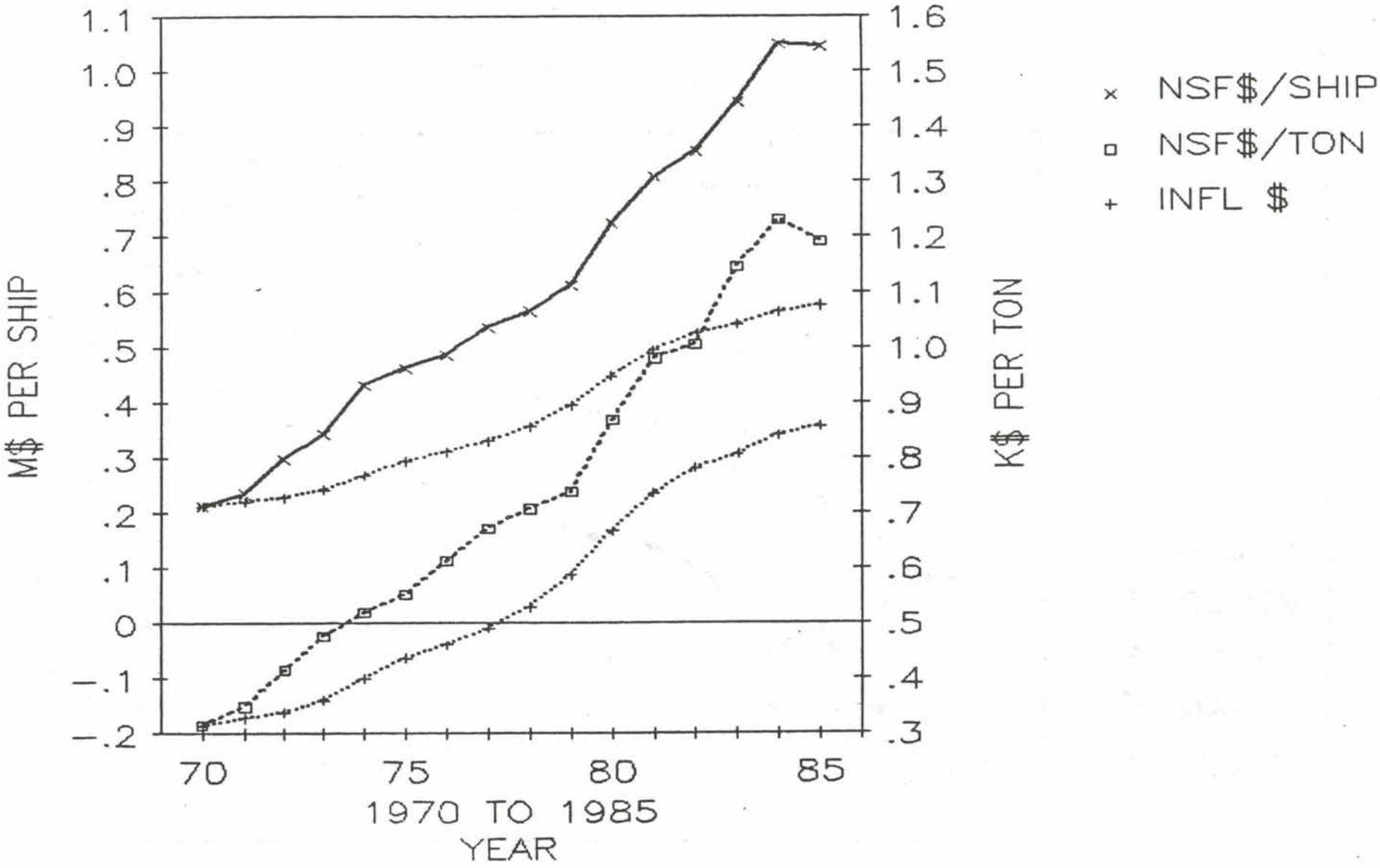
FINANCIAL SUPPORT

ACADEMIC FLEET



NSF FUNDS PER SHIP

CORE ACADEMIC FLEET



R.West—FpST 6/10/85

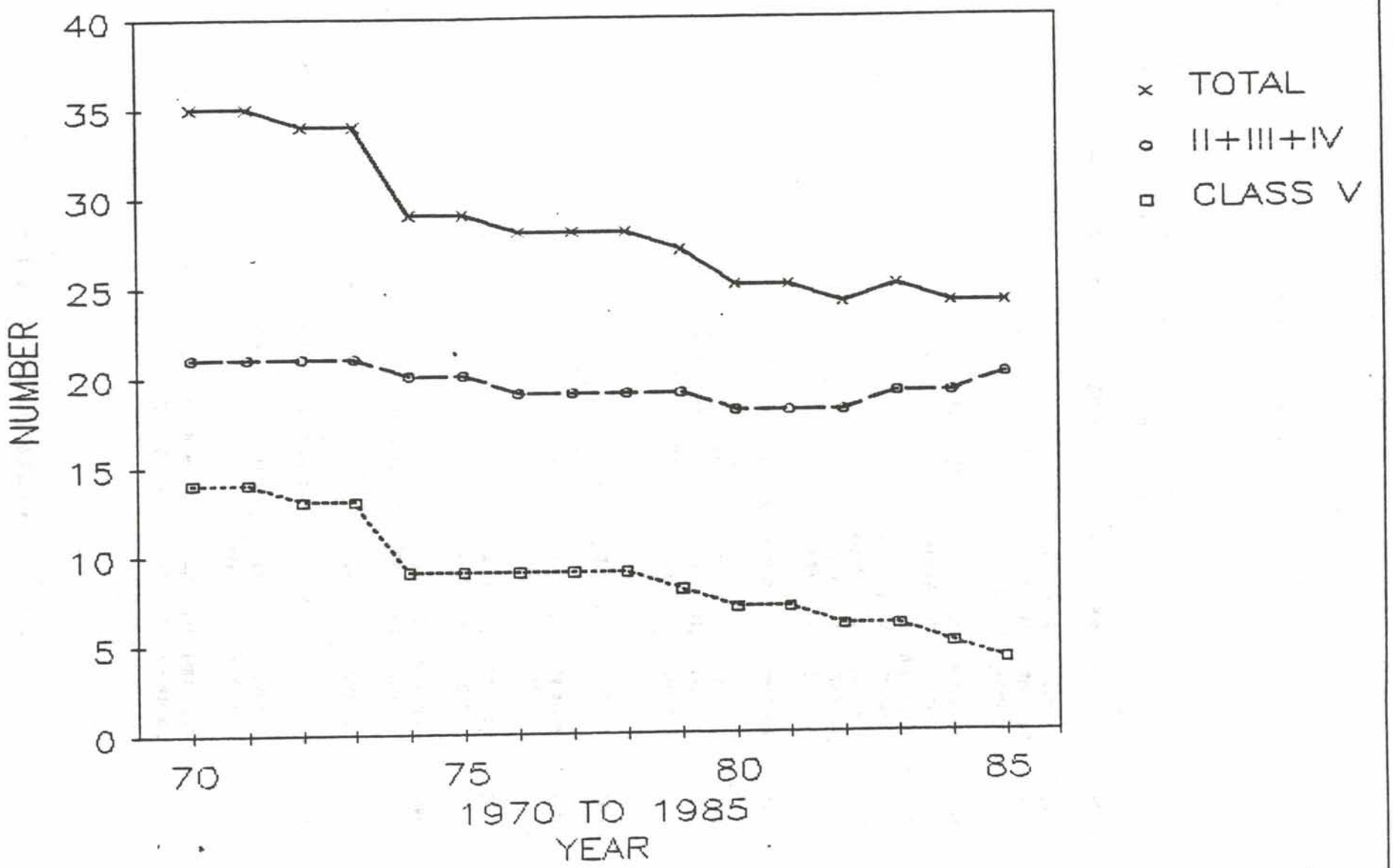
SHIP HISTORY : CHANGES

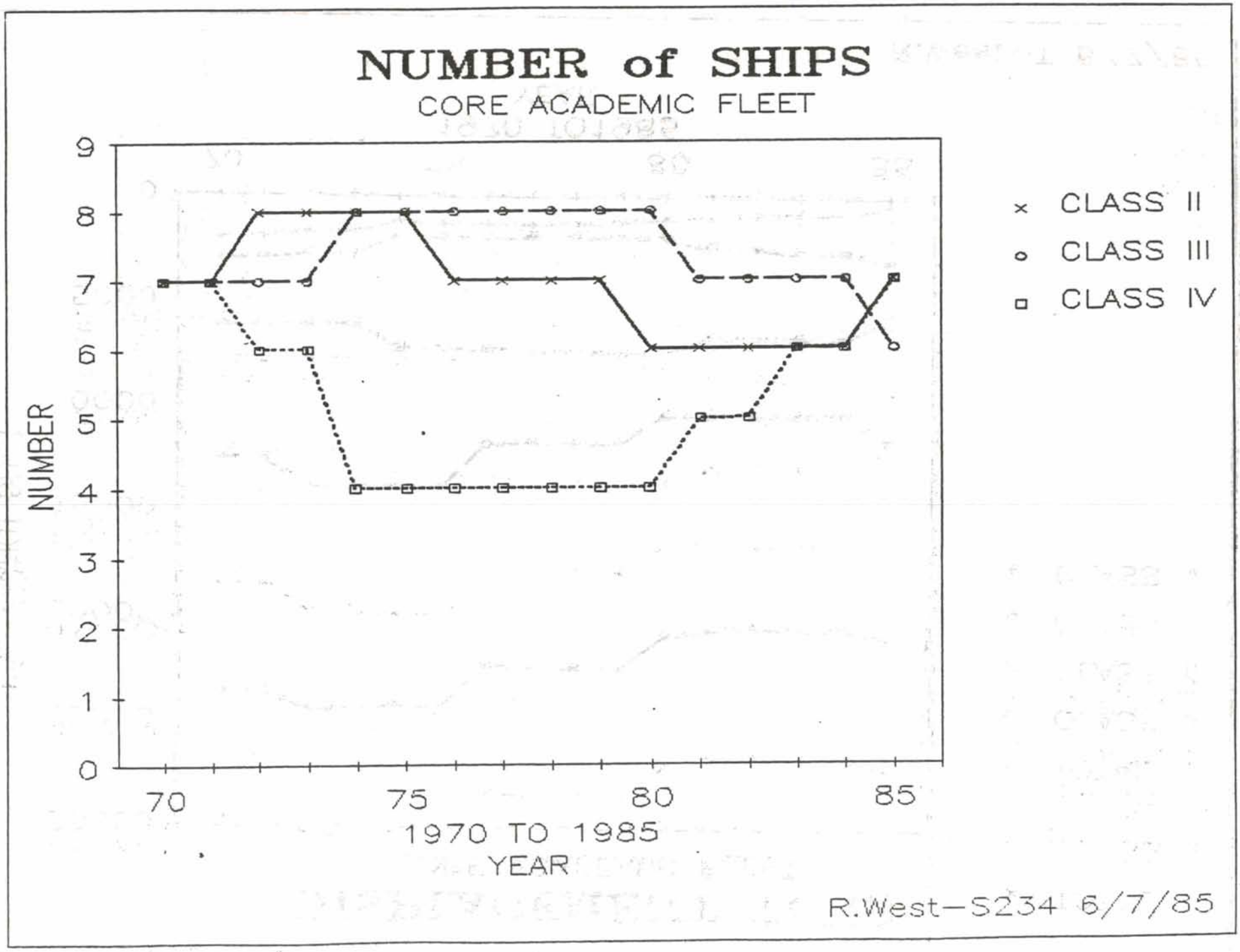
R.WEST 13-Jun-85

							CLASS II	CLASS III	CLASS IV	CLASS V		TOTAL FLEET
				1970 FLEET TOTALS			7	7	7	14		35
YEAR	OUT	CLASS		IN	CLASS		CLASS CHANGE II	III	IV	V	NET	
1972	GERDA	V	Miami	GILLISS	II	Miami						
	PILLSBURY	III	Miami	ISELIN	III	Miami	+1	0	-1	-1	-1	34
	PROTEUS	IV	Stanford									
1974	ALAMINOS	III	TAMU	GYRE	III	TAMU						
	TERITU	V	Hawaii	MOANA WAVE	III	Hawaii						
	OCONOSTOTA	IV	SIO									
	INLAND SEAS	IV	Michigan				0	+1	-2	-4	-5	29
	MYSIS	V	Michigan									
	TURSIOPS	V	FSU									
	GOSNOLD	V	WHOI									
1975	GULFSTREAM	V	NOVA U	LONGHORN	V	Texas	0	0	0	0	0	29
1976	CHAIN	II	WHOI	OCEANUS	III	WHOI						
	YAQUINA	III	OSU	WECOMA	III	OSU	-1	0	0	0	-1	28
	KIT JONES	V	Skidaway	BLUE FIN	V	Skidaway						
	TRIDENT	III	URI									
1977	AGASSIZ	III	SIO	ENDEAVOR	III	URI	0	0	0	0	0	28
1979	MOANA WAVE	III	Hawaii	N HORIZON	III	SIO	0	0	0	-1	-1	27
	MAURY	V	JHU									
1980	GILLISS	II	Miami				-1	0	0	-1	-2	25
	ACONA	V	Alaska									
1981	EASTWOOD	IV	Duke	C HATTERAS	IV	Duke	0	-1	+1	0	0	25
	VEMA	III	L-DGO	C FLORIDA	IV	Miami						
1982	LONGHORN	V	Texas				0	0	0	-1	-1	24
1983				C HENLOPEN	IV	Delaware	0	0	+1	0	+1	25
1984	HOH	V	Wash	BARNES	V	Wash	0	0	0	-1	-1	24
	ONAR	V	Wash									
1985	KANA KEOKI	III	Hawaii	MOANA WAVE	II	Hawaii	+1	-1	+1	-1	0	24
	E B SCRIPPS	V	SIO	R G SPROUL	IV	SIO						
							II	III	IV	V		
				NET GHANGE 1970-1985			0	-1	0	-10	-11	
				1985 FLEET TOTALS			7	6	7	4		24

NUMBER of SHIPS

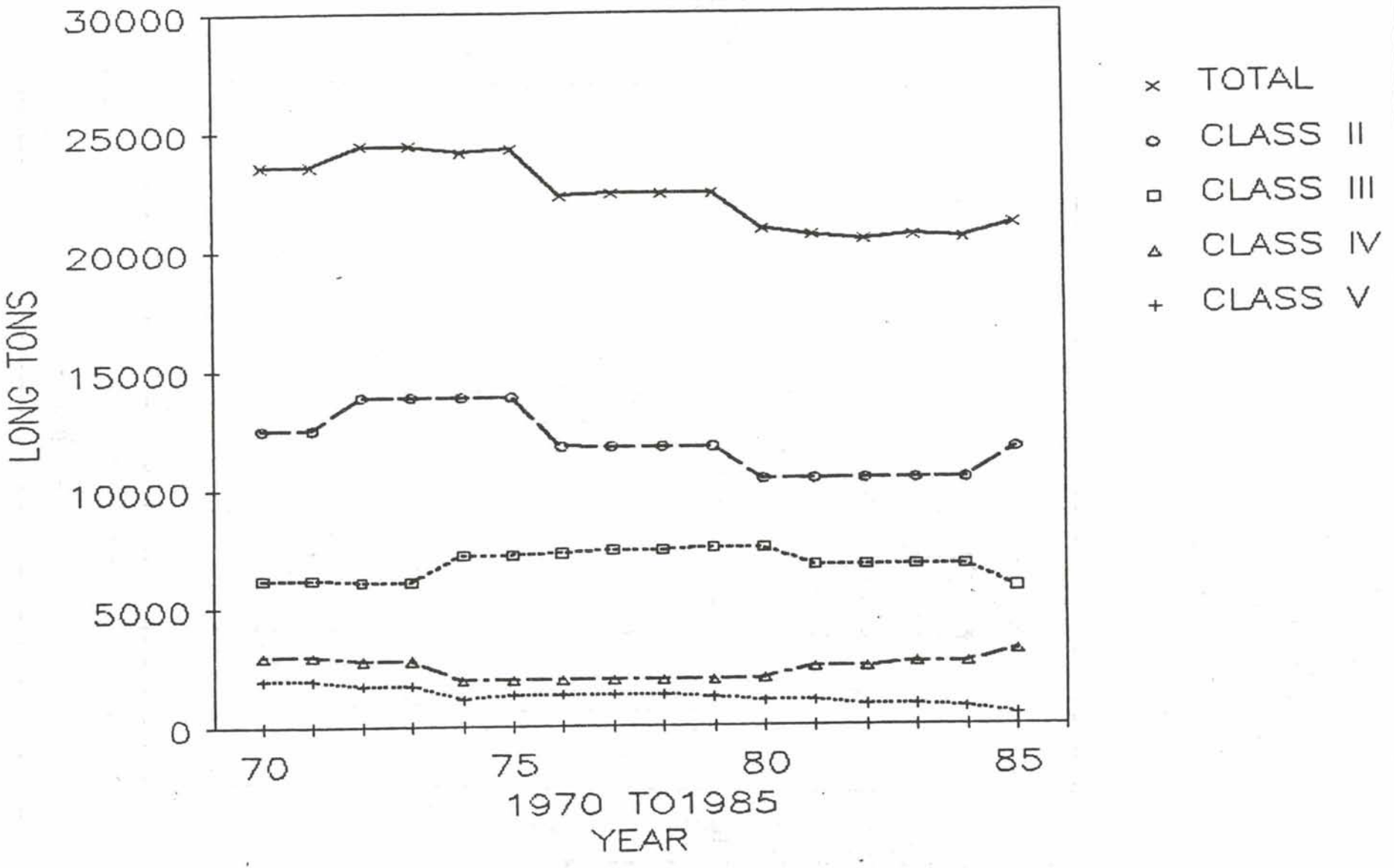
CORE ACADEMIC FLEET



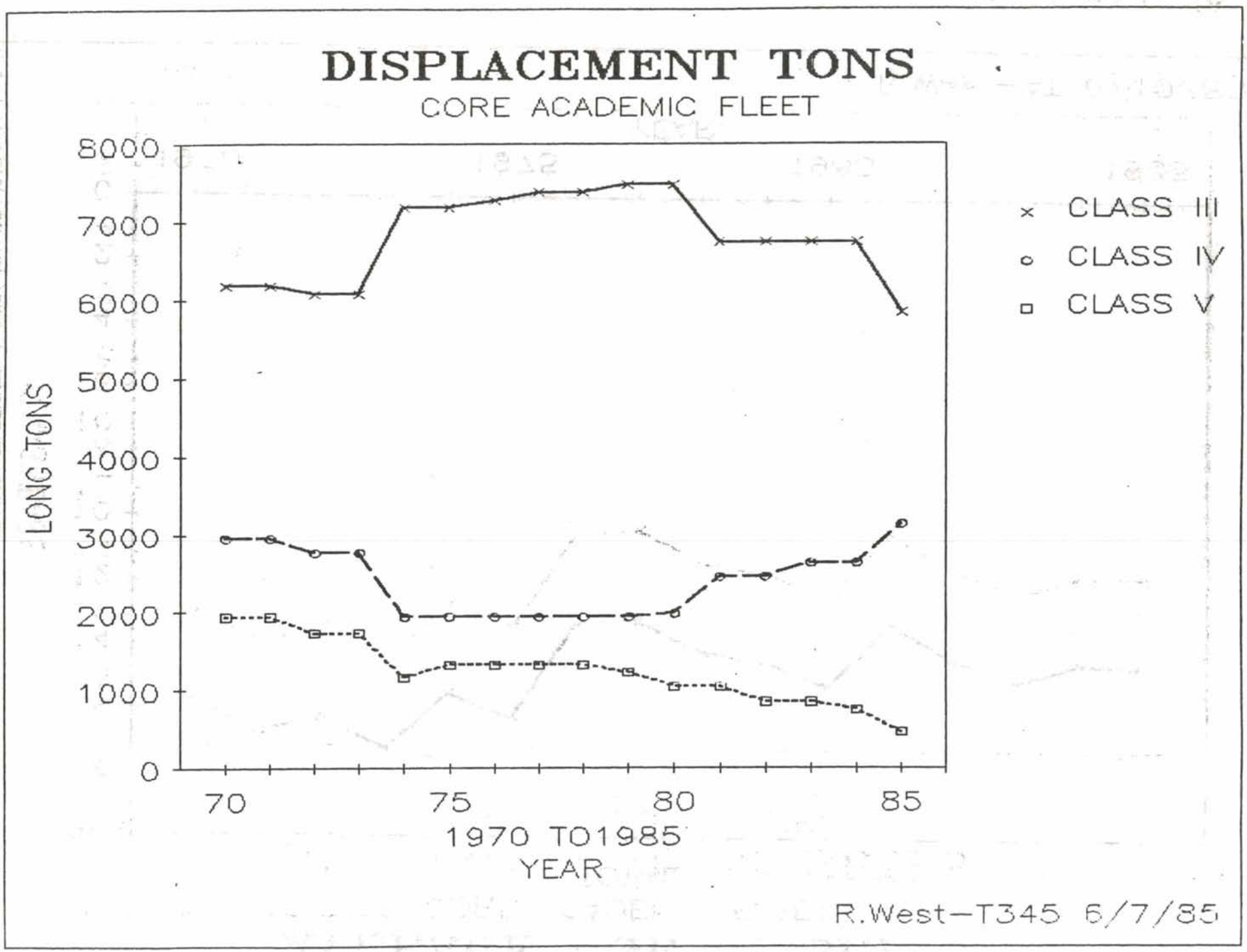

NUMBER of SHIPS
CORE ACADEMIC FLEET
NUMBER
0
1
2
3
4
5
6
7
8
9
70
75
80
85
1970 TO 1985
YEAR
CLASS II
CLASS III
CLASS IV
R.West—S234 6/7/85

DISPLACEMENT TONS

CORE ACADEMIC FLEET

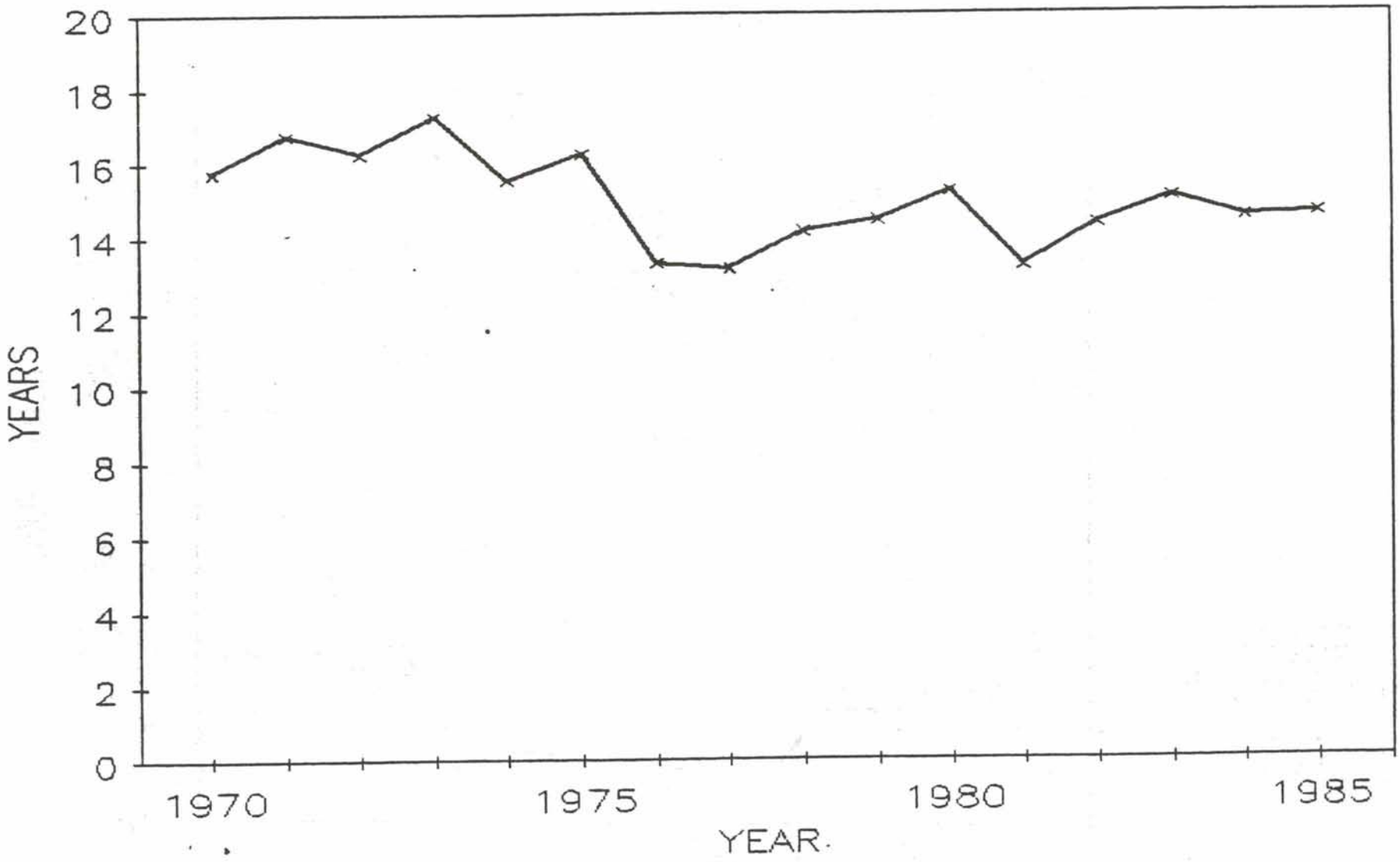


R.West—T 6/7/85


DISPLACEMENT TONS
CORE ACADEMIC FLEET
8000
7000
6000
5000
4000
3000
2000
1000
0
LONG TONS
70
75
80
85
1970 TO1985
YEAR
CLASS III
CLASS IV
CLASS V
R.West—T345 6/7/85

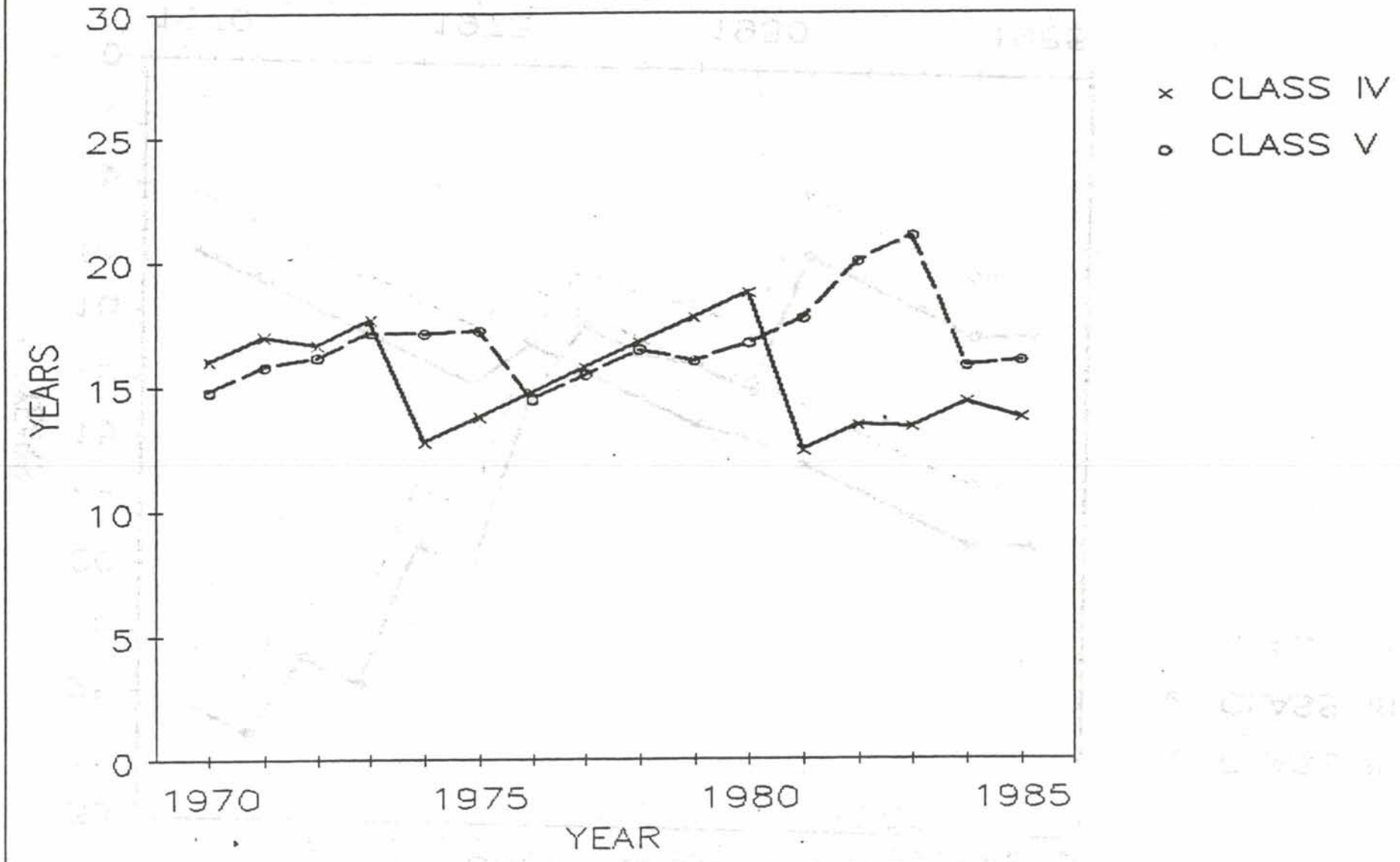
AVERAGE AGE of SHIPS

CORE ACADEMIC FLEET
TOTAL



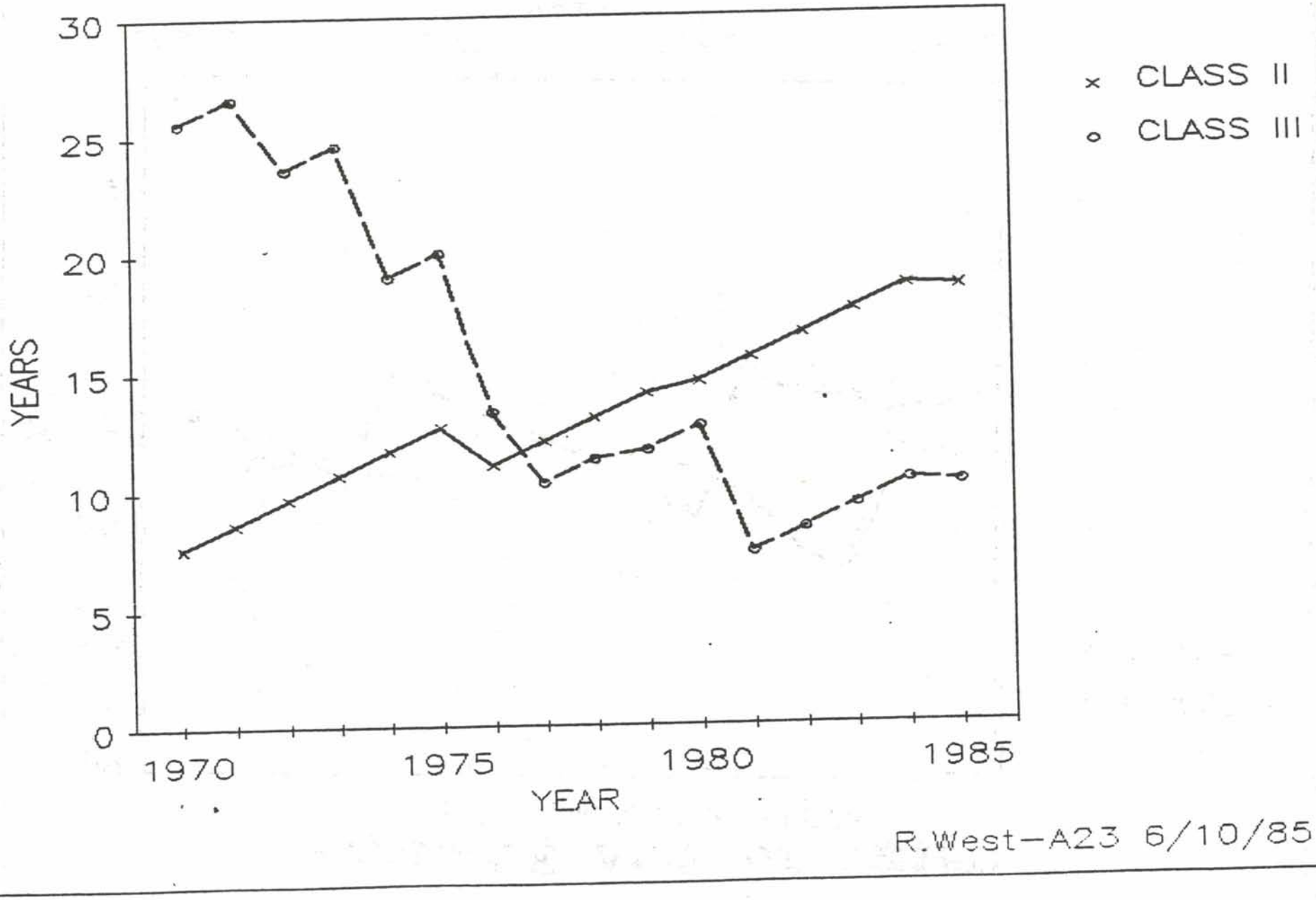
AVERAGE AGE of SHIPS

CORE ACADEMIC FLEET



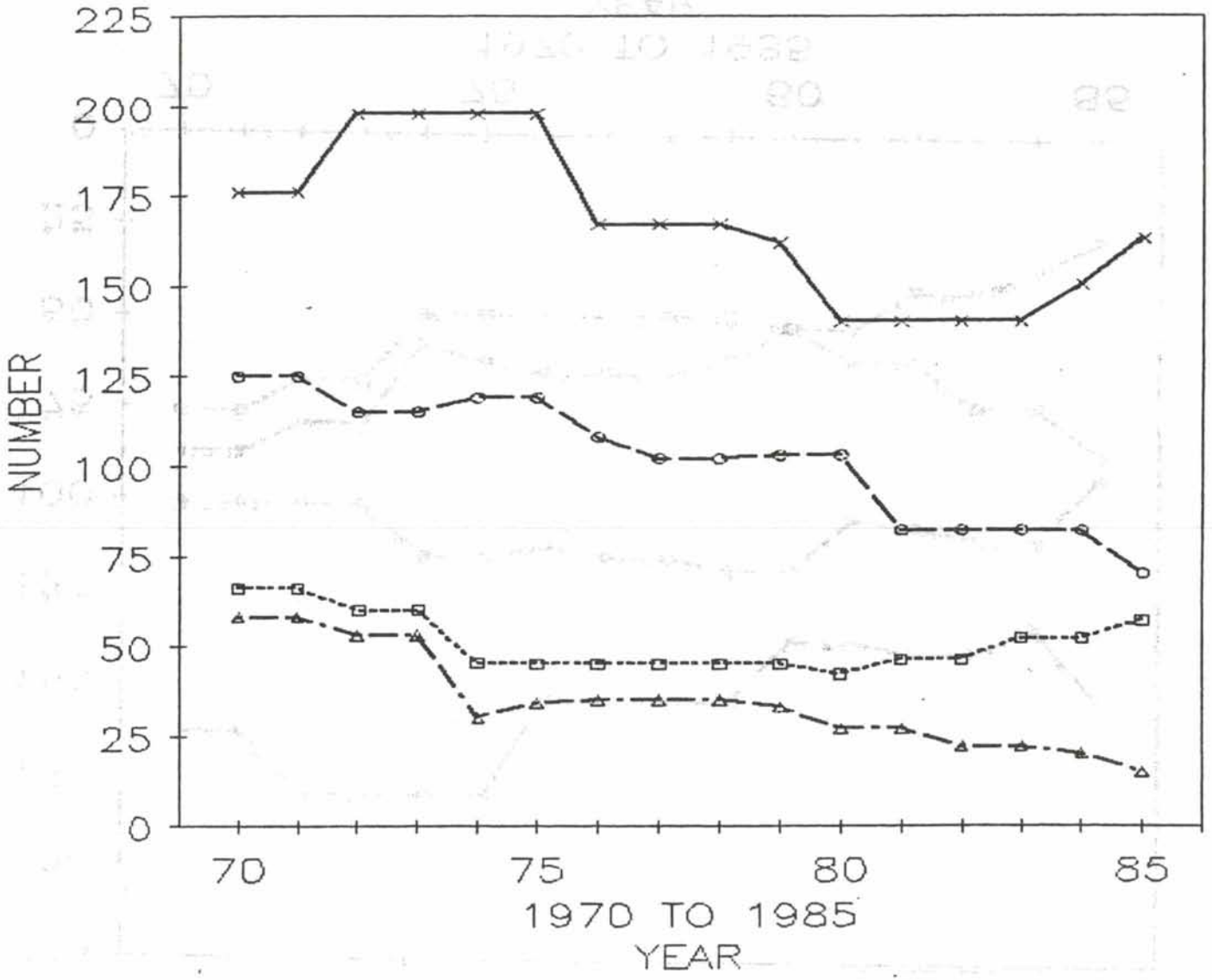
AVERAGE AGE of SHIPS

CORE ACADEMIC FLEET



NUMBER of CREW

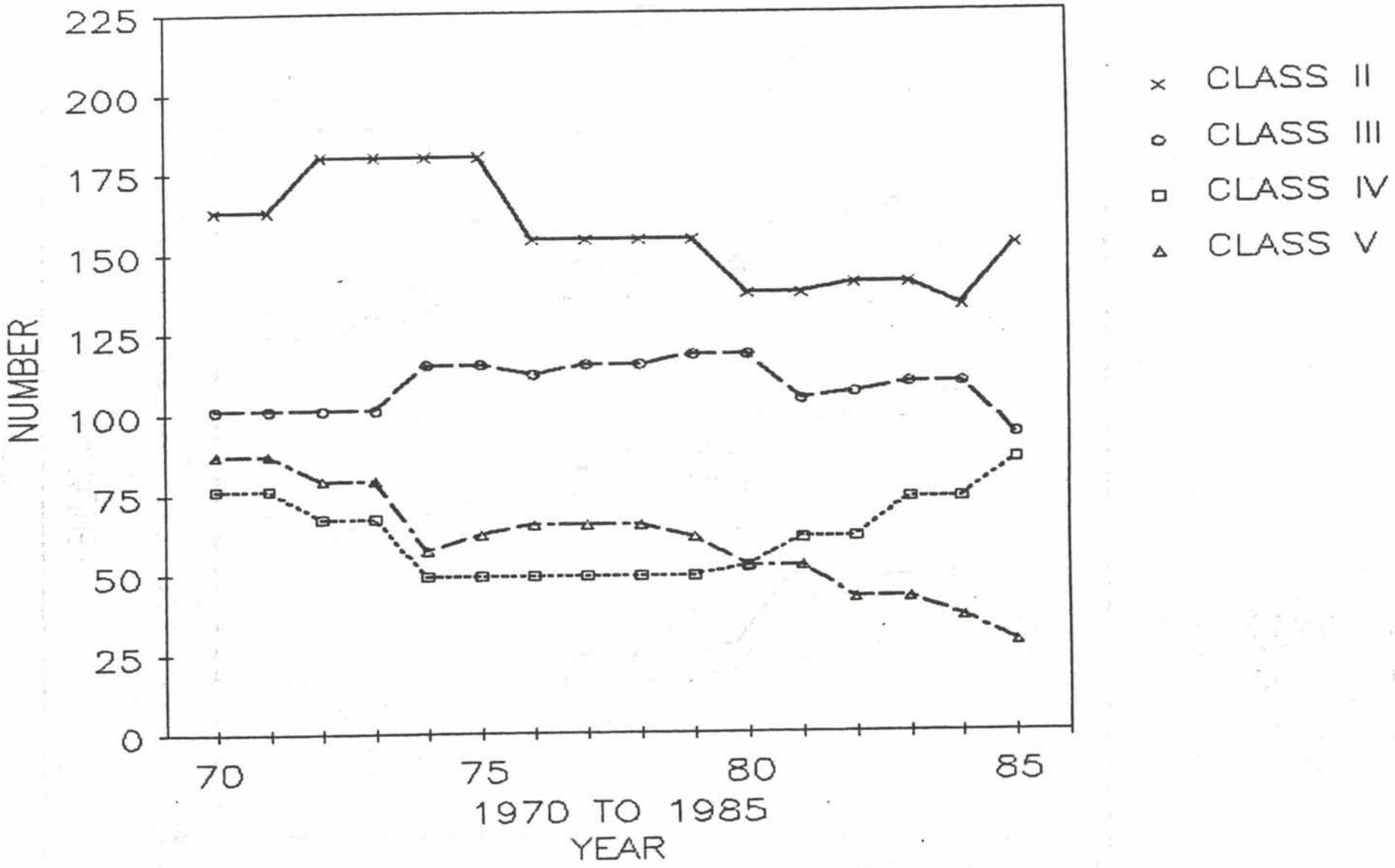
CORE ACADEMIC FLEET



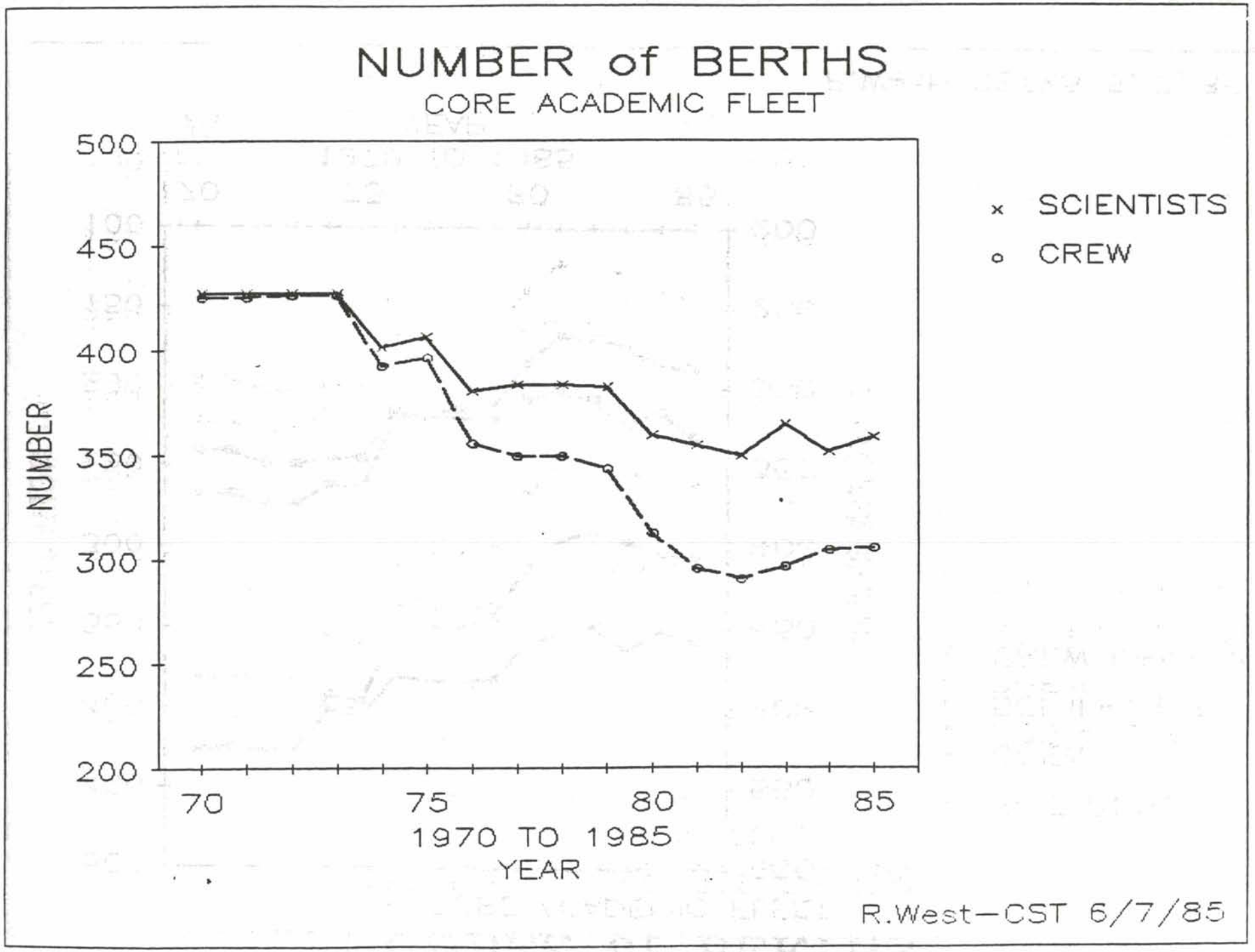
R.West—C2t5 6/7/85

NUMBER of SCIENTISTS

CORE ACADEMIC FLEET

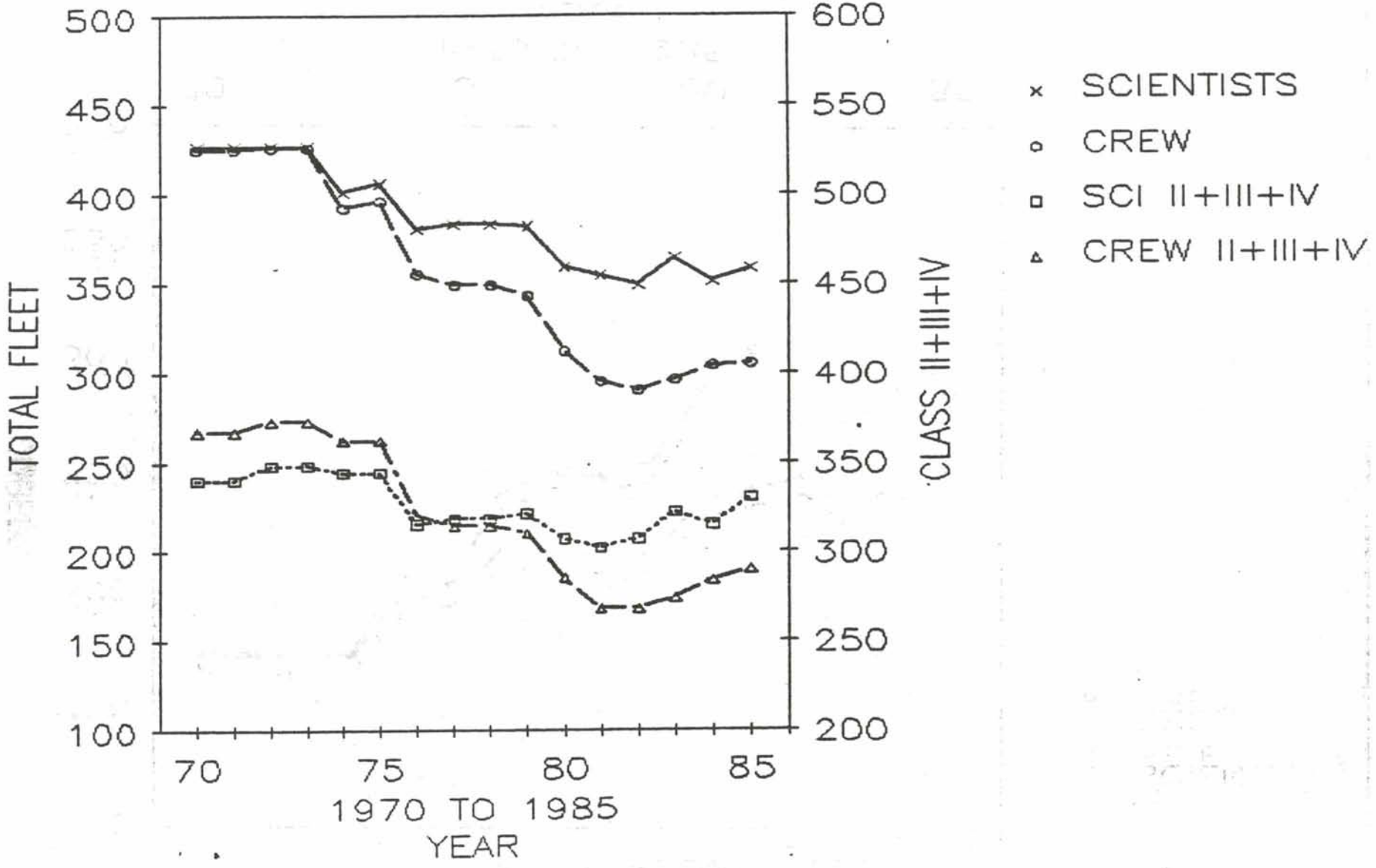


R.West—S2t5 6/7/85

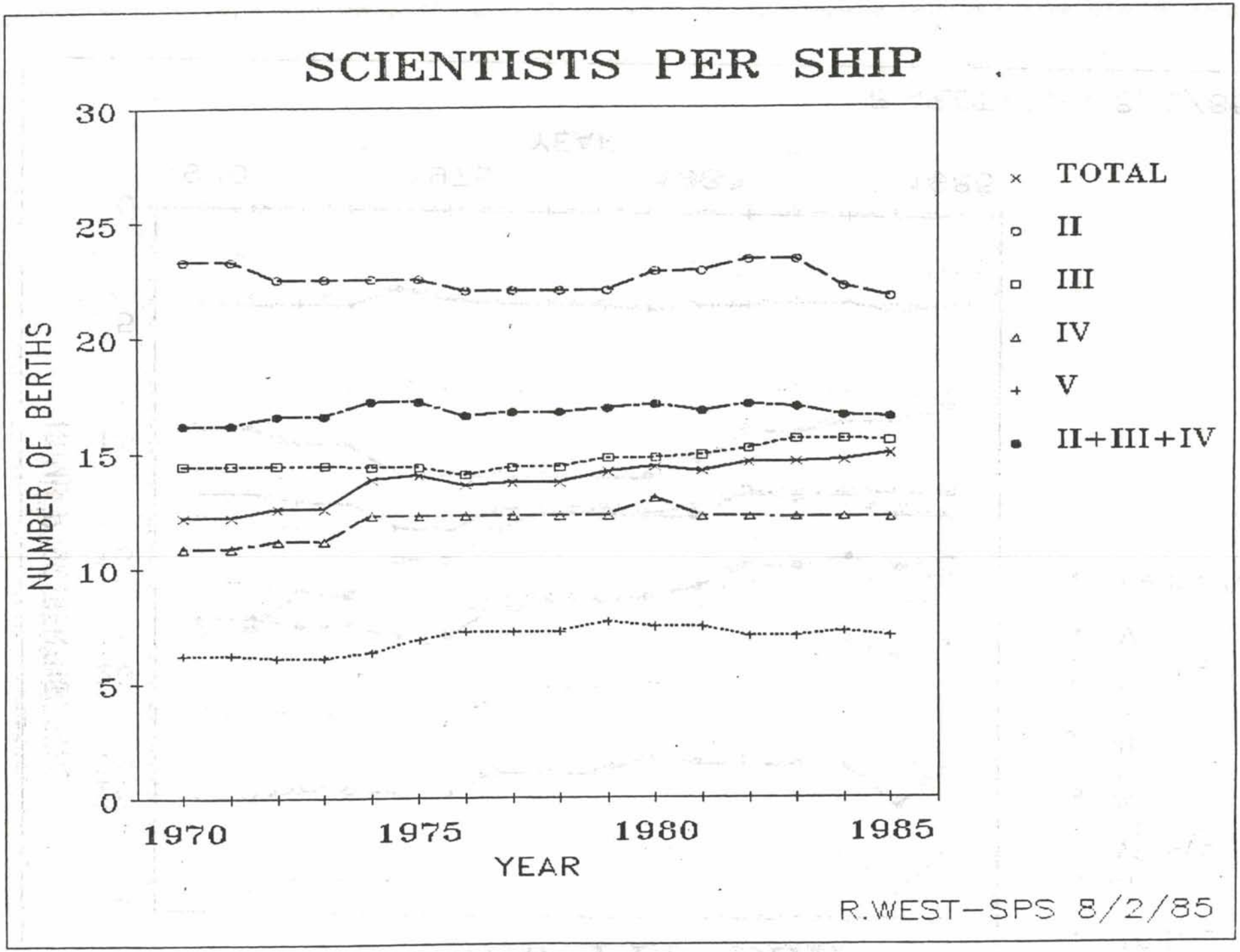

NUMBER of BERTHS
CORE ACADEMIC FLEET
500
450
400
350
300
250
200
NUMBER
70
75
80
85
1970 TO 1985
YEAR
× SCIENTISTS
o CREW
R.West—CST 6/7/85

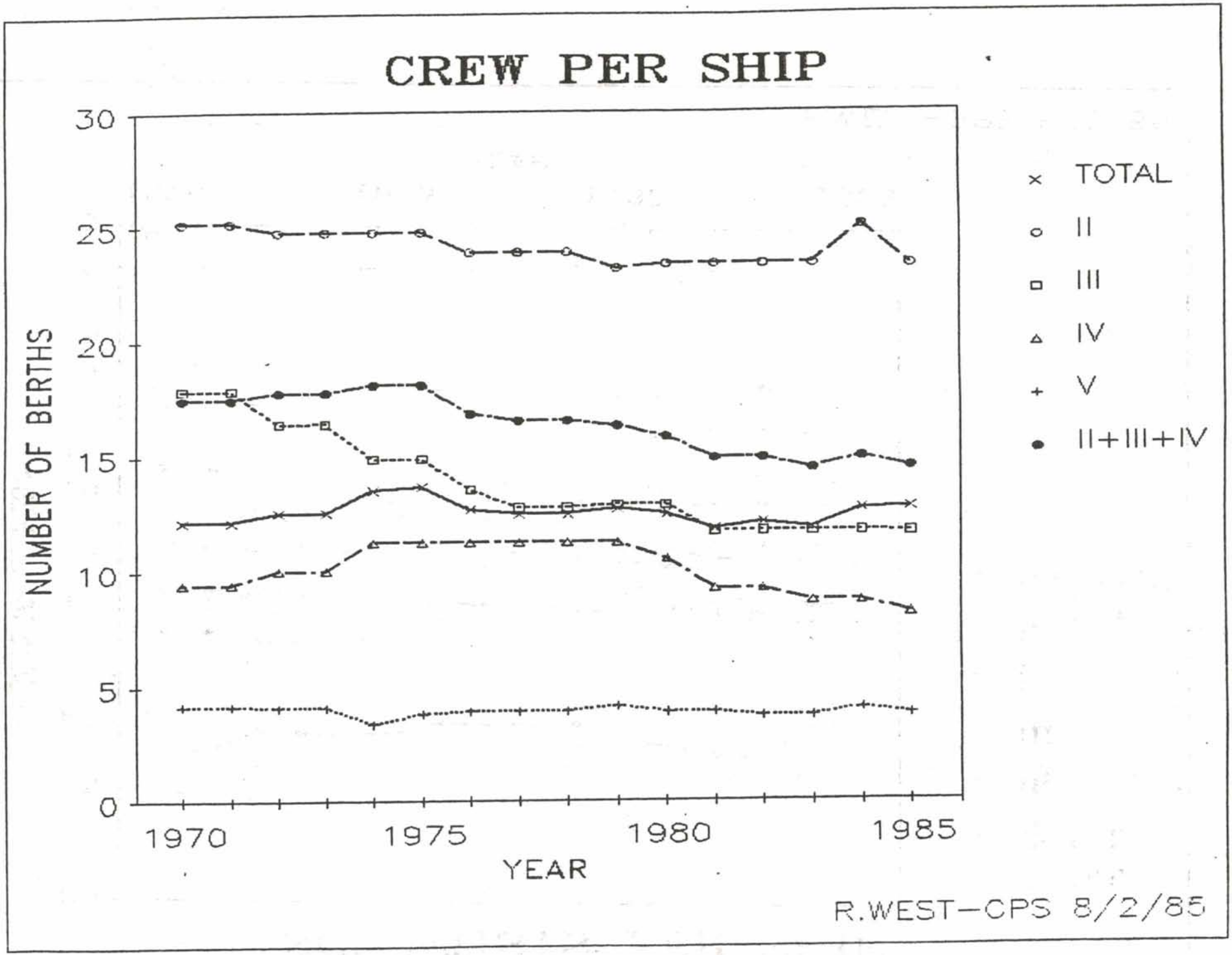
NUMBER of BERTHS

CORE ACADEMIC FLEET



R.West—CSTX5 6/7/85


SCIENTISTS PER SHIP
NUMBER OF BERTHS
30
25
20
15
10
5
0
1970
1975
1980
1985
YEAR
TOTAL
II
III
IV
V
II+III+IV
R.WEST-SPS 8/2/85


CREW PER SHIP
NUMBER OF BERTHS
30
25
20
15
10
5
0
1970
1975
1980
1985
YEAR
TOTAL
II
III
IV
V
II+III+IV
R.WEST—CPS 8/2/85

AN OVERVIEW OF THE SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT PROGRAM (SSSE)

AUGUST 1985

RICHARD W. WEST

OCEANOGRAPHIC FACILITIES SUPPORT SECTION

AREAS OF SUPPORT

SHIP OPERATIONS

TECHNICIANS

OCEANOGRAPHIC INSTRUMENTATION

SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT

INSTRUMENTATION DEVELOPMENT

SHIP CONSTRUCTION & CONVERSION

MISCELLANEOUS

SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT

OBJECTIVE

TO MAINTAIN AND IMPROVE THE QUALITY OF SHIPBOARD EQUIPMENT FOR OCEAN SCIENCE RESEARCH

SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT

TYPES OF EQUIPMENT

DECK : WINCH SYSTEMS (WINCHES, WIRE, CABLE, METERS, SHEAVES, ETC.)
CRANES
FRAMES (A, J, U, ETC.)

NAVIGATION : RADARS ; GYROS ; LORAN-C, OMEGA & SATELLITE SYSTEMS

COMMUNICATION: RADIO & SATELLITE TRANSCEIVERS ,
INTERCOMS, CLOSED CIRCUIT TV, WALKIE-TALKIES

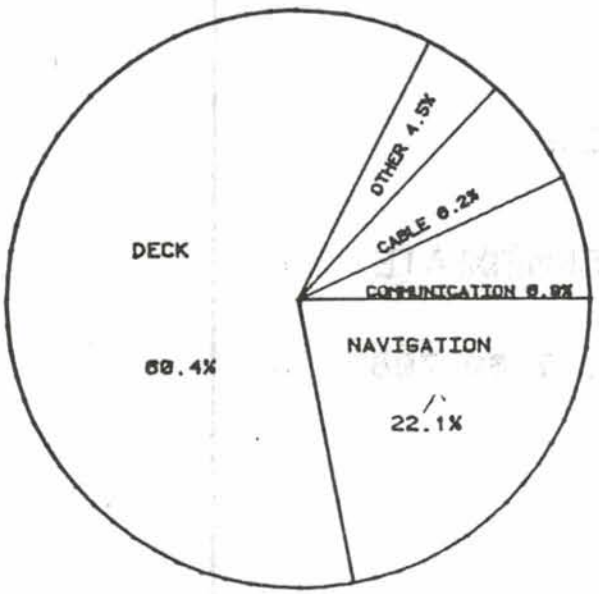
OTHER : WORKBOATS, OUTBOARD MOTORS, ENVIRONMENTAL CHAMBERS ,
WEATHER INDICATION DEVICES, FIELD SERVICE ELECTRONICS

SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT

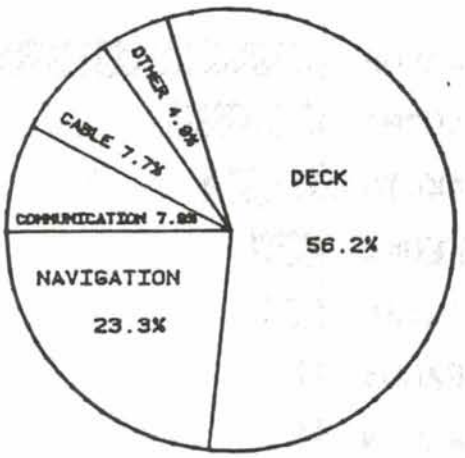
TYPE OF EQUIPMENT

FISCAL YEAR 1983

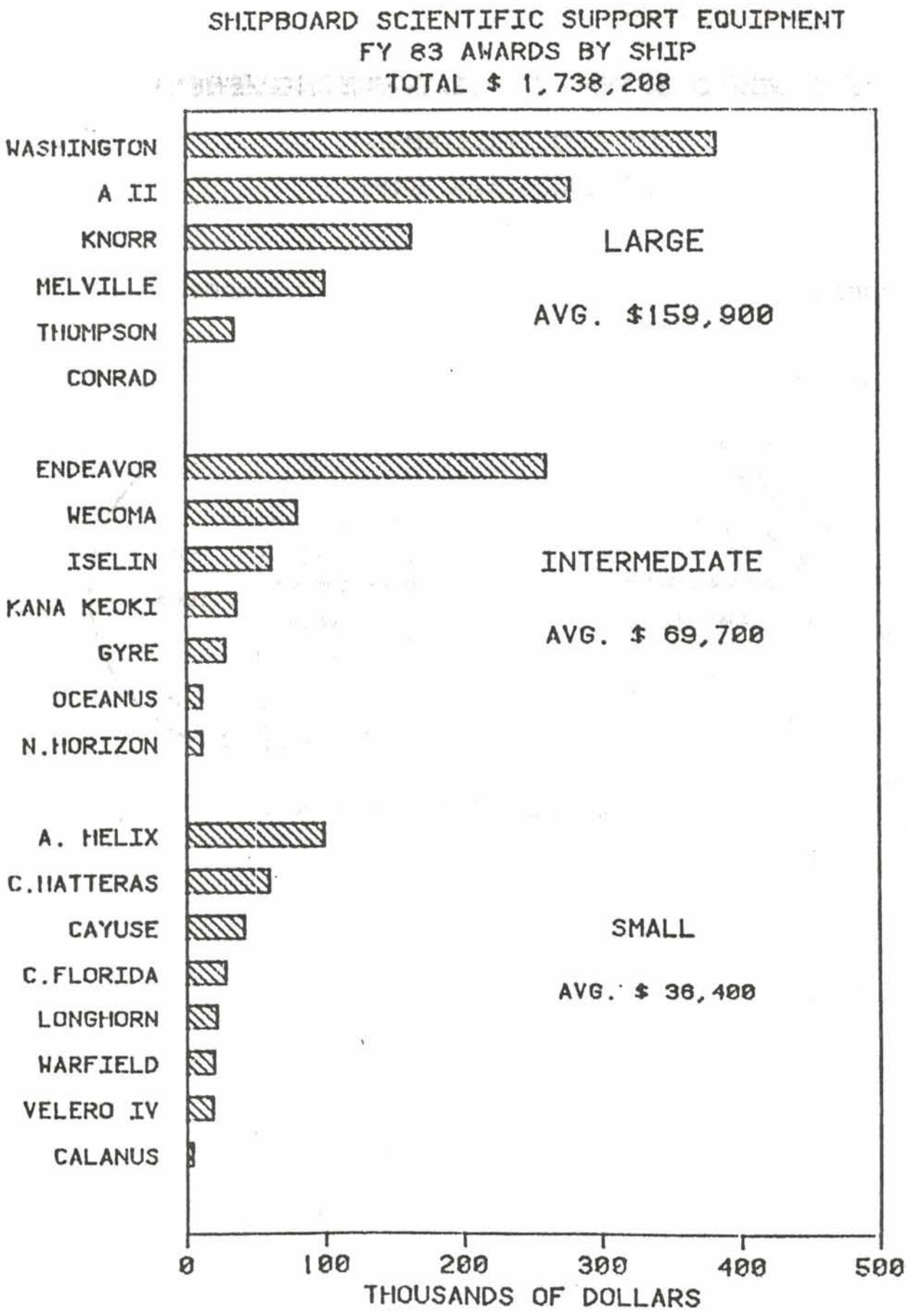
REQUESTS

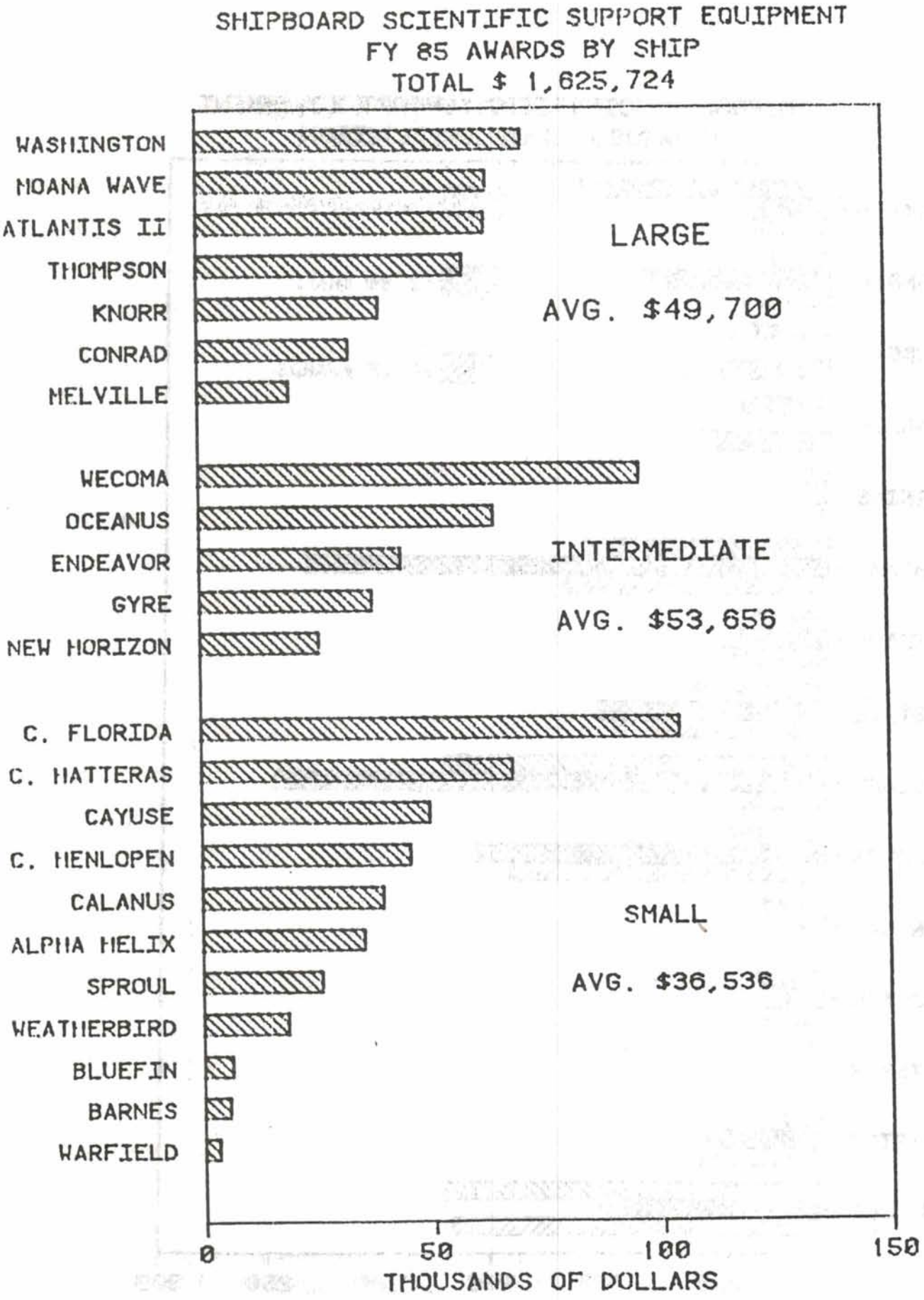


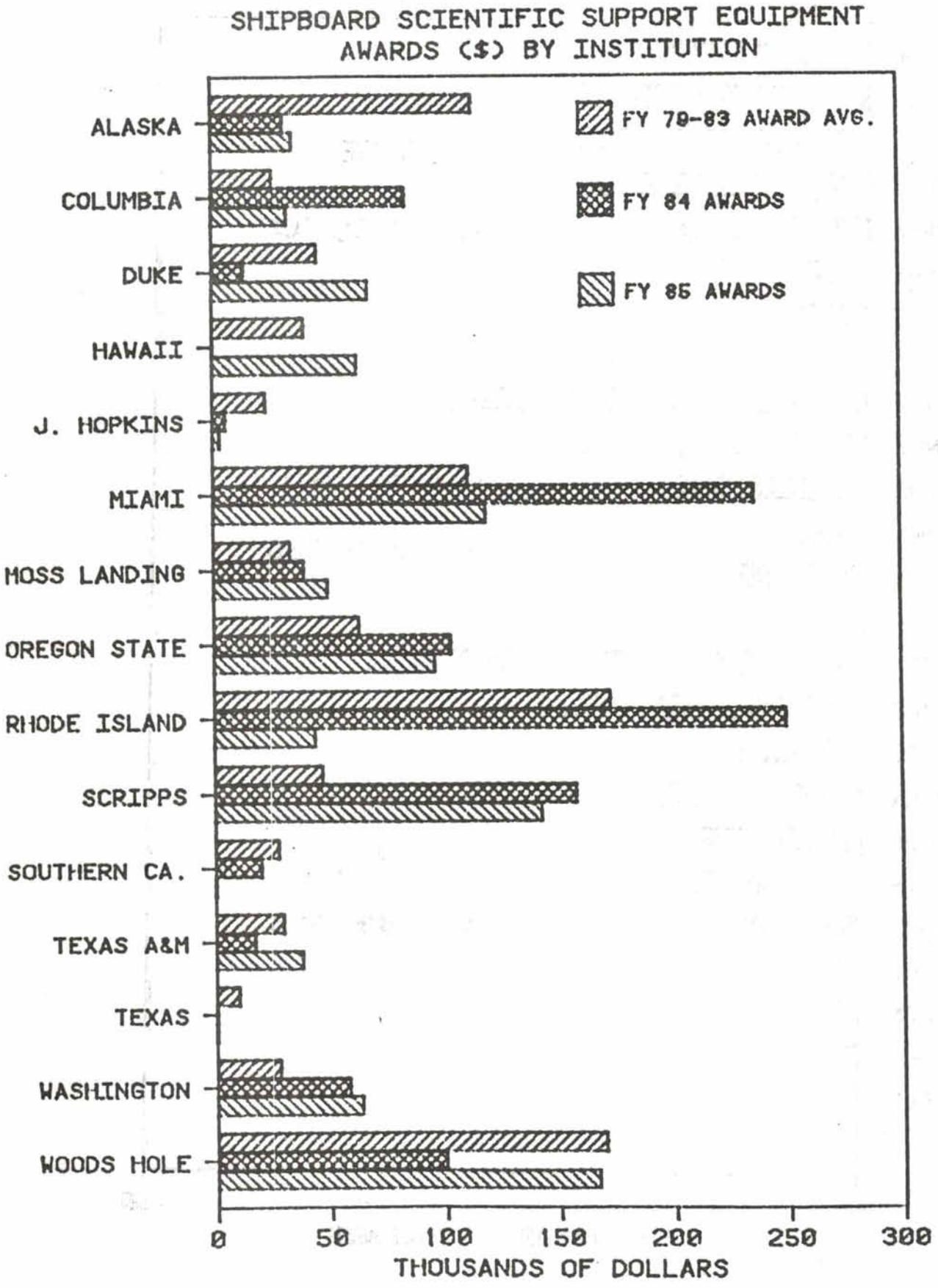
AWARDS



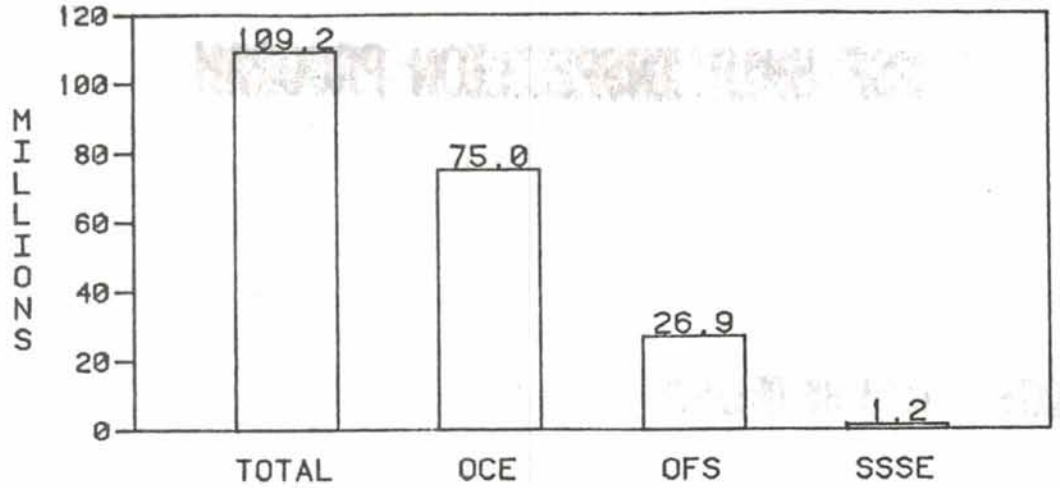
AWARDS / REQUESTS = 59 %


SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT
FY 83 AWARDS BY SHIP
TOTAL $ 1,738,208
WASHINGTON
A II
KNORR
MELVILLE
THOMPSON
CONRAD
ENDEAVOR
WECOMA
ISELIN
KANA KEOKI
GYRE
OCEANUS
N.HORIZON
A. HELIX
C.HATTERAS
CAYUSE
C.FLORIDA
LONGHORN
HARFIELD
VELERO IV
CALANUS
LARGE
AVG. $159,900
INTERMEDIATE
AVG. $ 69,700
SMALL
AVG. $ 36,400
0
100
200
300
400
500
THOUSANDS OF DOLLARS

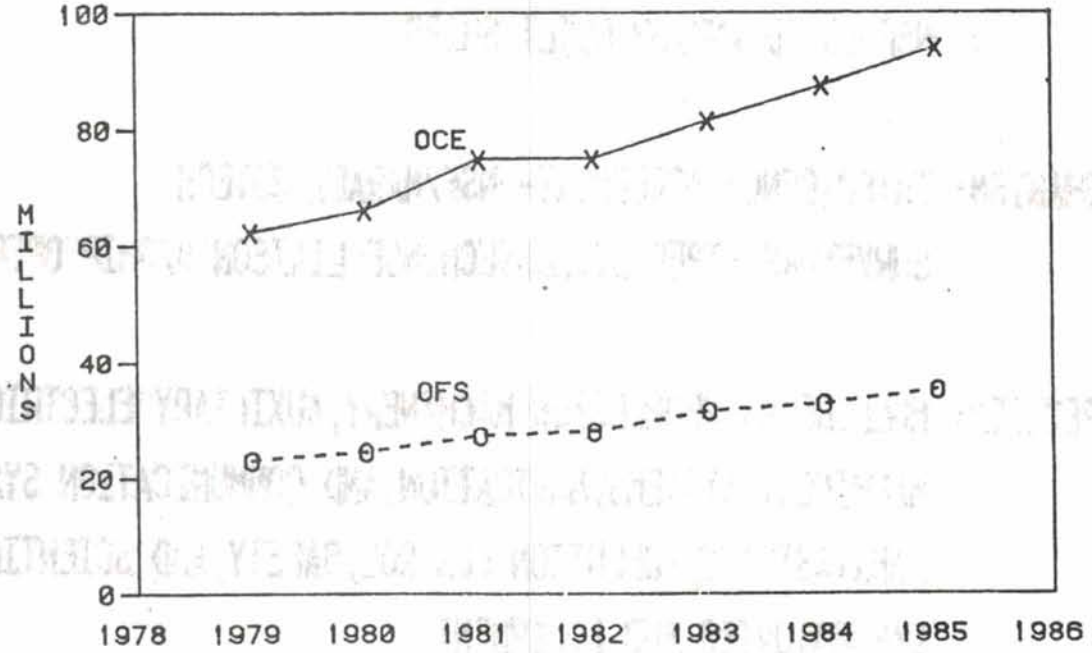

SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT
FY 85 AWARDS BY SHIP
TOTAL $ 1,625,724
WASHINGTON
MOANA WAVE
ATLANTIS II
THOMPSON
KNORR
CONRAD
MELVILLE
WECOMA
OCEANUS
ENDEAVOR
GYRE
NEW HORIZON
C. FLORIDA
C. HATTERAS
CAYUSE
C. HENLOPEN
CALANUS
ALPHA HELIX
SPROUL
WEATHERBIRD
BLUEFIN
BARNES
WARFIELD
LARGE
AVG. $49,700
INTERMEDIATE
AVG. $53,656
SMALL
AVG. $36,536
0
50
100
150
THOUSANDS OF DOLLARS


SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT
AWARDS ($) BY INSTITUTION
FY 79-83 AWARD AVG.
FY 84 AWARDS
FY 85 AWARDS
ALASKA
COLUMBIA
DUKE
HAWAII
J. HOPKINS
MIAMI
MOSS LANDING
OREGON STATE
RHODE ISLAND
SCRIPPS
SOUTHERN CA.
TEXAS A&M
TEXAS
WASHINGTON
WOODS HOLE
0
50
100
150
200
250
300
THOUSANDS OF DOLLARS

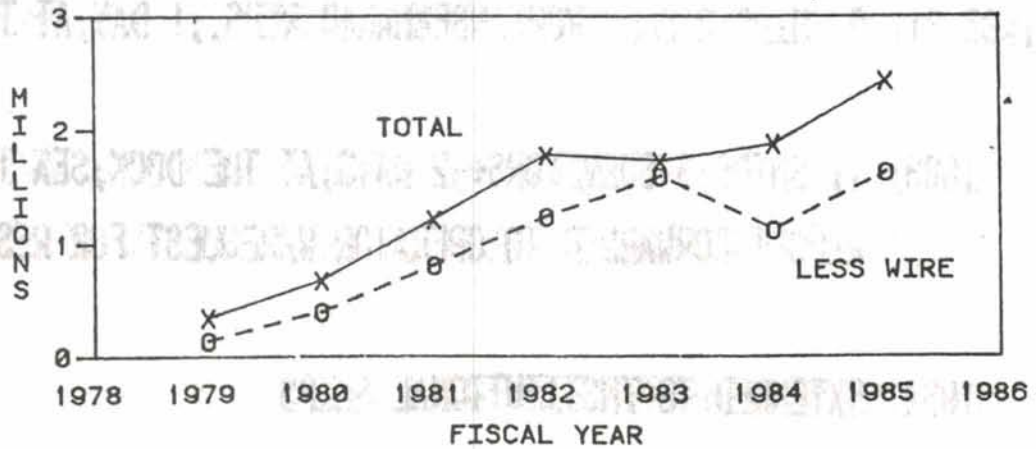
NSF
OCEAN SCIENCE BUDGET
FISCAL YEAR 1981



OCEAN SCIENCES DIVISION
BUDGET



SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT
TOTAL AWARDS ($) BY FISCAL YEAR



NSF SHIP INSPECTION PROGRAM

INITIATED: 1980 BY OFS/NSF

PURPOSE: TO EVALUATE SEAWORTHINESS AND SCIENTIFIC CAPABILITIES OF NSF OWNED AND/OR BUILT SHIPS

MECHANISM: INTERAGENCY AGREEMENT--NSF/MARAD/ABSTECH
SURVEYORS HIRED BY ABSTECH.NSF LIAISON W/SHIP OPERATORS

INSPECTION: HULL,DECKS,PROPULSION MACHINERY,AUXILIARY ELECTRICAL AND MACHINERY SYSTEMS,NAVIGATION AND COMMUNICATION SYSTEMS, HABITABILITY,POLLUTION CONTROL,SAFETY,AND SCIENTIFIC LABORATORIES AND EQUIPMENT

1980-81: 9 SHIPS;2 SURVEYORS+NSF&MARAD REPS.;1 DAY;AT THE DOCK

1983: 11 SHIPS;3 SURVEYORS+;2 DAYS;AT THE DOCK;SEA TRIALS; REPORT FORWARDED TO OPERATOR W/REQUEST FOR RESPONSE

1984: EXTENDED TO INSTITUTIONAL SHIPS

WIRE AND CABLE POOL

INITIATED: WIRE ROPE FY 81 ; E-M CABLE FY 82 ; COAX FY 84

COMPONENTS: BULK PURCHASE ; RESERVE POOL

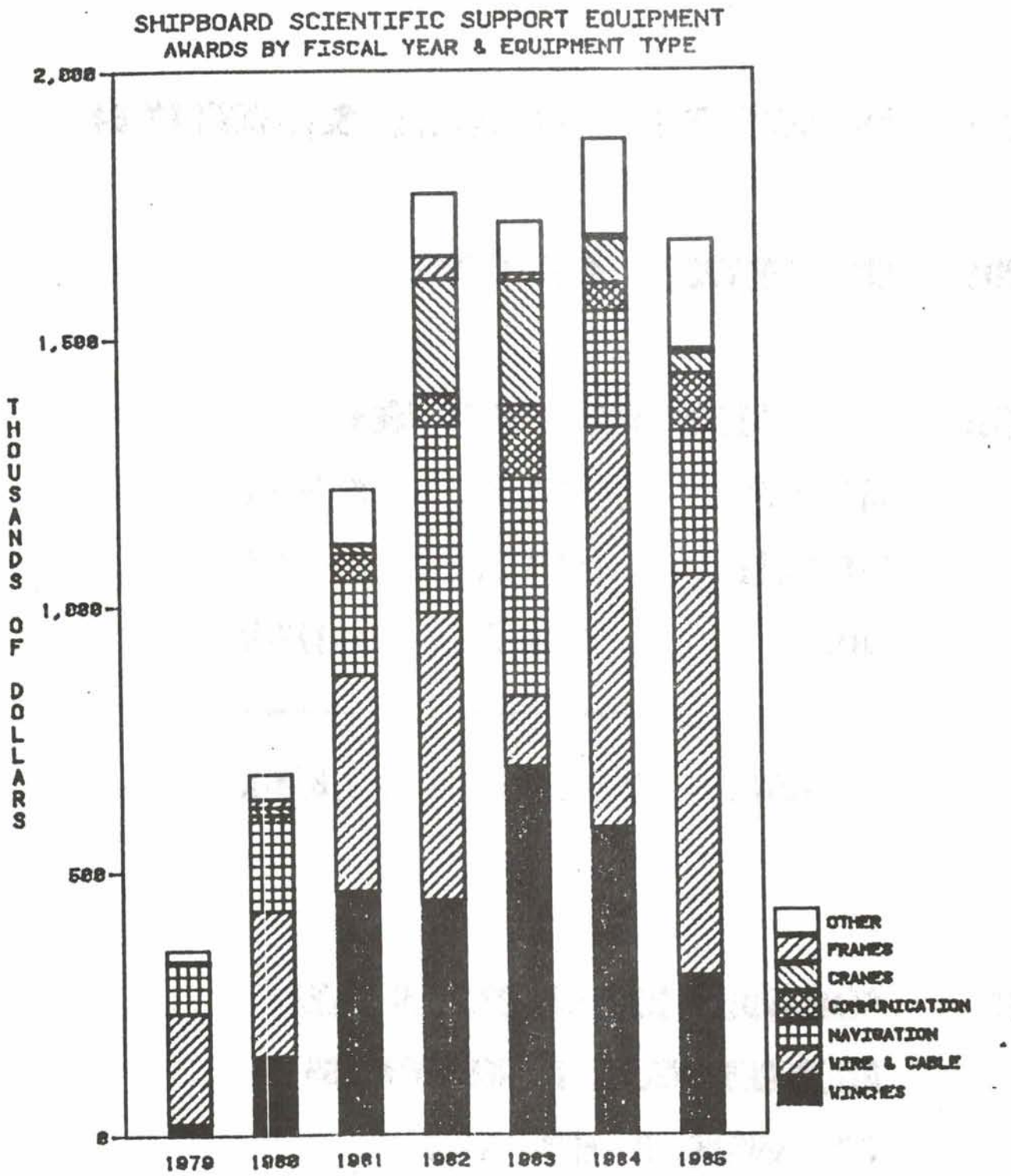
PURCHASES: FISCAL YEAR 1981 TO 1984

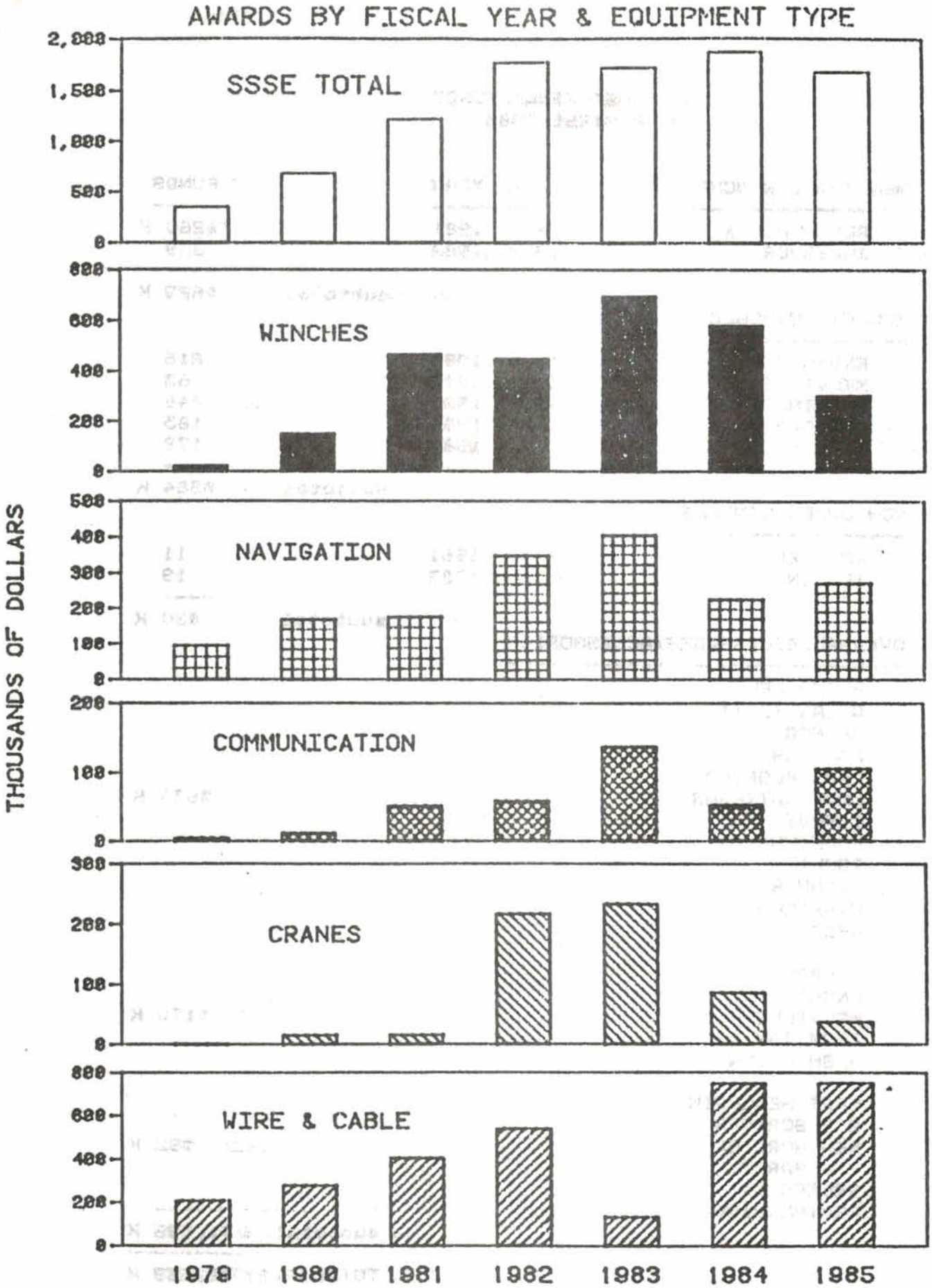
WIRE ROPE	1,107 K FT.	$ 747 K
E-M CABLE	748 K FT.	$ 452 K
COAX	60 K FT.	$ 179 K
TOTAL	2,855 K FT.	$ 2,078 K

BENEFITS: STANDARDIZATION FROM 28 TO 8 SIZES

RAPID RESPONSE TO EMERGENCY NEEDS

COST SAVINGS OF ABOUT 44 %


SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT
AWARDS BY FISCAL YEAR & EQUIPMENT TYPE
THOUSANDS OF DOLLARS
2,000
1,500
1,000
500
0
1979
1980
1981
1982
1983
1984
1985
OTHER
FRAMES
CRANES
COMMUNICATION
NAVIGATION
WIRE & CABLE
WINCHES


AWARDS BY FISCAL YEAR & EQUIPMENT TYPE
THOUSANDS OF DOLLARS
SSSE TOTAL
2,000
1,500
1,000
500
0
WINCHES
800
600
400
200
0
NAVIGATION
500
400
300
200
100
0
COMMUNICATION
200
100
0
CRANES
300
200
100
0
WIRE & CABLE
800
600
400
200
0
1979
1980
1981
1982
1983
1984
1985

NSF WINCH FUNDS
1981-1985

NEW TRAWL WINCHES	YEAR		FUNDS
ALPHA HELIX	1981		$260 K
ENDEAVOR	1982		369
		subtotal	$629 K
NEW CTD WINCHES			
ENDEAVOR	1983		216
MELVILLE	1983		63
WASHINGTON	1983		248
ENDEAVOR	1984		185
ISELIN	1984		172
		subtotal	$884 K
NEW OTHER WINCHES			
WARFIELD	1981		11
ISELIN	1983		19
		subtotal	$30 K
OVERHAULS/UPGRADES/ACCESSORIES			
ALPHA HELIX			
ATLANTIS II			
BARNES			
CALANUS			
CAPE FLORIDA			
CAPE HATTERAS			$834 K
CAYUSE			
ENDEAVOR			
ISELIN			
OCEANUS			
WARFIELD			
WECOMA			
CONRAD			
KNORR			
MELVILLE			$170 K
THOMPSON			
WASHINGTON			
CAPE HENLOPEN			
E B SCRIPPS			
NEW HORIZON			$92 K
R G SPROUL			
VELERO IV			
WEATHERBIRD			
		subtotal	$1,096 K
		TOTAL	$2,639 K

ONR funds totaled at least an additional $1.1 M during this period

WINCH IMPROVEMENTS
NSF FUNDS ONLY
1981-1985

	NUMBER OF SHIPS	NEW WINCHES	# OF SHIPS WITH UPGRADES	# OF SHIPS WITH ACCESSORIES	# OF SHIPS IMPROVED	ALL SHIPS EXCEPT
NSF	12	7	9	11	12	
NAVY	9	2	2	5	5	MNWV, HO, ONR GYRE
INSTITUTION	10	0	2	5	6	BLFN, LNGHRN KK, LRNTN
TOTAL	31	9	13	21	23	

CRANE IMPROVEMENTS
1981-1985

SHIP	REPORT* REPLACEMENT DATE	FUNDS ($1,000) REPLACED BY NSF	ONR	DATE
WECOMA	N/A	15		1981
CAYUSE	ASAP	37		1982
KANA KEOKI	ASAP	47		1982
VELERO IV	ASAP	40		1982
ALPHA HELIX	1981	93		1982
WASHINGTON	1981		104	1983
THOMPSON	1982 1983	53	92	1983 1984
MELVILLE	1983			**
LONGHORN	1984	20		1983
LAURENTIAN	1986			
WARFIELD	1988			
VELERO IV	1990			
NEW HORIZON	1990 (3)			
CONRAD	NONE		98	1982
ATLANTIS II	NONE	186 ***		1983
GYRE	NONE	28		1983
MOANA WAVE	NONE		62	1984
C. HENLOPEN	NONE	22		1985
BARNES	N/A	30		1983
WEATHERBIRD	N/A	31		1984
C. FLORIDA	N/A	16		1985
TOTALS Thru 85	9	$618 K	$356 K	16
		$974 K TOTAL		

* Report of the Subcommittee on Cranes, UNOLS Technical Assessment Committee, August 1981

** 1983 Planning Letter to ONR said good for 5 yrs. then overhaul or replace

*** New crane for AII, Rehab'd AII crane for OCEANUS

SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT

ON THE HORIZON

WINCHES
MOTION COMPENSATION

CABLE
KEVLAR

NAVIGATION
NAVSTAR / GPS

COMMUNICATION
INMARSAT