

# APPENDIX IX

A 5-year plan for undersea research in the region of the Central Pacific is being prepared.

## **Hawaii Undersea Research Laboratory -Project Unity Narrative**

Following the rectification review of June 1994, the Hawaii Undersea Research Laboratory changed its basic direction to concentrate on the completion and full Integrated operation of its ship, submersible and, ROV. This has been labeled as project Unity. This change in focus was one of the central recommendations of the rectification committee.

Project Unity began in full swing in the fall of 1994. The goal of Project Unity is to effectively integrate the Ka'lmikai-o-Kanaloa ROV and Pices V submersible into a smoothly operational 2000m diving system. Initial work began on the ship. This involved overhaul of the ship's motors and installation of an inertial navigation system. This was followed by a drydock period. During the drydock the rudders were overhauled and repacked, the below hull Seabeam array was installed, the hull was cleaned and painted and zinc anodes were replaced. Following drydocking a CTD winch and boom were installed as well as a ship wide video monitoring and clear com system.

The second part of project unity is the submersible. Work on the submersible began by totally dismantling the present vehicle. This was followed by now calculations on sub stability to make adjustments for the new hook which arrived from Scotland. A series of strengthening measures were taken on the strongback to allow for lift by the telearm. The hook has been installed. All submersible components have been on overhauled. ABS has certified the frame and spheres. Reassembly is now taking place. The submersible with the now anti-pendulation tele-arm and A-frame lift system will be ready for ocean testing in the summer of 1996.

Following overhaul, the ship conducted three short test cruises. The Seabeam took accurate swath bathymetric data over rough terrain at 11 knots. The CTD system and rosette water sampling system deployed by the innovative CTD boom worked flawlessly. All of the other ship systems also functioned well making the ship the first completed part of project unity.

A detailed study of our ROV system came to the conclusion that the purchase of a new ROV rather than an upgrade of the current ROV is most cost effective. Specifications have been completed and a new ROV will be ordered. Specifications have also been completed for a motion compensating crane to launch the ROV.

Project unity plans for tests of the integrated system in the spring of 1996 followed by a full science program in the summer of 1996. Project Unity is well on the way to providing the nation an effective deep ocean research diving capability .

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