February 9, 1982

Scientific Officer
Ocean Programs Office
Naval Ocean Research and Development Activity
NORDA Code 500
NSTL Station, Mississippi 39529

Attention: Mr. Bobby Wheatley

Subject: Contract No. N00014-78-C-0862

Dear Mr. Wheatley

This letter and enclosure constitute the final report for contract N00014-78-C-0862. The final report is line item A002 in accordance with the contract.

The period of performance was from 5 September 1978 through 9 February 1982. The tasks in this contract dealt with the environmental acoustic (EVA) support of the Tactical ASW Environmental Acoustic Support (TAEAS) Program objectives in the area of TASSRAP O/B and the maintenance of specific acoustic models.

We have enclosed a DD Form 250 for completion of this contract. We would appreciate you noting your acceptance of this work in Block 21B, and sending to our contracts office (Attention: Janice Steinbeck) a copy of the completed form.

If you have any comments or questions please contact us.

Thank you,

W. D. Kirby

cc: Distribution
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Section 1
INTRODUCTION

This document is the final report for Office of Naval Research Contract Number N00014-78-C-0862. The work under this contract was conducted during the period from 5 September 1978 through 9 February 1982. Three modifications to this contract have been awarded. The following sections address the tasks performed under this contract.
Section 2
ORIGINAL CONTRACT TASKS

2.1 TASK STATEMENT

The original contract contained the following task statement.

"The Contractor shall provide acoustic analysis in support of the Tactical Anti-Submarine Environmental Acoustic Support (TAEAS) project. Specifically, the Contractor shall perform the following tasks:

Task I Incorporate software changes into the Towed Array Surveillance System Range Prediction on Board (TASSRAP O/B) program to eliminate most of the model/operator problems identified during the at-sea tests and incorporate minor improvements in the system.

Task II Provide planning support to the TASSRAP O/B program by participating in the planning, execution, and subsequent evaluation of a series of tests to establish the operational readiness of the system ashore prior to the deployment of the system."

2.2 WORK PERFORMED

SAI assisted the Navy and its contractors in making the necessary changes to the Towed Array Surveillance
System Range Prediction on Board (TASSRAP O/B) program to insure it would meet the operational requirements. In addition, SAI assisted in the support of the planning, execution and evaluation of TASSRAP O/B.
Section 3
MODIFICATION P0001 TASKS

3.1 TASK STATEMENT

Modification P0001 to this contract contains the following task statement.

"Under the terms of Modification P0001, the Contractor shall provide technical assistance for the Tactical ASW Environmental Acoustic Support (TAEAS) project. The Contractor shall assist NORDA Code 500 in cooperation with other Navy activities in the technical support of specific acoustic performance prediction models which are of direct concern to the TAEAS project. This shall involve investigations, analysis, and technical documentation as may be needed on a required basis. Specifically, a technical description of the SHARPS III model is required."

3.2 WORK PERFORMED

Under this contract a draft of the technical description of SHARPS III has been prepared, and it is under revision to reflect more recent changes to the model.

Specific analysis performed under this contract have been reported in the form of informal file memoranda. One formal report is as follows.

"SHARPS III Predictions of Echo and Reverberation Levels Compared to Those from NISSM II (U)", William D. Kirby, SAI-80-288-WA, July 1979, CONFIDENTIAL, (AD-C019 454L)
Section 4  
MODIFICATION P0002 Tasks

4.1 TASK STATEMENT

Modification P0002 to this contract contains the following task statement.

"Under the terms of Modification P0002, the Contractor shall assist NORDA in cooperation with other Navy activities and contractors in the technical support of specific acoustic performance prediction models which are of direct concern to the TAEAS project. The specific models are ASRAP, VLAD, Active ASRAP, and SHARPS III. This will involve investigations, analysis and technical documentation as may be needed on an as required basis."

4.2 WORK PERFORMED

Specific analysis performed under this task have been reported in the form of informal file memoranda. A major emphasis of this work has been the analysis of specific prediction problems at Fleet Numerical Oceanography Center, Monterey, California. This has included specific assistance in integrating the VLAD performance prediction capabilities into the operational FNOC system.
Section 5
MODIFICATION P0003 TASKS

5.1 TASK STATEMENT

Modification P0003 to this contract contains the following task statement.

"Under the terms of Modification P0003, the Contractor shall perform the following tasks: Assist NORDA Code 500, in cooperation with other Navy activities and contractors, in the technical support of specific acoustic performance prediction models at Fleet Numerical Oceanography Center (FNOC) which are of direct concern to the TAEAS project. These models include ASRAP, VLAD, Active ASRAP and SHARPS III. This effort will involve various investigations, analyses, and technical documentation as may be needed on an as required basis."

5.2 WORK PERFORMED

Specific analysis performed under this task have been reported in the form of informal memoranda and formal reports. Two formal reports have been prepared, and one of these is still under review and comment. These two reports are as follows:

The tasks in this contract dealt with the environmental acoustic (EVA) support of the Tactical ASW Environmental Acoustic Support (TAEAS) program objectives in the area of TASSRAP O/B and the maintenance of other specific underwater acoustic numerical models.
Distribution

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MEMORANDUM FOR DISTRIBUTION LIST

Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT (LRAPP) DOCUMENTS

Ref: (a) SECNAVINST 5510.36

Encl: (1) List of DECLASSIFIED LRAPP Documents

1. In accordance with reference (a), a declassification review has been conducted on a number of classified LRAPP documents.

2. The LRAPP documents listed in enclosure (1) have been downgraded to UNCLASSIFIED and have been approved for public release. These documents should be remarked as follows:

   Classification changed to UNCLASSIFIED by authority of the Chief of Naval Operations (N772) letter N772A/6U875630, 20 January 2006.

   DISTRIBUTION STATEMENT A: Approved for Public Release; Distribution is unlimited.

3. Questions may be directed to the undersigned on (703) 696-4619, DSN 426-4619.

   BRIAN LINK
   By direction
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<td>Hooper, M. W., et al.</td>
<td>MEASUREMENTS AND ANALYSIS OF ACOUSTIC BOTTOM INTERACTION IN THE NORTHWESTERN MEXICAN BASIN</td>
<td>University of Texas, Applied Research Laboratories</td>
<td>811005</td>
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<td>Kirby, W. D.</td>
<td>FINAL REPORT FOR CONTRACT NUMBER N00014-78-C-0862</td>
<td>Science Applications Inc.</td>
<td>820201</td>
<td>ADA111000</td>
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<td>Brunson, B. A., et al.</td>
<td>PHYSICAL SEDIMENT MODEL FOR THE PREDICTION OF SEAFLOOR GEOACOUSTIC PROPERTIES</td>
<td>Planning Systems Inc.</td>
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<td>Cavanagh, R. C., et al.</td>
<td>NORDA PARABOLIC EQUATION WORKSHOP, 31 MARCH - 3 APRIL 1981</td>
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<td>Martin, R. L., et al.</td>
<td>THE ACOUSTIC MODEL EVALUATION COMMITTEE (AMEC) REPORTS, VOL. 1A - SUMMARY OF RANGE INDEPENDENT ENVIRONMENT ACOUSTIC PROPAGATION DATA SETS</td>
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<td>NRL-FR-8695; NRL-8695</td>
<td>Palmer, L. B., et al.</td>
<td>TRANSVERSE HORIZONTAL COHERENCE AND LOW-FREQUENCY ARRAY GAIN LIMITS IN THE DEEP OCEAN</td>
<td>Naval Research Laboratory</td>
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