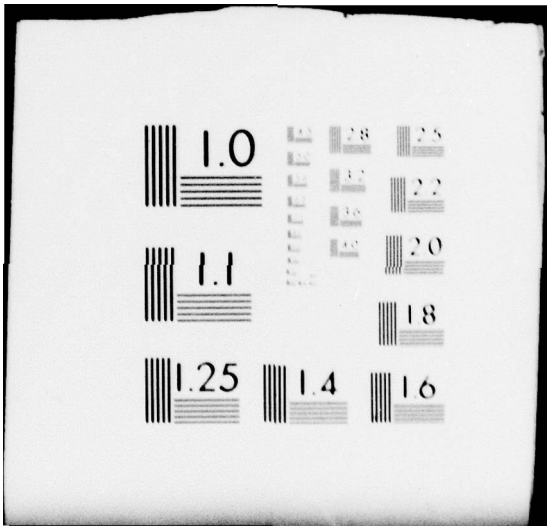
AD-A074 835 ARMY INDUSTRIAL BASE ENGINEERING ACTIVITY ROCK ISLAND IL F/G 13/8
MANUFACTURING METHODS AND TECHNOLOGY PROGRAM PROJECT STATUS REP--ETC(U)
AUG 79 H E WEIDNER, L S HANCOCK

UNCLASSIFIED NL

1 OF 2
AD A074835




1.0
1.1
1.25
1.4
16
18
20
22
25
28

AD A074835

U.S. ARMY
MATERIEL DEVELOPMENT AND READINESS COMMAND

(13)
NW

AD-A068 038

LEVEL

MMT
MANUFACTURING METHODS & TECHNOLOGY

DDC
RECEIVED
OCT 8 1979
E

This document has been approved for public release and sale; its distribution is unlimited.

DDC FILE COPY

SEMIANNUAL REPORT

FIRST CY 79

(RCS DRCMT-301)

79 10 05 006

PREPARED BY

AUGUST 1979

USA INDUSTRIAL BASE ENGINEERING ACTIVITY

MANUFACTURING TECHNOLOGY DIVISION

ROCK ISLAND, ILLINOIS 61299

SEMIANNUAL REPORT
FIRST CY 79

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: FIRST CY79

2. GOVT ACCESSION NO.:

3. RECIPIENT'S CATALOG NUMBER:

4. TITLE (and Subtitle): MANUFACTURING METHODS & TECHNOLOGY Program Project Status Report. First Half CY79.

5. TYPE OF REPORT & PERIOD COVERED: Semiannual Report, 1 Jan 79 – 30 Jun 79

6. PERFORMING ORG. REPORT NUMBER:

7. AUTHOR(s): Mr. H. E. Weidner; Ms. L. S. Hancock

8. CONTRACT OR GRANT NUMBER(s): N/A

9. PERFORMING ORGANIZATION NAME AND ADDRESS:
US Army Industrial Base Engineering Activity
ATTN: DRXIB-MT
Rock Island, IL 61299

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS: N/A

11. CONTROLLING OFFICE NAME AND ADDRESS:
US Army Industrial Base Engineering Activity
ATTN: DRXIB-MT
Rock Island, IL 61299

12. REPORT DATE: August 1979

13. NUMBER OF PAGES: 166 (12) 143

14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office):
US Army Materiel Development & Readiness Command
ATTN: DRCMT, Office of Manufacturing Technology
5001 Eisenhower Avenue
Alexandria, VA 22333

15. SECURITY CLASS. (of this report): UNCLASSIFIED

15a. DECLASSIFICATION/DOWNGRADING SCHEDULE: N/A

16. DISTRIBUTION STATEMENT (of this Report):
DISTRIBUTION UNLIMITED

DDC RECEIVED OCT 10 1979 E

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report):
DISTRIBUTION UNLIMITED

18. SUPPLEMENTARY NOTES:
N/A

19. KEY WORDS (Continue on reverse side if necessary and identify by block number):
Manufacturing Methods & Technology
MMT

20. ABSTRACT (Continue on reverse side if necessary and identify by block number):
This document is a summary compilation of the Manufacturing Methods and Technology Program Project Status Reports (RCS DRCMT-301) submitted to IBEA from DARCOM major subordinate commands and project managers. Each page of the computerized section lists project number, title, status, funding, and projected completion date. Summary pages give information relating to the overall DARCOM program.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

410713

DEPARTMENT OF THE ARMY
US ARMY INDUSTRIAL BASE ENGINEERING ACTIVITY
ROCK ISLAND, ILLINOIS 61299

07 SEP 1979

DRXIB-MT

SUBJECT: Manufacturing Methods and Technology (MMT) Program Project Status Report, First Half CY79

SEE DISTRIBUTION

1. Reference is made to paragraph 3-8e(1) of AR 700-90, C1, Logistics, Army Industrial Preparedness Program, dated 10 March 1977.

2. This Semiannual Report is a summary compilation of the MMT Program Project Status Reports (RCS DRCMT-301) submitted to IBEA from DARCOM major subordinate commands (MSC) and project managers. The document is used as a management tool for monitoring the progress of MMT projects.

3. The format for this report has been altered to present a more complete view of the program. There are separate sections in the report showing projects that are new, active, and completed. Also, now included is a section on project slippage.

4. Persons who are interested in the details of an individual project should contact the manufacturing technology representative at the MSC. A list of those representatives is included in Appendix III to this report. Project officers for this task were Ms. L. S. Hancock and Mr. H. E. Weidner, Autovon 793-6521.

Accession For
NTIS GRA&I ☑
DDC TAB ☐
Unannounced ☐
Justification
By
Distribution/
Availability Codes
Dist | Avail and/or special
A

James W. Carstens
JAMES W. CARSTENS
Acting Director
Industrial Base Engineering Activity

TABLE OF CONTENTS

	Page
INTRODUCTION	1
DISCUSSION	5
PROJECT SLIPPAGE STUDY	17
PROJECTS ADDED 1st HALF, CY79	21
PROJECTS COMPLETED 1st HALF, CY79	29
SUMMARY PROJECT STATUS REPORTS	39
Test and Evaluation Command	41
Aviation R&D Command	49
Armament R&D Command *Armament Materiel Readiness Command (Ammunition)*	57
Armament R&D Command *Armament Materiel Readiness Command (Weapons)*	89
Mobility Equipment R&D Command	99
Communications R&D Command	105
Electronics R&D Command	109
Army Material and Mechanics Research Center *Materiel Development & Readiness Command*	117
Natick R&D Command	121
Missile Command	125
Tank-Automative R&D Command *Tank-Automotive Materiel Readiness Command*	137
APPENDICES	145
I - Command Identification	147
II - User's Guide	151
III - Army MMT Program Representatives	155
DISTRIBUTION	161

INTRODUCTION

BACKGROUND

The Army Manufacturing Methods and Technology (MMT) Program was established in 1964 as a part of the Army Production Base Support (PBS) Program. The MMT Program has goals of improving existing manufacturing technology, translating new technology into production line processes, and supporting the modernization and expansion of the military hardware production base. Army Regulation 700-90, C1, paragraph 3-6, describes the objectives of the MMT Program as follows:

> To develop, on a timely basis, manufacturing processes, techniques, and equipment for use in production of Army materiel. In achieving this objective, strong consideration will be given to efforts that insure producibility, reduce costs or lead times, relieve critical materiel/materials shortages, enhance safety, provide for abatement of pollutants, improve product quality and reliability, and advance the state-of-the-art in manufacturing methods and equipment.

AUTHORIZATION

This MMT Semiannual Report provides the status summaries of 543 active projects with an authorized cost of $251,012,900. The report is compiled, edited, and published for HQ, DARCOM by the Manufacturing Technology Division of the Army Industrial Base Engineering Activity (IBEA) according to AR 700-90, C1, paragraph 3-8e(1).

Distribution of this report is extended to Army materiel developers and users and to counterparts in the Navy and the Air Force. Inquiries on the detailed technical aspects of any individual project may be answered by the MMT Program representative of the action command under which the project was completed or is being executed. Inquiries or suggestions may also be directed to the Manufacturing Technology Division of IBEA.

COMPOSITION OF THE REPORT

The report is composed of five major sections:

Discussion. A summary of important information that relates to the overall DARCOM program. This section discusses changes in funding and includes data on expenditures of funds.

Projects Added 1st Half, CY79. A list divided by organization of all projects funded during the first half of CY79. Included is a narrative of the problem for each project.

Projects Completed 1st Half, CY79. A list divided by organization of all projects completed during the first half of CY79. Included is a narrative of the final status for each project.

Project Slippage Study. A study of the trends in the timeliness of MMT project execution.

Summary Project Status Report. These reports are divided by organization and include a summary of funding by fiscal year and a narrative status for each project.

PRECEDING PAGE BLANK

MMT PROGRAM

DISCUSSION



PRECEDING PAGE BLANK

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM

This discussion will summarize the overall MMT project reporting and funding status for the 1st half of CY79. The summary includes data from the DARCOM Major Subordinate Commands (MSC) that have active projects and the AMMRC and DARCOM sponsored projects. Cumulative figures are provided relative to the number of projects by fiscal years, and the distribution and expenditures of funds on contract and in-house. Completed projects are not included in this section. They are listed in a separate section on page 29 which gives the final work status for each project that was completed during this reporting period.

A summary of the MMT Program (Figure 1) indicates that the number of active projects has been reduced by 5%. This reduction is caused primarily by the efforts of DARCOM to expedite the closing out of older projects. Numerically, the largest decreases were in Ammunition, Weapons, Aviation, and Missiles. The largest decrease percentage wise both in number and dollars was the CORADCOM Program. This data does not indicate a shrinking program but rather a more timely closing out of the projects. The active project funds at this time are approximately 3.7 times the latest year (FY79) funding.

A breakout of the active projects by fiscal year is shown in Figure 2. The median fiscal year for the active projects is now FY78, a slight increase from the last report period. All of the projects from fiscal years 70, 71 and 72 have now been closed out. Closing out these projects reduced the total span of the active MMT Program from 10 to 7 years. The one remaining FY73 project is nearing completion and should be closed out during the next reporting period. The increased emphasis in closing out the older projects has been effective.

Figure 3 indicates at what rate the project funds are being expended. The information presented is not significantly different than that presented in the previous semiannual report. The percent of contract funds expended is the same. The percent of in-house expenditures is up slightly; however, it should drop back down as the FY80 funds become available. The amount of funds remaining in-house as compared to the contracted amounts is higher than would be expected. The long time delays (approx. 11 mo. avg.) required to put funds out on contract are the cause of the seeming excess of in-house funds. This time delay is a persistent problem.

PRECEDING PAGE BLANK

Accuracy of project information depends on the quality of the project status reports submitted to IBEA from the commands. Efforts were made this period to improve the quality of individual reports. Any report containing significant errors or inadequate description of accomplishments was sent back to the command for correction.

Accuracy also depends on a complete submission of all the project status reports for each command. In June a call letter was mailed out to each MSC. Inclosed with this letter was a computerized listing of the projects for which a semiannual report was required for this reporting period. There were 62 reports, which 7 weeks after the due date, were not submitted. This is a substantial increase over the 18 delinquent reports from the previous reporting period. The main reasons for this increase were an earlier publication date for the compiled Semiannual Report and an apparent lack of a sense of urgency in the submission of the individual reports. The earlier date allows for distribution of this document in a more timely fashion.

There will be a continuing effort to reduce the number of delinquent reports and still publish a timely document. This will provide a more useful review of the progression of the MMT Program.

PRECEDING PAGE BLANK

MMT PROGRAM SUMMARY

Organization	Number of Projects			Funding Status		
	Previous Period	This Period	Percent Change	Previous Period	This Period	Percent Change
TECOM	3	3	0	2,479,000	2,479,800	0
AVRADCOM	77	72	-6	24,844,700	21,343,400	-14
ARRADCOM/ARRCOM (Ammo)	211	201	-5	134,679,800	118,162,700	-12
ARRADCOM/ARRCOM (Weapons)	81	72	-11	13,020,200	12,375,300	-5
MERADCOM	22	20	-9	5,424,000	5,184,000	-4
CORADCOM	12	10	-17	5,782,100	5,052,100	-13
ERADCOM	43	45	+5	22,592,000	24,535,500	+9
AMMRC/DARCOM	12	16	+33	23,152,000	24,236,000	+5
NARADCOM	4	4	0	853,100	853,100	0
MICOM	67	62	-7	24,417,900	24,560,000	+1
TARADCOM/TARCOM	39	38	-3	12,042,000	12,231,000	+2
TOTAL	571	543	-5	269,286,800	251,012,900	-7

Figure 1

PRECEDING PAGE BLANK

ACTIVE PROJECTS BY FISCAL YEAR

Organization	73	74	75	76	7T	77	78	79	TOTAL
TECOM						1	1	1	3
AVRADCOM		3	7	6		11	19	26	72
ARRADCOM/ARRCOM (Ammo)		6	9	27	7	37	54	61	201
ARRADCOM/ARRCOM (Weapons)	1		2	2		23	22	22	72
MERADCOM						2	7	11	20
CORADCOM				5		1	2	2	10
ERADCOM			2	11		16	6	10	45
AMMRC/DARCOM		1	2	2	2	2	4	3	16
NARADCOM		1		2		1			4
MICOM				1		8	30	23	62
TARADCOM/TARCOM				2	1	4	11	20	38
TOTAL	1	11	22	58	10	106	156	179	543

Figure 2

PRECEDING PAGE BLANK

PROGRAM FUNDING EXPENDITURES
(MILLIONS)

Organization	Projects	Authorized Funding	Contractor Amount	Contractor Expended	In-House Remaining	In-House Expended
TECOM	3	$ 2.5	$ 0.1	$ *0.0 (37%)	$ 2.4	$ 1.5 (64%)
AVRADCOM	72	21.3	12.1	3.1 (25%)	9.3	2.7 (28%)
ARRADCOM/ARRCOM (Ammo)	201	118.2	53.7	34.3 (64%)	64.5	28.2 (43%)
ARRADCOM/ARRCOM (Weapons)	72	12.4	4.5	1.7 (37%)	7.9	3.5 (44%)
MERADCOM	20	5.2	2.9	1.8 (62%)	2.3	0.4 (15%)
CORADCOM	10	5.1	3.4	2.6 (76%)	1.7	0.4 (25%)
ERADCOM	45	24.6	18.1	11.2 (61%)	6.4	1.5 (22%)
AMMRC/DARCOM	16	24.2	2.3	0.0 (0%)	21.9	11.5 (52%)
NARADCOM	4	0.9	0.6	*0.6 (92%)	0.2	*0.2 (99%)
MICOM	62	24.6	13.8	7.5 (54%)	10.8	3.0 (27%)
TARADCOM/TARCOM	38	12.2	6.9	1.7 (25%)	5.4	0.9 (16%)
TOTAL	543	$251.2	$118.4	$64.5 (54%)	$132.8	$53.8 (41%)

Figure 3

*All values rounded to one decimal place.

PRECEDING PAGE BLANK

MMT PROGRAM

PROJECT SLIPPAGE STUDY



PRECEDING PAGE BLANK

PROJECT SLIPPAGE STUDY

The purpose of this study is to monitor trends in the timeliness of MMT project execution. Figure 1 is a slippage profile for each Command and for the program as a whole. This is the third time that this figure has been published with the data now covering a period of approximately 1½ years. In no case have the "Totals (DARCOM Wide)" for the program varied more than 2 percentage points from the current situation (the "no data" and "0 mo" columns are combined). A staff study published by IBEA in 1975 indicated similar results; therefore, it would appear that the current situation has prevailed for at least 4 years. It would seem that the previous efforts to control and reduce project slippage have been ineffective.

IBEA is presently generating a more detailed analysis of the MMT program project execution phase. A preliminary conclusion is that the time delay in awarding a contract may be significant contributor to project slippage. The milestone charts in a P-16 will typically indicate a 2 to 4 month period for contract award. The actual time required to award a contract averages 10.5 months with a mode (most frequent value) of 9 months. This factor alone would account for 5 months or more of the reported slippage. Ninety percent of the contract award times lie between 2½ months and 24½ months. Fifty percent of the contract award times lie between 5½ months and 13½ months. A reduction of 5 months in the slippage profile could be attained in the future if the contract award milestone was realistically increased to 9 months for projects in the funding cycle.

PROJECT SLIPPAGE STUDY *

Command	Active Projects	Active Projects in Each Slippage Interval (Months)						
		No Data	0 mo	1-6	7-12	13-18	19-24	25+
AMMRC	9	33%	22%			11%	11%	22%
ARRADCOM/ARRCOM (Ammo)	203	16	26	13%	10%	13	6	15
ARRADCOM/ARRCOM (Weapons)	75	16	19	15	21	8	9	12
AVRADCOM	77	32	17	14	5	6	9	16
DARCOM	7	14	29	29		14		14
CORADCOM/ERADCOM	57	4	19	19	23	21	5	9
MERADCOM	20	15	65	5	10			5
MICOM	70	6	63	7	10	10	3	1
NARADCOM	4				25			75
TARADCOM/TARCOM	39	36	41	10	5	3	3	3
TECOM	3		67		33			
TOTALS (DARCOM WIDE)	563	17	30	13	12	10	6	12
Previous Period Totals	594	23	26	11	12	12	6	11

Figure 1 - Slippage Profile

*Reflects data from status reports received as of 8 Aug 79.

MMT PROGRAM

PROJECTS ADDED 1st HALF, CY79



PRECEDING PAGE BLANK

PROJECTS ADDED IN FIRST HALF, CY79

MERADCOM

E 79 3592
IMPROVED GRAPHITE REINFORCEMENT-PHASE 3

LOW IMPACT STRENGTH OF GRAPHITE FIBERS IS DUE TO THE COMBINATION OF THEIR HIGH MODULUS AND AVERAGE TENSILE STRENGTH.

E 79 3761
DIMPLE PLATE SANDWICH PANEL,WEB,BRIDGING FOR THE 1980'S

HOW TO STABILIZE THIN SHEETS OF ALUMINUM TO CARRY HIGH SHEAR STRESSES WITHOUT BUCKLING.

ERADCOM

H 79 3504
ADV METH F/FABR CHALCOGENIDE GL IR LENS BKS

PRESENT COMMON MODULE IR IMAGERS USED WITH THE ARMY FIRE CONTROL SYSTEM REQUIRE ABERRATION CORRECTING LENS ELEMENTS. THERE IS NO SUBSTITUTE FOR TEXAS INSTR. PROPREITARY 1173 IR GLASS EXCEPT FOR THE NEWLY DEVELOPED AMTIR-1.

H 79 3516
CRYOGENIC COOLER HYBRID MOTOR CIRCUIT

AT PRESENT THE MAN PORTABLE SYSTEMS ARE USING CLOSED CYCLE COOLING TO COOL SENSORS. THESE COOLERS USE DC BRUSHLESS MOTORS COMMUTATED BY HYBRID ELECTRONIC CIRCUITS. THE CIRCUIT IS SMALL AND EFFICIENT BUT IS EXPENSIVE DUE TO ITS COMPONENT DENSITY.

H 79 5000
PRODUCTION HOT FORGING OF ALKALI HALIDE LENSES

THE COST OF GERMANIUM OPTICS USED IN FIR SYSTEMS IS EXPENSIVE. UNDER DARPA SPONSORSHIP IN FY 79 AND FY80, FIR LENSES WILL BE FABRICATED IN THE LAB BY FORGING TO FIGURE OF SALTS. THIS FORGING PROCESS MUST BE TRANSFERRED TO A PDN LINE OPERATION.

H 79 5042
LARGE DIAMETER ND

EXISTING MANUFACTURING PROCEDURES FOR HIGH VOLTAGE POWER SUPPLIES FOR IMAGE TUBES ARE INADEQUATE TO ACHIEVE LOW PRODUCTION UNIT COST WITH HIGH PERFORMANCE AND RELIABILITY.

M 79 9838
MINIATURE CATHODE RAY TUBES

PRESENT MINIATURE CRT'S ARE TOO EXPENSIVE AND DO NOT HAVE IMAGE QUALITY TO ALLOW FOR MISSION REQUIREMENTS, THERE ARE NO SOURCES FOR THE REQUIRED TUBES IN DESIRED QUANTITIES.

AMMRC

M 78 6390
PROGRAM IMPLEMENTATION AND INFORMATION TRANSFER

THE SUCCESS OF THE MMT PROGRAM IS VERY DEPENDENT ON WHETHER THE RESULTS OF MMT WORK GET IMPLEMENTED, THIS IN TURN IS DEPENDENT ON WHETHER INFORMATION CONCERNING THE MMT TECHNOLOGY IS MADE AVAILABLE AND USED BY CONCERNED PARTIES.

M 79 6390
PROGRAM IMPLEMENTATION AND INFORMATION TRANSFER

THE SUCCESS OF THE MMT PROGRAM IS VERY DEPENDENT ON WHETHER THE RESULTS OF MMT WORK GET IMPLEMENTED, THIS IN TURN IS DEPENDENT ON WHETHER INFORMATION CONCERNING THE MMT TECHNOLOGY IS MADE AVAILABLE AND USED BY CONCERNED PARTIES.

MICOM

R 79 1041
LSI FABRICATION METHODOLOGY IMPROVEMENT

THE YIELD OF CUSTOM DESIGNED LARGE SCALE INTEGRATED CIRCUITS FOR COPPERHEAD IS LOW (1-2%) BECAUSE OF MASK MANUFACTURE AND ALIGNMENT PROBLEMS, AND SEMICONDUCTOR DIFFUSION MATERIALS AND PROCESS CONTROL PROBLEMS.

R 79 3204
INTERNAL SHEAR FORMING OF MISSILE STRUCTURES

EACH SECTION OF THE PRIMARY STRUCTURE OF THE PERSHING MISSILE CONTAINS INTERMEDIATE STIFFENING RINGS, AND SPLICE RINGS ON EACH END. THE SPLICE RINGS ARE MACHINED TO DIMENSIONS REQUIRED FOR WELDING AND THEN FINISH MACHINED.

R 79 3287
PRODUCTION METHODS FOR LOW COST STRIP LAMINATE MOTOR CASES

CURRENT MANUFACTURING PROCESSES FOR ROCKET MOTORS ARE EXPENSIVE AND SLOW.

PROJECTS ADDED IN FIRST HALF, CY79
(CONTINUED)

TARADCOM

T 79 6038
HIGH DEPOSITION WELDING

WELDING IS LABOR INTENSIVE AND HIGH COST IT IS A MAJOR COST DRIVER IN ARMOR VEHICLE MANUFACTURE.

AVRADCOM

1 79 7298
HIGH TEMPERATURE VACUUM CARBURIZING

PRESENT GEAR CARBURIZING IS PERFORMED AT 1700 DEG F (PER MIL-S-6090 WHICH REQUIRES PROCESSING TIMES OF 8-10 HOURS.

1 79 7339
FILAMENT WOUND COMPOSITE FLEXBEAM TAIL ROTOR

FILAMENT WINDING FROM A SOLID FLEXBEAM TO AN OPEN SPAR SECTION, WINDING TO NET SHAPE, IMPROVED RESIN CONTROL AND TOLERANCE CONTROL MUST BE OBTAINED TO ENHANCE THE COST EFFECTIVENESS OF FLEXBEAM TAIL ROTERS.

ARRADCOM-ARRCOM (AMMO)

5 79 1318
CHEMICAL PRODUCTION FILL, CLOSE AND LAP FOR 8 IN XM736 PROJ

THE QL PROCESS FOR VX BINARY MFG RESULTS IN LARGE QUANTITIES OF WASTE, AND ORGANIC PHOSPHOROUS COMPOUNDS. PRIOR PROCEDURES FOR DISPOSAL (DEEP WELL) ARE NO LONGER ACCEPTABLE. NEW TECHNIQUES ARE REQUIRED.

5 79 1403
IMPROVED PROC/SUBSTITUTION OF NONTOXIC DYES-M18 SMK GRENADES

CURRENT DYE MIXES USED IN YELLOW AND GREEN SMOKE MUNITIONS ARE KNOWN TO BE TOXIC AND ARE SUSPECT CARCINOGENS.

5 79 1903
DIE CAST TAILCONE + DESIGN MACHINE FOR BLU-96/B

CURRENT ROLL FORMING EQUIPMENT IS LIMITED TO SIX FEET. BLU-96/B SKIN IS TEN FEET AND IS GROOVED. LIMITED EXPERIENCE EXISTS IN BUILDING A DIE FOR THE BLU-96/B TAILCONE WHICH IS 26 INCHES IN DIAMETER AND WEIGHS IN EXCESS OF 70 LBS.

PROJECTS ADDED IN FIRST HALF, CY79
(CONTINUED)

5 79 1905
PBX CONTINUOUS CASTING FOR MUNITIONS LOADING

ADDED USE OF CASTABLE PLASTIC BONDED EXPLOSIVES WILL CREATE PRODUCTION SHORTFALLS. MOST PBX CAN NOT BE USED IN PRESENT MELT / CAST EQUIPMENT. PBX PRODUCTION IS NOW DONE AT 2 NAVY PLANTS WHICH COULD NOT HANDLE LOADING OF CASTABLE PBX IN BOMBS.

5 79 4059
OPTIMIZATION - NITROGUANADINE IN M30 PROPELLANT

NITROGUANIDINE PRODUCED ON THE NEW LINE AT SUNFLOWER AAP IS EXPECTED TO HAVE A DIFFERENT PARTICLE SIZE DISTRIBUTION THAN THAT OF PREVIOUS SUPPLIER. THIS MAY CREATE PROCESSING PROBLEMS IN THE NEW CONTINUOUS AUTOMATED MULTI-BASE LINE (CAMBL) PROCESS.

5 79 4137
AUTOMATED LOADING OF CENTER CORE IGNITERS

LOADING OF THE LONG SLENDER CLOTH BAG IS AN AREA WHICH REQUIRES HIGH LABOR COSTS AND SUBJECTS A LARGE NUMBER OF PERSONNEL TO HAZARDOUS OPERATIONS.

5 79 4139
APPL OF RADAR TO BALLIST ACC TESTG OF AMMO-ARBAT

PRESENT RADARS IN USE AT THE PROVING GROUNDS HAVE LIMITED CAPABILITY, ARE ADAPTATIONS OF TACTICAL SYSTEM AND LACK REAL TIME DATA PROCESSING CAPABILITY.

5 79 4163
CONTROLLED PROD LOADING SYS F/105MM HEAT-T M456A1

PRESENT LOADING PROCESS FOR 105MM, HEAT AMMUNITION RESULTS IN A REJECT RATE OF FROM 50 TO 60 PERCENT.

5 79 4189
HIGH FRAGMENTATION STEEL PRODUCTION PROCESS

THE CURRENT PRODUCTION PROCESS FOR MANUFACTURING HF1 PROJECTILES IS EXTREMELY EXPENSIVE. PROPRIETARY PRODUCTION PROCESSES DEVELOPED BY PRIVATE INDUSTRY ARE NOT AVAILABLE.

5 79 4194
IMPROVED PROCESS F/PRESSING LX-14 EXPL CHARGES

PRESENT PROCESS FOR PRESSING LX-14 IS SLOW AND REQUIRES NUMEROUS OPERATIONS WHICH ARE COSTLY.

PROJECTS ADDED IN FIRST HALF, CY79
(CONTINUED)

5 79 4225
RED WATER POLLUTION ABATEMENT SYSTEM

RED WATER PRODUCED IN VOLUME FROM THE PURIFICATION OF TNT IS A POLLUTANT FOR WHICH A SATISFACTORY DISPOSAL METHOD DOES NOT EXIST.

5 79 4263
AUTO PILOT LINE F/CONT COOL AND PROC OF HE LD PROJ

THE OPERATIONAL/TESTING PHASE OF THE CONTROLLED COOLING PILOT PLANT MUST BE CONDUCTED TO VERIFY EQUIPMENT CRITERIA AND DESIGNS PREVIOUSLY FURNISHED AND CURRENTLY BEING UTILIZED IN THE DESIGN OF FULL-SCALE PRODUCTION FACILITIES.

5 79 4305
PDN TECH FOR IMPROVED WP 155MM SMOKE MUNITION (XM825)

PRODUCTION REQUIREMENT FOR 155MM WP XM825 HAS BEEN ESTABLISHED IN FY84 AND FY85 AND NO PRODUCTION FACILITY IS CURRENTLY AVAILABLE.

5 79 4309
PROCESS DEVELOPMENT FOR 120MM TANK AMMUNITION

MASS PRODUCTION IN THE US OF W. GERMAN 120MM TANK AMMUNITION POSES PROBLEMS IN FOUR FUNCTIONAL AREAS - METAL PARTS, PROPELLANT, FUZE, AND LAP.

5 79 4322
MMT DESIGN/CHAR OF ELEC CONT SYST FOR PROD FAC

UNCERTAINTY OF THE EFFECT OF LONG TERM STORAGE DURING PLANT LAYAWAY ON ELECTRONIC CONTROL SYSTEMS AND THE ASSOCIATED IMPACT ON PRODUCTION BASE LEAD TIME.

5 79 4332
IMPROVEMENTS FOR POTTING ELECTRONIC ASSEMBLY FOR GATOR

CURRENT METHODS INVOLVE MANY INDIVIDUAL HAND OPERATIONS WITH LOW YIELD. FACILITY WILL BE EXPENSIVE TO PROCURE AND TO PROVE OUT CONTINUOUS PROCESS TO SATISFY PRODUCTION REQUIREMENTS.

5 79 4335
ALTERNATIVE PROC F/TITANIUM GYROSCOPE COMPONENTS-COPPERHEAD

CONTEMPLATED PRODUCTION METHODS ARE COSTLY AND REMAIN ESSENTIALLY UNCHANGED FROM THOSE USED TO PRODUCE COMPONENTS FOR THE ENGINEERING DEVELOPMENT VERSION.

PROJECTS ADDED IN FIRST HALF, CY79
(CONTINUED)

5 79 4341
IMPROVED NITROCELLULOSE PURIFICATION PROCESS

EXISTING NITROCELLULOSE PURIFICATION FACILITIES WERE BUILT IN EARLY 1940'S AND ARE IN DETERIORATED CONDITION. THE PROCESS USED DATES BACK TO WW1 AND CONSUMES LARGE QUANTITIES OF ENERGY AND WATER.

5 79 6553
ADAPT ACOUSTIC ANALYSIS/INSPECT WELDED OVERLAY BANDS-ARTYSHL

PREVIOUS PRODUCTION LINE TESTS WERE OF DEFICIENCIES AND THE SYSTEM COULD NOT BE APPROVED FOR FINAL ACCEPTANCE.

5 79 6738
USE OF ULTRA-HI SURFACE SPEEDS F/METAL REMOVAL, ARTY SHELL

DUE TO THE LOW METAL REMOVAL RATES OF THE CURRENT CONVENTIONAL MACHINING OPERATIONS, A GREATER NUMBER OF MACHINES ARE REQUIRED TO PRODUCE ARTILLERY PROJECTILES.

ARRADCOM-ARRCOM (WPNS)

6 77 7753
NOISE SUPPRESSOR FOR POWDER TYPE RECOIL MECHANISM TESTING MA

THE NOISE PRODUCED BY THE POWDER GYMNASTICATORS EXCEEDS THE LEVELS ALLOWED BY THE ILLINOIS STATE REGULATIONS.

TOTAL PROJECTS ADDED IN FIRST HALF, CY79 36

MMT PROGRAM

PROJECTS COMPLETED 1st HALF, CY79



PRECEDING PAGE BLANK

PROJECTS COMPLETED IN FIRST HALF, CY79

MERADCOM

E 78 3588
SLUFAE MINE NEUTRALIZER LAUNCHER

A TEMPER TECHNIQUE WAS DEVELOPED THAT PRODUCES LGE DIA, THIN WALL TUBES THAT ARE DIMENSIONALLY STABLE AND CAN MEET BURST STRENGTH PRESSURES OF 500 PSI WITHOUT ADDITIONAL HEAT TREATMENT. ALTERNATE TUBE CUTTING METHODS AND PACKAGING WERE INVESTIGATED.

7 76 5504
PRODUCTION OF PHOSPHAZENE ELASTOMERS

PHOSPHAZINE FUEL HOSES WERE PREPARED AND TESTED. ALTHOUGH PDT SHOWED SOME SUPERIOR QUALITIES, LACK OF SUSTAINED COLD TEMPS AND SOME CONTAMINATION LIMITED SCOPE OF ARCTIC TESTING. MERADCOM PLNG FURTHER SEPARATE TESTING DURING WINTER 80-81.

CORADCOM

2 72 9025
TEMPERATURE COMPENSATED MICROCIRCUIT CRYSTAL OSCILLATORS

CONTRACT WITH CTS KNIGHTS WAS TERMINATED WITH A NO-COST SETTLEMENT. CONTRACTOR'S TECHNICAL AND ADM. PROBLEMS WILL NOT BE SOLVED IN A REASONABLE TIME. CERAMIC PACKAGED CRYSTALS AND AUTOMATED HYBRID CIRCUIT TECHNIQUES WILL OBSOLETE THIS CRYSTAL AND CKT

ERADCOM

H 76 3126
WHITE STARTER FOR THERMAL BATTERIES

EPI HAS DEVELOPED THE CAPABILITIES, METHODS, PROCESSES, SPECIALIZED TOOLING, AND SPECIALIZED EQUIPMENT REQUIRED TO MAKE THE WHITE STARTER. ALL PRODUCTION METHODS ARE COMPATIBLE WITH THE DESIGN PRODUCTION RATE OF 100,000 UNITS PER MONTH.

2 75 9739
PHOTOLITHOGRAPHIC TECHNIQUES FOR SURFACE WAVE ACOUSTICS

HUGHES USED PHOTOLITHOGRAPHIC TECHNIQUES WITH VERY THIN FLEXIBLE GLASS MASKS TO PRODUCE SURFACE ACOUSTIC WAVE DEVICES. REPRODUCIBILITY AND SAVINGS ARE GOOD. COST WAS CUT 90% OVER LAB COST. WORK COMPLETE EXCEPT FOR FINAL REPORT. FOR TPQ-36-37, PLRS.

PROJECTS COMPLETED IN FIRST HALF, CY79
(CONTINUED)

H 78 9871
AUTO PRODUCTION OF MILITARY INTEGRATED CIRCUITS

THE PROJECT WAS CANCELLED AND FUNDS WERE APPLIED AS FOLLOWS- $500K TO H789738, $250K TO H789889, AND $700K TO MIRADCOM FOR R781041. THE MIRADCOM PROJECT IS WITH MARTIN MARIETTA FOR CLGP, WITH A SUBCONTRACT TO HARRIS SEMICONDUCTOR FOR LSI WORK.

MICOM

3 76 3073
MANUFACTURING TECHNIQUES FOR STATIC SWITCHES (CAM)

FMC DEVELOPED LOW COST PRODUCTION PROCESSES FOR STATIC SWITCHES (INTERVALOMETERS). SWITCHES WITH HYBRID MICROCIRCUITS WERE ENCAPSULATED AND FUNCTIONALLY TESTED SUCCESSFULLY WITH LIVE SQUIBES. FINAL REPORT AND ALL DOCUMENTATION HAS BEEN DELIVERED.

R 77 3133
LITHIUM FERRITE PHASE SHIFTER FOR PHASED ARRAY RADAR

RAYTHEON OPTIMIZED LI-TI-FERRITE COMPOSITION + ESTABLISHED FIRING,FORMING AND EVAL TECHNIQUES. SOLVED PROBLEMS WITH COFIRING AND MAINTAINING CENTER HOLE STRAIGHTNESS IN TOROIDAL PHASE SHIFTERS. WORK SET THE STAGE FOR SECOND YEAR PROGRAM.

R 77 3168
PRODUCTION OF CIRCUIT BOARD HEAT PIPE

HUGHES MET ALL GOALS FOR PRODUCING INTEGRATED HEAT PIPES FOR CIRCUIT CARDS. PROCESSES INCLUDE STAMPING TO FORM THE BRASS HEAT PIPE SHELL, FURNACE BRAZING FOR OPTIMUM SHELL SEALING, SINTERING METAL WICKS AND FILLING WITH ACETONE.

R 77 3217
AUTOMATED PRODUCTION METHODS FOR TRAVELING WAVE TUBES

LITTON DEVELOPED LOW COST PROCESSES FOR PRODUCING PATRIOT TWTS. FAST WARM-UP CATHODE PROBLEMS WERE SOLVED BY ADDING .018 IN SKIRT TO CATHODE BUTTON. NEW CATHODES WERE INSTALLED IN 2 TWTS WHICH SUCCESSFULLY PASSED PRE-ACCEPTANCE TESTING. SEE BELOW.

3 76 3231
METHODS FOR THE PRODUCTION OF SQUEEZE CASTINGS

SQUEEZE CASTINGS FOR 2 COMPONENTS WERE MADE AND EVALUATED. THE PREFORMS PROVED DEFECTIVE DUE TO SLIGHT SURFACE AND SUBSTRATE IMPERFECTIONS. THE 2ND PHASE OF THE CONTRACT WAS CANCELLED.

3 77 3232
COMPUTERIZED PRODUCTION PROCESS PLANNING

THIS PROJECT IS COMPLETE. WORK ON THE COST DRIVER ANALYSIS IS CONTINUING. EXTENSIVE EVALUATION AND ANALYSIS OF DATA GATHERED WILL RESULT IN THE FORMULATION OF THE COST DRIVERS BASE-LINE AND FORMAT.

R 78 3441
APPLICATION OF HIGH ENERGY LASER MANUFACTURING PROCESSES

THIS PROJECT IS COMPLETE. WORK IS BEING CONTINUED UNDER R 79 3441.

TARADCOM

T 77 4557
PROD METHOD FOR HI EFFICIENCY JOINING OF ESR ARMOR-PHASE 2

OPTIMUM WELDING PROCEDURES WERE EVOLVED AND BALLISTIC TEST SAMPLES WERE PREPARED AND TESTED. THIS PROJECT HAS SHOWN THAT THE TYPES OF ESR STEEL TESTED ARE NOT READILY WELDABLE AND ALSO UNSUITABLE FOR ARMOR DUE TO BEING EXTREMELY BRITTLE.

T 78 5064
LIGHT WEIGHT SADDLE TANK

PROCUREMENT PACKAGE COMPILED AND CONTRACT AWARDED. FUEL TANKS FABRICATED, TESTED BY CONTRACTOR AND SHIPPED TO TARADCOM. PLASTIC TANKS WEIGHT LESS THAN ONE-THIRD OF EXISTING METAL FUEL TANKS.

AVRADCOM

1 71 6050
AUTOMATED TAPE LAYUP SYSTEM (ATLAS)

WORK HAS BEEN COMPLETED. THE 5 AXIS NC TAPE LAYUP MACHINE DEVELOPED IN THIS PROJECT ESTABLISHED OPERATING PARAMETERS, MACHINE DESIGN, ENGINEERING SPECS, AND MACHINE REQUIREMENTS. FINAL TECH REPORTS HAVE BEEN ISSUED.

PROJECTS COMPLETED IN FIRST HALF, CY79
(CONTINUED)

1 73 6673
PRECISION FORGING OF SPIRAL BEVEL GEARS

THE TRW, INC. CONTRACT HAS NOT BEEN CLOSED OUT YET. THE FINAL AUDIT IS ON-GOING PURSUANT TO THIS CLOSE OUT.

1 77 7046
PRECISION CAST TITANIUM COMPRESSOR CASING

PROJECT IS COMPLETE. COST SAVINGS ON THE ORDER OF 650 DOLLARS PER ENGINE ARE ESTIMATED.

1 76 7054
DIFFUSION BOND TITANIUM SPAR FABRICATION

THE CONTRACTOR HAS COMPLETED ALL WORK. RESULTS ARE AVAILABLE IN THE FINAL REPORT.

1 77 7103
IMPROVED MFG-BLISK/ IMPELLER TURBINE ENGINE COMPRESSOR PARTS

PROJECT IS COMPLETE. PROJECT HAS BEEN IMPLEMENTED.

1 75 8148
PROCESSING ADVANCED GEAR MATERIALS

PROJECT IS COMPLETE. WORK IS BEING CARRIED OUT UNDER 1 76 8148.

ARRADCOM-ARRCOM (AMMO)

5 7T 1264
SUPPRESSIVE SHIELD OF HAZARDOUS PRODUCTS + SUPPORT OPERATION

TASKS COMPLETED: APPLED TECHNOLOGY, SUPPORT ENGINEERING, OPERATIONAL APPLICATIONS AND PREP OF ENG. DESIGN HANDBOOK

5 76 1264
SUPPRESSIVE SHIELD OF HAZARDOUS PRODUCTS + SUPPORT OPERATION

SITE SURVEYS COMPLETED FOR SEVEN AAPS. SEVEN GROUPS OF SHIELDS HAVE BEEN DEFINED TO FACILITATE SELECTION OF A TYPE FOR A SPECIFIC JOB.

5 77 3127
MINIATURE BEARINGS + SHAFT MFG FOR THE XM734 FUZE.

THE CONTRACTUAL EFFORT TO PROVIDE A PROCESS AND A PILOT FACILITY FOR MFR OF THE P5602 TURBOALTERNATOR FOR THE XM734 FUZE WAS COMPLETED DURING THIS PERIOD. ALL MMT EQUIP WAS ACCEPTED BY THE CONTRACTOR FOR THE IPF ON AN AS-IS BASIS.

PROJECTS COMPLETED IN FIRST HALF, CY79
(CONTINUED)

5 76 4013
CONTINUOUS NC MFG BY THE MAG NITRATE PROCESS

THE PILOT PLANT PROTECTIVE WORK AND THE FINAL TECHNICAL REPORT WERE COMPLETED.

5 76 4041
AUTO EQUIP FOR ASSY OF MORTAR COMPONENTS

ALL PHASE I EQUIPMENT DESIGN WORK ON THE PROTOTYPE LINE WAS COMPLETED. THE POWDER WEIGH AND FILL STATION BUILD, INCLUDING CONTROLS INSTALLATION, HAS BEEN COMPLETED. THE ESTABLISHMENT OF LEAK DEFECT STANDARDS HAS BEEN INITIATED.

5 76 4105
AUTO INCREMENT L/A OF PROP CHARGE W/CENTRAL CORE IGNITERS

COMPLETION OF THE ASSEMBLY MODULE, COMPLETION OF LOADING MODULE TOOLING, AND TESTING OF BOTH MODULES WAS ACCOMPLISHED. RATES COULD NOT BE MET AT THE TACK SEWING STATION. A RESOLUTION IS IN PROCESS TO COMPLETE THIS EFFORT.

5 73 4114
METHODS TO MINIMIZE ENVIRONMENTAL CONTAMINATION

THE FINAL STATUS REPORT WAS RECEIVED, A SUMMARY REPORT WILL BE PREPARED.

5 74 4114
METHODS TO MINIMIZE ENVIRONMENTAL CONTAMINATION

THE FINAL STATUS REPORT WAS RECEIVED, A SUMMARY REPORT WILL BE PREPARED.

5 70 4147
COMPUTER CONTROL APPLICATION TO CONTINUOUS TNT MANUFACTURE

A PROTOTYPE DIRECT DIGITAL CONTROL (DDC) SYSTEM WAS DESIGNED FOR A SINGLE TNT LINE AND INSTALLED AND EVALUATED AT VAAP. THE SYSTEM PROMISES BETTER PROCESS CONTROL, IMPROVED SAFETY, AND LOWER OPERATING COST.

5 78 4163
CONTROLLED PRODUCTION LOADING F/105 MM HEAT M456

THE TECHNIQUES, EQUIPMENT MODIFICATIONS, LOADING PRUCEDURES USED AND PROCESS CONTROLS APPLIED DID PROVIDE EVIDENCE THAT CRACK FREE CASTS ARE POSSIBLE WITH PROPER METAL PARTS TEMPERATURES AND SLOW CONTROLLED COOLING. PROJECT COMPLETED.

PROJECTS COMPLETED IN FIRST HALF, CY79
(CONTINUED)

5 76 4211
MOD OF PROCESS CONTROL OF EXPLOSIVE COMPOSITIONS

CONCEPTS FOR A NON-CONTACT TYPE MOLTEN EXPLOSIVES FLOW MEASUREMENT SYSTEM WERE INVESTIGATED. PLANS FOR AWARD OF CONTRACT FOR ADDITIONAL WORK ON CONCEPT WERE SUSPENDED. A PROTO MOLTEN EXPLOSIVE LEVEL SENSOR AND CONTROL SYS WAS TESTED AND DEBUGGED.

5 77 4237
CONTINUOUS TNT PROCESS ENGINEERING

THE EQUIPMENT AND PIPING FOR THE TNT PILOT PLANT WERE INSTALLED IN CONJUNCTION WITH THE INSTALLATION OF A SOMEWHAT SMALLER SCALE RDX/HMX PILOT PLANT.

5 77 4249
SEPARATION OF EXPLOSIVES FROM SPENT ACID/WATER SLURRIES

BUILDING MODIFICATIONS WERE MADE IN PREPARATION FOR THE BIRD PANNEVIS FILTER. PURCHASE ORDERS WERE ISSUED FOR A CENTRIFUGAL BLOWER, SS VACUUM PUMP SCRUBBER AND TWO SEPARATOR VESSELS.

5 75 4252
IMPROVE PRESENT PROCESSES FOR THE MANUFACTURE OF RDX + HMX

WORK EFFORT IS COMPLETE. RESULTS INDICATE ACETIC ANHYDRIDE CAN BE REDUCED BY 46 PERCENT WITH INCREASE IN HMX YIELD. FILTRATION PROBLEMS WITH HMX RESOLVED BY INCREASED SLURRY TEMP. PILOT PLANT COMPLETED FOR 5 TO 10 LB BATCH RDX HMX PRODUCTION.

5 77 4285
TNT EQUIVALENCY TESTING FOR SAFETY ENGINEERING

BLAST CHARACTERISTICS OF VARIOUS EXPLOSIVES AND PROPELLANTS WERE DETERMINED. TNT EQUIVALENCIES WERE CALCULATED AND FINAL REPORTS PREPARED ON M26E1 PROPELLANT AND CHEMICAL MIXTURES AT TNT FACILITIES.

5 76 4285
TNT EQUIVALENCY TESTING FOR SAFETY ENGINEERING

PRESSURE AND IMPULSE DATA WAS ESTABLISHED FOR A VARIETY OF EXPLOSIVE AND PROPELLANT COMPOSITIONS. TNT EQUIVALENCIES WERE OBTAINED WITH THIS DATA. FINAL REPORTS WERE PREPARED ON BS-NACO PROP, COMP A5, M10 PROP AND M30A1 PROP.

PROJECTS COMPLETED IN FIRST HALF, CY79
(CONTINUED)

5 77 4288
EXPLOSIVE SAFE SEPARATION AND SENSITIVITY CRITERIA

SAFE DISTANCE TESTS AND FINAL REPORTS HAVE BEEN COMPLETED FOR- PROJECT TITLES, 155MM M549, 8 INCH 106, CRUS, EXPLOSIVE COMPOSITIONS, A5 1016S, A7 165 16S, AND B RISER SCRAP. SOME REPORTS HAVE BEEN PUBLISHED.

5 77 4289
HAZARD CLASSIFICATION OF PROPELLANTS AND EXPLOSIVES

TESTS WITH M30 MULTI-PERF PROP IN HEAVY WALLED DRYER WERE COMPLETED. ALL TESTS INDICATED A BURNING REACTION. BASED ON RESULTS 1500 LBS OF M30 PROP SHOULD BE CLASS 1.2 OR 1.3 BURNING ONLY. THIS EFFORT IS COMPLETE.

5 76 4289
HAZARD CLASSIFICATION OF PROPELLANTS AND EXPLOSIVES

REPORTS WERE COMPLETED ON HAZARDS TEST DATA FOR PROPS AND A PROCEDURE FOR HAZARDS CLASSIF OF EXPL AND PROPS. DUST EXP SENSITIVITY OF M1, M30, COMP B AND HMX WERE IN ORDER OF DECREASING SENSITIVITY.

5 77 4341
IMPROVED NITROCELLULOSE PURIFICATION PROCESS

A MARKET SURVEY WAS CONDUCTED TO FIND A MFGR OF PRESSURIZED, CONTINUOUS DIGESTION EQUIPMENT. THE ONLY EQUIPMENT THAT MET THE SAFETY STNDS WAS THE CONICELL UNIT MFGD BY MOSER PROCESSING. BENCH SCALE STDY RESULTS OF COMBINED ACID BOIL/POACH WERE POOR.

5 77 4462
MODERNIZED FAD FOR MULTI-BASE PROPELLANTS

A PRELIMINARY DESIGN CONCEPT FOR MODIFYING ONE BAY OF A FAD FOR IMPROVED PROPELLANT DRYING WAS COMPLETED. EXTENSIVE BENCH SCALE TESTING FOR REMOVAL AND DECOMPOSITION OF NG VAPOR FROM EXHAUST AIR WAS COMPLETED.

5 77 4481
PYROLYSIS OF ARMY AMMUNITION PLANT SOLID WASTE

A FINAL TECH RPT "ENERGY RECVRY F/ AAP SOLID WASTE BY PYROLOSIS" WAS PUBLISHED. A TRW STUDY SHOWED THAT DUE TO THE RELATIVELY SMALL SIZE OF THE PLANT (50 TPD) REQUIRED TO HANDLE AAP WASTES, PROCESS ECONOMICS WERE NOT FAVORABLE. OTHER REC WERE MADE.

PROJECTS COMPLETED IN FIRST HALF, CY79
(CONTINUED)

5 76 6642
INERTIA WELDED ROTATING BANDS FOR PROJECTILE BODIES.

THIS PROJECT HAS ESTABLISHED THE CAPABILITY OF INERTIA WELDING THE BAND TO BODY OF THE 155MM M483 PROJECTILE. FURTHER WORK WILL BE REQUIRED UNDER PROJECTS MMT 5784153 AND MMT 5786725 PRIOR TO IN-FACILITY IMPLEMENTATION OF PROJECT RESULTS.

ARRADCOM-ARRCOM (WPNS)

6 75 7248
IMPROVED MFG CONTRL THROUGH DATA AUTOMATION-CAM RELATED.

THIS EFFORT IS COMPLETED. AN AUTOMATED PRODUCTION CONTROL SYSTEM HAS BEEN INSTALLED AND IMPLEMENTED AT WATERVLIET ARSENAL. AN ON-LINE SYSTEM WAS INSTALLED WHICH PERMITS MASTER SCHEDULING ACTIVITIES WITH SIMULATION. TECHNICAL REPORT IS BEING PREPARED.

6 74 7332
MFG DATA FOR OPT ELEMENTS, TOOLS + MATERIALS-CAM RELATED

THE OPTICAL MANUFACTURING DATA-DATA BASE SYSTEM CONSISTS OF MASTER DATA SETS AND DETAIL DATA SETS LINKED VIA KEYED DATA. DATA SETS EXIST FOR OPTICAL ELEMENTS, PROCESSING EQUIPMENT AND TOOLING, INSPECTION AND TEST AND PROCESS PLANS. DATA IS ACCESSIBLE

6 75 7419
RECIPROCATING SCREW MOLDING OF THERMOSETTING PLASTIC

MODIFICATIONS WERE MADE TO THE INJECTION MOLDING MACHINE TO IMPROVE ITS PERFORMANCE. PROCESSING STUDIES WERE CONTINUED AND THERMOSETTING PLASTIC ITEMS WERE SUCCESSFULLY MOLDED. FIFTY SETS OF HANDGUARDS WERE SUBMITTED FOR FIELD TESTING. PROJ COMPLETE.

6 75 7430
FIRE CONTROL MANUFACTURE MODERNIZATION PLAN

GROUP TECHNOLOGY WAS APPLIED TO GLASS AND METAL FIRE CONTROL COMPONENTS MADE AT FRANKFORD ARSENAL. THE MICLASS SYSTEM WAS USED TO CODE EACH PART USING 12 DIGITS FOR EACH ITEM. RESULTS ARE USED IN PROJECT 6 79 7963.

PROJECTS COMPLETED IN FIRST HALF, CY79
(CONTINUED)

6 77 7614
APPLICATION OF RAPID PLATING BY ABRASIVE PARTICLE FLOW

PROJECT IS COMPLETE. PROJECT WAS TECHNICALLY UNSUCCESSFUL.

6 77 7649
COMPUTERIZED POWDER METALLURGY FORGING DESIGN-CAM

A MORE SOPHISTICATED GRAPHICS PROGRAM WAS DEVELOPED TO GIVE PRESSURE AND DENSITY DISTRIBUTIONS AND SPECIMEN SHAPES AT VARIOUS STAGES AND DIRECTIONS OF FORGING.

6 77 7650
FAR-RUBBER END ITEM USING MICROWAVE EQPT

WORK WAS COMPLETED. RUBBER OBTURATOR PADS WERE SUCCESSFULLY CURED IN 1/4 THE NORMAL TIME, WHICH RESULTED IN A 66% REDUCTION IN CURING COST PER ITEM. A FINAL REPORT HAS BEEN PREPARED, AND INITIAL ACTION TO IMPLEMENT THE PROCESS HAS BEEN INITIATED.

6 77 7715
APPLICATION OF CONTROLLED-FORCE MACHINING

PROJECT IS COMPLETE. RESULTS ARE BEING USED AT RIA.

6 77 7720
FABRICATION METHODS FOR 2 AND 3 WIRE MESH SPRINGS

MFG PROCEDURES WERE ESTAB FOR THE QUANTITY PROD OF 2 AND 3 WIRE MESH SPRINGS ON PRODUCTION COILERS. RESULTS OF THIS STUDY WILL BE IMPLEMENTED BY WIDE DISSEMINATION OF THE FINAL TECHNICAL REPORT.

6 78 7844
ROOM TEMPERATURE PHOSPHATING

PROJECT IS COMPLETE. PROJECT WAS TECHNICALLY UNSUCCESSFUL.

TOTAL PROJECTS COMPLETED IN FIRST HALF, CY79 54

MMT PROGRAM

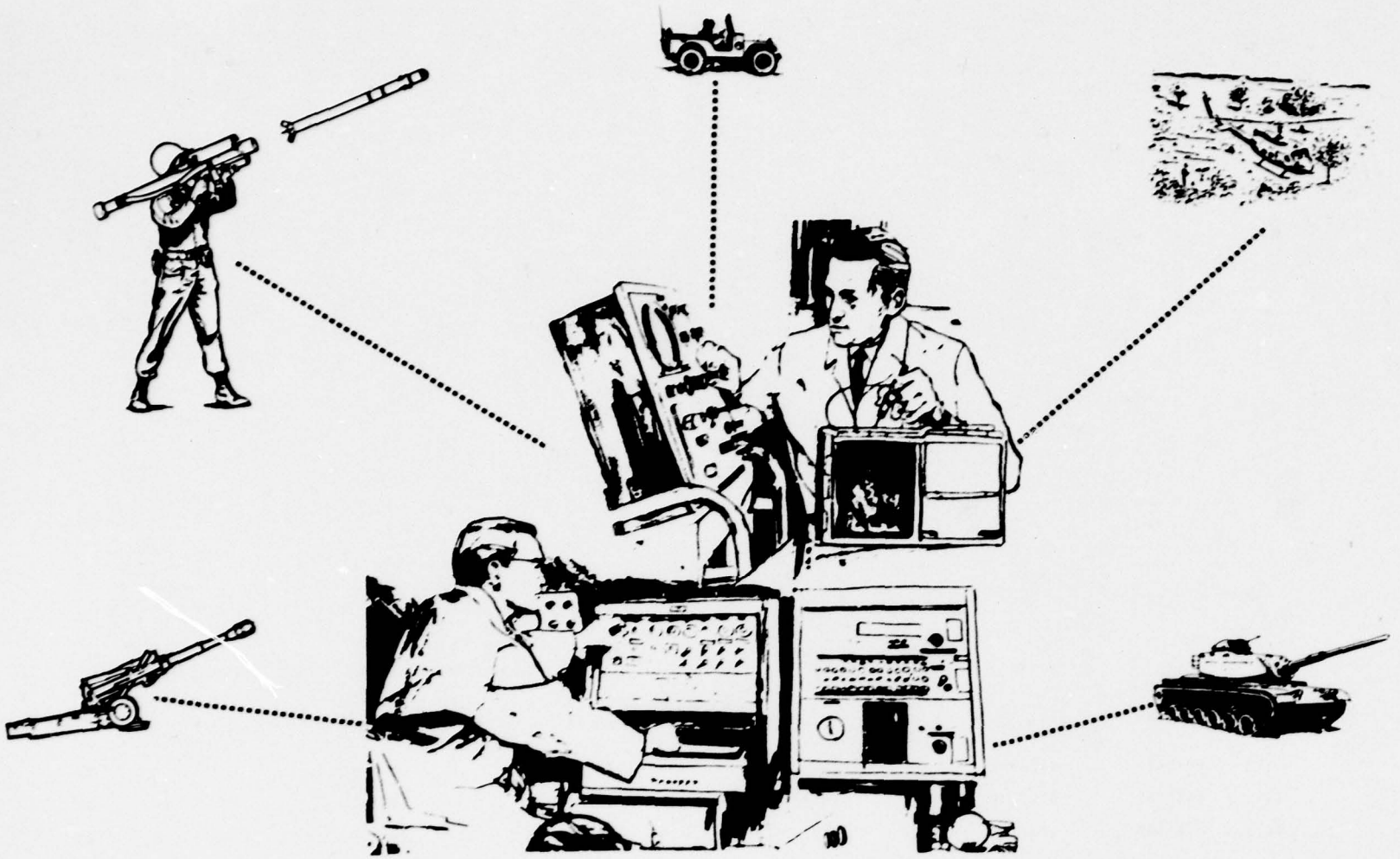
SUMMARY PROJECT STATUS REPORT



MANUFACTURING METHODS AND TECHNOLOGY PROGRAM

SUMMARY PROJECT STATUS REPORT

The Summary Project Status Report for each Major Subordinate Command (MSC) is preceded by the tabulated MSC MMT project funding status. The accuracy of funding amounts is based on the individual semiannual status reports. The status as reported here is the IBEA condensation of information contained in the report or other comments as deemed useful. If a status report was not provided, a pertinent comment was made so that the project would be printed.



TEST AND EVALUATION COMMAND

(TECOM)

TEST AND EVALUATION COMMAND

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)	INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)
77	1	863,800	4,800	0 (0%)	859,000	669,800 (77%)
78	1	735,000	53,300	42,000 (78%)	681,700	651,100 (95%)
79	1	881,000	55,000	0 (0%)	826,000	206,000 (24%)
TOTAL	3	2,479,800	113,100	42,000 (37%)	2,366,700	1,526,900 (64%)

AUTHORIZED FUNDING

CONTRACT ALLOCATED 5%

INHOUSE ALLOCATED 95%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
0 77 5071	IMPROVEMENT OF PRODUCTION TEST METHODOLOGY SEE INDIVIDUAL SUBTASKS BELOW FOR STATUS.	863.8	4.8	669.8	DEC 78	SEP 79
0 77 5071AB	IMPACT SENSITIVITY OF FUZES THE PHYSICAL PARAMETERS REQUIRED TO COMPLETELY DESCRIBE THE EFFECTS OF RAIN AND BRUSH ON FUZES AND THE FACTORS THAT MUST BE REPRODUCED DURING THE PRODUCTION OF FUZES HAVE BEEN ESTABLISHED. THIS PROJECT HAS BEEN DELAYED DUE TO SHORTAGES OF PERSONNEL.					SEP 79
0 77 5071AC	AUTOMATIC DATA COLLECTION SYSTEMS FOR AIR CONDITIONERS ELECTRONIC ANALOG INSTRUMENTION HAS BEEN PROCURED TO REPLACE STANDARD THERMOMETERS AND MANOMETERS, THE NEW INSTRUMENTS ARE BEING USED CURRENTLY WITH THE OLD TO DETERMINE THE FEASIBILITY OF REPLACEMENT.					SEP 79
0 77 5071AD	RADIATION DOSIMETRY THE CALIBRATION OF THE FOIL ACTIVATION AND RADIOCHEMICAL SEPARATION TECHNIQUES HAS BEEN PERFORMED USING NBS CALIBRATED CF252 NEUTRON SOURCE. ALSO, EXTENSIVE ANALYSIS OF HSMR FBR HAS BEEN COMPLETED. THE FINAL REPORT WILL BE PUBLISHED 30 SEPT. 1979.					SEP 79
0 77 5071C	BACKSPALLING CHARACTERISTICS TEST FIRINGS HAVE BEEN COMPLETED ON TWO DUAL HARDNESS ARMOR PLATES, 1/2 AND 5/8 INCH PLATES WITH 45/55 FACE PLATE TO BACK PLATE RATIO. .50 AP, M2 PROJECTILES WERE USED IN THESE TEST FIRINGS.					SEP 79
0 77 5071F	METHODS OF HALOGEN LEAK DETECTION TASK WAS COMPLETED. IT WAS CONCLUDED THAT THE COMMERICALLY AVAILABLE HALOGEN DETECTORS ARE SUFFICIENTLY SENSITIVE AND ACCURATE TO DETERMINE WHETHER REFRIGRATION EQUIP. CONFORMS TO MILITARY SPECIFICATIONS.					SEP 79
0 77 5071G	SMALL CALIBER WEAPON COOK-OFF TESTING FIRING TRIALS HAVE BEEN REPEATEDLY DELAYED BECAUSE OF CONFLICTS WITH HIGHER PRIORITY TEST PROJECTS FOR THE USE OF SUITABLE CLIMATIC TEST FACILITIES. THE FINAL REPORT IS SCHEDULED TO BE COMPLETED IN FY 80.					SEP 79
0 77 5071I	RISK IN ACCEPTING MATERIAL NOT CONFORMING TO EMI REQUIREMENT COMPLETION OF THE FINAL REPORT HAS BEEN DELAYED AS THE PRINCIPAL INVESTIGATOR WAS NOT BE AVAILABLE DUE TO HIS PARTICIPATION IN THE INTERNATIONAL STANDARDIZATION EFFORT. THE REPORT IS SCHEDULED TO BE PUBLISHED IN SEPTEMBER 1979.					SEP 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
SUMMARY PROJECT STATUS REPORT
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
0 77 5071J	TEST OPERATIONS PROCEDURES TWO TOPS WERE COMPLETED AND ARE BEING COORDINATED INTERNALLY, WORK STARTED ON A THIRD TOP.					SEP 79
0 77 5071K	COOLING CAPACITY OF AIR CONDITIONERS PREVIOUSLY UNEXPLAINED VARIATIONS IN THE COEFFICIENT OF DISCHARGE (CD) VALUES WERE FOUND TO BE DUE TO MINUTE AIR LEAKS BETWEEN THE LAMINAR FLOW ELEMENT AND THE NOZZLES. A FINAL REPORT IS SCHEDULED TO BE COMPLETED OCTOBER 1979.					SEP 79
0 77 5071N	SMOKE-OBSCURANTS THE FIRST VALIDATION OF THE SMOKE TRANSPORT MODEL HAS BEEN COMPLETED AND THE FINAL REPORT IS BEING REVIEWED. THIS EFFORT IS THE FIRST STEP TOWARDS DEVELOPING A MODEL THAT WILL ADEQUATELY PREDICT SMOKE CLOUD CHARACTERISTICS.				DEC 78	SEP 79
0 77 5071R	GUN AIR DEFENSE SYSTEM TEST AND EVALUATION A REVIEW OF RECENT TESTS OF AIR DEFENSE SYSTEMS HAVE BEEN COMPLETED AND DOCUMENTATION OF REVISED PROCEDURES AND OPTIMUM ANALYTICAL METHODS IS CONTINUING. DATA REDUCTION COMPUTER PROGRAMS ARE BEING DEVELOPED.				DEC 78	SEP 79
0 77 5071V	PRODUCTION TEST RANGE THE EXAMINATION OF THE VARIOUS METHODS OF ANALYZING PRODUCTION LINE FLOW PROBLEMS HAS BEEN COMPLETED. THE ENGINEERING CONTRACT FOR THIS PROJECT HAS BEEN AWARDED AND WORK IS UNDERWAY.				DEC 78	SEP 79
0 78 5071	IMPROVEMENT OF PRODUCTION TEST METHODOLOGY SEE INDIVIDUAL SUBTASKS BELOW FOR STATUS.	735.0	53.3	651.1	DEC 79	DEC 79
0 78 5071B	GEDAAC AND CONVENTIONAL INSTRUMENTATION DATA CORRELATION COMPUTER PROGRAMS HAVE BEEN DEVELOPED TO COMPUTE THE HARMONIC CONTENT AND THE WAVEFORM DEVIATION OF THE TEST GENERATOR WAVEFORM IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-STD-705. THE INVESTIGATION OF ADDITIONAL MIL-STD-705 AND MTD DATA IS CONTINUING					DEC 79
0 78 5071C	ELECTROSTATIC GENERATION AND PRECIPITATION AN EXPERIMENTAL FARADAY CAGE HAS BEEN CONSTRUCTED AND STUDIES ARE BEING CONDUCTED TO DETERMINE THE METHODOLOGY THAT WILL MINIMIZE MEASUREMENT ERRORS. THE FARADAY CAGE APPROACH APPEAR TO BE AN ACCEPTABLE METHOD TO MEASURE ELECTROSTATIC CHARGES.					DEC 79
0 78 5071D	SOLID STATE SMEAR CAMERA STATUS HAS NOT CHANGED FROM PREVIOUS REPORTING PERIOD.					DEC 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

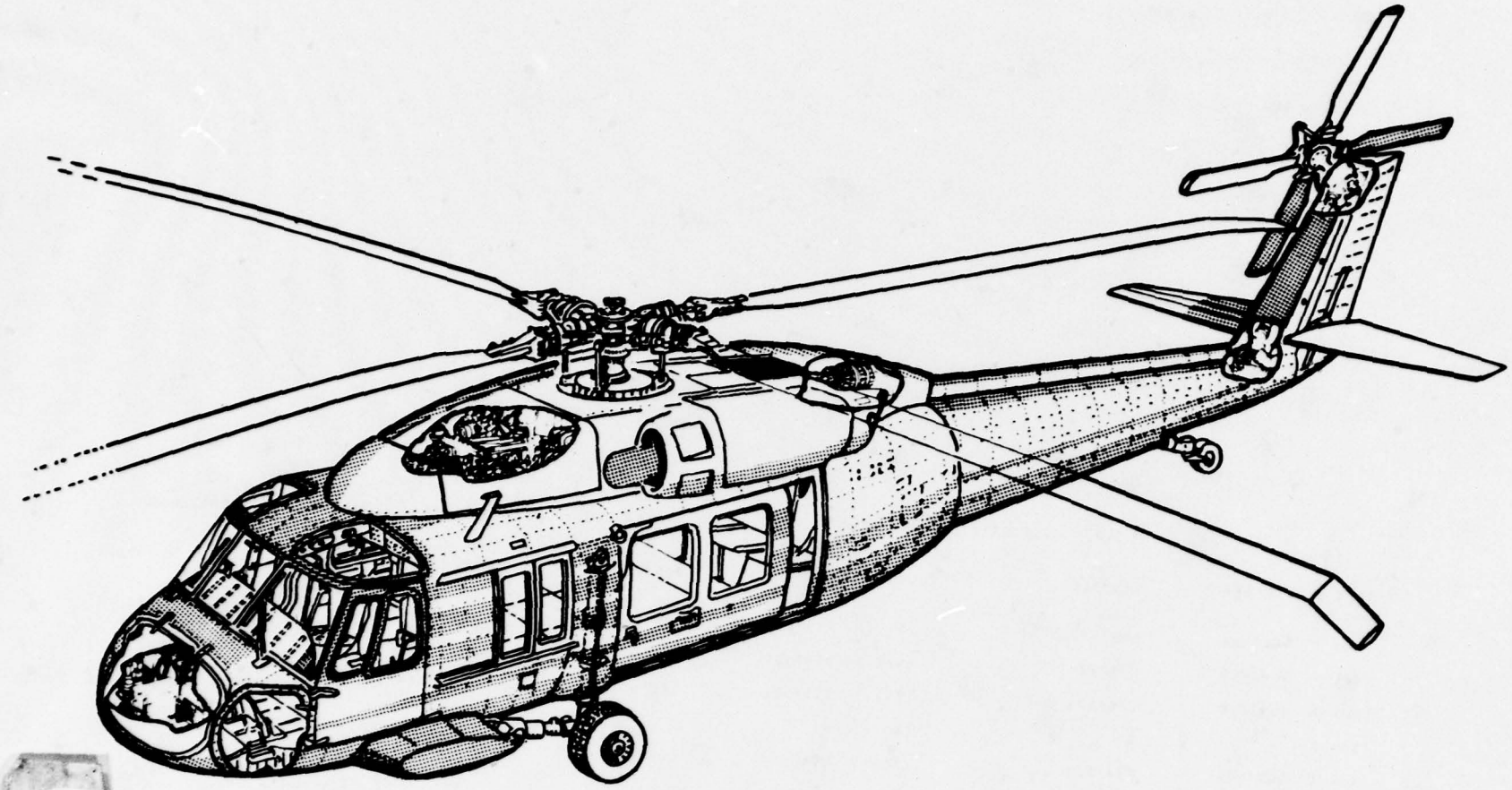
PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
0 78 5071E	GUN AIR DEFENSE SYSTEM LASER TECHNIQUES STATUS DID NOT CHANGE FROM PREVIOUS REPORTING PERIOD.					DEC 79
0 78 5071F	PROJECTILE EDDY CURRENT INSPECTION THE STATUS HAS NOT CHANGED FROM THE PREVIOUS REPORT PERIOD AS THE WORK HAS BEEN SUSPENDED AWAITING AVAILABILITY OF QUALIFIED TECHNICAL PERSONNEL.					DEC 79
0 78 5071G	IN-BORE RADIOGRAPHY TECHNIQUE APPLICATION FIELD EVALUATION OF THE NEW X-RAY TRIGGER SYSTEM REVEALED A NUMBER OF SHORTCOMINGS, THE TASK IS CONTINUING AND A FINAL REPORT IS SCHEDULED FOR 21 OCT 1979.					DEC 79
0 78 5071H	MILITARY VEHICLE ROLL OVER TESTS THE STATUS HAS NOT CHANGED FROM THE PREVIOUS REPORTING PERIOD.					DEC 79
0 78 5071I	MULTI-FUEL SPACE HEATERS CAPACITY TESTING TASK COMPLETED, A FINAL REPORT WAS PREPARED FOR APPROVAL APRIL 1979.					DEC 79
0 78 5071J	TRANSDUCER VELOCITY MEASUREMENT A SHORTAGE OF QUALIFIED MATHEMATICIANS HAS DELAYED SOLUTION OF A COMPLEX EQUATION REQUIRED FOR THE DESIGN OF THE PROPOSED SYSTEM. A SCOPE OF WORK IS BEING DEVELOPED TO ACQUIRE MATHEMATICAL EXPERTISE ON A CONTRACT BASIS.					DEC 79
0 78 5071K	DIRECT FIRE WEAPON ADVANCED MUZZLE BORE SIGHT IMPROVEMENTS IN THE PRECISION AND RELIABILITY ARE BEING CONSIDERED- 1. IMPROVE THE TRAINING AND SKILL OF USER, 2. REDESIGN OPTICAL BORE SIGHT, 3. INVESTIGATE ADVANCED CONCEPTS.					DEC 79
0 78 5071L	MICROWAVE SKY SCREEN THE STATUS HAS NOT CHANGED FROM THE PREVIOUS REPORTING PERIOD.					DEC 79
0 78 5071M	IMPROVED CRUSHER GAGES A FINITE ELEMENT ANALYSIS WAS PERFORMED BY BRL ON THE M11 CRUSHER GAGE, SEVERE BINDING OCCURED DURING HIGH TEMPERATURE AND PRESSURE, AS A RESULT A NEW MIL GAGE HAS BEEN DESIGNED AND IS BEING EVALUATED USING THE FINITE ELEMENT ANALYSIS MODEL.					DEC 79
0 78 5071N	TEST AUTOMATION DEVELOPMENT THE STATUS HAS NOT CHANGED SINCE THE PREVIOUS REPORTING PERIOD.					DEC 79
0 78 5071P	TEST OPERATIONS PROCEDURES TWELVE TOPS WERE PUBLISHED, FOURTEEN TOPS ARE IN FINAL FORM AWAITING APPROVAL.					DEC 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
SUMMARY PROJECT STATUS REPORT
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
0 78 5071Q	AEROSOL BIOLOGICAL PARTICLE SIZE MEAS. STANDARDIZATION PERSONNEL WERE TRAINED TO STANDARDIZE PROCEDURES. THIS TRAINING HAS PRODUCED AGREEMENT BETWEEN VISUAL, AUTOMATIC COUNTING AND SIZING OF PARTICLES.					DEC 79
0 78 5071R	FERMENTATION METHODOLOGY PRODUCTION OF SIX LOTS OF S. MARCESCENS AND TWO LOTS OF E. COLI AND ONE EXPERIMENTAL LOT OF MS-2 COLIPHAGE WERE COMPLETED. AEROSOL COMPARISONS OF S. MARCESCENS PRODUCTION SHOWED THREE LOTS HAVE SIGNIFICANTLY LOWER RATES OF AEROSOL DECAY.					DEC 79
0 78 5071S	AVIRULENT VEE VIRUS STRAIN STANDARDIZATION ATTEMPTS HAVE BEEN MADE TO ESTABLISH A CONTINUOUS CELL SYSTEM WITH SOME SUCCESS. VERO CELLS WERE ESTABLISHED AT BAKER LABORATORY WHICH IS BEING RENOVATED. THE BAKER VERO CELL FUNCTION IS PLANNED TO BE RELOCATED TO DPG CHEMISTRY COMPLEX.					DEC 79
0 78 5071T	TANK MAIN WEAPON FIRING INHIBITOR THE BREADBOARDED SYSTEM IS UNDERGOING ELECTRONIC REDESIGN TO MAKE IT FIELD APPLICABLE. THE EFFECTIVE RANGE HAS TO BE INCREASED FROM 2000 TO 3000 METERS. THE DOWNRANGE SOURCES MUST BE REMOTELY POWERED. THE FINAL REPORT IS SCHEDULED FOR DEC. 1979.					DEC 79
0 78 5071U	IMPROVED TRANSPORTABILITY/CONTAINER TEST CAPABILITY PRELIMINARY PLANS AND COST ESTIMATE WERE COMPLETED FOR A NEW LAUDSHIP HANDLING TEST FACILITY. PREPARATION OF DOCUMENTS NECESSARY FOR APPROVAL AND CONSTRUCTION OF THE FACILITY ARE IN PROGRESS. A REPORT IS SCHEDULED FOR NOVEMBER 1979.					DEC 79
0 79 5071	TECOM TEST METHODOLOGY ENGINEERING MEASURES SEE INDIVIDUAL SUBTASK BELOW FOR STATUS.	881.0	55.0	206.0	SEP 80	SEP 80
0 79 5071A	ACCEPTANCE TEST PROCEDURES SEVEN ATP PREPARED BY OTHER AGENCIES WERE REVIEWED AND FIVE WERE PREPARED AND PUBLISHED BY APG. THOSE PUBLISHED COVERED ACCEPTANCE TESTS FOR 105MM PROJECTILES, 4.2-INCH MORTAR CANNON AND 81MM MORTAR CANNON.				SEP 80	SEP 80
0 79 5071B	TOXIC GAS MEASUREMENTS DURING WEAPON FIRINGS DATA FROM FIELD FIRINGS AND GAS CONTAMINATION TESTS ARE BEING COMPILED. AMMUNITION HAS BEEN ORDERED AND ARRANGEMENTS ARE BEING MADE FOR THE CONDUCT OF TESTS WITH TANK IN MOTION.				SEP 80	SEP 80
0 79 5071C	SAFETY EVALUATION OF AMMUNITION THE INVESTIGATIVE WORK HAS BEEN DELAYED AS THE PRINCIPAL INVESTIGATOR HAS BEEN TEMPORARLY ASSIGNED TO THE ALLIED EUROPEAN ARMIES' STANDARDIZED SAFETY TESTING EFFORTS.				SEP 80	SEP 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
0 79 5071D	SHOCK AND BLAST EFFECTS FROM STABALLOY PENETRATION A TEST FIRING PLAN IS BEING PREPARED FOR THE PURPOSE OF DETERMINING SHOCK AND BLAST LEVELS WHICH CAN BE EXPECTED DURING TYPICAL TEST OF STABALLOY PROJECTILES,				SEP 80	SEP 80
0 79 5071E	TEST OPERATION PROCEDURES NINE TOPS WERE PUBLISHED, TEN TOP ARE APPROVED AND ARE IN THE FINAL STAGES OF PUBLICATION, THREE TOPS ARE AWAITING TECOM APPROVAL, THIRTEEN TOP ARE IN THE PROCESS OF BEING DEVELOPED,				SEP 80	SEP 80
0 79 5071F	CERTIFICATION OF LOOSE CARGO BOUNCE TEST A PROPOSAL WAS REVIEWED AND CHANGES WERE RECOMMENDED, IT IS EXPECTED THAT A CONTRACT WILL BE AWARDED BY JULY 1979 AND THE WORK COMPLETED WITHIN ONE YEAR,				SEP 80	SEP 80
0 79 5071G	ON-LINE SEMI CONDUCTOR TESTING IN NUCLEAR ENVIRONMENT THE INTEGRATED CIRCUIT TEST FIXTURE AND SCANNER WERE CHECKED OUT, THE ONLY ITEM THAT DID NOT FUNCTION PROPERLY WAS THE TRANSISTOR SECTION OF THE SCANNER,				SEP 80	SEP 80
0 79 5071H	FAST BURST REACTOR A TEST PLAN HAS BEEN ACCEPTED BY THE NWEB TEST PLANNING COMMITTEE, THE MODERATOR MATERIAL REQUIRED FOR THE TEST HAS BEEN IDENTIFIED, PURE POLYETHYLENE AND 20WT PERCENT COO-POLYETHYLENE, THE INITIAL PROCUREMENT ACTION IS UNDERWAY,				SEP 80	SEP 80
0 79 5071I	LIDAR FEASIBILITY TEST TESTS WERE CONDUCTED TO MEASURE SMOKE/OBSCURANT CHARACTERISTICS AND BEHAVIOR USING LIDAR TYPE EQUIPMENT,				SEP 80	SEP 80



AVIATION R&D COMMAND
(AVRADCOM)

PRECEDING PAGE BLANK

AVIATION R+D COMMAND

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)	INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)
74	3	1,027,000	418,800	351,800 (84%)	608,200	376,700 (61%)
75	7	1,436,900	990,400	841,700 (84%)	446,500	406,800 (91%)
76	6	1,231,000	757,900	445,100 (58%)	473,100	384,300 (81%)
77	0	0	0	0 (0%)	0	0 (0%)
77	11	6,414,600	4,308,700	725,800 (16%)	2,105,900	677,500 (32%)
78	19	3,748,000	2,119,700	481,600 (22%)	1,628,300	532,900 (32%)
79	26	7,485,900	3,476,400	238,100 (6%)	4,009,500	295,700 (7%)
TOTAL	72	21,343,400	12,071,900	3,084,100 (25%)	9,271,500	2,673,900 (28%)

AUTHORIZED FUNDING CONTRACT ALLOCATED 57% INHOUSE ALLOCATED 43%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
1 78 7036	ISOTHERMAL ROLL-FORGING OF COMPRESSOR BLADES TENSILE SPECIMENS HAVE BEEN CUT FROM ROLLED COMPONENTS, PROPERTIES LOOK GOOD.	300.0	250.0	49.0	JUN 79	JUL 79
1 79 7036	ISOTHERMAL ROLL-FORGING OF COMPRESSOR BLADES WORK HAS NOT BEEN INITIATED DUE TO DELAYS IN THE FY78 EFFORT.	275.0		1.6		
1 76 7042	MICROWAVE CURE OF COMPOSITE ROTOR BLADE SPARS CURE OPTIMIZATION STUDIES INDICATED THAT ALTHOUGH LAMINATES ARE HEATED TO CURE TEMPERATURES MORE RAPIDLY, TIME AT TEMPERATURE TO CURE IS CONSTANT. OPTIMIZATION OF THE CURING FOR SP-250 IS BEING CONDUCTED UNDER CONTRACT. TOOLING HAS BEEN FABRICATED.	250.0	50.0	136.0	FEB 77	DEC 79
1 75 7052	FEAS OF ULTRASONIC ASSISTED FORMATION OF TITANIUM NOSE CAP ALL PROJECT WORK HAS BEEN COMPLETED. THE FINAL REPORT HAS BEEN REVIEWED AND ACCEPTED. DURING THE NEXT REPORTING PERIOD, THE FINAL REPORT WILL BE DISTRIBUTED.	209.4	171.4	38.0	JUN 76	SEP 79
1 77 7052	FEAS OF ULTRASONIC ASSISTED FORMATION OF TITANIUM NOSE CAP STATIC FORMING TRIALS UTILIZING THE 4000 WATT ULTRASONIC SYSTEM DEDICATED TOOLING HAS BEGUN. TESTS WERE CONDUCTED INSURING THE INTEGRITY OF THE ULTRASONICALLY ASSISTED FORMING SYSTEM. TEST MATERIALS WERE RECEIVED FROM HUGHES.	556.0	147.3	86.0	SEP 79	APR 81
1 78 7055	ULTRASONIC WELDING OF HELICOPTOR FUSELAGE STRUCTURES ***** DELINQUENT STATUS REPORT *****	441.0			JAN 79	DEC 80
1 75 7070	CAST COMPRESSOR COMPONENTS ENGINE QUALIFICATION TESTS ARE NEARING COMPLETION.	195.0	171.3	23.7	OCT 77	AUG 79
1 76 7079	BRAIDING OF REINFORCED PLASTIC STRUCTURAL COMPONENT PHASE 1, SELECTION OF ROTOR SPAR SECTION, HAS BEEN COMPLETED, AND THE PHASE 2 FINAL REPORT HAS BEEN RECEIVED FROM THE CONTRACTOR.	156.0	139.6	16.4	JAN 78	DEC 79
1 78 7086	ABRADABLE SEALS FOR COMPRESSOR BLADE TIP APPLICATIONS AN EVALUATION TO DETERMINE THE OPTIMUM MATERIAL FOR RETARDING THE INITIAL DRYING TIME OF THE CHEM-BRAZE HIGH TEMPERATURE CEMENT USED TO BOND FELT METAL ABRADABLE SEAL MATERIAL TO COMPRESSOR SHROUD MATERIALS. GLYCERINE APPEARS TO BE THE BEST MATERIAL.	91.0	72.4	10.0	JUN 79	DEC 79
1 79 7086	ABRADABLE SEALS FOR COMPRESSOR BLADE TIP APPLICATIONS A FOLLOW-ON CONTRACT TO PN 1 78 7086 IS BEING PREPARED. AN RFQ WILL BE READY BY 15 JULY 1979.	90.0		0.5	SEP 80	SEP 80
1 78 7091	PROCESSING AIRCRAFT COMPONENTS USING PULTRUDED MATERIALS ***** DELINQUENT STATUS REPORT *****	320.0	150.0	101.7	SEP 80	AUG 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
1 77 7104	T700 TURBINE ENGINE NOZZLE MANUFACTURING PROCESS ***** DELINQUENT STATUS REPORT *****	33,4	33,2	3,9	JUN 79	NOV 79
1 78 7104	T700 TURBINE ENGINE NOZZLE MANUFACTURING PROCESS TASK 2 IS NEARLY COMPLETE.	32,0	23,7	8,3	MAR 78	NOV 79
1 77 7108	MANUFACTURING TECHNIQUES FOR TRANSMISSION SHAFT SEALS ***** DELINQUENT STATUS REPORT *****	135,0	121,5	13,5	AUG 79	OCT 79
1 77 7112	COMPOSITE IMPROVED MAIN ROTOR BLADES ***** DELINQUENT STATUS REPORT *****	4,146,0	3,450,7	140,0	SEP 78	DEC 79
1 79 7113	COMPOSITE FUSELAGE MANUFACTURING TECHNOLOGY ***** DELINQUENT STATUS REPORT *****	250,0	200,0			SEP 81
1 77 7114	MFG TECHNIQUES FOR INFRARED SUPRESSION AIRCRAFT COMPONENTS ***** DELINQUENT STATUS REPORT *****	510,0	95,0	54,0	APR 78	NOV 79
1 77 7119	NON-DESTRUCTIVE EVALUATION TECH FOR COMPOSITE STRUCTURES ***** DELINQUENT STATUS REPORT *****	475,0	62,0	230,5	SEP 80	JUN 81
1 78 7119	NON-DESTRUCTIVE EVALUATION TECH FOR COMPOSITE STRUCTURES ***** DELINQUENT STATUS REPORT *****	96,0	15,0	15,0	SEP 80	JUL 79
1 79 7119	NON-DESTRUCTIVE EVALUATION TECH FOR COMPOSITE STRUCTURES ***** DELINQUENT STATUS REPORT *****	400,0				
1 78 7121	INTEGRALLY HEATED + PRESSURIZED TOOLING F/UTTAS ROTOR BLADES ***** DELINQUENT STATUS REPORT *****	234,0	210,0	7,7	JUN 79	DEC 79
1 78 7123	CONTINUOUS BALANCING OF HELICOPTOR SHAFTING EIGHT PERCENT OF MECHANICAL BALANCING PREPARATION AND THIRTY PERCENT OF ANALYSIS HAS BEEN ACCOMPLISHED.	120,0	90,0	10,0	JUN 79	FEB 80
1 77 7144	T700 ENGINE NOZZLE IN-PROCESS INSPECTION ***** DELINQUENT STATUS REPORT *****	66,6	59,0	8,8	APR 79	DEC 80
78 7144	T700 ENGINE NOZZLE IN-PROCESS INSPECTION PHASE II OF THE CONTRACT HAS PROCEEDED ON SCHEDULE, TASK I, COOLING FLOW MEASUREMENT, AND TASK II, AUTOMATED MEASUREMENT ARE SCHEDULED TO BE COMPLETED BY DEC 1979 WHICH WILL CONCLUDE THE PROJECT EFFORT.	67,0	65,8	1,2	NOV 79	OCT 79
1 78 7155	MFG METHODS FOR IMPROVED HIGH PERFORMANCE HELICOPTER GEARS AN RFQ HAS BEEN RELEASED, A RESPONSE HAS EVALUATED AND ADDITIONAL INFO HAS REQUESTED, IT HAS BEEN RECID AND IS BEING EVALUATED.	461,0	360,0	57,4	NOV 80	AUG 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
1 76 7156	ULTRSONICALLY ASSISTED MACHINING FOR SUPERALLOYS, THE ULTRASONIC SYSTEM DESIGN IS COMPLETED. THE TOOL POST IS BEING ASSEMBLED AND THE FREQUENCY CONVERTER AND TRANSDUCER ARE COMPLETE, CUTTING TOOLS AND MATERIAL HAVE BEEN ORDERED, SONOBOND IS TRYING TO SECURE A TURRET LATHE THROUGH DIPEC.	300.0	207.1	72.9	MAY 78	NOV 79
1 76 7164	FILAMENT WINDING PRECISION RESIN IMPREGNATION SYSTEM THE FINAL REPORT HAS BEEN DRAFTED AND CORRECTED, AND PREPARATION FOR A FINAL INDUSTRY BRIEFING HAS BEEN INITIATED.	90.0	89.2		JUN 77	AUG 79
1 78 7183	SEMI-AUTO COMPOSITE MFG SYS- HELICOPTER FUSELAGE STRUCTURES ***** DELINQUENT STATUS REPORT *****	245.0	191.0	36.0	MAR 81	OCT 79
1 79 7183	SEMI-AUTO COMPOSITE MFG SYS-HELICOPTER FUSELAGE STRUCTURES ***** DELINQUENT STATUS REPORT *****	100.0	85.0			
1 77 7197	FABRICATION OF INTEGRAL ROTORS BY JOINING DESIGN AND INITIAL TOOLING REQUIREMENTS AND HARD-ARE FABRICATION IS COMPLETE, NDI EVALUATION IS IN PROGRESS.	300.0	240.0	55.0	DEC 80	OCT 79
1 79 7197	FABRICATION OF INTEGRAL ROTORS BY JOINING ***** DELINQUENT STATUS REPORT *****	100.0				
1 78 7199	LASER HARDENING OF GEARS, BEARINGS AND SEALS ***** DELINQUENT STATUS REPORT *****	180.0	100.0	28.0	SEP 78	OCT 79
1 79 7199	LASER HARDENING OF GEARS, BEARINGS AND SEALS ***** DELINQUENT STATUS REPORT *****	200.0				
1 79 7200	COMPOSITE ENGINE INLET PARTICLE SEPARATOR ***** DELINQUENT STATUS REPORT *****	200.0	180.0			
1 79 7202	APPLICATION OF THERMOPLASTICS ***** DELINQUENT STATUS REPORT *****	225.0	202.5			
1 77 7238	PRECISION FORGED ALUMINIUM POWDER METALLURGY FABRICATION AND ASSEMBLY OF VARIOUS VACUUM FORGING SYSTEM COMPONENTS HAVE BEEN COMPLETED, HOWEVER, DESIGN PROBLEMS WITH THE SYSTEM WILL CAUSE A 9 MONTH DELAY.	72.6	50.0	19.7	MAR 79	DEC 79
1 79 7238	PRECISION FORGED ALUMINIUM POWDER METALLURGY EFFORTS ARE STILL IN PROGRESS TO SELECT SUB-CONTRACTOR.	398.7	350.0	2.6	APR 81	APR 81
1 78 7240	ESR 4340 MACHINING METHODS FOR HELICOPTER APPLICATIONS ***** DELINQUENT STATUS REPORT *****	117.0	98.5	20.6	SEP 78	DEC 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

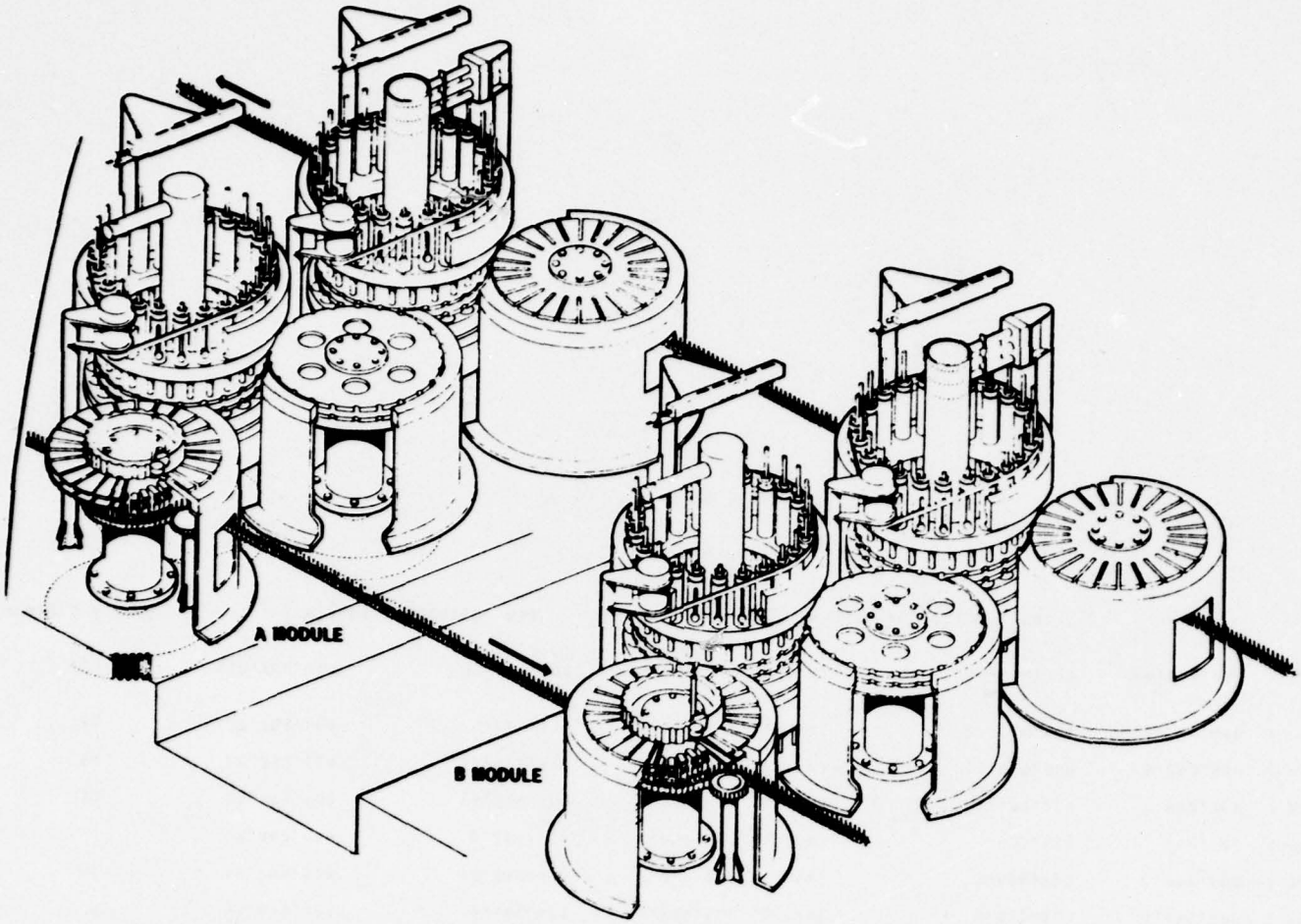
PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
1 79 7240	ESR 4340 MACHINING METHODS FOR HELICOPTER APPLICATIONS ***** DELINQUENT STATUS REPORT *****	75.0				
1 78 7241	HOT ISOSTATIC PRESSING OF TITANIUM CASTINGS A TENTATIVE AGREEMENT ON THE CONTRACT HAS BEEN REACHED BY AMMRC AND SIKORSKY, VIA TELEPHONE, ON ALL PREVIOUSLY UNRESOLVED TERMS AND CONDITIONS.	113.0	100.0	13.0	MAR 79	
1 79 7241	HOT ISOSTATIC PRESSING OF TITANIUM CASTINGS A TENTATIVE AGREEMENT ON THE CONTRACT HAS BEEN REACHED BY AMMRC AND SIKORSKY, VIA TELEPHONE, ON ALL PREVIOUSLY UNRESOLVED TERMS AND CONDITIONS.	600.0	520.0		SEP 81	SEP 81
1 79 7243	MACHINING OPERATIONS ON KEVLAR LAMINATED CONSTRUCTIONS A DRAFT CONTRACTURAL SCOPE OF WORK HAS BEEN PREPARED.	104.0	87.0		NOV 79	NOV 79
1 77 7258	THIN WALL MANTECH FOR RPV SENSOR DOMES A SEARCH OF LITERATURE AND INDUSTRY WAS COMPLETED, A TECHNICAL REPORT TITLED MATERIALS, COATING AND PROCESSING FOR THE MANUFACTURE OF THIN WALL RPV SENSOR DOME HAS BEEN STARTED.	35.0		16.2	AUG 80	MAY 79
1 77 7281	SURVEY OF COMPOSITE MANTECH F/ARMY AIRCRAFT STRUCTURES ***** DELINQUENT STATUS REPORT *****	85.0	59.0	30.1	SEP 78	DEC 79
1 78 7284	SUPERPLASTIC FORMING/DIFFUSION BONDING OF TITANIUM SEE PROJ NO 1 79 7284.	120.0	118.3	27.0	JUL 81	OCT 81
1 79 7284	SUPERPLASTIC FORMING/DIFFUSION BONDING OF TITANIUM A CONTRACT HAS BEEN AWARDED TO ROCKWELL INTERNATIONAL.	400.0	322.2	40.0	OCT 82	OCT 82
1 78 7285	CAST TITANIUM COMPRESSOR IMPELLERS ***** DELINQUENT STATUS REPORT *****	135.0	100.0	29.0	JUN 78	MAR 81
1 79 7285	CAST TITANIUM COMPRESSOR IMPELLERS CASTINGS OF DIFFERENT TI ALLOYS HAVE BEEN RECEIVED, DIMENSIONALLY CHECKED, PROPERTY DATA IS NOW BEING GATHERED.	300.0	200.0	10.0	FEB 81	FEB 81
1 78 7286	SUPERALLOY POWDER PRODUCTION FOR TURBINE COMPONENTS POWDER LOTS HAVE BEEN PROCURED AND ARE BEING INSPECTED, INGOTS HAVE BEEN MELTED AND ARE BEING INSPECTED.	220.0	175.0	41.0	SEP 79	FEB 81
1 79 7286	SUPERALLOY POWDER PRODUCTION FOR TURBINE COMPONENTS A CONTRACT HAS BEEN LET TO OBTAIN LOW CYCLE FATIGUE DATA FOR AN INDEPENDANT ANALYSIS BY AMMRC.	322.2	210.0	35.8	FEB 81	FEB 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
1 78 7287	PRODUCTION METHODS FOR MULTI-ELEMENT MODULES FOR ANTENNAS CONTRACT NOT YET LET. A CONTRACTOR WILL DEVELOP AUTOMATED TECHNIQUES FOR FABRICATING AND TESTING PHASE SHIFTER MODULES, WILL USE HYBRID INTEGRATION TECHNIQUES, SPECIFIC METHODS HAVE BEEN IDENTIFIED AND A STATEMENT OF WORK WRITTEN. SUPPORTS SOTAS.	240.0		58.0	DEC 80	DEC 80
1 79 7287	PRODUCTION METHODS FOR MULTI-ELEMENT MODULES FOR ANTENNAS FUNDS RECENTLY RECEIVED. WILL BE A FOLLOW-ON TO 1787287. PROJECT WAS DELAYED PENDING RESULTS OF ACQUISITION REVIEW COUNCIL ON SOTAS (STAND OFF TARGET ACQUISITION SYSTEM).	225.0		24.0	DEC 81	DEC 81
1 79 7288	OPTIMAL CURING COND. FOR PROCESS FIBER-REINFORCED COMPOSITES ***** DELINQUENT STATUS REPORT *****	125.0	112.5			
1 79 7291	TITANIUM POWDER METAL COMPRESSOR IMPELLER WORK ON RFP WAS INITIATED.	240.0		25.0	SEP 80	SEP 80
1 79 7292	IMPROVED PROD PROC TO REDUCE COST OF TESTING MICROPROCESSOR ***** DELINQUENT STATUS REPORT *****	260.0	180.0			
1 79 7297	PROD-INSTALL OF URETHANE EDGE GUARDS ON ROTOR BLADES ***** DELINQUENT STATUS REPORT *****	98.0	88.2			
1 79 7298	HIGH TEMPERATURE VACUUM CARBURIZING THE CONTRACTUAL SCOPE OF WORK IS UNDER WAY AND A FIRST DRAFT SHOULD BE COMPLETED BY THE MIDDLE OF JULY. THE TARGET DATE FOR CONTRACT AWARD IS 15 MARCH 1980.	125.0	100.0	0.7		
1 79 7315	LOW COST MANUFACTURE OF POISE GIMBAL THE SPECIFICATIONS, STATEMENT OF WORK, AND OTHER PROCUREMENT REQUIREMENTS HAVE BEEN COMPLETED, AND THE PROCUREMENT CYCLE HAS BEEN INITIATED.	202.0		10.7		
1 79 7338	COMPOSITE TAIL SECTION THE PROGRAM HAS BEEN TEMPORARILY HALTED DUE TO A POSSIBLE REDESIGN OF THE EXISTING AAH TAIL SECTION.	980.0		45.0		
1 79 7339	FILAMENT WOUND COMPOSITE FLEXBEAM TAIL ROTOR THIS PROJECT WAS JUST FUNDED. NO STATUS REPORT REQUIRED.	452.0				
1 79 7340	COMPOSITE MAIN ROTOR BLADE THE CONTRACT HAS BEEN PLACED WITH HUGHES HELICOPTER. THE FACILITY FOR PERFORMING THE WORK HAS BEEN PREPARED, AND THE EQUIPMENT IS BEING PROCURED. THE MMT AND TEST PLANS HAVE BEEN ESTABLISHED.	739.0	659.0	100.0	NOV 80	NOV 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
1 78 7348	LTWT COMPOSITE FASTENING SYS FOR COMPOSITE HELICOPTER COMPTS COMPONENT CONFIGURATION ANALYSIS (PHASE 3, TASK 1) IS NEARING COMPLETION, MATERIALS HAVE BEEN RECEIVED, AND TEST PANELS ARE BEING PREPARED.	216.0		20.0	JUN 80	MAY 80
1 74 8008	BROADGOODS LAY UP SYSTEM (CAM RELATED) ***** DELINQUENT STATUS REPORT *****	700.0	241.8	224.7	MAR 75	DEC 79
1 75 8017	EROSION RESISTANT LEADING EDGE FOR HELICOP ROTOR BLADES ALL WORK ON THE ORIGINAL CONTRACT WAS COMPLETED. TESTING BY HUGHES SHOWED THAT BORIDED TI HAD GOOD RAIN RESISTANCE BUT POOR SAND RESISTANCE, AND THAT BORIDED STAINLESS STEEL SHOWED POOR RAIN RESISTANCE AND FAIR SAND RESISTANCE. BELL CONTRACT AWARDED.	268.5	209.1	48.0	MAY 76	OCT 79
1 74 8035	PROD OF TRANSPARENT FORMS OF POLYOLEFIN FOR LTWT ARMOR APPLN CONTR ACCEPTED 1500 LBS HERCULES EK500 POLYPROPYLENE HOMOPOLYMER BIAXIALLY ORIENTED FILM. SIX OF PLANNED 15 EXPERIMENTAL MOLDINGS HAVE BEEN MADE. GOAL IS TO OPTIMIZE MOLDING PROCESS TO ACHIEVE BEST COMBINATION OF BALLISTIC RESISTANCE AND OPTICAL PROP	125.0	97.0	28.0	JUN 75	SEP 79
1 75 8035	PROD OF TRANSPARENT FORMS OF POLYOLEFIN FOR LTWT ARMOR APPLN CONTRACTS FOR BOTH PROJECTS 1748035 AND 1758035 HAVE BEEN LET OUT. HOWEVER, WORK ON CONTRACT 1758035 WILL NOT BEGIN UNTIL CONTRACT WITH 1748035. NO OTHER WORK WAS CARRIED OUT ON THIS PROJECT DURING THIS LAST PERIOD.	114.0	31.0	83.0	SEP 76	JUL 80
1 76 8045	FIBER-REINFORCE PLASTIC HELICOPTER TAIL ROTOR ASSEMBLY ***** DELINQUENT STATUS REPORT *****	285.0	238.0	47.0	FEB 78	DEC 79
1 74 8091	ADVANCED ADHESIVES FOR TRANSPARENT ARMOR ***** DELINQUENT STATUS REPORT *****	202.0	80.0	122.0	JUN 75	DEC 79
1 75 8120	IMPRVD HCPTR SKIN MATERIAL BY CNTRLLD SOLIDIFICATION + TMT BENCH FATIGUE TESTING WAS COMPLETED. A REPORT ON SUPPLEMENTARY BALLISTIC EVAL OF COMMERCIAL PURITY 7075-T73 IS BEING PREPARED. A FINAL REPORT FOR THE CONTRACTUAL EFFORT IS ALSO BEING PREPARED.	250.0	175.0	46.7	JUN 76	SEP 79
1 75 8129	COLUMBIUM ALLOY TURBINE ENGINE COMPONENTS BURNER RIG TESTS SHOW THAT UNDER TEST CONDITIONS, THE COATING FAILS.	250.0	169.4	80.6	APR 76	DEC 79
1 75 8136	HIGH STRENGTH FLEXIBLE CARGO RESTRAINT DEVICES ***** DELINQUENT STATUS REPORT *****	150.0	63.2	86.8	AUG 75	SEP 80
1 76 8148	PROCESSING ADVANCED GEAR MATERIALS TEST PINS HAVE SATISFACTORILY BEEN VACUUM CARBURIZED.	150.0	34.0	112.0	DEC 78	SEP 79



ARMAMENT R&D COMMAND
ARMAMENT MATERIEL READINESS COMMAND
(ARRADCOM, ARRCOM)
(AMMUNITION)

A R R C O M - A R R A D C O M (AMMUNITION)

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)	INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)
74	6	4,432,800	2,847,400	2,587,900 (90%)	1,585,400	1,584,700 (97%)
75	9	13,379,400	6,665,600	6,179,500 (92%)	6,713,800	3,995,800 (59%)
76	27	19,990,500	10,365,600	9,329,000 (89%)	9,624,900	6,978,600 (72%)
77	7	3,462,000	2,286,700	1,657,000 (72%)	1,175,300	642,300 (54%)
77	37	22,791,900	13,354,800	8,936,600 (66%)	9,437,100	7,572,700 (80%)
78	54	26,352,100	12,532,800	5,395,800 (43%)	13,819,300	6,263,900 (45%)
79	61	27,754,000	5,605,500	258,300 (4%)	22,148,500	1,210,400 (5%)
TOTAL	201	118,162,700	53,658,400	34,344,100 (64%)	64,504,300	28,208,400 (43%)

AUTHORIZED FUNDING CONTRACT ALLOCATED 45% INHOUSE ALLOCATED 54%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 75 1284	IMPROVEMENT + MOD OF INSP AIDS F/DEF + PROT ITEMS THE PROTOTYPE TESTER WAS COMPLETED AND THE PRELIMINARY ACCEPTANCE TESTING WAS CONDUCTED AT THE CONTRACTORS PLANT. THE CONTRACTOR IS OVER THE CONTRACT. FUNDS WERE MADE AVAILABLE FROM THE IN-HOUSE MONIES PROGRAMMED FOR THIS PROJECT.	424.0	300.0	84.0	JUN 77	APR 80
S 77 1295	MODERNIZATION OF CHARCOAL FILTER TEST EQUIPMENT THE CONTRACTOR IS CONTINUING WORK ON THE BREADBOARD. SOME DELAY IS BEING EXPERIENCED IN RECEIPT OF BREADBOARD COMPONENTS, AMONG THEM ARE THE AGENT VAPOR METERING PUMP AND THE TEST FILTER MOUNTING HYDRAULIC CLAMPS.	245.0	175.0	30.0	AUG 78	JAN 80
S 79 1295	MODERNIZATION OF CHARCOAL FILTER TEST EQUIPMENT ***** DELINQUENT STATUS REPORT *****	245.0	125.0	28.0		DEC 79
8 78 1296	MT FOR CB FILTERS SP2 PERFORATED PLATE FILLING MACHINE IS 70 PERCENT COMPLETE. SP3 FILTER VELOCITY TRAVERSE INSTRUMENT WAS BUILT AND PROVEN OUT. OTHER CONCEPTS, LASER, RADIOGRAPHIC AND THERMOGRAPHIC WERE IDENTIFIED. SP4 CONTRACT TO DETER SAFE DUST LEVELS WAS INITIATED	654.0	318.4	335.6	MAR 79	AUG 79
S 79 1296	MT FOR CB FILTERS SP2 HARDWARE WAS PROCURED FOR THE MFR OF ADDITIONAL FILTERS IN THE TWO PROTOTYPE FACE-FILLING MACHINES. SP3 A CONTRACT SCOPE WAS PREPARED FOR EVALUATING THE RELATIONSHIP BETWEEN FILLING PROCESS CONDITIONS AND FILTER PERFORMANCE CHARACTERISTICS.	380.0	175.0	104.0	MAY 80	MAY 80
S 76 1311	M229 REFIL KIT COMPONENT-CHEMICAL AGENT ALARM DELIVERY OF FILTER AND CAPSULE ASSEMBLY MACHINES HAVE SLIPPED TO AUGUST 79. DELAYS WERE TO DEBUGGING PROBLEMS ENCOUNTERED BY THE SUBCONTRACTOR.	570.0	177.0	355.0	DEC 77	NOV 79
S 77 1312	PAPER, CHEMICAL AGENT DETECTOR M8 TESTS INDICATE ALL THREE DYES USED IN M8 PAPER ARE MUTAGENIC, A SAFETY SOP AND PROTECTIVE REQUIREMENTS WERE DEVELOPED. MODIFICATIONS TO THE PILOT FACILITY WERE MADE TO PERMIT WORK WITH THE DYES.	118.0		76.0	MAR 78	SEP 79
S 79 1318	CHEMICAL PRODUCTION FILL, CLOSE AND LAP FOR 8 IN XM736 PROJ DOCUMENTS AND RECORDS AT CSL AND NAAP WERE REVIEWED TO ASSIST IN ESTABLISHING SOURCE, QUANTITY, AND COMPOSITION OF WASTE STREAMS ASSOCIATED WITH THE GL PROCESS.	398.0		12.0	MAR 81	MAR 81
S 77 1320	PILOT STATIONS FOR FILLING + CLOSING IMPROVED WP MUNITIONS THE IN-PLANT TEST OF THE INERTIA WELDER HAS BEEN COMPLETED. THE WELDER WAS SENT TO PBA FOR FINAL TESTING. THE TAPE AND MARK MACHINE WAS DEBUGGED. TESTING WAS SCHEDULED FOR JUN 79. A CONTRACTOR IS WORKING ON THE FINAL DESIGN OF A DRILL AND PIN MACHINE	374.0	257.0	108.0	JUL 78	SEP 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 78 1320	PILOT STATIONS FOR FILLING + CLOSING IMPROVED WP MUNITIONS THE MACHINE TO TORQUE THE WARHEAD TO THE ROCKET MOTOR WAS COMPLETED BY THE CONTRACTOR, TESTED, AND ACCEPTED. IT HAS BEEN SHIPPED TO PBA. AN RFP FOR THE TRANSFER SYSTEM HAS BEEN ISSUED. FAB OF THE VOL CYLINDERS AND NOZZLES FOR THE WP DRY FILL CNTINUED	375.0	39.0	50.0	SEP 79	FEB 80
S 77 1327	IMPROVEMENT AND MODERNIZATION OF GAS MASK LEAKAGE TESTING EFFORTS CONTINUED ON SHOP DRAWINGS, HAZARD ANALYSIS, TEST PLAN AND FABRICATION OF A PROTOTYPE TESTER. CONTRACTOR ANTICIPATES NINE MONTH SLIPPAGE DUE TO MANPOWER PROBLEMS.	305.0	193.0	32.0	MAR 79	MAR 79
B 78 1335	MFG TECH FOR NEW PROTECTIVE MASK A MANUFACTURING PLAN, PLANT LAYOUT, AND DIPEC SEARCH WERE COMPLETED. ORIGINAL PROCUREMENT ACTION FOR APRIL WAS CANCELLED. A SECOND SOLICITATION WAS RELEASED IN MAY.	724.0		141.6	JUN 79	JUN 80
S 79 1335	MAN TECH FOR NEW PROTECTIVE MASK A SPECIAL IPR IN APRIL RESULTED IN REORIENTATION OF THIS EFFORT. THE NEXT STATUS REPORT WILL REFLECT NEW MILESTONES, TASK DEFINITIONS, AND PROJECT OBJECTIVES.	629.0		38.6		
S 77 1337	ENGR STUDY F/ADAPT TRF OF UK TECH-LCHR SYS W/RP/BUTYL GREN PROCESS STUDIES COMPLETED ON TALCING TECHNIQUES AND EQMT. KNEADER-EXTRUDER OBTAINED AND LIMITED PROCESS STUDIES PERFORMED. PROCESS BASELINE PREPARED AND STAFFED FOR REVIEW.	354.0	98.0	251.0	JAN 79	JUL 79
B 78 1339	PREPARATION OF B-1 DYE MAJOR PIECES OF EQUIPMENT HAVE BEEN RECEIVED. THE OPERATING AREA IN THE PILOT PLANT HAS BEEN PREPARED FOR WORK WITH B-1 DYE. PRELIMINARY RESULTS OF SPRAY DRYING INVESTIGATION SHOWS THAT ACCEPTABLE PARTICLE SIZE B-1 DYE WAS OBTAINED.	461.0	40.0	286.0	JUN 79	OCT 79
B 78 1345	BIOLOGICAL WARNING SYSTEM CONTRACT AWARDED TO SOUTHERN RES FOR PROCESS STUDIES. INTER-MARK DELIVERED DRYING SYSTEM, COATING AND RE-IND SECTIONS FOR THE TAPE MAKING EQMT. CONTRACT AWARDED TO BENDIX FOR BIOLOGICAL DETECTORS. TAPE CASSETTE AND REFILL KIT STUDIES COMPLETE.	480.0	237.0	151.0	JAN 80	JUN 80
S 79 1345	BIOLOGICAL WARNING SYSTEM MODIFICATIONS TO THE CHEMILUMINESCENCE CELL WERE REQUIRED. ASSEMBLY PROCEDURES WERE DEVELOPED FOR THE INJECTOR PUMP. LIQUID TUBING HARNESS ORDERED FROM SIL-MED. SYRINGES ORDERED FROM UNIMETRICS. TOLERANCE STUDIES COMPLETED ON COLLECTOR/CONCENTRATOR.	525.0	169.0	74.0	DEC 80	DEC 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 HCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 78 1353	SMOKE MIX PROCESS (GLATT) ***** DELINQUENT STATUS REPORT *****	390.6				
5 79 1354	SLUDGE VOLUME REDUCTION AND DISPOSAL PROCESS STUDY ***** DELINQUENT STATUS REPORT *****	122.0				
5 79 1355	MANUFACTURING PLANT TOXIC EFFLUENT/EMISSION PRETREATMENT ***** DELINQUENT STATUS REPORT *****	104.0				
5 79 1403	IMPROVED PROC/SUBSTITUTION OF NONTOXIC DYES-M18 SMK GRENADES THIS PROJECT WAS JUST FUNDED, NO STATUS REPORT IS REQUIEED.	315.0				
5 79 1903	DIE CAST TAILCONE + DESIGN MACHINE FOR BLU-96/B THIS PROJECT WAS JUST FUNDED, NO STATUS REPORT IS REQUIRED.	450.0				
5 79 1905	PBX CONTINUOUS CASTING FOR MUNITIONS LOADING THIS PROJECT WAS JUST FUNDED, NO STATUS REPORT IS REQUIRED.	250.0				
5 76 3062	PELLET THERMAL POWER SUPPLY TECHNOLOGY CHEMICAL ANALYSES FOR CR, CA,CL, LI, K AND SI02 IN AVAILABLE POWDERS COMPLETED. ALSO BET SURFACE AREA ANALYSES COMPLETED. ANAL OF FLOW CHAR OF MOLTEN POWDERS STARTED. EQUIP FOR IN-HSE PREP OF DEB POWDERS NOW INSTALLED. VARIOUS PHYS AND CHEM TESTS PLD	150.0		119.0	JAN 78	DEC 79
5 76 3110	AUTOMATED ASSEMBLY AND TESTING OF SWITCHES ***** DELINQUENT STATUS REPORT *****	90.0	39.9	60.1	FEB 77	
5 77 3905	PS127 RESERVE POWER SUPPLY MFG FOR THE XM587 FUZE PROTOTYPE EDGE-PAINTING DEVICE MADE AND DEMONSTRATED, EQUIP DESIGN COMPLETED AND GOVT APPROVAL OBTAINED. FAB OF ELECTRODE AND SEP DIES, MATRIX STACKING AND PAINTING FIXTURE,AND MACHINE TO COAT ELECTRODE INNER EDGE BEGUN. PROJ SHOULD BE COMP BY YEAREND	375.0	122.0	43.0	NOV 78	NOV 79
5 78 3907	MNOS COUNTER-MEMORY CIRCUIT FOR FUZES PHASE I COMPLETED, PHASE II DRAFT REPORT COMPLETED, FABRICATION OF PHASE III DEVICES COMPLETED, ALL 3 PHASES, GROUP A+B TESTS SUCCESSFUL, GROUP C TESTS (GUN FIRING) REMAINS, READY TO START FABRICATION OF PHASE IV DEVICES.	300.0	273.7	6.3	SEP 79	SEP 79
5 79 3913	MECHANICAL JOINING OF MINIATURIZED ELECTRONIC COMPONENTS M732 FUZE BATTERY COMPONENTS WERE RECEIVED AND ASSEMBLY JIGGING IS BEING PUT TOGETHER. CONNECTIONS FOR THE HIGH POWER LASER WERE RECEIVED, WHEN READY, PULSE DURATION, SPOT SIZE + POWER DENSITY WILL BE OPTIMIZED. A DESIGN GUIDE WILL BE PREPARED.	89.0	59.0	5.9	DEC 79	MAY 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION OF 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 77 3947	THICK FILM HYBRID CIRCUITS FOR XM587E2/XM724 FUZES HONEYWELL COMPLETED ITS WORK ON THE HYBRID OSCILLATOR CIRCUIT, IS WRITING ITS FINAL REPORT + REQUESTED $43K ADDITIONAL. RCA HAD LOW YIELD ON ITS ARMING + FIRING CIRCUIT AND WILL SHIP ONLY 900 UNITS BUT WILL NOT HAVE A COST OVERRUN.	150.0	120.0	30.0	SEP 79	SEP 79
S 78 3947	THICK FILM HYBRID CIRCUITS FOR XM587E2/XM724 FUZES SEE SUBTASKS A AND B.	530.0	468.4	11.0	JUL 79	SEP 79
S 78 3947A	THICK FILM HYBRID CIRCUITS—HONEYWELL HONEYWELL BUILT 700 OF 2000 HYBRID OSCILLATOR CIRCUITS FOR THE 587/724 ET FUZE. HONEYWELL IS EMPLOYING THE TAPE AUTOMATED BONDING SYSTEM AND LASER TRIMMING, A COST OVERRUN OF $43K WAS REQUESTED. FINAL REPORT IS BEING PREPARED.	267.0	245.4	8.0	JUL 79	JUL 79
S 78 3947B	THICK FILM HYBRID CIRCUITS—RCA RCA BURLINGTON WILL SHIP ONLY 900 OF 2000 INTEGRATED ARMING AND FIRING CIRCUITS BECAUSE OF TECHNICAL PROBLEMS, THEY WILL HAVE A 2 MONTH DELAY BUT NO COST OVERRUN. THESE HYBRID UNITS MUST BE GUN TESTED BY MDL.	263.0	221.0	5.0	JUL 79	SEP 79
S 79 3961	PROTOTYPE PRN EQUIP FOR PRINTED CIRCUIT BOARDS MDL WILL PRODUCE LARGE-SHEET, MULTIPLE-ARRAY PRINTED CIRCUITS ON COMMERCIAL EQUIPMENT, WILL DO DRILLING, LAMINATING, PERFORATING AND WAVE SOLDERING. NC DRILL WAS INSTALLED AND WORKS OK, WILL LOOK AT ADDITIVE (PLATING) + SUBTRACTIVE (ETCHING) PROCESSES	405.0	205.0	26.0	DEC 79	MAR 81
S 79 3961	IMPROVED 3-D VIBRATION ACCEPTANCE TEST FOR ART FUZES SOW'S ENGINEERING DESIGN WAS BEEN COMPLETED. THE PROCUREMENT PROCESS COMMENCED IN MID MAY 1979. THE PLANNED FUND OBLIGATION DATE FOR HALF DOLLARS IS THE MONTH OF SEPTEMBER 1979.	242.0	192.0	20.0	SEP 81	MAY 81
S 74 4000	AUTOMATED M55 DETONATOR PRODUCTION EQUIPMENT BECAUSE OF PROBLEMS ENCOUNTERED AT LSAAP IN BLENDING PA-130, CURRENT PLANS ARE FOR ARRADCOM TO MAKE THE MIX ONSITE AND SHIP TO THE LOAD PLANT IN CAPSULES.	549.0	64.0	485.0	JUN 75	DEC 81
S 77 4000	AUTOMATED M55 DETONATOR PRODUCTION EQUIPMENT FINAL OFFERS FOR MULTI-TOOLED HAZARD ANALYSIS WERE RECEIVED FROM FOUR CONTRACTORS, PROPOSALS WERE EVALUATED AND RECOMMENDATIONS SENT TO PROCUREMENT.	1,000.0	417.0	532.3	FEB 81	DEC 81
S 78 4000	AUTOMATED M55 DETONATOR PRODUCTION EQUIPMENT EQUIP FOR ULTRASONIC SEALING OF LIVE DETONATORS IS BEING SET-UP, TEST HAS INDICATED THAT A .002 HOLE IN A CUP CAN BE DETECTED, ARC HAS SHOWN FEASIBILITY OF A BENCH MODEL CRIT. INSPECTION MODULE, 4,000 DET WERE LACQUERED W/ QUICK DRY LACQUER FOR TEST.	1,400.0	565.0	576.0	DEC 79	MAR 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-381

PROJ NO.	TITLE + STATUS	AUTHO-RIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 79 4000	AUTOMATED M55 DETONATOR PRODUCTION EQUIPMENT MATERIAL HANDLING/SYSTEM INTEGRATION-FORMULATION AND REVIEW OF MATERIAL HANDLING CONCEPTS ARE CONTINUING. A TEST PLAN FOR COMPARING THE BALL AND CHAMLEE DISPENSER HAS BEEN PREPARED.	1,600.0	451.0	150.1	MAR 81	MAR 81
S 74 4009	AUTO OF EQUIP FOR A/P OF SMALL SHAPED CHARGE ROCKETS SEE PROJECT S 76 4009 FOR WORK STATUS.	1,045.0	829.4	215.6	MAY 75	SEP 79
S 75 4009	AUTO OF EQUIP FOR A/P OF SMALL SHAPED CHARGE ROCKETS SEE PROJECT S 76 4009 FOR WORK STATUS.	650.0	389.9	259.8	SEP 76	SEP 79
S 76 4009	AUTO OF EQUIP FOR A/P OF SMALL SHAPED CHARGE ROCKETS INSTALLATION OF EQUIP AT LOAD PLANT DELAYED PENDING PM DECISION. DISCUSSIONS WERE HELD WITH GENERAL DYNAMICS ON POSSIBLE USE OF EQUIP ON VIPER. IT WAS INDICATED THAT ALL THE EQUIP WILL BE PLANNED FOR USE.	781.0	519.5	214.7	MAR 77	SEP 79
S 75 4012	FINAL ROLL MILL/PAD-MAKEUP MACHINE FOR MORTAR INCREMENTS THE (AS BUILT) FINAL ROLL AND PAD MAKE UP LINE FOR MORTAR SHEET PROPELLANT WAS CHECKED OUT WITH INERT COMPOSITION FOR UNIT OPERATIONS FUNCTION AND CONTINUITY BETWEEN UNITS. PROBLEMS WITH HOPPERS, 2 ROLL CALENDAR PLOWS, + CUTTER STACKER DRUM REMAIN.	701.0	597.0	89.6	JUN 76	APR 81
S 79 4024	DSN DEV BLD PROT COMP AND AUTO ASSY MACH M223 FZ SCOPE OF WORK WAS PREPARED AND STAFFED. PROCUREMENT WAS MADE AN INITIAL SOLICITATION.	1,132.0		9.9	SEP 81	SEP 81
S 78 4041	AUTO EQUIP FOR ASSY OF MORTAR COMPONENTS MACHINING, ASSEMBLY AND DEBUGGING OF THE REMAINING FIVE STATIONS IS 86% COMPLETE. PANEL DESIGNS FOR THE STATIONS AND THE CONTROL ROOM WERE FINALIZED. COMBINATION WITH MAAP ON ALL ASPECTS OF THE LINE WAS CONTINUED.	759.0	543.0	116.4	JUL 79	OCT 79
S 79 4046	QUANTITATIVE ANAL. OF BLENDED EXPLOS. SAMPLES PREPARED LIST OF RESPONSIBILITIES AND TASKS FOR IN-HOUSE WORK. PREPARED SCOPE OF WORK FOR CONTRACTOR.	307.0	71.0		NOV 80	NOV 80
S 75 4050	AUTOMATED LOADING OF PROPELLANT FLASH REDUCERS FABRICATION AND ASSEMBLY OF MODULE WAS COMPLETED AND TESTING WAS DONE. ONLY 1 TYPE FLASH REDUCER WAS SUCCESSFULLY LOADED, THE M74 M2. LOADING OF THE 155MM M3A1 REDUCER WITH GREEN BAG ATTACHED WAS UNSUCCESSFUL. DISPOSITION OF PROJ IS BEING DECIDED.	1,187.4	847.9	199.6	MAR 76	JUN 79
S 79 4051	IMPROVED INSTR CONTROL FOR ACID PLANTS VISITS WERE MADE TO MAAP, VAAP, HAAP AND NAAP TO INSPECT AND DISCUSS INSTR AND CONTROL PROBLEMS FOR THE ACID PLANTS. GOCO PLANTS PROVIDED INFO ON INSTRUMENT MODELS, PROBLEMS AND RECOMMENDATIONS FOR REPLACING OR REPAIRING.	157.0		49.4	DEC 79	DEC 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 74 4054	PROC IMPROVED ENG F/MOD+AUTO OF ARTY PROP CHARGE MFR DEBUGGING HAS PRODUCED SOME IMPROVEMENT IN RELIABILITY INCLUDING REDUCING THREAD BREAKAGE AND CLOTH TUBE SLIPPAGE. THE PROBLEMS OF DROPPED THREAD AND OCCASIONAL CLOTH TUBE SLIPPAGE APPEAR SOLVABLE. MACHINE WILL BE SHIPPED TO ARRADCOM FOR MORE WORK.	710.0	452.4	257.6	MAR 75	JUN 79
S 79 4059	OPTIMIZATION + NITROGUANADINE IN M30 PROPELLANT THIS PROJECT WAS JUST FUNDED. NO STATUS REPORT IS REQUIRED.	250.0				
S 79 4062	AUTO MFG SYSTEM FOR MORTAR INCREMENT CONTAINERS THE MANUFACTURING PROCEDURES FOR INCREMENT CONTAINERS WERE REVIEWED. THE NC PAPER MOLDING PROCEDURE IS MORE ADAPTABLE TO AUTOMATION THAN THE NC SLURRY VACUUM MOLDING PROCEDURE. A SCOPE OF WORK WAS PREPARED DEFINING A THREE PHASE CONTRACT EFFORT.	507.0		24.0	APR 82	APR 82
S 79 4064	AUTO LAP OPERATIONS FOR 105MM TANK CARTRIDGES A CONTRACT SOW WAS PREPARED AND RELEASED FOR SOLICITATION. A PRE-BID CONFERENCE WAS HELD AT MILAN AAP. GOCO SOW PARTIALLY RELEASED PENDING FINALIZATION OF COMMERCIAL CONTRACT.	1,262.0	85.0	29.4	SEP 80	SEP 80
S 79 4084	OPACITY/MASS EMISSION CORRELATION CONTRACT AWARDED TO JACA CORP, FT. WASHINGTON, PA TO PERFORM CORRELATION STUDY BETWEEN OPACITY AND MASS EMISSIONS OF FORGING OPERATIONS.	121.0	77.5	3.5	JUN 81	JUN 81
S 77 4105	AUTO INCREMENT L/A OF PROP CHARGE W/CENTRAL CORE IGNITERS TOP FOR PACKOUT HAS BEEN COMPLETED. FABRICATION IS 20% COMPLETE. 95% OF REQUIRED ITEMS HAVE BEEN PURCHASED. COMPLETION OF BALANCE OF PACKOUT MODULE WILL BE WITH IPF FUNDS. MMT WILL BE ENDED UPON INSTALLATION OF LOAD + ASSEMBLE MODULES AT CRANE AAA.	1,385.0	1,059.8	322.7	MAY 78	AUG 79
S 77 4114	POLLUTION ABATEMENT METHODS FOR P+E SEE PROJECT S 77 4114.	500.0		225.0	SEP 78	NOV 79
S 75 4114	METHODS TO MINIMIZE ENVIRONMENTAL CONTAMINATION SEE PROJECT S 77 4114.	5,950.0	2,007.2	1,400.5	MAY 78	AUG 79
S 76 4114	METHODS TO MINIMIZE ENVIRONMENTAL CONTAMINANATION SEE PROJECT S 77 4114.	5,200.0	1,429.5	1,588.1		NOV 79
S 77 4114	DEVELOPMENT OF POLLUTION ABATEMENT TECHNOLOGY SEE FOLLOWING INDIVIDUAL TASKS FOR WORK STATUS.	1,007.0	100.4	569.7	NOV 79	APR 80
S 77 4114E02	ECOLOGICAL SURVEY OF DARCOM INSTALLATIONS ALL WORK AND REPORTS HAVE BEEN COMPLETED FOR NAAP, RAAP, MAAP, VAAP, TEAD, PHA, TOAD, AND AAP. JOINT EFFORT WITH DUGWAY PROVING GROUNDS HAS COMPLETED ECOLOGICAL SURVEYS.				NOV 77	DEC 78

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 77 4114E03	SOLUBILITY LIMITS FOR SOLID WASTES AT PBA COMPLETED.				OCT 77	JUN 78
5 77 4114E04	MONITOR OF AIR POLLUTION EMISSION AT PBA COMPLETED.				FEB 77	JUN 78
5 77 4114E06	MONITORING TOXIC EFFLUENTS WITH BIO SENSORS VPI CONDUCTED EXP RUNS ON WASTE RIVER WATER AND CHLORINATED TAP WATER TO ESTABLISH CRITICAL LIMITS. THE TRAILER HAS BEEN WINTERIZED AND THE NUMBER OF MONITOR TANKS DOUBLED. MAJOR DELAYS HAVE BEEN CAUSED BY TRANSFER OF FUNDS THROUGH ARRCOM.				APR 79	FEB 79
5 77 4114E08	EDGEWOOD ARSENAL WASTEWATER TREATMENT ENGINEERING SUPPORT FOR THE DECON/DETOX FACILITY IS COMPLETED. ELEMENTAL PHOSPHORUS TREATMENT SYSTEM IS PLANNED FOR E518A.				JUN 77	JUN 79
5 77 4114E09	CONVERTING P4 AND PHOSPHATE FOR FINAL DISPOSAL COMPLETED.				DEC 76	JUN 78
5 77 4114F01	IDENT + CONTROL OF POLLUTION - PRESENT REQMTS BIDS WERE RECEIVED BY AMRON FOR WASTE TREATMENT CENTERS. INDUSTRIAL WASTE TREATMENT PLANT LAYOUT WAS REVIEWED. WASTEWATER TREATMENT FACILITY PLANNED TO MEET PERMIT REMTS IN WISCONSIN.	59.0		37.3	SEP 77	JUN 79
5 77 4114F02	CONTROL OF POLLUTION GENERATED BY SURFACE TREAT LINES COMPLETED.				FEB 77	JUN 79
5 77 4114F03	REMOVAL OF SOLID WASTES FROM METAL PARTS MFG PROCESSES COMPLETED.					JUN 79
5 77 4114F04	IMPROVED TREATMENT FOR PRIMER MIX PLANT COMPLETED.				APR 77	JUN 79
5 77 4114F05	ELIMINATION OF OIL IN QUENCH HARDENING OF STEEL COMPONENTS COMPLETED.					JUN 79
5 77 4114F06	LUBRICATION POLLUTION PROBLEMS COMPLETED.					JUN 79
5 77 4114F07	FORMULATION OF PAINTS AND THINNERS WITH LESS TOXIC SOLVENTS DELETED.					JUN 79
5 77 4114F08	POLLUTION ABATEMENT FROM PLATING OPERATIONS COMPLETED.				SEP 77	JUN 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 77 4114F09	APPLICATION OF ATMOSPHERIC CONTROLLED FURNACES DELETED.					JUN 79
5 77 4114F10	PYROTECHNIC WASTE DISPOSAL COMPLETED.				DEC 76	JUN 79
5 77 4114F11	RECYCLING TECHNIQUES FOR DE-SCALE WATER DELETED.					JUN 79
5 77 4114F12	POLLUTION CONTROL FOR SCAMP COMPLETED.				MAR 78	JUN 79
5 77 4114F13	MONITOR + CONTROL OF POLLUTANTS ON-SITE INSTALLATION AND WATER QUALITY TESTING WAS PERFORMED AT LOUISIANA AAP UTILIZING THE MACH EQUIPMENT.				JUN 77	APR 80
5 77 4114F14	ELIM OF AIR POLLUTION FROM METAL PARTS MFG COMPLETED.				JUN 77	JUN 79
5 77 4114F15	DISPOSAL OF MERCURY FROM STRESS CRACK TESTS COMPLETED.				DEC 78	JUN 79
5 77 4114F16	WATER BASED FORGING LUBRICANTS COMPLETED.					JUN 79
5 77 4114P01	PROGRAM CONTROL, COORDINATION AND SUPPORT FINAL REPORT ON THE EVALUATION OF ANTHRAFILT FILTER AS A PRETREATMENT FOR PINK WASTEWATER HAS BEEN RECEIVED FROM KANSAS AAP.	183.5	167.0	116.4	SEP 78	SEP 78
5 77 4114P02	BOMB WASHOUT WATER TREATMENT COMPLETED.					JUN 79
5 77 4114P03	SELLITE WASTE TREATMENT COMPLETED.					JUN 79
5 77 4114P04	NO-X ABATEMENT METHODS FINAL TECH REPORT INCORPORATING STATISTICAL DATA REPORTED BY CERL IS BEING WRITTEN.				NOV 79	AUG 79
5 77 4114P05	EXPLOSIVE CONTAMINATED INERT WASTE DISPOSAL COMPLETED.					JUN 79
5 77 4114P06	PROPELLANT AND EXPLOSIVE WASTE INCINERATION FINAL REPORT FOR THE FLUIDIZED BED INCINERATOR SYSTEM IS COMPLETED. INCINERATOR OPERATOR AS PER DESIGN SPECIFICATION AND ACCORDING TO TEST SCHEDULE.				JUN 77	APR 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 77 4114P07	ELIMINATION OF NITRATE WASTES COMPLETED.					JUN 79
S 77 4114P08	DISPOSAL OF RED WATER FROM TNT PURIFICATION FIVE LONG DURATION PILOT SCALE MULTI-HEARTH FURNACE TESTS WERE PERFORMED. SOW WAS PREPARED FOR AMENDING OPERATING CONTRACTS AT RAAP AND VAAP.				JUN 77	JAN 79
S 77 4114P09	TREATMENT OF NITROBODY WASTES COMPLETED.				OCT 76	JUN 79
S 77 4114P10	DISPOSAL OF WASTES FROM PROPELLANT MFG FINAL REPORT ON THE REUSE OF SCRAP PROPELLANT PROCESS HAS BEEN REVIEWED. EXP RUNS WERE MADE WITH SYN BALL POWDER THROUGH ULTRA FIL AND REV OSMOSIS UNIT. RUNS WERE SUCCESSFUL.				MAR 79	APR 80
S 77 4114P11	ELIMINATION OF SULFATE WASTES COMPLETED.					JUN 79
S 77 4114P12	ELIMINATION OF ORGANIC WASTES SUCH AS SOLVENT FINAL REPORT IS BEING REVIEWED PRIOR TO PUBLICATION.				AUG 77	JUN 79
S 77 4114P13	DISPOSAL OF FLY ASH AND BOTTOM ASH WASTES CANCELLED.					JUN 79
S 77 4114P14	POLLUTION ABATEMENT IN PROCESSING METAL PARTS FOR AMMO TOTAL RESPONSIBILITY FOR THIS TASK HAS BEEN TRANSFERRED TO LARGE CAL LABS, ARRADCOM.					APR 80
S 77 4114P15	IMPROVED TREATMENT FOR PRIMER MIX PLANTS TOTAL RESPONSIBILITY FOR THIS TASK HAS BEEN TRANSFERRED TO LARGE CAL LABS, ARRADCOM.					APR 80
S 77 4114P16	PROCESS WATER MANAGEMENT AT GOCO PLANTS EVALUATION OF THE REUSE OF STEAM CONDENSATE AT KANSAS AAP HAS BEEN COMPLETED. WAX REMOVAL METHODOLOGY AND TREATED WATER REUSE STUDIES ARE COMPLETED. DISCREPANCIES IN WATER UTILIZATION DATA RESOLVED AT SUNFLOWER AAP.	392.7	62.0	296.4	NOV 77	JUN 79
S 77 4114P17	ELIMINATION OF PHOSPHATE WASTES FROM COOLING TOWER EFFLUENT COMPLETED.					JUN 79
S 77 4114P18	UTILIZATION OF WASTE ENERGETIC MATERIALS COMPLETED.				SEP 77	JUN 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 77 4114P19	METHODS + EQPT TO MONITOR AND CONTROL POLLUTANTS EVALUATION OF THE AUTOMATIC CONTROL SYSTEM CONTINUES BECAUSE OF NG MONITOR PROBLEMS. CARBON AND SULFIDE MONITORS HAVE BEEN CHECKED OUT AND ARE OPERATIONAL. INSTRUMENTATION FOR NOX CONTROL SYSTEM IS READY FOR INSTALLATION.				JAN 79	MAR 80
S 77 4114P20	DISPOSAL OF LEAD AZIDE COMPLETED.				JAN 77	JUN 79
S 77 4114P21	MODELING AND COMPUTER SIMULATION NOT FUNDED.					
S 77 4114P22	REGENERATION OF ACTIVATED CARBON COMPLETED.				JUN 77	JUN 79
S 77 4114P23	DISPOSAL OF METHYL NITRATE FROM HMX + RDX COMPLETED.				DEC 77	JUN 79
S 77 4114P24	REMOVAL TECHNIQUES FOR RDX + HMX COMPLETED.				AUG 75	JUN 79
S 77 4114P25	HAZARDS ANALYSIS OF POLLUTION ABATEMENT TECHNIQUES COMPLETED.					JUN 79
S 77 4114P26	SO-X ABATEMENT METHODS COMPLETED.				FEB 77	JUN 79
S 77 4114P27	SOLID WASTE SOIL DISPOSAL TECHNIQUES PROBLEMS WITH DETECTION SYSTEM FOR AIRBORNE NITROBODIES RESOLVED. COMPOST EXP MADE WITH VARYING RATIOS OF CARBON TO NITROGEN.				MAR 78	APR 80
S 77 4114P28	REMOVAL OF SMALL QUANTITIES OF AMMONIA IN STREAMS COMPLETED.					JUN 79
S 77 4114P30	DESTRUCTION AND DECONTAMINATION OF BULK MATERIAL COMPLETED.				JUL 77	JUN 79
S 77 4114P31	FREEZE TECHNOLOGY FOR WATER POLLUTION COMPLETED.				SEP 77	JUN 79
S 77 4114P32	INDUSTRIAL WASTE WATER TREATMENT, HOLSTON AAP COMPLETED.				FEB 77	JUN 79
S 77 4114P33	REMOVAL OF NO-X AND TNM FROM NITRATION FUMES DRAWINGS AND WRITTEN SPECS ADDED TO BID PACKAGE FOR C-LINE AT RADFORD AAP.				NOV 79	MAR 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 MCS DRCMT-301

PROJ NO.	TITLE • STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 77 4114P34	OXIDATION OF NITROBODIES FINAL REPORT RECEIVED FROM INNOVA,INC. ON ELECTROCHEMICAL PROCESS.	170.4	11.5	158.9	MAY 78	JUL 79
S 77 4114P35	BIOLOGICAL WASTEWATER TREATMENT PILOT PLANT COMPLETED.					JUL 79
S 76 4122	PRODUCTION LINE MODERNIZATION FOR CBU WEAPONS CONTROL SYSTEM HAS BEEN DESIGNED AND IS BEING ASSEMBLED. SEVERAL MAIN ITEMS HAVE BEEN RECEIVED. A REQUEST HAS BEEN ISSUED TO REMOVE PRESENT CONTROL AND HYDRAULIC SYSTEMS FROM THE PRESS SO THAT NEW EQUIPMENT MAY BE INSTALLED AS IT ARRIVES.	721.0	128.0	559.3	MAR 77	DEC 79
S 79 4124	FABRICATION OF CONTROL ACTUATION SYSTEM HOUSINGS A PROPOSAL HAS BEEN RECEIVED AND IS PRESENTLY BEING EVALUATED. THIS PROJECT IS BEHIND SCHEDULE DUE TO ADDITIONAL TIME FOR PROPOSAL SUBMISSION. THIS PROJECT SHOULD PROVIDE ECONOMICAL MID-VOLUME PRODUCTION OF CONTROL SYSTEM HOUSINGS.	930.0		4.0	JUN 80	JUN 80
S 75 4136	DEVELOPMENT OF A GENERALIZED MATH MODEL NO PROGRESS REPORTED ON THIS FY OF THE PROJECT.	283.0	80.0	203.0	JAN 76	DEC 79
S 76 4136	DEVELOPMENT OF A GENERALIZED MATH MODEL A CONTRACT WAS AWARDED TO DR. E. MUTH OF THE UNIVERSITY OF FLORIDA. A LITERATURE SEARCH WAS COMPLETED AND MODEL DEVELOPMENT INITIATED.	150.0	21.5	115.0	JUN 77	SEP 79
S 79 4137	AUTOMATED LOADING OF CENTER CORE IGNITERS FUNDING HAS BEEN RECEIVED. GOCO SCOPE OF WORK FOR FEASIBILITY STUDY HAS BEEN COMPLETED AND FORWARDED TO ARRCOM. CONTRACTOR SCOPE OF WORK FORWARDED TO ARRADCOM PROCUREMENT IN APRIL 1979.	205.0		30.0	OCT 79	FEB 80
S 78 4139	APPLICATION OF RADAR TO BALLISTIC ACCEPTANCE TEST OF AMMO SYSTEM INTEGRATION AND STATIC TESTS AT THE CONTRACTORS PLANT WERE COMPLETED. THE SYSTEM WAS SHIPPED TO YUMA PROVING GROUNDS AND INSTALLED. DYNAMIC TESTING USING THE 4.2 IN MORTAR ROUNDS WAS STARTED. SOME MODIFICATION OF PROGRAMS AND ALGORITHMS REQ'D.	1,565.0	1,239.4	226.4	FEB 79	DEC 79
S 79 4139	APPL OF RADAR TO BALLIST ACC TESTG OF AMMO•ARRAT SYSTEM TESTING IS CONTINUING USING THE 60 AND 81MM MORTAR ROUNDS. VARIOUS TARGET INTERCEPT MODES WERE TESTED AND SYSTEM SOFTWARE WASCORRECTED AND IMPROVED. INTERCEPT AND TRACKING PERFORMANCE IS GRADUALLY IMPROVING.	245.0	120.0		SEP 79	SEP 79
S 78 4143	MFG OF CANISTERS AND COMP F/M259 • M264 ROCKETS A CONTRACT WAS AWARDED. THE CONTRACTOR HAS PRESENTED CANDIDATE MANUFACTURING PROCESSES TO GSL FOR COMMENT AND APPROVAL. A COST BREAKDOWN FOR EACH PROCESS WAS INCLUDED. FABRICATION OF SAMPLE QUANTITIES OF HICKS WAS BEGUN.	160.0	82.2	22.0	MAR 80	MAR 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 76 4147	COMPUTER CONTROL APPLICATION TO CONTINUOUS TNT MANUFACTURE DETAILED SPECS AND DRAWINGS FOR INSTALLATION OF FIELD EQUIPMENT WERE COMPLETED, AND AN IRF WAS ISSUED. FOUR PROPOSALS WERE RECEIVED AND ARE BEING EVALUATED.	795.0	765.0	30.0	NOV 75	APR 80
S 78 4149	LOADING OF 30MM ADEN/DEFA MEDP AMMUNITION DESIGN OF PROJ FLUTED LINER AND CHARGE LOADING WAS FINALIZED. TOOLING FOR PROJ FABRICATION IS READY FOR TESTING. THE CHARGING PROCESS HAS BEEN DEVELOPED AND ACCEPTED FOR QUALIFICATION TESTING.	500.0	405.7	55.9	MAY 79	APR 80
S 78 4150	NEW MANUFACTURING PROCESSES FOR SAWS AMMUNITION THIS PROJECT IS IN THE PROCESS OF BEING REWRITTEN. THE NEW EMPHASIS WILL BE ON INTERFACIN WITH CONVENTIONAL PRODUCTION EQUIPMENT RATHER THAN THE SCAMP EQUIPMENT. CONTRACT NEGOTIATIONS ARE IN PROGRESS.	50.0		26.4	SEP 80	SEP 79
S 78 4153	INERTIA WELDER FOR THE M509 AND M483 PROJECTILES ULTRASONIC INSPECTION PROCEDURES ARE BEING ESTABLISHED FOR INERTIA WELDED BANDS.	350.0	225.0	9.0	AUG 80	FEB 80
S 79 4163	CONTROLLED PROD LOADING SYS F/105MM HEAT-T M456A1 AN OVERALL TEST PLAN WAS PREPARED AND RELEASED. PROJECTILE METAL PARTS, FUNNELS, DIAL THERMOMETERS, ETC., WERE ORDERED. AN M456A1 PROJECTILE WAS INSTRUMENTED TO OBTAIN COOLING RATE DATA.	419.0	20.2	38.7	DEC 79	DEC 79
S 79 4189	HIGH FRAGMENTATION STEEL PRODUCTION PROCESS THIS PROJECT WAS JUST FUNDED. NO STATUS REPORT IS REQUIRED.	400.0				
S 79 4194	IMPROVED PROCESS F/PRESSING LX-14 EXPL CHARGES THIS PROJECT WAS JUST FUNDED. NO STATUS REPORT IS REQUIRED.	327.0				
S 77 4202	PROTO EQ F/CONT AUTO PROD OF SOLVENT- TYPE MULTI-BASE PROP CAMBL PROTOTYPE LINE WAS WINTERIZED AND WILL BE AVAILABLE FOR FUTURE USE AFTER REPAIRS ARE MADE TO NG AREA. BALLISTIC DATA OF M30A1 INDICATES BETTER UNIFORMITY THAN THAT MADE ON THE BATCH PROCESS. ONLY WORK BEING PURSUED IS WRITING A FINAL REPORT.	505.0	308.0	186.1	MAR 78	OCT 79
S 77 4211	MOD OF PROCESS CONTROL OF EXPLOSIVE COMPOSITIONS RDX/TNT COMPOSITION ANALYZER AND ANCILLARY EQUIPMENT WAS INSTALLED AND TESTED. A STIMULANT WAS USED TO CHECK THE RESPONSES OF THE SYSTEM. THE SOW FOR THE AUTOMATED IMPACT TESTER HAS BEEN REVISED AND FORWARDED FOR PROPOSALS.	427.0	243.4	129.7	AUG 78	MAR 81
S 78 4214	POLLUTION ENGINEERING FOR 1983-85 REQUIREMENTS SEE FOLLOWING INDIVIDUAL TASKS FOR WORK STATUS.	1,180.0	515.9	594.0	SEP 79	DEC 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 78 4214P1	TECHNOLOGY REQUIREMENTS BIOENGR, R+D LAB INITATED PROGRAM TO STUDY EFFLUENTS RESULTING FROM VARIOUS TECHNOLOGIES. MEETING HELD CONCERNING MMT ALTERNATIVE TECHNOLOGIES FOR THE TREATMENT OF PINK WATER. MODERNIZATION AND MCA PROGRAMS WERE REVIEWED.	212.0	0.3	163.3	SEP 79	SEP 79
5 78 4214P2	IN-PLANT REUSE OF POLLUTION ABATED WATERS REPORT ON INDUSTRIAL MODEL FOR ABATED WATER REUSE SUBMITTED TO LC-SL. STUDY OF FIRE WATER DISTRIBUTION SYSTEM SHOWED THAT SUFFICIENT WATER WAS AVAILABLE. ECONOMIC ANALYSIS FOR REUSE OF WATER CONDUCTED.	377.0	130.3	244.0	JUL 79	NOV 79
5 78 4214P3	LOW COST SYSTEM TO ABATE NITROBODY POLLUTION UV/OZONE UNIT HAS BECOME OPERATIONAL AND IS UNDERGOING FINAL CHECKOUT. TWO STAGE, TWO COMPONENT EXTRACTION SYSTEM IS BEING STUDIED. BENCH SCALE MODEL OF EXTRACTION PROCESS IS BEING FINALIZED.	355.0	235.3	108.0	JUL 79	APR 79
5 78 4214P4	NG-NITRATE ESTER REMOVAL BY ADSORPTION/RECYCLE EXP RUNS MADE ON ADSORPTION COLUMN CONTAINING ROHM AND HAAS RESINS. INITIAL WORK HAS BEGUN ON SITE SELECTION FOR THE PILOT PLANT.	236.0	150.0	78.7	JUL 79	DEC 79
5 79 4214	POLLUTION ENGINEERING FOR 1983-85 REQUIREMENTS SEE FOLLOWING INDIVIDUAL TASKS FOR WORK STATUS.	1,269.0	553.0	63.0	SEP 80	SEP 80
5 79 4214P1	TECHNOLOGY REQUIREMENTS SOW FOR CHEMICAL ASSESSMENT IS BEING IMPLEMENTED AT IOWA AAP TO ASSESS EFFECTIVENESS OF VARIOUS TECHNOLOGIES FOR REMOVAL OF NITROBODIES FROM PINK WATER.	367.0	142.0	9.5	SEP 79	SEP 79
5 79 4214P2	IN-PLANT REUSE OF POLLUTION ABATED WATERS NO CHANGE IN STATUS.	449.0	294.0	36.8	JUL 80	JUL 80
5 79 4214P3	LOW COST SYSTEM TO ABATE NITROBODY POLLUTION ELECTOCHEMICAL/OXIDATION CELL IS CURRENTLY BEING FABRICATED BY INNOVA. EVALUATION WILL BE CARRIED OUT BY SPECIAL TECH. BRANCH/MTD AND MERDC.	325.0	45.0	11.2	MAR 80	APR 80
5 79 4214P4	NG-NITRATE ESTER REMOVAL BY ABSORPTION/RECYCLE OPERATING PROCEDURE FOR NEW ADSORPTION COLUMN WAS MODIFIED TO INCLUDE NEW FLOW RATES AND SAMPLING FREQUENCIES. BENCH-SCALE APPARATUS AND SUPPORTING EQUIP. WAS MOVED INTO A NEW APPROVED FACILITY.	128.0	70.0	5.5	SEP 80	SEP 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS URCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 74 4215	AUTO THE CONTINUOUS TNT PROD FACILITY PROCESS CONTROLS A DOUBLE-TUBED LIQUID CHROMATOGRAPH WAS INSTALLED AND TESTED. THE ACID SAMPLE PASSES THRU THE INNER TUBE WHILE WATER PASSES THRU THE OUTER TUBE. TEST RESULTS WERE INCONCLUSIVE. TESTING AT HIGHER TEMPERATURE ALSO WAS PLANNED.	323.8	224.6	99.2	MAY 75	AUG 79
S 77 4223	APPLICATION OF ULTRASONIC ENERGY TO DOUBLE-BASE PROP PROC MAJOR DESIGN DEFICIENCIES WITH THE ACOUSTIC ASSEMBLY AND THE FREQUENCY GENERATION EQUIPMENT WERE RESOLVED. EXTRUSION OPTIMIZATION STUDIES WERE BEING CONDUCTED WITH LIVE PROPELLANT.	330.0	48.0	269.0	SEP 78	FEB 80
S 79 4225	RED WATER POLLUTION ABATEMENT SYSTEM THIS PROJECT WAS JUST FUNDED, NO STATUS REPORT IS REQUIRED.	350.0				
S 78 4228	AUTOMATED BAG LOADING/CHARGE ASSEMBLY + PACKOUT-155MM/8IN TECH DATA PACKAGE FOR THE ASSEMBLY MACHINE WAS COMPLETED. TDP FOR PACKOUT LINE NEARED COMPLETION. ALL ADDITIONAL WORK ON THE LOADING MODULE (16 LB BAG SCALE) HAD EARLIER BEEN TERMINATED FROM THIS PROJECT.	137.4		112.8	AUG 78	SEP 79
S 78 4257	CONTINUOUS TNT PROCESS ENGINEERING WATER TESTING OF THE INSTALLED EQUIPMENT WAS COMPLETED. THE TESTING REVEALED SOME DEFECTS THAT REQUIRED CORRECTION. WORK WAS HALTED BECAUSE OF WITHDRAWAL OF FY78 FUNDS. WITHOUT FUND, IT WILL BE IMPOSSIBLE TO RUN THE PILOT PLANT WITH LIVE MATERIALS.	130.0	9.0	115.2	FEB 79	AUG 79
S 78 4249	SEPARATION OF EXPLOSIVES FROM SPENT ACID/WATER SLURRIES DAMAGE CLAIM ON THE BIRD-PANNEVIS FILTER WAS SETTLED. REPAIR WORK HAS BEEN INITIATED. HAZARDS ANALYSIS HAS BEEN COMPLETED AND PUBLISHED. ADDITIONAL FUNDS FOR COMPLETION OF INSTALLATION WAS BEEN REQUESTED FROM THE PRM.	250.0	220.0	3.5	DEC 78	APR 80
S 77 4252	IMPROVE PRESENT PROCESSES FOR THE MANUFACTURE OF RDX + HMX SIMULANTS FOR EACH COMP C4 PRECOAT WERE DEVELOPED. NEGOTIATIONS WERE INITIATED WITH BAY MIXING TO EVALUATE THESE SIMULANTS IN A LAB NAUTA MIXER. BLDG M3 AT HAAP HAS BEEN SELECTED AS SITE WHERE C4 PRECOAT WILL BE EVALUATED FOR DEWATER AND DRYING.	884.2	653.1	202.7	DEC 77	JAN 80
S 78 4252	IMPROVE PRESENT PROCESSES FOR THE MANUFACTURE OF RDX + HMX INVESTIGATION OF SIMMER PROCESS INITIATED.	548.0	57.0	19.8	MAY 80	APR 81
S 76 4263	AUTO PILOT LINE FOR CONTROLLED COOL/PROCESSING HE LOAD PROJ PROJECT HAS BEEN COMPLETED AND A FINAL REPORT WILL BE PREPARED.	1,144.9	778.6	385.8	JUN 77	DEC 79
S 77 4263	AUTO PILOT LINE FOR CONTROLLED COOL/PROCESSING HE LOAD PROJ PROJECT HAS BEEN COMPLETED AND A FINAL REPORT WILL BE PREPARED.	900.0	153.4	746.6	SEP 78	DEC 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 78 4263	AUTO PILOT LINE FOR CONTROLLED COOL/PROCESSING HE LOAD PROJ REACTIVATION OF CONTINUOUS MELTER AND ASSOCIATED EQUIP WAS COMPLETED. HEAT TRANSFER TESTS WERE PERFORMED TO SUPPORT FAC PROJ AT IAAP + LAAP. THE AIR CURTAIN DRYER WAS DEEMED INADEQUATE FOR SHELL DRYING. IT IS CURRENTLY BEING REDESIGNED.	257.0	56.4	187.4	OCT 78	DEC 79
S 79 4263	AUTO PILOT LINE F/CONT COOL AND PROC OF HE LD PROJ THIS PROJECT WAS JUST FUNDED. NO STATUS REPORT IS REQUIRED.	329.0				
S 77 4267	CONTINUOUS PROCESS FOR GRANULAR COMPOSITION B A BENCH SCALE WET PRILLING TOWER WAS CONSTRUCTED. BULK DENSITY AND MOISTURE CONTENT WAS SATISFACTORY HOWEVER, PARTICLE SIZE DIST DID NOT MEET SPEC. MECHANICAL GRANULATION WAS EVALUATED AND RECOMMENDED BY MAAP.	500.0	429.3	70.7	SEP 79	JUN 81
S 78 4267	CONTINUOUS PROCESS FOR GRANULAR COMPOSITION B CONTRACT TO HAZARDS WES COMPLETED ON STUDY OF STATIC CHARGE BUILDUP ON PARTICLES OF FALLING COMP B. RESULTS INDICATE NO POTENTIAL HAZARD. A SOW WAS PREPARED FOR DESIGN, CONSTRUCTION AND OPERATION OF A PROTO GRANULAR COMP B FACILITY.	344.1	207.0	3.4	MAR 81	DEC 81
S 76 4280	M577 FUZE AUTOMATIC PROCESS CONTROL PROTOTYPE EQUIPMENT RETESTING OF THE ULTRASONICALLY STAKED COUNTER HOUSING SAMPLES WAS SATISFACTORY. A FINAL REPORT ON THIS PROJECT WILL BE SUBMITTED IN THE NEAR FUTURE.	208.0	162.9	45.1	AUG 76	JAN 80
S 77 4280	M577 FUZE AUTOMATIC PROCESS CONTROL PROTOTYPE EQUIPMENT THE ZERO SET MACHINE IS 98 PERCENT COMPLETE. THIS EQUIPMENT IS BEING DEBUGGED. THE POISING MACHINE AND REGULATION MACHINE HAVE BEEN COMPLETED AND ACCEPTANCE TESTS SATISFACTORILY PERFORMED. FINAL REPORTS ARE BEING PREPARED.	900.0	745.1	77.9	MAR 78	JAN 80
S 76 4281	ENERGY SAVING AT ARMY AMMO PLANTS SEE THE FOLLOWING INDIVIDUAL TASKS FOR WORK STATUS.	875.0	421.5	453.4	OCT 78	APR 80
S 76 4281A01	PROCESS ENERGY INVENTORY ALL FY76 FUNDS ALLOCATED FOR THIS TASK HAVE BEEN SPENT. WORK ON THIS TASK IS CONTINUING UNDER FY77, 78, AND 79.	375.5	125.0	250.5	OCT 77	APR 79
S 76 4281A04	WASTE HEAT FROM CHEMICAL REACTIONS ALL WORK CONDUCTED WITH FY76 FUNDING HAS BEEN COMPLETED	374.5	212.6	141.9	OCT 77	JUL 77
S 76 4281H01	PROCESS ENERGY INVENTORY FOR METAL PARTS A SURVEY OF ENERGY USE AT THE SCRANTON AAP WAS CONDUCTED AND A FINAL REPORT WAS PUBLISHED. ENERGY USE PATTERNS WERE DETERMINED, AREAS OF ENERGY WASTE WERE IDENTIFIED, AND A DATA BASE WAS DEVELOPED FOR USE BY SUPERVISORY PERSONNEL TO CONSERVE ENERGY.	60.0	49.0	11.1	OCT 78	MAR 77

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 76 4281B02	REDUCED FORGING TEMPERATURE 155MM PROJECTILES WERE FORGED IN EXPERIMENTAL GROUPS OF 50 PIECES EACH AT 5 FORGING TEMPS IN 100F INCREMENTS STARTING AT 2200F AND ENDING WITH 1800F. A LINEAR INCREASE INFORGING TONNAGE OF 100 TONS WAS REQUIRED FOR EACH 100F DECREASE IN TEMP.	65.0	35.0	30.0	JUN 77	SEP 77
S 77 4281	ENERGY SAVING AT ARMY AMMO PLANTS SEE THE FOLLOWING INDIVIDUAL TASKS FOR WORK STATUS.	1,000.0	581.7	396.8	SEP 79	JUL 80
S 77 4281A01	PROCESS ENERGY INVENTORY A REPORT WAS PUBLISHED THAT SUMMARIZES THE ENERGY AUDITS OF HOLSTON AAP'S 18 ENERGY INTENSIVE PRODUCTION AREAS. ENERGY FLOW ANALYSES WERE PERFORMED WHICH SHOW LEVELS OF ENERGY SAVING OPPORTUNITIES. STEAM USAGE AT RAAP IS STILL BEING DETERMINED.	348.0	262.6	68.7	JUN 79	JUL 80
S 77 4281A04	WASTE HEAT FROM CHEMICAL REACTIONS A FINAL RPT WAS PUBLISHED IN AUG 78. IT CONTAINS A REVIEW OF THE MFG OPNS AT RAAP, MAAP, AND VAAP FROM THE STANDPOINT OF REDUCING ENERGY CONSUMPTION. FOUR PRIME AREAS FOR ACHEIVING PROCESS ENERGY SAVINGS WERE IDENTIFIED. DEMO PROJECTS WERE PLANNED.	193.8	64.2	127.6	AUG 79	AUG 78
S 77 4281A08	CAVITATIONAL REMOVAL OF EXPLOSIVES REMOVAL OF EXPLOSIVES FROM PROJECTILES USING A CAVITATING JET WAS DEMONSTRATED TO BE SAFE AND CONSIDERABLY MORE EFFICIENT THAN COMPETING METHODS. A CONTRACT WAS NEGOTIATED FOR THE DSN, CONSTRUCTION, AND EVALUATION OF A PILOT FACILITY.	301.2	162.9	135.5	SEP 79	DEC 78
S 77 4281B01	PROCESS ENERGY INVENTORY FOR METAL PARTS PROCESS ENERGY USAGE AT LCAAP WAS COVERED IN A REPORT PUBLISHED IN APR 78. IT DETERMINED AND COMPARED ENERGY USAGE IN THE CONVENTIONAL AND SCAMP MFG LINES. A DATA BASE WAS DEVELOPED TO ENABLE SUPVY PERSONNEL IN IMPLEMENTING ENERGY CONSERVATION.	59.0	41.0	17.9	FEB 78	JUN 77
S 77 4281B02	REDUCED FORGING TEMPERATURE ENERGY CONSUMPTION WAS REDUCED OVER 20% BY LOWERING THE FORGE TEMP FROM 2200F TO 2000F. PROCESS DATA WAS OBTAINED BY FORGING 10,000 155MM PROJECTILES. NO DIFF IN PROJ QUAL WAS OBSERVED. THERE WERE NO REJECTS CAUSED BY REDUCING FORGING TEMPERATURE.	98.0	51.0	47.0	FEB 78	JUN 79
S 78 4281	ENERGY SAVING AT ARMY AMMO PLANTS SEE THE FOLLOWING INDIVIDUAL TASKS FOR WORK STATUS.	1,062.0	826.1	163.9	MAR 80	JUL 80
S 78 4281A01	PROCESS ENERGY INVENTORY ENERGY USAGE MEASUREMENTS AT LSAAP WERE CANCELLED BECAUSE LAW PRODUCTION WAS TERMINATED. THE M483 GRENADE LINE WAS EQUIPPED FOR MEASURING ENERGY USAGE AT KAAP. DEVICES FOR MEASURING ELECTRICAL USAGE AND AIRFLOWS WERE INSTALLED AND ARE BEING USED.	177.0	118.0	56.6		JUL 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 MCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 78 4281A04	ENERGY RECOVERY FROM WASTE HEAT A PLAN FOR RECOVERING HEAT FROM THE BOILING TUBS WAS DEVELOPED. BOILING TUB USAGE DATA FOR OCTOBER 78 WAS COLLECTED AT RAAP. INSTRUMENTATION WAS INSTALLED TO MEASURE WASH-CYCLE WATER TEMPERATURES AND WATER FLOW PROFILES.	326.0	272.0	24.4		MAR 80
S 78 4281A05	ENERGY RECOVERY FROM WOOD WASTE THE FEASIBILITY STUDY OF USING WOOD WASTE AS AN ALTERNATE ENERGY SOURCE IS 90% COMPLETE. THREE ADDITIONAL SYSTEMS ARE BEING EVALUATED TO PROVIDE A VARIETY OF ENERGY PRODUCT MIXES.	75.0	75.0			MAR 79
S 78 4281A08	CAVITATIONAL REMOVAL OF EXPLOSIVES A TWO PHASE PLAN WAS DEVELOPED. P-1 WILL USE MODIFIED EQUIPMENT AT IAAP TO INVESTIGATE THE DEGREE OF FOAMING AND FOAM CONTROL USING PRELIMINARY CAVIJET CUTTING HEADS WITH EXPLOSIVE LOADED 155MM WARHEADS TO DEVELOP DESIGN PARAMETERS FOR A PROTYPE FAC.	295.0	275.0	16.9		MAY 81
S 78 4281B01	PROCESS ENERGY INVENTORY FOR METAL PARTS ADDITIONAL EFFORTS HAVE BEEN DEFINED FOR SAAP BASED ON RESULTS OF THE ENERGY SURVEY. AT LCAAP, TRW PRESENT A BRIEFING COVERING THE RESULTS OF THEIR ENERGY INVENTORY. SUMMARY CHARTS COMPARED THE ENERGY USE AND COST FOR SCAMP VS CONVENTIONAL MFG LINES.	72.0	1.7	41.1		MAY 79
S 78 4281B04	WASTE HEAT RECOVERY A WASTE HEAT RECOVERY EVALUATION AT SAAP WAS COMPLETED. A FINAL RPT WAS PREPARED. IT DESCRIBES THE TECHNICAL AND ECONOMICAL FEASIBILITY FOR RECOVERING WASTE HEAT WITH A WASTE HEAT BOILER SYSTEM. STEAM WOULD BE PRODUCED TO MEET FACILITY STEAM REQMNTS	117.0	84.4	24.9		JUN 79
S 79 4281	CONSERVATION OF ENERGY AT ARMY AMMUNITION PLANTS SEE THE FOLLOWING INDIVIDUAL TASKS FOR WORK STATUS.	1,285.0		140.0	JUL 80	JUN 81
S 79 4281A01	PROCESS ENERGY INVENTORY THE CONTRACT SCOPE OF WORK FOR BOTH LSAAP AND IAAP ARE BEING PROCESSED.	193.0	133.0	17.0	JUL 80	JUL 80
S 79 4281A02	OPTIMIZED INSULATION CONTRACT SCOPE OF WORK WAS BEING PROCESSED.	193.0		12.0	OCT 79	JUN 80
S 79 4281A03	SYNTHETIC NATURAL GAS FOR PROCESS OPERATIONS THE CONTRACT SCOPE OF WORK WAS BEING PROCESSED.	257.0			SEP 79	MAY 80
S 79 4281A04	ENERGY RECOVERY FROM WASTE HEAT THE CONTRACT SCOPE OF WORK HAS NOT YET BEEN RELEASED FOR SUBTASK 3. SUBTASK 1 WAS TERMINATED BECAUSE IT WAS DETERMINED THAT IT WOULD BE MORE EFFECTIVE TO IMPLEMENT RESULTS AT THE OPERATING PLANTS INSTEAD OF DESIGNING AND CONSTUCTING PILOT PLANTS.	515.0			JUN 80	JUN 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION OF FY 80 MCR DRCMT-3111

PROJ NO.	TITLE & STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 79 4281814	WASTE HEAT RECOVERY AN ENGR BPA AND PROCUREMENT PACKAGE WAS SUBMITTED TO PROCUREMENT IN MAY 79. THE BOA COVERS THE DESIGN OF A WASTE HEAT BOILER SYSTEM FOR RECOVERY OF THE WASTE HEAT BEING DISCHARGED FROM THE BILLET HEATING FURNACES.	127.1		4.5	AUG 79	MAY 81
5 77 4285	TNT EQUIVALENCY TESTING FOR SAFETY ENGINEERING ADDITIONAL TESTS WERE CONDUCTED ON MC4844 BALL POWDER TO VALIDATE EARLIER DATA, RESULTS CONFIRMED EARLIER DATA, A PRELIMINARY REPORT WAS PREPARED ON TRACER COMP B3B4 (NITRO COMPOUND AND TNT).	377.4	87.9	210.4	APR 79	DEC 79
5 78 4285	TNT EQUIVALENCY TESTING FOR SAFETY ENGINEERING TESTING OF COMP A3 WAS COMPLETED, TEST PLANS FOR BLAST CHARACTERISTICS OF C4 AND NITROCELLULOSE WAS APPROVED BY SAFETY. TEST PLAN FOR LX14 EXPLOSIVE WAS FORWARDED TO SAFETY.	410.1	41.2	313.5	JUL 79	MAR 81
5 79 4285	TNT EQUIVALENCY TESTING FOR SAFETY ENGINEERING TEST PLAN FOR BLAST CHARACTERISTICS OF MABS.	421.1		7.9	MAY 81	MAY 81
5 78 4288	EXPLOSIVE SAFE SEPARATION AND SENSITIVITY CRITERIA SAFE SEPARATION DISTANCE TESTS	424.1	129.7	443.2	FEB 79	JUN 79
5 78 4288	EXPLOSIVE SAFE SEPARATION AND SENSITIVITY CRITERIA PRELIM TEST PLAN COORDINATION & REQUEST FOR MUNITIONS COMPLETED/PROJECTILE, 155MM WP75 AND 81MM EXTRA HEIGHT, PRIMARY AND SECONDARY FRAGMENT IMPACT TESTS COMPLETED ON CAPTEX TNT CHARGES & 81MM MORTARSFINAL REPORT FORTH COMING! DRAFTED PROPELLANT TEST PLN.	443.1	174.5	2.5	OCT 81	OCT 81
5 77 4289	HAZARD CLASSIFICATION OF PROPELLANTS AND EXPLOSIVES AIRBLAST TESTS WERE CONDUCTED ON M1, M26, M31 AND MK BLUPRTER, A CRITICAL LENGTH TEST WAS ESTABLISHED AS RELATABLE, FIREBREAK TESTS WERE USED TO ESTABLISH AN EFFECTIVE FLAME TRAP FOR EACH MTL, BURNING IN BULK TESTS ON M1 STRANDS WERE PERFORMED.	104.1	187.5	116.5	AUG 79	NOV 79
5 78 4289	HAZARD CLASSIFICATION OF PROPELLANTS AND EXPLOSIVES PARAMETERS FOR PRESSURIZATION RATE FOR MULTIPHASE DRYER WERE ESTABLISHED, SENSITIVITY AND EFFECTS EVALUATIONS WERE ACCOMPLISHED FOR M31 PELL, M1 STRANDS, M26 PASTE AND MK BLUPRT, MIN DUST CONC IN AIR OF NINE PYROTECHNICS TO IGNITE WAS DETERMINED.	214.1	115.8	74.1	DEC 79	DEC 79
5 77 4291	BLAST EFFECTS IN THE MUNITIONS PLANT ENVIRONMENT PRESTRESSED/REBAR STEEL BUILDING FAILED TEST TO WITHSTAND ACCIDENTAL EXTERIOR BUILDING AMMUNITION EXPLOSION, A SPECIALLY DESIGNED BUILDING AND TEST INSTRUMENTATION WERE CONSTRUCTED, TESTING MTL START IN JUNE.	151.1	174.1	91.3	JUN 79	JAN 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 78 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 78 4291	BLAST EFFECTS IN THE MUNITIONS PLANT ENVIRONMENT FUNDING RECEIVED, SCOPE OF WORK, PROCUREMENT PACKAGE FOR STEEL DESIGN MANUAL AND SAFETY CRITERIA FOR ALTERNATE CONSTRUCTION MATERIALS WERE COMPLETED.	235.0	91.0	24.0	SEP 80	SEP 80
S 77 4301	ACCEPT PLAN FOR CONTINUOUSLY PROD MULTIBASE CANNON PROPGAM ALL FUNDING FOR THIS PROJECT HAS BEEN SPENT, PROJECT OFFICER HAS BEEN ADVISED TO CLOSE OUT THIS PROJECT.	111.0	15.0	95.0	JAN 77	DEC 79
S 78 4301	ACCEPT PLAN+ CONT PRODUCTION MULTI-BASE CANNON PROPELLANTS ALL FUNDING FOR THIS PROJECT HAS BEEN SPENT, PROJECT OFFICER HAS BEEN ADVISED TO CLOSE OUT THIS PROJECT.	395.0	180.0	215.0	OCT 78	DEC 79
S 77 4301	ACCEPT PLAN+CONT PRODUCTION MULTI-BASE CANNON PROPELLANTS WATERVLIET COMMENCED THE FABRICATION OF THE COMBUSTION TUBE AND PISTON FOR LATEST DYNAGUN DESIGN, AMENDMENT TO S.O.W. WAS SUBMITTED TO PAAP FOR IMPLEMENTATION, M30 BALLISTIC TESTING CONTINUES TO BE DELAYED DUE TO EQUIPMENT PROBLEMS.	501.0	231.0	220.3	MAY 78	FEB 80
S 77 4302	ACCEPTANCE CRITERIA FOR CONTINUOUS SINGLE BASE PROPELLANT ALL WORK UNDER THIS PROJECT HAS BEEN COMPLETED EXCEPT FOR PREPARATION OF SPECIFICATIONS AND FINAL REPORT FROM RADFORD AAP.	75.0	8.0	67.0	SEP 77	DEC 79
S 78 4302	ACCEPTANCE CRITERIA FOR CONTINUOUS SINGLE BASE PROPELLANT WORK WAS CONTINUED ON PREPARATION OF SPECIFICATIONS AND FINAL REPORT.	440.0	317.0	123.0	JUN 77	DEC 79
S 78 4303	ACCEPTANCE OF CONTINUOUSLY PRODUCED BLACK POWDER A FINAL TECH REPORT SUMMARIZING INDIANA AAPIS COMPLETED, EFFORT WAS PREPARED. THE TEST DEVICE WILL BE SHIPPED TO INAAP DURING THE 3RD QTR, FY79, PROVE OUT OF THE DEVICE WILL BE ACCOMPLISHED UNDER FACILITY PROJECT S 74 2004.	337.0	197.7	145.3	APR 77	DEC 79
S 77 4303	ACCEPTANCE OF CONTINUOUSLY PRODUCED BLACK POWDER PCAL SUBMITTED THEIR FINAL REPORT, THE TEST DEVICE OPERATIONAL MANUAL AND ASSOCIATED DRAWINGS TO ARRADCOM, A SUBSEQUENT CONTRACT WILL BE AWARDED TO SET UP THE TEST DEVICE AT INDIANA AAP AND TO TRAIN THE PERSONNEL IN ITS USE.	60.0	60.0		JUN 78	DEC 79
S 77 4304	SPIN TEST FOR ACCEPTANCE OF ROCKET GRAIN-STARS THE RFP WAS RELEASED TO PROCUREMENT FOR PHASE I, THE PROPOSAL IS SCHEDULED TO BE RETURNED 21 JUN 79, ADDITIONAL FUNDS WILL BE REQUIRED TO FABRICATE STARS (PHASE II), AN MMT WILL BE GENERATED FOR THE FABRICATION OF STARS (PHASE II).	300.0		50.0	JUN 79	JAN 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 79 4305	PDN TECH FOR IMPROVED MP 155MM SMOKE MUNITION (XM825) SCOPE OF WORK WAS DRAFTED, EQUIPMENT DESIGN WAS INITIATED. CANNISTER CARRIER DESIGN WAS COMPLETED.	265.0		6.0	JUN 80	JUN 80
5 79 4309	PROCESS DEVELOPMENT FOR 120MM TANK AMMUNITION TASK 1, PROPELLANTS - 3.0.M. FOR RADFORD AAP EFFORT WAS COMPLETED. TASK 2, LAP - OUTLINE FOR PROPOSED R+D LOADING STUDY WAS REVIEWED. THIS TASK IS TO DETERMINE WHETHER PROCESS SELECTED IS SUITABLE FOR MASS PDN. NO R+D LOADING DATA WAS BEEN GENERATED.	448.0			NOV 80	NOV 80
5 78 4310	DMSO RECRYSTALLIZATION OF HMX/RDX SOP HAS BEEN COMPLETED AND OPERATORS TRAINED, SAFETY DEFICIENCIES HAVE BEEN CORRECTED IN THE PILOT PLANT, EQUIPMENT WAS WATER TESTED.	196.0	170.0	6.5	AUG 79	SEP 79
5 79 4310	DMSO RECRYSTALLIZATION OF HMX/RDX WORK ON THIS EFFORT HAS STOPPED, SINCE ADDITIONAL FUNDS ARE REQUIRED AND THE PM FOR PBM HAS REQUESTED A CRITICAL ITEM REVIEW.	483.0		4.7	DEC 81	DEC 81
5 76 4311	AUTO PROD EQUIP FOR LAP OF XM 692 MINE DISPENSING SYSTEM NO WORK ACCOMPLISHED DURING REPORTING PERIOD.	1,230.0	1,044.8	179.4	OCT 77	JUL 79
5 77 4311	DEVELOP AUTOMATED PRODUCTION EQUIPMENT FOR XM 692 THE OVERLAY ASSEMBLY MACHINE HAS PASSED ACCEPTANCE TEST AT LOUISIANA AAP WHERE IT IS NOW BEING USED IN PRODUCTION.	1,453.0	1,192.1	187.2	AUG 78	JAN 80
5 79 4312	INJECTION MOLDING FOR PRODUCTION EXPLOSIVE LOADING PROTO INJECTION MOLDING DEVICE LOCATED AND INSPECTED, INFO OBTAINED FROM NAPEC, CRANE, IND ON MELT POUR EQMT DESIGNS, A SOW WAS PREPARED FOR A ONE YEAR EFFORT A KAAP FOR ANALYSIS, TESTING AND SCALE-UP OF PROTO INJECTION MOLDING DEVICE.	261.0	145.0	41.6	JUN 80	JUN 80
5 78 4322	CHARACTERIZE DORMANCY EFFECT ON ELECTRONIC EQUIPMENT THE ELECTRONIC CONTROL SYSTEM FOR A CONTINUOUS TNT LINE HAS BEEN SHUT DOWN, STORED IN CONTROLLED TEMP AND HUMIDITY AND REACTIVATED THREE TIMES SINCE OCT 77. REACTIVATION PROCEDURES HAVE BEEN DEVELOPED WHICH LESSEN DEPENDENCY ON CRITICAL SKILLS.	185.0	87.0	87.0	MAR 79	MAR 79
5 79 4322	MMT DESIGN/CHAR OF ELEC CONT SYST FOR PROD FAC WORK PLANS HAVE BEEN PREPARED TO IDENTIFY POTENTIAL PROBLEM AREAS AND LAYAWAY PROCEDURES FOR SEVERAL AMMO PRODUCTION FACILITIES. PLANS TO IMPLEMENT A CYCLE PROCEDURE HAVE BEEN DEVELOPED, DATA CAPTURE FORMS WERE DEVELOPED FOR FAILURE REPORTS + ANALYSES	610.0	389.0	26.0	FEB 80	FEB 80
5 79 4352	IMPROVEMENTS FOR POTTING ELECTRONIC ASSEMBLY FOR GATOR THE CONTRACT WAS NOT YET AWARDED. PROJECT IS FOR PRODUCT IMPROVEMENT. IS ALSO APPLICABLE TO BLU-92B GATOR MINE, AN ATH FORCE ITEM.	83.0			APR 80	APR 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 MCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 79 4335	ALTERNATIVE PROC F/TITANIUM GYROSCOPE COMPONENTS-COPPERHEAD SCOPE OF WORK IS BEING PROCESSED.	411.0	350.0		FEB 81	FEB 81
S 76 4337	ALTERNATE MATERIALS FOR CURING/MOLDING PROCESS F/AP MINES UV PROGRAM IS BEING DELAYED. PLASTICS LAB AWAITING UV HOOKUP. SCOPE OF WORK REVIEWED AND REJUSTIFIED AND SUBMITTED TO PBM.	504.0	221.3	114.4	AUG 78	FEB 82
S 76 4338	DEV AUTO PROCESS + PROTO EQUIP FOR LAP OF M483 155MM PROJO THE CONTRACTOR FOR THE 30 PPM MACHINE HAS RUN OUT OF FUND, ANOTHER $65K IS REQUIRED.WORK ON THE 90 PPM MACHINE WAS SUSPENDED.THE CONTRACTOR REQUIRES AN ADDITIONAL $550K TO BUILD AND PROVE IT OUT.THE GRENADE PREPACK TASK WAS TRANSFERRED TO PROJ 4469.	758.6	654.6	83.2	MAR 79	JUN 80
S 78 4341	IMPROVED NITROCELLULOSE PURIFICATION PROCESS A FIRM PRICE FOR THE PROTOTYPE CONICELL WAS RECEIVED FROM THE CONTRACTOR. HE QUOTED $528K FOR THE EQUIPMENT. A 10 MONTH DELIVERY DATE WAS PROMISED. 55% OF THE EQUIPMENT DOLLARS WAS TO BE SPENT FOR USA MANUFACTURED EQUIPMENT, THIS INCREASED THE COSTS.	665.0	575.0	78.5	APR 79	SEP 80
S 79 4341	IMPROVED NITROCELLULOSE PURIFICATION PROCESS THE PROGRAM WAS RESTRUCTURED TO REFLECT SLIPPAGE AND TO PRODUCE A BETTER UTILIZATION OF FUNDING. SLIPPAGE WAS CAUSED BY AN UNFORESEEN DELAY IN EXPEDITING THE WAIVER OF ASPR-7-104.15 CLAUSES WHICH IS A PREREQUISITE TO CONTRACT PLACEMENT.	742.0		3.4	NOV 80	NOV 80
S 77 4343	IMPROVED NITROCELLULOSE PROCESS CONTROL A SERIES OF CHARACTERIZATIONS OF CONTINUOUS IMPROVED NITRATION WERE INITIATED COVERING THE MANUFACTURE OF LOW AND HIGH GRADE NC PREPARED FROM SHEETED LINTERS, BALED LINTERS, AND WOOD PULP. INVESTIGATION OF PROPERTIES OF CELLULOSE WAS CONTINUED.	302.0	117.0	185.0	JUL 78	OCT 79
S 78 4343	IMPROVED NITROCELLULOSE PROCESS CONTROL PREPARATION OF A DRAFT COPY OF A FINAL STATUS REPORT WAS INITIATED. IT WILL BE REVIEWED AND SUBMITTED DURING THE NEXT REPORT PERIOD.	15.0		15.0	JUN 79	OCT 79
S 78 4349	MODERNIZATION OF PRESS LOADING FOR WEB PROJECTILES ECP AND RECOMMENDED ACTIONS HAVE BEEN SUBMITTED FOR DESIGN REVIEW COMMENTS FOR END ITEMS.	250.0		153.6	JUN 80	JUL 80
S 77 4362	REHEAT OF LARGE CAL PROJECTILES TO ELIMINATE BASE SEPARATN TESTING OF TNT LOADED M549'S AND XM795'S HAS INDICATED THAT A OPTIMUM COOLING PROCESS WITH A SINGLE PROBE HAS BEEN ESTABLISHED.	400.0	28.8	356.9	APR 78	SEP 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 77 4410	MFG TUNGSTEN PENETRATORS TO SHAPE BY TAPER SWAGING KENNAMETAL CORES HAVE BEEN BALLISTICALLY TESTED. TELEDYNE FIRTH CORES HAVE BEEN MANUFACTURED.	397.0	247.4	135.3	MAR 78	OCT 79
S 77 4431	AUTOMATED EQUIPMENT FOR MORTAR IGNITION CARTRIDGES THE DESIGNS FOR THE HEAD ASSEMBLY, FINAL ASSEMBLY AND FINAL INSPECTION MODULES WERE COMPLETED. FMC STARTED FABRICATION ON THE HEAD ASSEMBLY AND THE FINAL ASSEMBLY MODULES. PROGRAM TERMINATED DUE TO ANTICIPATED CONTRACT OVERRUNS.	911.8	653.8	192.9	DEC 78	FEB 79
S 78 4431	AUTOMATED EQUIPMENT FOR MORTAR IGNITION CARTRIDGES THE PROJECT AND CONTRACT WERE TERMINATED DUE TO ANTICIPATED COST OVERRUNS AND LACK OF ADDITIONAL FUNDS. THE HI-SPEED CHECKWEIGHER PURCHASED BY THE CONTRACTOR WILL BE SHIPPED TO MILAN AAP AS REQUESTED.	658.0	598.0		JUL 79	FEB 79
S 77 4444	BODY FOR M42/M46 GRENADE TWO OF THE FOUR PROCESSES HAVE BEEN SELECTED FOR CONTINUED WORK IN THE NEXT PHASE OF THE PROGRAM.	536.0	443.7	86.3	SEP 77	DEC 79
S 78 4444	BODY FOR M42/M46 GRENADE PROCUREMENT REQUEST HAS BEEN ISSUED TO PROCUREMENT.	628.0		104.5	JUN 79	DEC 80
S 79 4444	BODY FOR M42/M46 GRENADE WORK HAS NOT BEEN INITIATED.	563.0			SEP 80	JUN 81
S 78 4447	NITROGUANIDINE PROCESS CONTROL ANALYTICAL SYSTEMS COLORIMETRIC METHOD FOR DETERMINING GUANIDINIUM ION IN ACID STREAMS HAS ADOPTED FOR USE. TWO NEW METHODS FOR TOTAL SULFATE DETERMINATION WERE FOUND TO BE FEASIBLE. WORK ON METHODS FOR CARBONATE DETERMINATION AND ASSAY OF CRUDE CA CYANAMIDE CONTINUED.	390.0	20.0	248.4	JUL 79	DEC 79
S 78 4449	PROCESS IMPROVEMENT FOR COMPOSITION C-4 MOC PRODUCED 2 TRIAL LOTS OF C-4 USING NOMINAL CLASS 1 AND CLASS 5 RDX. EXPERIMENTAL C-4 USING N-OCTANE AS THE LACQUER SOLVENT WAS EXTRUDED AT LOUISIANA AAP. CURRENT PLANS ARE TO COMPLETE ADDITIONAL EXTRUSION TESTS AND TRADE OFF REST OF FUNDS.	917.0	85.0	31.1	OCT 79	NOV 79
S 78 4454	AUTO INSPECTION DEVICE FOR EXPLOSIVE CHARGE IN SHELL-CAM AIDECS	1,348.0	524.0	132.3	JUL 80	DEC 81
S 79 4454	AUTO INSPECTION DEVICE FOR EXPLOSIVE CHARGE IN SHELL-CAM SEE PROJECT NO. S 78 4454 FOR STATUS.	428.0			DEC 81	DEC 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 77 4457	MULTI-TOOLED IOWA DETONATOR LOADING MACHINE APPROX 413K DETONATORS HAVE BEEN PRODUCED ON THE X-4 LOADER. A REQUEST FOR ADDITIONAL FUNDS HAVE BEEN SUBMITTED FOR ENGINEERING AND TESTING OF LOADER IMPROVEMENTS.	641.0	616.0	25.0	OCT 77	SEP 79
5 79 4460	CONT MIXER-ILLUMINANT COMP ANAL + CONTROL SYSTEM REVISED SCOPE OF WORK. INVESTIGATION BEGUN OF ANALYTICAL CONCEPTS RE X-RAY FLUORESCENCE AND NEUTRON INVESTIGATION.	236.0	114.0	36.5	DEC 80	DEC 80
5 78 4462	MODERNIZED FAD FOR MULTI-BASE PROPELLANTS TESTS ON REMOVAL OF NG VAPOR FROM EXHAUST AIR CONTINUED. NG ON ACTIVATED CARBON WAS FOUND NOT TO BE COMPATIBLE. DRAWINGS WERE PREPARED FOR MODIFICATION OF THE FAD BAY FOR IMPROVED HEATING. SAFETY SITE APPROVAL FOR FAD MODERNIZATION WAS REQUESTED.	592.0	502.0	69.5	AUG 79	DEC 79
5 79 4462	MODERNIZED FAD FOR MULTI-BASE PROPELLANTS ECONOMIC ANALYSES OF PROCESS ALTERNATIVES WAS CONDUCTED TO DETERMINE OPTIMUM ARRANGEMENTS OF PROCESS ELEMENTS. THE OPTIMUM WAS MODERNIZED FAD, CAUSTIC NG SCRUBBER, NG VAPOR ANALYZER, HEAT PIPES, WATER ABSORBER AND HYDROCARBON VAPOR ANALYZER.	528.0		27.6	JUL 80	JUL 80
5 78 4466	EVAL TNT, CYCLOTOL, AMATEX, OCTOL IN MELT POUR FACILITIES PROCESS EQUIP + CONTROL SYSTEMS HAVE BEEN CHECKED IN PREP FOR TNT SLURRY TEST. INSTRUMENTATION HAS BEEN INSTALLED + A VISCOSIMETER OBTAINED. MINOR REPAIRS ARE BEING ACCOMPLISHED.	200.0		118.6	DEC 78	SEP 79
5 79 4466	EVAL TNT, CYCLOTOL, OCTOL IN MELT-POUR FACILITY A LITERATURE SEARCH WAS MADE TO FIND EQUIP SUITABLE FOR MIXING MOLTEN TNT WITH SOLID TNT. AN S. HOWES FUNKEN AUTO-FEEDER AND FLOW JET MIXER APPEARS PROMISING. A SON WAS PREPARED FOR PROCUREMENT OF AUTOMATED METERING AND MIXING SYSTEM.	461.0	36.1	42.4	APR 81	APR 81
5 78 4469	AUTOMATED INSERTION OF GRENADE LAYERS. SCOPES-OF-WORK FOR THE PREPACK ASSEMBLY EQUIPMENT AND INSERTATION SYSTEM WERE REVISED A SECOND TIME TO INCORPORATE PROVISIONS IN THE DESIGN FOR THE M509 PROJECTILE. CONCEPT MODELS OF INSPECTION DEVICES FOR THE AUTO INSERTION SYSTEM WERE FABRICATED.	502.0	275.0	193.0	APR 79	SEP 79
5 79 4469	AUTOMATIC INSERTION OF GRENADE LAYERS FUNDS WERE RECEIVED IN MAY 1979. CONTRACT AWARDING PROCEDURES WERE INITIATED.	400.0			JAN 80	JAN 80
5 78 4472	DEV EQUIP/ PROC FOR AUTO/MECH FAB OF CENTER CORE PROP BAG FOUR CONCEPTS WERE DEVELOPED THROUGH THE FEASIBILITY STUDY. A MECHANIZATION CONCEPT WAS CONSIDERED MOST FEASIBLE AND JURY RIG WORK WAS STARTED. PARTIAL SUCCESS WAS ACHIEVED, WORK IS CONTINUING. A PARALLEL EFFORT IS BEING DEVELOPED IN CASE OF FAILURE.	215.0	148.0	62.0	JAN 79	AUG 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED (LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 79 4474	DEHUMIDIFIED AIR FOR DRYING SINGLE= BASE PROPELLANT ***** DELINQUENT STATUS REPORT *****	350.0				
5 78 4498	CONSOLIDATION + AUTOMATIC ASSEMBLY OF SMALL MINES A PROCEDURE FOR LOADING THE XM74 AP MINE HAS BEEN DEV. TECH SPECS FOR ELECTRONIC LENS TESTER HAS BEEN APPROVED. DESIGN OF AUTOMATED SOLDERING MACHINE HAS BEGUN.	325.0	130.0	84.5	DEC 80	OCT 79
5 79 4498	CONSOLIDATION + AUTOMATIC ASSEMBLY OF SMALL MINES PAD HAS REVIEWED AND APPROVED TECHNICAL SPECS FOR ELECTRONIC LENS TESTER.	1,147.0	1,055.0	11.2	SEP 80	SEP 80
5 78 4508	PROCESS IMPROVEMENT OF PRESSABLE RDX COMPOSITIONS WORK CONTINUED ON AN A=5 COATING PROCESS USING CYCLOHEXANONE=STEARIC ACID ADDITION TO AN RDX WATER SLURRY. SEVERAL PRODUCED BATCHES MET PRODUCT SPECS. COMP A=4 MADE BY N=OCTANE=WAX SLURRY PROCESS UNDERWENT TESTING. TURBO=DRYER DRAWINGS WERE REVIEWED.	300.0	241.0	12.4	NOV 78	DEC 79
5 79 4508	PROCESS IMPROVEMENT OF PRESSABLE RDX COMPOSITIONS PRELIMINARY TESTING PORTION OF COMP A=7 DRYER EVALUATION WAS COMPLETED. THE A=7 DRYER SYSTEM WAS MODIFIED TO MEET THE RECOMMENDATIONS IN THE TESTING PROGRAM. EARLY OPERATIONS SHOW THAT THE MODIFIED SYSTEM HAS ELIMINATED IN=BUILDING DUST.	357.0	289.0	1.0	DEC 79	DEC 79
5 76 6200	SMALL CALIBER AMMO PROCESS IMPROVEMENT PROGRAM THREE LOAD AND ASSEMBLE SUBMODULES WERE ACCEPTED W/ LIMITS. CARTRIDGE MEASURE AND EJECT INTEGRATION TO LOAD + ASSEMBLE NO 4 WAS COMPLETED. LOAD + ASSEMBLY INTERFACE WITH PROCESS + QC SYSTEM IS ESTABLISHED. BULLET + OFF LINE GAGES HAVE ARRIVED.	1,300.0	298.0	1,002.0	AUG 76	DEC 79
5 77 6200	SMALL CALIBER AMMO PROCESS IMPROVEMENT PROGRAM REFURBISHMENT OF THE GFE MINSTER PRESS WAS COMPLETED. THE WATERBURY FARREL CUPPING SYSTEM WAS CHOSEN FOR THIS OPERATION. A LIMITED PRODUCTION RUN OF 1 MILLION CUPS DEMONSTRATED IMPROVED QUALITY. THE GULF + WESTERN CONTRACT IS BEING CLOSED OUT.	1,157.5	1,087.0	44.3	FEB 78	JUN 79
5 75 6211	SINTERED STEEL PREFORMS FOR WORKING INTO FRAG SHELL BODIES DATA IS CURRENTLY BEING ANALYZED.	230.0		207.6	DEC 77	DEC 79
5 76 6472	APPLN OF ALT PROCES FOR FAB OF PRECIS METAL PARTS FOR MTFUZE BILLETS AND VARIOUS TOOLING COMPONENTS HAVE BEEN PREPARED FOR THE EXTRUSION AND DRAWING TRIALS, WHICH WILL BEGIN AS SOON AS TIME IS AVAILABLE ON BATTELLE'S PRESS.	400.0	339.7	44.0	FEB 78	SEP 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHO-RIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 77 6494	NEW CONCEPTS FOR MFR AND INSPECT OF 20MM 25MM 30MM AMMO SEE PROJECT 5 77 6494 FOR THE EFFORT STATUS.	1,300.0	1,204.0	94.0	AUG 79	JAN 80
5 75 6494	MANUFACTURE AND INSPECTION OF CAL.50, 20MM, AND 30MM AMMO FUSE TO PROJECTILE ASSEMBLY WILL BE REPORTED UNDER THIS TASK SINCE IDENTIFY OF FY FUNDING TO INDIVIDUAL TASKS IS IMPOSSIBLE. FEED MECHANIZATION AND OUTPUT ACCUMULATOR DESIGN IS 75% COMPLETED. FAB OF FEEDER EQUIPMENT IS 20% COMPLETE.	3,760.0	2,375.0	1,338.0	DEC 76	JAN 80
5 76 6494	MANUFACTURE AND INSPECTION OF CAL.50, 20MM, AND 30MM AMMO HEI CHARGING MACHINE TASK= THE SCOPE OF WORK WAS MODIFIED BY DELETING THE TRACER CHARGING MACHINES AND REQUESTS FOR FINAL QUOTES HAVE BEEN MADE. THE REVISED QUOTES ARE TO BE SUBMITTED BY 13 JULY 79.	1,200.0	823.0	319.3	DEC 77	JAN 80
5 77 6494	NEW CONCEPTS FOR MFR AND INSPECT OF 20MM 25MM 30MM AMMO BALLISTIC TEST SUBMODULE TASK= FABRICATION OF THE TRACE DETECTORS WAS COMPLETED. THE CIRCUIT BOARDS WILL HAVE TO BE REDESIGNED. A SCOPE OF WORK FOR TRACE DETECTOR INSTALLATION, DEBUG ASSISTANCE AND COMPARISON TESTS OF NEW VS CURRENT WAS WRITTEN.	2,067.0	1,565.0	493.0	JUN 79	JAN 80
5 79 6553	ADAPT ACOUSTIC ANALYSIS/INSPECT WELDED OVERLAY BANDS=ARTYSML THIS PROJECT WAS JUST FUNDED. NO STATUS REPORT IS REQUIRED.	95.0				
5 76 6557	CONTINUOUS PROPELLANT DRYING SALT COATING AND GLAZING. FIRE PROTECTION SYSTEM INSTALLED AND TESTED. RESPONSE TIME 72 MILLISECS, EQUIPMENT INSTALLED AND DEBUGGED. FEED SYSTEM EVALUATED. RESULTS SHOW 200 LB/HR MATL CAN BE SUPPLIED TO CENTRIFUGE. SECOND DRYER PROCUREMENT STOPPED. EXTRA 70K REQUESTED TO COMP	792.0	741.0	51.0	DEC 76	NOV 79
5 75 6558	CAM=ADAPTATION OF AUTOMATIC DYNAMIC/STATIC FUZE REGULATION THE EVALUATION REPORT REVEALED THAT BEFORE THE EQUIP COULD BE USED IN A PRODUCTION LINE, DESIGN REFINEMENTS AND CHANGES IN TEST SPECS ARE NECESSARY. CORRECTIVE ACTION HAS BEEN TAKEN.	315.0	68.6	213.7	MAR 76	JUL 80
5 74 6571	ENGR SUPPORT OF MORTAR AMMO MPTS MODERNIZATION TWO ALTERNATIVE MATERIALS (AISI 1541 AND 1040) HAVE BEEN ADDED TO 60 MM LETHALITY PROGRAM. WORK PROCEEDING ON AMSAA 81MM COST EFFECTIVENESS REPORT. PRELIMARY WORK HAS BEGUN ON 81MM FINAL REPORT. DATA REDUCTION FOR 60MM FINAL REPORT HAS BEEN STARTED.	1,010.0	512.0	457.3	DEC 76	OCT 79
5 76 6596	BALL PROPELLANT PILOT PLANT STUDIES WORK ON THIS PROJECT HAS BEEN COMPLETED AND THE FINAL REPORT WILL SOON BE PREPARED. FOLLOW-ON PROJECTS 5 77 6596 AND 5 78 6596 CONTINUE THE MMT BALL PROPELLANT PILOT PLANT STUDIES.	1,230.0	1,130.0	100.0	OCT 78	JUL 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 MCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 77 6596	BALL PROPELLANT PILOT PLANT STUDIES WORK IN THE 10, 100, AND 1000 GAL STILLS FOR THE BATCH STILL SCALING SUBTASK CONTINUED. CONTINUOUS WET LINE EQUIPMENT INSTALLATION COMPLETED. TOTAL COST INCLUDING PRIOR YEARS OF WET LINE EQUIPMENT IS 1225K.	1,095.0	896.0	130.0	JUL 78	AUG 79
S 78 6596	BALL PROPELLANT PILOT PLANT STUDIES CONTINUOUS WET LINE EQUIP DEBUGGED, EXTERNAL LACQUER MIXER INSTALLED. LEAKING AGITATOR SHAFT SEALS DISCOVERED AND REPAIRED WITH NO SCHEDULE SLIPPAGE. COST GROWTH OF 534K APPROVED BUT NOT YET RELEASED.	1,088.0	1,004.0	34.0	JAN 79	JUL 81
S 76 6599	2ND GENER ELEC-OPTC PROJO CAVITY INS EQ FOR 155-175MM PROJOS FUNDS FOR THE PROJECT HAVE BEEN EXHAUSTED. ORDAR-QA IS PROVIDING THE FUNDS FOR 10-15 THOUSAND DOLLAR CONTRACT MOD. THE CONTRACT MOD RFP HAS BEEN PRESENTED TO THE CONTRACTOR, ARRADCOM IS AWAITING THE CONTRACTORS REPLY TO THE RFP.	133.0	125.6	7.5	SEP 77	OCT 79
S 76 6628	AUTOMATED INSPECT. OF M.T. FUZE COMPONENTS-MOVE, PLATES- SOFT TOOLING TO HOLD M577 FUZE PART HAS BEEN DESIGNED. AN OPERATIONAL SEQUENCE FOR PIECE PART INSPECTION HAS BEEN DEVELOPED. A CONTRACT MOD WAS AWARDED 27 MAR 1979. FUNDS ARE NOT AVAILABLE TO CONTINUE THE MACHINE DEV. AND ADAPTION TO M577 PIECE PART.	250.0	198.6	43.4	JAN 77	JUL 79
S 76 6632	AUTO INSPECTION DEVICES FOR ART PROJECTILES IN MUN PLANTS ALL COMPONENTS DRAWINGS, MANUALS ETC, HAVE BEEN RECEIVED AT LOUISIANA ARMY AMMUNITION PLANT. FUNDING HAS BEEN REQUESTED FOR COORDINATING THE REWORK AND ADDITION OF ECCENTRICITY READOUT CAPABILITY FOR THE SYSTEM.	367.0	283.1	43.9	SEP 77	JUL 79
S 77 6632	AUTO INSPECTION DEVICES FOR ART PROJECTILES IN MUN PLANTS DUE TO THE COST OVERRUN, A REQUEST FOR ADDITIONAL FUNDS WAS PRESENTED TO ARRADCOM. A DECISION TO DISCONTINUE THE RAGE INSPECTION SYS. WAS MADE. THE OGIVE PORTION OF THE PROJECT WILL BE COMPLETED.	589.0	291.0	136.0	SEP 78	OCT 79
S 76 6634	MFG OF ALLOYS FOR LARGE CALIBER ARMOR DEFEATING PROJECTILE 42 M735 CORES HAVE BEEN MADE FROM 40 PERCENT RECLAIMED MACHINING CHIPS, ASSEMBLED INTO PROJECTILES AND ARE AWAITING BALLISTIC TESTING.	500.0		499.5	AUG 77	SEP 79
S 77 6634	MFG OF ALLOYS FOR LARGE CALIBER ARMOR DEFEATING PROJECTILE NETCO HAS DEMONSTRATED THE ROLLING OF THREADS AND BUTTRESS GROOVES ON HEAT TREATED CORES.	707.0	249.0	458.3	JAN 78	JUN 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

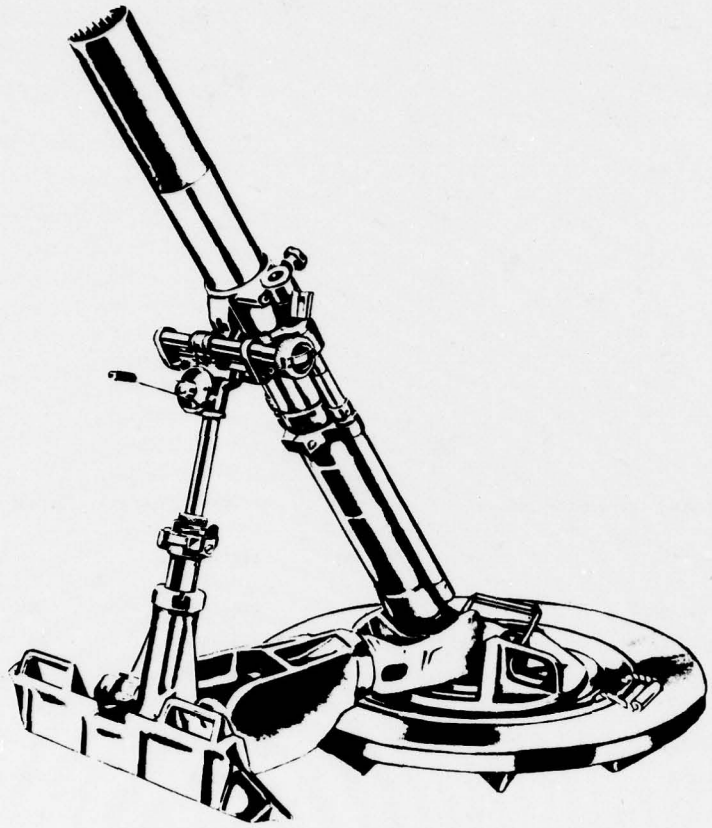
PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
5 78 6634	MFG DU ALLOYS FOR LARGE CALIBER ARMOR DEFEATING PROJECTILE FINAL REPORT BEING WRITTEN FOR TASK C.	400.0		273.7	FEB 79	SEP 79
5 79 6634	MFG DU ALLOYS FOR LARGE CALIBER ARMOR DEFEATING PROJECTILE PROCUREMENT REQUEST FOR CONTRACT ON CHIP RECYCLE IS NEAR COMPLETION. ADDED TASK TO EVALUATE PRODUCTION HEAT TREAT EQUIPMENT FOR STABALLOY CORES.	542.0		36.0	AUG 80	AUG 80
5 76 6640	PROD CONTROL/QA OF SHAPED CHG LINERS BY AUTO X-RAY ANAL BRL SHAPED CHARGE LINER PERSONNEL ARE CURRENTLY EXAMINING THE FLASH RADIOGRAPHS OF FIRESTONE PRODUCED LINERS. THESE DATA AND THEIR COMPANION PENETRATION VALUES ARE SCHEDULED TO BE DISCUSSED AT BRL WITHIN TWO WEEKS.	133.0	55.8	77.2	DEC 76	AUG 79
5 77 6640	PROD CONTROL/QA OF SHAPED CHG LINERS BY AUTO X-RAY ANAL THE PROCUREMENT PACKAGE CONCERNING DIAMOND MACHINING HAS BEEN PLACED WITH CHAMBERLAIN CORPORATION OF WATERLOO FOR ACTION. WITHIN 90 DAYS THE CONTRACT NEGOTIATIONS WILL BE FINALIZED AND THE CONTRACT AWARDED.	165.0	67.0	92.5	JUN 78	MAR 80
5 78 6654	NDT FOR QC IN MFGR OF ADVANCED FRAGMENTING STEEL SHELLS THE LAUNCHING PROBLEM WAS SOLVED. WITH THE RESOLUTION OF THIS PROBLEM, PHASE B WAS ACTIVATED. THIS PHASE CONSISTS OF AN EFFORT TO DESIGN AND CONSTRUCT AN INTEGRATED INSPECTION SYSTEM AND PERFORM SENSITIVITY AND RELIABILITY ANALYSIS.	590.0	540.0	14.7	JAN 80	JAN 80
5 77 6678	EVALUATION OF AQUA QUENCH UNDER PRODUCTION CONDITIONS A QUENCH CRACKING PROBLEM HAS SURFACED WHICH REQUIRES A CHANGE IN THE SCOPE OF WORK TO RE-EVALUATE THE HEAT TREAT PARAMETERS OF THE M483 PROJECTILE. THE ADDITIONAL FUNDS ARE BEING PROVIDED BY THE TRANSFER OF 100K FROM MMT 5776777 TO THIS PROJECT.	400.0	375.8	24.2	MAR 78	OCT 79
5 78 6681	PROCESS PARAMETERS FOR PRODUCTION FORMING OF PROJECTILES ROTARY FORGING TRIALS HAVE BEEN INITIATED. DIES HAVE BEEN COMPLETED FOR SQUEEZE CASTING.	600.0	167.3	164.0	JUN 79	MAR 80
5 79 6682	SIMULATION OF AMMUNITION PRODUCTION LINES MISSISSIPPI ARMY AMMO PLANT WAS SELECTED LINE FOR SIMULATION. FACTORS INCLUDE MACHINE RATES, DEFECT RATES, MAINTENANCE SCHEDULED AND UNSCHEDULED, BUFFER SIZES, OPERATION EXPERIENCE, MACHINE AVAILABILITY, STATISTICAL DISTRIBUTION OF MACHINE FAILURES.	170.0		18.3	NOV 80	NOV 80
5 77 6683	PRODUCTION OF TUNGSTEN BASE ALLOY PENETRATORS FOR AP MUNIT COMPUTER STATISTICAL ANALYSES FOR TRENDS AND CORRELATIONS CONTINUE TO BE UPDATED.	500.0		313.5	APR 78	OCT 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 78 6683	PRODUCTION OF TUNGSTEN BASE ALLOY PENETRATORS FOR AP MUNIT RESULTS OF 30 SMALL SCALE BALLISTIC TESTS HAVE BEEN REPORTED. ROUTINE SAMPLING AND FIRING PROGRAM.	527.0		67.8	AUG 79	APR 80
S [illegible] 6693	BALL PROPELLANT DETERRENT COATING-CAM RELATED CONCEPT STUDY REPORT BEING FINALIZED AND WILL BE COMPLETED IN COMING QTR. ONLY ONE BID WHICH WAS INCOMPLETE RECEIVED FOR CONTROL SYSTEM PROCUREMENT. A NEW SOLICITATION PLANNED W/O RESTRICTION OF A SMALL BUSINESS SET ASIDE.	167.0	33.0	122.0	AUG 80	APR 80
S 79 6693	BALL PROPELLANT DETERRENT COATING-CAM RELATED PARTIAL MODEL OF DETERRENT COATING PROCESS CHECKED AGAINST BADGER AAP PRODUCTION DATA. GOOD FIT FOR 5 OF 6 TRANSPORT CONSTANTS. DIFFUSION COEFFICIENT, THE REMAINING CONSTANT, IS OFF BY A POWER OF 10.	171.0	28.0	32.0	NOV 80	NOV 80
S 77 6716	MATH MODEL OF FORMING OPERATIONS FOR ARTILLERY DESIGN CONFIRMATION TESTING OF THE DRAWING MODEL HAS BEEN COMPLETED WITH GOOD RESULTS. THE FINAL REPORT FOR THIS PHASE IS BEING WRITTEN.	295.0	149.7	113.9	MAR 78	DEC 79
S 79 6716	MATH MODEL OF FORMING OPERATIONS FOR ARTILLERY DESIGN A CONTRACT WAS AWARD TO BATTELLE ON 16 MAY 79.	306.0	280.0		JUN 80	JUN 80
S 78 6725	AUTOMATED INERTIA BANDING MACHINE FOR ARTILLERY MUNITIONS THREE DISCRETE TRANSDUCERS HAVE BEEN INSTALLED TO ACCURATELY RESOLVE ROTATIONAL SPEEDS FROM 4000 RPM TO THAT AT WHICH SEIZURE OCCURS. AN ULTRASONIC TRANSDUCER HAS BEEN DEVELOPED WHICH SHOULD ALLOW DETERMINATION OF AS WELDED BOND QUALITY.	325.0	250.0	33.2	APR 80	APR 80
S 78 6736	TECH READINESS ACCEL THRU COMPUTER INTEGRATED MFG (CAD) MANUFACTURING DATA PACKAGES SUPPLIED BY TWO METAL PARTS CONTRACTORS WERE ANALYZED TO DEVELOP A PRELIMINARY DEFINITION OF DATA BASE INPUT CRITERIA. PRODUCTION TOOLING DATA WAS LOADED INTO DATA BASE. NC PROGRAMS WERE PREPARED AND TOOLING WAS FABRICATED	100.0	31.0	69.0	NOV 78	SEP 79
S 79 6736	TECH READINESS ACCEL THRU COMPUTER INTEGRATED MFG (CAD) PROCUREMENT PACKAGE WAS PREPARED TO DESIGN AND DEVELOP AN ARCHITECTURE FOR COMPUTER INTEGRATED MANUFACTURE OF AMMUNITION METAL PARTS WITH REDUCED LEAD TIME. PROCEDURES AND DOCUMENTATION ARE BEING PREPARED FOR PRODUCTION TOOLING.	256.0	175.0	3.0	SEP 79	SEP 79
S 79 6738	USE OF ULTRA-HI SURFACE SPEEDS F/METAL REMOVAL, ARTY SHELL CONTRACT PLACED FOR PROCUREMENT OF PLASMA ARC MACHINING EQUIPMENT. COMPLETE PROCUREMENT PACKAGE DELIVERED TO PROCUREMENT DIRECTORATE FOR CONDUCT OF HIGH SPEED MACHINING STUDIES.	181.0	154.2	5.0	SEP 80	SEP 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 78 6748	SCAMP POLLUTION ABATEMENT BECAUSE OF INSUFFICIENT FUNDS, ONLY THE OILY WASTE TREATMENT SYSTEM IS BEING INSTALLED AT THIS TIME. THE CONTRACTOR WILL BE LANCY LABS.	310.0	191.5	40.0	JAN 81	AUG 80
S 79 6748	SCAMP POLLUTION ABATEMENT NO STATUS REPORTED. FUNDS WERE NOT RECEIVED UNTIL MARCH 1979.	77.0	6.0	7.3	AUG 80	AUG 80
S 78 6753	METHODS FOR ORIENTING AND FEEDING SMALL CAL AMMO THE FIRST LOT OF PROVEOUT CASES CONTAINED SUFFICIENT DEVIATIONS TO STOP PRODUCTION. PROCESS CORRECTIONS HAVE BEEN MADE AND A SECOND PROVE-OUT LOT IS IN PROCESS. TIME AND FUNDS REQUIRED TO COMPLETE THIS PROJECT WILL DEPEND ON THE RESULTS FROM THIS LOT	400.0	322.0	62.0	MAR 79	DEC 79
S 76 6759	FEAS F/AUTO TRANSFER-HOT FORMING PRESSES F/MORTAR AMMO THE CONTRACTORS FINAL REPORT WAS REVIEWED BY ARRADCOM AND WAS DISCUSSED WITH THE CONTRACTOR. A FINAL ARRADCOM REPORT IS BEING PREPARED OUTLINING FURTHER ACTION NEEDED TO ASSURE SUCCESS OF UTILIZING HOT FORMERS FOR MORTAR MANUFACTURE.	132.0	117.0	15.0	MAY 77	AUG 79
S 78 6760	DRYING OF LOW DENSITY BALL PROPELLANT DRYING DATA ON OTHER LOW DENSITY BALL PROPELLANTS SHOWS THAT RAPID MOISTURE REMOVAL SHOULD BE POSSIBLE BY MEANS OF FLUID BED DRYING. DRAFT SCOPE OF WORK FOR DESIGN AND FABRICATION OF A SMALL FLUID BED DRYER HAS BEEN PREPARED AND REVIEWED.	118.0	20.0	85.0	AUG 81	DEC 79
S 79 6760	DRYING OF LOW DENSITY BALL PROPELLANT A 160 LB BATCH OF WATER-WET PROPELLANT WAS RECEIVED FROM OLIN CORP. A SECOND BATCH OF LOW DENSITY BALL PROPELLANT WILL BE MANUFACTURED AT BADGER AAP. BOTH BATCHES WILL BE USED FOR DRYING TESTS AT ARRADCOM.	101.0	28.0	3.0	JAN 81	JAN 81
S 78 6774	MANUFACTURING METHODS FOR APDS PROJECTILE NO REAL ACCOMPLISHMENTS WERE REPORTED FOR THIS REPORT PERIOD. A TECHNICAL PROPOSAL AND COST ESTIMATE ARE BEING EVALUATED.	300.0		47.6	NOV 79	NOV 79
S 79 6774	MANUFACTURING METHODS FOR APDS PROJECTILE THE PRIOR (FY78) EFFORT HAS NOT BEEN STARTED.	895.0		17.5	NOV 79	NOV 79



ARMAMENT R&D COMMAND
ARMAMENT MATERIEL READINESS COMMAND
(ARRADCOM, ARRCOM)
(WEAPONS)

PRECEDING PAGE BLANK

A R R C O M - A R R A D C O M (WEAPONS)

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)		INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)	
73	1	486,000	369,900	369,900	(100%)	116,100	86,100	(74%)
74	0	0	0	0	(0%)	0	0	(0%)
75	2	270,000	193,100	41,900	(21%)	76,900	73,500	(95%)
76	2	528,000	342,600	257,900	(75%)	185,400	148,800	(80%)
77	0	0	0	0	(0%)	0	0	(0%)
77	23	4,812,300	1,818,800	614,600	(33%)	2,993,500	2,344,700	(78%)
78	22	2,984,000	1,052,900	374,100	(35%)	1,931,100	671,700	(34%)
79	22	3,295,000	693,900	900	(0%)	2,601,100	212,700	(8%)
TOTAL	72	12,375,300	4,471,200	1,659,300	(37%)	7,904,100	3,537,500	(44%)

AUTHORIZED FUNDING CONTRACT ALLOCATED 36% INHOUSE ALLOCATED 63%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
A 78 7901	MANUFACTURE OF FLUIDIC AMPLIFIERS BY COLD FORMING FLORIDA PINEBLANKING CORP, HAD DELAYS IN OBTAINING ELECTRODES REQUIRED TO PRODUCE PINEBLANKING TOOLS, DELIVERY SCHEDULED FOR AUG 79, TRITEC, INC WILL MANUFACTURE, BOND, TEST AND EVALUATE FLUIDIC COMPONENTS, HAS STARTED TO REVIEW DRAWINGS.	290.0	166.0	66.0	SEP 79	MAY 80
A 73 7107	APPL. OF HIGH FREQ. INDUCTION HEATING FOR HOT COIL SPRINGS ADJUSTMENTS WERE MADE TO THE MACHINE AND TEST SPRINGS WERE PRODUCED.	486.0	369.9	86.1	JUL 75	SEP 79
A 77 7201	ARTILLERY WEAPON FIRING TEST SIMULATOR DESIGN OF THE SECOND SIMULATOR IS COMPLETE AND MANUFACTURE IS UNDERWAY, SPECIFICATIONS FOR THE FOUNDATION WERE PREPARED. THE WEAPON TEST STAND WAS COMPLETED.	720.0	630.6	47.6	OCT 78	MAY 80
A 77 7213	HIGH SPEED CHROME PLATING TECHNIQUE DESIGN OF PROTOTYPE FAC FOR CHROMIUM PLATING FULL LENGTH GUN TUBES BY THE PUMP THRU SYS HAS BEEN COMPLETED. ELECTROLYTES AND PLATING PARAMETERS ARE BEING REVIEWED TO FORMULATE THE BEST PARAMETERS FOR HIGH SPEED PLATING AND IMPROVED DEPOSIT PROPERTY.	266.0	109.8	138.4	DEC 77	SEP 79
A 79 7213	HIGH SPEED CHROME PLATING TECHNIQUE SPECS HAVE BEEN ESTAB FOR AUTO SOLUTION FLOW SYS, PROCUREMENT HAS BEEN INITIATED, SPECS AND REQUIREMENTS FOR HEATING/COOLING SYS BEING ESTAB, FAB OF ANODE AND CATHODE FIXTURES HAS COMMENCED AND IS APPROX 40% COMPLETE.	199.0	9.8	21.0	DEC 81	DEC 81
A 76 7241	IMPROVEMENT HONING EQUIPMENT AND PROCEDURES, A REFRIGERATION UNIT MUST BE REPLACED BEFORE FINAL TESTING CAN BE INITIATED.	178.0	55.3	119.5	MAR 77	SEP 79
A 79 7246	SIMPLIFICATION OF BREECH RING MFG AND HANDLING INITIAL EFFORT INVOLVING PRELIMINARY PALLET LAYOUTS WAS STARTED ON THE BREECH RING, ACTION HAS BEEN INITIATED TO CHANGE THE SCOPE OF WORK.	60.0	2.4	4.8	MAR 80	MAR 80
A 77 7313	SIMULATOR FOR PRODUCTION TESTS OF WEAPONS CAM THE FINAL REPORT IS BEING PUBLISHED. THIS REPORT DETAILS ALL WORK PERFORMED UNDER THIS PROJECT.	205.0	85.0	116.9	DEC 77	DEC 79
A 79 7317	OPTIMIZATION OF STEP THREAD TOOLING ORDERS HAVE BEEN WRITTEN FOR THE PROCUREMENT OF 4 SETS OF TOOLS FROM DIFFERENT GRADES OF TOOL STEELS, AVA HAS BEEN ASKED TO DESIGN A NEW GRINDING FIXTURE FOR THE BREECH RING AND BREECH BLOCK THREADING TOOLS.	75.0	8.0	6.9	NOV 80	NOV 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
6 79 7482	MODIFIED RIBBON RIFLING GENERATING MACHINE CONTACT WITH EQUIPMENT MFRS WHO COULD PROVIDE INFORMATION OF USE IN THE DESIGN OF MODIFICATIONS HAS BEEN INITIATED. PREPARATION OF THE DESIGN SPEC HAS BEGUN.	136.0	48.2	5.6	APR 81	APR 81
6 77 7485	APPLICATION OF CHEMICAL PROCESSES TO IMPROVE SURFACE FINISH TWO 40 INCH FULL CHAMBERED 105MM SPECIMENS HAVE BEEN ELECTROPOLISHED THRU 3 CYCLES WITH A STRAIGHT ANODE. A CONFORMING ANODE IS BEING PREPARED FOR A SECOND SERIES OF ELECTROPOLISHING TESTS.	309.0		267.0	FEB 78	SEP 80
6 75 7532	SINGLE POINT CUTTING FOR METAL + PLASTIC OPTICS AN ULTRA PRECISION CURVE GENERATOR MILLING MACH HAS BEEN FAB AND WILL BE USED INITIALLY AT THE MICOM HIGH ENERGY LASER CENTER WHERE IT WILL BE DEBUGGED.	140.0	98.1	40.5	JUN 76	DEC 79
6 79 7555	DYNAMIC PRESSURIZATION STAND, SLIDE BLOCK BREECH MECH THE INSTRUMENTATION PACKAGE HAS BEEN DEVELOPED, BUILT, AND INSTALLED FOR THE GYMNASTICATOR, 90% OF THE STRUCTURE, HYDRAULICS, AND ELECT SYS HAVE BEEN RECD FOR THE DYMANIC PRES STD. ASSEMBLY S/B INITIATED IN JULY OR AUGUST 1979.	121.0	70.2	0.2	SEP 81	SEP 81
6 76 7580	PILOT AUTO SHOP LOADING AND CONTROL SYSTEM+ CAM SOFTWARE DEVELOPMENT WAS COMPLETED AND SIMULATION TRIALS AND OPERATIONAL TESTING WERE INITIATED ON INVENTORY/OPEN ORDER MODULE, WORKON MATERIEL REQUIREMENTS AND CAPACITY PLANNING MODULE, AND COST MODULE IS CONTINUING. SUFTWARE TASKS EXPERIENCED DELAY	350.0	287.3	29.3	SEP 78	NOV 80
6 77 7588	ROTARY FORGE INTEGRATED PRODUCTION TECHNOLOGY AN OPTIMIZED QUENCHING CYCLE STOPPED QUENCH CRACKING OF M68 TUBES, TOOL PROCUREMENT DIFFICULTIES NECESSITATE A ONE YEAR EXTENSION.	260.0	56.6	203.4	DEC 78	DEC 80
6 75 7589	AUTO TARGETING SYS FOR PRODUCTION TEST OF AUTO WPN + AMMO THE CONTRACTOR HAS COMPLETED THE INSTALLATION AND CHECKOUT OF THE ACOUSTIC SCORING SYSTEM. THE SYSTEM WORKS SATISFACTORILY FOR ALL SINGLE SHOT AND UP TO 7.62MM BURST FIRING. THE SYSTEM MEETS THE CONTRACT ACCURACY REQUIREMENTS.	130.0	95.0	33.0	SEP 76	SEP 79
6 79 7605	CHEMICALLY BONDED SAND FOR CLOSE TOLERANCE CASTING PROCUREMENT SPECIFICATIONS HAVE BEEN PREPARED.	127.0		11.7	MAR 80	APR 80
6 77 7644	APPLICATION OF INTEGRAL COLOR ANODIZE FOR ALUMINUM THREE INTEGRAL COLOR ANODIZING PROCESSES WERE SELECTED FOR EVALUATION. TEST PANELS WERE PROCESSED WITH THE ALCOA AND KAISER PROCESS. REYNOLDS WILL PROCESS TEST PANELS WITH ITS PROCESS. VARIOUS TESTS AND A FINAL REPORT WILL BE COMPLETED SOON.	75.0		60.9	APR 78	OCT 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
6 78 7649	COMPUTERIZED POWDER METALLURGY FORGING DESIGN-CAM A COMPUTER GRAPHICS PROGRAM TO DESIGN POWDER METAL PREFORMS WAS DEVELOPED AND USED TO DESIGN PREFORM FOR M-85 GUIDE CARTRIDGE RAMP.	102.0	92.2	3.8	AUG 79	MAR 80
6 77 7652	COOLANT CHIP EJECTOR, MULTI-OPERATION TOOLING THE REQUISITION FOR TOOLING WAS FURTHER MODIFIED TO PERMIT IMMEDIATE APPL OF EJECTOR COUNTERBORING M198 HOW CYLINDERS. MAREMONT CORP PERSONNEL WERE BRIEFED ON EJECTOR AND OIL-HOLE TOOLING, METHODS, AND TECHNIQUES.	65.0		29.2	AUG 78	DEC 79
6 77 7655	APPLICATION - THERMOARC SPRAY WEAR COATINGS THE THERMAL SPRAY DEPOSITION PARAMETERS HAVE BEEN DEVELOPED FOR THE ELECTRIC ARC AND FLAME POWDER SPRAY PROCESSES.	70.0	49.9	19.3	MAR 78	MAY 79
6 78 7655	APPLICATION - THERMOARC SPRAY WEAR COATINGS THE M140 CYLINDERS FOR THE PROTOTYPE PRODUCTION EVALUATION HAVE BEEN RECEIVED FROM ROCK ISLAND ARSENAL. THESE ARE BEING PREPARED FOR THE FINAL PROCESS EVALUATION PHASE.	62.0	50.0	5.5	AUG 78	MAR 80
6 77 7707	AUTOMATED PROCESS CONTROL FOR MACHINING (CAM) FORMULAS AND COMPUTER PROGRAMS WERE ESTABLISHED TO PERMIT ADJUSTABLE CONTROL OF ALL VARIABLES WITH RESPECT TO TIME AND COST, INCLUDING WORKPIECE SURFACE FINISH. TESTING TO CONTROL FINISH TURNING WAS COMPLETED. ANALYSES OF TURNING OPERATION CONTINUES.	105.0	50.7	51.2	OCT 78	OCT 79
6 78 7710	INJECTION MOLDING OF RUBBER OBTURATOR PADS A MOLD WAS MADE AVAILABLE FOR USE IN DETERMINING MOLD SHRINKAGE OF RUBBER. THE INJECTION MOLDING MACHINE WAS REPAIRED BUT WAS NOT USED DUE TO PRIOR COMMITMENT FOR HIGHER PRIORITY EFFORTS.	77.0		11.1	JUL 79	MAR 80
6 77 7711	ELECTROPOLISHING PROCESS MODELS FOR SMALL BORE WEAPONS A MIXTURE OF PHOSPHORIC ACID, SULFURIC ACID AND WATER HAS BEEN USED AT 150 DEG F AS THE ELECTROPOLISHING MEDIA. CURRENT DENSITY WAS 2 AMPS/SQ INCH. AMT OF METAL REMOVED IS LARGELY GOVERNED BY THE SIZE OF THE BORE. SOLUTION VISCOSITY CHGS ARE BEGIN EVAL	75.0		68.2	FEB 78	SEP 79
6 77 7714	MULTI-MODE WEAPON + MOUNT IMPEDANCE SIMULATOR (CAM) THE DESIGN OF THE SIMULATOR HAS BEEN EVALUATED AND AGREED UPON. DETAILS OF THE CONTROL PANEL LAYOUT HAVE BEEN DEFINED AND COMPONENTS ARE BEING ORDERED. THE SIMULATOR WILL BE FABRICATED WHEN THE COMPONENTS ARRIVE.	285.0	225.0	37.3	OCT 79	JUL 80
6 77 7716	PROTOTYPE PROD LINE FOR PRESSURE PHOSPHATE COATINGS A REPRODUCIBLE PROCESS WAS DEVELOPED WHICH DOES NOT REQUIRE A PRESSURIZED CELL AND APPEARS TO BE SUITABLE FOR USE ON A PRODUCTION TYPE OPERATION. REGENERATION OF THE SOLUTION CAN BE CONTINUOUS IF VERY HIGH PRODUCTION RATES ARE REQUIRED.	115.0	70.0	43.7	APR 78	JUN 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
6 78 7716	PROTOTYPE PROD LINE FOR PRESSURE PHOSPHATE COATINGS DUE TO PROCUREMENT DELAYS,A NEW PROCESS WHICH DOES NOT REQUIRE PRESSURIZED CELLS WAS DEVELOPED USING 678 7716 FUNDS,SO PROTOTYPE PROCESS DEVELOPMENT MUST BE DONE WITH 677 7716 FUNDS.THIS WILL NOT HAMPER THE SUCCESSFUL IMPLEMENTATION OF THE PROCESS.	77.0	50.0	18.9	DEC 79	DEC 79
6 77 7722	IMPLEMENTATION OF THE 8 INCH XM201 ON ROTARY FORGE LINE THE 8 INCH M201 WAS TREPANNED BY AN OUTSIDE CONTRACTOR, THE PROJECT COMPLETION IS SLIPPING DUE TO INABILITY TO ACCESS ROTARY FORGE.	298.0	51.6	176.1	MAY 78	SEP 79
6 79 7724	GROUP TECHNOLOGY OF WEAPON SYSTEMS DRAWINGS HAVE BEEN CODED, ROUTINGS ASSEMBLED, AND PRODUCTION QUANTITIES DETERMINED, A CONTRACT TO ANALYZE THIS DATA IS IN THE FINAL PURCHASING CYCLE.	83.0	35.0	2.1	FEB 80	FEB 80
6 77 7726	APPLICATION OF COLD AND WARM ROTARY FORGING INSTRUMENTATION EQUIPMENT RECEIVED, AOR PREFORMS RECEIVED. REFORGE PROGRAM USED TO DEVELOP TOOL GEOMETRY, MANDREL STRESS ANALYSIS COMPLETED. LEAST COST PREFORM REDUCED SIZE FROM 23 TO 13 INCHES.	592.0	317.7	258.5	MAY 79	AUG 79
6 78 7726	APPLICATION OF COLD AND WARM ROTARY FORGING PURCHASED PREFORMS TO BE DELIVERED IN SEPT 79. MILESTONE CHANGES ARE BASED ON MATERIAL DELIVERY DATE. FORGING HAMMERS BEING REDESIGNED.	110.0	10.2	12.9	SEP 79	AUG 80
6 79 7726	APPLICATION OF COLD AND WARM ROTARY FORGING NO WORK PERFORMED TO DATE. A REQUEST TO REDUCE FUNDING BY 295K IS IN PROCESS. THE FUNDS WOULD BE USED TO FUND TWO URGENT LATE START MMT PROJECTS.	403.0			SEP 80	SEP 80
6 77 7727	RECYCLING OF SCRAP GUN TUBES BY ROTARY FORGING WORK CONTINUED ON FORGING, HEAT TREAT, INSPECTION AND TESTING OF RECYCLED TUBES.	224.0	21.1	194.8	AUG 78	AUG 79
6 79 7727	RECYCLING OF SCRAP GUN TUBES BY ROTARY FORGING WORK IS CONTINUING FROM FIRST YEAR EFFORT, TO DATE 8 SCRAP TUBES HAVE BEEN REFORGED INTO 12 NEW TUBES, THESE ARE NOW IN VARIOUS STAGES OF HEAT TREAT, INSPECTION AND TESTING.	237.0		25.6	JUL 81	JUL 81
6 79 7730	MANUFACTURE OF SPLIT RING BREECH SEALS PROBLEMS ASSOC WITH PRESENT MFG METHODS HAVE BEEN IDENTIFIED AND DIFFERENT SOLUTIONS ARE BEING INVESTIGATED. LETTERS HAVE BEEN SENT TO VARIOUS MFRS IN ORDER TO ACCUM THE TECH INFO NECESSARY AND RELEVANT TO THIS ENG ANALYSIS.	137.0		5.0	JUN 80	JUN 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHO-RIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
6 77 7733	ELIMINATION OF EXTERIOR TUBE MACHINING PRIOR TO SWAGE AUTO. MUZZLE SWAGING TESTS HAVE BEGUN.	47.0		44.7	MAR 78	JUL 79
6 77 7741	IMPR INST/INSPECT ANGLE + LINEARITY OF F C INSTS NO WORK WAS ACCOMPLISHED DUE TO LACK OF TWO ESSENTIAL COMPONENTS NEEDED TO BUILD ALIGNMENT TEST FIXTURE, COMPONENT DELIVERY IS SCHEDULED FOR OCT 79.	130.0	47.3	44.9	APR 78	MAY 80
6 78 7741	IMPR INST/INSPECT ANGLE + LINEARITY OF F C INSTS NO WORK WAS ACCOMPLISHED DUE TO DELAY IN COMPLETION OF THE ALIGNMENT TEST FIXTURE, ARRADCOM WILL CONDUCT TESTS AND MAKE MODIFICATIONS ON THE BREADBOARD IAW DECILOG'S REPORT TO DETERMINE FEASIBILITY OF THE PROJECT.	54.0		34.0	DEC 79	JUL 80
6 78 7743	APPLICATION OF ANTI-FOG CONDUCTIVE FILMS NO WORK WAS DONE IN THIS PERIOD BECAUSE THE THIN FILM LAB WAS BEING RELOCATED.PRIOR WORK SHOWED INDIUM TIN OXIDE FILM SPUTTERED ON FROM AN RF HEATED SOURCE PRODUCED GOOD CONDUCTION AND 90% TRANSMISSION,ANTI-REFLECTIVE COATING INCREASED THIS TO 97%.	70.0		65.4	FEB 79	SEP 80
6 77 7744	IMPROVED MFG PARAMETERS FOR OPTICS ARRADCOM OPTICS SHOP IS REVIEWING SPEC MIL-O-13830. THEY IDENTIFIED AND REQUESTED SEPARATE PROJECTS FOR 3 NEEDED RELATED AREAS OF FURTHER INVESTIGATION IN MAKING MEASURING CALIBRATING AND TESTING SCRATCH AND DIG STANDARDS. MIL-O-13830 NEEDS UPDATING.	165.0		154.2	APR 78	AUG 79
6 77 7745	DIAMOND TOOL FABRICATION CAPABILITY NO PROGRESS BECAUSE OPTICAL FACILITIES HAVE NOT BEEN MOVED FROM FFA TO ARRADCOM.	112.0		58.6	MAR 78	END:
6 77 7746	IMPROVE DURABILITY HIGH EFFICIENCY REFLECT FILMS NO PROGRESS WAS MADE DUE TO DAMAGE SUSTAINED BY THE RF SPUTTERING SYSTEM AND RELOCATION OF THE OPERATIONAL LAB. WORK IS INTENDED TO PROVIDE DURABLE DIELECTRIC FILM COATINGS ON REFLECTORS.	89.0		77.5	MAY 78	DEC 79
6 77 7753	NOISE SUPPRESSOR FOR POWDER TYPE RECOIL MECHANISM TESTING WA REVISED PROPOSALS ARE BEING EVALUATED TO DETERMINE THEIR ACCEPTABILITY.	80.0	60.0	0.7	FEB 80	FEB 80
6 78 7802	ESTABLISH MACHINE TOOL PERFORMANCE SPECIFICATIONS SCOPE FOR PHASE II AWARDED TO BACK NW LAB-BATTELLE. CURRENT STATUSAND PRACTICES OF MACHINE TOOL ACQUISITION WAS COMPLETED. A FLOW CHART FOR PROG SEQUENCING AND COMPUTERIZED RECORD KEEPING FOR ALL STEPS IN MACH TOOL ACQUISITION WAS DESIGNED.	195.0	161.5	23.4	DEC 79	DEC 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 HCS DRCMT-301

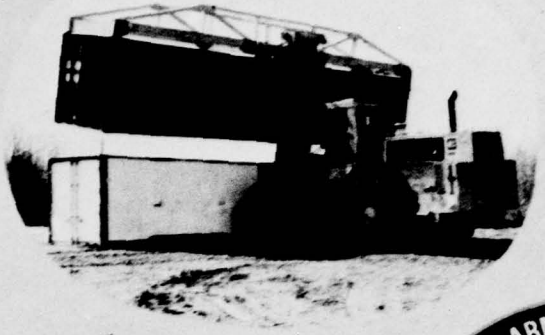
PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
6 79 7802	ESTABLISH MACHINE TOOL PERFORMANCE SPECIFICATIONS IN-HOUSE, PRIVATE INDUSTRY, AND MACH TOOL BUILDER PRACTICES FOR JUSTIFICATION, SELECTION, SPECIFICATION, AND TESTING WERE REVIEWED, THE CONTRACT SCOPE OF WORK TO ESTAB SYS PROCUREMENT METHODOLOGY WAS PREPARED AND CONTRACTUAL SERVICES WERE INITIATED.	282.0	238.3	0.7	JUN 81	JUN 81
6 78 7807	PROGRAMMED OPTICAL SURFACING EQUIPMENT AND METHODOLOGY (CAM) SEE PROJECT 6 79 7807.	134.0	100.0	17.3	DEC 79	JUL 80
6 79 7807	PROGRAMMED OPTICAL SURFACING EQUIPMENT AND METHODOLOGY (CAM) PROCUREMENT PACKAGE FOR A PROGRAMMABLE CURVE GENERATING/RADIUS TRUEING MACHINE HAS BEEN COMPLETED. A SPECIFICATION DELINEATING THE CHAR AND PERFORMANCE REQ FOR A COMPUTER CONTROLLED GRINDING/POLISHING MACHINE HAS BEEN INITIATED.	138.0	122.0	0.3	NOV 80	NOV 80
6 78 7808	LEAK DETECTION TECHNIQUES FOR SMALL SEALED FIRE CON ASSM A PROTOTYPE LEAK DETECTION TEST FIXTURE WAS DESIGNED AND FABRICATION OF THE FIXTURE WAS BEGUN.	86.0		78.2	APR 79	APR 80
6 77 7814	SYNTHETIC QUENCHANT FOR HEAT TREATING WEAPON COMPONENTS CONTRACT IN THE PROCESS OF BEING AWARDED.	67.0		50.1	FEB 78	SEP 79
6 78 7814	SYNTHETIC QUENCHANT FOR HEAT TREATING WEAPON COMPONENTS CONTRACT IN THE PROCESS OF BEING AWARDED.	51.0		0.8	JUN 79	MAR 80
6 78 7825	ELIMINATION OF FACILITATING HONING OPERATIONS TEN 105MM M68 TUBES WERE BURNISHED IN AVG RUN TIME OF 10 MIN. ELIMINATION OF HONING APPEARS FEASIBLE IF PRIOR SURFACE FINISH IS 200 RMS OR LESS. INABILITY TO ACCESS GUIDED BORES IS DELAYING THE PROJECT.	133.0	12.2	62.2	JUN 79	OCT 79
6 78 7840	PORTABLE MULTI-DEGREE-OF-FREEDOM SIMULATOR PROVE OUT OF STATIONARY SIMULATOR DESIGN CAUSED A DELAY UNTIL SEP 78, SCOPE OF WORK HAS BEEN SUBMITTED TO PROCUREMENT. SPECIFICATIONS ALLOW OPTION OF NEW DESIGN OR CURRENT PROGRAMMABLE TRIGONAL ACTUATOR DESIGN, CONTRACT AWARD FORECASTED FOR NOV 79.	389.0		29.0	JUN 80	OCT 82
6 78 7933	CENTRAL COOLANT SYSTEMS A SINGLE TANK CENTRAL COOLANT SYSTEM HAS BEEN SELECTED AS MOST ECONOMICAL AND ADVANTAGEOUS. THE SYSTEM WILL HAVE A DEIONIZER, MAKE UP TANK, A FILTER SYSTEM, AND A CENTRIFUGE FOR FINAL CLEANING. PH AND BACTERIA WILL BE AUTOMATICALLY CONTROLLED.	58.0		31.5	SEP 79	FEB 80
6 77 7943	ANALYSIS FOR MODERNIZATION OF INDUSTRIAL OPERATIONS BUILDING LAYOUT SELECTION WAS COMPLETED. ADDITIONAL $111,000 WAS REQUESTED AND RECEIVED. COMPLETION DATE EXTENDED TO MAY 1980.	458.3	43.5	201.5	FEB 78	MAY 80

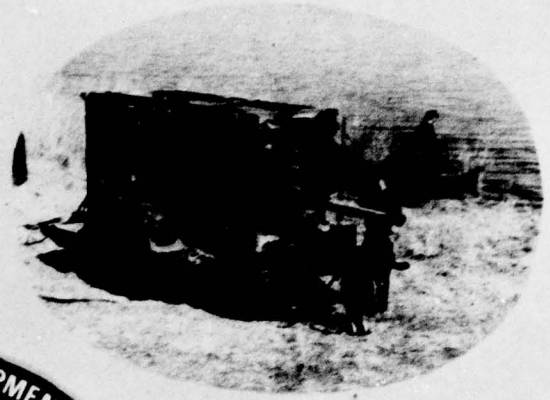
MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
6 78 7943	ANALYSIS FOR MODERNIZATION OF INDUSTRIAL OPERATIONS PHASE II, BUILDING LAYOUT SELECTION WAS COMPLETED. PERFORMED ECON ANALYSIS FOR MCA RELATED PORTION OF PROJECT REARM.	433.0	393.7	28.0	JUN 79	MAY 80
6 79 7948	ESTABLISH CUTTING FLUID CONTROL SYSTEM A SCOPE OF WORK HAS BEEN PREPARED AND SUBMITTED TO PROCUREMENT. RIA CUTTING FLUIDS ARE BEING INVENTORIED TO FILTER OUT UNDESIRABLES AND THE MACHINE SHOPS ARE BEING CANVASSED TO IDENTIFY PROBLEM AREAS WITH PRESENT FLUIDS. THIS PROJ IS BEHIND SCHEDULE.	150.0		6.0	FEB 80	MAR 80
6 79 7949	APPLICATION OF GROUP TECHNOLOGY TO RIA MFR (CAM) A CONTRACT TO PROVIDE TRAINING IN CLASSIFICATION AND CODING USING THE MICLASS SYSTEM IS IN THE FINAL STAGES. TWO CRT WERE APPROVED FOR PURCHASE.	127.0	80.0	0.6	FEB 80	FEB 80
6 79 7963	GROUP TECH CELLULAR MFG FOR FC COMPONENTS ASSEMBLIES INITIAL PLANNING HAS BEEN COMPLETED. A CONTRACTOR HAS BEEN SELECTED.	188.0	80.0	8.3	JUL 80	JUL 80
6 79 7965	DIFFERENTIAL SCATTEROMETRY FOR MICROFINISH SURFACES THE PERFORMANCE REQUIREMENTS HAVE BEEN ESTABLISHED. PRELIMINARY DESIGN REQUIREMENTS HAVE BEEN FINALIZED. THE MATERIAL AND COMPONENTS FOR THE PROJECT ARE BEING PURCHASED.	100.0		17.0	MAR 80	MAR 80
6 79 8004	CO-DEPOSITION OF SOLID LUBRICANTS DURING ANODIZING THE ALUMINUM ALLOY MATERIALS AND THE NECESSARY CHEMICALS AND LUBRICANT ADDITIVES HAVE BEEN PROCURED. THE DEVELOPMENT OF ANODIZING PROCESS PARAMETERS IS PRESENTLY IN PROGRESS.	120.0		18.6	JAN 80	JAN 80
6 79 8005	ESTABLISHMENT OF THE SPACE MECHANICAL PLATING PROCESS THE PROCESS SURVEY HAS BEEN COMPLETED. VARIOUS SMALL PARTS WERE COATED WITH CADMIUM, ZINC OR COMBINATIONS OF THESE PLUS CHROMATE AND SUBJECTED TO SALT SPRAY TESTS. MATERIAL PROCUREMENT PHASE IS NOW IN PROGRESS.	150.0		28.6	DEC 79	DEC 79
6 79 8010	PRODUCTION OF ACOUSTIC MICROWAVE FILTERS THIS IS AN IN-HOUSE EFFORT.ELECTRON BEAM LITHOGRAPHY WILL BE USED TO PRODUCE RESONATORS,OPTO-ACOUSTIC DEVICES+MICROWAVE FILTERS.NUMERICAL CONTROL WILL BE USED TO ACHIEVE PRODUCTION RATES.LITERATURE SEARCH AND EQUIP PROCUREMENT PLAN WERE INITIATED.	233.0		15.8	JUN 80	JUN 80
6 78 8017	POLLUTION ABATEMENT PROGRAM THE NON-CYANIDE COPPER PLATING BATH WAS CHEMICALLY BALANCED AND STEEL PANELS WERE SUCCESSFULLY COATED. THIS COPPER COATING MET ALL REQUIREMENTS OF MIL-C-14550A "COPPER PLATING, (ELECTRODEPOSITED)". A DERUSTING SOLN CAN BE REPLACED BY NON-CYANIDE SOLN	82.0		51.7	APR 79	JUL 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE & STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
6 79 8017	POLLUTION ABATEMENT PROGRAM PROCUREMENT ACTION WAS INITIATED TO OBTAIN PROPRIETARY CHEMICALS FOR ESTABLISHING NON-CYANIDE BASED COPPER AND CADMIUM PLATING BATHS.	41.0		4.7	DEC 79	DEC 79
6 79 8025	ELECTRONIC PROFILE READOUT GAGE FOR POWDER CHAMBER CONTROLS A REVIEW OF TECHNICAL DATA WAS CONDUCTED INCLUDING AN ON SITE INSPECTION OF THE PRESENT GAGING SYSTEM. THIS PROJECT IS FALLING BEHIND THE ORIGINAL "P16" SCHEDULE. 1-1/2 MONTH IN-HOUSE DELAY OF FUNDS IS PART OF THE PROBLEM.	106.0		10.6	JUL 80	JUL 80
6 78 8043	IMPROVED MACHINING PROCEDURES FOR DOVETAILS COMPLETED EVALUATION OF PRESENT MANUFACTURING SYSTEM, CONSIDERED TWO MANUFACTURING CONCEPTS. MILLING CONCEPT MOST PRACTICAL. PREPARATION OF MILLING MACHINE SPECIFICATION FOR SPECIALTY MILLING MACHINE IS IN PROCESS.	100.0		37.4	JUN 79	DEC 79
6 78 8045	IMPROVED TUBE STRAIGHTENING PURCHASE REQUEST FOR EQUIPMENT HAS BEEN PREPARED.	125.0	1.2	17.5	MAR 80	AUG 80
6 78 8047	PASS THRU STEADY RESTS FOR TUBE TURNING ENG REQUIREMENTS FOR ESTAB HYDRAULIC PRESSURE TO SAFELY SUPPORT AND RETAIN VARIOUS GUN TUBES FOR EXTERIOR TURNING OPERATIONS HAVE BEEN COMPLETED. FOREIGN SOURCES OF PASS THRU STEADY RESTS ARE ALSO BEING INVESTIGATED.	139.0	15.0	36.7	SEP 80	SEP 80
6 78 8048	IMPRVD INSPECTION TECH F/INGOTS & PREFORMS F/ROTARY FORGING THE PROCUREMENT REQ FOR THE ULTRASONIC SYSTEM INCLUDING	113.0		33.9	SEP 80	SEP 80
6 78 8049	MANUFACTURING PROCESSES ENERGY CONSERVATION PROGRAM DEVELOPED PROJECTIS SCOPE OF WORK. STAFFED SCOPE OF WORK AT RIA. IDENTIFIED 32 MAJOR ENERGY CONSERVATION FIRMS. SEVEN COMPANIES ARE INTERESTED IN VISITING RIA FOR A PRE-SOLICITATION MEETING. THE ENERGY PROFILE OF THE M&B MFG LINE IS BEING EVALUATED.	104.0	0.9	6.5	DEC 79	JUN 80
6 79 8107	CREEP FEED CRUSH FORM GRINDING A DETAILED REVIEW OF POTENTIAL APPLICATIONS IS IN PROGRESS.	82.0		18.6	MAY 80	MAY 80

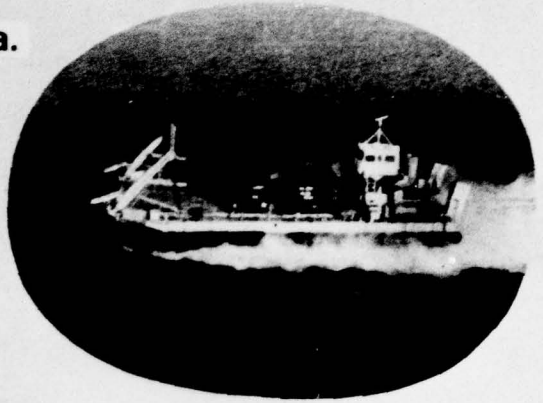




U.S. ARMY MOBILITY EQUIPMENT
MERADCOM
RESEARCH & DEVELOPMENT COMMAND

Fort Belvoir, Va.





MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT COMMAND

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)	INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)
77	2	956,000	782,300	748,600 (95%)	173,700	14,600 (8%)
78	7	1,628,000	1,325,600	1,003,600 (75%)	302,400	292,400 (96%)
79	11	2,600,000	765,000	49,000 (6%)	1,835,000	62,200 (3%)
TOTAL	20	5,184,000	2,872,900	1,801,200 (62%)	2,311,100	369,200 (15%)

AUTHORIZED FUNDING CONTRACT ALLOCATED 55% INHOUSE ALLOCATED 44%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
E 78 3532	MOLTEN SALT LI/CL BATTERY 10 CELL LI-AL/FES MODULE TESTED TO ABOUT 30 CYCLES AT ANL. TEST TERMINATED DUE TO CELL IMBALANCE CAUSED BY ANL CHARGE EQUALIZATION CIRCUIT. MODULE SENT TO EPI FOR DISMANTLING AND CHECK. TESTS WILL BE RESUMED WITH EITHER RECONDITIONED OR SPARE CELLS.	120.0	105.0	12.0	DEC 78	SEP 79
E 79 3532	MOLTEN SALT LI/CL BATTERY CELL AND BATTERY REDESIGNED TO MEET SPECIAL NEEDS OF ARMY FORK LIFT PROGRAM. HIGHER CAPACITIES AND VOLUME CONSTRAINTS REQUIRE CHANGES FROM THE ANL/EPI MARK 1A CAR BATTERY.	295.0	280.0		AUG 80	NOV 80
E 78 3587	SLUFAE ROCKET MOTOR THE POT LIFE WAS IMPROVED BY ADDING 2% DUA AND .005% TRI-PHENYL BISMUTH. THE POT LIFE WAS 6 HRS PROCESSING TIME AT A BATCH TEMP OF 110F. TEST STAND RESULTS WERE EQUIVALENT TO PERFORMANCE PARAMETERS OF EXISTING MOTORS.	210.0	200.0	10.0	AUG 79	AUG 79
E 77 3592	IMPROVED GRAPHITE REINFORCEMENT WORK WAS CONCENTRATED ON EVALUATING MORE SUITABLE AND ECONOMICAL METHODS OF HEATING FIBERS. THESE INCLUDED INDUCTION AND LASER HEATING.	206.0	148.6	14.6	SEP 78	DEC 79
E 79 3592	IMPROVED GRAPHITE REINFORCEMENT-PHASE 3 HIS PROJECT WAS JUST FUNDED. NO STATUS REPORT REQUIRED.	282.0				
E 78 3604	SOLID STATE POWER SWITCH PRODUCTION OF PRE-ENGINEERING SAMPLE SWITCHES SLIPPED 6 MONTHS DUE TO MECHANICAL INTERFERENCE PROBLEMS. DELTA ELECTRONICS IS ASSEMBLING TRANSISTOR CHIPS ONTO A COMMON HEAT SINK. SLIPPAGE WILL NOT AFFECT PRICE OF FIXED PRICE CONTRACT.	350.0	294.0	56.0	JUN 80	JUN 80
E 79 3604	SOLID STATE POWER SWITCH FOLLOW-ON TO ABOVE. DELTA ELECTRONICS CONVERT THE R+D DESIGN INTO A PRODUCTION DESIGN. INCLUDES SILICON TRANSISTOR WAFER PROCESSING, MOUNTING, HERMETIC SEALING AND TESTING. WILL SWITCH 50 AMPS AT 300 VOLTS.	85.0	54.0	14.0	JUN 81	JUN 81
E 78 3605	TRANSCALENT-HIGH POWER-TRANSISTOR A CONTRACT WAS LET TO RCA TO START WORK ON A POWER TRANSISTOR HAVING AN INTERDIGITATED EMITTER ALIGNED WITH AN IDENTICAL BALLAST RESISTOR STRUCTURE. HEAT PIPES ON BOTH SIDES OF THE WAFER FORM PART OF THE PACKAGE.	50.0	30.0	20.0	MAR 82	MAR 82
E 79 3605	TRANSCALENT-HIGH POWER-TRANSISTOR FOLLOW-ON TO ABOVE. RCA IS WORKING OUT A METHOD FOR ALIGNING AN EMITTER BALLAST WITH AN INTERDIGITATED TRANSISTOR WAFER DURING ASSEMBLY. ALIGNMENT MUST BE PRECISE DURING PACKAGE WELDING. TEST METHODS ARE ALSO BEING DEVELOPED.	453.0	376.0	17.0	MAR 82	MAR 82

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
E 78 3606	250 AMP TRANSCALENT (HIGH POWER) RECTIFIER RCA, LANCASTER, PA DELIVERED ENGINEERING SAMPLE DIODES RATED 250 AMPS. APPLICATION OF METAL IN VARYING THICKNESS WAS THE PRODUCTION PROBLEM. RCA IS TRYING TO ACHIEVE UNIFORM CURRENT DENSITY.	360.0	305.0	50.0	JUN 80	JUN 80
E 79 3606	250 AMP TRANSCALENT (HIGH POWER) RECTIFIERS RCA BUILT ENGINEERING SAMPLE RECTIFIERS THAT WERE LOANED TO POTENTIAL USERS FOR EVALUATION. ASSEMBLY AND TEST PROCEDURES ARE BEING IMPROVED. UNITS WILL SWITCH 250 AMPS AT 1200 VOLTS BLOCKING VOLTAGE. WIDER USAGE WILL REDUCE PRODUCTION UNIT COST.	85.0	55.0	10.0	JUN 81	JUN 80
E 78 3613	VEHICLE-MOUNTED ROAD MINE DETECTOR SYSTEM ANTENNAS THE CONTRACTOR HAS MADE SEVERAL DESIGN RECOMMENDATIONS WHICH HAVE BEEN APPROVED BY THE GOVERNMENT. THE TECHNIQUE ASSESSMENT, PHASE I OF THE PROGRAM, HAS BEEN COMPLETED. A REPORT ON PHASE I IS BEING PREPARED.	195.0	163.0	30.0	JUN 80	AUG 79
E 79 3613	VEHICLE-MOUNTED ROAD MINE DETECTOR SYSTEM ANTENNAS PHASE I OF THE ORIGINAL CONTRACT WAS COMPLETED. THE TECHNIQUE EVALUATION, PHASE II, IS UNDERWAY AND PILOT PRODUCTION OF RECOMMENDED ANTENNA DESIGN IS UNDERWAY.	163.0		10.0	JUN 80	JUN 80
E 79 3708	COATED FABRIC COLLAPSIBLE FUEL TANK-CIRCULAR SEAM WEAVING A CONTRACT PACKAGE HAS BEEN PREPARED.	97.0		4.7	AUG 79	SEP 81
E 79 3709	CONTINUOUS LENGTH FUEL HOSE THE PACKAGE FOR CONTRACT AWARD HAS BEEN PREPARED AND IS BEING CIRCULATED AND REVIEWED. THE CONTRACT IS SCHEDULED TO BE AWARDED DURING THE 4TH QTR. FY79.	245.0		6.5	SEP 81	SEP 81
E 78 3717	HIGH TEMPERATURE TURBINE NOZZLE FOR 10 Kw POWER UNIT MATERIALS AND MANUFACTURING METHODS HAVE BEEN SELECTED, AND SAMPLE TEST BARS AND NOZZLE VANE SECTIONS HAVE BEEN ORDERED. SELECTIONS WERE BASED ON EROSION CAPABILITIES AND POTENTIAL FOR COST REDUCTION IN MANUFACTURING. FOUR SELECTIONS WERE MADE.	343.0	228.6	114.4	SEP 79	SEP 79
E 79 3743	COMPOSITE SPUN MATERIAL LAUNCHING BEAM FOR BRIDGES INITIATION OF WORK HAS BEEN POSTPONED UNTIL RESEARCH AND DEVELOPMENT WORK PRESENTLY UNDERWAY IS COMPLETED. THE ANTICIPATED INITIATION DATE WILL BE IN THE 4TH QUARTER OF FY 79.	470.0			SEP 80	SEP 80
E 77 3749	HYDRAULIC ROTOR ACTUATORS THE CONTRACTOR HAS COMPLETED AND BENCH TESTED SIX INTERMEDIATE UNITS.	750.[illegible]	633.[illegible]		MAY 79	SEP 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
E 79 3759	KEVLAR CABLE REINFORCEMENT FOR MILITARY BRIDGES FUNDS ARE BEING REPROGRAMMED.	175.0				
E 79 3761	DIMPLE PLATE SANDWICH PANEL,WEB,BRIDGING FOR THE 1980'S FUNDS ARE BEING REPROGRAMMED TO PROJECT E 79 3743.	250.0				



COMMUNICATIONS R&D COMMAND

(CORADCOM)

PRECEDING PAGE BLANK

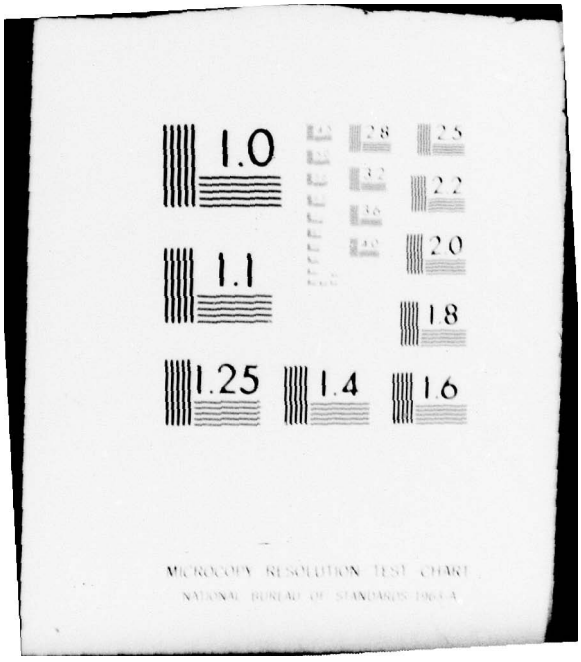
AD-A074 835 ARMY INDUSTRIAL BASE ENGINEERING ACTIVITY ROCK ISLAND IL F/G 13/8
MANUFACTURING METHODS AND TECHNOLOGY PROGRAM PROJECT STATUS REP--ETC(U)
AUG 79 H E WEIDNER, L S HANCOCK

UNCLASSIFIED NL

2 OF 2
AD A074835



END
DATE FILMED
10-79
DDC


1.0
1.1
1.25
1.4
1.6
2.8
3.2
3.6
4.0
2.5
2.2
2.0
1.8
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

COMMUNICATIONS R + D COMMAND

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)	INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)
76	5	2,593,300	2,222,200	1,919,600 (86%)	371,100	355,000 (95%)
77	0	0	0	0 (0%)	0	0 (0%)
77	1	448,800	398,800	398,800 (100%)	50,000	44,000 (88%)
78	2	1,100,000	745,900	272,800 (36%)	354,100	30,900 (8%)
79	2	910,000	0	0 (0%)	910,000	0 (0%)
TOTAL	10	5,052,100	3,366,900	2,591,200 (76%)	1,685,200	429,900 (25%)

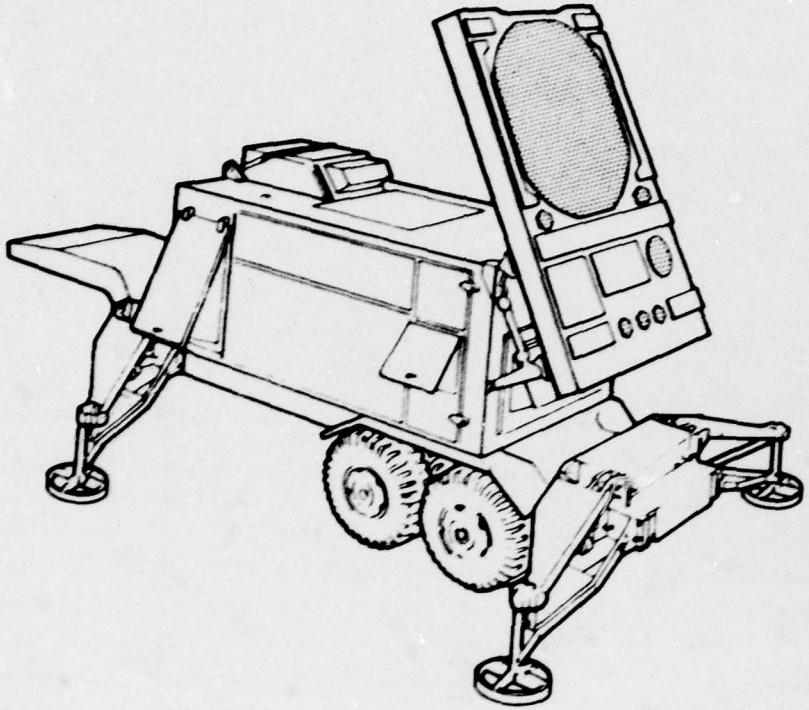
AUTHORIZED FUNDING CONTRACT ALLOCATED 67% INHOUSE ALLOCATED 33%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
2 76 9679	NUMERICAL CONTROL LATHE LANGUAGE EVALUATION SUMMARIES OF MAJOR NUMERICAL CONTROL LATHE LANGUAGES WERE PREPARED. AS A RESULT OF TEST PATTERNS, A COMPREHENSIVE SET OF TEST PARTS WAS DESIGNED, BENCHMARKED BY DOD PARTICIPANTS AND FIELD TESTED AT PROPONENT SITES.	395.0	195.1	185.0	OCT 79	DEC 79
2 76 9758	PROCESSES FOR METAL NITRIDE OXIDE SEMICONDUCTORS FOR RORAM WESTINGHOUSE COMPLETED ASSEMBLY OF 160 OF 220 PILOT RUN MEMORIES. A CAPACITY RUN WAS HELD IN JULY 79. MNOS MEMORY CHIPS WERE MADE AND MOUNTED IN 16-CHIP HYBRID PACKAGES, 6000 DEVICES ARE TO BE DELIVERED. A DEMO IS SET FOR 2 OCT 79.	724.0	674.0	50.0	AUG 78	DEC 79
2 78 9773	COMPUTER AIDED F/PREP OF AUTO ANALOG CIRCUIT PROD TEST PROG AUTOMATIC TEST PROGRAM GENERATION SOFTWARE CONVERSION FROM UNIVAC 1108 AND NAVY VAST SYSTEM TO ARMY AN/USM-410 TEST STATION WAS ANALYZED; CONVERSION PROBLEMS WERE IDENTIFIED; CONVERSION PROCESS WAS INITIATED, NETWORK ENGINEERING COMPLETED ON SOME CMP	500.0	453.4	6.9	NOV 79	SEP 80
2 76 9776	FAB METHODS FOR LOW COST HYBRID SILICON PHOTODETECTOR MODULE RCA CANADA DEVELOPED SEMI-AUTOMATIC METHODS FOR ALIGNING OPTIC FIBERS AND PHOTODETECTORS, FOR FIBER OPTIC CABLES AND GVS-5 RANGE FINDERS. CASE GROUND LEAD PROBLEM WAS SOLVED BY THE PACKAGE SUPPLIER, IT RESULTED FROM POOR WORKMANSHIP, UNITS MEET SPECS	446.5	411.4	35.0	AUG 78	FEB 80
2 76 9778	LONG LIFE LIGHT EMITTER FOR FIBER OPTICS SEE INDIVIDUAL SUBTASKS FOR STATUS.	437.8	392.7	45.0	AUG 78	MAY 81
2 76 9778A	LONG LIFE LIGHT EMITTER FOR FIBER OPTICS LASER DIODE LAB FABRICATED INJECTION LASER DIODES FOR FIBER OPTIC COMMUNICATIONS, LIQUID PHASE EPITAXIAL SYNTHESIS, PHOTOLITHOGRAPHY AND CHEMICAL ETCHING WERE UTILIZED TO FABRICATE THE DOUBLE-HETERO JUNCTION GAAS-GAALAS SEMICONDUCTOR LASER.	437.8	193.8	45.0		MAY 81
2 76 9778B	LONG LIFE LIGHT EMITTER FOR FIBER OPTICS LASER DIODE LAB FABRICATED HIGH SPEED ETCHED WELL LEDS FOR FIBER OPTIC COMMUNICATIONS, LIQUID PHASE EPITAXY WAS UTILIZED IN FABRICATION, IT WAS LEARNED THAT WHEN LEADS ARE CLEAVED, THE OPERATION MUST BE PERFORMED CORRECTLY TO MINIMIZE CORE POWER LOSS.	437.8	198.9	45.0		FEB 80
2 76 9781	THIN FILM TRANSISTOR ADDRESSED DISPLAY SEE SUBTASKS BELOW.	590.0	549.0	40.0	AUG 78	OCT 79
2 76 9781A	THIN FILM TRANSISTOR ADDRESSED DISPLAY WESTINGHOUSE EXHAUSTED ALL CONTRACT FUNDS WITHOUT ACHIEVING ITS GOALS, ALL WORK STOPPED EXCEPT FOR ASSEMBLY OF SELECTED SUBSTRATES INTO 8 DMD PANELS, W WILL INSURE THAT ALL PERTINENT INFO DEVELOPED ON THIS PROJECT IS DOCUMENTED IN FINAL REPORT.	345.0	310.0	34.0		AUG 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
2 76 9781B	THIN FILM TRANSISTOR ADDRESSED DISPLAY AN ADD ON CONTRACT AT WESTINGHOUSE PROVIDED NEW MASK DESIGNS AND NEW METALLIZATION METHODS WHICH REDUCED PROCESS STEPS AND TIME. ALL FUNDS EXPENDED AND WORK HALTED EXCEPT FOR PANEL ASSEMBLY AS STATED ABOVE.	245.0	239.0	6.0		OCT 79
2 77 9835	INT CONTL CRCIT FOR THIN FILM TRANSISTR DISPLAY AEROJET HAD PRODUCTION PROBLEMS WITH THIN FILM CIRCUITS. FUNDS ARE DEPLETED AND PILOT RUN CANNOT BE MADE. FILM CIRCUITS WITH 0.1 MIL TOLERANCE ON 4 INCH MASKS IS BEYOND THE TECHNOLOGY. SOME PROBLEMS WERE SOLVED BUT $600K IS NEEDED TO FINISH.	448.8	398.8	44.0	MAR 79	MAY 80
F 79 9891	ARCTIC (-55 C) ELECTRICAL CABLE JACKET AN RFP WAS ISSUED IN MAY 79. NO BIDS WERE RECEIVED. COMADCOM IS INVESTIGATING THE DETAILS OF WHY THE COMPANIES SOLICITED REFUSED TO BID ON THE PROGRAM.	400.0			OCT 81	MAY 82
2 78 9898	RUGGEDIZED TACTICAL FIBER OPTIC CABLES CONTRACT WAS AWARDED TO ITT ELECTRO-OPTICS FOR IMPROVING PRODUCTION EQUIPMENT TO FABRICATE FIBER OPTIC CABLE FOR SECURE GROUND BASED COMMUNICATIONS. ITT WILL WORK ON BUNDLING, CABLING AND JACKETING CAPABLE OF OPERATING IN A MILITARY ENVIRONMENT.	600.0	292.5	24.0	NOV 79	JUL 81
F 79 9938	THREE COLOR LIGHT EMITTING DIODE DISPLAY UNIT A PROCUREMENT PACKAGE HAS BEEN PREPARED. THE PACING R+D FOR THIS PROJECT UNDERWENT CHANGES AND THE DESIGN OF THE MODULE WAS NOT FINALIZED UNTIL 1 MAR 79. THIS PROJECT IS CURRENTLY 9 MONTHS BEHIND SCHEDULE.	510.0			SEP 81	NOV 81



ELECTRONICS R&D COMMAND
(ERADCOM)

ELECTRONICS R & D COMMAND

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)		INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)	
75	2	964,500	890,500	846,600	(95%)	74,000	74,000	(100%)
76	11	4,606,000	4,161,100	3,527,600	(84%)	442,900	345,000	(82%)
77	0	0	0	0	(0%)	0	0	(0%)
77	16	10,752,400	9,029,600	6,135,000	(67%)	1,722,800	858,500	(49%)
78	6	3,093,700	2,828,200	657,800	(23%)	265,500	130,900	(49%)
79	10	5,120,900	1,235,000	0	(0%)	3,885,900	32,000	(0%)
TOTAL	45	28,535,500	18,144,400	11,166,600	(61%)	6,391,100	1,457,300	(22%)

AUTHORIZED FUNDING CONTRACT ALLOCATED 74% INHOUSE ALLOCATED 26%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
M 79 3504	ADV METH F/FABR CHALCOGENIDE GL IR LENS BKS THE CONTRACT IS NOT YET AWARDED. A PROCUREMENT PACKAGE WAS FORWARDED AND BIDS REQUESTED 30 JUN 79. OBJECTIVE IS TO ESTABLISH CASTING PROCESSES FOR PRODUCING UNIFORM GE-AS-SE GLASS IN TEN INCH DIAMETER PLATES. APPLICATION IS INFRARED SYSTEMS.	270.0		4.2	MAY 81	MAY 81
M 78 3511	FAB OF SUBMICRON PHOTOMASKS FOR INTEGRATED CIRCUIT DEVICES ***** DELINQUENT STATUS REPORT *****	66.0	58.1	7.9	SEP 81	SEP 81
M 79 3516	CRYOGENIC COOLER HYBRID MOTOR CIRCUIT HIGH VOLUME, HIGH YIELD MANUFACTURING METHODS WILL BE ESTABLISHED FOR PRODUCING EXTREMELY SMALL, EFFICIENT HYBRID ELECTRONIC CIRCUITS. THE CIRCUITS WILL HAVE A PROTECTIVE COATING FOR PROTECTION IN A CRYOGENIC COOLER.	175.9	140.9	5.0	JUN 81	JUN 81
M 79 5000	PRODUCTION HOT FORGING OF ALKALI HALIDE LENSES HONEYWELL WILL ESTABLISH TECHNIQUES TO SIMULTANEOUSLY HOT FORGE A NUMBER OF LENS ELEMENTS PER BATCH WITH A MINIMUM TIME BETWEEN BATCHES. POTASSIUM BROMIDE IS THE MATERIAL. HONEYWELL IS DEVELOPING LESS EXPENSIVE COLOR CORRECTION LENSES.	594.0	544.0	5.0	SEP 81	SEP 81
M 79 5042	LARGE DIAMETER ND THIS PROJECT WAS JUST FUNDED. NO STATUS REPORT REQUIRED.	287.0				
2 75 9525	HOT PRESSING OF PIEZO CERAMIC ELEMENTS FOR HV TRANSFORMERS HONEYWELL SUCCESSFULLY APPLIED HOT PRESSING TECHNIQUES TO THE FABRICATION OF EXTREMELY THIN LEAD ZIRCONATE-LEAD TITANATE CERAMIC ELEMENTS INTO PIEZOCERAMIC TRANSFORMERS. THE FINAL AND GENERAL REPORTS WERE DELIVERED IN JUNE 79 FOR DISTRIBUTION IN JULY	229.4	192.9	36.5	OCT 77	AUG 79
2 76 9631	IC FABRICATION USING ELECTRON BEAM TECHNOLOGY TEXAS INSTRUMENTS MADE 512 GOOD 256 BIT RANDOM ACCESS MEMORIES USING ELECTRON BEAM EXPOSURE DIRECTLY ON THE WAFER. TI AUTOMATED THE E-BEAM AND MATERIAL HANDLING EQUIPMENT AND USED HIGH SPEED ELECTRON RESIST. A DEMO WAS HELD AT FT. MONMOUTH IN MAY 79.	782.9	735.4	25.0	AUG 77	SEP 79
2 75 9665	MEASUREMENT OF ELECTCOMPONENTS UNDER DYNAMIC STRESS ***** DELINQUENT STATUS REPORT *****	735.1	697.6	37.5	SEP 77	DEC 79
2 76 9738	EPITAXIAL + METALLIZATION PROCESSES F/GAAS IMPATT DIODES MICROWAVE ASSOCIATES CONVERTED MANUAL PROCEDURES TO AUTOMATED CONTROLS WITH FEEDBACK. PROCESS CHANGES AND 168 HOUR BURN-IN WERE NEEDED TO PREVENT BURNOUT. CONTRACT WAS EXTENDED 9 MONTHS AT NO COST. SAMPLES WERE DELIVERED IN JULY 79.	248.8	248.8		JUN 77	OCT 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 MCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
M 78 9738	PULSED GALLIUM ARSENIDE IMPATT DIODES MICROWAVE ASSOCIATES IS EXTENDING AUTOMATED GROWTH CONTROLS DEVELOPED ON 2769738,WILL GROW N=TYPE AND THEN P=TYPE GALLIUM ARSENIDE LAYERS IN THE SAME REACTOR,MA IS WORKING ON MATERIALS, DEVICES, A MODULATOR CIRCUIT + AN OSCILLATOR,EXTENSION IS RECOMM	500.0	441.2	15.0	JUN 80	OCT 80
2 76 9746	THIN FILM AL OXIDE ION BARRIERS FOR 18MM MICROCHANNEL PLATES ITT (EOPD) COMPLETED CONFIRMATORY SAMPLE TESTS EXCEPT THE 6000 HOUR TEST WHICH HAS RUN 2400 HOURS WITH NO MCP FAILURES, THE PILOT RUN WAS STARTED. ITT IS NOW MAKING THE MCPS AND TUBES TO TEST THEM IN. WILL DEPOSIT THIN FILM BARRIER ON ALL MCPS.	480.0	432.0	45.0	JUL 79	JAN 80
2 76 9749	THICK FILM PROCESSING OF MICROWAVE INTEGRATED CIRCUITS. ***** DELINQUENT STATUS REPORT *****	360.0	300.0	30.0	JUN 78	DEC 79
2 77 9751	MFG METHODS FOR FABRICATION OF YAG LASER RODS ***** DELINQUENT STATUS REPORT *****	142.0	66.5	24.0	JAN 79	DEC 79
2 76 9754	CONTIN CYCLE PROC OF SHOCK RESISTANT QUARTZ CRYSTAL UNITS THE IN=LINE ULTRAHIGH VACUUM FABRICATION FACILITY HAS BEEN DESIGNED AND CONSTRUCTED. ASSEMBLY IS COMPLETE AND OPERATIONAL TESTS HAVE BEEN PERFORMED SATISFACTORILY. THE SYSTEM IS IN FINAL CHECKOUT.	826.7	784.7	39.0	AUG 78	DEC 79
2 77 9754	CONTIN CYCLE PROC OF SHOCK RESISTANT QUARTZ CRYSTAL UNITS THE ULTRAHIGH VACUUM QUARTZ CRYSTAL FABRICATION FACILITY IS OPERATING SATISFACTORILY, SEVERAL HUNDRED ENGINEERING SAMPLES HAVE BEEN PROCESSED. FABRICATION OF CONFIRMATORY SAMPLES IS SCHEDULED TO START IN SEPT.	1,489.0	1,426.0	63.0	DEC 79	AUG 80
2 76 9766	DEPOSITION OF A HIGHVOLTAGE INSULATING LAYER FOR THICK FILM ERIE TECH WAS UNABLE TO BUILD A WORKABLE MULTIPLIER MODULE DUE TO OUT=OF=SPEC CAPACITOR BANKS. NO FURTHER EFFORT WILL BE MADE TO MANUFACTURE MULTIPLIERS AS ORIGINALLY PROPOSED. NEW MULTIPLIER DESIGN WILL BE SUBMITTED BY 30 JUNE 79.	182.9	128.5	35.0	AUG 78	SEP 79
2 76 9767	DEPOSITION OF THICK FILM CIRCUITS FOR CRYSTAL OSCILLATORS RAYTHEON WAS TOLD THE CONTRACT MUST BE CLOSED OUT WITH REMAINING FUNDS. TERMINATION WILL FOLLOW DELIVERY OF 50 THICK FILM OSCILLATORS. YIELD WAS LOW AND COST WAS HIGH. A NEW LOW COST OSCILLATOR WILL BE BUILT ON ANOTHER PROJECT.	392.7	361.7	31.5	AUG 78	NOV 79
2 76 9771	LOW TEMP PROCESS OF BULK SEMICONDUCTOR SWITCHES + LIMITERS MICROWAVE ASSOCIATES ESTABLISHED PRODUCTION PROCEDURES FOR MAKING SEMICONDUCTOR LIMITERS TO REPLACE GAS TUBES. DEVELOPED SHALLOW DIFFUSED JUNCTIONS + ASSEMBLY + MOUNTING METHODS. DEMO WILL BE AUG 79.	380.0	347.5	32.0	AUG 78	AUG 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
2 76 9774	IMP PLATED-THRU HLS BY ALTERING DRILL GEOMETRY + FINISH ***** DELINQUENT STATUS REPORT *****	125.0	73.8	51.2	JUN 77	DEC 79
2 76 9783	PRODUCTION OF HIGH RESISTIVITY SILICON MATERIAL SEE SUBTASKS A AND B.	501.0	457.1	43.9	AUG 78	JUL 81
2 76 9783A	PRODUCTION OF HIGH RESISTIVITY SILICON MATERIAL HUGHES BUILT A DOMESTIC SOURCE OF HIGH PURITY SILICON, THE COST WAS $30 PER GRAM AND IS NOW $10, BUT WACKER OF W. GERMANY IS SELLING IT FOR $4 A GRAM WHILE QUOTING OTHERS $30. A FOLLOW-ON PROJECT WILL WORK ON MULTIPLE DRAWING. DEMO WAS HELD.	501.0	457.1	43.9		JUL 81
2 76 9783B	PRODUCTION OF HIGH RESISTIVITY SILICON MATERIAL UNIV. OF DAYTON RESEARCH INST. IMPROVED TECHNIQUES FOR MEASURING RESISTIVITY OF HIGH PURITY SILICON. IT APPROACHES 30,000 OHM CMS. THIS CONTRACT IS FUNDED BY AFML WHICH PROVIDED $474.8, INCLUDING $457.1 FOR WORK AT HUGHES.					JUL 81
2 76 9788	FAB OF LOW VOLTAGE START SEALED BEAM ARC LAMPS. ***** DELINQUENT STATUS REPORT *****	324.0	290.6	33.3	AUG 78	DEC 79
2 77 9792	PDN OF FUNNELLED MCPS WITH HIGH SECONDARY EMITTING COATNG GALILEO ELECTRO-OPTICS CORP IS HAVING TROUBLE REDUCING CHANNEL SPACING FROM 15 MICRONS TO 10, AND WITH CHANNELING. NOISE FIGURE IS OK. SAMPLES ARE 10 MONTHS LATE. 6-MONTHS SCHEDULE MAKEUP IS OVEROPTIMISTIC. A NO-COST EXTENSION WAS REQUESTED.	600.0	471.7	69.0	MAR 80	JUN 80
M 78 9793	PRODUCTION OF INTAGLIATED FIBER OPTIC PHOSPHOR SCREEN ITT (EOPD) HAS WORKED OUT A METHOD FOR ETCHING OUT THE CORES OF THE OPTIC FIBERS, METALLIZING THE WALLS OF THE PITS,ALSO DEPOSITING PHOSPHOR AND A THIN ALUMINUM COATING.FIRST SAMPLES ARE ACCEPTABLE ALTHOUGH 3 MONTHS LATE.FOR 18 + 25 MM 3RD GEN TUBES.	200.0	177.1	16.0	DEC 79	APR 80
2 77 9805	AUTO MICROCIRCUIT BRIDGE PDN MEASURE OF QUARTZ CRYSTALS HUGHES IS DEVELOPING AN ADVANCED SYSTEM FOR PRODUCTION TESTING OF QUARTZ CRYSTALS, BRIDGE FABRICATION HAS BEGUN, CRYSTAL OVEN IS BEING EVALUATED, OFFSET LOCAL OSCILLATOR MODEL IS NEAR COMPLETION, TECHNIQUES WILL BE USED IN MIL-C-3098.	680.0	580.0	75.0	JAN 79	APR 80
M 79 9805	QUARTZ CRYSTAL PARAMETER TESTING SOLE SOURCE CONTRACT HAS NOT YET NEGOTIATED. PROJECT IS A FOLLOW-ON TO 2 77 9805. HUGHES WILL BUILD MULTICRYSTAL TEMPERATURE CHAMBERS FOR AUTOMATIC ACQUISITION OF FREQUENCY/TEMP AND AGING DATA. WILL RAISE TEST CAPACITY FROM 25 TO 200 CRYSTALS PER DAY	400.0			JUN 80	DEC 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

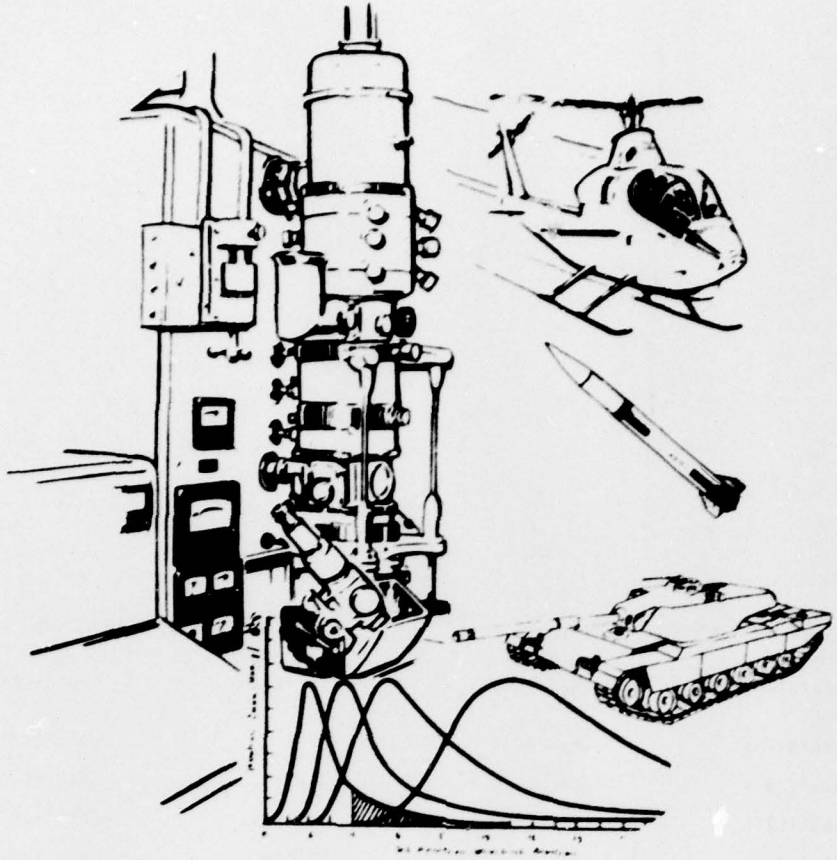
PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
M 79 9807	PROCESSING HIGH STABILITY QUARTZ CRYSTAL UNIT PROJECT WAS PLANNED TO BE DONE AT DOE, WITH A PILOT LINE ESTABLISHED AT GEND, A GOCO FACILITY OF DOE. A LAW SUIT FILED BY FIRMS CLAIMING CAPABILITY OF MANUFACTURING OTHER COMPONENTS BEING MANUFACTURED AT GEND HAS LEFT THIS PROJECT IN ABEYANCE.	760.0			MAR 81	MAR 81
2 77 9808	AUTO INPROCESS EVAL OF THICK FILM PRINT + HYBRID CKT ASSY RCA DEMONSTRATED SYSTEM INSPECTION CAPABILITY WITH ITS RETURN BEAM VIDICON, A TESTGEN SYSTEM SOFTWARE FEATURE WAS USED TO CREATE AND STORE INSPECTION CONDITIONS. RCA REQUESTED $41,660 MORE TO FINISH THE WORK BUT NO MONEY IS AVAIL. FINAL RPT REQUESTED	534.6	489.6	43.0	AUG 79	DEC 79
2 77 9809	MFAS TECHNIQ FOR CHMICALS IN MFG PROC FOR SOLID ST MICROWV NO WORK ACCOMPLISHED SINCE EFFORT HAD COST OVERRUN WHICH NEEDED TO BE RESOLVED.	553.8	553.8		NOV 78	MAR 80
2 77 9811	REDUC MFG COSTS FOR MICROWAVE POWER TRANSISTORS-IN PROC TUNR ***** DELINQUENT STATUS REPORT *****	597.4	529.4	35.8	JUL 79	MAR 80
2 77 9812	SPLIT CYCLE STIRLING COOLER RELIABILITY TESTING WAS INITIATED, COMPRESSOR COATING FLAKED OFF DURING THE 350-400 HOUR PERIOD CAUSING FAILURE DUE TO EXPANDER CONTAMINATION, A NEW TEST RUN WITH THE CORRECTION MADE, FAILED AFTER 550 HOURS, MARTIN MADE 6 CONFIRMATORY COOLERS.	795.0	439.9	65.0	JAN 80	MAY 80
2 77 9813	RUGGEDIZED LOW COST QUADRANT DETECTOR FOR CLGP, TI WORKED OUT ASSEMBLY AND TEST PROCEDURES FOR SILICON QUADRENT DETECTORS,BUT PROBLEMS WERE FOUND IN THE WAFER DIFFUSION LINE AND THE FACILITY HAD TO SHUT DOWN FOR CLEANING,TI ALSO BUILDS PAVEWAY DETECTORS IN THE SAME EQUIPMENT SO ARMY WORK MUST WAIT	375.0	159.0	40.0	JAN 80	OCT 80
2 77 9827	PROCESSING XP ARMOR FOR RADAR HARDENING APPLICATIONS FILM STRETCHING TRIALS HELD, SPLITS WERE MINIMIZED WITH ADJ ROLL AND SOF QUENCH H20 TEMP, SURFACE DEBONDING STUDIES SHOW SURF FINISH OF AL CAUL PLATES ARE THE CAUSE, EFFECT OF FILM ARMOR ON RADAR PERFORMANCE DETERMINED, EXTRA 88K REQUESTED TO COM	500.0	275.2	194.0	JUL 79	SEP 80
2 77 9831	PILOT MFG RUGGED L-BAND CRYSTAL CONTLD TELEMETRY TRANSMITER ***** DELINQUENT STATUS REPORT *****	79.0		34.0	OCT 78	SEP 79
2 77 9834	FABRICATION SERIES TRANSDUCER ACOUSTIC DELAY LINES ***** DELINQUENT STATUS REPORT *****	270.4	222.4	20.7	MAR 79	DEC 79
M 79 9838	MINIATURE CATHODE RAY TUBES NO PROGRESS WAS REPORTED ON THE STATUS REPORT.	300.0			AUG 81	AUG 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
M 78 9841	ZINC SELENIDE WINDOWS AND OPTICAL ELEMENTS ENGINEERING SAMPLES PRODUCED BY RAYTHEON WERE ACCEPTED. THE AUTOMATIC WIRE FEED ASSEMBLY IS OPERATIONAL. SEVERAL SELENIDE BLANKS WERE PRODUCED ON CURVED MANDRELS.	156.4	140.4	12.0	DEC 79	FEB 80
2 77 9842	THIRD GENERATION .9 MICRON PHOTOCATHODE SEE SUBTASKS A AND B.	1,893.0	1,771.1	37.4	DEC 79	JAN 80
2 77 9842A	VARIAN WORK VARIAN'S SAMPLE 0.9 MICRON PHOTOCATHODES MET ALL SPECS. NOW IN THE PILOT RUN, 20 OF 30 SAMPLES HAVE BEEN COMPLETED. THE REST WILL BE FINISHED BY 15 JUN 79. VARIAN IS USING THE PUSH-PULL EPITAXIAL MULTI-GROWTH SYSTEM. NO COST OR TIME OVERRUN EXPECTED.	1,029.0	963.0	20.0	DEC 79	DEC 79
2 77 9842B	ITT WORK ITT IS MAKING 15 PHOTOCATHODES FOR TEST BUT THEY ARE 3 MONTHS LATE BECAUSE OF PROBLEMS WITH GA-AS MATERIAL, EPITAXIAL GROWTH, AND TEST EQUIPMENT. A REPORT DETAILING PROCEDURES AND YIELDS IS NEEDED BEFORE PILOT RUN CAN START.	864.0	808.1	17.4	DEC 79	JAN 80
M 79 9844	CMOS CIRCUITS USING SILICON ON SAPPHIRE -SOS-TECHNOLOGY A PROCUREMENT DATA PACKAGE WAS SENT TO THE PROCUREMENT OFFICE ON 17 MAY 79. A CONTRACT SHOULD BE LET BY NOV 79. CONTRACTOR WILL PULL MULTIPLE SAPPHIRE RIBBONS THRU EDGE DEFINING DIES. A SILICON FILM WILL BE EPITAXIALLY GROWN ON THE SAPPHIRE RIBBONS.	700.0		10.0	NOV 81	NOV 81
2 77 9845	NUMERICALLY CONTROLLED OPTICAL FABRICATION HONEYWELL PROCURED A 2-AXIS DIAMOND TURNING LATHE FROM NUMO MFG CO. THEY CHECKED ITS ACCURACY BY TURNING 10" PARABOLIC SURFACES BEFORE AND AFTER DELIVERY. ACCURACY WAS RETAINED. HONEYWELL IS TAKING BASELINE MEASUREMENTS TO ASSURE CONTINUED ACCURACY.	333.2	304.2	18.6	OCT 77	JAN 81
2 77 9857	AUTO SEPARATION, CARRIER MOUNTING + TESTING OF SEMI-CDT DICE HONEYWELL RESUMED WORK AFTER RECEIVING ADDITIONAL FUNDS. WORK ON THE MATERIAL HANDLING SYSTEM (MHS) WAS HALTED BECAUSE OF LACK OF CONFIDENCE IN IT. SAMPLE CIRCUITS FOR FOUR DEVICES WERE TAPE BONDED. AN AUTOMATIC OUTER LEAD BONDER IS BEING DESIGNED.	1,275.0	1,143.9	126.0	OCT 79	SEP 80
M 78 9860	PDN TECHGE-GALLIUM ARSENIDE MIMAV FIELD EFFECT TRANSISTORS HUGHES AIRCRAFT CO. ESTABLISHED TECHNIQUES TO PRODUCE ACTIVE DEVICE LAYERS IN SEMI-INSULATING GALLIUM-ARSENIDE WITH ION IMPLANTATION. A DETAILED PROCESS MANUAL IS BEING UPDATED BUT THERE IS A QUESTION ON PROPRIETARY RIGHTS. ALSO, PACKAGES MAY BE LATE	399.3	399.3		NOV 80	OCT 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
2 77 9873	ANTENNA PATTERN MEASUREMENTS USING NEARFIELD TECHNIQUES THE ASSEMBLY OF THE PLANAR POSITIONER, COMPUTER SYSTEM, SIGNAL SOURCE AND RECEIVER HAS BEEN COMPLETED BY THE CONTRACTOR. TESTING OF THE MECHANICAL POSITIONING CHARACTERICS OF THE SYSTEM IS UNDERWAY. PRELIMINARY RESULTS ARE ENCOURAGING.	634.4	598.3	27.0	OCT 79	SEP 79
M 79 9877	LIGHT EMITTING DIODE ARRAY COMMON MODULE SPECTRONICS WILL ESTABLISH A MULTI-WAFER EPITAXIAL GALLIUM-ARSENIDE-PHOSPHIDE GROWTH PROCESS, THEN THEY WILL MAKE ARRAYS, WILL IMPROVE RESISTOR PLACEMENT, HEADER METALLIZATION, ARRAY IDENTIFICATION, AND SEPARATION, FOR THERMAL IMAGING DISPLAYS.	600.0	550.1	7.8	APR 81	APR 81
M 78 9889	THIRD GENERATION 0.9 MICRON WAFER INTENSIFIER TUBE SEE SUBTASKS A AND B.	1,772.0	1,612.1	80.0	JUN 81	JUN 81
M 78 9889A	THIRD GENERATION 0.9 MICRON WAFER INTENSIFIER TUBE (ITT) ITT (EOPD) IS DESIGNING PROCESS AUTOMATION EQUIPMENT, AN INTERNAL FIXTURE FOR THE 12-TUBE PROCESSING CHAMBER IS BEING FABRICATED, AN ALIGNMENT AND POTTING FIXTURE WAS DESIGNED, 5 MONTHS SLIPPAGE WAS CAUSED BY SHORTAGE OF GOOD 3RD GEN CATHODES.	712.1	632.1	30.0	JUN 81	SEP 80
M 78 9889B	THIRD GENERATION 0.9 MICRON WAFER INTENSIFIER TUBE (VARIAN) VARIAN ASSOCIATES STARTED TO PRODUCTION ENGINEER THE 3RD GEN INTENSIFIER TUBE, QC PROCEDURES WILL BE SET, YIELD DATA WILL BE ESTABLISHED DURING A PILOT RUN, VARIAN WILL SECOND SOURCE ITT ON THE 3RD GEN TUBE.	1,059.9	980.0	50.0	JUN 81	JUN 81
M 79 9963	LOW COST E-BEAM EQUIPMENT ***** DELINQUENT STATUS REPORT *****	1,034.0				



MATERIALS AND MECHANICS RESEARCH CENTER
(AMMRC)

US ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND

(DARCOM)

HEADQUARTERS-DARCOM • ARMY MATERIALS AND MECHANICS RESEARCH CENTER

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)	INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)
74	1	331,000	0	0 (0%)	331,000	329,000 (99%)
75	2	3,840,000	695,200	0 (0%)	3,144,800	3,055,300 (97%)
76	2	4,537,000	228,000	0 (0%)	4,309,000	3,625,600 (84%)
77	2	883,000	92,700	0 (0%)	790,300	472,300 (59%)
77	2	4,305,000	1,051,500	0 (0%)	3,253,500	2,895,700 (89%)
78	4	5,125,000	251,900	0 (0%)	4,873,100	1,168,300 (23%)
79	3	5,215,000	0	0 (0%)	5,215,000	0 (0%)
TOTAL	16	24,236,000	2,319,300	0 (0%)	21,916,700	11,546,200 (52%)

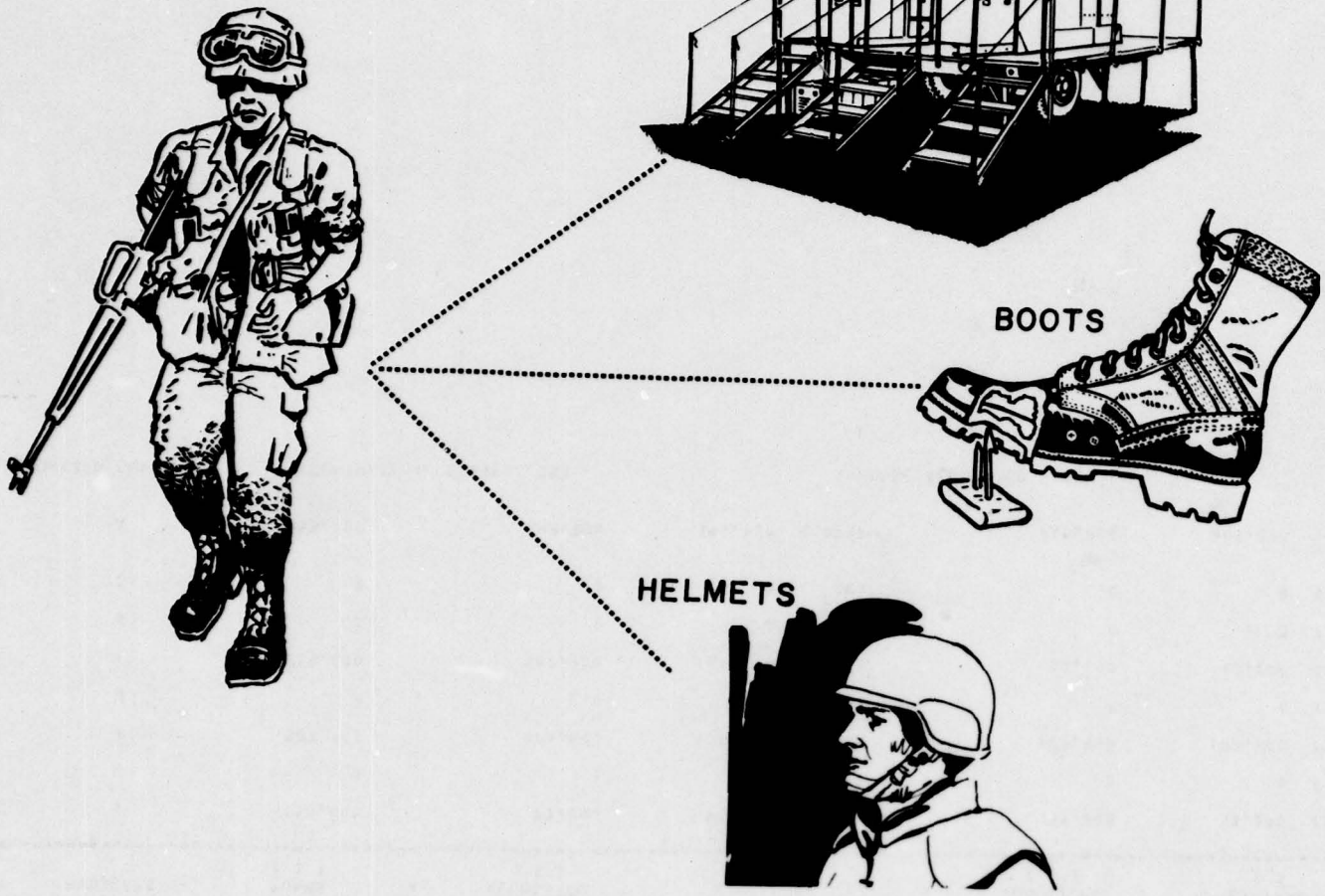
AUTHORIZED FUNDING CONTRACT ALLOCATED 10% INHOUSE ALLOCATED 90%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
M 77 6350	MATERIALS TESTING TECHNOLOGY (MTT) SEE COMMENTS ON M 79 6350.	500.0	92.7	407.3	SEP 77	DEC 79
M 75 6350	MATERIALS TESTING TECHNOLOGY (MTT) SEE COMMENTS ON M 79 6350.	3,500.0	695.2	2,750.3	DEC 75	DEC 79
M 76 6350	MATERIALS TESTING TECHNOLOGY (MTT) SEE COMMENTS ON M 79 6350.	4,083.0	228.0	3,625.6	DEC 76	DEC 79
M 77 6350	MATERIALS TESTING TECHNOLOGY (MTT) SEE COMMENTS ON M 79 6350.	4,000.0	1,051.5	2,895.7	MAY 78	DEC 79
M 78 6350	MATERIALS TESTING TECHNOLOGY (MTT) SEE COMMENTS ON M 79 6350.	4,500.0	251.9	1,166.3	JUN 79	DEC 79
M 79 6350	MATERIALS TESTING TECHNOLOGY (MTT) NO STATUS REPORTS FOR 6350 WERE RECEIVED. AMMRC IS DEVELOPING PROCEDURES WHEREBY WORK WILL BE REPORTED ON ALL THE SUBTASKS OF ALL THE ACTIVE FISCAL YEARS. A TIMELY SUBMISSION WAS NOT RECEIVED IN THE FIRST ATTEMPT.	4,470.0				
M 78 6370	OPTIMIZATION OF MMT PROGRAM EFFECTIVENESS ***** DELINQUENT STATUS REPORT *****	35.0		2.0	FEB 80	FEB 80
M 78 6390	PROGRAM IMPLEMENTATION AND INFORMATION TRANSFER ***** DELINQUENT STATUS REPORT*****	40.0				
M 79 6390	PROGRAM IMPLEMENTATION AND INFORMATION TRANSFER ***** DELINQUENT STATUS REPORT *****	250.0				

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
A 77 5052	ARMY ENGINEERING DESIGN HANDBOOK FOR PRODUCTION SUPPORT ***** DELINQUENT STATUS REPORT *****	383.0		65.0	JUN 78	
A 74 5052	ARMY ENGINEERING DESIGN HANDBOOK FOR PRODUCTION SUPPORT ***** DELINQUENT STATUS REPORT *****	331.0		329.0	JUN 76	DEC 79
A 75 5052	ARMY ENG DESIGN HANDBOOKS FOR PRODUCTN SUPPORT, ***** DELINQUENT STATUS REPORT *****	340.0		305.0	JUN 77	DEC 79
A 76 5052	ARMY ENG DESIGN HANDBOOKS FOR PRODUCTN SUPPORT ***** DELINQUENT STATUS REPORT *****	454.0			JUN 78	DEC 79
A 77 5052	ARMY ENGINEERING DESIGN HANDBOOK FOR PRODUCTION SUPPORT ***** DELINQUENT STATUS REPORT *****	305.0			SEP 79	DEC 79
D 78 5052	ARMY ENGINEERING DESIGN HANDBOOK FOR PRODUCTION SUPPORT ***** DELINQUENT STATUS REPORT *****	550.0			NOV 79	NOV 79
D 79 5052	ARMY ENGINEERING DESIGN HANDBOOK FOR PRODUCTION SUPPORT ***** DELINQUENT STATUS REPORT *****	495.0				



NATICK R&D COMMAND
(NARADCOM)

NATICK RESEARCH AND DEVELOPMENT COMMAND

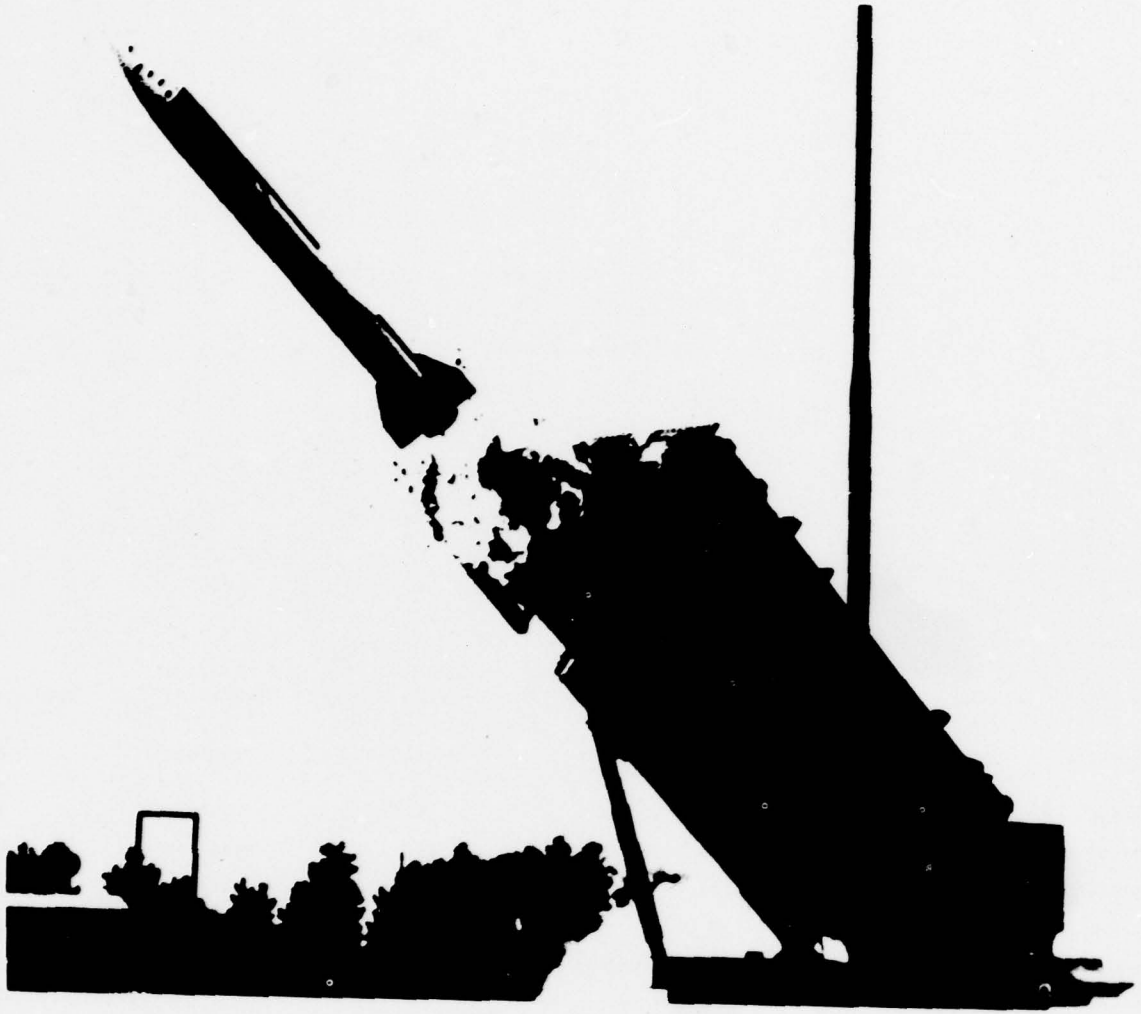
CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)	INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)
74	1	110,400	77,200	77,200 (100%)	33,200	33,200 (100%)
75	0	0	0	0 (0%)	0	0 (0%)
76	2	527,700	404,800	404,800 (100%)	122,900	122,900 (100%)
77	0	0	0	0 (0%)	0	0 (0%)
77	1	215,000	160,900	111,100 (69%)	54,100	53,100 (98%)
78	0	0	0	0 (0%)	0	0 (0%)
79	0	0	0	0 (0%)	0	0 (0%)
TOTAL	4	853,100	642,900	593,100 (92%)	210,200	209,200 (99%)

AUTHORIZED FUNDING CONTRACT ALLOCATED 75% INHOUSE ALLOCATED 24%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE & STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE D
A 74 200N	MFG OF TURNING SHOE LASTS USING NUMERICAL CONTROL. IN THE BEST INTEREST OF THE GOVERNMENT THE CONTRACT WAS TERMINATED. THIS PROJECT WILL NOT PRODUCE EXPECTED BENEFITS.	110.4	77.2	33.2	MAR 76	SEP 79
7 76 8035	AUTOMATED PRODUCTION OF INSULATED FOOTWEAR THE INSTALLATION PHASE IS COMPLETE, THE PROTOTYPE LINE WAS SUCCESSFUL. A FINAL TECHNICAL REPORT IS BEING PREPARED. THIS TECHNOLOGY WILL BE MADE AVAILABLE TO INDUSTRY.	390.0	320.5	69.5	OCT 78	SEP 79
7 76 8036	NUMERICALLY CONTROLLED HELMET DIE SINKING A FINAL REPORT IS BEING PREPARED. THIS PROJECT WILL NOT PRODUCE EXPECTED RESULTS.	137.7	84.3	53.4	SEP 77	JAN 80
9 77 8053	CADAM OF PARACHUTE HARDWARE DEVELOPMENT OF COMPUTER GRAPHICS PROGRAMMING IS PROGRESSING.	215.0	161.9	53.1	MAR 78	DEC 80



MISSILE COMMAND

(MICOM)

PRECEDING PAGE BLANK

MISSILE COMMAND

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)	INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)
76	1	550,000	411,000	399,200 (97%)	139,000	138,800 (99%)
77	0	0	0	0 (0%)	0	0 (0%)
77	8	5,674,000	4,003,600	3,285,800 (82%)	1,670,400	950,500 (56%)
78	30	9,506,000	5,743,700	2,896,100 (50%)	3,762,300	1,660,600 (44%)
79	23	8,830,000	3,556,400	873,500 (24%)	5,273,600	263,600 (4%)
TOTAL	62	24,560,000	13,714,700	7,454,600 (54%)	10,845,300	3,013,500 (27%)

AUTHORIZED FUNDING CONTRACT ALLOCATED 56% INHOUSE ALLOCATED 44%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 MCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
P 79 1041	LSI FABRICATION METHODOLOGY IMPROVEMENT MARTIN MARIETTA IS STUDYING PRE-AMP SENSITIVITY VS LAYOUT, AND CHANGES IN WAFER PROCESSING TO IMPROVE YIELD. WILL LATER DO THE SAME FOR LIMIT-SUM CIRCUIT, CIRCUIT HAS 4 PRE AMPLIFIERS THAT MUST BE BALANCED. WILL TRY TO RAISE YIELD FROM 2% TO 7%.	1,000.0	950.0	10.0	SEP 80	SEP 80
P 78 3075	INFRARED TESTING OF PC BOARDS AND MICROCIRCUITS EQUIPMENT FAILURES IN THE DIGITAL IMAGE PROCESSOR AND CAMERA ARE CAUSING DELAYS. THE CLOSE-UP LENS HAS SHOWN DETAIL IDENTIFICATION TO LESS THAN .001 IN WITH GOOD RESOLUTION TO .004 IN. THE SOFTWARE IS APPROXIMATELY 95 PERCENT COMPLETE.	335.0	230.8	21.4	AUG 79	SEP 79
P 77 3091	APPLICATION OF CAM TO AFFIXING ELEC CONNECTORS TO CABLES MARTIN MARIETTA ESTABLISHED COMPUTER CONTROLLED MANUFACTURING PROCESSES FOR AFFIXING ELECTRICAL CONNECTORS TO CABLES. VIDEO TAPE AND SYSTEM INSTALLATION WERE COMPLETED. ALL ITEMS WERE SUCCESSFULLY DEMONSTRATED 1 FEB. FINAL REPORT IS BEING REVISED.	140.0	137.1	2.8	AUG 77	OCT 79
P 77 3112	MFG MULTILAYER RIGID-FLEX HARNESS MCDONNELL DOUGLAS FOUND B-STAGE ADHESIVE WORKED ON EPOXY-GLASS BOARDS AND POLIMIDE FLEX MTL, ALSO, ACRYLIC ADHESIVE WORKED ON POLIMIDE/GLASS BOARDS AND POLIMIDE FLEX MTL. RF PLASMA SMEAR REMOVAL IS OK BUT NOT OPTIMUM. WILL WORK ON TOOLING + HANDLING.	350.0	160.4	182.1	SEP 78	JAN 80
3 77 3115	ENGINEERING FOR METROLOGY AND CALIBRATION SEE INDIVIDUAL SUBTASK BELOW FOR STATUS	594.0	204.0	349.0	SEP 78	SEP 79
3 77 3115G	REPEATABILITY STUDY OF LOW FLOW TURBINE METERS TEST OF THE FLOW METERS FOR LONG TERM REPEATABILITY IS 75% COMPLETE. PROJECT WILL BE COMPLETED BY THE END OF THE FIRST QTR. FY80.					SEP 79
3 77 3115M	MODULAR EQUIPMENT CONFIGURATION FOR CALIBRATION + ANALYSIS COMPLETION OF THIS PROJECT HAS BEEN DELAYED BY SLIPPAGE OF THE MIPR EQUIPMENT PURCHASE.					SEP 79
3 78 3115	ENGINEERING FOR METROLOGY AND CALIBRATION SEE INDIVIDUAL SUBTASK BELOW FOR STATUS.	481.0	234.0	263.0	SEP 79	SEP 79
3 78 3115A	JOSEPHSON EFFECT VOLTAGE STANDARD CONSTRUCTION OF THE ALL-CRYOGENIC VOLTAGE STANDARD HAS BEEN COMPLETED AND TESTING OF THE CALIBRATION AND MEASUREMENT MODE YIELDED SATISFACTORY RESULTS. THIS COMPLETES FY78 WORK ON THIS PROJECT. ADDITIONAL WORK IS CONTINUING ON PROJECT 379 3115.					SEP 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
3 78 3115C	LOW FREQUENCY RMS VOLTMETER ENGINEERING CIRCUIT SCHEMATICS FOR THE VOLTMETER ELECTRONICS HAVE BEEN COMPLETED, SEVEN FRONT PANEL PCB HAVE BEEN SUCCESSFULLY TESTED. THIS COMPLETES THE FY78 WORK ON THIS PROJECT, ADDITIONAL WORK IS CONTINUING ON PROJECT 3 79 3115.					SEP 79
3 78 3115D	AUTOMATIC AC/DC THERMAL VOLTAGE MEASUREMENT SYSTEM SOFTWARE DESIGNS HAS BEEN COMPLETED ALONG WITH THE EVALUATION. THE SOFTWARE DOCUMENTATION REMAINS TO BE COMPLETED. THIS COMPLETES THE FY78 EFFORT, FUTHER WORK WILL CONTINUE UNDER PROJECT 3 79 3115.					SEP 79
3 78 3115E1	PRESSURE TRANSDUCER SYSTEMS A SPECIFICATION WAS PREPARED TO INTEGRATE TRANSDUCERS AND MICROPROCESSORS INTO A DEDICATED PRESSURE STANDARD FOR FIXED OR MOBILE USE. THIS COMPLETES THE EFFORT FOR THIS SUBTASK.					SEP 79
3 78 3115F	MICROPROCESSOR TECHNOLOGY A DIFFERENTIAL AND ABSOLUTE THERMOMETER SYSTEM HAS BEEN PARTIALLY REDESIGNED. REWORK AND SIMPLIFICATION OF PREVIOUS SOFTWARE FOR A PNEUMATIC PRESSURE STANDARD IS BEING COMPLETED.					SEP 79
3 78 3115H	RF AND MW MEASUREMENTS STANDARDS THIS SUBTASK HAS BEEN COMPLETED. AN ACCURATE SIX-PORT MEASURING SYSTEM USING BOLOMETER WAS PRODUCED. NBS PLANS TO CONVERT ALL THEIR RF MEASURING SYSTEMS TO SIX-PORT AND ARE RECOMMENDING THAT DOD PRIMARY LABS DO THE SAME.					SEP 79
3 78 3115O	TURBINE FLOWMETER DATA HANDLING UNIT A SCOPE OF WORK WAS PREPARED AND A CONTRACT HAS BEEN FINALIZED. DELIVERY IS ANTICIPATED DURING THE LAST QUARTER OF FY79.					SEP 79
3 78 3115P	DYNAMIC MEASUREMENT AND STIMULI COMPARISON OF EQUATE AND MATS SYSTEMS HAS BEEN COMPLETED WITH GENERATION OF A TABLE OF RATED STIMULUS OF MEASUREMENT CAPABILITIES. IMPROVEMENTS IN THE DAC INCLUDE PROTECTIVE CIRCUITS, TROUBLE-SHOOTING CIRCUITS AND TEMPERATURE COEFFICIENT REDUCTIONS.					SEP 79
3 79 3115	ENGINEERING FOR METROLOGY AND CALIBRATION SEE SUBTASKS BELOW FOR STATUS.	693.0	338.0	9.3	SEP 80	SEP 80
3 79 3115A	JOSEPHSON EFFECT VOLTAGE STANDARD LEAD-ALLOY JUNCTIONS WERE INSTALLED IN THE 1PPM VOLTAGE STANDARDS IN ORDER TO GET THEM OPERATIONAL. INITIAL TESTING OF ONE OF THE FOUR PRODUCTION UNITS AT NBS INDICATED GENERALLY SATISFACTORY PERFORMANCE.				SEP 80	SEP 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
3 79 3115C	LOW FREQUENCY RMS VOLTMETER PARTS AND COMPONENTS ARE BEING PROCURED FOR ASSEMBLY OF A PROTOTYPE TO CHECK OUT MANUFACTURING PROCESSESFOR THIS IMPROVED VOLTMETER.				SEP 80	SEP 80
3 79 3115D	AUTOMATIC AC/DC THERMAL VOLTAGE MEASUREMENT SYSTEM SOFTWARE IS BEING PREPARED FOR USE WITH THE PARTIALLY CONFIGURED IEEE DATA BUS SYSTEM. EVALUATION OF THE SYSTEM IS IN-PROCESS.				SEP 80	SEP 80
3 79 3115F	MICROPROCESSOR TECHNOLOGY ASSEMBLY LANGUAGE REPROGRAMMING OF PRESSURE SYSTEM IS UNDERWAY. THIS WILL REORGANIZE AND SHORTEN THE EXISTING SOFTWARE.				SEP 80	SEP 80
3 79 3115J	ELECTRO-OPTICAL AND LASER SYSTEM STANDARDS TESTS CONDUCTED AT NBS ESTABLISHED THAT GLASS BEAD BLASTING (70-140 MICRON BEAD SIZE) IS THE SUPERIOR PROCESS FOR PREPARING DIFFUSE (MATT) REFLECTANCE AT CO2 LASER WAVELENGTHS, PROVIDED THAT THE AL SAMPLE IS NOT TOO HARD.				SEP 80	SEP 80
3 79 3115M	SIX-PORT MEASUREMENT SYSTEM INTEGRATED SIX-PORT NETWORKS WILL BE DELIVERED TO NBS BY THE CONTRACTOR IN AUG 79. THESE INTEGRATED SIX-PORTS WILL BE EVALUATED BY NBS FOR USE IN SIX-PORT MEASURING SYSTEMS.				SEP 80	SEP 80
3 79 3115Q	BAROMETRIC PRESSURE MEASUREMENT COMPONENTS OF THIS SYSTEM HAVE BEEN PROCURED AND ARE PRESENTLY RECEIVING INITIAL CALIBRATION.				SEP 80	SEP 80
3 79 3115R	MILLIMETER WAVE STANDARDS THE MICROCALORIMETER AT NBS IS 90% COMPLETE. STANDARDS ARE BEING FABRICATED AND THE 95GHZ SIX-PORT NETWORK ARE UNDER CONTRACT FOR FALL 1979 DELIVERY.				SEP 80	SEP 80
3 79 3115S	OPTICAL COMMUNICATION SYSTEM STANDARDS NBS ESTABLISHED MEASUREMENT TECHNIQUE AND SYSTEM FOR CHARACTERIZING OPTICAL FIBERS AND IS STUDYING SOURCES AND DETECTORS. NBS WILL SUPPLY COMPONENTS FOR AN INITIAL OPTICAL FIBER MEASUREMENT CAPABILITY BY THE END OF FY79.				SEP 80	SEP 80
3 79 3115T	INSTRUMENT CONTROLLER SYSTEM THE MODEMS AND PRINTERS ARE BEING PURCHASED. THESE WILL BE USED WITH AN EXISTING MULTI-STATION SYSTEM TO REMOTELY ACCOMPLISH THE CONTROL OF THE CALIBRATION PROCESS AT SEVERAL LOCATIONS AND PRINT THE RESULTS OF THE CALIBRATIONS AT THESE LOCATIONS.				SEP 80	SEP 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
A 78 3116	IMPROVED PROCESSES FOR COMPLIANT BEARING GYROS GENERAL DYNAMICS COMPLETED THE FABRICATION PHASE FOR PRODUCTION ENGINEERING THE STINGER SEEKER OPTICS AND DETECTOR, UV/IR SANDWICH DETECTOR, OPTICS REPLICATION, IR FILTER, PREAMPLIFIER AND THE OPTICS ALIGNING AND SECURING STRUCTURE WERE INCLUDED.	536.0	470.0	18.0	SEP 79	SEP 79
A 79 3116	IMPROVED PROCESSES FOR COMPLIANT BEARING GYROS FOLLOWING THE FY78 EFFORT, THE CONTRACTOR WILL DEVELOP SPECIFICATIONS FOR THE NEW PROCESS,+ PROVIDE DATA ON TIME, COSTS, SKILLS AND EQUIPMENT, WILL ALSO FABRICATE COMPONENTS FOR SEVEN COMPLETE ROSETTE SEEKERS AND VALIDATE PERFORMANCE.	750.0			SEP 79	SEP 80
A 78 3121	APPLICATION AND NDT OF LINE PIPE FOR MOTOR COMPONENTS THE FIRST YEAR OF THE PROGRAM HAS BEEN COMPLETED, PHASE 7, THE CONCEPT DEMONSTRATION, HAS BEEN COMPLETED AND PHASE 8,REPRODUCIBILITY DEMONSTRATION WITH MILL SUPPLIER IS NEARING COMPLETION. DELIVERY OF THE COMPONENTS,PHASE 9, IS IN PROGRESS.	300.0	239.5	38.0	SEP 79	SEP 79
A 78 3126	PROCESSING OF LASER OPTICAL CERAMICS AMMRC IS EXPERIENCING DIFFICULTIES GROWING YITTRIUM ALUMINUM GARNET (YAG) CRYSTALS LIGHTLY DOPED WITH NEODYMIUM. GROWTH INTERFACE BREAKDOWN AND SECOND PHASE INCLUSIONS PREVENT PRODUCTION OF LASER QUALITY CRYSTALS. THE GROWTH CYCLE WAS CHANGED.	122.0		102.5	AUG 79	AUG 79
A 78 3133	LITHIUM FERRITE PHASE SHIFTER FOR PHASED ARRAY RADAR RAYTHEON WILL DESIGN AND MAKE TOOLING FOR PRODUCTION OF COMFIRED FERRITE AND DIELECTRIC INSERTS, WILL MAKE PILOT RUNS AND ELECTROMAGNETICALLY EVALUATE ELEMENTS FROM EACH BATCH TO ESTABLISH STATISTICAL PERFORMANCE RANGE WITHIN AND BETWEEN RUNS.	715.0	125.9	56.7	SEP 79	JUN 79
A 77 3135	PROCESS DEVELOPMENT FOR CARBORANE MANUFACTURE CHECKOUT, DEBUGGING, AND STARTUP ARE UNDERWAY, A DEMONSTRATION TEST PLAN WAS RECEIVED. PERMITS TO START THE FACILITY WERE OBTAINED FROM THE PENN DEPT OF ENVIRONMENTAL RESOURCES. DELAYS IN HIRING AND TRAINING OPERATORS HAVE OCCURED, DEMO TEST SLIPPED.	2,000.0	2,000.0		SEP 79	MAR 80
A 78 3136	IMP. MANUFACTURING PROCESSES FOR COMPLIANT BEARING GYROS TWO STEEL RINGS HAVE BEEN ADDED TO THE ROTOR TO FACILITATE DYNAMIC BALANCING. PARTS WERE CHANGED TO PROVIDE FOR A MOLDED MAGNET, A MULTI CAVITY MOLD WAS DESIGNED TO PERMIT INTERCHANGEABILITY. A MOTOR BALANCING CONCEPT WAS SELECTED AND CONTRACTED FOR.	450.0	398.7	43.7	DEC 79	OCT 79
A 79 3136	IMPROVED MFR PROCESSES FOR COMPLIANT BEARING GYROS NO PROGRESS WAS REPORTED FOR THIS EFFORT.	350.0			JUL 80	JUN 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
SUMMARY PROJECT STATUS REPORT
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
R 78 3140	IMP MANUFACTURING PROCESSES FOR SILICON VIDICONS RCA PRODUCED A RUN OF 40 CERAMIC ENVELOPE SILICON TARGET VIDICONS FOR TARGET ACQUISITION SYSTEMS, PROCESSES WERE DEVELOPED FOR THE SILICON TARGET, ANTI-REFLECTIVE COATINGS, AND SURFACE LASER PASSIVATION. THE TUBES PASSED RCA AND NVEOL TESTING.	149.0	8.0	141.0	MAR 78	FEB 79
R 79 3142	PRODUCTION METHODS FOR LOW COST PAPER MOTOR COMPONENTS REQUEST FOR PROPOSAL ISSUED AND RESPONSE RECEIVED. COST WAS TOO MUCH. HENCE REQUEST WITHDRAWN, MODIFIED AND RE-ISSUED.	275.0	240.0		JUL 80	DEC 80
R 79 3146	HIGH DENSITY MULTILAYER THICK FILM HYBRID MICRO CIRCUITS CONTRACT HAS NOT YET BEEN AWARDED. PROJECT WILL UTILIZE PHOTOLITHOGRAPHIC TECHNIQUES TO INCREASE THE YIELD OF HIGH DENSITY THICK FILM HYBRID MICROCIRCUITS. OPTIMUM FABRICATION PROCESSES FOR .003 INCH LINES AND .003 INCH SPACES WILL BE ESTABLISHED.	350.0		7.2	JUN 80	JAN 81
R 78 3147	ADDITIVE PROCESSES FOR FABRICATION OF PRINT CIRCUIT BOARDS WORK DURING THIS PERIOD CONSISTED OF SUBMISSION, REWORK AND EDITING THE FINAL TECHNICAL REPORT.	250.0	170.0	30.0	JUN 78	JUL 79
R 78 3150	DEVEL METHOD FOR UTILIZING UV CURED CONFORMAL COATINGS THE TESTING PROGRAM HAS IDENTIFIED THREE CANDIDATE MATERIALS. THESE MATERIALS HAVE PASSED ALL OF THE PRELIMINARY SCREENING TESTS REQUIRED BY MIL-I-46058.	126.0	79.4	42.8	SEP 78	JAN 80
R 77 3160	CLEANLINESS + PROCESS CRITERIA FOR CIRCUIT BOARDS WORK STOPPED DUE TO LACK OF FUNDS. MIRADCOM WANTS TO EXTEND THE CONTRACT SO MARTIN CAN FURTHER DEVELOP MEANS TO IDENTIFY, QUANTIFY + REMOVE PROCESSING CONTAMINANTS FROM PCBS. MARTIN BOUGHT A LIQUID CHROMATOGRAPH WITH CO FUNDS. PROJ SHOULD CONTINUE.	150.0	67.4	42.6	SEP 78	MAR 80
R 79 3160	CLEANLINESS + PROCESS CRITERIA FOR CIRCUIT BOARDS FOLLOW ON TO ABOVE. MARTIN MARIETTA WILL DEVISE MEANS TO TEST FOR, QUANTIFY, AND REMOVE RESIDUAL CONTAMINANTS REMAINING ON PRINTED WIRING BOARDS AFTER PROCESSING AND NORMAL CLEANING.	150.0	89.3	3.1	MAR 80	MAR 80
R 78 3165	PRODN PROCESS + TECHNIQUES FOR SEALING HYBRID MIC-CIR PACK FINE LEAK TEST CHAMBER IS 10% COMPLETED. THE CUSTOM DRY BOX HAS BEEN COMPLETED AND INSTALLED. TWO MICROCIRCUIT CAROUSELS WERE FABRICATED. PNEUMATIC GROSS LEAK TESTER TESTING WAS COMPLETED. THE FINAL REPORT IS SCHEDULED FOR COMPLETION IN FY79.	220.0	147.0	73.0	NOV 79	SEP 79
R 78 3167	PROD CONTROLS TO PREVENT PLATED-THROUGH HOLE CRACKING HUGHES EVALUATED NON-ADDITIVE COPPER SULFATE AND PYROPHOSPHATE BATHS. EVALUATION OF COPPER CYANIDE, PYROPHOSPHATE WITH PY6/H AGENT, AND FLUOBORATE BATHS IS IN PROGRESS. DEPOSITS FROM THE PYRO AND CYANIDE BATHS ARE BEING TESTED.	223.0	110.1	107.8	MAR 79	MAR 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
R 77 3169	AUTO OPTICAL INSPECTION OF PC BOARDS AND COMPONENTS(CAM) A PRODUCTION-ORIENTED PROTOTYPE IS IN THE FINAL STATE OF ASSEMBLY. THE CONTRACTOR IS PLANNING TO IMPLEMENT THIS SYSTEM IN THEIR PRODUCTION FACILITIES AS WELL AS MANUFACTURE THE SYSTEM FOR COMMERCIALSALES.	275.0	188.8	84.0	SEP 78	MAR 80
R 78 3171	AUTO MONITOR AND CONTROL FOR WAVE SOLDERING MACHINES WESTINGHOUSE FOUND THAT FLUX COVERAGE AND DRYNESS, AND SOLDER WAVE TEMPERATURE, TIME AND DEPTH OF WAVE DETERMINE QUALITY OF WAVE SOLDERING. LOW SOLDER TEMPERATURE + TIME, AND FLUX WETNESS CAUSE BRIDGING, VOIDS, EXCESSIVE OR INSUFFICIENT SOLDER.	454.0	253.1	91.9	SEP 80	APR 80
R 77 3183	IMPROVED PROCESSES FOR INERTIAL GRADE Q-FLEX ACCELEROMETER SUNDSTRAND INVESTIGATED THE EFFECTS OF MOISTURE ON ACCELEROMETER BIAS AND SCALE FACTOR. SIX SENSORS WERE MADE WITH DOUBLE GOLD PLATING ON THE SEISMIC ELEMENT. SENSITIVITY TO MOISTURE WAS REDUCED WITHOUT DEGRADATION OF BIAS CHARACTERISTICS.	165.0	114.4	30.0	DEC 78	JUN 79
R 78 3183	IMPROVED PROCESSES FOR INERTIAL GRADE Q-FLEX ACCELEROMETER SUNDSTRAND ANALYZED AND TESTED MAGNETIC CIRCUIT AND MOISTURE EFFECT, ALSO DETERMINED EFFECT OF BOBBIN POSITION ON SCALE FACTOR STABILITY. ALTERNATIVE ASSEMBLY METHODS WERE EVALUATED AND MOISTURE INTAKE WAS REDUCED WITH J-500 SILICON SEALER.	180.0	115.6	16.1	JUL 80	NOV 79
R 78 3188	INFRARED IMAGING SEEKERS FOR THERMAL HOMING MISSILES TI IS CONTINUING A DESIGN TO UNIT COST STUDY ON THE HELLFIRE INFRARED IMAGING SEEKER(IRIS),THIS LOOKING AT LOWER COST METHODS,A THINNER DOME, + A REFLECTIVE OPTICAL SYSTEM.TEN SEEKER HEADS ARE IN VARIOUS STAGES OFASSEMBLY.IS A CONTINUATION OF R7731B8	500.0	449.9	15.0	MAR 79	DEC 79
R 78 3204	INTERNAL SHEAR FORGING PROCESSES FOR MISSILE PRIME STRUCT HOT ROLLING EXPERIMENTS WERE CONDUCTED ON ALUM ALLOY 2014-0 TO ASCERTAIN THE RESPONSE OF THE MATL TO MECH PROCESSING AND SUBSEQUENT HEAT TREATMENT. TOOLING FAB WAS COMPLETED ON SCHEDULE, A DELIVERY DATE OF AUG 79 HAS BEEN SELECTED FOR THE TOOLING.	314.0	123.8	35.4	OCT 80	SEP 80
R 79 3204	INTERNAL SHEAR FORMING OF MISSILE STRUCTURES A CONTRACT WAS NEGOTIATED WITH IITRI. REPORTING STS AND TIME PHASING PROBLEMS HAVE BEEN SATISFACTORILY RESOLVED. THE CONTRACTOR IS REVIEWING SKETCHES AND DRAWINGS AND PROCURING MATERIALS.	200.0	150.1		SEP 80	SEP 80
R 79 3217	AUTOMATED PRODUCTION METHODS FOR TRAVELING WAVE TUBES PROJECT IS A CONTINUATION OF R 77 3217, LITTON IS PERFORMING SHOCK AND VIBRATION TESTING ON TWO TWTS, OPTION IT SCHEDULE REQUIRES ESTABLISHMENT OF A PILOT LINE CAPABLE OF PRODUCING SIX TWTS PER MONTH. TEST EQUIPMENT AND TUBE PARTS ARE ON ORDER	740.0	560.9	75.0	JUL 80	JUL 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
R 78 3218	REDUCE THE FINISHING COST OF FUSED SILICA RADOMES ELEVEN CASTING STARTS HAVE BEEN MADE, SEVERAL PROBLEMS WERE ENCOUNTERED, HOWEVER MOST HAVE BEEN SOLVED, TWO OF THE RADOMES ARE CONSIDERED DELIVERABLE BLANKS, A WALL THICKNESS TOLERANCE OF 0.010 IN HAS NOT BEEN DEMONSTRATED BUT IS BELIEVED ACHIEVABLE.	300.0	12.7	252.3	OCT 79	MAR 80
R 79 3219	AUTOMATIC POLYMER ATTACHMENT PRODUCTION METHODS THE PROCUREMENT PACKAGE IS IN THE PROCUREMENT AND PRODUCTION DIRECTORATE FOR PROPOSAL SOLICITATION.	200.0	150.0		AUG 79	SEP 80
3 76 3227	LOW COST PROD METH FOR HAND HYBRID CHIP W/TAPE CAR LEAD FR SEE SUBTASKS BELOW, ONLY THREE WORDS WERE UPDATED ON THE SEMIANNUAL REPORT IN THE PAST YEAR.	550.0	411.0	138.8	NOV 77	OCT 79
3 76 3227A	HONEYWELL WORK HONEYWELL WORKED AT AUTOMATING THE TAPE-BONDING METHOD, WITH JADE MFG CO THEY DEVELOPED AN INNER LEAD BONDER AND AN OUTER LEAD BONDER, A MECHANIZED MATERIAL HANDLING SYSTEM PROVED TO BE FORMIDABLE AND WAS GREATLY SIMPLIFIED.	200.0	149.9	50.1		OCT 79
3 76 3227B	DETEX SYSTEMS WORK DETEX SYSTEMS WORK IS NOT REPORTED, THEY HAVE BEEN WORKING ON UTILIZATION TECHNIQUES.	43.0	32.0	10.8		OCT 79
3 76 3227C	HONEYWELL MODIFICATION HONEYWELL MODIFICATION, HONEYWELL BONDED CIRCUIT CHIPS ONTO TAPES FOR MISSILE APPLICATIONS, COST AND RELIABILITY DATA ARE BEING ACCUMULATED, CIRCUITS WERE USED IN THE PATRIOT AND COPPERHEAD MISSILES, AN INDUSTRY DEMONSTRATION WAS HELD.	72.4	54.1	18.3		OCT 79
3 76 3227D	HONEYWELL OPTION HONEYWELL OPTION, HONEYWELL DEVELOPED ELEVEN SPECS FOR TAPE AUTOMATED BONDING--LEAD FRAME, DIE SEPARATION, SUBSTRATES, BUMP PLATING, METALLIZATION, ETCHING, PHOTORESIST, INNER LEAD BONDING, OUTER LEAD BONDING, DIE TESTING, AND REWORK METHODS.	234.6	175.0	59.6		OCT 79
R 78 3228	PRODUCTION METHODS FOR EXTRUDABLE HTPB PROPELLANT THE DESIGN OF THE PROTOTYPE FILL MACHINE WAS COMPLETED DURING THIS PERIOD, THE PROTOTYPE MACHINE WAS DELIVERED TO ATLANTIC RESEARCH FOR CHECKOUT, CHECKOUT WILL BE COMPLETE WHEN 10 CYCLES CAN BE RUN WITH MINIMUM DEGRADATION AND WITH GOOD GRAIN QUALITY	200.0	150.0	25.0	SEP 79	SEP 79
R 78 3229	METHODOLOGY FOR PRODUCING LOW COST/ DISPOSABLE MANDRELS TWO MANDRELS WITH SURFACE IRREGULARITIES CAUSED A PROCESS CHANGE, PROCESS ENGINEERING COST ANALYSIS HAS BEEN COMPLETED.	150.0	45.0	1.8	SEP 79	SEP 79

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

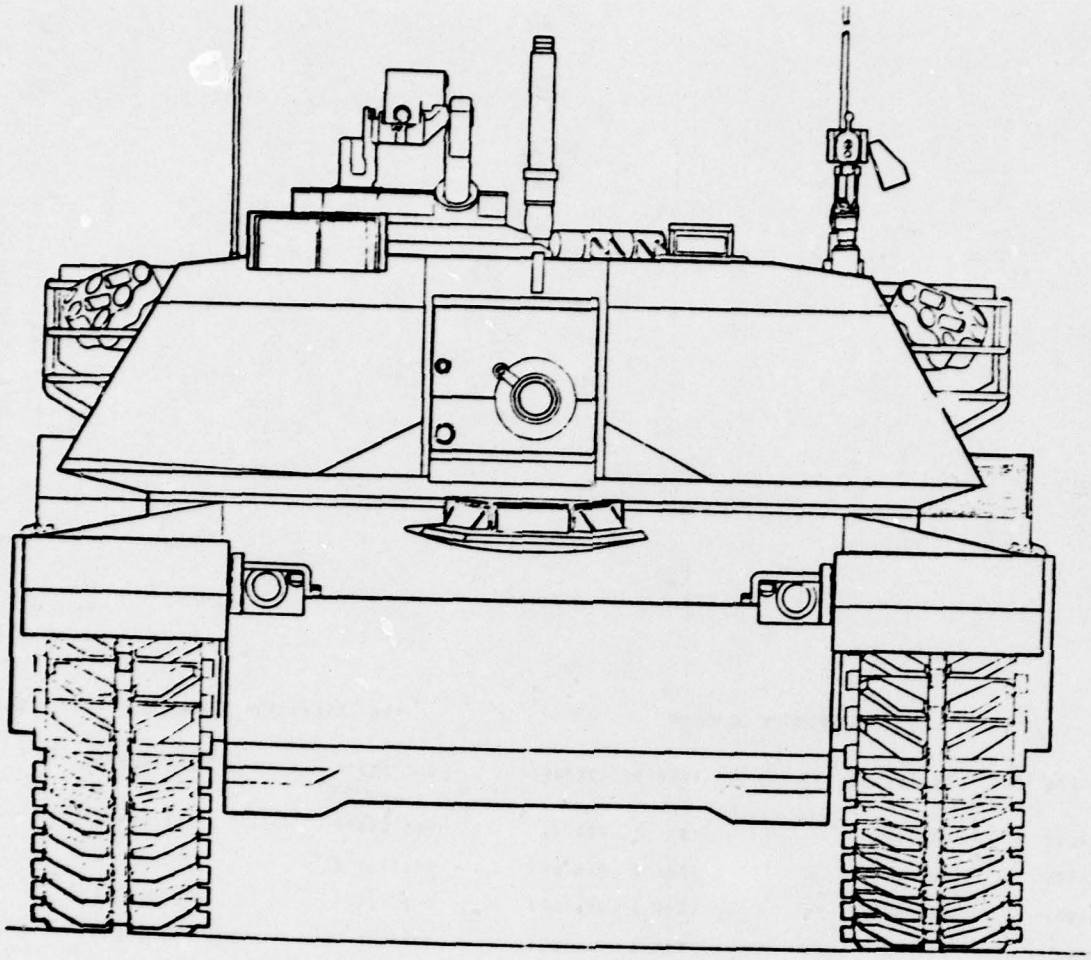
PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
P 78 3242	DIGITAL FAULT ISOLATION OF PRINTED CIRCUIT BOARD HUGHES AIRCRAFT CO SURVEYED TEST REQUIREMENTS FOR 21 DIGITAL PWBS AND ENTERED THE DATA IN A DATA BANK. SEVEN AUTOMATED TEST SYSTEM FIRMS WILL COMPETE IN AN EFFICIENCY TEST. A DRAFT MIL SPEC FOR TESTABILITY IS BEING COORDINATED WITH MR KEINER OF NWSC.	425.0	263.7	41.3	SEP 79	JUL 79
P 79 3242	DIGITAL FAULT ISOLATION OF PRINTED CIRCUIT BOARD NO WORK HAS YET BEEN DONE ON THIS FY79 PORTION. MICOM CAN EXERCISE AN OPTION ON ITS FY78 CONTRACT WITH HUGHES AIRCRAFT CO. TO COMPLETE ITS SAMPLING OF CIRCUIT BOARD TEST REQUIREMENTS AND ITS SURVEY OF AUTOMATIC TESTERS.	425.0			APR 80	APR 80
P 78 3253	HIGH CURRENT DENSITY CATHODES SPERRY UNIVAC DEVELOPED PRODUCTION METHODS FOR FABRICATING HIGH CURRENT THIN-FILM FIELD EMISSION CATHODES FOR ELECTRON TUBES. ELECTRON BEAM TECHNOLOGY IS USED TO MAKE THE ARTWORK. FY78 WORK COMPLETED. FINAL REPORT BEING PREPARED.	175.0	124.7	46.0	JUN 80	DEC 79
P 79 3253	HIGH CURRENT DENSITY CATHODES SPERRY UNIVAC COMPLETED A SPECIFICATION CONSISTING OF 19 MAJOR PROCESS STEPS. THEY INCLUDE THIN FILM DEPOSITION, ETCHING AND SEALING. WAFER PROCESSING WAS COMPLETE THROUGH OXIDE GROWTH. TECHNICAL DETAILS WERE DISCUSSED WITH STANFORD RESEARCH.	175.0	124.3	20.0	JUN 80	JUN 80
P 78 3254	SEMI-FLEXIBLE THIN FILM SEMICONDUCTORS MICROELECTRONICS ENGINEERING CORP. WILL DEVELOP COMPUTER CONTROLLED THIN FILM DEPOSITION AND ETCHING EQUIPMENT FOR MAKING THIN FILM TRANSISTORS AND INTEGRATED CIRCUITS. THE SYSTEM DESIGN HAS BEEN COMPLETED. M+S COMPUTING WILL DO PART OF THE WORK.	400.0	394.7	1.0	JUN 79	SEP 80
P 78 3268	AUTOMATIC CONTROL OF PLATING (CAM) A POLAROGRAPHIC CONTROLLER HAS BEEN SELECTED FOR PROCUREMENT, WHICH CAN BE PROGRAMMED TO CONTROL NINE ANALYTICAL PROCEDURES. THIS INSTRUMENT WILL CONTROL A PLATING LINE FOR PRINTED CIRCUIT BOARDS. ASSEMBLY OF INSTRUMENTATION AND OTHER CONTROLLERS CONT	450.0	143.9	54.0	OCT 79	SEP 79
P 79 3268	AUTOMATIC CONTROL OF PLATING (CAM) PRESENT EFFORT IS BEING CARRIED OUT UNDER PROJECT P783268.	450.0	20.0		SEP 80	SEP 80
P 79 3272	FLEX PRINTED CIRCUITS WITH INTEGRAL MOLDED CONNECTORS THE CONTRACT IS NOT YET AWARDED. THE CONTRACTOR SELECTED WILL ESTABLISH MANUFACTURING PROCESSES, METHODOLOGY AND SPECIFICATIONS FOR THE MANUFACTURE OF FLEXIBLE PRINTED CIRCUITS WITH INTEGRAL MOLDED CONNECTORS FOR MAXIMUM RELIABILITY AND MINIMUM COST.	217.0		10.0	OCT 81	OCT 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
R 79 3280	ENGR ANALYSIS OF MFG PARAMETERS FOR THERMAL BATTERIES SCOPE OF WORK (TR) BEING REVISED AND READY FOR ISSUE, BASICALLY CONSULTANT TBN WILL REVIEW THERMAL BATTERY PROBLEMS IN ALL SERVICES AND RECOMMEND NEXT STEP.	145.0	25.0		SEP 80	DEC 80
R 79 3287	PRODUCTION METHODS FOR LOW COST STRIP LAMINATE MOTOR CASES CONTRACT AWARDED FEB 79, FULL SCALE MOTOR CONCEPT DEMO CARRIED OUT. REPRODUCIBILITY DEMO WITH PRODUCTION CONTRACTOR STARTED.	250.0	198.8	19.0		DEC 79
R 78 3372	MANUFACTURING METHODS FOR MAGNETIC MATERIALS TWENTY FOUR POTTING MATERIALS WERE EVALUATED AND FIVE WERE SELECTED. ELECTRICAL AND ENVIRONMENTAL TESTING WAS STARTED. DETERMINATION OF THE EFFECTS OF HANDLING TECHNIQUES AND CONTAMINANTS ON ULTRA-FINE WIRE WAS STARTED.	410.0	362.0	30.6	OCT 79	SEP 80
R 79 3372	MANUFACTURING METHODS FOR MAGNETIC MATERIALS NO PROGRESS WAS REPORTED ON THIS FY OF THE EFFORT.	610.0			OCT 79	OCT 79
R 78 3376	TESTING ELECTRO-OPTICAL COMPONENTS AND SUBSYSTEMS THE CONTRACT PACKAGE HAS BEEN COMPLETED, RFP ISSUED AND PROPOSAL EVALUATED. THE CONTRACT SHOULD BE AWARDED DURING THE 4TH QUARTER OF FY79.	375.0		10.0	DEC 80	JUL 81
R 79 3381	LOW COST, IMPROVED 2-D HEAT SHIELDS A CONTRACT WAS AWARDED 21 MAY 79.	900.0	384.0		MAR 80	DEC 80
R 78 3396	INJECTION MOLDING OF ONE PIECE NOZZLES A PROCUREMENT PACKAGE WAS COMPLETED AND WAS BEING STAFFED.	180.0			MAR 80	END:
R 79 3410	PRODUCTION METHOD FOR HEAT PIPES FOR HYBRID/LSI THE CONTRACT WAS NOT YET AWARDED. PURPOSE IS TO FABRICATE HEAT PIPES FOR HYBRID LSI CIRCUITRY. PROCESSES WILL INCLUDE LOW COST METHODS FOR POWDER WICK FORMING AND SHELL ASSEMBLY. VACUUM SYSTEM WILL BE USED FOR EVACUATION, FILL AND SEAL.	250.0			SEP 79	SEP 79
R 78 3436	DEVELOPMENT OF CERAMIC CIRCUIT BOARDS AND LARGE AREA HYBRIDS FABRICATION OF THE THICK-FILM MULTILAYER SUBSTRATES WAS STARTED. LONG LEAD TOOLING ITEMS ARE BEING ACQUIRED. AS PRESENTLY CONFIGURED THE LSH WILL CONSIST OF A 3.5 IN SQUARE SUBSTRATE WITH 4 CONDUCTIVE LAYERS. THIRTY TTL CHIPS WILL BE MOUNTED.	325.0	271.8	25.9	DEC 79	OCT 79
R 79 3438	DELIDDING, PARALLEL SEAM SEALED HYBRID MICROELECT PACKAGES A CONTRACT IS NOT YET AWARDED. MANUFACTURING PROCESSES AND TECHNIQUES TO DELID AND RESEAL HYBRID MICROELECTRONIC PACKAGES WITH COST EFFECTIVE PROCEDURES AND EQUIPMENT WILL BE ESTABLISHED. A 'MESA' PERMANENT DIAMOND LAP WILL BE UTILIZED FOR DELIDDING	200.0		10.0	OCT 79	MAR 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
R 78 3440	PRODUCTION TESTING OF CONTROL SYSTEMS FOR GUIDED WEAPONS A CONTRACTOR HAS BEEN SELECTED, A VERIFICATION TEST PLAN HAS BEEN SUBMITTED BY THE CONTRACTOR; A COMPREHENSIVE DESIGN DOCUMENT IS BEING DEVELOPED BY THE CONTRACTOR AND IS SCHEDULED TO BE COMPLETED 30 JUNE 79.	550.0	490.4	23.9	APR 80	DEC 79
R 79 3441	APPLICATION OF HIGH ENERGY LASER MANUFACTURING PROCESSES EXCELLENT WELDS WERE MADE FOR ONE AND ONE QUARTER INCH THICK JOINTS.	400.0	200.0	100.0	SEP 79	OCT 79
R 79 3448	FULLY ADDITIVE MANUFACTURING FOR PRINTED WIRING BOARDS THE SCOPE OF WORK FOR INVESTIGATING FULLY ADDITIVE MFG PROCESSES WAS PREPARED, THE CONTRACT WAS AWARDED TO HUGHES AIRCRAFT CO. ON 21 JUN 79.	200.0	120.0		SEP 79	SEP 80
R 79 3445	PRECISION MACHINING OF OPTICAL COMPONENT A PROCUREMENT PACKAGE WAS COMPLETED. PROPOSALS WERE RECEIVED AND EVALUATED. CONTRACT AWARD IS EXPECTED IN JULY.	300.0			OCT 81	END!
R 77 3452	LOW COST QUANTITY PRODUCTION TECHNIQUES FOR LASER SEEKERS MARTIN MARIETTA BUILT TOOLING TO INTEGRATE THE ALTERNATE HELLFIRE SEEKER HEAD WITH THE COPPERHEAD ELECTRONICS PKGS, HAD PROBLEMS WITH G-SENSITIVE DRIFT, GUIDANCE NOISE, AND COLLIMATION OF ROTOR + ASPHERIC MIRROR. A PILOT LINE IS BEING ASSEMBLED.	2,000.0	1,125.5	200.0	SEP 79	SEP 79
R 78 3453	GROUND LASER LOCATOR DESIGNATOR PRODUCTION IMPROVEMENTS NAVAL WPNS CTR AT CHINA LAKE WILL ESTABLISH ECONOMICAL PROD METHODS FOR THE LASER OPTICAL TRAIN AND COMPONENTS IN THE GROUND LASER DESIGNATORS. LENS CLEANLINESS IS NOW A PRODUCTION PROBLEM. FUNDS WERE MIPRED TO NWC, CHINA LAKE.	211.0	175.0	3.0	DEC 80	DEC 80
R 78 3454	LO COST - HI VOLUME RADIOGRAPHIC INSPECTION THE REAL TIME X-RAY EQUIPMENT WAS PURCHASED AND INSTALLED TEMPORARILY FOR CHECK-OUT PURPOSES. THE TRAILER, PERMANENT FACILITY FOR THE SYSTEM, IS BEING EQUIPPED TO ACCEPT THE SYSTEM.	200.0	147.6	47.7	FEB 80	MAR 80



TANK-AUTOMOTIVE R&D COMMAND
(TARADCOM)

TANK-AUTOMOTIVE MATERIEL READINESS COMMAND
(TARCOM)

TANK-AUTO R-D COMMAND AND TANK-AUTO MATERIEL READINESS COMMAND

CURRENT FUNDING STATUS, 1ST FY79

FISCAL YEAR	NO. OF PROJECTS	AUTHORIZED FUNDS ($)	CONTRACT FUNDING ALLOCATED ($)	CONTRACT FUNDING EXPENDED ($)	INHOUSE FUNDING ALLOCATED ($)	INHOUSE FUNDING EXPENDED ($)
76	2	450,000	162,000	162,000 (100%)	288,000	242,000 (84%)
77	1	500,000	473,400	233,000 (49%)	26,600	26,600 (100%)
77	4	1,550,000	1,280,200	724,800 (56%)	269,800	168,400 (62%)
78	11	4,252,000	2,976,700	588,500 (19%)	1,275,300	351,700 (27%)
79	20	5,479,000	1,959,000	30,000 (1%)	3,520,000	113,700 (3%)
TOTAL	38	12,231,000	6,851,300	1,738,300 (25%)	5,379,700	902,400 (16%)

AUTHORIZED FUNDING CONTRACT ALLOCATED 56% INHOUSE ALLOCATED 43%

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
SUMMARY PROJECT STATUS REPORT
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE • STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
T 78 4264	TRACK INSERTS AND FILLERS FOR TRACK RUBBER PADS THE FIRST SET OF SAMPLE PADS HAVE BEEN FABRICATED AND DELIVERED TO THE TEST SITE. A TEST VEHICLE (M103A2) HAS BEEN DELIVERED AND SUPPORT PARTS HAVE BEEN ORDERED.	200.0	15.8	138.7	JAN 81	JAN 81
T 79 4389	PDN OF FOLDABLE PLASTIC TOPS FOR SOFT TOP TRUCK CABS-PH 1 PROCUREMENT PACKAGE HAS BEEN PREPARED AND IS BEING PROCESSED IN PREPARATION FOR SUBMISSION FOR OUTSIDE BIDS.	225.0	140.0	15.0	SEP 81	SEP 81
A 76 4392	JOINING DISSIMILAR METALS-PHASE 2 EVERYTHING EXCEPT BALLISTIC TESTS AND COMPILATION OF DATA HAS BEEN ACCOMPLISHED, HOWEVER ALL FUNDS HAVE BEEN EXPENDED. COMPLETION OF THIS PROJECT IS DEPENDENT ON THE PROVISION OF ADDITIONAL FUNDING.	125.0		125.0	SEP 77	OCT 79
A 76 4563	ROTATIONAL MOLDING OF LARGE CAPACITY FUEL TANKS. YPG TESTING OF FUEL TANKS FOR THE M-551 VEHICLE HAS COMPLETED. YPG TESTING OF M-88 HAS NOT BEEN STARTED BECAUSE TANKS RECEIVED FROM CONTRACTOR WERE UNACCEPTABLE FOR TESTING.	325.0	162.0	117.0	JUN 77	OCT 79
T 78 4575	LASER WELDING TECHNIQUES FOR MILITARY VEHICLES(PHASE I) WELDS HAVE BEEN SUCCESSFULLY MADE IN ONE AND ONE HALF INCH PLATES.	175.0	117.6	25.0	MAY 79	NOV 79
T 79 4575	LASER WELDING TECHNIQUES FOR MILITARY VEHICLES A PROCUREMENT REQUEST HAS BEEN FORWARDED TO PROCUREMENT.	375.0		3.0	JUL 81	JUL 81
T 79 4586	IMPROVED LARGE ARMOR STEEL CASTINGS- PHASE 1 PROPOSALS ARE BEING EVALUATED.	900.0		16.0	OCT 80	OCT 80
T 79 5002	FABRICATING TORSION SPRINGS FROM HIGH STRENGTH STEELS PROCUREMENT REQUEST SUBMITTED FOR SOURCE SELECTION.	150.0	110.0	5.0	FEB 81	FEB 81
T 79 5006	PRODUCTION OF LIGHTWEIGHT STEEL CAST TRACK SHOES THE NEW DESIGNS OF THE TRACK SHOE BODIES ALONG WITH THE SCOPE OF WORK HAVE BEEN SUBMITTED TO THE ENGINEERING SUPPORT DIRECTORATE AT TARADCOM FOR A COST ESTIMATE.	200.0			APR 80	APR 80
T 79 5007	ADVANCED TECHNOLOGY BRAKE LINING MATERIALS-PHASE 2 A CONTRACT TO OBTAIN BRAKE SHOES WITH A WATERPROOF, GRIDDED POWDER METAL LINING MATERIAL HAS BEEN LET. THE PROJECT IS ON SCHEDULE.	190.0	20.0	4.0	JUN 81	JUN 81
T 77 5014	IMPROVED FOUNDRY CASTINGS UTILIZING CAM CONTRACT EFFORTS HAVE BEEN COORDINATED WITH TARADCOM AND SUB-CONTRACTORS. THE CAD SOFTWARE IS BEING MODIFIED FOR THREE-DIMINSIONAL ANALYSIS CAPABILITY.	560.0	441.2	52.0	SEP 79	JAN 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
T 78 5014	IMPROVED FOUNDRY CASTINGS UTILIZING CAM SEE PROJECT T 79 5014.	265.0	244.3		JAN 81	FEB 81
A 78 5019	PLASTIC CONTAINER FOR LOW MAINTENANCE DRY CHARGED BATTERY LAB PERF TESTS ON PROTOTYPE 6TN LOW MTNE BATTERIES BEGUN, FIELD EVAL TESTS BEGUN AT TECOM, COLD REGIONS TEST CENTER, EARLY BATTERY LEAKAGE PROBS REQD PROTOTYPE MODS.MODIFIED SAMPLES RESUBMITTED TO CRTC AND YPG FOR FURTHER EVAL.TESTING NOW IN PROGRESS	160.0		86.0	SEP 79	SEP 79
T 78 5024	CAM GEAR DIE DESIGN AND MANUFACTURING PHASE I. SEE PROJECT T 79 5024.	200.0	112.7		JUN 80	JAN 82
T 79 5024	GEAR DESIGN MFG UTILIZING COMPUTER TECHNOLOGY, CAM-PH2 PHASE 1 OF A 3 PHASE CONTRACT WAS AWARDED DURING JUNE 1979.	205.0	160.0	14.0	JUN 80	JAN 82
T 79 5045	SPALL SUPPRESSIVE ARMOR FOR COMBAT VEHICLES-PHASE 1 PROJECT STATUS REPORT WAS SENT BACK TO THE COMMAND FOR CORRECTION.	150.0	92.0	3.0	DEC 79	DEC 79
T 79 5054	LASER SURFACE HARDENED COMBAT VEHICLE COMPONENTS-PHASE 1 PURCHASE REQUEST IS IN PROCESS.	175.0		1.7	JUL 80	JUL 80
T 78 5062	PRODUCTION OF ARMORED VEHICLE VISION BLOCKS AMMRC IS ASSEMBLING SELECTED TRANSPARENCIES INTO VISION BLOCKS F/BALLISTIC TEST.SPECIMENS WERE SELECTED TO ESTABLISH MATERIAL COMBINATIONS FOR BEST BALLISTIC PROTECTION AT MINIMUM COST,INCLUDES CONVENTIONAL GLASS,HARD GLASS,POLYCARBONATE AND SAPPHIRE	170.0	150.0	10.3	SEP 79	SEP 79
T 79 5064	LIGHT WEIGHT SADDLE TANK-PHASE 2 ON-VEHICLE FIELD TESTING AND TRIAL INSTALLATION OF FUEL TANKS FOR 5 TON VEHICLE AT VARIOUS GOVT TEST SITES BEGUN, SIMILAR TESTING OF TANKS FOR 2.5 TON VEHICLE RESCHEDULED FOR FY80.	140.0	15.0	1.0	FEB 81	FEB 81
T 79 5067	PLASTIC BATTERY BOX PROCUREMENT REQUEST HAS BEEN APPROVED BY THE SOLICITATION REVIEW BOARD.	60.0	35.0	9.0	OCT 79	OCT 79
T 79 5080	HIGH STRENGTH NEAR NET SHAPE ALUMINUM TRANSMISSION CASES A PROCUREMENT REQUEST WAS PREPARED AND IS BEING PROCESSED FOR PROCUREMENT ACTION PRIOR TO SOLICITATION OF PROPOSALS.	325.0	275.0	9.0	JUL 81	JUL 81
T 79 5081	FABRICATION OF FRICTION RINGS AND REACTION PLATES- PHASE 2 CONTRACT IS BEING NEGOTIATED.	205.0			MAR 81	MAR 81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
T 79 5082	FLEXIBLE MACHINING SYSTEMS PILOT LINE FOR TCV COMPONENTS WORK IS IN PLANNING STAGES. CURRENT EFFORTS ARE DIRECTED TOWARD ESTABLISHING A STEERING GROUP MADE UP OF USERS AND SUPPLIERS OF FMS TECHNOLOGY.	440.0	395.0	4.0	MAR 80	MAR 80
T 77 5083	UPSCALING OF POWDERED METALLURGY PROCESSES ISOTHERMAL FORGING OF SPUR GEARS HAS BEEN DONE.	215.0	152.0	55.0	MAY 79	SEP 79
T 78 5083	UPSCALING OF POWDERED METALLURGY PROCESSES QUOTATIONS FOR DIE MATERIAL HAVE BEEN RECEIVED.	325.0	179.0	22.0	MAR 79	NOV 79
T 79 5083	UPSCALING OF ADVANCED POWDERED METALLURGY PROCESSES-PH 3 WORK HAS NOT BEEN INITIATED.	175.0			MAR 81	MAR 81
T 77 5085	PRODUCTION TECHNIQUES FOR FABRICATION OF TURBINE RECUPERATOR THIS PROJECT IS PHASE I OF A 2 YEAR EFFORT. IT DELIVERED A LASER AND VERIFIED THE CAPABILITY FOR PRODUCTION USAGE AND ESTABL REQ'D PARAMETERS AND PROD TOOLING DESIGNS.	400.0	318.0	55.0	NOV 78	JAN 79
T 78 5085	PRODUCTION TECHNIQUES FOR FABRICATION OF TURBINE RECUPERATOR A RE-AUDIT AND EQUIP MALFUNCTIONS IN THE POWER SUPPLY AND MIRROR SYSTEM HAVE DELAYED WORK ON THIS PHASE II EFFORT.	480.0	443.0	9.0	JAN 80	DEC 79
T 79 5088	HIGH POWER ELECTRON BEAM WELDING IN AIR PHASE I THE RFQ HAS BEEN PREPARED AND SENT TO PROCUREMENT.	250.0		9.5	SEP 80	SEP 80
T 79 5090	IMPROVED AND COST EFFECTIVE MACHINING TECHNOLOGY NO WORK HAS BEEN INITIATED AS THE CONTRACT IS IN THE FINAL STAGES OF NEGOTIATION.	315.0	270.0	3.0	FEB 81	FEB 81
T 79 5094	ARMOR STEEL TREATED WITH RARE EARTH ADDITIONS AN RFQ HAS BEEN ISSUED FOR MFG RARE EARTH TREATED STEEL ARMOR A RESPONSE DATE OF 3 JULY 79 WAS SET.	480.0	300.0	6.5	SEP 80	SEP 80
T 77 5097	INTEGRALLY CAST LOW COST COMPRESSOR MOST OF THE WORK ON PRODUCTION DRAWINGS, TOOLING AND FIXTURING, AND CASTING PARAMETER STUDY HAVE BEEN COMPLETED.	375.0	369.0	6.4	JUN 79	JAN 80
T 78 5097	INTEGRALLY CAST LOW COST COMPRESSOR (PHASE II) CONTRACT TO BE AWARDED IN JULY.	250.0		15.7	JUN 80	FEB 81
T 79 6000	LIGHT WEIGHT TILT-UP HOOD FENDER ASSEMBLY-PHASE I PROPOSALS HAVE BEEN EVALUATED. THE INITIAL ACQUISITION IS IN THE FINAL STAGES OF AWARDING A CONTRACT. PROJECT SO FAR ON SCHEDULE.	200.0	147.0	10.0	SEP 81	SEP'81

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
T 78 6023	FABRICATION OF FLAT THIN GAGE ALLOY STEEL PLATE CONTRACTOR HAS PRODUCED PLATTER PLATES BY QUENCHING UNDER PLATEN RESTRAINTS AND PLATTENING WITH A VOSS LEVELER.	195.0	84.3	45.0	OCT 79	NOV 79
T 78 6035	ESTABLISH ON-LINE NDT FOR TRACKED COMBAT VEHICLES(PHASE 1) THE NONDESTRUCTIVE TEST PROGRAM IS 38 PERCENT COMPLETE AS COMPARED TO THE SCHEDULED 41 PERCENT. OF THE 9 TASKS, 5 ARE BEHIND SCHEDULE. THE DEBUG TEST PROCEDURES ON PRE AND INITIAL PRODUCTION HARDWARE TASK IS SIX MONTHS BEHIND SCHEDULE.	1,832.0	1,630.0		APR 81	APR 81
T 79 6038	HIGH DEPOSITION WELDING WORK HAS NOT BEEN INITIATED.	319.0			JUL 80	JUL 80

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 79 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
4 77 4568	TECH DATA/CONFIGURATION MANAGEMENT SYSTEM (TD/CMS) PHASE 1 (TO PREPARE DATA FOR BACKLOGGED TDP'S) HAS BEEN COMPLETED. AN IN-PROGRESS REVIEW WAS MADE ON PHASE 2. REVIEW INCLUDED AMSR MODIFICATION SPECIFICATION AND PRIORITIES FOR AMSR AND TD/CMS FUNCTIONAL IMPROVEMENTS. PROJECT WILL SLIP 3 MONTHS MORE.	500.0	473.4	26.6	JUN 79	JUN 80

APPENDICES

PRECEDING PAGE BLANK

APPENDIX I: Command Identification

PRECEDING PAGE BLANK

APPENDIX I: ARMY ACTION COMMAND/ACTIVITY IDENTIFICATION

Action Command	Acronym	Command Identifier
Test & Evaluation Command	TECOM	0
Aviation R&D Command	AVRADCOM	1
Communications & Electronics Command	CERCOM	2
Tank-Automotive Materiel Readiness Command	TARCOM	4
Armament Materiel Readiness Command (Munitions)	ARRCOM (Ammo)	5
Armament R&D Command (Munitions)	ARRADCOM (Ammo)	8
Armament Materiel Readiness Command (Weapons)	ARRCOM (Wpns)	6
Armament R&D Command (Weapons)	ARRADCOM (Wpns)	9
Troop Support & Aviation Materiel Readiness Command	TSARCOM	7
Materiel Development & Readiness Command	DARCOM	D
Mobility Equipment R&D Command	MERADCOM	E
Communications R&D Command	CORADCOM	F
Electronics R&D Command	ERADCOM	H
Army Materials and Mechanics Research Center	AMMRC	M
Natick R&D Command	NARADCOM	Q
Missile Command	MICOM	R
Tank-Automotive R&D Command	TARADCOM	T

NOTE: Abbreviation - R&D Research and Development

PRECEDING PAGE BLANK

APENDIX II: User's Guide

PRECEDING PAGE BLANK

MANUFACTURING METHODS AND TECHNOLOGY PROGRAM
S U M M A R Y P R O J E C T S T A T U S R E P O R T
1ST SEMIANNUAL SUBMISSION CY 78 RCS DRCMT-301

PROJ NO.	TITLE + STATUS	AUTHORIZED ($000)	CONTRACT VALUES ($000)	EXPENDED LABOR AND MATERIAL ($000)	ORIGINAL PROJECTED COMPLETE DATE	PRESENT PROJECTED COMPLETE DATE
S 78 6776	MPS METHOD FOR APDS PROJECTILE (25MM) INITIATED PRELIM CONTRACT FOR DEVELOPMENT OF 25MM PROJECTILE, S.O.W. DEVELOPED FOR PLASTIC SABOT.	300.0	150.0	30.2	NOV 79	NOV 79
S 77 6777	DEVELOPMENT OF PROD PROC- 105MM XM719E1 PROJECTILE METAL PTS CONTRACTOR HAS SUBMITTED A DRAFT FINAL REPORT.	500.0	49.8	340.9	MAR 78	JUN 78
(1) (2)	(3) (4)	(5)	(6)	(7)	(8)	(9)

THIS FORM IS USED FOR SUMMARIZING THE MMT PROGRAM PROJECTS STATUS. USER'S GUIDE BELOW EXPLAINS THE SIGNIFICANCE OF EACH COLUMN HEREIN.

USER'S GUIDE
to
SUMMARY PROJECT STATUS REPORT

COLUMN 1. PROJECT NUMBER

A project is identified by the first and last four digits which corresponds to the project title for the life of its execution. However, for accounting and reporting purposes, a project is recognized by the totality of its seven-digit numeral or alphanumeric number. Example:

3 75 6241

- 6241 — Project identifying number, which corresponds to the project title and is designated by action command.
- 75 — Fiscal year of funding - the only two digits that may vary according to funding frequency (7T for FY transition).
- 3 — Action command (see list accompanying Introduction).

COLUMN 2. Subtask identifier, if any.

COLUMN 3. PROJECT TITLE

The title descriptive of project effort.

COLUMN 4. STATUS

An abstract of project status taken from the **Semiannual report. Whenever possible,** technical accomplishments during the reporting period were summarized.

COLUMN 5. AUTHORIZED

The total amount of funds authorized in dollars, to complete the project.

COLUMN 6. CONTRACT VALUES

The portion of authorized funds actually expended or obligated for work performed by private industry.

COLUMN 7. EXPENDED LABOR AND MATERIAL

The portion of authorized funds actually expended **in-house, namely within the Government.**

COLUMN 8. ORIGINAL PROJECTED COMPLETION DATE

Calendar date clearly given in, or the nearest calendar month and year as could be read from the Milestone Chart of, the very first Project Status Report, RCS DRCMT-301.

COLUMN 9. PRESENT PROJECTED COMPLETION DATE

Calendar date clearly given in, or the nearest calendar month and year as could be read from the Milestone Chart of, the latest Project Status Report, RCS DRCMT-301.

APPENDIX III: Army MMT Program Representatives

PRECEDING PAGE BLANK

ARMY MMT PROGRAM REPRESENTATIVES

HQ, DARCOM
US Army Materiel Development and Readiness Command
ATTN: DRCMT
5001 Eisenhower Avenue — C: 202 274-8284/8298
Alexandria, VA 22333 — AV: 284-8284/8298

AVRADCOM
US Army Aviation R&D Command
ATTN: DRDAV-EXT, Mr. Robert Vollmer
12th & Spruce Streets — C: 314 263-1625
St. Louis, MO 63166 — AV: 693-1625

CERCOM
US Army Communications & Electronics Materiel Readiness Command
ATTN: DRSEL-LE-R, Mr. Martin Ides — C: 201 532-4950
Fort Monmouth, NJ 07703 — AV: 992-4950

CORADCOM
US Army Communications R&D Command
ATTN: DRDCO-PPA-TP, Mr. Al Feddeler/Sam Esposito/Burton Resnic
Building 2700 — C: 201 535-2418/4262/4026
Fort Monmouth, NJ 07703 — AV: 995-2418/4262/4026

ERADCOM
US Army Electronics R&D Command
ATTN: DELET-DT, Mr. Joseph Key/Bernard Reich — C: 201 544-4258
Fort Monmouth, NJ 07703 — AV: 995-4258

MICOM
US Army Missile Command
ATTN: DRSMI-EAT, Mr. Ray Farrison — C: 205 876-1835
Redstone Arsenal, AL 35809 — AV: 746-1835

TARADCOM
US Army Tank-Automotive R&D Command
ATTN: DRDTA-KP, DRDTA-RCK, Dr. Jim Chevalier — C: 313 573-2065/1814/2467
Warren, MI 48090 — AV: 273-2065/1814/2467

TARCOM
US Army Tank-Automotive Materiel Readiness Command
ATTN: DRSTA-EM, Ms. Vivian Buarkhalter — C: 313-573-2485
Warren, MI 48090 — AV: 273-2485

ARRCOM
US Army Armament Materiel Readiness Command
ATTN: DRSAR-IRB, Mr. August Zahatko
Rock Island Arsenal — C: 309 794-4485/3730
Rock Island, IL 61299 — AV: 793-4485/3730

PRECEDING PAGE BLANK

ARRADCOM
US Army Armament R&D Command
ATTN: DRDAR-PML, Mr. Donald J. Fischer — C: 201 328-6714/6715
Dover, NJ 07801 — AV: 880-6714/6715

TSARCOM
US Army Troop Support and Aviation Materiel Readiness Command
ATTN: DRSTS-PLE, Mr. Don G. Doll
4300 Goodfellow Blvd. — C: 314 263-3040
St. Louis, MO 63120 — AV: 693-3040

MERADCOM
US Army Mobility Equipment R&D Command
ATTN: DRDME-UP, Mr. S. O. Newman — C: 703 664-5530
Fort Belvoir, VA 22060 — AV: 354-5530

NARADCOM
US Army Natick R&D Command
ATTN: DRDNA-EM, Mr. Frank Civilikas — C: 617 653-1000, x2793/4
Natick, MA 01760 — AV: 955-2349/2351

TECOM
US Army Test & Evaluation Command
ATTN: DRSTE-AD-M, Mr. Grover Shelton — C: 301 278-3677
Aberdeen Proving Ground, MD 21005 — AV: 283-3677

AMMRC
US Army Materials & Mechanics Research Center
ATTN: DRXMR-PT, Mr. Raymond Farrow — C: 617 923-3150
Watertown, MA 02172 — AV: 955-3150

HDL
Harry Diamond Laboratories
ATTN: DELHD-PP, Mr. Julius Hoke
2800 Powder Mill Road — C: 202 394-1551
Adelphi, MD 20783 — AV: 290-1551

Rock Island Arsenal
ATTN: SARRI-ENM, Mr. Joseph DiBenedetto — C: 309 794-4627/4584
Rock Island, IL 61299 — AV: 793-4627/4584

Watervliet Arsenal
ATTN: SARWV-PPI, Mr. L. A. Jette — C: 518 266-5318
Watervliet, NY 12189 — AV: 794-5318

PM for Munitions Production Base Modernization and Expansion
ATTN: DRCPM-PBM-DP, Mr. Joseph Taglairino — C: 201 328-6708
Dover, NJ 07801 — AV: 880-6708

AMRDL
US Army Air Mobility R&D Laboratories
ATTN: SAVDL-EU-TAS, Mr. L. Thomas Mazza — C: 804 878-5732
Fort Eustis, VA 23604 — AV: 927-5732

IBEA
US Army Industrial Base Engineering Activity
ATTN: DRXIB-MT, Mr. James Carstens — C: 309 794-5113
Rock Island, IL 61299 — AV: 793-5113

DCSRDA
ATTN: DAMA-CSM, Mr. Rod Vawter
Room 3C400, The Pentagon — C: 202 695-0506/07/08
Washington, DC 20310 — AV: 225-0506/07/08

DCSRDA (PA 1497, Aircraft)
ATTN: DAMA-WSA, LTC Jay B. Bisbey
Room 3B454, The Pentagon — C: 202 695-1362
Washington, DC 20310 — AV: 225-1362

DCSRDA (PA 2597, Missiles)
ATTN: DAMA-WSM-A, Mr. John Doyle
Room 3B485, The Pentagon — C: 202 695-8740
Washington, DC 20310 — AV: 224-8740

DCSRDA (PA 3297, Weapons; PA 3197, Tracked Combat Vehicles)
ATTN: DAMA-WSW, MAJ Gordon Winder
Room 3D455, The Pentagon — C: 202 697-0106
Washington, DC 20310 — AV: 227-0106

DCSRDA (PA 5297, Communications/Electronics)
ATTN: DAMA-CSC-BU, COL Higgins
Room 3D440, The Pentagon — C: 202 695-1881
Washington, DC 20310 — AV: 225-1881

DCSRDA (Other Procurement Activities:
PA 5197, Tactical and Support Vehicles)
ATTN: DAMA-CSS-P, LTC L. R. Hawkins
Room 3D416, The Pentagon — C: 202 694-8720
Washington, DC 20310 — AV: 224-8720

DCSRDA (Other Procurement Activities:
PA 5397, Other Support)
ATTN: DAMA-CSS-P, LTC P. K. Linscott
Room 3D418, The Pentagon — C: 202 694-8720
Washington, DC 20310 — AV: 224-8720

DCSRDA (PA 4950, Ammunition)
ATTN: DAMA-CSM-DA, COL Jack King
Room 3C444, The Pentagon — C: 202 694-4330
Washington, DC 20310 — AV: 224-4330

DCSRDA (PA 4950, Ammunition)
ATTN: DAMA-CSM-P, Mr. John Mytryshyn
Room 3C444, The Pentagon — C: 202 694-4330
Washington, DC 20310 — AV: 224-4330

DISTRIBUTION

PRECEDING PAGE BLANK

DRXIB-MT
DISTRIBUTION:

Defense Documentation Center:
Building 5, Cameron Station, Alexandria, VA 22314 (12 cys)

Department of Defense:
DIRSO, Cameron Station, Attn: Mr. Charles Downer (3 cys)
OUSD (R&D), The Pentagon, Attn: Dr. Lloyd L. Lehn (2 cys)

Department of the Army:
HQDA, OASARDA, The Pentagon, Attn: Mr. Eugene S. Davidson
HQDA, ODCSRDA, The Pentagon, Attn: DAMA-PPM-P, Mr. Rod Vawter

HQ DARCOM:
Cdr, DARCOM, Attn: DRCCG
Cdr, DARCOM, Attn: DRCDMD
Cdr, DARCOM, Attn: DRCDMR
Cdr, DARCOM, Attn: DRCPP
Cdr, DARCOM, Attn: DRCPP-I (3 cys)
Cdr, DARCOM, Attn: DRCDE
Cdr, DARCOM, Attn: DRCMT (20 cys)

Project/Product Managers:
PM, Advanced Attack Helicopter, Attn: DRCPM-AAH (AVRADCOM)
PM, Aircraft Survivability Equipment (ASE), Attn: DRCPM-ASE (AVRADCOM)
PM, Amphibians and Watercraft (AWC), Attn: DRCPM-AWC (TSARCOM)
PM, Armored Combat Vehicle Technology (ACVT), Attn: DRCPM-CVT (TARADCOM)
PM, Army Container-Oriented Distribution System (ACODS), Attn: DRCPM-CS (DARCOM)
PM, Army Tactical Communications Systems (ATACS), Attn: DRCPM-ATC (CORADCOM)
PM, Army Tactical Data Systems (ARTADS), Attn: DRCPM-TDS (CORADCOM)
PM, Automatic Test Support Systems, Attn: DRCPM-ATSS (CORADCOM)
PM, Blackhawk, Attn: DRCPM-BH (AVRADCOM)
PM, Cannon Artillery Weapons Systems, Attn: DRCPM-CAWS (ARRADCOM)
PM, CH-47 Mod. Program, Attn: DRCPM-CH47M (AVRADCOM)
PM, CHAPARRAL/FAAR, Attn: DRCPM-CF (MICOM)
PM, Chemical Demilitarization & Installation Restoration, Attn: DRCPM-DR (APG)
PM, COBRA, Attn: DRCPM-CO (TSARCOM)
PM, Division Air Defense (DIVAD) Gun, Attn: DRCPM-ADG (ARRADCOM)
PM, Family of Military Engr. Construc. Equip. (FAMECE)/Univsl. Engr. Tractor (UET), Attn: DRCPM-FM (MERADCOM)
PM, Fighting Vehicle Armament, Attn: DRCPM-FVA (TARADCOM)
PM, Fighting Vehicle Systems, Attn: DRCPM-FVS (TARADCOM)
PM, FIREFINDER, Attn: DRCPM-FF (ERADCOM)
PM, General Support Rocket System, Attn: DRCPM-RS (MICOM)
PM, Ground Laser Designators, Attn: DRCPM-LD (MICOM)
PM, HAWK, Attn: DRCPM-HA (MICOM)
PM, Heavy Equipment Transporter (HET), Attn: DRCPM-HT (TARCOM)
PM, Heliborne Laser Fire and Forget (HELLFIRE) Missile System, Attn: DRCPM-HE (MICOM)

Project/Product Managers (Cont'd):
PM, High Energy Laser System, Attn: DRCPM-HEL (MICOM)
PM, Improved TOW Vehicle, Attn: DRCPM-ITV (TARADCOM)
PM, LANCE, Attn: DRCPM-LC (MICOM)
PM, M60 Tank Development, Attn: DRCPM-M60TD (TARCOM)
PM, M60 Tank Production, Attn: DRCPM-M60TP (TARCOM)
PM, M110E2, 8-Inch Howitzer, Attn: DRCPM-M110E2 (ARRCOM)
PM, M113/M113A1 Family of Vehicle Readiness, Attn: DRCPM-M113 (TARCOM)
PM, Mobile Electric Power, Attn: DRCPM-MEP (Springfield, VA)
PM, Multi-Service Communications Systems, Attn: DRCPM-MSCS (CORADCOM)
PM, Navigation Control Systems (NAVCON), Attn: DRCPM-NC (ERADCOM)
PM, Nuclear Munitions, Attn: DRCPM-NUC (ARRADCOM)
PM, PATRIOT, Attn: DRCPM-MD (MICOM)
PM, PERSHING, Attn: DRCPM-PE (MICOM)
PM, Remotely Monitored Battlefield Sensor Systems (REMBASS), Attn: DRCPM-RBS (ERADCOM)
PM, 2.75 Rocket System, Attn: DRCPM-RK (MICOM)
PM, SATCOM, Attn: DRCPM-SC (ERADCOM)
PM, Selected Ammunition, Attn: DRCPM-SA (ARRADCOM)
PM, Signal Intelligence/Electronic Warfare (SIGINT/EW), Attn: DRCPM-SIEW (CERCOM)
PM, Single Channel Ground and Airborne Radio Subsystem (SINCGARS), Attn: DRCPM-GARS (CORADCOM)
PM, Smoke/Obscurants (SMOKE), Attn: DRCPM-SMK (APG)
PM, Special Electronic Mission Aircraft (SEMA), Attn: DRCPM-AE (TSARCOM)
PM, Stand-off Target Acquisition System, Attn: DRCPM-STA (ERADCOM)
PM, STINGER, Attn: DRCPM-MP (MICOM)
PM, TOW-DRAGON, Attn: DRCPM-DT (MICOM)
PM, Training Devices, Attn: DRCPM-TND (Orlando, FL)
PM, US ROLAND, Attn: DRCPM-ROL (MICOM)
PM, VIPER, Attn: DRCPM-VI (MICOM)
PM, XM-1 Tank System, Attn: DRCPM-GCM (TARADCOM)

Project Officers:
PO, M60A1 Tank Camouflage Pilot Program, Attn: DRXFB-RT
PO, SLUFAE/SLUMINE, Surface Launch Unit Fuel Air Explosive (SLUFAE) Mine Neutralization System/Surface Launched Unit Mine (SLUMINE) Dispensing System, Attn: DRDME-NS (Ft. Belvoir)
PO, Stand-Off Target Acquisition/Attack System (SOTAS), Attn: DRSEL-CT
PO, Test, Measurement, and Diagnostic Equipment, Attn: DRCRE-T (DARCOM)
PO, Tactical Shelters, Attn: DRXNM-UBS

Major Subcommands:
Cdr, APG, Attn: STEAP-MT-M, J. L. Sanders
Cdr, ARRCOM, Attn: DRSAR-CG
Cdr, ARRADCOM, Attn: DRDAR
Cdr, ARRADCOM, Attn: DRDAR-TDA, Mr. Joe Blick
Cdr, AVRADCOM, Attn: DRDAV
Cdr, CERCOM, Attn: DRSEL

Major Subcommands (Cont'd):
Cdr, CORADCOM, Attn: DRDCO-PE-EC-I, Mr. Stan Sokolove
Cdr, DESCOM, Attn: DRSDS-PMI, Mr. Allen Updegrave
Cdr, ERADCOM, Attn: DRDEL-ED, Mr. Robert Ruth
Cdr, MICOM, Attn: DRSMI
Cdr, TARADCOM, Attn: DRDTA
Cdr, TARCOM, Attn: DRSTA
Cdr, TECOM, Attn: DRSTE
Cdr, TSARCOM, Attn: DRSTS
Cdr, MERADCOM, Attn: DRDME
Cdr, NARADCOM, Attn: DRDNA
Dir, USAILCOM, Attn: DRCIL

Arsenals:
Cdr, Pine Bluff Arsenal (PBA), Attn: SARPB
Cdr, Rock Island Arsenal (RIA), Attn: SARRI-CO
Cdr, Rocky Mountain Arsenal (RMA), Attn: SARRM
Cdr, Watervliet Arsenal (WVA), Attn: SARWV

Army Ammunition Plants:
Cdr, Crane AAP, Attn: SARCN
Cdr, Hawthrone AAP, Attn: SARHW
Cdr, Holston AAP, Attn: SARHO
Cdr, Indiana AAP, Attn: SARIN
Cdr, Iowa AAP, Attn: SARIO
Cdr, Kansas AAP, Attn: SARKA
Cdr, Lake City AAP, Attn: SARLC
Cdr, Lone Star AAP, Attn: SARLS
Cdr, Longhorn AAP, Attn: SARLO
Cdr, Louisiana AAP, Attn: SARLA
Cdr, McAlester AAP, Attn: SARMC
Cdr, Milan AAP, Attn: SARMI
Cdr, Mississippi AAP, Attn: SARMS
Cdr, Radford AAP, Attn: SARRA
Cdr, Riverbank AAP, Attn: SARRB
Cdr, Scranton AAP, Attn: SARSC

Depots:
Cdr, Anniston Army Depot, Attn: SDSAN
Cdr, Corpus Christi Army Depot, Attn: SDSCC
Cdr, Letterkenny Army Depot, Attn: SDSLE
Cdr, New Cumberland Army Depot, Attn: SDSNC
Cdr, Red River Army Depot, Attn: SDSRR-MO
Cdr, Sacramento Army Depot, Attn: SDSSA
Cdr, Seneca Army Depot, Attn: SDSSE
Cdr, Sharpe Army Depot, Attn: SDSSH

DRXIB-MT
DISTRIBUTION (Cont'd)

Depots (Cont'd):
Cdr, Sierra Army Depot, Attn: SDSSI
Cdr, Tobyhanna Army Depot, Attn: SDSTO
Cdr, Tooele Army Depot, Attn: SDSTE

Depot Activities:
Cdr, Lexington-Blue Grass Army Depot Activity, Attn: SDSLX
Cdr, Navajo Army Depot Activity, Attn: DRXTE-N
Cdr, Pueblo Army Depot Activity, Attn: DRXPU
Cdr, Savanna Army Depot Activity, Attn: DRSAC
Cdr, Umatilla Army Depot Activity, Attn: DRXTE-UM
Cdr, Fort Wingate Army Depot Activity, Attn: DRXFW

DARCOM Labs, Schools, and Other Army Installations/Activities:
Cdr, Army Ballistic Research Labs (BRL), Attn: DRDAR-BL
Cdr, Army Equipment Authorizations Review Acty. (EARA), Attn: DRXEA-C
Cdr, Army Harry Diamond Labs (HDL), Attn: DELHD
Dir, Army Human Engineering Labs (HEL), Attn: DRXHE
Cdr, Army Logistics Management Ctr. (ALMC), Attn: DRXMC-AL
Cdr, Army Maintenance Management Ctr., Attn: DRXMD
Dir, Army Management Engineering Training Acty. (AMETA), Attn: DRXOM
Dir, Army Materials and Mechanics Research Ctr. (AMMRC), Attn: DRXMR, DRXMR-M (3 cys)
Cdr, Army Research Office (ARO), Attn: DRXRO-AO
Cdr, Army Weapons Support Ctr, Crane, IN 47522
Dir, Automated Logistics Management Systems Acty. (ALMSA), Attn: DRXAL-A
Cdr, Foreign Science and Technology Ctr. (FSTC), Attn: DRXST-OC
Dir, Installations and Services Activity (I&SA), Attn: DRCIS
Cdr, Joint Military Packing Training Ctr., Attn: DRXPP-A
Cdr, Night Vision Labs (NVL), Attn: DRSEL-NV-PA/IO

MT Representatives:
Cdr, ARRADCOM, Attn: DRDAR-PML, Mr. Donald J. Fischer (7 cys)
Cdr, ARRCOM, Attn: DRSAR-IRB, Mr. August Zahatko (4 cys)
Cdr, AVRADCOM, Attn: DRDAV-EXT, Mr. Robert Vollmer
Cdr, CERCOM, Attn: DRSEL-LE-R, Mr. Martin Ides
Cdr, CORADCOM, Attn: DRDCO-PPA-TP, Mr. Al Feddeler, Sam Esposito, Burton Resnic
Cdr, ERADCOM, Attn: DELET-DT, Mr. Joseph Key, Attn: DELET-R, Mr. Bernard Reich
Cdr, MERADCOM, Attn: DRDME-UP, Mr. S. O. Newman
Cdr, MICOM, Attn: DRSMI-EAT, Mr. Ray Farrison
Cdr, NARADCOM, Attn: DRDNA-EM, Mr. Frank Civilikas
Cdr, TARADCOM, Attn: DRDTA-KP, DRDTA-RCK, Dr. Jim Chevalier
Cdr, TARCOM, Attn: DRSTA-EM, Ms. Vivian Buarkhalter
Cdr, TECOM, Attn: DRSTE-AD-M, Mr. Glover Shelton
Cdr, TSARCOM, Attn: DRSTS-PLE, Mr. Don G. Doll
Dir, AMMRC, Attn: DRXMR-E, DRXMR-PT, Mr. Raymond Farrow
Cdr, HDL, Attn: DELHD-PP, Mr. Julius Hoke

MT Representatives (Cont'd):
Cdr, AMRDL, Attn: SAVDL-EU-TAS, Mr. L. Thomas Mazza
Cdr, RIA, Attn: SARRI-ENM, Mr. Joseph DiBenedetto
Cdr, WVA, Attn: SARWV-PPI, Mr. L. A. Jette
PM, MPBM&E, Attn: DRCPM-PBM-DP, Mr. Joseph Taglairino
DCSRDA, Attn: DAMA-WSA, LTC Jay B. Bisbey
DCSRDA, Attn: DAMA-WSM-A, Mr. John Doyle
DCSRDA, Attn: DAMA-WSW, MAJ Gordon Winder
DCSRDA, Attn: DAMA-CSC-BU, COL Higgins
DCSRDA, Attn: DAMA-CSS-P, LTC L. R. Hawkins, LTC P. K. Linscott
DCSRDA, Attn: DAMA-CSM-P, Mr. John Mytryshyn
DCSRDA, Attn: DAMA-CSM-DA, COL Jack King

Navy Activities:
Cdr, NAVMAT, Attn: CPT L. C. Dittmar, Code 064
Cdr, NAVMIRO, Attn: Officer-In-Charge
Cdr, NAVSEA, Attn: T. E. Draschil, Code C-0354
Cdr, NAVAIR, Attn: D. S. Henderson, Code ESA-824
Cdr, NAVELEX, Attn: C. A. Rigdon, Code ELEX-504512
Cdr, Naval Surface Weapons Ctr/White Oak Lab, Attn: Code E-1A, Mr. Banish
Cdr, Naval Surface Weapons Ctr/Dahlgren Lab, Attn: Code CM-51
Cdr, Naval Weapons Ctr, Attn: D. M. Bullat, Code 36804

Air Force Activities:
Cdr, HQ, USAF/RDXI, The Pentagon, Attn: MAJ D. Mackintosh
Cdr, AFSC/DLF, Andrew AFB
Cdr, AFSC/DLFF, Andrew AFB
Cdr, AFSC/PPD, Andrew AFB
Cdr, AFSC/PPDE, Andrew AFB
Cdr, AFML/LT, Wright-Patterson AFB
Cdr, AFML/LTE, /LTM, /LTN, Wright-Patterson AFB
Cdr, AFML/MX, Wright-Patterson AFB
Cdr, San Antonio Air Logistics Ctr, Kelly AFB, Attn: E. Boisvert, MMEWA