

APPENDIX IX

MG & G Point Papers

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Subject: FIC homework

UNOLS Fleet as MG&G Platforms for NAVO

(Point paper by Robert Detrick; information supplied by Commander Jim Trees, NAVOCEANO)

NAVOCEANO is potentially interested in using UNOLS vessels equipped with multibeam sonars, gravimeters and seismic sub-bottom profiling systems for surveys along both the U.S. east and west coasts. These surveys may extend into water depths of less than 100 fathoms (-200 m). This work may be carried out on more than one vessel over several different periods during FY '97 as needed to integrate with existing, scheduled UNOLS academic research work. In FY '97 NAVO has budgeted \$4.7M for possible contract work on UNOLS vessels or other commercial survey ships although at this time they do not have a final budget figure for FY '97. It was not clear to me if this \$4.7M figure represents just ship time or total project costs of which ship time only represents a portion of the total. However it is clear that the potential is here for NAVOCEANO to utilize a substantial amount of UNOLS ship time in FY '97.

UNOLS vessels equipped with multibeam sonars include the EWING, KNORR, MELVILLE, THOMPSON and REVELLE. The sonar systems on these ships are designed to operate in water depths of 10-10000 m and should be able to satisfy most, if not all, of the NAVO survey requirements. It was unclear from my conversations with Cmdr. Trees whether NAVO required MCS or just SCS sub-bottom seismic profiling. The EWING is the only UNOLS vessel equipped for MCS; any of the multibeam-equipped UNOLS vessels could be equipped for SCS profiling, although only the EWING and MELVILLE routinely collect such data.

Recommendations:

In FY '97 a significant opportunity exists for NAVO utilization of multibeam equipped UNOLS vessels for survey work along the U.S. east and west coasts. The potential of similar survey work for NAVO in 1998 and beyond needs to be explored. FIC should also consider the need for equipping one or more UNOLS vessels with a higher frequency (75 kHz), shallow water (operating range 1-500 m), multibeam mapping system to improve mapping capabilities of the UNOLS Fleet in very shallow water.

MG&G Science Program Prospects

(Point paper by Robert Detrick)

Like the rest of the marine science community, science program prospects within MG&G are very uncertain.

The budget for ODP is expected to remain flat for FY '97. Program renewal for Phase III, which begins in 1998, has yet to be decided although NSF has committed to the program through 2002. The drill ship will move into the Indian Ocean in late 1997 and is expected to work in the Indian Ocean and western Pacific through 1999. There thus may be ODP-related site survey needs on UNOLS vessels in these areas.

The RIDGE program budget is, at best, expected to remain flat for the next few years. With the completion of the initial phase of the RIDGE Indian Ocean program earlier this year, and the third leg of the MELT experiment next year, RIDGE research is expected to focus more on the RIDGE Observatory

on the Juan de Fuca Ridge in the northeast Pacific. This work will involve deep submergence (ALVIN, ROV) studies, mapping and sampling, and instrument deployment and recoveries usually involving Class II or III vessels. Other major programs are planned or proposed for the Mid-Atlantic Ridge and East Pacific Rise, as well as an expedition involving the new ATLANTIS to the southern EPR, western Pacific and possibly into the Indian Ocean.

MESH and MARGINS are the other two major MG&G initiatives. MESH UNOLS ship use is relatively modest and is not expected to increase significantly (as far as I know). The MARGINS program is likely to be the next major initiative in MG&G but its future funding prospects are very uncertain. Nevertheless, the MARGINS community has typically conducted one or two major experiments each year (e.g. Aleutians, New Zealand, East Greenland). These experiments usually require the airgun/MCS capabilities of the EWING. This level of activity could increase if the MARGINS program is funded. Other new initiatives within MG&G include BOREHOLE, LIPS, and OSN. Funding prospects for all of these programs are very dependent on the future of the NSF budget. Most involve use of Class II or III vessels, especially the EWING, but also those equipped with multibeam sonars.

Shipboard Technology Upgrades MG&G Needs:

P-Code GPS - P-code is enormously useful but is not available on all UNOLS vessels. It should be.

The UNOLS Fleet is now well-equipped with deep water multibeam sonars (six ships - the MELVILLE, KNORR, THOMPSON, EWING, REVELLE and ATLANTIS) all have second or third generation deep water sonar systems. However, I don't believe any UNOLS vessel is equipped with a shallow water multibeam system (i.e. for operating in water depths of <10-100 m). This may be a future need, especially with a greater emphasis on coastal processes.

With the conversion to the new ATLANTIS the deep submergence community in the U.S. is pretty well taken care of for now platform-wise. Upgrades to the ALVIN, in order to keep its capabilities "state-of-the-art", will be needed.

The EWING's MCS streamer, the only such facility available to the U.S. academic community, is in need of replacement. The present streamer is too short, is one of only two in existence making obtaining replacement sections hard, and is in poor condition. A new, six km, industry standard streamer is needed ASAP.

We need at least two UNOLS vessels capable of firing a large (ca. 6000-8000 cu in) airgun array for seismic refraction studies. The EWING is so equipped, but a second airgun-equipped vessel is needed for refraction studies that don't involve MCS. The MELVILLE has some capability in this area but its system needs to be upgraded to match that on the EWING.