

certain ship operations managers as ex officio technical advisors, as I do not think we can continue to be ship-driven oceanographers but must balance ships versus other oceanographic facilities and manage resources more cooperatively for the shared-resource future in prospect; i.e., as in the original essence of UNOLS.

Finally, in my opinion, a very strong case could be made for basing all of the global R/Vs at SIO and WHOI, for the following reasons:

- economy of scale (and competence)
- fits their institutional self-image
- fits their institutional role in the national community
- regional distribution arguments do not much apply to global R/Vs
- place an end to smaller institutions, lust for such vessels
- ease the resource management for these precious but expensive assets by focusing on the size of the global R/V fleet at only two institutions.

As a corollary, an argument (based on economy of scale) can probably be made for concentrating regional R/Vs in one operating institution for each major region, and for a broad distribution of national coastal and local coastal R/Vs.

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Appendix V
Report to RVOC Annual Meeting
Woods Hole, 21-23 October 1997
Arctic Icebreaker Coordinating Committee
Joe Coburn

AICC's activities were principally divided in two phases; physical arrangements and facilities of the new CG Icebreaker Healy during the first part of the year, and coordinating science requests for the Ship of Opportunity (SOO) on the Polar Class Icebreakers the later part of the year.

Surprisingly, the top ten priorities of physical lay-out improvements suggested by AICC were accepted by the Coast Guard and have been incorporated into the design. These consisted of rationalization of the lab and science storage spaces that on the whole will facilitate science and make the ship much more successful as a research vessel. Although no steel had been cut which was affected by these changes, I anticipated that this would be an impossible request. However, when the shipbuilder asked for a 6 month delay the Coast Guard negotiated for the acceptance of all 10 of these changes with no penalty. Healy will be launched this November, with delivery scheduled for December 1998. Most of 1999 will be devoted to shake down and tests, with the first scheduled science cruises in January, 2000.

The second major effort of AICC has been to coordinate science requests for Ship of Opportunity requests on the currently operating Polar Class Icebreakers. The process has been formalized somewhat and the possible criticism of "cronyism" eliminated.

Additionally, AICC has been advising and helping the Coast Guard in the design and selection of science outfit. In some cases, AICC merely recommended a point of contact for one field of expertise or another and in other situations the committee members used e-mail to arrive at a consensus recommendation. The Coast Guard is looking at our Safety Training Manual and is developing a Cruise Planning Manual based on those on the web. The CG has been clearly appreciative of AICC. I believe the CG does fund the expenses associated with AICC.

Through all of this it is clear that the USCG has clearly emphasized the importance of science in its polar operations. Although 75 seems to be a very large crew from our perspective, the crew of 75 planned for Healy is a significant departure from past policies. The issue between the perceived need for military-style rotations (typically 2 year tours and very rarely second tours.) and the need for continuity and stability among a highly skilled crew has been discussed. The continued turn-over in the icebreaker and polar operations management billets belies any change in this area.

AICC's chairman is Jim Swift of SIO, who is energetic and well organized. I have enclosed his report to the

UNOLS council meeting in June.
Notes from J. Swift presentation to UNOLS Council meeting,
24 June 1997, Grand Haven, MI:

The UNOLS Arctic Icebreaker Coordinating Committee (AICC) continues to move toward scheduling of USCG Arctic science missions in the UNOLS framework. The AICC has recommended that the Coast Guard take advantage of the on-line system, tracking, and other functions provided by the LTNOLS Office. The Coast Guard icebreakers are now on the UNOLS on-line ship-time request site. The AICC expects continued incorporation into the UNOLS scheduling, notification, and tracking system. In practical terms there will be only limited opportunities for scheduled USCG Arctic science missions (i.e. other than ship-of-opportunity) until January 2000 when USCGC HEALY becomes available.

The dominant mode of operation now for USCG Arctic science support is via ship-of-opportunity (SOO) cruises. These receive no agency cost recovery because they are primarily tests of the vessel(s) and training missions for the USCG. An AICC responsibility is coordination of these SOO cruises.

The AICC functions for the 1997 (first) SOO program went well - all requests were feasible one way or another - but the cruise was canceled. (The AICC has not yet determined what priority should be given to 1997 groups for future years.) There were a number of questions and concerns from the community regarding the AICC's role in the SOO cruise planning. These were largely anticipated by the AICC. The AICC has reformulated to SOO guidelines for 1998 and these should be issued soon (hopefully by end of July 1997).

The AICC notes that SOO exploits a grey area in science support, and this will inevitably lead to problems. Namely, such cruises are fiscally advantageous to agencies, and so might be seen by some program managers as a preferred means of cruise support, but SOO cruises carry considerable risks - in fact there is no USCG commitment on SOO cruises to science support - and when these risks materialize, this may lead to disappointment on the part of agencies and investigators and image problems for the USCG. The AICC notes that dedicated science missions put the responsibility for ship support squarely upon the USCG, and so they better utilize USCG support and test USCG commitment to science missions. The availability of USCGC HEALY brings no new dedicated ship/science funds from the agency side.

The AICC hopes that via publicity and UNOLS ship scheduling that use of USCGC HEALY develops the number and type of excellent proposals envisioned by planners. The availability today of the HEALY on the UNOLS on-line request system is one step in developing that list of proposals.

The AICC has continued to build liaisons. John Freitag of RVTEC is participating in AICC business and the Coast Guard's science officer, Phil McGillivray, is attending RVTECH functions. The AICC and the Antarctic Research Vessel Oversight Committee (ARVOC) are exchanging attendance at meetings. And the AICC email list continues to expand.

One issue of concern to the AICC - scientific clearance in foreign EEZs - has been mostly laid to rest, but the final step of having the Coast Guard play the same role as a UNOLS operator remains somewhat unclear. [Note added: At the UNOLS Council meeting, however, Rick Rooth said that the Coast Guard will adopt those procedures.] AICC questions regarding HEALY's status under Canadian regulations appear to be resolved satisfactorily.

With respect to HEALY construction, Captain Johnson reported almost all good news at the AICC meeting. Even the six-month delivery delay was positive because in exchange for this the yard agreed to complete most of the "top 10" science-related modifications requested by the AICC. (The AICC is very pleased and appreciative!) The hull may be complete at this time. Delivery is set for December 1998 with most of 1999 as shakedown and testing. The AICC plans to tour the vessel shortly after launch in late 1997. John Boaz, a senior technician at SIO, is contracted by the USCG (through NSF) for consulting on science systems.

The AICC has recommended that there be no SOO on USCGC HEALY in 1999. Instead, we ask the USCG to concentrate on tests and training. We hope to locate science groups who can use the test to their advantage, but under control of the USCG and test team. The AICC is now working to help design science system tests during HEALY ice trials. The AICC regards it as very important that procedures be worked

out to provide "corporate memory" for science systems support rather than to re-train for each mission.

The next scheduled meeting of the AICC will be in New Orleans, probably in January 1998.

Appendix VI

Available from the UNOLS Office

Appendix VII

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Appendix VIII

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Appendix IX

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Appendix X

RVOC 1997- Woods Hole Oceanographic Institution Great Lakes Research Vessel Workshop

On March 11-12 1997 a workshop sponsored by the Great Lakes Commission was held in Detroit, Michigan.

The purpose of this meeting was to respond to reduced or otherwise constrained funding for research and related resources. Questions they sought to address included how to better communicate/share resources to maximize capabilities? Is there unnecessary duplication to eliminate and/or unmet needs to address? Is some new institutional arrangement needed to improve, the operational efficiency of the Great Lakes Research Vessel Fleet?

The meeting was attended by approximately 80 people representing Canadian and U.S. marine operators, scientists and program managers. In preparation for this meeting an effort was made to develop an inventory of Great Lakes Research Vessels which resulted in 60 R/V's being identified. The majority of these vessels were under 65 ft. in length. These vessels were owned and operated by a number of different sources; federal, state/provincial, municipalities, university and private.

As part of this meeting a series of initial presentations were given one of which was an overview of UNOLS. The principal effort was directed towards work groups divided along the lines of scientist, marine operator, and scientist. Prior to adjournment each work group was asked to summarize and present their recommendations. The recommendations coming from each of the three groups were striking in terms of their similarities. These recommendations included:

- Greater need for exchange of information with WWW home page seeming to be the initial direction. This need for exchange of information was quite broad, ranging from ship's schedules, to science programs being planned, to inventories of vessels, vessel's equipment, specialized skills, personnel available, etc.
- For a large number of attendees (particularly the operators) this seemed to be the first time they had