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ANOMALOUS ABSORPTION

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Principal Investigator

MANAGEMENT REPORT

1 April 1980 thru 30 June 1980

Sponsored by
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Administered by the Office of Naval Research
Contract N00014-80-C-0091

Contract Effective Date: 1 October 1979
Contract Expiration Date: 30 September 1980
Amount of Anomalous Absorption Contract: \$204,300

Scientific Officer: Director, Acoustic Program
Office of Naval Research
Department of the Navy
800 North Quincy
Arlington, Virginia 22217

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The primary objective of the Anomalous Absorption program is to observe and correlate in a quantitative manner the anomalous, frequency dependent acoustic absorption caused by fish and fish larvae with the type and abundance of the fish and larvae population as determined by net hauls. Such a characterization of the absorption will allow tactical sonar performance prediction to draw on fisheries surveys of regional productivity			

Marine Physical Laboratory

ANOMALOUS ABSORPTION

MANAGEMENT REPORT

1 April 1980 thru 30 June 1980

RESEARCH PROGRAM AND PLAN

The primary objective of the Anomalous Absorption program is to observe and correlate in a quantitative manner the anomalous, frequency dependent acoustic absorption caused by fish and fish larvae with the type and abundance of the fish and larvae population as determined by net hauls. Such a characterization of the absorption will allow tactical sonar performance prediction to draw on fisheries surveys of regional productivity as a data bank for prediction of anomalous absorption in the mobile passive sonar band. Cooperative support has been offered by the National Bureau of Fisheries for the program by way of ship time on the DAVID STAR JORDAN for deploying and recovering the buoy systems and in collecting and supplying net haul data at the buoy stations during the data collection period. The scope of the program includes the design, fabrication and testing of the automatic data collection buoy system in the first year, followed by a two year program of data collection in the southern California current.

MAJOR ACCOMPLISHMENTS

Electronics circuit design is now 100% completed. Assembly of the prototype system is nearly complete.

The prototype transmit transducer array and receiving hydrophone array have been calibrated and are ready for deployment. All auxiliary transducers (for telemetry, transponders, etc.) have been assembled, tested and calibrated.

The shipboard command/control unit has been assembled and is currently being tested and debugged.

Receiver, transmitter and transponder prototypes are being tested and debugged.

Detailed software development is proceeding more rapidly now that hardware/software interface requirements have been firmed up. The main supervisory routine and several data handling subroutines are now operating.

Procedures for assembling, disassembling and handling the buoy strings at sea during deployment and recovery have been developed. Special

winching and spooling hardware has been designed and is currently being fabricated.

FUTURE PLANS

Complete bench tests and debugging of prototype system prior to July 30.

Sea test prototype system August 1 - August 18 in 1,050 meters water depth.

Analyze data, evaluate performance, document hardware and preparation of report 4th quarter FY80 and 1st quarter FY81.

Fabricate buoy set 1 - 4th quarter FY80, 1st quarter FY81.

Fabricate buoy set 2 and 3 - 2nd and 3rd quarter FY 81.

Three deployments for data collection FY81 - Report.

Fabricate buoy set 4 - 1st quarter FY82.

Six to seven deployments for data collection in FY82 - Report.

FISCAL STATUS

- (1) Amount currently provided in contract
\$204,300
- (2) Expenditures and commitments to date
\$175,216
- (3) Estimated funds required to complete the work
\$29,084
- (4) Estimated date of completion of work
30 September 1980

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