

# APPENDIX XII

## Deep Submergence Community Guidance February 1995 Letter (Karen Von Damm, Subcommittee Chair)

### Major recommendations:

- The timing of the conversion is critical.
  - Conversion and Alvin overhaul should begin early enough in CY 1996 to permit testing in waters close to Woods Hole and work in the North Atlantic in fall 1996.
  - The proposed plan to have the DSV hangar located to port be adopted.
  - Most cost effective
  - Retains deck space
  - Some of the DSV transport rails removable
- DYNACON winch be permanently installed below decks.
- Added weight from the A-frame, ballast, and other proposed work will increase the draft of Knorr by 0.5-0.8 feet. Models suggest this will reduce stern slamming by 50%. Defer the rapid ballast system for the present time.
- It is not recommended that more bunks be added at the present time.
- A multi-beam system (SeaBeam 2100) has already been met.
- Recommend wet and dry ends of a combined short and long baseline navigation system be installed and integrated into a single navigation system.
- To enhance the "livability" on Knorr. Find permanent space for exercise equipment.
- Small boat handling on Knorr is less than ideal. Defer any relatively costly resolution unless it becomes a significant limiting factor.

The deep submergence science community is firmly behind the retirement of Atlantis II and the conversion of Knorr to the support vessel. While Atlantis II has served the community well, its limited space for science, personnel, lab and hold space has been limiting. Knorr will be a significant enhancement over those capabilities. Knorr will allow us to truly integrate submersible and ROV operations. It will open new investigative horizons. While not trivial (cost/structural), it will serve the community well throughout the next decade.

### Work Tasks

#### Relocate Alvin - Move A-Frame

- Renovate, Replace Hydraulics
- Handling System
- Hangar
- Topside Control/Navigation
- Shops/Stores
- Battery Service
- Weight Stowage & Handling

#### Accommodate ROVs

- Handling/ Tending Systems
- Topside Control/Navigation
- Shops/ Stores - Service/Storage

#### Retain Knorr General Purpose

## **Related Science Issues**

- PCode GPS
- SeaBeam
- Dynamic Positioning

## **Related Ship Impact Issues**

- Laboratory Space
- Berthing
- Stores

## **Plan Overview -1**

### **Objectives**

- Alvin and ROV Support
- Maintain maximum general science capability consistent with above. Secondary to Alvin and ROV Support

### **Funding**

- WHOI Cost Sharing

Proceeds from sale of Atlantis II, guaranteed to \$900,000 plus WHOI owned traction winch and fiber optic cable

## **Plan Overview - 2**

### **Design Approach**

#### Phase 1 Design

Glosten visits to Knorr & Atlantis II (twice)

#### Phase 2 Design

Needed because best information generated late revisions to:

- Hanger, track arrangement
- Weight handling

Final focus and control of inputs to designer

- Design products
- Resolve arrangements and concepts
- Set of drawings
- Complete shipyard specs
- Weight and stability calculations
- Material for submission to ABS & USCG

## **Plan Overview - 3**

### Management Approach

- Strong Central Control
- Management Objectives
  - Quality conversion:
  - Control growth (cost)
  - Minimize down
  - Minimize risks
- Similar to Oceanus Mid-Life Overhaul
  - Incorporating "lessons learned"
  - Single all-encompassing contract
  - Minimum (zero) owner furnished equipment
- Bid base (minimum) job plus options
- Regular dry-docking work
- Task shipyard to:
  - Remove A-Frame
  - Order Caley components
  - Mod A-Frame under Caley's direction
  - Install all new components
  - Completely test system

	<b>Lulu</b>	<b>Atlantis II</b>	<b>Knorr</b>
LOA	105 ft.	210 ft.	279 ft.
Beam	48 ft.	44 ft.	46 ft.
Displacement	480 Ltons	2,300 Ltons	2,685 LTons
Crew	9	22	22
Science:			
DSV/Tech	9	9	13
Party	8	19	21
Generators	150 kw	600 kw	1,780 kw
Cruising Speed	6.5 kts	10.5 kts	12 kts
Endurance	20 days	30 days	60 days
Range	2,000 mi.	9,000 mi.	12,000 mi.
Labs	One Van	4 labs (1,031 sq. ft.)	6 labs (1,981 sq. ft.)

This appendix also includes information on the AGOR 25 construction and schedule, AGOR program schedule summary, WHOI Ships Schedule -. 1995-1997, and various views of KNORR (existing and proposed modification for ALVIN). The overall schedule to convert KNORR to handle ALVIN is also included. These sheets can be requested from the UNOLS Office: E-mail [unols@gsosun1.gso.uri.edu](mailto:unols@gsosun1.gso.uri.edu), or regular mail P.O. Box 392, Saunderstown, RI 02874.

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