

June 21, 2000

Dr. Larry Atkinson
Chair, UNOLS Fleet Improvement Committee
Old Dominion University
P.O. Box 6369
Norfolk, VA 23508

Dear Dr. Atkinson:

Please find attached a status report outlining where the University of Delaware stands in the design effort to replace the R/V CAPE HENLOPEN. At this point in time, the University is on schedule according to the proposed timetable presented to the Fleet Improvement Committee on November 10, 1999.

Sincerely,

Matthew J. Hawkins
Director, Marine Operations

c/c: Dr. Robert Knox, UNOLS Council
Mike Prince, UNOLS Office
Dolly Dieter, NSF
Sujata Millick, ONR

STATUS REPORT
Design and Replacement Effort
For the R/V CAPE HENLOPEN
University of Delaware
June 2000

Prepared For the UNOLS Fleet Improvement Committee
Dr. Larry Atkinson, Chair

The "Delaware Research Vessel Committee" (DRVC) was established in February of 2000 to aid in the design and review process for the new vessel. The committee is composed primarily of sea-going scientists from the mid-Atlantic region who represent the R/V CAPE HENLOPEN's normal user base. Also included are representatives from NOAA, NAVO, USGS and a fellow ship operating institution. The members were selected such they represent many of the major oceanographic institutions in the mid-Atlantic and the principle disciplines in oceanography. A list of the committee members is included as an attachment to this report.

A "Preliminary Planning Package" was sent to all the committee members in March to help them prepare for the first meeting. The Preliminary Planning Package included a draft "Mission Statement" and "Science Mission Requirement (SMR) Sheets" for them to review. The intent was to guide their thinking in the kinds of questions that would need to be addressed and to elicit their thoughts prior to the meeting. It was hoped that this would aid in making the first meeting productive by: 1) focusing on the most important topics, and 2) identifying areas which would require additional background information and preparation.

The SMR Sheets were tabular in nature and based on SMR's developed by FIC and other institutions in

the past. The sheets were divided into four sections to help make the volume of information easier to process. The sections were: 1) General "Regional Ship" Requirements, 2) Region Specific (mid-Atlantic) Requirements, 3) Scientific Outfit, and 4) Operational/Regulatory Considerations. A column showing the current capabilities of the R/V CAPE HENLOPEN was given for reference, and a blank column was included to write in suggestions for the new vessel. Because the vessel is intended to be general purpose in nature, the committee members were asked to comment only on those criteria that were important to their particular disciplines. The complete SMR would be compiled from their individual input into one set of SMR's.

The first meeting of the DRVC was held on Monday, April 10th, at the College of Marine Studies in Lewes. Fourteen of the fifteen committee members were able to attend. The meeting was run by the Chair of the committee, Dr. David Kirchman from the University of Delaware. David Bradley from Pennsylvania State University was also present as an observer. Marine Operations and college staff were also on hand to provide background information to the committee as the discussion progressed.

The first meeting was very productive with most major issues being resolved. A compilation of the committee's preliminary responses was used as a guide in orchestrating the meeting and focusing topics of discussion. There were numerous minor topics that were not addressed at the committee meeting, but they should be able to be resolved by e-mail and phone conversations as part of the final review process. With the major issues resolved, there is ample information to proceed to the "concept" design phase. A preliminary overview of the new vessel's primary characteristics is included as an attachment to this report.

Marine Operations was asked to gather more historical information on issues such as size of the scientific party, area of operation, and prevailing weather and sea states to help confirm the views of the committee. Though important for the review process, it was not felt that this information would severely affect the design of the vessel as envisioned by the committee, and could wait to be presented along with the "concept" design at the second meeting in 2001.

The Mission Statement and Science Mission Requirement Sheets were revised based on the committee's comments at the first meeting. These revised sheets were sent out to the DRVC for final review and comment on June 7th. Results of this review process should be completed by June 23rd. The University of Delaware anticipates that the final Mission Statement and SMR sheets will be ready for submittal to the Fleet Improvement Committee for review during the first week in July 2000. Once FIC has completed their review, these documents will be revised and development of the "concept" design will begin. Draft deck plans, profiles, and estimates of ship capabilities should be available by the second meeting in 2001. For reference, a copy of the overall design process presented to FIC in November 1999 is included as an attachment to this report.

Key Characteristics of New Delaware R/V as Determined by the DRVC

- Vessel to support multi-disciplinary research, and operated on 24-hour basis.
- Draft at (or just below) 10 feet - work both inshore and offshore.
- Acoustically quiet to ICES standards (if possible) for shallower draft vessel. Would like to see to 11 knots but may be acceptable if achievable at slower survey speeds.
- Though no atmospheric researchers on committee - generally accepted that low emissions is important.

- 12 permanent scientific berths expandable to 16 (by conversion of scientific office) and then again to 20 by use of van.
- **High degree of flexibility in outfitting and arrangement** - labs, vans, winches. Vessel able to be configured in a wide variety of ways to suit a full range of missions.
- Capable of carrying **two** 20-foot vans on aft deck - greater flexibility
- Ship should be outfitted with a more substantial work boat which can be carried in place of a 20 foot van for sampling in very shallow water regions. 2-3 scientists, small sheltered cabin, light A-frame/davit - small instruments, grabs, trawls. Higher speed. Deployed at sea from the ship.
- Maximum wire needs on winches: 3000m
- Side towing capability extremely important.
- Two separate trawl winches normally carried below decks - one outfitted with wire rope, the other with E&M cable. Roughly same capacity. Interchangeable drums.
- Variety of deck winches - "Clean", wire rope, and E&M Cable.
- Greater lab and deck space than the CAPE HENLOPEN.
- Wet lab incorporated with CTD "hanger" to allow personnel to work out of the weather.
- New ship envisioned approximately 50% larger than the CAPE HENLOPEN and less than 150 feet.