

Georgia Institute of Technology

Office of Contract Administration

Project Administration Data Sheet

☒ ORIGINAL

☐ REVISION NO. \_\_\_\_\_

Project No. A-3431      GTRI/~~ST~~      DATE 12/7/82

Project Director: Tom McFadden      ~~xxxxx~~ Lab EML-HO-

Sponsor: US Army Missile Command; Redstone Arsenal, AL 35898

Delivery Agreement: Delivery Order No. 0004 under Contract No. DAAH01-82-D-A036

Period: From 11/17/82 To 9/30/83 (Performance) 9/30/83 (Reports)

Sponsor Amount: Total Estimated: \$ 81,595.90      Funded: \$ 81,595.90

Cost Sharing Amount: \$ None      Cost Sharing No: \_\_\_\_\_

Project: Hawk MBJ Missile Simulation

ADMINISTRATIVE DATA

OCA Contact Linda H. Bowman      x4820

Sponsor Technical Contact: \_\_\_\_\_

2) Sponsor Admin/Contractual Matters:

Mr. Thomas A. Bryant

ONR Resident Representative

Georgia Institute of Technology

206 O'Keefe Bldg.

Atlanta, GA 30332

attn: DRSML-RDF/Davis

U. S. Army Missile Command

Redstone Arsenal, AL 35898

License Priority Rating: DO-A2 under DMS Reg. 1      Military Security Classification: Unclassified

(or) Company/Industrial Proprietary: \_\_\_\_\_

RESTRICTIONS

Attached Government Supplemental Information Sheet for Additional Requirements.

Level: Foreign travel must have prior approval – Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of \$500 or 125% of approved proposal budget category.

Equipment: Title vests with Government; except those items costing less than \$1,000 vests with GIT if prior approval to purchase is obtained from the Contracting Officer

REMARKS:

COPIES TO:

Research Administrative Network

Research Property Management

Accounting

Procurement/EES Supply Services

Research Security Services

Reports Coordinator (OCA)

GTRI

Library

Research Communications (2)

Project File

Other \_\_\_\_\_

Project Director \_\_\_\_\_



SPONSORED PROJECT TERMINATION/CLOSEOUT SHEET

Date December 5, 1983

Project No. A-3431 ~~Research~~ Lab EMI/HO

Includes Subproject No.(s) \_\_\_\_\_

Project Director(s) Tom McFadden GTRI / ~~XXX~~

Sponsor U.S. Army Missile Command; Redstone Arsenal

Title "Hawk MBJ Missile Simulation"

Effective Completion Date: 9-30-83 (Performance) 11/30/83 (Reports)

Grant/Contract Closeout Actions Remaining:

- ☐ None
- ☒ Final Invoice or Final Fiscal Report
- ☒ Closing Documents
- ☒ Final Report of Inventions
- ☒ Govt. Property Inventory & Related Certificate
- ☐ Classified Material Certificate
- ☐ Other \_\_\_\_\_

Continues Project No. \_\_\_\_\_ Continued by Project No. \_\_\_\_\_

COPIES TO:

Project Director  
 Research Administrative Network  
 Research Property Management  
 Accounting  
 Procurement/EES Supply Services  
 Research Security Services  
 Reports Coordinator (OCAL) ✓  
 Legal Services

Library  
 GTRI  
 Research Communications (2)  
 Project File  
 Other \_\_\_\_\_

Monthly Performance and Cost Report No. 1

Report Period  
November 17 through December 31, 1982

Report Prepared  
January 19, 1983

HAWK MBJ MISSILE SIMULATION

T. A. McFadden

Contract No. DAAH01-82-D-A036  
Delivery Order No. 0004  
Project No. A-3431

Effective Date: 11/17/82  
Expiration Date: 09/30/83

Prepared for

U. S. Army Missile Command  
Attn: DRSMI-IYBB/Henderson  
Redstone Arsenal, Alabama 35898

Prepared by

Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, Georgia 30332

WORK PERFORMED DURING THIS PERIOD

No work has been performed to date on this task.

PROBLEMS ENCOUNTERED

None

WORK TO BE PERFORMED

- o RFSS testing of MBJ missile in selected Phase III environments .
- o Evaluation of previous RFSS data involving MBJ hardware.

### A-3431 Cost Information

The following charges have been incurred against the contract during period November 17 through December 31, 1982.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ -0-	\$ -0-
Fringe Benefits	-0-	-0-
Materials and Supplies	-0-	-0-
Travel	-0-	-0-
Subtotal	<u>-0-</u>	<u>-0-</u>
Equipment	-0-	-0-
Overhead (@ 47.2% of Subtotal)	-0-	-0-
TOTAL	\$ <u>-0-</u>	\$ <u>-0-</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Man Hours</u>
Principal Research Scientists/Engineers	\$ -0-	-0-
Senior Research Scientists/Engineers	-0-	-0-
Research Scientists II/Engineers II	-0-	-0-
Research Scientists I/Engineers I	-0-	-0-
Technicians/Draftsmen	-0-	-0-
Students	-0-	-0-
Secretarial/Clerical/Other	-0-	-0-
TOTAL	\$ <u>-0-</u>	<u>-0-</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services (PS)	\$ 39,335.05	\$ -0-	\$ -0-	\$ 39,336.05
Fringe Benefits	7,676.87	-0-	-0-	7,676.87
Materials and Supplies	2,309.78	-0-	-0-	2,309.78
Travel and Shipping	6,114.13	-0-	-0-	6,114.13
Equipment	-0-	-0-	-0-	-0-
Overhead	26,160.07	-0-	-0-	26,160.07
FUNDING	\$ <u>81,595.90</u>	\$ <u>-0-</u>	\$ <u>-0-</u>	\$ <u>81,595.90</u>

Based on present full funding, the funding and equivalent man hours are sufficient to complete the task.

Monthly Performance and Cost Report No. 2

Report Period  
January 1 through January 31, 1983

Report Prepared  
February 17, 1983

HAWK MBJ MISSILE SIMULATION

T. A. McFadden

Contract No. DAAH01-82-D-A036  
Delivery Order No. 0004  
Project No. A-3431

Effective Date: 11/17/82  
Expiration Date: 09/30/83

Prepared for

U. S. Army Missile Command  
Attn: DRSMI-IYBB/Henderson  
Redstone Arsenal, Alabama 35898

Prepared by

Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, Georgia 30332

#### WORK PERFORMED DURING THIS PERIOD

During this period an RFSS entry using the MBJ baseline missile in the Phase III threat environment was supported. Data reduction from this entry has begun, and should continue into the next reporting period. In addition, preliminary thought has been given to a test matrix for the next MBJ/Phase III entry scheduled for February.

Software development has been initiated this period on a Phase III threat simulation. This software is being developed on a TI 99/4 A personal computer. When perfected this software will provide a cost effective means of investigating promising look left-shoot right scenarios in addition to look down. Further digital simulation on the Cyber will be performed on promising scenarios.

In addition, software development was initiated on a program to model the IH receiver AFC loop. This program is being developed on the HP micro-computer and should help in the analysis of receiver dynamics in the multiple target environment.

#### PROBLEMS ENCOUNTERED

None

#### WORK TO BE PERFORMED

- o Continued analysis of RFSS data.
- o Further investigation of the look left-shoot right and look down scenarios.
- o Continued development of AFC models.
- o Support for planned MBJ/Phase III entry in February.

### A-3431 Cost Information

The following charges have been incurred against the contract during period January 1 through January 31, 1983.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ 18,776.76	\$ -0-
Fringe Benefits	3,574.85	-0-
Materials and Supplies	160.21	236.96
Travel	-0-	-0-
Subtotal	<u>22,511.82</u>	<u>236.96</u>
Equipment	-0-	-0-
Overhead (@ 47.2% of Subtotal)	10,625.58	-0-
TOTAL	<u>\$ 33,137.40</u>	<u>\$ 236.96</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Man Hours</u>
Principal Research Scientists/Engineers	\$ 3,988.95	143
Senior Research Scientists/Engineers	7,695.07	339
Research Scientists II/Engineers II	-0-	-0-
Research Scientists I/Engineers I	4,107.00	279
Technicians/Draftsmen	-0-	-0-
Students	2,486.54	364
Secretarial/Clerical/Other	499.20	63
TOTAL	<u>\$ 18,776.76</u>	<u>1,188</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services (PS)	\$ 39,335.05	\$ 18,776.76	\$ -0-	\$ 20,558.29
Fringe Benefits	7,676.87	3,574.85	-0-	4,102.02
Materials and Supplies	2,309.78	160.21	236.96	1,912.61
Travel and Shipping	6,114.13	-0-	-0-	6,114.13
Equipment	-0-	-0-	-0-	-0-
Overhead	<u>26,160.07</u>	<u>10,625.58</u>	<u>-0-</u>	<u>15,534.49</u>
FUNDING	<u>\$ 81,595.90</u>	<u>\$ 33,137.40</u>	<u>\$ 236.96</u>	<u>\$ 48,221.94</u>

Based on present full funding, the funding and equivalent man hours are sufficient to complete the task. Approximately 40% of the proposed task has been completed.



Monthly Performance and Cost Report No. 3

Report Period  
February 1 through February 28, 1983

Report Prepared  
March 18, 1983

HAWK MBJ MISSILE SIMULATION

T. A. McFadden

Contract No. DAAH01-82-D-A036  
Delivery Order No. 0004  
Project No. A-3431

Effective Date: 11/17/82  
Expiration Date: 09/30/83

Prepared for

U. S. Army Missile Command  
Attn: DRSMI-IYBB/Henderson  
Redstone Arsenal, Alabama 35898

Prepared by

Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, Georgia 30332

#### WORK PERFORMED DURING THIS PERIOD

During this work period preparations were made for an entry in the RFSS. However, this entry was delayed by problems encountered during RFSS testing of another program. It is hoped that an entry will occur next month.

Computer modeling has continued on both the TI microcomputer and on the Cyber. On the TI, typical Phase III test trajectories are run to determine the various geometries which would be encountered when firing into the SOJ wedge. On the Cyber, testing evaluates various aspects of receiver performance while flying into the SOJ wedge.

#### PROBLEMS ENCOUNTERED

None

#### WORK TO BE PERFORMED

- o Preparations for upcoming RFSS entry
- o Further development of Phase III threat environment models on the Cyber
- o Development and integration of AFC models into the digital simulator

### A-3431 Cost Information

The following charges have been incurred against the contract during period February 1 through February 28, 1983.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ 19,294.65	\$ -0-
Fringe Benefits	3,313.40	-0-
Materials and Supplies	50.86	23.04
Travel	-0-	1,605.00
Subtotal	<u>22,658.91</u>	<u>1,628.04</u>
Equipment	-0-	-0-
Overhead (@ 47.2% of Subtotal)	10,695.01	-0-
TOTAL	<u>\$ 33,353.92</u>	<u>\$ 1,628.04</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Man Hours</u>
Principal Research Scientists/Engineers	\$ -0-	-0-
Senior Research Scientists/Engineers	7,695.07	190
Research Scientists II/Engineers II	-0-	-0-
Research Scientists I/Engineers I	5,275.87	201
Technicians/Draftsmen	-0-	-0-
Students	5,325.31	532
Secretarial/Clerical/Other	998.40	70
TOTAL	<u>\$ 19,294.65</u>	<u>993</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services (PS)	\$ 38,119.91	\$ 38,071.41	\$ -0-	\$ 48.50
Fringe Benefits	7,421.69	6,888.25	-0-	533.44
Materials and Supplies	2,309.78	211.07	260.00	1,838.71
Travel and Shipping	3,508.36	-0-	1,605.00	1,903.36
Equipment	6,000.00	-0-	-0-	6,000.00
Overhead	24,236.16	21,320.59	-0-	2,915.57
FUNDING	<u>\$ 81,595.90</u>	<u>\$ 66,491.32</u>	<u>\$ 1,865.00</u>	<u>\$ 13,239.58</u>

Based on present full funding, the funding and equivalent man hours are sufficient to complete the task. Approximately 84% of the proposed task has been completed.

Monthly Performance and Cost Report No. 4

Report Period  
March 1 through March 31, 1983

Report Prepared  
April 20, 1983

HAWK MBJ MISSILE SIMULATION

T. A. McFadden

Contract No. DAAH01-82-D-A036  
Delivery Order No. 0004  
Project No. A-3431

Effective Date: 11/17/82  
Expiration Date: 09/30/83

Prepared for

U. S. Army Missile Command  
Attn: DRSMI-ICD/Henderson  
Redstone Arsenal, Alabama 35898

Prepared by

Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, Georgia 30332

#### WORK PERFORMED DURING THIS PERIOD

Work currently underway includes analysis of the recent Phase III entry into RFSS. Effects of the ESJs and SOJs are being documented for the A-3431 report. We are also working up a matrix of runs for the upcoming RFSS entries of Phase III and ATCE-88 scheduled tentatively for May 2.

Work is also being performed on the Georgia Tech multipath program on the SEL 87. Although this program will provide data to future Phase III RFSS entries, it is not expected that it will be used in the May 2 entry.

Another task being carried out includes the development of a Sim buster program on the HP-85. This program will enable real-time reduction of phase III type-RFSS runs and will provide future slide capability for presenting the Phase III data. This program is almost finished and will probably get a good testing in the next Phase III entry in RFSS.

Finally as mentioned above, the documentation of the past Phase III RFSS results are almost concluded. The results of this entry will be used to draw up a run matrix for the next entry.

#### PROBLEMS ENCOUNTERED

None

#### WORK TO BE PERFORMED

- o Prepare for Phase III RFSS entry
- o Continue data reduction task

-3431 Cost Information

The following charges have been incurred against the contract during period March 1 through March 31, 1983.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ 4,406.66	\$ -0-
Fringe Benefits	455.56	-0-
Materials and Supplies	344.53	(80.00)
Travel	-0-	(1,605.00)
Subtotal	<u>5,206.75</u>	<u>(1,685.00)</u>
Equipment	-0-	-0-
Overhead (@ 47.2% of Subtotal)	2,452.87	-0-
TOTAL	<u>\$ 7,659.62</u>	<u>\$ (1,685.00)</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Man Hours</u>
Principal Research Scientists/Engineers	\$ -0-	-0-
Senior Research Scientists/Engineers	-0-	-0-
Research Scientists II/Engineers II	553.28	17
Research Scientists I/Engineers I	-0-	-0-
Technicians/Draftsmen	-0-	-0-
Students	3,354.18	335
Secretarial/Clerical/Other	499.20	35
TOTAL	<u>\$ 4,406.66</u>	<u>387</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services (PS)	\$ 38,119.91	\$ 42,478.07	\$ -0-	\$ (4,358.16)
Fringe Benefits	7,421.69	7,343.81	-0-	77.88
Materials and Supplies	2,309.78	545.60	180.00	1,584.18
Travel and Shipping	3,508.36	-0-	-0-	3,508.36
Equipment	6,000.00	-0-	-0-	6,000.00
Overhead	24,236.16	23,773.46	-0-	462.70
FUNDING	<u>\$ 81,595.90</u>	<u>\$ 74,140.94</u>	<u>\$ 180.00</u>	<u>\$ 7,274.96</u>

Based on present full funding, the funding and equivalent man hours are sufficient to complete the task. Approximately 91% of the proposed task has been completed.

Monthly Technical Report No. 5

and

Monthly Cost and Performance Report No. 5

Reporting Period  
April 1 through April 30, 1983

Report Prepared  
May 16, 1983

HAWK MBJ MISSILE SIMULATION

T. A. McFadden

Contract DAAH01-82-D-A036  
Delivery Order No. 0004  
Project Number A-3431

Effective Date: 11/17/82  
Expiration Date: 09/30/83

Prepared for

Commander  
US Army Missile Command  
DRSMI-ICD/Henderson  
Redstone Arsenal, AL 35898

Prepared by

Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, GA 30332

#### WORK PERFORMED DURING THIS REPORTING PERIOD

Documentation of the previous RFSS testing has begun. Areas of acceptable intercept performance have been identified. Also, a summary was prepared which outlines the capability as a function of the proposed firing doctrine. This summary is still incomplete as the full Phase III firing doctrine has not yet been finalized.

A meeting in the HPO was attended, and RFSS testing results to date were compared with Raytheon. New information on the current firing doctrine was collected. This new data will be incorporated into the May RFSS test.

Plans were formulated for the May RFSS testing. Meetings were held to gather inputs for May testing. Boeing was briefed on the general outline of the May entry.

Work has proceeded on the Phase III off-line simulation program. This program may be used to optimize Phase III missile parameters prior to the initiation of testing.

#### PROBLEMS ENCOUNTERED DURING THIS REPORTING PERIOD

None

#### WORK TO BE PERFORMED NEXT REPORTING PERIOD

- o Support RFSS testing
- o RFSS data reduction
- o Digital simulation studies



# Cost and Performance Report No. 5

Contract No. DAAH01-D-82-A036, D.O. 0004

GT/EES Project A-3431

The following charges have been incurred against the contract during period March 1 through March 31, 1983.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ -0-	\$ -0-
Fringe Benefits	-0-	-0-
Materials and Supplies	186.40	-0-
Travel	-0-	-0-
Subtotal	<u>186.40</u>	<u>-0-</u>
Equipment	-0-	-0-
Overhead (@ 47.2% of Subtotal)	87.98	-0-
TOTAL	<u>\$274.38</u>	<u>\$ -0-</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Man Hours</u>
Principal Research Scientists/Engineers	\$ -0-	-0-
Senior Research Scientists/Engineers	-0-	-0-
Research Scientists II/Engineers II	-0-	-0-
Research Scientists I/Engineers I	-0-	-0-
Technicians/Draftsmen	-0-	-0-
Students	-0-	-0-
Secretarial/Clerical/Other	-0-	-0-
TOTAL	<u>\$ -0-</u>	<u>-0-</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services (PS)	\$ 38,119.91	\$ 42,478.07	\$ -0-	\$ (4,311.76)
Fringe Benefits	7,421.69	7,343.81	-0-	74.77
Materials and Supplies	2,309.78	732.00	-0-	1,397.78
Travel and Shipping	3,508.36	-0-	-0-	3,508.36
Equipment	6,000.00	-0-	-0-	6,000.00
Overhead	<u>24,236.16</u>	<u>23,861.44</u>	<u>-0-</u>	<u>351.35</u>
FUNDING	\$ 81,595.90	\$ 74,415.32	\$ -0-	\$ 7,020.50

Based on present full funding, the funding and equivalent man hours are sufficient to complete the task. Approximately 91% of the proposed task has been completed.

Monthly Technical Report No. 6

and

Monthly Cost and Performance Report No. 6

Reporting Period  
May 1 through May 31, 1983

Report Prepared  
June 14, 1983

HAWK MBJ MISSILE SIMULATION

T. A. McFadden

Contract DAAH01-82-D-A036  
Delivery Order No. 0004  
Project Number A-3431

Effective Date: 11/17/82  
Expiration Date: 09/30/83

Prepared for

Commander  
US Army Missile Command  
DRSMI-ICD/Henderson  
Redstone Arsenal, AL 35898

Prepared by

Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, GA 30332

WORK PERFORMED DURING THIS REPORTING PERIOD

Receipt was taken on the CPT word processor to be used for the analysis and reduction of data and the preparation of the final report.

PROBLEMS ENCOUNTERED DURING THIS REPORTING PERIOD

None

WORK TO BE PERFORMED NEXT REPORTING PERIOD

- o Preparation of A-3431 final report.

# Cost and Performance Report No. 6

Contract No. DAAH01-D-82-A036, D.O. 0004

GT/EES Project A-3431

The following charges have been incurred against the contract during period May 1 through May 31, 1983.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ -0-	\$ -0-
Fringe Benefits	-0-	-0-
Materials and Supplies	29.21	-0-
Travel	-0-	-0-
Subtotal	<u>29.21</u>	<u>-0-</u>
Equipment	-0-	5,140.00
Overhead (@ 47.2% of Subtotal)	13.79	-0-
TOTAL	<u>\$ 43.00</u>	<u>\$5,140.00</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Man Hours</u>
Principal Research Scientists/Engineers	\$ -0-	-0-
Senior Research Scientists/Engineers	-0-	-0-
Research Scientists II/Engineers II	-0-	-0-
Research Scientists I/Engineers I	-0-	-0-
Technicians/Draftsmen	-0-	-0-
Students	-0-	-0-
Secretarial/Clerical/Other	-0-	-0-
TOTAL	<u>\$ -0-</u>	<u>-0-</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services (PS)	\$ 38,119.91	\$ 42,478.07	\$ -0-	\$ (4,311.76)
Fringe Benefits	7,421.69	7,343.81	-0-	74.77
Materials and Supplies	2,309.78	761.21	-0-	1,368.57
Travel and Shipping	3,508.36	-0-	-0-	3,508.36
Equipment	6,000.00	-0-	5,140.00	860.00
Overhead	<u>24,236.16</u>	<u>23,875.23</u>	<u>-0-</u>	<u>360.93</u>
FUNDING	\$ 81,595.90	\$ 74,458.32	\$ 5,140.00	\$ 1,860.87

Based on present full funding, the funding and equivalent man hours are sufficient to complete the task. Approximately 91% of the proposed task has been completed.

Monthly Technical Report No. 7  
and  
Monthly Cost and Performance Report No. 7

Reporting Period  
June 1 through June 30, 1983

Report Prepared  
July 14, 1983

HAWK MBJ MISSILE SIMULATION

T. A. McFadden

Contract DAAH01-82-D-A036  
Delivery Order No. 0004  
Project Number A-3431

Effective Date: 11/17/82  
Expiration Date: 09/30/83

Prepared for  
  
Commander  
US Army Missile Command  
DRSMI-ICD/Henderson  
Redstone Arsenal, AL 35898

Prepared by  
  
Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, GA 30332

WORK PERFORMED DURING THIS REPORTING PERIOD

Current work involves writing the final report for this project.

PROBLEMS ENCOUNTERED DURING THIS REPORTING PERIOD

None

WORK TO BE PERFORMED NEXT REPORTING PERIOD

The only work planned for this project is to finish the final report.

# Cost and Performance Report No. 7

Contract No. DAAH01-D-82-A036, D.O. 0004

GT/EES Project A-3431

The following charges have been incurred against the contract during period May 1 through May 31, 1983.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ 27.35	\$ -0-
Fringe Benefits	-0-	-0-
Materials and Supplies	-0-	35.00
Travel	-0-	-0-
Subtotal	<u>27.35</u>	<u>35.00</u>
Equipment	-0-	-0-
Overhead (@ 47.2% of Subtotal)	12.90	-0-
TOTAL	<u>\$ 40.25</u>	<u>\$ 35.00</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Man Hours</u>
Principal Research Scientists/Engineers	\$ -0-	-0-
Senior Research Scientists/Engineers	-0-	-0-
Research Scientists II/Engineers II	-0-	-0-
Research Scientists I/Engineers I	-0-	-0-
Technicians/Draftsmen	-0-	-0-
Students	-0-	-0-
Secretarial/Clerical/Other	27.35	2.0
TOTAL	<u>\$27.35</u>	<u>2.0</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services (PS)	\$ 38,119.91	\$ 42,459.02	\$ -0-	\$ (4,339.11)
Fringe Benefits	7,421.69	7,348.57	-0-	73.12
Materials and Supplies	2,309.78	761.21	35.00	1,548.57
Travel and Shipping	3,508.36	5.00	-0-	3,503.36
Equipment	6,000.00	-0-	5,140.00	860.00
Overhead	<u>24,236.16</u>	<u>23,870.84</u>	<u>-0-</u>	<u>365.32</u>
FUNDING	\$ 81,595.90	\$ 74,444.64	\$ 5,175.00	\$ 2,011.26

Based on present full funding, the funding and equivalent man hours are sufficient to complete the task. Approximately 91% of the proposed task has been completed.

Monthly Technical Report No. 8  
and  
Monthly Cost and Performance Report No. 8

Reporting Period  
July 1 through July 31, 1983

Report Prepared  
August 16, 1983

HAWK MBJ MISSILE SIMULATION

T. A. McFadden

Contract DAAH01-82-D-A036  
Delivery Order No. 0004  
Project Number A-3431

Effective Date: 11/17/82  
Expiration Date: 09/30/83

Prepared for

Commander  
US Army Missile Command  
DRSMI-ICD/Henderson  
Redstone Arsenal, AL 35898

Prepared by

Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, GA 30332



WORK PERFORMED DURING THIS REPORTING PERIOD

Work performed at this time involves writing the final report for this project.

PROBLEMS ENCOUNTERED DURING THIS REPORTING PERIOD

None

WORK TO BE PERFORMED NEXT REPORTING PERIOD

Completion of the final report for this project.

# Cost and Performance Report No. 8

Contract No. DAAH01-D-82-A036, D.O. 0004

GT/EES Project A-3431

The following charges have been incurred against the contract during period July 1 through July 31, 1983.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ 8.03	\$ -0-
Fringe Benefits	1.89	-0-
Materials and Supplies	36.20	-0-
Travel	-0-	-0-
Subtotal	<u>46.12</u>	<u>-0-</u>
Equipment	-0-	-0-
Overhead (@ 49.4% of Subtotal)	22.78	-0-
TOTAL	<u>\$ 68.90</u>	<u>\$ 35.00</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Man Hours</u>
Principal Research Scientists/Engineers	\$ -0-	-0-
Senior Research Scientists/Engineers	-0-	-0-
Research Scientists II/Engineers II	-0-	-0-
Research Scientists I/Engineers I	-0-	-0-
Technicians/Draftsmen	-0-	-0-
Students	-0-	-0-
Secretarial/Clerical/Other	8.03	.5
TOTAL	<u>\$ 8.03</u>	<u>.5</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services (PS)	\$ 38,119.91	\$ 42,467.07	\$ -0-	\$ (4,347.16)
Fringe Benefits	7,421.69	7,349.69	-0-	72.00
Materials and Supplies	2,309.78	805.01	-0-	1,504.77
Travel and Shipping	3,508.36	5.00	-0-	3,503.36
Equipment	6,000.00	5,140.00	-0-	860.00
Overhead	<u>24,236.16</u>	<u>23,896.86</u>	<u>-0-</u>	<u>339.30</u>
FUNDING	\$ 81,595.90	\$ 79,663.63	\$ -0-	\$ 1,932.27

Based on present full funding, the funding and equivalent man hours are sufficient to complete the task. Approximately 97% of the proposed task has been completed.

A-3431

Monthly Technical Report No. 9  
and  
Monthly Cost and Performance Report No. 9

Reporting Period  
August 1 through August 31, 1983

Report Prepared  
September 13, 1983

HAWK MBJ MISSILE SIMULATION

T. A. McFadden

Contract DAAH01-82-D-A036  
Delivery Order No. 0004  
Project Number A-3431

Effective Date: 11/17/82  
Expiration Date: 09/30/83

Prepared for

Commander  
US Army Missile Command  
DRSMI-ICD/Henderson  
Redstone Arsenal, AL 35898

Prepared by

Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, GA 30332

WORK PERFORMED DURING THIS REPORTING PERIOD

The only work performed on this project has been directed towards completing the final report.

PROBLEMS ENCOUNTERED DURING THIS REPORTING PERIOD

None

WORK TO BE PERFORMED NEXT REPORTING PERIOD

Completion of the final report required by this project.

Cost and Performance Report No. 9

Contract No. DAAH01-D-82-A036, D.O. 0004

GT/EES Project A-3431

The following charges have been incurred against the contract during period August 1 through August 31, 1983.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ 77.65	\$ -0-
Fringe Benefits	18.24	-0-
Materials and Supplies	1.20	-0-
Travel	-0-	-0-
Subtotal	<u>97.09</u>	<u>-0-</u>
Equipment	-0-	-0-
Overhead (@ 49.4% of Subtotal)	47.96	-0-
TOTAL	<u>\$145.05</u>	<u>\$ -0-</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Man Hours</u>
Principal Research Scientists/Engineers	\$ -0-	-0-
Senior Research Scientists/Engineers	-0-	-0-
Research Scientists II/Engineers II	-0-	-0-
Research Scientists I/Engineers I	-0-	-0-
Technicians/Draftsmen	-0-	-0-
Students	-0-	-0-
Secretarial/Clerical/Other	77.65	10.8
TOTAL	<u>\$77.65</u>	<u>10.8</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services (PS)	\$ 38,119.91	\$ 42,544.72	\$ -0-	\$ (4,424.81)
Fringe Benefits	7,421.69	7,367.93	-0-	53.76
Materials and Supplies	2,309.78	806.21	-0-	1,503.57
Travel and Shipping	3,508.36	5.00	-0-	3,503.36
Equipment	6,000.00	5,140.00	-0-	860.00
Overhead	<u>24,236.16</u>	<u>23,944.82</u>	<u>-0-</u>	<u>291.34</u>
FUNDING	\$ 81,595.90	\$ 79,808.68	\$ -0-	\$ 1,787.22

Based on present full funding, the funding and equivalent man hours are sufficient to complete the task. Approximately 98% of the proposed task has been completed.