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ANOMALOUS ABSORPTION

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Principal Investigator

MANAGEMENT REPORT

1 October 1979 thru 31 December 1979

AD-A 146 980

Sponsored by  
Advanced Research Projects Agency  
ARPA Order Number 220  
Program Code Number NR 006-120

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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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MARINE PHYSICAL LABORATORY

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## Marine Physical Laboratory

## ANOMALOUS ABSORPTION

## MANAGEMENT REPORT

1 October 1979 thru 31 December 1979

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 STARR 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

All major operating parameters and range of variables have been determined. System conceptual design has been completed at the logic block diagram level for both hardware and software. Detail design has been completed for underwater housings, mooring system, acoustic command/communication subsystems, battery packs, frequency synthesizer, programmer, timer and some of the transducers. Candidate source transducers have been prototyped and are undergoing performance tests. A microprocessor system and digital data recorder have been selected for incorporation in the prototype system. Procurement of components for the prototype system is proceeding as rapidly as the design decisions will allow.

FUTURE PLANS

Complete detail design - 2nd, quarter FY 80.

Fabricate, test and debug prototype system - 2nd and 3rd quarter FY 80.

Sea tests of prototype system in San Diego Trough 900-1200 meters water depth - June-July 1980.

Analyze data, evaluate performance, document hardware and preparation of report - 4th quarter FY 80 and 1st quarter FY 81.

Fabricate buoy set - 4th quarter FY 80.

Fabricate buoy set 2, 3 and 4 - FY 81.

Four deployments for data collection one each quarter FY 81 - Report.

Fabricate buoy sets 5 and 6 - 1st and 2nd quarter FY 82.

Six to seven deployments for data collection in FY 82 - Report.

FISCAL STATUS

(1) Amount currently provided in contract

\$204,300

(2) Expenditures and commitments to date

\$ 19,700

(3) Estimated funds required to complete the work

\$184,600

(4) Estimated date of completion of work

30 September 1980

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