

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT INITIATION

Date: 8/22/79

Project Title: Analysis of Antenna Performance (Directive) for CVV Contract Design

Project No: A-2422

Project Director: Mr. B. J. Cown

Sponsor: Atlantic Research Corp.

Agreement Period: From 6/18/79 Until 9/28/79

Type Agreement: Purchase Order No. 10537

Amount: \$3,000

Reports Required: Final Report

Sponsor Contact Person (s):

Technical Matters

Mr. A. Gates  
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Contractual Matters

(thru OCA)

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Defense Priority Rating: D0-A7 under DMS Reg. 1

Assigned to: ET/EE (School/Laboratory)

COPIES TO:

Project Director  
Division Chief (EES)  
School/Laboratory Director  
Dean/Director-EES  
Accounting Office  
Procurement Office  
Security Coordinator (OCA)  
✓ Reports Coordinator (OCA) *Rodgers*

Library, Technical Reports Section  
EES Information Office  
EES Reports & Procedures  
Project File (OCA)  
Project Code (GTRI)  
Other \_\_\_\_\_

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT TERMINATION

Date: 11/21/79

Project Title: "Analysis of Antenna Performance (Directive) for CVV Contract Design"

Project No: A-2422

Project Director: B. J. Cown

Sponsor: Atlantic Research Corp.

Effective Termination Date: 9/28/79

Clearance of Accounting Charges: 9/28/79

Grant/Contract Closeout Actions Remaining:

- ☒ Final Invoice and Closing Documents
- ☐ Final Fiscal Report
- ☐ Final Report of Inventions
- ☐ Govt. Property Inventory & Related Certificate
- ☐ Classified Material Certificate
- ☐ Other \_\_\_\_\_

TERMINATED

Assigned to: ET/EE (~~SCM~~/Laboratory)

COPIES TO:

Project Director  
Division Chief (EES)  
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Other \_\_\_\_\_

SPECIAL LETTER  
FINAL REPORT  
Project A-2422

CONSULTING SERVICES FOR CVV ANTENNA  
SENSOR BLOCKAGE ESTIMATES

By

R. L. Moore  
B. J. Cown

28 September 1979

Subcontract No. P.O. 10537  
(Prime Contract No. N00024-78-C-7157)

Prepared for

Atlantic Research Corporation  
5990 Cherokee Avenue  
Alexandria, Virginia 22314

Submitted by

Electromagnetic Effectiveness Division  
Electronics Technology Laboratory  
Engineering Experiment Station  
Georgia Institute of Technology  
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## CONSULTING SERVICES FOR CVV ANTENNA SENSOR BLOCKAGE ESTIMATES

### Introduction

This report summarizes the work effort performed for Atlantic Research Corporation (ARC) on Phase I of "Sensor Blockage for the 10 August 1979 CVV Design." These research efforts were conducted under the auspices of Purchase Order No. 10537 (Prime Contract No. N00024-78-C-7157). The research objective was to support ARC on the assessment of CVV sensor coverage by performing an analysis of directive antenna performance which included appropriate estimates of antenna gain loss. These efforts were carried out using the gain loss model which is implemented in the computer program GTOM3 [1].

### Summary of Work

Georgia Tech received the CVV design drawings on 20 August 1979. The drawings, dated 10 August 1979, were used to determine the positions and sizes of the structures on the CVV which would be the causes of antenna blockage. An additional memorandum from Al Gates of ARC dated 17 August 1979 was received along with the drawings. This memorandum defined specific cases for which blockage data was needed. Calculations for these cases were to be carried out following a priority scale included in the same memorandum.

The gain loss data for the requested CVV design cases were calculated and delivered to Al Gates via U.S. mail in two separate packages. These packages were mailed on 23 August and 7 September 1979, respectively. Each package included three data tables. These data tables show antenna blockage as a function of azimuth and elevation angles for the Sensor Performance Cases, Priorities 1 and 2 of the CVV Contract Design Phase I, which was specified in the Sensor Blockage memorandum of 17 August 1979. Copies of these data tables for the specified cases were delivered to Mr. George Webster of Rockwell International, Anaheim, California via U.S. mail on 23 August and Federal Express on 5 September 1979. The six data tables which were delivered to both ARC and Rockwell International were titled

#### REFERENCES

1. B.J. Cown and R.L. Moore, "Analytical Methodology and Computer Algorithm Plan for Predicting Directive Antenna Gain Loss Caused by Open-mast Obstacles", Georgia Institute of Technology, Final Engineering Report, Subcontract No. A7HM-567217 to Prime Contract No. N00024-76-C-7294), October 1977.

"Computer Printouts A1-A6" and the identification code for these printouts is given in Table I. It was confirmed via phone conversation on 11 September that these tables had been received and that they satisfied the requests of ARC.

TABLE I

## CVV COMPUTER PRINT-OUT IDENTIFICATION

Print-Out I.D.	Antenna	Priority
A-1	49	2-8/10 Drawing
A-2	48	1-8/10 Drawing plus 15
A-3	43	1-8/10 Drawing
A-4	49	1-8/10 Drawing plus 15
A-5	48	2-8/10 Drawing
A-6	43	1-8/10 Drawing plus 15