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THE NAVY MANUFACTURING TECHNOLOGY ELECTRONICS STUDY. A PLAN FOR--ETC(U)
JUN 77 N00039-77-C-0095

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1 OF 2
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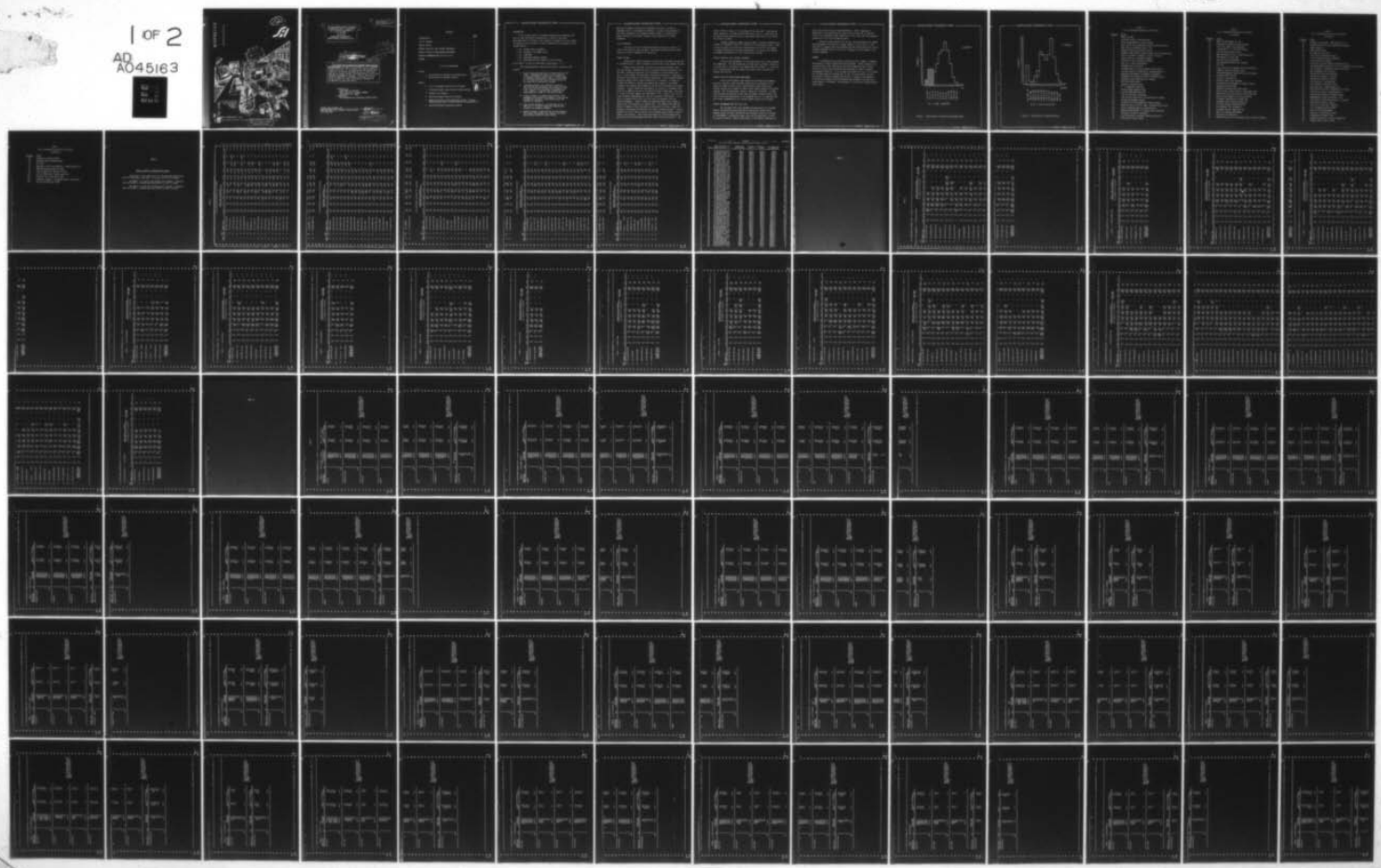

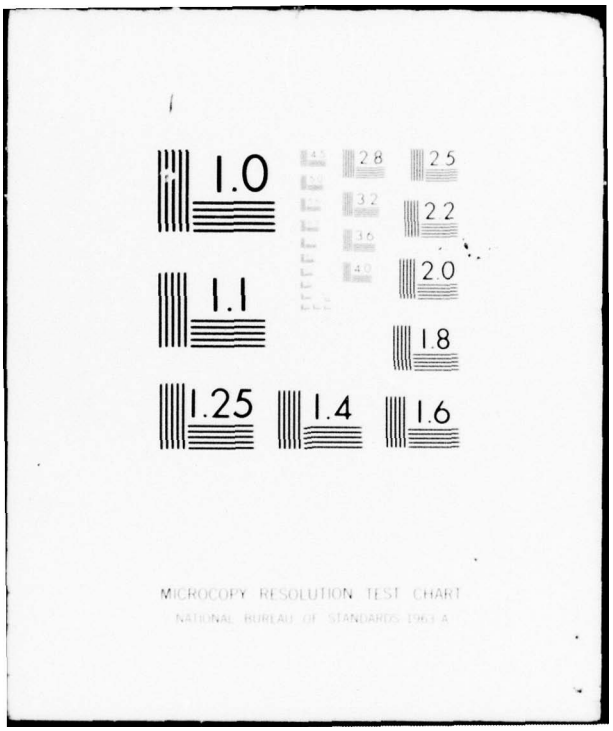
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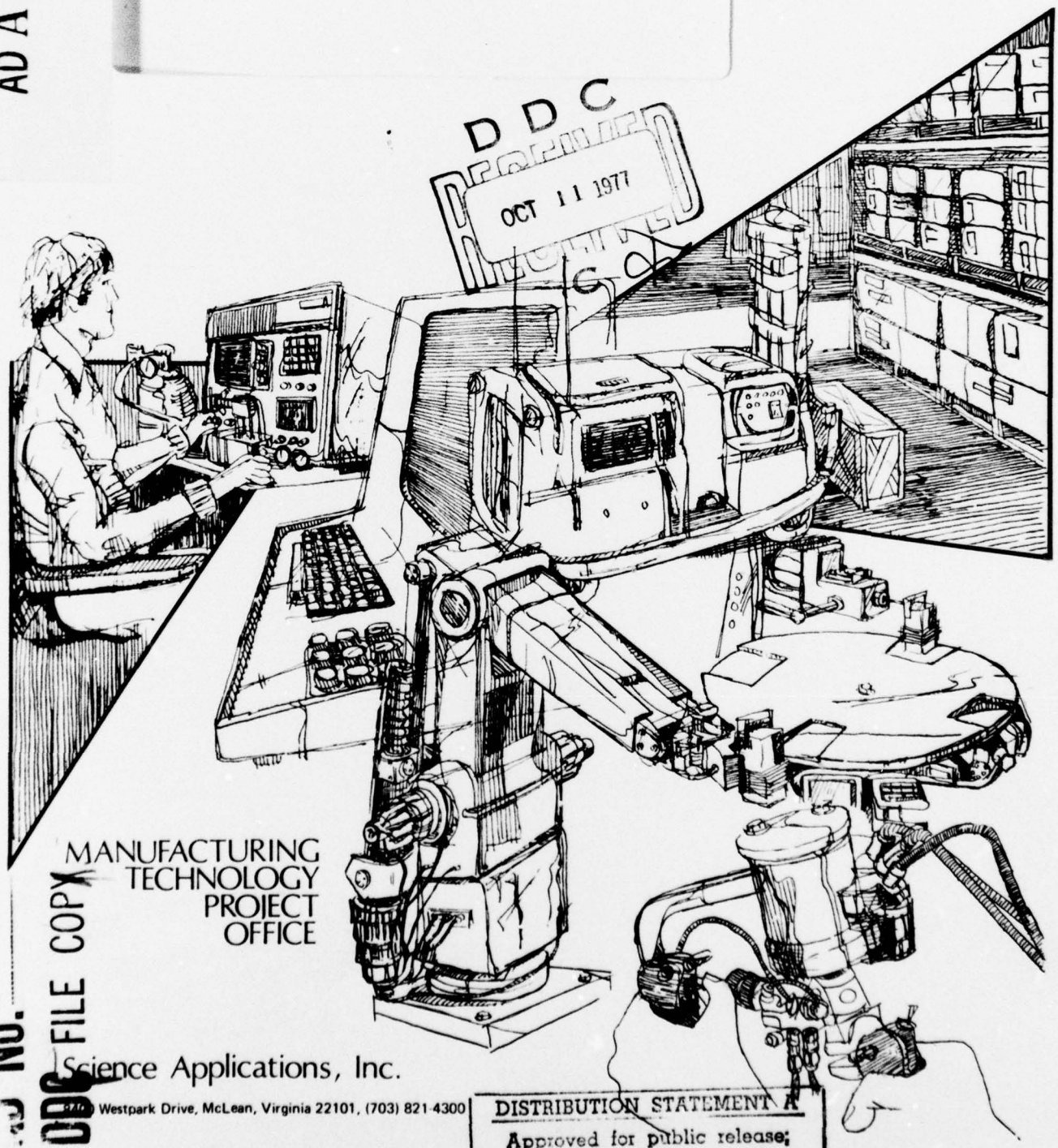

# MANUFACTURING TECHNOLOGY PROJECT OFFICE



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(6) THE NAVY MANUFACTURING TECHNOLOGY ELECTRONICS STUDY - A PLAN FOR COST EFFECTIVE ELECTRONICS IN THE NAVY.

Volume II.

A CANDIDATE ELECTRONICS MANUFACTURING TECHNOLOGY PLAN.



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Prepared by:
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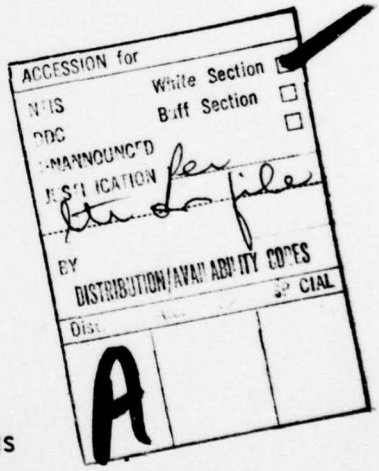
CONTENTS



LIST OF ILLUSTRATIONS




Figures



Tables

## INTRODUCTION

This volume contains a candidate manufacturing technology (MT) plan for Navy electronics formulated as a result of the study described briefly in Volume I and in detail in Volume III of this report. The purpose of this volume is to give information on the aspects of the prcgram such as:

(1) savings minus investment,
(2) savings to investment ratio,
(3) timeframe,
(4) applicable weapons systems,
(5) manufacturing cost category of cost savings

on an overall, as well as individual, project basis.

The following general rules were followed in setting up the program:

- Project costs were obtained in present dollars from firms. Implementation costs for one production line were included if appropriate. Further costs to implement at additional lines are not included as it is possible that such activities would not be funded out of the Navy MT program.

- Timeframe estimates were obtained in addition. The earliest any new project was started was FY80. since the FY78 and 79 MT plans are already fairly firm. However, if appropriate, suggestions for reprogramming of funds in FY79 were included.

- Project savings, in present value dollars, were estimated from industrial estimates of cost savings (weighed for technical risk) assuming that the project was successful.

- Cost savings categories - as developed in Vol. I, Table 5a, b, for each project are reported and projects are ranked by category.

- Weapons systems of applicability for the projects are listed, and projects are ranked by the applicable weapon system of savings impact.

Rankings by highest savings minus investment are given. Savings to investment ratio is calculated in addition. A study of the variation of rank due to changes of the standard interest rates of 10 percent and annual inflation of 4 percent indicated little sensitivity to these parameters.

## LIST OF PROJECTS

The titles of the 101 candidate projects are given in Table 1 in order of an arbitrary index assigned. More detailed descriptions of each project are found in Appendix A of Volume III.

## PROJECT RATING

Projects were rated by expected savings minus investment and savings to investment ratio. Table 2 contains a prioritized list by highest net gain.

Projects were evaluated initially on a 4-year procurement cycle for cost savings, assuming both that all projects would be successful, and that their savings are applied to all electronics in the related class (e.g., a cost savings for one project in missile electronics is applied at the end of the project to all missile electronics). This procedure produces favorable returns, and is used uniformly for all projects. In order to estimate the effect of cutting out projects with lower S/I on savings, a sample of 93 projects were studied as to the joint distributions of these variables. Figure 1 shows the distribution of savings to investment ratio (S/I) for a sample of 93 out of 101 projects rated as described. The scale is linear in project number, but logarithmic in S/I. Note a "tail" of low return projects superimposed on a typical log-normal distribution. If one cuts all projects with an S/I of 3.2 or less (14 projects), the tail largely disappears. Figure 2 shows the expected savings (the average of nominal and risk adjusted) on a similar plot. The dotted lines show the effect of removal of the 14 projects on the low S/I criteria. Again this produces a log-normal distribution, this time in project savings. A cut on projects S/I 3.2 or less on the set of 101 projects would produce a project sample of 82 projects. These plots were made with interim project data, and the cut was reinvestigated when final report data was available. The

overall effect of the cut is to increase S/I by about 20%. There may be other reasons for including projects that have a low S/I. One factor may be large indirect benefits such as lower weight (particularly for missile and avionics systems).

Projects ranked by highest net gain (gain = savings-investment) but savings to investment ratios are listed also in the computer output. These ratings are based on current best information as of mid FY77 but updates to project costing due to altered technological risk factors and changed procurement projections will vary ranking prior to FY80.

PROJECTS RATED BY COST SAVINGS CATEGORIES

Projects were aggregated into the appropriate cost savings category and summarized. The cost categories are those used in Volume I, Table 4a, b, and printed in the output in an abbreviated form (Table 3). In the output x indicates the Table 4a product cost factor, and y the Table 4b process cost factors.

PROJECTS RATED BY MAJOR WEAPON PROCUREMENT

Lists of the projects rated against major weapons procurements, missiles, aircraft, ships and other electronics are presented in the output in format similar to that used previously where appropriate project savings are allocated to specific Navy weapon systems by the NEMTA program. The following table, Table 4, shows this allocation. In many cases projects are applied to more than one weapons system; however, the cost for multiple application is not accounted for as it is possible that the further implementation will not be funded directly by MT funding.

PROJECT RECOMMENDATIONS FOR FY82 to 84

The out-years FY82 to 84 represent an opportunity for increased benefit from manufacturing technology by addressing indirect costs. Reduced weight and power consumption and increased reliability affected by improvements in manufacture ought to be used as additional criteria in project selection. Many projects begun in the FY80-81 timeframe will

mature into effective cost saving mechanisms. Table 5 represents a compendium of key technology for costs for the period 1978 to 1990 and Table 6 lists programs already identified in this study that are apparently responsive to the future projected needs.

Naturally these projects will evolve, new technologies will emerge and procurement priorities will change; however, at this point in time (mid 1977) it appears that the candidate Navy MT program does have a future oriented component that will serve as a framework for the program in the FY82-84 timeframe.

SUMMARY

A candidate plan has been outlined involving a number of elements, and methods to select projects have been advanced. Certain projects are too specialized to be rated versus the broad categories used initially (Table 3), yet are good candidates when analyzed for specific weapons procurements (Table 4). If all projects from Table 3 of S/I 2.9 or greater are included along with projects 28, 44, 60, 75 and 78 which rate well from Table 4 (specific systems application), a present value program of 31.3M worth of projects returning between 580 and 825M in savings over a 4-year period is indicated. The average S/I is 22 with an average project cost of 401K.

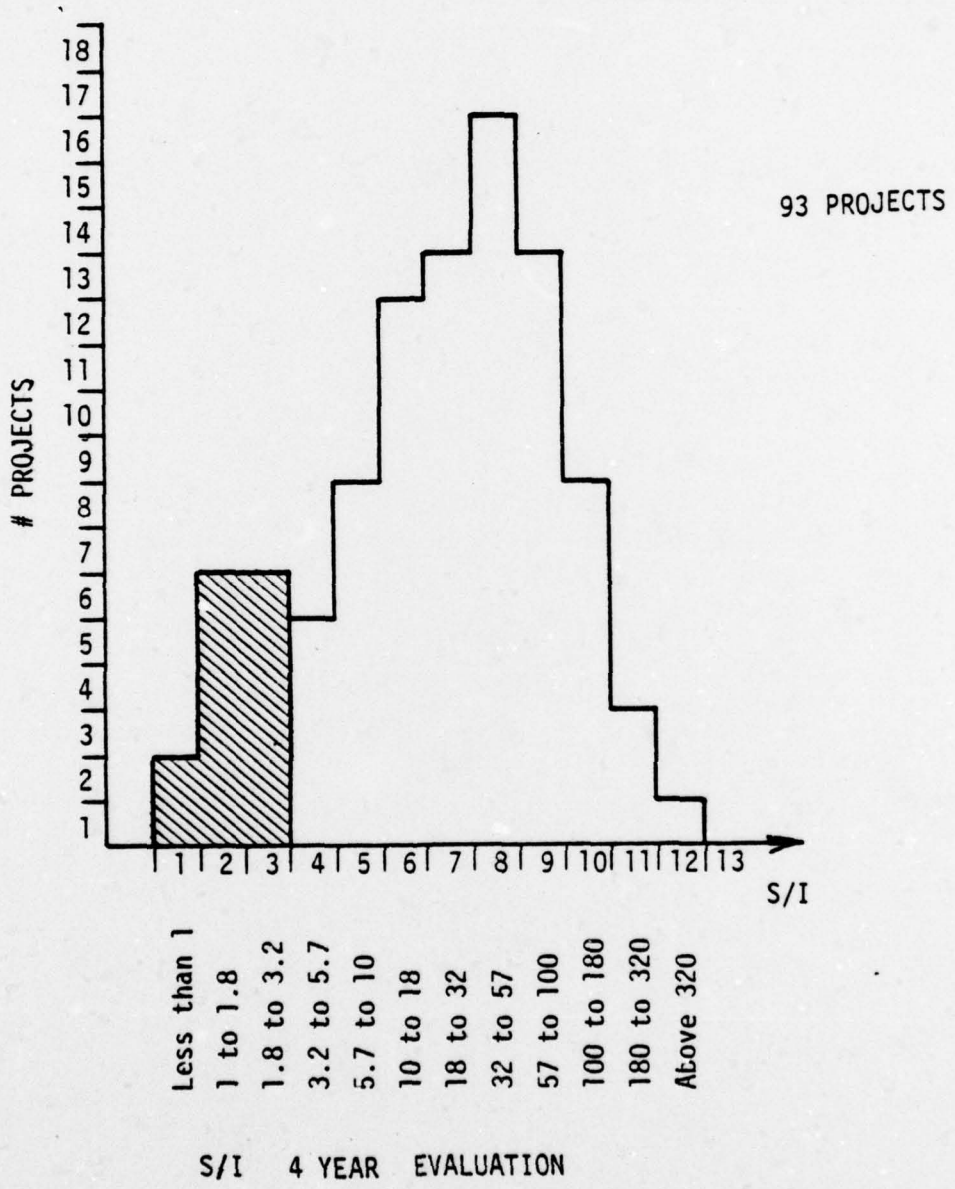



Figure 1. Distribution of Savings-to-Investment Ratio

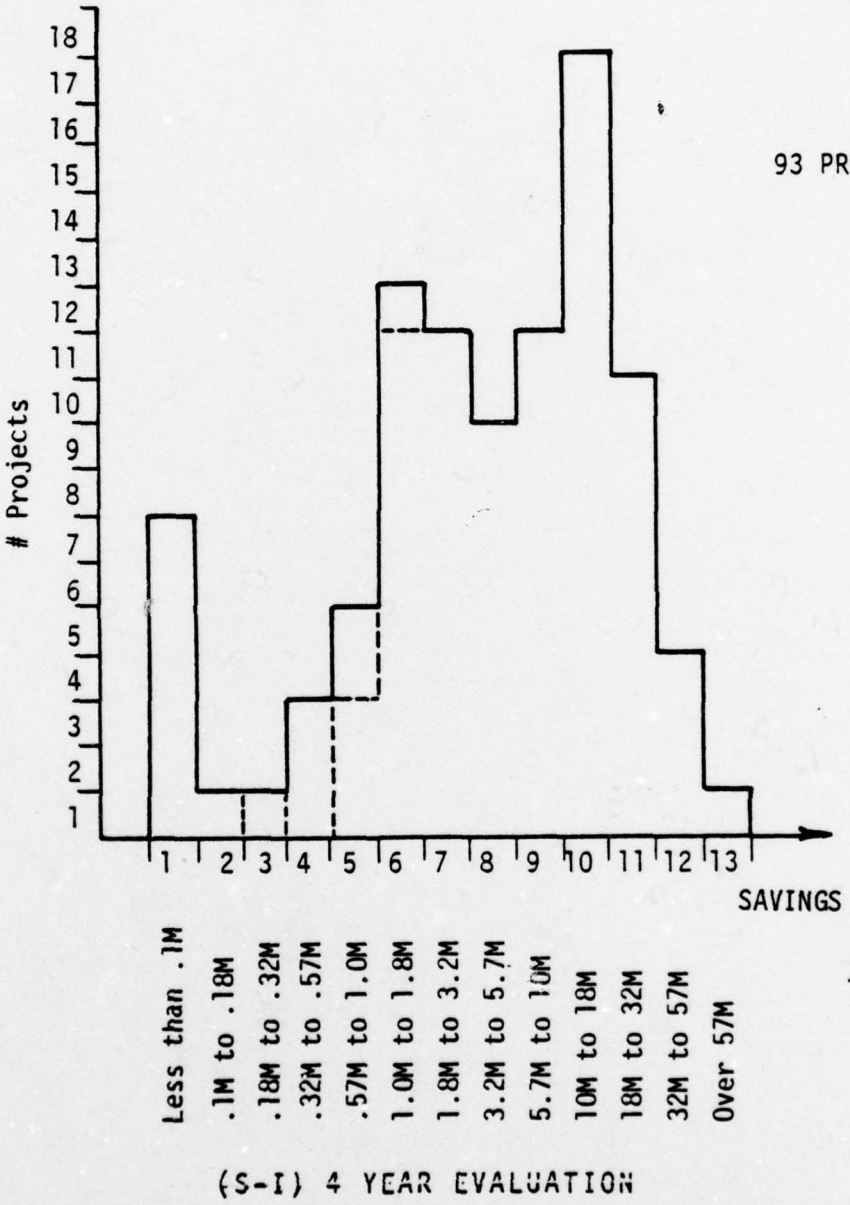



Figure 2. Distribution of Expected Savings

Table 1

List of Candidate Electronics MT Projects

| Proj.No. | Title |
|---|---|
| 1 | Metal Core PCB |
| 2 | Conformal Coating - Moisture Seals |
| 3 | Group Technology/Parts Classification |
| 4 | Cost Savings via Standardized Soldering Specifications |
| 5 | Smear Free Interconnect Holes - PCB |
| 6 | Computer Controlled Pattern Printing |
| 7 | Automatic Gang Probing of Multilayer Thick Film Substrates |
| 8 | Revision of Rework Standards - Hybrid Circuits |
| 9 | Vapor Soldering - Automated Assembly |
| 10 | Interactive Fault Isolation Software |
| 11 | Data Link - Supplier/Assembler |
| 12 | Automated Fault Isolation |
| 13 | Automated Hybrid Circuit Assembly Justification |
| 14 | Low Cost Hybrid via Redesign for Manufacturability |
| 15 | Manufacturing Methods for Magnetic Components |
| 16 | Automated Laser Bonder for Hybrid Microelectronics |
| 17 | Computerized Ion Beam Resistor Trimming |
| 18 | SAW Device Replication |
| 19 | Leadless Inverted Devices |
| 20 | R. F. Packaging Techniques |
| 21 | Electron Beam Imaging System |
| 22 | Electron Bombarded Device MT |
| 23 | Thin Silicon Layer Technology |
| 24 | High Dose Shallow Profile Ion Implantation Systems |
| 25 | Encoder Improvement Program |
| 26 | Evaluation of Electrochemical Etching Process |
| 27 | Adaption Control of Drill Temp - PCB Board Application |
| 28 | Coaxial Magnetron-Design for Manufacture |
| 29 | Manufacturing Methods - Frequency Agile Magnetrons |
| 30 | "Nasglow" Plating on Connectors |
| 31 | Low Cost Machine Insertable Tantalum Capacitors |
| 32 | Fibre Optics Signal Cables |

Table 1

List of Candidate Electronics MT Projects

- continued -

| Proj.No. | Title |
|---|---|
| 33 | GaAs FET/Replacement for TWT |
| 34 | Patterned Polyimide-Siloxane Coatings |
| 35 | Ultra Thin Copper Clad Laminates |
| 36 | Lightweight R. F. Stripline Assembly |
| 37 | Low Cost Microchannel Plates |
| 38 | GaAs Microwave Circuits - Manufacturability |
| 39 | NMOS Memory-Tri Metal ROM |
| 40 | Low Cost Polyimide MW-PWB's |
| 41 | Semi-Automated Minature TWT Assembly |
| 42 | Not Used |
| 43 | Large Scale Hybrid Assembly and Test-Automation |
| 44 | Computer Controlled Machine Tools |
| 45 | Improved/Automated Standard Machining Processes |
| 46 | Automated PCB Insertion |
| 47 | Flat Wire Interconnects |
| 48 | Automatic Sonar Test Equipment |
| 49 | Microprocessor Replacement in Digital Sonars |
| 50 | Automated Wiring System |
| 51 | Computer Processed Shop Instructions |
| 52 | Substitution of Gold Plating - Interconnections |
| 53 | Mechanized Fabrication-Flexible Multilayer PCB |
| 54 | Water-Soluble Organic Flux Flow Soldering |
| 55 | HF Removal Technique-Drill Smear PCB |
| 56 | Automated Cable Harness Manufacture |
| 57 | N/C Cable Harness Assembly Machine |
| 58 | Environmental Test Automation |
| 59 | Automated Optical Inspection PCB |
| 60 | Near Field Antenna Measurement |
| 61 | Production Test Modeling |
| 62 | Improved Analog Circuit Automated Fault Isolation Software |

Table 1

List of Candidate Electronics MT Projects

- continued -

| Proj.No. | Title |
|---|---|
| 63 | Improved Test Methods - MOS-Rad Hard IC's |
| 64 | Automated PCB Board Test Equipment Development |
| 65 | Ribbon Sapphire |
| 66 | CMOS Custom Library |
| 67 | N/C Machine Calibration |
| 68 | Thick Film Printed Hybrid Seals |
| 69 | Plastic Molded Microwave Components |
| 70 | Laser Welding of Cabinets |
| 71 | Projection Printing SAW Device Manufacturing |
| 72 | Increased Median Technology Level via Contractor Short Courses |
| 73 | N/C Placement of Components and Reflow Solder |
| 74 | Semi-Automated Core Stringing |
| 75 | Improved Hole Etching/Striplines |
| 76 | CAD for Wire Harness - Software |
| 77 | Advanced N/C Machine Controller |
| 78 | Laser Welding - Core Memories |
| 79 | "Silk Screen" Printing for PCB's |
| 80 | Quick Reaction - Change Capability |
| 81 | Effective Utilization of Automation Interfaces |
| 82 | Hierarchical Control Program/Robotics |
| 83 | Tactile/Visual Sensors on Robotic Arms |
| 84 | Reembodiment of Semi Conductors in LSI |
| 85 | Fibre Optics Integrated Structure - Airframe |
| 86 | Glue Process Avionics Chassis |
| 87 | Plastic H.V. Power Sup. Cabinets |
| 88 | III, V Compound Crystal Growth |
| 89 | GaAs FET Yield Improvement |
| 90 | Epitaxial YIG Microwave Filters |
| 91 | Piezoelectric Polymer Films |
| 92 | Composite Materials in Optical Assemblies |
| 93 | Diamond Turned Plastic Lenses |

Table 1

List of Candidate Electronics MT Projects

- continued -

| Proj.No. | Title |
|---|---|
| 94 | Vacuum Lock Coating System |
| 95 | Automated Photo-Cathode System |
| 96 | Not Used |
| 97 | Monolithic Focal Plane Detector - Manufacturability |
| 98 | CMOS/SOS Manufacturability Study |
| 99 | Laser Inspection of Hybrid Circuits |
| 100 | Low Cost Monolithic Ceramic Capacitors |
| 101 | Closed Circuit Cleaning of PCB's |
| 102 | Component Assembly - Automated Operator Assistance |
| 103 | Ink Jet Wire Marking System |

TABLE 2

Notes to Assist in Reading this Output

The project in the output title is a 20 character abbreviation used for convenience, see Table 1 for exact title of the projects.

The symbol x is used for the product cost category - reference Table 4a Volume I, an abbreviated description is given in output.

The symbol y is used for the process cost category - reference Table 4b Volume I, an abbreviated description is given in output.

Table 2

NAVY MANUFACTURING TECHNOLOGY FIVE YEAR PROGRAM

PROJECT COST ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS)

| PRIOR | PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | AUTO FAULT ISOLATION | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 5511.9 | 45041.6 | 9110.6 | 8497.9 | | | |
| 2 | 59 | PCB OCR INSP. A266 | 0.0 | 0.0 | 200.0 | 300.0 | 300.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16731.0 | 15271.6 | 13491.4 | 11806.9 | |
| 3 | 61 | TEST OPTM MODEL A213 | 0.0 | 0.0 | 150.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 7860.9 | 16731.0 | 15271.6 | 13491.4 | | |
| 4 | 85 | FBR-OPT INT STR A311 | 0.0 | 0.0 | 250.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 7658.3 | 12666.8 | 14563.4 | 13316.5 | | | |
| 5 | 32 | FIB OPT SIG CBL A314 | 0.0 | 0.0 | 250.0 | 250.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7937.9 | 14240.1 | 12945.6 | 10973.5 | |
| 6 | 52 | ELEC CONNECPLATEA502 | 0.0 | 0.0 | 150.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 5750.1 | 9826.1 | 10456.9 | 9544.7 | | | |
| 7 | 50 | AUTO WIRE SYS | 0.0 | 0.0 | 500.0 | 1000.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 4191.2 | 7620.4 | 10391.5 | 9446.8 | | |
| 8 | 84 | RE-EMBODIMENT LSI | 0.0 | 0.0 | 200.0 | 250.0 | 500.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 4750.0 | 8636.5 | 7851.3 | 7137.6 | | |
| 9 | 87 | PLAS HV CABS A773 | 0.0 | 0.0 | 150.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 3842.0 | 6985.4 | 6350.3 | 5773.0 | | | |
| 10 | 23 | THINSILAYRTEC DNA566 | 0.0 | 0.0 | 550.0 | 400.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 2945.0 | 6477.3 | 5810.0 | 5281.8 | | |
| 11 | 101 | CL.CR.CL.PCB A847 | 0.0 | 0.0 | 95.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 3570.2 | 5409.5 | 4619.7 | 5080.3 | | | | |
| 12 | 80 | QK REACTON CNG.CAP. | 0.0 | 0.0 | 500.0 | 600.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 3657.5 | 4694.2 | 6045.5 | 5819.2 | | | |
| 13 | 4 | SOLDER SPC.IPLACE | 0.0 | 0.0 | 350.0 | 350.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 3355.5 | 4417.0 | 5668.2 | 5241.6 | | | |
| 14 | 3 | GROUP TECH/PARTS CLS | 0.0 | 0.0 | 180.0 | 160.0 | 285.0 | 125.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 1840.4 | 3542.6 | 6552.0 | 6006.7 | | |
| 15 | 66 | CMOS CUSTOM LIB A124 | 0.0 | 0.0 | 250.0 | 250.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 4750.0 | 4318.2 | 3925.7 | 3568.8 | | |
| 16 | 86 | GLUE AV-CHA[illegible] A802 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 2028.5 | 4610.3 | 3725.5 | 4762.7 | | | | |
| 17 | 43 | LSHYBRID ASSY A116A | 0.0 | 0.0 | 150.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 2095.6 | 6350.3 | 3463.8 | 3148.9 | | |
| 18 | 54 | WATERSOLFLUXSOL A862 | 0.0 | 0.0 | 300.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 1886.6 | 4015.4 | 3665.2 | 3237.9 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.0 | 0.0 | 2028.5 | 4610.3 | 3725.5 | 4762.7 | | | | |
| | 17 | 43 | LSHYBRID ASSY A116A | 0.0 | 0.0 | 150.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | 0.0 | 0.0 | 0.0 | 0.0 | 2095.6 | 6350.3 | 3463.8 | 3148.9 | | |
| | 18 | 54 | WATERSOLFLUXSOL A862 | 0.0 | 0.0 | 300.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | 0.0 | 0.0 | 0.0 | 0.0 | 1886.6 | 4015.4 | 3665.2 | 3237.9 | | |

NAVY MANUFACTURING TECHNOLOGY FIVE YEAR PROGRAM

PROJECT COST ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS)

| PRIOR | PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 65 | RIBBON SAPPHIRE | 0.0 | 0.0 | 250.0 | 250.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2159.1 | 3925.7 | 3568.8 | 3244.3 | |
| 20 | 70 | LASER WELDING CABINT | 0.0 | 0.0 | 300.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 2444.9 | 3175.2 | 2886.5 | 2624.1 | | |
| 21 | 30 | SUB AU PN PLATE A501 | 0.0 | 0.0 | 100.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 1746.5 | 3175.2 | 2886.5 | 2624.1 | | |
| 22 | 24 | ION IMPLANTION DNA44 | 0.0 | 0.0 | 230.0 | 100.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 1520.0 | 3238.7 | 2878.8 | 2617.1 | | |
| 23 | 53 | MECH FLEXRG PCB A840 | 0.0 | 0.0 | 100.0 | 200.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2540.1 | 2734.1 | 2485.6 | 2106.9 | |
| 24 | 35 | ULTRATHIN MICROC A72 | 0.0 | 0.0 | 220.0 | 160.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 1336.3 | 2844.3 | 2596.2 | 2293.5 | | |
| 25 | 16 | HYBRD LAS BND DNA579 | 0.0 | 0.0 | 250.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 1380.0 | 2358.3 | 2509.7 | 2290.7 | | | |
| 26 | 17 | IONRESISTTRIM DNA577 | 0.0 | 0.0 | 250.0 | 180.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 1380.0 | 2358.3 | 2509.7 | 2290.7 | | | |
| 27 | 51 | COMP SHOP INSTRUCT | 0.0 | 0.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 2305.2 | 2095.6 | 1905.1 | 1731.9 | | | |
| 28 | 98 | CMOS/SOS MANU A125B | 0.0 | 0.0 | 300.0 | 300.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 1567.5 | 2375.0 | 2159.1 | 1962.8 | | | |
| 29 | 13 | AUTO-HYB ASMBLY | 0.0 | 0.0 | 120.0 | 250.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 1378.0 | 1830.2 | 2277.7 | 2124.5 | | | |
| 30 | 21 | EL BM LSI CIR DNA415 | 0.0 | 0.0 | 250.0 | 150.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 1187.5 | 2159.1 | 1962.8 | 1784.4 | | |
| 31 | 102 | OP.ASST.ASSMBL A805 | 0.0 | 0.0 | 70.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 1014.3 | 1844.1 | 1676.5 | 1524.1 | 0.0 | | | |
| 32 | 5 | PCB SMEAR FREE HOLES | 0.0 | 0.0 | 90.0 | 60.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 975.3 | 1669.0 | 1612.1 | 1551.8 | | | |
| 33 | 77 | AV.NC MACH CONTROL | 0.0 | 0.0 | 200.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 975.3 | 1669.0 | 1612.1 | 1551.8 | | | |
| 34 | 69 | PLASTIC MICROWV COMP | 0.0 | 0.0 | 140.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 914.4 | 1564.7 | 1511.4 | 1454.8 | | | |
| 35 | 72 | TECH SH.COURSE | 0.0 | 0.0 | 600.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 1463.0 | 1877.7 | 1813.7 | 1745.8 | | | |
| 36 | 26 | PCB ELCHEM ETCH A832 | 0.0 | 0.0 | 96.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 1472.0 | 1257.7 | 1338.5 | 1221.7 | | | |

| PRIOR | PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | 72 | TECH SH.COURSE | 0.0 | 0.0 | 600.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 1463.0 | 1877.7 | 1813.7 | 1745.8 | 0.0 | 0.0 | 0.0 |
| 36 | 26 | PCB ELCHEM ETCH A832 | 0.0 | 0.0 | 96.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 1472.0 | 1257.7 | 1338.5 | 1221.7 | 0.0 | 0.0 | 0.0 |

NAVY MANUFACTURING TECHNOLOGY FIVE YEAR PROGRAM

PROJECT COST ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS)

| PRIOR | PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 37 | 36 | LIGHTWT RF STRIPLINE | 0.0 | 0.0 | 120.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 845.2 | 1536.8 | 1397.1 | 1270.1 | | | | |
| 38 | 11 | DATA LNK-SUPPLR/ASMB | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 826.8 | 1464.1 | 1366.6 | 1274.7 | | | |
| 39 | 79 | SLK SCRN PRNTNG PCBS | 0.0 | 0.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 811.4 | 1475.3 | 1341.2 | 1219.3 | | | | |
| 40 | 55 | SMEARFREEPCB A836 | 0.0 | 0.0 | 150.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 737.7 | 1341.2 | 1219.3 | 1108.4 | | | |
| 41 | 56 | AUTOCABLEHARNESS A830 | 0.0 | 0.0 | 350.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 698.5 | 1270.1 | 1154.6 | 1049.6 | | |
| 42 | 68 | HYBRID SEAL RINGS | 0.0 | 0.0 | 70.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 609.6 | 1043.1 | 1007.6 | 969.9 | | | |
| 43 | 9 | VAPOR SOLDERING | 0.0 | 0.0 | 60.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 609.6 | 1043.1 | 1007.6 | 969.9 | | | |
| 44 | 1 | PCB METAL CORE | 0.0 | 0.0 | 85.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 585.2 | 1001.4 | 967.3 | 931.1 | | | |
| 45 | 57 | N/C CBL HARNESS A809 | 0.0 | 0.0 | 200.0 | 500.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 698.5 | 1270.1 | 1154.6 | 1049.6 | | |
| 46 | 45 | AUTO STD MACH PROCSS | 0.0 | 0.0 | 250.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 614.7 | 1117.7 | 1016.1 | 923.7 | | | |
| 47 | 10 | INTERACTIVE TESTING | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 599.5 | 975.3 | 834.5 | 806.1 | | | | |
| 48 | 27 | PCB DRILLING A833 | 0.0 | 0.0 | 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 510.3 | 881.9 | 780.9 | 728.8 | | | | |
| 49 | 63 | MOS RAD HRD TST A231 | 0.0 | 0.0 | 200.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 522.5 | 950.0 | 863.6 | 785.1 | | | |
| 50 | 8 | REWORK STD HYB CIR | 0.0 | 0.0 | 200.0 | 200.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 609.6 | 782.4 | 1007.6 | 969.9 | | | |
| 51 | 81 | STD.AUTOM.INTERFACES | 0.0 | 0.0 | 50.0 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 461.0 | 838.2 | 762.0 | 692.8 | | | |
| 52 | 67 | N/C CALIBRATION | 0.0 | 0.0 | 30.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 731.5 | 625.9 | 604.6 | 581.9 | | | |
| 53 | 76 | CAD WIRE HRNSS-SFTWR | 0.0 | 0.0 | 120.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 449.7 | 731.5 | 625.9 | 604.6 | 0.0 | | | |
| 54 | 6 | PCB COMPUTER PLATING | 0.0 | 0.0 | 70.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 390.1 | 667.6 | 644.9 | 620.7 | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.0 | 0.0 | 0.0 | 731.5 | 625.9 | 604.6 | 581.9 | | | |
| 53 | 76 | CAD WIRE HRNSS-SFTWR | 0.0 | 0.0 | 120.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | 0.0 | 0.0 | 449.7 | 731.5 | 625.9 | 604.6 | | | | | |
| 54 | 6 | PCB COMPUTER PLATING | 0.0 | 0.0 | 70.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | 0.0 | 0.0 | 0.0 | 390.1 | 667.6 | 644.9 | 620.7 | | | | |

NAVY MANUFACTURING TECHNOLOGY FIVE YEAR PROGRAM

PROJECT COST ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS)

| PRIOR | PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55 | 47 | FLATWIREINERCONNECT | 0.0 | 0.0 | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 384.2 | 698.5 | 635.0 | 577.3 | | | |
| 56 | 40 | POLYIMIDE MLB A743 | 0.0 | 0.0 | 200.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 390.1 | 667.6 | 644.9 | 620.7 | | | |
| 57 | 103 | JNK JET WIR MK AS32 | 0.0 | 0.0 | 400.0 | 400.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 372.6 | 952.5 | 846.7 | 769.7 | | |
| 58 | 99 | LASR INSP HYBD CIR. | 0.0 | 0.0 | 150.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 307.4 | 698.5 | 635.0 | 577.3 | | | |
| 59 | 62 | IMPROVDANALOGCIRA251 | 0.0 | 0.0 | 60.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 307.4 | 558.8 | 508.0 | 461.8 | | | |
| 60 | 41 | AUTOMATED TNT 603A | 0.0 | 0.0 | 150.0 | 225.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 349.3 | 635.0 | 577.3 | 524.8 | | |
| 61 | 64 | AUTO PCB TST EQ A265 | 0.0 | 0.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 307.4 | 558.8 | 508.0 | 461.8 | | | |
| 62 | 7 | GANG PROBE HYB TEST | 0.0 | 0.0 | 20.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 268.2 | 459.0 | 443.3 | 426.7 | | | |
| 63 | 20 | RF PACKG TECH DNE027 | 0.0 | 0.0 | 95.0 | 45.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 307.4 | 489.0 | 444.5 | 404.1 | | | |
| 64 | 94 | VAC LOCK CTNG A332 | 0.0 | 0.0 | 200.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 304.8 | 521.6 | 503.8 | 484.9 | | | |
| 65 | 19 | HYBRID LID DEV DNA2 | 0.0 | 0.0 | 55.0 | 85.0 | 55.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 231.0 | 476.3 | 427.2 | 388.4 | | |
| 66 | 88 | III V CMPND CRYST GR | 0.0 | 0.0 | 250.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 261.3 | 475.0 | 431.8 | 392.6 | | | |
| 67 | 46 | AUTOPCBCOMPINSERT | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 184.4 | 335.3 | 304.8 | 277.1 | | | |
| 68 | 100 | MONLTH CERAMIC CAP. | 0.0 | 0.0 | 80.0 | 190.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 245.9 | 335.3 | 304.8 | 277.1 | | | |
| 69 | 31 | LOW COST CAPACT A503 | 0.0 | 0.0 | 100.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 167.6 | 304.8 | 277.1 | 251.9 | | |
| 70 | 2 | PCB CONFORM COATING | 0.0 | 0.0 | 115.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 166.9 | 322.4 | 310.4 | 250.8 | | |
| 71 | 22 | EBS DEVICES DNE042 | 0.0 | 0.0 | 280.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 270.5 | 245.9 | 223.5 | 203.2 | 0.0 | 0.0 | | |
| 72 | 34 | POLY-SIL COAT A630B | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 122.9 | 223.5 | 203.2 | 184.7 | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.0 | 0.0 | 0.0 | 0.0 | 196.7 | 322.4 | 310.4 | 298.2 | | | |
| 71 | 22 | EBS DEVICES | DNE042 | 0.0 | 0.0 | 280.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 270.5 | 245.9 | 223.5 | 203.2 | | | | | |
| 72 | 34 | POLY-SIL COAT | A6308 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 122.9 | 223.5 | 203.2 | 184.7 | | | | |

NAVY MANUFACTURING TECHNOLOGY FIVE YEAR PROGRAM

PROJECT COST ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS)

| PRIOR | PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 73 | 82 | HIERARCH.CONTROL | 0.0 | 0.0 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | 0.0 | 0.0 | 0.0 | 92.2 | 167.6 | 152.4 | 138.6 | | | |
| 74 | 33 | GAAS FET | A6218 | 0.0 | 0.0 | 250.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | 0.0 | 0.0 | 0.0 | 0.0 | 223.5 | 203.2 | 184.7 | 167.9 | | | |
| 75 | 71 | PROJECTION LITH SAW | | 0.0 | 0.0 | 60.0 | 60.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 29.5 | 47.7 | 61.0 | 54.2 | | | | |
| 76 | 37 | MICROCHANNEL PL | A324 | 0.0 | 0.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 76.8 | 69.9 | 63.5 | 57.7 | | | | |
| 77 | 39 | MNOS MEMORY | A1298 | 0.0 | 0.0 | 200.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 0.0 | 47.5 | 129.5 | 117.8 | 107.1 | | | |
| 78 | 83 | TACTILE SENSORS | | 0.0 | 0.0 | 150.0 | 200.0 | 200.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 0.0 | 83.8 | 152.4 | 138.6 | 126.0 | | | |
| 79 | 95 | AUTO PHOTO CATH | A322 | 0.0 | 0.0 | 200.0 | 150.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 76.8 | 69.9 | 63.5 | 57.7 | | | | |
| 80 | 18 | SAW REPLICATN | DNA508 | 0.0 | 0.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 12.3 | 22.4 | 20.3 | 18.5 | | | | |
| 81 | 38 | GA-AS ICS MICROWA | 1218 | 0.0 | 0.0 | 500.0 | 500.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 0.0 | 223.5 | 203.2 | 184.7 | 167.9 | | | |
| 82 | 90 | EP YIG FILT | A508 | 0.0 | 0.0 | 250.0 | 350.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 61.5 | 111.8 | 101.6 | 92.4 | | | | |
| 83 | 89 | GAAS FET YL IM | A618B | 0.0 | 0.0 | 650.0 | 650.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | | 0.0 | 0.0 | 0.0 | 245.9 | 223.5 | 203.2 | 184.7 | | | | |

## SUMMARY

SAMPLE MANUFACTURING TECHNOLOGY PROJECTS ORDERED BY HIGHEST NET GAIN

| Prior | | PROJECT IDENTIFICATION NUMBER AND TITLE | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) | CUM. PROJ. COST ($,THOUSANDS) | S/I |
|---|---|---|---|---|---|---|---|
| 1 | 12 | AUTO FAULT ISOLATION | 200.0 | 67962.1 | 50921.5 | 200.0 | 340.8 |
| 2 | 59 | PCB OCR INSP. A266 | 800.0 | 56500.9 | 45040.7 | 1000.0 | 71.6 |
| 3 | 61 | TEST OPTM MODEL A213 | 350.0 | 53004.9 | 39666.1 | 1350.0 | 152.4 |
| 4 | 85 | FBR-OPT INT STR A311 | 500.0 | 47705.0 | 23602.5 | 1850.0 | 96.4 |
| 5 | 32 | FIB OPT SIG CBL A314 | 650.0 | 45447.2 | 36227.7 | 2500.0 | 70.9 |
| 6 | 52 | ELEC CONNECPLATEA502 | 350.0 | 35227.8 | 26333.4 | 2850.0 | 101.7 |
| 7 | 50 | AUTO WIRE SYS | 2500.0 | 29149.8 | 19654.9 | 5350.0 | 12.7 |
| 8 | 84 | RE-EMBODIMENT LSI | 950.0 | 27425.4 | 24587.8 | 6300.0 | 29.9 |
| 9 | 87 | PLAS MV CAB3 A773 | 300.0 | 22650.7 | 20355.6 | 6600.0 | 76.5 |
| 10 | 23 | THINSILAYRTEC DNA566 | 1100.0 | 19414.1 | 12965.4 | 7700.0 | 18.7 |
| 11 | 101 | CL.CR.CL.PCB A847 | 95.0 | 18584.6 | 16002.6 | 7795.0 | 196.6 |
| 12 | 80 | QK REACTON CNG.CAP. | 2100.0 | 18116.4 | 8008.2 | 9895.0 | 9.6 |
| 13 | 4 | SOLDER SPC.1PLACE | 700.0 | 17982.3 | 14109.3 | 10595.0 | 26.7 |
| 14 | 3 | GROUP TECH/PARTS CLS | 750.0 | 17191.8 | 8220.9 | 11345.0 | 23.9 |
| 15 | 66 | CMOS CUSTOM LIB A124 | 750.0 | 15812.7 | 14156.4 | 12095.0 | 22.1 |
| 16 | 86 | GLUE AV-CHASIS A802 | 100.0 | 15027.2 | 13514.5 | 12195.0 | 151.3 |
| 17 | 43 | LSHYBRID ASSY A116A | 300.0 | 14758.7 | 10241.1 | 12495.0 | 50.2 |
| 18 | 54 | WATERSOLFLUXSOL A862 | 450.0 | 12355.2 | 10151.4 | 12945.0 | 28.5 |
| 19 | 65 | RIBBON SAPPHIRE | 750.0 | 12147.9 | 5699.0 | 13695.0 | 17.2 |
| 20 | 70 | LASER WELDING CARINT | 500.0 | 10630.7 | 7291.5 | 14195.0 | 22.3 |
| 21 | 30 | SUB AU PN PLATE A501 | 150.0 | 10282.1 | 7674.1 | 14345.0 | 69.6 |
| 22 | 24 | ION IMPLANTION DNA44 | 580.0 | 9674.6 | 6598.2 | 14925.0 | 17.7 |
| 23 | 53 | MECH FLEXRG PCB A840 | 550.0 | 9316.7 | 6356.7 | 15475.0 | 17.9 |
| 24 | 35 | ULTRATHIN MICROC A72 | 380.0 | 8690.3 | 3248.1 | 15855.0 | 23.9 |
| 25 | 16 | HYBRD LAS BND DNA579 | 400.0 | 8138.7 | 3869.3 | 16255.0 | 21.4 |
| 26 | 17 | IONRESISTTRIM DNA577 | 430.0 | 8108.7 | 5974.0 | 16685.0 | 19.9 |
| 27 | 51 | COMP SHOP INSTRUCT | 200.0 | 7837.8 | 5426.5 | 16885.0 | 40.2 |
| 28 | 98 | CMOS/SOS MANU A1258 | 600.0 | 7464.5 | 5448.4 | 17485.0 | 13.4 |
| 29 | 13 | AUTO-HYB ASMBLY | 620.0 | 6990.3 | 3185.1 | 18105.0 | 12.3 |
| 30 | 21 | EL BM LSI CIR DNA415 | 600.0 | 6493.8 | 2946.9 | 18705.0 | 11.8 |
| 31 | 102 | OP.ASST.ASSMBL A805 | 70.0 | 5989.0 | 4474.2 | 18775.0 | 86.6 |
| 32 | 5 | PCB SMEAR FREE HOLES | 150.0 | 5658.3 | 3335.0 | 18925.0 | 38.7 |
| 33 | 77 | AV.NC MACH CONTROL | 400.0 | 5408.3 | 3956.2 | 19325.0 | 14.5 |
| 34 | 69 | PLASTIC MICROWV COMP | 140.0 | 5305.3 | 4760.8 | 19465.0 | 38.9 |
| 35 | 72 | TECH SH.COURSE | 1600.0 | 5300.1 | 1850.0 | 21065.0 | 4.3 |
| 36 | 26 | PCB ELCHEM ETCH A832 | 96.0 | 5194.0 | 3871.5 | 21161.0 | 55.1 |
| 37 | 36 | LIGHTWT RF STRIPLINE | 120.0 | 4929.1 | 3666.9 | 21281.0 | 42.1 |
| 38 | 11 | DATA LNK-SUPPLR/ASMB | 50.0 | 4882.2 | 3649.1 | 21331.0 | 98.6 |
| 39 | 79 | SLK SCRN PRNTNG PCBS | 150.0 | 4697.2 | 3485.4 | 21481.0 | 32.3 |
| 40 | 55 | SMEARFREEPCB A836 | 250.0 | 4156.5 | 3054.9 | 21731.0 | 17.6 |
| 41 | 56 | AUTOCBLEHARNESS A830 | 550.0 | 3622.9 | 2579.6 | 22281.0 | 7.6 |
| 42 | 68 | HYBRID SEAL RINGS | 70.0 | 3560.2 | 2834.2 | 22351.0 | 51.9 |
| 43 | 9 | VAPOR SOLDERING | 110.0 | 3520.2 | 3157.2 | 22461.0 | 33.0 |
| 44 | 1 | PCB METAL CORE | 185.0 | 3300.0 | 1906.0 | 22646.0 | 18.8 |
| 45 | 57 | N/C CBL HARNESS A809 | 900.0 | 3272.9 | 2229.6 | 23546.0 | 4.6 |
| 46 | 45 | AUTO STD MACH PROCSS | 500.0 | 3172.1 | 2804.9 | 24046.0 | 7.3 |
| 47 | 10 | INTERACTIVE TESTING | 50.0 | 3165.5 | 2200.8 | 24096.0 | 64.3 |
| 48 | 27 | PCB DRILLING A833 | 80.0 | 2821.9 | 1661.2 | 24176.0 | 36.3 |
| 49 | 63 | MOS RAD HRD TST A231 | 300.0 | 2821.3 | 2353.1 | 24476.0 | 10.4 |
| 50 | 8 | REWORK STD HYB CIR | 600.0 | 2769.4 | 1927.1 | 25076.0 | 5.6 |
| 51 | 81 | STD.AUTOM.INTERFACES | 150.0 | 2604.1 | 2328.7 | 25226.0 | 18.4 |
| 52 | 67 | N/C CALIBRATION | 30.0 | 2513.9 | 2005.1 | 25256.0 | 84.8 |
| 53 | 76 | CAD WIRE HRNSS-SFTWR | 120.0 | 2291.6 | 1688.7 | 25376.0 | 20.1 |
| 54 | 6 | PCB COMPUTER PLATING | 70.0 | 2253.3 | 1324.0 | 25446.0 | 33.2 |
| 55 | 47 | FLATWIREINERCONNECT | 75.0 | 2220.1 | 1646.3 | 25521.0 | 30.6 |
| 56 | 40 | POLYIMIDE MLB A743 | 250.0 | 2073.3 | 1492.5 | 25771.0 | 9.3 |
| 57 | 103 | JNK JET WIR MK ASS2 | 1000.0 | 1941.6 | 1206.2 | 26771.0 | 2.9 |
| 58 | 99 | LASR INSP HYBD CIR. | 300.0 | 1918.2 | 1650.3 | 27071.0 | 7.4 |
| 59 | 62 | IMPROVDANALOGCIRA251 | 100.0 | 1736.1 | 1001.6 | 27171.0 | 18.4 |
| 60 | 41 | AUTOMATED TWT 603A | 375.0 | 1711.4 | 1085.5 | 27546.0 | 5.6 |
| 61 | 64 | AUTO PCB TST EQ A265 | 150.0 | 1686.1 | 768.0 | 27696.0 | 12.2 |
| 62 | 7 | GANG PROBE HYB TEST | 40.0 | 1557.3 | 1317.7 | 27736.0 | 39.9 |
| 63 | 20 | RF PACKG TECH DNE027 | 140.0 | 1505.0 | 1011.5 | 27876.0 | 11.8 |
| 64 | 94 | VAC LOCK CTNG A332 | 350.0 | 1465.1 | 1237.9 | 28226.0 | 5.2 |
| 65 | 19 | HYBRID LID DEV DNA2 | 195.0 | 1327.8 | 566.4 | 28421.0 | 7.8 |
| 66 | 88 | III V CMPND CRYST GR | 500.0 | 1060.6 | 280.3 | 28921.0 | 3.1 |
| 67 | 96 | AUTOPCBCOMPINSERT | 50.0 | 1051.6 | 941.5 | 28971.0 | 22.0 |
| 68 | 100 | MONLTH CERAMIC CAP. | 270.0 | 893.1 | 739.9 | 29241.0 | 4.3 |
| 69 | 31 | LOW COST CAPACT A503 | 150.0 | 851.5 | 651.2 | 29391.0 | 6.7 |
| 70 | 2 | PCB CONFORM COATING | 215.0 | 835.5 | 608.7 | 29606.0 | 4.9 |
| 71 | 22 | EBS DEVICES DNE002 | 280.0 | 663.1 | 2.9 | 29886.0 | 3.4 |
| 72 | 34 | POLY-SIL COAT A6308 | 100.0 | 634.4 | 340.7 | 29986.0 | 7.3 |
| 73 | 82 | HIERARCH.CONTROL | 100.0 | 450.8 | 395.7 | 30086.0 | 5.5 |
| 74 | 33 | GAAS FET A6218 | 500.0 | 279.4 | 45.6 | 30586.0 | 1.6 |
| 75 | 71 | PROJECTION LITH SAW | 120.0 | 72.3 | 25.0 | 30706.0 | 1.6 |
| 76 | 37 | MICROCHANNEL PL A124 | 250.0 | 17.9 | -62.5 | 30956.0 | 1.1 |
| 77 | 39 | MNOS MEMORY A129H | 400.0 | 1.9 | -78.5 | 31356.0 | 1.0 |
| 78 | 83 | TACTILE SENSORS | 550.0 | -49.3 | -299.6 | 31906.0 | .9 |
| 79 | 95 | AUTO PHOTO CATHA322 | 350.0 | -82.1 | -120.4 | 32256.0 | .8 |
| 80 | 18 | SAW REPLICATN DNA508 | 250.0 | -176.6 | -213.3 | 32506.0 | .3 |
| 81 | 38 | GA-AS ICSMICROWA1218 | 1000.0 | -220.6 | -376.5 | 33506.0 | .8 |
| 82 | 90 | FP YIG FILT A508 | 600.0 | -232.8 | -416.4 | 34106.0 | .6 |
| 83 | 89 | GAAS FET YL IM A6188 | 1300.0 | -442.6 | -871.3 | 35406.0 | .7 |

TABLE 3

# Table 3

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

Product Cost Category - 1 CABNTS,CABLS,INTRCON

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND
(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 86 | GLUE AV-CHASIS A802 | 0. | 0. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 3 | 1 |
| | | 0. | 0. | 2029. | 4610. | 3726. | 4763. | | | | | 15127. | 151. | | |
| | | 0. | 0. | 1826. | 4149. | 3353. | 4287. | | | | | 13615. | 136. | | |
| 52 | ELEC CONNECPLATEA502 | 0. | 0. | 150. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 350. | | 3 | 0 |
| | | 0. | 0. | 0. | 5750. | 9826. | 10457. | 9545. | | | | 35578. | 102. | | |
| | | 0. | 0. | 0. | 4313. | 7370. | 7843. | 7159. | | | | 26683. | 76. | | |
| 85 | FBR-OPT INT STR A311 | 0. | 0. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 3 | 0 |
| | | 0. | 0. | 0. | 7658. | 12667. | 14563. | 13317. | | | | 48205. | 96. | | |
| | | 0. | 0. | 0. | 3829. | 6333. | 7282. | 6658. | | | | 24103. | 48. | | |
| 87 | PLAS HV CABS A773 | 0. | 0. | 150. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 300. | | 3 | 0 |
| | | 0. | 0. | 0. | 3842. | 6985. | 6350. | 5773. | | | | 22951. | 77. | | |
| | | 0. | 0. | 0. | 3458. | 6287. | 5715. | 5196. | | | | 20656. | 69. | | |
| 32 | FIB OPT SIG CBL A318 | 0. | 0. | 250. | 250. | 150. | 0. | 0. | 0. | 0. | 0. | 650. | | 1 | 0 |
| | | 0. | 0. | 0. | 0. | 0. | 7938. | 14240. | 12946. | 10974. | | 46097. | 71. | | |
| | | 0. | 0. | 0. | 0. | 0. | 6350. | 11392. | 10357. | 8779. | | 36878. | 57. | | |
| 30 | SUB AU PN PLATE A501 | 0. | 0. | 100. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 3 | 0 |
| | | 0. | 0. | 0. | 0. | 1746. | 3175. | 2887. | 2624. | | | 10432. | 70. | | |
| | | 0. | 0. | 0. | 0. | 1310. | 2381. | 2165. | 1968. | | | 7824. | 52. | | |
| 36 | LIGHTWT RF STRIPLINE | 0. | 0. | 120. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 120. | | 3 | 0 |
| | | 0. | 0. | 845. | 1537. | 1397. | 1270. | | | | | 5049. | 42. | | |
| | | 0. | 0. | 634. | 1153. | 1048. | 953. | | | | | 3787. | 32. | | |
| 9 | VAPOR SOLDERING | 0. | 0. | 60. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 110. | | 2 | 3 |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 3630. | 33. | | |
| | | 0. | 0. | 0. | 549. | 939. | 907. | 873. | | | | 3267. | 30. | | |
| 47 | FLATWIREINERCONNECT | 0. | 0. | 75. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 75. | | 3 | 0 |
| | | 0. | 0. | 0. | 384. | 699. | 635. | 577. | | | | 2295. | 31. | | |
| | | 0. | 0. | 0. | 288. | 524. | 476. | 433. | | | | 1721. | 23. | | |
| 70 | LASER WELDING CABINT | 0. | 0. | 300. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 3 | 0 |
| | | 0. | 0. | 0. | 0. | 2445. | 3175. | 2887. | 2624. | | | 11131. | 22. | | |
| | | 0. | 0. | 0. | 0. | 1711. | 2223. | 2021. | 1837. | | | 7792. | 16. | | |
| 20 | RF PACKG TECH DNE027 | 0. | 0. | 95. | 45. | 0. | 0. | 0. | 0. | 0. | 0. | 140. | | 3 | 0 |
| | | 0. | 0. | 0. | 307. | 489. | 445. | 404. | | | | 1645. | 12. | | |
| | | 0. | 0. | 0. | 215. | 342. | 311. | 283. | | | | 1152. | 8. | | |
| 56 | AUTOCBLEHARNESS A330 | 0. | 0. | 350. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 550. | | 2 | 3 |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 4173. | 8. | | |
| | | 0. | 0. | 0. | 0. | 524. | 953. | 866. | 787. | | | 3130. | 6. | | |
| 57 | N/C CBL HARNESS A809 | 0. | 0. | 200. | 500. | 200. | 0. | 0. | 0. | 0. | 0. | 900. | | 2 | 3 |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 4173. | 5. | | |
| | | 0. | 0. | 0. | 0. | 524. | 953. | 866. | 787. | | | 3130. | 4. | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 56 | AUTOCBLEHARNESS A330 | 0. | 0. | 350. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 550. | | 2 3 |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 4173. | 8. | |
| | | 0. | 0. | 0. | 0. | 524. | 953. | 866. | 787. | | | 3130. | 6. | |
| 57 | N/C CBL HARNESS A809 | 0. | 0. | 200. | 500. | 200. | 0. | 0. | 0. | 0. | 0. | 900. | | 2 3 |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 4173. | 5. | |
| | | 0. | 0. | 0. | 0. | 524. | 953. | 866. | 787. | | | 3130. | 3. | |
| 103 | JNK JET WIR MK A332 | 0. | 0. | 400. | 400. | 200. | 0. | 0. | 0. | 0. | 0. | 1000. | | 3 0 |
| | | 0. | 0. | 0. | 0. | 373. | 953. | 847. | 770. | | | 2942. | 3. | |
| | | 0. | 0. | 0. | 0. | 279. | 714. | 635. | 577. | | | 2206. | 2. | |
| | INVESTMENT TOTAL | 0. | 0. | 2600. | 2295. | 550. | 0. | 0. | 0. | 0. | 0. | 5445. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 2874. | 24699. | 42792. | 57271. | 53755. | 21063. | 10974. | | 213428. | 39. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 2460. | 17953. | 30544. | 41347. | 38546. | 16313. | 8779. | | 155942. | 24. | |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

ELEMENT - 2 SNSRS,ANTNNAS,SP,TBS

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 69 | PLASTIC MICROWV COMP | 0. | 0. | 140. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 140. | | 3 0 |
| | | 0. | 0. | 0. | 914. | 1565. | 1511. | 1455. | | | | 5445. | 39. | |
| | | 0. | 0. | 0. | 823. | 1408. | 1360. | 1309. | | | | 4901. | 35. | |
| 41 | AUTOMATED TNT 603A | 0. | 0. | 150. | 225. | 0. | 0. | 0. | 0. | 0. | 0. | 375. | | 1 0 |
| | | 0. | 0. | 0. | 0. | 349. | 635. | 577. | 525. | | | 2086. | 6. | |
| | | 0. | 0. | 0. | 0. | 245. | 445. | 404. | 367. | | | 1461. | 4. | |
| 94 | VAC LOCK CTNG A332 | 0. | 0. | 200. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 350. | | 1 2 |
| | | 0. | 0. | 0. | 305. | 522. | 504. | 485. | | | | 1815. | 5. | |
| | | 0. | 0. | 0. | 229. | 469. | 453. | 436. | | | | 1588. | 5. | |
| 37 | MICROCHANNEL PL A324 | 0. | 0. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 250. | | 3 0 |
| | | 0. | 0. | 0. | 77. | 70. | 64. | 58. | | | | 268. | 1. | |
| | | 0. | 0. | 0. | 54. | 49. | 45. | 40. | | | | 188. | 1. | |
| 95 | AUTO PHOTO CATHA322 | 0. | 0. | 200. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 350. | | 3 0 |
| | | 0. | 0. | 0. | 77. | 70. | 64. | 58. | | | | 268. | 1. | |
| | | 0. | 0. | 0. | 58. | 63. | 57. | 52. | | | | 230. | 1. | |
| | INVESTMENT TOTAL | 0. | 0. | 940. | 525. | 0. | 0. | 0. | 0. | 0. | 0. | 1465. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 0. | 1373. | 2575. | 2777. | 2632. | 525. | | | 9883. | 7. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 0. | 1163. | 2234. | 2360. | 2242. | 367. | | | 8366. | 6. | |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

ELEMENT - 3 INTEGRATED CIRCUITS

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84 | RE-EMBODIMENT LSI | 0. | 0. | 200. | 250. | 500. | 0. | 0. | 0. | 0. | 0. | 950. | | 1 0 |
| | | 0. | 0. | 0. | 0. | 4750. | 8637. | 7851. | 7138. | | | 28375. | 30. | |
| | | 0. | 0. | 0. | 0. | 4275. | 7773. | 7066. | 6424. | | | 25538. | 27. | |
| 35 | ULTRATHIN MICROC A72 | 0. | 0. | 220. | 160. | 0. | 0. | 0. | 0. | 0. | 0. | 380. | | 1 3 |
| | | 0. | 0. | 0. | 0. | 1336. | 2844. | 2596. | 2294. | | | 9070. | 24. | |
| | | 0. | 0. | 0. | 0. | 535. | 1138. | 1039. | 917. | | | 3628. | 10. | |
| 66 | CMOS CUSTOM LIB A124 | 0. | 0. | 250. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 750. | | 1 0 |
| | | 0. | 0. | 0. | 0. | 4750. | 4318. | 3926. | 3569. | | | 16563. | 22. | |
| | | 0. | 0. | 0. | 0. | 4275. | 3886. | 3533. | 3212. | | | 14906. | 20. | |
| 23 | THINSILAYRTEC DNA566 | 0. | 0. | 550. | 400. | 150. | 0. | 0. | 0. | 0. | 0. | 1100. | | 3 0 |
| | | 0. | 0. | 0. | 0. | 2945. | 6477. | 5810. | 5282. | | | 20514. | 19. | |
| | | 0. | 0. | 0. | 0. | 1767. | 4534. | 4067. | 3697. | | | 14065. | 13. | |
| 24 | ION IMPLANTION DNA44 | 0. | 0. | 230. | 100. | 250. | 0. | 0. | 0. | 0. | 0. | 580. | | 2 0 |
| | | 0. | 0. | 0. | 0. | 1520. | 3239. | 2879. | 2617. | | | 10255. | 18. | |
| | | 0. | 0. | 0. | 0. | 1064. | 2267. | 2015. | 1832. | | | 7178. | 12. | |
| 65 | RIBBON SAPPHIRE | 0. | 0. | 250. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 750. | | 3 0 |
| | | 0. | 0. | 0. | 0. | 0. | 2159. | 3926. | 3569. | 3244. | | 12898. | 17. | |
| | | 0. | 0. | 0. | 0. | 0. | 1080. | 1963. | 1784. | 1622. | | 6449. | 9. | |
| 98 | CMOS/SOS MANU A125B | 0. | 0. | 300. | 300. | 0. | 0. | 0. | 0. | 0. | 0. | 600. | | 3 0 |
| | | 0. | 0. | 0. | 1568. | 2375. | 2159. | 1963. | | | | 8064. | 13. | |
| | | 0. | 0. | 0. | 1176. | 1781. | 1619. | 1472. | | | | 6048. | 10. | |
| 21 | EL BM LSI CIR DNA415 | 0. | 0. | 250. | 150. | 200. | 0. | 0. | 0. | 0. | 0. | 600. | | 2 0 |
| | | 0. | 0. | 0. | 0. | 1188. | 2159. | 1963. | 1784. | | | 7094. | 12. | |
| | | 0. | 0. | 0. | 0. | 594. | 1080. | 981. | 892. | | | 3547. | 6. | |
| 63 | MOS RAD HRD TST A231 | 0. | 0. | 200. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 300. | | 4 0 |
| | | 0. | 0. | 0. | 523. | 950. | 864. | 785. | | | | 3121. | 10. | |
| | | 0. | 0. | 0. | 444. | 808. | 734. | 667. | | | | 2653. | 9. | |
| 88 | III V CMPND CRYST GR | 0. | 0. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 3 0 |
| | | 0. | 0. | 0. | 261. | 475. | 432. | 393. | | | | 1561. | 3. | |
| | | 0. | 0. | 0. | 131. | 238. | 216. | 196. | | | | 780. | 2. | |
| 39 | MNOS MEMORY A129B | 0. | 0. | 200. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 400. | | 3 0 |
| | | 0. | 0. | 0. | 0. | 48. | 130. | 118. | 107. | | | 402. | 1. | |
| | | 0. | 0. | 0. | 0. | 38. | 104. | 94. | 86. | | | 322. | 1. | |
| | INVESTMENT TOTAL | 0. | 0. | 2900. | 2410. | 1600. | 0. | 0. | 0. | 0. | 0. | 6910. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 0. | 2351. | 20336. | 33417. | 32209. | 26359. | 3244. | | 117917. | 17. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 0. | 1750. | 15374. | 24430. | 23094. | 18845. | 1622. | | 85115. | 12. | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INVESTMENT TOTAL | 0. | 0. | 2900. | 2410. | 1600. | 0. | 0. | 0. | 0. | 0. | 6910. | | |
| SAVINGS TOTAL(U) | 0. | 0. | 0. | 2351. | 20336. | 33417. | 32209. | 26359. | 3244. | | 117917. | 17. | |
| SAVINGS TOTAL(L) | 0. | 0. | 0. | 1750. | 15374. | 24430. | 23094. | 18845. | 1622. | | 85115. | 12. | |





ELEMENT - 4 SM HDW,DCB,CONNCTORS

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | CL.CR.CL.PCB A847 | 0. | 0. | 95. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 95. | | 3 | 0 |
| | | 0. | 0. | 3570. | 5410. | 4620. | 5080. | | | | | 18680. | 197. | | |
| | | 0. | 0. | 2499. | 4869. | 4158. | 4572. | | | | | 16098. | 169. | | |
| 26 | PCB ELCHEM ETCH A832 | 0. | 0. | 96. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 96. | | 3 | 0 |
| | | 0. | 0. | 0. | 1472. | 1258. | 1339. | 1222. | | | | 5290. | 55. | | |
| | | 0. | 0. | 0. | 1104. | 943. | 1004. | 916. | | | | 3968. | 41. | | |
| 5 | PCB SMEAR FREE HOLES | 0. | 0. | 90. | 60. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 3 | 0 |
| | | 0. | 0. | 0. | 975. | 1669. | 1612. | 1552. | | | | 5808. | 39. | | |
| | | 0. | 0. | 0. | 585. | 1001. | 967. | 931. | | | | 3485. | 23. | | |
| 27 | PCB DRILLING A833 | 0. | 0. | 80. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 80. | | 3 | 0 |
| | | 0. | 0. | 510. | 882. | 781. | 729. | | | | | 2902. | 36. | | |
| | | 0. | 0. | 306. | 529. | 469. | 437. | | | | | 1741. | 22. | | |
| 6 | PCB COMPUTER PLATING | 0. | 0. | 70. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 70. | | 3 | 0 |
| | | 0. | 0. | 0. | 390. | 668. | 645. | 621. | | | | 2323. | 33. | | |
| | | 0. | 0. | 0. | 234. | 401. | 387. | 372. | | | | 1394. | 20. | | |
| 79 | SLK SCRN PRNTNG PCBS | 0. | 0. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 3 | 0 |
| | | 0. | 0. | 811. | 1475. | 1341. | 1219. | | | | | 4847. | 32. | | |
| | | 0. | 0. | 609. | 1107. | 1006. | 914. | | | | | 3635. | 24. | | |
| 54 | WATERSOLFLUXSOL A862 | 0. | 0. | 300. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 450. | | 3 | 0 |
| | | 0. | 0. | 0. | 0. | 1887. | 4015. | 3665. | 3238. | | | 12805. | 28. | | |
| | | 0. | 0. | 0. | 0. | 1321. | 3413. | 3115. | 2752. | | | 10601. | 24. | | |
| 1 | PCB METAL CORE | 0. | 0. | 85. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 185. | | 3 | 0 |
| | | 0. | 0. | 0. | 585. | 1001. | 967. | 931. | | | | 3485. | 19. | | |
| | | 0. | 0. | 0. | 351. | 601. | 580. | 559. | | | | 2091. | 11. | | |
| 53 | MECH FLEXRG PCB A840 | 0. | 0. | 100. | 200. | 250. | 0. | 0. | 0. | 0. | 0. | 550. | | 3 | 0 |
| | | 0. | 0. | 0. | 0. | 0. | 2540. | 2734. | 2486. | 2107. | | 9867. | 18. | | |
| | | 0. | 0. | 0. | 0. | 0. | 1778. | 1914. | 1740. | 1475. | | 6907. | 13. | | |
| 55 | SMEARFREEPCB A836 | 0. | 0. | 150. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 250. | | 3 | 0 |
| | | 0. | 0. | 0. | 738. | 1341. | 1219. | 1108. | | | | 4407. | 18. | | |
| | | 0. | 0. | 0. | 553. | 1006. | 914. | 831. | | | | 3305. | 13. | | |
| 40 | POLYIMIDE MLB A743 | 0. | 0. | 200. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 250. | | 3 | 0 |
| | | 0. | 0. | 0. | 390. | 668. | 645. | 621. | | | | 2323. | 9. | | |
| | | 0. | 0. | 0. | 293. | 501. | 484. | 466. | | | | 1743. | 7. | | |
| 2 | PCB CONFORM COATING | 0. | 0. | 115. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 215. | | 3 | 0 |
| | | 0. | 0. | 0. | 0. | 167. | 322. | 310. | 251. | | | 1051. | 5. | | |
| | | 0. | 0. | 0. | 0. | 117. | 258. | 248. | 201. | | | 824. | 4. | | |
| | INVESTMENT TOTAL | 0. | 0. | 1531. | 760. | 250. | 0. | 0. | 0. | 0. | 0. | 2541. | | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 4892. | 12317. | 15400. | 20333. | 12764. | 5974. | 2107. | | 73788. | 29. | | |
| | SAVINGS TOTAL(L) | 0. | 0. | 3414. | 9624. | 11522. | 15710. | 9353. | 4693. | 1475. | | 55791. | 22. | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | PCB CONFORM COATING | 0. | 0. | 115. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 215. | | 3 |
| | | 0. | 0. | 0. | 0. | 167. | 322. | 310. | 251. | | | 1051. | 5. | |
| | | 0. | 0. | 0. | 0. | 117. | 258. | 248. | 201. | | | 824. | 4. | |
| | INVESTMENT TOTAL | 0. | 0. | 1531. | 760. | 250. | 0. | 0. | 0. | 0. | 0. | 2541. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 4892. | 12317. | 15400. | 20333. | 12764. | 5974. | 2107. | | 73788. | 29. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 3414. | 9624. | 11522. | 15710. | 9353. | 4693. | 1475. | | 55791. | 22. | |

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

ELEMENT - 5 DISC SEMICONDUCTORS

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | POLY-SIL COAT A630B | 0. | 0. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 3 0 |
| | | 0. | 0. | 0. | 123. | 224. | 203. | 185. | | | | 734. | 7. | |
| | | 0. | 0. | 0. | 74. | 134. | 122. | 111. | | | | 441. | 4. | |
| 22 | EBS DEVICES DNE042 | 0. | 0. | 280. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 280. | | 3 0 |
| | | 0. | 0. | 271. | 246. | 224. | 203. | 0. | | | | 943. | 3. | |
| | | 0. | 0. | 81. | 74. | 67. | 61. | 0. | | | | 283. | 1. | |
| 71 | PROJECTION LITH SAW | 0. | 0. | 60. | 60. | 0. | 0. | 0. | 0. | 0. | 0. | 120. | | 3 0 |
| | | 0. | 0. | 0. | 30. | 48. | 61. | 54. | | | | 192. | 2. | |
| | | 0. | 0. | 0. | 15. | 38. | 49. | 43. | | | | 145. | 1. | |
| 33 | GAAS FET A621B | 0. | 0. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 3 0 |
| | | 0. | 0. | 0. | 0. | 224. | 203. | 185. | 168. | | | 779. | 2. | |
| | | 0. | 0. | 0. | 0. | 157. | 142. | 129. | 118. | | | 546. | 1. | |
| 38 | GA-AS ICSMICROWA121B | 0. | 0. | 500. | 500. | 0. | 0. | 0. | 0. | 0. | 0. | 1000. | | 3 0 |
| | | 0. | 0. | 0. | 0. | 224. | 203. | 185. | 168. | | | 779. | 1. | |
| | | 0. | 0. | 0. | 0. | 179. | 163. | 148. | 134. | | | 624. | 1. | |
| 89 | GAAS FET YL IM A618B | 0. | 0. | 650. | 650. | 0. | 0. | 0. | 0. | 0. | 0. | 1300. | | 3 0 |
| | | 0. | 0. | 0. | 246. | 224. | 203. | 185. | 0. | | | 857. | 1. | |
| | | 0. | 0. | 0. | 123. | 112. | 102. | 92. | 0. | | | 429. | 0. | |
| | INVESTMENT TOTAL | 0. | 0. | 1840. | 1460. | 0. | 0. | 0. | 0. | 0. | 0. | 3300. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 271. | 644. | 1165. | 1077. | 793. | 336. | | | 4286. | 1. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 81. | 285. | 686. | 638. | 524. | 252. | | | 2466. | 1. | |

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

ELEMENT - 6 HYBRID CIRCUITS

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 68 | HYBRID SEAL RINGS | 0. | 0. | 70. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 70. | | 3 0 |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 3630. | 52. | |
| | | 0. | 0. | 0. | 488. | 835. | 806. | 776. | | | | 2904. | 41. | |
| 43 | LSHYBRID ASSY A116A | 0. | 0. | 150. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 300. | | 3 0 |
| | | 0. | 0. | 0. | 0. | 2096. | 6350. | 3464. | 3149. | | | 15059. | 50. | |
| | | 0. | 0. | 0. | 0. | 1467. | 4445. | 2425. | 2204. | | | 10541. | 35. | |
| 7 | GANG PROBE HYB TEST | 0. | 0. | 20. | 20. | 0. | 0. | 0. | 0. | 0. | 0. | 40. | | 2 0 |
| | | 0. | 0. | 0. | 268. | 459. | 443. | 427. | | | | 1597. | 40. | |
| | | 0. | 0. | 0. | 228. | 390. | 377. | 363. | | | | 1358. | 34. | |
| 16 | HYBRD LAS BND DNA579 | 0. | 0. | 250. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 400. | | 3 0 |
| | | 0. | 0. | 0. | 1380. | 2358. | 2510. | 2291. | | | | 8539. | 21. | |
| | | 0. | 0. | 0. | 690. | 1179. | 1255. | 1145. | | | | 4269. | 11. | |
| 17 | IONRESISTTRIM DNA577 | 0. | 0. | 250. | 180. | 0. | 0. | 0. | 0. | 0. | 0. | 430. | | 3 0 |
| | | 0. | 0. | 0. | 1380. | 2358. | 2510. | 2291. | | | | 8539. | 20. | |
| | | 0. | 0. | 0. | 1035. | 1769. | 1882. | 1718. | | | | 6404. | 15. | |
| 13 | AUTO-HYB ASMBLY | 0. | 0. | 120. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 620. | | 1 2 |
| | | 0. | 0. | 0. | 1378. | 1830. | 2278. | 2125. | | | | 7610. | 12. | |
| | | 0. | 0. | 0. | 689. | 915. | 1139. | 1062. | | | | 3805. | 6. | |
| 19 | HYBRID LID DEV DNA2 | 0. | 0. | 55. | 85. | 55. | 0. | 0. | 0. | 0. | 0. | 195. | | 3 0 |
| | | 0. | 0. | 0. | 0. | 231. | 476. | 427. | 388. | | | 1523. | 8. | |
| | | 0. | 0. | 0. | 0. | 116. | 238. | 214. | 194. | | | 761. | 4. | |
| 99 | LASR INSP HYBD CIR. | 0. | 0. | 150. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 300. | | 2 0 |
| | | 0. | 0. | 0. | 307. | 699. | 635. | 577 | | | | 2218. | 7. | |
| | | 0. | 0. | 0. | 231. | 629. | 572. | 520. | | | | 1950. | 7. | |
| 8 | REWORK STD HYB CIR | 0. | 0. | 200. | 200. | 200. | 0. | 0. | 0. | 0. | 0. | 600. | | 4 0 |
| | | 0. | 0. | 0. | 610. | 782. | 1008. | 970. | | | | 3369. | 6. | |
| | | 0. | 0. | 0. | 457. | 587. | 756. | 727. | | | | 2527. | 4. | |
| | INVESTMENT TOTAL | 0. | 0. | 1265. | 1185. | 505. | 0. | 0. | 0. | 0. | 0. | 2955. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 0. | 5933. | 11856. | 17217. | 13541. | 3537. | | | 52084. | 18. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 0. | 3817. | 7885. | 11469. | 8950. | 2398. | | | 34520. | 12. | |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

ELEMENT - 7 PASSIVE COMPONENTS

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | LOW COST CAPACT A503 | 0. | 0. | 100. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 1 0 |
| | | 0. | 0. | 0. | 0. | 168. | 305. | 277. | 252. | | | 1002. | 7. | |
| | | 0. | 0. | 0. | 0. | 134. | 244. | 222. | 202. | | | 801. | 5. | |
| 100 | MONLTH CERAMIC CAP. | 0. | 0. | 80. | 190. | 0. | 0. | 0. | 0. | 0. | 0. | 270. | | 3 0 |
| | | 0. | 0. | 0. | 246. | 335. | 305. | 277. | 0. | | | 1163. | 4. | |
| | | 0. | 0. | 0. | 184. | 302. | 274. | 249. | 0. | | | 1010. | 4. | |
| 90 | EP YIG FILT A508 | 0. | 0. | 250. | 350. | 0. | 0. | 0. | 0. | 0. | 0. | 600. | | 3 0 |
| | | 0. | 0. | 0. | 62. | 112. | 102. | 92. | | | | 367. | 1. | |
| | | 0. | 0. | 0. | 31. | 56. | 51. | 46. | | | | 184. | 0. | |
| 18 | SAW REPLICATN DNA508 | 0. | 0. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 250. | | 3 0 |
| | | 0. | 0. | 0. | 12. | 22. | 20. | 19. | | | | 73. | 0. | |
| | | 0. | 0. | 0. | 6. | 11. | 10. | 9. | | | | 37. | 0. | |
| | INVESTMENT TOTAL | 0. | 0. | 680. | 540. | 0. | 0. | 0. | 0. | 0. | 0. | 1270. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 0. | 320. | 637. | 732. | 665. | 252. | | | 2605. | 2. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 0. | 221. | 503. | 579. | 527. | 202. | | | 2031. | 2. | |

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

ELEMENT - 8 ASSEMBLY LABOR

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 102 | OP.ASST.ASSMBL A805 | 0. | 0. | 70. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 70. | | 2 | 0 |
| | | 0. | 0. | 1014. | 1844. | 1677. | 1524. | | | | | 6059. | 87. | | |
| | | 0. | 0. | 761. | 1383. | 1257. | 1143. | | | | | 4544. | 65. | | |
| 4 | SOLDER SPC.1PLACE | 0. | 0. | 350. | 350. | 0. | 0. | 0. | 0. | 0. | 0. | 700. | | 4 | 0 |
| | | 0. | 0. | 0. | 3356. | 4417. | 5668. | 5242. | | | | 18682. | 27. | | |
| | | 0. | 0. | 0. | 1678. | 3313. | 5101. | 4717. | | | | 14809. | 21. | | |
| 46 | AUTOPCBCOMPINSERT | 0. | 0. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 50. | | 2 | 0 |
| | | 0. | 0. | 0. | 184. | 335. | 305. | 277. | | | | 1102. | 22. | | |
| | | 0. | 0. | 0. | 166. | 302. | 274. | 249. | | | | 992. | 20. | | |
| 81 | STD.AUTOM.INTERFACES | 0. | 0. | 50. | 50. | 50. | 0. | 0. | 0. | 0. | 0. | 150. | | 4 | 0 |
| | | 0. | 0. | 0. | 461. | 838. | 762. | 693. | | | | 2754. | 18. | | |
| | | 0. | 0. | 0. | 415. | 754. | 686. | 624. | | | | 2479. | 17. | | |
| 50 | AUTO WIRE SYS | 0. | 0. | 500. | 1000. | 1000. | 0. | 0. | 0. | 0. | 0. | 2500. | | 2 | 3 |
| | | 0. | 0. | 0. | 0. | 4191. | 7620. | 10392. | 9447. | | | 31650. | 13. | | |
| | | 0. | 0. | 0. | 0. | 2934. | 5334. | 7274. | 6613. | | | 22155. | 9. | | |
| 82 | HIERARCH.CONTROL | 0. | 0. | 50. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 3 | 0 |
| | | 0. | 0. | 0. | 92. | 168. | 152. | 139. | | | | 551. | 6. | | |
| | | 0. | 0. | 0. | 83. | 151. | 137. | 125. | | | | 496. | 5. | | |
| 72 | TECH SH.COURSE | 0. | 0. | 600. | 1000. | 0. | 0. | 0. | 0. | 0. | 0. | 1600. | | 4 | 0 |
| | | 0. | 0. | 0. | 1463. | 1878. | 1814. | 1746. | | | | 6900. | 4. | | |
| | | 0. | 0. | 0. | 732. | 939. | 907. | 873. | | | | 3450. | 2. | | |
| 83 | TACTILE SENSORS | 0. | 0. | 150. | 200. | 200. | 0. | 0. | 0. | 0. | 0. | 550. | | 3 | 0 |
| | | 0. | 0. | 0. | 0. | 84. | 152. | 139. | 126. | | | 501. | 1. | | |
| | | 0. | 0. | 0. | 0. | 42. | 76. | 69. | 63. | | | 250. | 0. | | |
| | INVESTMENT TOTAL | 0. | 0. | 1820. | 2650. | 1250. | 0. | 0. | 0. | 0. | 0. | 5720. | | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 1014. | 7400. | 13587. | 17998. | 18626. | 9573. | | | 68198. | 12. | | |
| | SAVINGS TOTAL(L) | 0. | 0. | 761. | 4456. | 9692. | 13659. | 13931. | 6676. | | | 49175. | 9. | | |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

ELEMENT - 9 FABRICATION LABOR

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | V |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 77 | AV.NC MACH CONTROL | 0. | 0. | 200. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 400. | | 3 0 |
| | | 0. | 0. | 0. | 975. | 1669. | 1612. | 1552. | | | | 5808. | 15. | |
| | | 0. | 0. | 0. | 732. | 1252. | 1209. | 1164. | | | | 4356. | 11. | |
| 45 | AUTO STD MACH PROCSS | 0. | 0. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 2 0 |
| | | 0. | 0. | 0. | 615. | 1118. | 1016. | 924. | | | | 3672. | 7. | |
| | | 0. | 0. | 0. | 553. | 1006. | 914. | 831. | | | | 3305. | 7. | |
| | INVESTMENT TOTAL | 0. | 0. | 450. | 450. | 0. | 0. | 0. | 0. | 0. | 0. | 900. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 0. | 1590. | 2787. | 2628. | 2476. | | | | 9480. | 11. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 0. | 1285. | 2258. | 2124. | 1995. | | | | 7661. | 9. | |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

ELEMENT - 10 SUPPORT LABOR

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | DATA LNK-SUPPLR/ASMB | 0. | 0. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 50. | | 1 0 |
| | | 0. | 0. | 0. | 827. | 1464. | 1367. | 1275. | | | | 4932. | 99. | |
| | | 0. | 0. | 0. | 620. | 1098. | 1025. | 956. | | | | 3699. | 74. | |
| 67 | N/C CALIBRATION | 0. | 0. | 30. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 30. | | 3 0 |
| | | 0. | 0. | 0. | 732. | 626. | 605. | 582. | | | | 2544. | 85. | |
| | | 0. | 0. | 0. | 585. | 501. | 484. | 466. | | | | 2035. | 68. | |
| 51 | COMP SHOP INSTRUCT | 0. | 0. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 200. | | 2 0 |
| | | 0. | 0. | 0. | 2305. | 2096. | 1905. | 1732. | | | | 8038. | 40. | |
| | | 0. | 0. | 0. | 1614. | 1467. | 1334. | 1212. | | | | 5627. | 28. | |
| 3 | GROUP TECH/PARTS CLS | 0. | 0. | 180. | 160. | 285. | 125. | 0. | 0. | 0. | 0. | 750. | | 2 0 |
| | | 0. | 0. | 0. | 0. | 1840. | 3543. | 6552. | 6007. | | | 17942. | 24. | |
| | | 0. | 0. | 0. | 0. | 920. | 1771. | 3276. | 3003. | | | 8971. | 12. | |
| 76 | CAD WIRE HRNSS-SFTWR | 0. | 0. | 120. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 120. | | 2 0 |
| | | 0. | 0. | 450. | 732. | 626. | 605. | | | | | 2412. | 20. | |
| | | 0. | 0. | 337. | 549. | 469. | 453. | | | | | 1809. | 15. | |
| 80 | OK REACTON CNG.CAP. | 0. | 0. | 500. | 600. | 1000. | 0. | 0. | 0. | 0. | 0. | 2100. | | 2 0 |
| | | 0. | 0. | 0. | 3658. | 4694. | 6046. | 5819. | | | | 20216. | 10. | |
| | | 0. | 0. | 0. | 1829. | 2347. | 3023. | 2910. | | | | 10108. | 5. | |
| | INVESTMENT TOTAL | 0. | 0. | 1080. | 760. | 1285. | 125. | 0. | 0. | 0. | 0. | 3250. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 450. | 8252. | 11346. | 14069. | 15960. | 6007. | | | 56084. | 17. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 337. | 5196. | 6802. | 8090. | 8819. | 3003. | | | 32249. | 10. | |

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

ELEMENT - 11 TEST LABOR

PROJECT COSTS ($,THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | AUTO FAULT ISOLATION | 0. | 0. | 100. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 200. | | 2 0 |
| | | 0. | 0. | 0. | 5512. | 45042. | 9111. | 8498. | | | | 68162. | 341. | |
| | | 0. | 0. | 0. | 4134. | 33781. | 6833. | 6373. | | | | 51122. | 256. | |
| 61 | TEST OPTM MODEL A213 | 0. | 0. | 150. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 350. | | 3 0 |
| | | 0. | 0. | 0. | 0. | 7861. | 16731. | 15272. | 13491. | | | 53355. | 152. | |
| | | 0. | 0. | 0. | 0. | 5896. | 12548. | 11454. | 10119. | | | 40016. | 114. | |
| 59 | PCB OCR INSP. A266 | 0. | 0. | 200. | 300. | 300. | 0. | 0. | 0. | 0. | 0. | 800. | | 2 3 |
| | | 0. | 0. | 0. | 0. | 0. | 16731. | 15272. | 13491. | 11807. | | 57301. | 72. | |
| | | 0. | 0. | 0. | 0. | 0. | 13385. | 12217. | 10793. | 9446. | | 45841. | 57. | |
| 10 | INTERACTIVE TESTING | 0. | 0. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 50. | | 2 0 |
| | | 0. | 0. | 600. | 975. | 835. | 806. | | | | | 3216. | 64. | |
| | | 0. | 0. | 420. | 683. | 584. | 564. | | | | | 2251. | 45. | |
| 62 | IMPROVDANALOGCIRA251 | 0. | 0. | 60. | 40. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 3 0 |
| | | 0. | 0. | 0. | 307. | 559. | 508. | 462. | | | | 1836. | 18. | |
| | | 0. | 0. | 0. | 184. | 335. | 305. | 277. | | | | 1102. | 11. | |
| 64 | AUTO PCB TST EQ A265 | 0. | 0. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 3 0 |
| | | 0. | 0. | 0. | 307. | 559. | 508. | 462. | | | | 1836. | 12. | |
| | | 0. | 0. | 0. | 154. | 279. | 254. | 231. | | | | 918. | 6. | |
| | INVESTMENT TOTAL | 0. | 0. | 710. | 640. | 300. | 0. | 0. | 0. | 0. | 0. | 1650. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 600. | 7102. | 54855. | 44395. | 39965. | 26983. | 11807. | | 185706. | 113. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 420. | 5155. | 40876. | 33889. | 30552. | 20912. | 9446. | | 141249. | 86. | |

METHOD OF COST SAVING - 1 VOLUME

PROJECT COST ($, THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | FIB OPT SIG CBL A314 | 0. | 0. | 250. | 250. | 150. | 0. | 0. | 0. | 0. | 0. | 650. | | 1 |
| | | 0. | 0. | 0. | 0. | 0. | 7938. | 14240. | 12946. | 10974. | | 46097. | 71. | |
| | | 0. | 0. | 0. | 0. | 0. | 7938. | 14240. | 12946. | 10974. | | 36878. | 57. | |
| 84 | RE-EMBODIMENT LSI | 0. | 0. | 200. | 250. | 500. | 0. | 0. | 0. | 0. | 0. | 950. | | 3 |
| | | 0. | 0. | 0. | 0. | 4750. | 8637. | 7851. | 7138. | | | 28375. | 30. | |
| | | 0. | 0. | 0. | 0. | 4750. | 8637. | 7851. | 7138. | | | 25538. | 27. | |
| 66 | CMOS CUSTOM LIB A124 | 0. | 0. | 250. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 750. | | 3 |
| | | 0. | 0. | 0. | 0. | 4750. | 4318. | 3926. | 3569. | | | 16563. | 22. | |
| | | 0. | 0. | 0. | 0. | 4750. | 4318. | 3926. | 3569. | | | 14906. | 20. | |
| 86 | GLUE AV-CHASIS A802 | 0. | 0. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 1 |
| | | 0. | 0. | 2029. | 4610. | 3726. | 4763. | | | | | 15127. | 151. | |
| | | 0. | 0. | 2029. | 4610. | 3726. | 4763. | | | | | 13615. | 136. | |
| 35 | ULTRATHIN MICROC A72 | 0. | 0. | 220. | 160. | 0. | 0. | 0. | 0. | 0. | 0. | 380. | | 3 |
| | | 0. | 0. | 0. | 0. | 1336. | 2844. | 2596. | 2294. | | | 9070. | 24. | |
| | | 0. | 0. | 0. | 0. | 1336. | 2844. | 2596. | 2294. | | | 3628. | 10. | |
| 13 | AUTO-HYB ASMBLY | 0. | 0. | 120. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 620. | | 6 |
| | | 0. | 0. | 0. | 1378. | 1830. | 2278. | 2125. | | | | 7610. | 12. | |
| | | 0. | 0. | 0. | 1378. | 1830. | 2278. | 2125. | | | | 3805. | 6. | |
| 11 | DATA LNK-SUPPLR/ASMB | 0. | 0. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 50. | | 10 |
| | | 0. | 0. | 0. | 827. | 1464. | 1367. | 1275. | | | | 4932. | 99. | |
| | | 0. | 0. | 0. | 827. | 1464. | 1367. | 1275. | | | | 3699. | 74. | |
| 41 | AUTOMATED TNT 603A | 0. | 0. | 150. | 225. | 0. | 0. | 0. | 0. | 0. | 0. | 375. | | 2 |
| | | 0. | 0. | 0. | 0. | 349. | 635. | 577. | 525. | | | 2086. | 6. | |
| | | 0. | 0. | 0. | 0. | 349. | 635. | 577. | 525. | | | 1461. | 4. | |
| 94 | VAC LOCK CTNG A332 | 0. | 0. | 200. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 350. | | 2 |
| | | 0. | 0. | 0. | 305. | 522. | 504. | 485. | | | | 1815. | 5. | |
| | | 0. | 0. | 0. | 305. | 522. | 504. | 485. | | | | 1588. | 5. | |
| 31 | LOW COST CAPACT A503 | 0. | 0. | 100. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 7 |
| | | 0. | 0. | 0. | 0. | 168. | 305. | 277. | 252. | | | 1002. | 7. | |
| | | 0. | 0. | 0. | 0. | 168. | 305. | 277. | 252. | | | 801. | 5. | |
| | INVESTMENT TOTAL | 0. | 0. | 1640. | 1585. | 1150. | 0. | 0. | 0. | 0. | 0. | 4375. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 2029. | 7120. | 18895. | 33588. | 33352. | 26722. | 10974. | | 132678. | 30. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 1826. | 5687. | 15299. | 26739. | 26110. | 21479. | 8779. | | 105918. | 24. | |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

METHOD OF COST SAVING - 2 CAPITAL EXPENDITURE

PROJECT COST ($, THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | AUTO FAULT ISOLATION | 0. | 0. | 100. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 200. | | 11 |
| | | 0. | 0. | 0. | 5512. | 45042. | 9111. | 8498. | | | | 68162. | 341. | |
| | | 0. | 0. | 0. | 5512. | 45042. | 9111. | 8498. | | | | 51122. | 256. | |
| 59 | PCB OCR INSP. A266 | 0. | 0. | 200. | 300. | 300. | 0. | 0. | 0. | 0. | 0. | 800. | | 11 |
| | | 0. | 0. | 0. | 0. | 0. | 16731. | 15272. | 13491. | 11807. | | 57301. | 72. | |
| | | 0. | 0. | 0. | 0. | 0. | 16731. | 15272. | 13491. | 11807. | | 45841. | 57. | |
| 50 | AUTO WIRE SYS | 0. | 0. | 500. | 1000. | 1000. | 0. | 0. | 0. | 0. | 0. | 2500. | | 8 |
| | | 0. | 0. | 0. | 0. | 4191. | 7620. | 10392. | 9447. | | | 31650. | 13. | |
| | | 0. | 0. | 0. | 0. | 4191. | 7620. | 10392. | 9447. | | | 22155. | 9. | |
| 80 | QK REACTON CNG.CAP. | 0. | 0. | 500. | 600. | 1000. | 0. | 0. | 0. | 0. | 0. | 2100. | | 10 |
| | | 0. | 0. | 0. | 3658. | 4694. | 6046. | 5819. | | | | 20216. | 10. | |
| | | 0. | 0. | 0. | 3658. | 4694. | 6046. | 5819. | | | | 10108. | 5. | |
| 3 | GROUP TECH/PARTS CLS | 0. | 0. | 180. | 160. | 285. | 125. | 0. | 0. | 0. | 0. | 750. | | 10 |
| | | 0. | 0. | 0. | 0. | 1840. | 3543. | 6552. | 6007. | | | 17942. | 24. | |
| | | 0. | 0. | 0. | 0. | 1840. | 3543. | 6552. | 6007. | | | 8971. | 12. | |
| 24 | ION IMPLANTION DNA44 | 0. | 0. | 230. | 100. | 250. | 0. | 0. | 0. | 0. | 0. | 580. | | 3 |
| | | 0. | 0. | 0. | 0. | 1520. | 3239. | 2879. | 2617. | | | 10255. | 18. | |
| | | 0. | 0. | 0. | 0. | 1520. | 3239. | 2879. | 2617. | | | 7178. | 12. | |
| 51 | COMP SHOP INSTRUCT | 0. | 0. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 200. | | 10 |
| | | 0. | 0. | 0. | 2305. | 2096. | 1905. | 1732. | | | | 8038. | 40. | |
| | | 0. | 0. | 0. | 2305. | 2096. | 1905. | 1732. | | | | 5627. | 28. | |
| 13 | AUTO-HYB ASMBLY | 0. | 0. | 120. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 620. | | 6 |
| | | 0. | 0. | 0. | 1378. | 1830. | 2278. | 2125. | | | | 7610. | 12. | |
| | | 0. | 0. | 0. | 1378. | 1830. | 2278. | 2125. | | | | 3805. | 6. | |
| 21 | EL BM LSI CIR DNA415 | 0. | 0. | 250. | 150. | 200. | 0. | 0. | 0. | 0. | 0. | 600. | | 3 |
| | | 0. | 0. | 0. | 0. | 1188. | 2159. | 1963. | 1784. | | | 7094. | 12. | |
| | | 0. | 0. | 0. | 0. | 1188. | 2159. | 1963. | 1784. | | | 3547. | 6. | |
| 102 | OP.ASST.ASSMBL A805 | 0. | 0. | 70. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 70. | | 8 |
| | | 0. | 0. | 1014. | 1844. | 1677. | 1524. | | | | | 6059. | 87. | |
| | | 0. | 0. | 1014. | 1844. | 1677. | 1524. | | | | | 4544. | 65. | |
| 56 | AUTOCBLEHARNESS AS30 | 0. | 0. | 350. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 550. | | 1 |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 4173. | 8. | |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 3130. | 6. | |
| 9 | VAPOR SOLDERING | 0. | 0. | 60. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 110. | | 1 |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | 0. | | | 3630. | 33. | |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | 0. | | | 3267. | 30. | |
| 57 | N/C CBL HARNESS AR09 | 0. | 0. | 200. | 500. | 200. | 0. | 0. | 0. | 0. | 0. | 900. | | 1 |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 4173. | 5. | |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 3130. | 3. | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | 0. | 0. | 5130. | 8. | |
| 9 | VAPOR SOLDERING | 0. | 0. | 60. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 110. | | 1 |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 3630. | 33. | |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 3267. | 30. | |
| 57 | N/C CBL HARNESS A809 | 0. | 0. | 200. | 500. | 200. | 0. | 0. | 0. | 0. | 0. | 900. | | 1 |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 4173. | 5. | |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 3130. | 3. | |
| 45 | AUTO STD MACH PROCSS | 0. | 0. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 9 |
| | | 0. | 0. | 0. | 615. | 1118. | 1016. | 924. | | | | 3672. | 7. | |
| | | 0. | 0. | 0. | 615. | 1118. | 1016. | 924. | | | | 3305. | 7. | |
| 18 | INTERACTIVE TESTING | 0. | 0. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 50. | | 11 |
| | | 0. | 0. | 600. | 975. | 835. | 806. | | | | | 3216. | 64. | |
| | | 0. | 0. | 600. | 975. | 835. | 806. | | | | | 2251. | 45. | |
| 76 | CAD WIRE HRNSS-SFTWR | 0. | 0. | 120. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 120. | | 10 |
| | | 0. | 0. | 450. | 732. | 626. | 605. | | | | | 2412. | 20. | |
| | | 0. | 0. | 450. | 732. | 626. | 605. | | | | | 1809. | 15. | |
| 99 | LASR INSP HYBD CIR. | 0. | 0. | 150. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 300. | | 6 |
| | | 0. | 0. | 0. | 307. | 699. | 635. | 577. | | | | 2218. | 7. | |
| | | 0. | 0. | 0. | 307. | 699. | 635. | 577. | | | | 1950. | 7. | |
| 7 | GANG PROBE HYB TEST | 0. | 0. | 20. | 20. | 0. | 0. | 0. | 0. | 0. | 0. | 40. | | 6 |
| | | 0. | 0. | 0. | 268. | 459. | 443. | 427. | | | | 1597. | 40. | |
| | | 0. | 0. | 0. | 268. | 459. | 443. | 427. | | | | 1358. | 34. | |
| 94 | VAC LOCK CTNG A332 | 0. | 0. | 200. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 350. | | 2 |
| | | 0. | 0. | 0. | 305. | 522. | 504. | 485. | | | | 1815. | 5. | |
| | | 0. | 0. | 0. | 305. | 522. | 504. | 485. | | | | 1588. | 5. | |
| 46 | AUTOPCBCOMPINSERT | 0. | 0. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 50. | | 8 |
| | | 0. | 0. | 0. | 184. | 335. | 305. | 277. | | | | 1102. | 22. | |
| | | 0. | 0. | 0. | 184. | 335. | 305. | 277. | | | | 992. | 20. | |
| | INVESTMENT TOTAL | 0. | 0. | 3800. | 3980. | 3485. | 125. | 0. | 0. | 0. | 0. | 11390. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 2064. | 18693. | 71110. | 62016. | 61199. | 35446. | 11807. | | 262334. | 23. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 1518. | 12835. | 51116. | 43728. | 42326. | 24708. | 9446. | | 185675. | 16. | |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

METHOD OF COST SAVING - 3 MANUFACTURING METHOD

PROJECT COST ($, THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 59 | PCB OCR INSP. A266 | 0. | 0. | 200. | 300. | 300. | 0. | 0. | 0. | 0. | 0. | 800. | | 11 |
| | | 0. | 0. | 0. | 0. | 0. | 16731. | 15272. | 13491. | 11807. | | 57301. | 72. | |
| | | 0. | 0. | 0. | 0. | 0. | 16731. | 15272. | 13491. | 11807. | | 45841. | 57. | |
| 61 | TEST OPTN MODEL A213 | 0. | 0. | 150. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 350. | | 11 |
| | | 0. | 0. | 0. | 0. | 7861. | 16731. | 15272. | 13491. | | | 53355. | 152. | |
| | | 0. | 0. | 0. | 0. | 7861. | 16731. | 15272. | 13491. | | | 40016. | 114. | |
| 85 | FBR-OPT INT STR A311 | 0. | 0. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 1 |
| | | 0. | 0. | 0. | 7658. | 12667. | 14563. | 13317. | | | | 48205. | 96. | |
| | | 0. | 0. | 0. | 7658. | 12667. | 14563. | 13317. | | | | 24103. | 48. | |
| 52 | ELEC CONNECPLATEA502 | 0. | 0. | 150. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 350. | | 1 |
| | | 0. | 0. | 0. | 5750. | 9826. | 10457. | 9545. | | | | 35578. | 102. | |
| | | 0. | 0. | 0. | 5750. | 9826. | 10457. | 9545. | | | | 26683. | 76. | |
| 50 | AUTO WIRE SYS | 0. | 0. | 500. | 1000. | 1000. | 0. | 0. | 0. | 0. | 0. | 2500. | | 8 |
| | | 0. | 0. | 0. | 0. | 4191. | 7620. | 10392. | 9447. | | | 31650. | 13. | |
| | | 0. | 0. | 0. | 0. | 4191. | 7620. | 10392. | 9447. | | | 22155. | 9. | |
| 87 | PLAS HV CABS A773 | 0. | 0. | 150. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 300. | | 1 |
| | | 0. | 0. | 0. | 3842. | 6985. | 6350. | 5773. | | | | 22951. | 77. | |
| | | 0. | 0. | 0. | 3842. | 6985. | 6350. | 5773. | | | | 20656. | 69. | |
| 23 | THINSILAYRTEC DNA566 | 0. | 0. | 550. | 400. | 150. | 0. | 0. | 0. | 0. | 0. | 1100. | | 3 |
| | | 0. | 0. | 0. | 0. | 2945. | 6477. | 5810. | 5282. | | | 20514. | 19. | |
| | | 0. | 0. | 0. | 0. | 2945. | 6477. | 5810. | 5282. | | | 14065. | 13. | |
| 101 | CL.CR.CL.PCB A847 | 0. | 0. | 95. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 95. | | 4 |
| | | 0. | 0. | 3570. | 5410. | 4620. | 5080. | | | | | 18680. | 197. | |
| | | 0. | 0. | 3570. | 5410. | 4620. | 5080. | | | | | 16098. | 169. | |
| 86 | GLUE AV-CHASIS A802 | 0. | 0. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 1 |
| | | 0. | 0. | 2029. | 4610. | 3726. | 4763. | | | | | 15127. | 151. | |
| | | 0. | 0. | 2029. | 4610. | 3726. | 4763. | | | | | 13615. | 136. | |
| 43 | LSHYBRID ASSY A116A | 0. | 0. | 150. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 300. | | 6 |
| | | 0. | 0. | 0. | 0. | 2096. | 6350. | 3464. | 3149. | | | 15059. | 50. | |
| | | 0. | 0. | 0. | 0. | 2096. | 6350. | 3464. | 3149. | | | 10541. | 35. | |
| 54 | WATERSOLFLUXSOL A862 | 0. | 0. | 300. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 450. | | 4 |
| | | 0. | 0. | 0. | 0. | 1887. | 4015. | 3665. | 3238. | | | 12805. | 28. | |
| | | 0. | 0. | 0. | 0. | 1887. | 4015. | 3665. | 3238. | | | 10601. | 24. | |
| 65 | RIBBON SAPPHIRE | 0. | 0. | 250. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 750. | | 3 |
| | | 0. | 0. | 0. | 0. | 0. | 2159. | 3926. | 3569. | 3244. | | 12898. | 17. | |
| | | 0. | 0. | 0. | 0. | 0. | 2159. | 3926. | 3569. | 3244. | | 6449. | 9. | |
| 70 | LASER WELDING CABINT | 0. | 0. | 300. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 1 |
| | | 0. | 0. | 0. | 0. | 2445. | 3175. | 2887. | 2624. | | | 11131. | 22. | |
| | | 0. | 0. | 0. | 0. | 2445. | 3175. | 2887. | 2624. | | | 7792. | 16. | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0. | 0. | 0. | 0. | 1887. | 4015. | 3663. | 3238. | 0. | 0. | 10601. | 24. | |
| 65 | RIBBON SAPPHIRE | 0. | 0. | 250. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 750. | | 3 |
| | | 0. | 0. | 0. | 0. | 0. | 2159. | 3926. | 3569. | 3244. | | 12898. | 17. | |
| | | 0. | 0. | 0. | 0. | 0. | 2159. | 3926. | 3569. | 3244. | | 6449. | 9. | |
| 70 | LASER WELDING CABINT | 0. | 0. | 300. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 1 |
| | | 0. | 0. | 0. | 0. | 2445. | 3175. | 2887. | 2624. | | | 11131. | 22. | |
| | | 0. | 0. | 0. | 0. | 2445. | 3175. | 2887. | 2624. | | | 7792. | 16. | |
| 30 | SUB AU PN PLATE A501 | 0. | 0. | 100. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 1 |
| | | 0. | 0. | 0. | 0. | 1746. | 3175. | 2887. | 2624. | | | 10432. | 70. | |
| | | 0. | 0. | 0. | 0. | 1746. | 3175. | 2887. | 2624. | | | 7824. | 52. | |
| 53 | MECH FLEXRG PCB A840 | 0. | 0. | 100. | 200. | 250. | 0. | 0. | 0. | 0. | 0. | 550. | | 4 |
| | | 0. | 0. | 0. | 0. | 0. | 2540. | 2734. | 2486. | 2107. | | 9867. | 18. | |
| | | 0. | 0. | 0. | 0. | 0. | 2540. | 2734. | 2486. | 2107. | | 6907. | 13. | |
| 35 | ULTRATHIN MICROC A72 | 0. | 0. | 220. | 160. | 0. | 0. | 0. | 0. | 0. | 0. | 380. | | 3 |
| | | 0. | 0. | 0. | 0. | 1336. | 2844. | 2596. | 2294. | 0. | | 9070. | 24. | |
| | | 0. | 0. | 0. | 0. | 1336. | 2844. | 2596. | 2294. | 0. | | 3628. | 10. | |
| 16 | HYBRD LAS BND DNA579 | 0. | 0. | 250. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 400. | | 6 |
| | | 0. | 0. | 0. | 1380. | 2358. | 2510. | 2291. | | | | 8539. | 21. | |
| | | 0. | 0. | 0. | 1380. | 2358. | 2510. | 2291. | | | | 4269. | 11. | |
| 17 | IONRESISTTRIM DNA577 | 0. | 0. | 250. | 180. | 0. | 0. | 0. | 0. | 0. | 0. | 430. | | 6 |
| | | 0. | 0. | 0. | 1380. | 2358. | 2510. | 2291. | | | | 8539. | 20. | |
| | | 0. | 0. | 0. | 1380. | 2358. | 2510. | 2291. | | | | 6404. | 15. | |
| 98 | CMOS/SOS MANU A125B | 0. | 0. | 300. | 300. | 0. | 0. | 0. | 0. | 0. | 0. | 600. | | 3 |
| | | 0. | 0. | 0. | 1568. | 2375. | 2159. | 1963. | | | | 8064. | 13. | |
| | | 0. | 0. | 0. | 1568. | 2375. | 2159. | 1963. | | | | 6048. | 10. | |
| 5 | PCB SMEAR FREE HOLES | 0. | 0. | 90. | 60. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 4 |
| | | 0. | 0. | 0. | 975. | 1669. | 1612. | 1552. | | | | 5808. | 39. | |
| | | 0. | 0. | 0. | 975. | 1669. | 1612. | 1552. | | | | 3485. | 23. | |
| 77 | AV.NC MACH CONTROL | 0. | 0. | 200. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 400. | | 9 |
| | | 0. | 0. | 0. | 975. | 1669. | 1612. | 1552. | | | | 5808. | 15. | |
| | | 0. | 0. | 0. | 975. | 1669. | 1612. | 1552. | | | | 4356. | 11. | |
| 69 | PLASTIC MICROWV COMP | 0. | 0. | 140. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 140. | | 2 |
| | | 0. | 0. | 0. | 914. | 1565. | 1511. | 1455. | | | | 5445. | 39. | |
| | | 0. | 0. | 0. | 914. | 1565. | 1511. | 1455. | | | | 4901. | 35. | |
| 26 | PCB ELCHEM ETCH A832 | 0. | 0. | 96. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 96. | | 4 |
| | | 0. | 0. | 0. | 1472. | 1258. | 1339. | 1222. | | | | 5290. | 55. | |
| | | 0. | 0. | 0. | 1472. | 1258. | 1339. | 1222. | | | | 3968. | 41. | |
| 36 | LIGHTWT RF STRIPLINE | 0. | 0. | 120. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 120. | | 1 |
| | | 0. | 0. | 845. | 1537. | 1397. | 1270. | | | | | 5049. | 42. | |
| | | 0. | 0. | 845. | 1537. | 1397. | 1270. | | | | | 3787. | 32. | |
| 79 | SLK SCRN PRNTNG PCBS | 0. | 0. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 4 |
| | | 0. | 0. | 811. | 1475. | 1341. | 1219. | | | | | 4847. | 32. | |
| | | 0. | 0. | 811. | 1475. | 1341. | 1219. | | | | | 3635. | 24. | |
| 55 | SMEARFREEPCB A836 | 0. | 0. | 150. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 250. | | 4 |
| | | 0. | 0. | 0. | 738. | 1341. | 1219. | 1108. | | | | 4407. | 18. | |
| | | 0. | 0. | 0. | 738. | 1341. | 1219. | 1108. | | | | 3305. | 13. | |
| 56 | AUTOCBLEHARNESS A830 | 0. | 0. | 350. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 550. | | 1 |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 4173. | 8. | |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 3130. | 6. | |
| 68 | HYBRID SEAL RINGS | 0. | 0. | 70. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 70. | | 6 |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 3630. | 52. | |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 2904. | 41. | |
| 9 | VAPOR SOLDERING | 0. | 0. | 60. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 110. | | 1 |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 3630. | 33. | |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 3267. | 30. | |
| 1 | PCB METAL CORE | 0. | 0. | 85. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 185. | | 4 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | VAPOR SOLDERING | 0. | 0. | 60. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 110. | | 4 | |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 3630. | 33. | | |
| | | 0. | 0. | 0. | 610. | 1043. | 1008. | 970. | | | | 3267. | 30. | | |
| 1 | PCB METAL CORE | 0. | 0. | 85. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 185. | | 4 | |
| | | 0. | 0. | 0. | 585. | 1001. | 967. | 931. | | | | 3485. | 19. | | |
| | | 0. | 0. | 0. | 585. | 1001. | 967. | 931. | | | | 2091. | 11. | | |
| 57 | N/C CBL HARNESS A809 | 0. | 0. | 200. | 500. | 200. | 0. | 0. | 0. | 0. | 0. | 900. | | 1 | |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 4173. | 5. | | |
| | | 0. | 0. | 0. | 0. | 699. | 1270. | 1155. | 1050. | | | 3130. | 3. | | |
| 27 | PCB DRILLING A833 | 0. | 0. | 80. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 80. | | 4 | |
| | | 0. | 0. | 510. | 882. | 781. | 729. | | | | | 2902. | 36. | | |
| | | 0. | 0. | 510. | 882. | 781. | 729. | | | | | 1741. | 22. | | |
| 67 | N/C CALIBRATION | 0. | 0. | 30. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 30. | | 10 | |
| | | 0. | 0. | 0. | 732. | 626. | 605. | 582. | | | | 2544. | 85. | | |
| | | 0. | 0. | 0. | 732. | 626. | 605. | 582. | | | | 2035. | 68. | | |
| 6 | PCB COMPUTER PLATING | 0. | 0. | 70. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 70. | | 4 | |
| | | 0. | 0. | 0. | 390. | 668. | 645. | 621. | | | | 2323. | 33. | | |
| | | 0. | 0. | 0. | 390. | 668. | 645. | 621. | | | | 1394. | 20. | | |
| 47 | FLATWIREINERCONNECT | 0. | 0. | 75. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 75. | | 1 | |
| | | 0. | 0. | 0. | 384. | 699. | 635. | 577. | | | | 2295. | 31. | | |
| | | 0. | 0. | 0. | 384. | 699. | 635. | 577. | | | | 1721. | 23. | | |
| 40 | POLYIMIDE MLB A743 | 0. | 0. | 200. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 250. | | 4 | |
| | | 0. | 0. | 0. | 390. | 668. | 645. | 621. | | | | 2323. | 9. | | |
| | | 0. | 0. | 0. | 390. | 668. | 645. | 621. | | | | 1743. | 7. | | |
| 103 | JNK JET WIR MK ASS2 | 0. | 0. | 400. | 400. | 200. | 0. | 0. | 0. | 0. | 0. | 1000. | | 1 | |
| | | 0. | 0. | 0. | 0. | 373. | 953. | 847. | 770. | | | 2942. | 3. | | |
| | | 0. | 0. | 0. | 0. | 373. | 953. | 847. | 770. | | | 2206. | 2. | | |
| 62 | IMPROVDANALOGCIRA251 | 0. | 0. | 60. | 40. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 11 | |
| | | 0. | 0. | 0. | 307. | 559. | 508. | 462. | 0. | | | 1836. | 18. | | |
| | | 0. | 0. | 0. | 307. | 559. | 508. | 462. | 0. | | | 1102. | 11. | | |
| 64 | AUTO PCB TST EQ A265 | 0. | 0. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 150. | | 11 | |
| | | 0. | 0. | 0. | 307. | 559. | 508. | 462. | | | | 1836. | 12. | | |
| | | 0. | 0. | 0. | 307. | 559. | 508. | 462. | | | | 918. | 6. | | |
| 20 | RF PACKG TECH DNE027 | 0. | 0. | 95. | 45. | 0. | 0. | 0. | 0. | 0. | 0. | 140. | | 1 | |
| | | 0. | 0. | 0. | 307. | 489. | 445. | 404. | | | | 1645. | 12. | | |
| | | 0. | 0. | 0. | 307. | 489. | 445. | 404. | | | | 1152. | 8. | | |
| 19 | HYBRID LID DEV DNA2 | 0. | 0. | 55. | 85. | 55. | 0. | 0. | 0. | 0. | 0. | 195. | | 6 | |
| | | 0. | 0. | 0. | 0. | 231. | 476. | 427. | 388. | | | 1523. | 8. | | |
| | | 0. | 0. | 0. | 0. | 231. | 476. | 427. | 388. | | | 761. | 4. | | |
| 88 | III V CMPND CRYST GR | 0. | 0. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 3 | |
| | | 0. | 0. | 0. | 261. | 475. | 432. | 393. | | | | 1561. | 3. | | |
| | | 0. | 0. | 0. | 261. | 475. | 432. | 393. | | | | 780. | 2. | | |
| 100 | MONLTH CERAMIC CAP. | 0. | 0. | 80. | 190. | 0. | 0. | 0. | 0. | 0. | 0. | 270. | | 7 | |
| | | 0. | 0. | 0. | 246. | 335. | 305. | 277. | | | | 1163. | 4. | | |
| | | 0. | 0. | 0. | 246. | 335. | 305. | 277. | | | | 1010. | 4. | | |
| 2 | PCB CONFORM COATING | 0. | 0. | 115. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 215. | | 4 | |
| | | 0. | 0. | 0. | 0. | 167. | 322. | 310. | 251. | | | 1051. | 5. | | |
| | | 0. | 0. | 0. | 0. | 167. | 322. | 310. | 251. | | | 824. | 4. | | |
| 22 | EBS DEVICES DNE042 | 0. | 0. | 280. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 280. | | 5 | |
| | | 0. | 0. | 271. | 246. | 224. | 203. | | | | | 943. | 3. | | |
| | | 0. | 0. | 271. | 246. | 224. | 203. | | | | | 283. | 1. | | |
| 34 | POLY-SIL COAT A630B | 0. | 0. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 5 | |
| | | 0. | 0. | 0. | 123. | 224. | 203. | 185. | | | | 734. | 7. | | |
| | | 0. | 0. | 0. | 123. | 224. | 203. | 185. | | | | 441. | 4. | | |
| 82 | HIERARCH.CONTROL | 0. | 0. | 50. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 8 | |
| | | 0. | 0. | 0. | 92. | 168. | 152. | 139. | | | | 551. | 6. | | |
| | | 0. | 0. | 0. | 92. | 168. | 152. | 139. | | | | 496. | 5. | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0. | 0. | 0. | 0. | 107. | 322. | 310. | 251. | 0. | 0. | 0. | 0. | |
| 22 | EBS DEVICES DNE042 | 0. | 0. | 280. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 280. | | 5 |
| | | 0. | 0. | 271. | 246. | 224. | 203. | | | | | 943. | 3. | |
| | | 0. | 0. | 271. | 246. | 224. | 203. | | | | | 283. | 1. | |
| 34 | POLY-SIL COAT A630B | 0. | 0. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 5 |
| | | 0. | 0. | 0. | 123. | 224. | 203. | 185. | | | | 734. | 7. | |
| | | 0. | 0. | 0. | 123. | 224. | 203. | 185. | | | | 441. | 4. | |
| 82 | HIERARCH.CONTROL | 0. | 0. | 50. | 50. | 0. | 0. | 0. | 0. | 0. | 0. | 100. | | 8 |
| | | 0. | 0. | 0. | 92. | 168. | 152. | 139. | | | | 551. | 6. | |
| | | 0. | 0. | 0. | 92. | 168. | 152. | 139. | | | | 496. | 5. | |
| 33 | GAAS FET A621B | 0. | 0. | 250. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 500. | | 5 |
| | | 0. | 0. | 0. | 0. | 224. | 203. | 185. | 168. | | | 779. | 2. | |
| | | 0. | 0. | 0. | 0. | 224. | 203. | 185. | 168. | | | 546. | 1. | |
| 71 | PROJECTION LITH SAW | 0. | 0. | 60. | 60. | 0. | 0. | 0. | 0. | 0. | 0. | 120. | | 5 |
| | | 0. | 0. | 0. | 30. | 48. | 61. | 54. | 0. | | | 192. | 2. | |
| | | 0. | 0. | 0. | 30. | 48. | 61. | 54. | 0. | | | 145. | 1. | |
| 37 | MICROCHANNEL PL A324 | 0. | 0. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 250. | | 2 |
| | | 0. | 0. | 0. | 77. | 70. | 64. | 58. | | | | 268. | 1. | |
| | | 0. | 0. | 0. | 77. | 70. | 64. | 58. | | | | 188. | 1. | |
| 39 | MNOS MEMORY A129B | 0. | 0. | 200. | 200. | 0. | 0. | 0. | 0. | 0. | 0. | 400. | | 3 |
| | | 0. | 0. | 0. | 0. | 48. | 130. | 118. | 107. | | | 402. | 1. | |
| | | 0. | 0. | 0. | 0. | 48. | 130. | 118. | 107. | | | 322. | 1. | |
| 83 | TACTILE SENSORS | 0. | 0. | 150. | 200. | 200. | 0. | 0. | 0. | 0. | 0. | 550. | | 8 |
| | | 0. | 0. | 0. | 0. | 84. | 152. | 139. | 126. | | | 501. | 1. | |
| | | 0. | 0. | 0. | 0. | 84. | 152. | 139. | 126. | | | 250. | 0. | |
| 95 | AUTO PHOTO CATHA322 | 0. | 0. | 200. | 150. | 0. | 0. | 0. | 0. | 0. | 0. | 350. | | 2 |
| | | 0. | 0. | 0. | 77. | 70. | 64. | 58. | | | | 268. | 1. | |
| | | 0. | 0. | 0. | 77. | 70. | 64. | 58. | | | | 230. | 1. | |
| 18 | SAW REPLICATN DNA508 | 0. | 0. | 250. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 250. | | 7 |
| | | 0. | 0. | 0. | 12. | 22. | 20. | 19. | | | | 73. | 0. | |
| | | 0. | 0. | 0. | 12. | 22. | 20. | 19. | | | | 37. | 0. | |
| 38 | GA-AS ICSMICROWA121B | 0. | 0. | 500. | 500. | 0. | 0. | 0. | 0. | 0. | 0. | 1000. | | 5 |
| | | 0. | 0. | 0. | 0. | 224. | 203. | 185. | 168. | | | 779. | 1. | |
| | | 0. | 0. | 0. | 0. | 224. | 203. | 185. | 168. | | | 624. | 1. | |
| 90 | EP YIG FILT A508 | 0. | 0. | 250. | 350. | 0. | 0. | 0. | 0. | 0. | 0. | 600. | | 7 |
| | | 0. | 0. | 0. | 62. | 112. | 102. | 92. | | | | 367. | 1. | |
| | | 0. | 0. | 0. | 62. | 112. | 102. | 92. | | | | 184. | 0. | |
| 89 | GAAS FET YL IM A618B | 0. | 0. | 650. | 650. | 0. | 0. | 0. | 0. | 0 | 0. | 1300. | | 5 |
| | | 0. | 0. | 0. | 246. | 224. | 203. | 185. | | | | 857. | 1. | |
| | | 0. | 0. | 0. | 246. | 224. | 203. | 185. | | | | 429. | 0. | |
| | INVESTMENT TOTAL | 0. | 0. | 10926. | 9070. | 2605. | 0. | 0. | 0. | 0. | 0. | 22601. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 8036. | 46660. | 92512. | 144484. | 123546. | 65771. | 17158. | | 498168. | 22. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 5955. | 34275. | 65754. | 104190. | 87122. | 47372. | 12543. | | 357211. | 16. | |

METHOD OF COST SAVING - 4 INSTITUTIONAL

PROJECT COST ($, THOUSANDS)
ANTICIPATED SAVINGS ($,THOUSANDS) - UPPER BOUND
LOWER BOUND

(ALL FIGURES IN FY 78 DOLLARS)

| PROJ NO. | PROJECT TITLE | FY 78 | FY 79 | FY 80 | FY 81 | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | TOTAL | S/I | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | SOLDER SPC.1PLACE | 0. | 0. | 350. | 350. | 0. | 0. | 0. | 0. | 0. | 0. | 700. | | 8 |
| | | 0. | 0. | 0. | 3356. | 4417. | 5668. | 5242. | | | | 18682. | 27. | |
| | | 0. | 0. | 0. | 3356. | 4417. | 5668. | 5242. | | | | 14809. | 21. | |
| 72 | TECH SH.COURSE | 0. | 0. | 600. | 1000. | 0. | 0. | 0. | 0. | 0. | 0. | 1600. | | 8 |
| | | 0. | 0. | 0. | 1463. | 1878. | 1814. | 1746. | | | | 6900. | 4. | |
| | | 0. | 0. | 0. | 1463. | 1878. | 1814. | 1746. | | | | 3450. | 2. | |
| 63 | MOS RAD HRD TST A231 | 0. | 0. | 200. | 100. | 0. | 0. | 0. | 0. | 0. | 0. | 300. | | 3 |
| | | 0. | 0. | 0. | 523. | 950. | 864. | 785. | | | | 3121. | 10. | |
| | | 0. | 0. | 0. | 523. | 950. | 864. | 785. | | | | 2653. | 9. | |
| 8 | REWORK STD HYB CIR | 0. | 0. | 200. | 200. | 200. | 0. | 0. | 0. | 0. | 0. | 600. | | 6 |
| | | 0. | 0. | 0. | 610. | 782. | 1008. | 970. | | | | 3369. | 6. | |
| | | 0. | 0. | 0. | 610. | 782. | 1008. | 970. | | | | 2527. | 4. | |
| 81 | STD.AUTOM.INTERFACES | 0. | 0. | 50. | 50. | 50. | 0. | 0. | 0. | 0. | 0. | 150. | | 8 |
| | | 0. | 0. | 0. | 461. | 838. | 762. | 693. | | | | 2754. | 18. | |
| | | 0. | 0. | 0. | 461. | 838. | 762. | 693. | | | | 2479. | 17. | |
| | INVESTMENT TOTAL | 0. | 0. | 1400. | 1700. | 2504 | 0. | 0. | 0. | 0. | 0. | 3350. | | |
| | SAVINGS TOTAL(U) | 0. | 0. | 0. | 6412. | 8865. | 10115. | 9435. | | | | 34827. | 10. | |
| | SAVINGS TOTAL(L) | 0. | 0. | 0. | 3726. | 6400. | 8184. | 7608 | | | | 25918. | 8. | |

TABLE 4

# Table 4

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 1 PCB METAL CORE System Acquisition Cost Due to MT Program

| AFFECTED NAVY WEAPON SYSTEM | YEAR | ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| HARPOON | 1 | 141700.0 | 0.0 | 0.0 |
| | 2 | 162000.0 | 0.0 | 0.0 |
| | 3 | 156200.0 | 0.0 | 0.0 |
| | 4 | 156300.0 | 46.0 | 13.4 |
| | 5 | 156400.0 | 80.5 | 32.2 |
| | 6 | 41700.0 | 18.8 | 7.5 |
| | 7 | 43400.0 | 17.1 | 6.8 |
| | 8 | 45100.0 | | |
| | 9 | 46900.0 | | |
| | 10 | 48800.0 | | |
| | TOTAL | 998500.0 | 162.3 | 64.9 |
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 41.5 | 31.2 |
| | 5 | 144400.0 | 74.3 | 55.7 |
| | 6 | 100100.0 | 45.0 | 33.8 |
| | 7 | 104100.0 | 40.9 | 30.7 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 201.8 | 151.3 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 27.6 | 20.7 |
| | 5 | 98700.0 | 50.8 | 38.1 |
| | 6 | 100500.0 | 45.2 | 33.9 |
| | 7 | 105200.0 | 41.4 | 31.0 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 165.0 | 123.7 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 24.2 | 18.1 |
| | 5 | 84100.0 | 43.3 | 32.4 |
| | 6 | 32700.0 | 14.7 | 11.0 |
| | 7 | 34500.0 | 13.6 | 10.2 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 24.2 | 18.1 |
| | 5 | 84100.0 | 43.3 | 32.4 |
| | 6 | 32700.0 | 14.7 | 11.0 |
| | 7 | 34500.0 | 13.6 | 10.2 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 95.7 | 71.8 |
| HARM | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 30300.0 | 0.0 | 0.0 |
| | 3 | 52800.0 | 0.0 | 0.0 |
| | 4 | 75100.0 | 22.1 | 8.8 |
| | 5 | 123800.0 | 63.7 | 25.5 |
| | 6 | 30500.0 | 13.7 | 5.5 |
| | 7 | 31800.0 | 12.5 | 5.0 |
| | 8 | 32900.0 | | |
| | 9 | 34300.0 | | |
| | 10 | 35600.0 | | |
| | TOTAL | 447100.0 | 112.0 | 44.8 |
| TOMAHAWK SLCM | 1 | 8300.0 | 0.0 | 0.0 |
| | 2 | 165600.0 | 0.0 | 0.0 |
| | 3 | 222800.0 | 0.0 | 0.0 |
| | 4 | 217300.0 | 63.9 | 48.0 |
| | 5 | 221000.0 | 113.7 | 85.3 |
| | 6 | 190550.0 | 85.7 | 64.3 |
| | 7 | 190640.0 | 74.9 | 56.2 |
| | 8 | 190580.0 | | |
| | 9 | 80820.0 | | |
| | 10 | 2140.0 | | |
| | TOTAL | 1489730.0 | 338.3 | 253.7 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | MT PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PCB METAL CORE | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 85.0 | -85.0 | -85.0 |
| | 4 | 100.0 | 125.4 | 45.2 |
| | 5 | 0.0 | 426.2 | 269.2 |
| | 6 | 0.0 | 223.1 | 155.9 |
| | 7 | 0.0 | 200.3 | 139.9 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 185.0 | 890.0 | 525.2 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT = 2 PCB CONFORM COATING

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| HARPOON | 1 | 141700.0 | 0.0 | 0.0 |
| | 2 | 162000.0 | 0.0 | 0.0 |
| | 3 | 156200.0 | 0.0 | 0.0 |
| | 4 | 156300.0 | 0.0 | 0.0 |
| | 5 | 156400.0 | 8.0 | 5.6 |
| | 6 | 41700.0 | 3.1 | 2.5 |
| | 7 | 43400.0 | 2.8 | 2.3 |
| | 8 | 45100.0 | 2.6 | 2.1 |
| | 9 | 46900.0 | | |
| | 10 | 48800.0 | | |
| | TOTAL | 998500.0 | 16.6 | 12.5 |
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 2.8 | 1.9 |
| | 5 | 144400.0 | 5.0 | 4.0 |
| | 6 | 100100.0 | 3.0 | 2.4 |
| | 7 | 104100.0 | 2.7 | 2.2 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 13.5 | 10.5 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 16.6 | 11.6 |
| | 5 | 98700.0 | 28.8 | 23.0 |
| | 6 | 100500.0 | 25.6 | 20.5 |
| | 7 | 105200.0 | 23.4 | 18.7 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 94.4 | 73.9 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 17.7 | 12.4 |
| | 5 | 84100.0 | 31.7 | 25.4 |
| | 6 | 32700.0 | 10.8 | 8.6 |
| | 7 | 34500.0 | 9.9 | 8.0 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 17.. | 12.4 |
| | 5 | 84100.0 | 31.7 | 25.4 |
| | 6 | 32700.0 | 10.8 | 8.6 |
| | 7 | 34500.0 | 9.9 | 8.0 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 70.2 | 54.4 |
| HARM | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 30300.0 | 0.0 | 0.0 |
| | 3 | 52800.0 | 0.0 | 0.0 |
| | 4 | 75100.0 | 0.0 | 0.0 |
| | 5 | 123800.0 | 4.2 | 3.0 |
| | 6 | 30500.0 | 1.8 | 1.5 |
| | 7 | 31800.0 | 1.7 | 1.3 |
| | 8 | 32900.0 | 1.5 | 1.2 |
| | 9 | 34300.0 | | |
| | 10 | 35600.0 | | |
| | TOTAL | 447100.0 | 9.2 | 7.0 |
| TOMAHAWK SLCM | 1 | 8300.0 | 0.0 | 0.0 |
| | 2 | 165600.0 | 0.0 | 0.0 |
| | 3 | 222800.0 | 0.0 | 0.0 |
| | 4 | 217300.0 | 0.0 | 0.0 |
| | 5 | 221000.0 | 3.8 | 2.7 |
| | 6 | 190550.0 | 5.7 | 4.6 |
| | 7 | 190640.0 | 5.0 | 4.0 |
| | 8 | 190580.0 | 4.4 | 3.5 |
| | 9 | 80820.0 | | |
| | 10 | 2140.0 | | |
| | TOTAL | 1489730.0 | 18.9 | 14.7 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PCB CONFORM COATING | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 115.0 | -115.0 | -115.0 |
| | 4 | 100.0 | -62.9 | -74.0 |
| | 5 | 0.0 | 81.5 | 63.6 |
| | 6 | 0.0 | 50.1 | 40.0 |
| | 7 | 0.0 | 45.6 | 36.5 |
| | 8 | 0.0 | 8.5 | 6.8 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 215.0 | 7.7 | -42.1 |

MANUFACTURING TECHNOLOGY STUDY 08/07/77

PROJECT - 5 PCB SMEAR FREE HOLES

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| HARPOON | 1 | 141700.0 | 0.0 | 0.0 |
| | 2 | 162000.0 | 0.0 | 0.0 |
| | 3 | 156200.0 | 0.0 | 0.0 |
| | 4 | 156300.0 | 0.0 | 0.0 |
| | 5 | 156400.0 | 67.0 | 40.2 |
| | 6 | 41700.0 | 31.3 | 18.8 |
| | 7 | 43400.0 | 28.4 | 17.1 |
| | 8 | 45100.0 | 25.8 | 15.5 |
| | 9 | 46900.0 | | |
| | 10 | 48800.0 | | |
| | TOTAL | 998500.0 | 152.6 | 91.5 |
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 69.2 | 41.5 |
| | 5 | 144400.0 | 123.8 | 74.3 |
| | 6 | 100100.0 | 75.0 | 45.0 |
| | 7 | 104100.0 | 68.2 | 40.9 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 336.3 | 201.8 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 46.1 | 27.6 |
| | 5 | 98700.0 | 84.6 | 50.8 |
| | 6 | 100500.0 | 75.3 | 45.2 |
| | 7 | 105200.0 | 68.9 | 41.4 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 274.9 | 165.0 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 40.3 | 24.2 |
| | 5 | 84100.0 | 72.1 | 43.3 |
| | 6 | 32700.0 | 24.5 | 14.7 |
| | 7 | 34500.0 | 22.6 | 13.6 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0. | 0.0 |
| | 4 | 82200.0 | 40.3 | 24.2 |
| | 5 | 84100.0 | 72.1 | 43.3 |
| | 6 | 32700.0 | 24.5 | 14.7 |
| | 7 | 34500.0 | 22.6 | 13.6 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 159.5 | 95.7 |
| HARM | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 30300.0 | 0.0 | 0.0 |
| | 3 | 52800.0 | 0.0 | 0.0 |
| | 4 | 75100.0 | 0.0 | 0.0 |
| | 5 | 123800.0 | 53.1 | 31.8 |
| | 6 | 30500.0 | 22.9 | 13.7 |
| | 7 | 31800.0 | 20.8 | 12.5 |
| | 8 | 32900.0 | 18.8 | 11.3 |
| | 9 | 34300.0 | | |
| | 10 | 35600.0 | | |
| | TOTAL | 447100.0 | 115.6 | 69.4 |
| TOMAHAWK SLCM | 1 | 8300.0 | 0.0 | 0.0 |
| | 2 | 165600.0 | 0.0 | 0.0 |
| | 3 | 222800.0 | 0.0 | 0.0 |
| | 4 | 217300.0 | 106.6 | 63.9 |
| | 5 | 221000.0 | 189.5 | 113.7 |
| | 6 | 190550.0 | 142.8 | 85.7 |
| | 7 | 190640.0 | 124.9 | 74.9 |
| | 8 | 190580.0 | | |
| | 9 | 80820.0 | | |
| | 10 | 2140.0 | | |
| | TOTAL | 1489730.0 | 563.8 | 338.3 |
| MK15 PHALANX CIWS | 1 | 67200.0 | 0.0 | 0.0 |
| | 2 | 93800.0 | 0.0 | 0.0 |
| | 3 | 85500.0 | 0.0 | 0.0 |
| | 4 | 89600.0 | 52.3 | 31.4 |
| | 5 | 107000.0 | 109.2 | 65.5 |
| | 6 | 111280.0 | 99.3 | 59.6 |
| | 7 | 95310.0 | 74.3 | 44.6 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 649690.0 | 335.1 | 201.1 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PCB SMEAR FREE HOLES | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 90.0 | -90.0 | -90.0 |
| | 4 | 60.0 | 254.5 | 128.7 |
| | 5 | [illegible] | 699.4 | 419.6 |
| | 6 | | 471.1 | 282.6 |
| | 7 | | 408.2 | 244.9 |
| | 8 | 0.0 | 44.7 | 26.8 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

| | | | |
|---|---|---|---|
| 3 | 90.0 | -90 | -90.0 |
| 4 | 60.0 | 254.5 | 128.7 |
| 5 | | 699.4 | 419.6 |
| 6 | | 471.1 | 282.6 |
| 7 | | 408.2 | 244.9 |
| 8 | | 44.7 | 26.8 |
| 9 | | | |
| 10 | | | |
| TOTAL | 150.0 | 1787.8 | 1012.7 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 6 PCB COMPUTER PLATING

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| HARPOON | 1 | 141700.0 | 0.0 | 0.0 |
| | 2 | 162000.0 | 0.0 | 0.0 |
| | 3 | 156200.0 | 0.0 | 0.0 |
| | 4 | 156300.0 | 30.7 | 18.4 |
| | 5 | 156400.0 | 53.6 | 32.2 |
| | 6 | 41700.0 | 12.5 | 7.5 |
| | 7 | 43400.0 | 11.4 | 6.8 |
| | 8 | 45100.0 | | |
| | 9 | 46900.0 | | |
| | 10 | 48800.0 | | |
| | TOTAL | 998500.0 | 108.2 | 64.9 |
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 27.7 | 16.6 |
| | 5 | 144400.0 | 49.5 | 29.7 |
| | 6 | 100100.0 | 30.0 | 18.0 |
| | 7 | 104100.0 | 27.3 | 16.4 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 134.5 | 80.7 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 18.4 | 11.1 |
| | 5 | 98700.0 | 33.8 | 20.3 |
| | 6 | 100500.0 | 30.1 | 18.1 |
| | 7 | 105200.0 | 27.6 | 16.5 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 110.0 | 66.0 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 16.1 | 9.7 |
| | 5 | 84100.0 | 28.8 | 17.3 |
| | 6 | 32700.0 | 9.8 | 5.9 |
| | 7 | 34500.0 | 9.0 | 5.4 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 88400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0. | 0.0 |
| | 4 | 82200.0 | 16.1 | 9.7 |
| | 5 | 84100.0 | 28.8 | 17.3 |
| | 6 | 32700.0 | 9.8 | 5.9 |
| | 7 | 34500.0 | 9.0 | 5.4 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 63.8 | 38.3 |
| HARM | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 30300.0 | 0.0 | 0.0 |
| | 3 | 52800.0 | 0.0 | 0.0 |
| | 4 | 75100.0 | 14.7 | 8.8 |
| | 5 | 123800.0 | 42.5 | 25.5 |
| | 6 | 30500.0 | 9.1 | 5.5 |
| | 7 | 31800.0 | 8.3 | 5.0 |
| | 8 | 32900.0 | | |
| | 9 | 34300.0 | | |
| | 10 | 35600.0 | | |
| | TOTAL | 447100.0 | 74.7 | 44.8 |
| TOMAHAWK SLCM | 1 | 8300.0 | 0.0 | 0.0 |
| | 2 | 165600.0 | 0.0 | 0.0 |
| | 3 | 222800.0 | 0.0 | 0.0 |
| | 4 | 217300.0 | 42.6 | 25.6 |
| | 5 | 221000.0 | 75.8 | 45.5 |
| | 6 | 190550.0 | 57.1 | 34.3 |
| | 7 | 190640.0 | 50.0 | 30.0 |
| | 8 | 190580.0 | | |
| | 9 | 80820.0 | | |
| | 10 | 2140.0 | | |
| | TOTAL | 1489730.0 | 225.5 | 135.3 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PCB COMPUTER PLATING | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 70.0 | -70.0 | -70.0 |
| | 4 | 0.0 | 150.3 | 90.2 |
| | 5 | 0.0 | 284.1 | 170.5 |
| | 6 | 0.0 | 148.7 | 89.2 |
| | 7 | 0.0 | 133.6 | 80.1 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 70.0 | 646.6 | 360.0 |

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 7 GANG PROBE HYB TEST

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| HARPOON | 1 | 141700.0 | 0.0 | 0.0 |
| | 2 | 162000.0 | 0.0 | 0.0 |
| | 3 | 156200.0 | 0.0 | 0.0 |
| | 4 | 156300.0 | 0.0 | 0.0 |
| | 5 | 156400.0 | 12.6 | 10.7 |
| | 6 | 41700.0 | 5.9 | 5.0 |
| | 7 | 43400.0 | 5.3 | 4.5 |
| | 8 | 45100.0 | 4.8 | 4.1 |
| | 9 | 46900.0 | | |
| | 10 | 48800.0 | | |
| | TOTAL | 998500.0 | 28.6 | 24.3 |
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 6.1 | 5.2 |
| | 5 | 144400.0 | 11.6 | 9.9 |
| | 6 | 100100.0 | 7.0 | 6.0 |
| | 7 | 104100.0 | 6.4 | 5.4 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 31.1 | 26.4 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 15.0 | 12.7 |
| | 5 | 98700.0 | 27.5 | 23.4 |
| | 6 | 100500.0 | 24.5 | 20.8 |
| | 7 | 105200.0 | 22.4 | 19.0 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 89.3 | 75.9 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 15.1 | 12.8 |
| | 5 | 84100.0 | 27.0 | 23.0 |
| | 6 | 32700.0 | 9.2 | 7.8 |
| | 7 | 34500.0 | 8.5 | 7.2 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 15.1 | 12.8 |
| | 5 | 84100.0 | 27.0 | 23.0 |
| | 6 | 32700.0 | 9.2 | 7.8 |
| | 7 | 34500.0 | 8.5 | 7.2 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 59.8 | 50.8 |
| HARM | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 30300.0 | 0.0 | 0.0 |
| | 3 | 52800.0 | 0.0 | 0.0 |
| | 4 | 75100.0 | 0.0 | 0.0 |
| | 5 | 123800.0 | 6.6 | 5.6 |
| | 6 | 30500.0 | 2.9 | 2.4 |
| | 7 | 31800.0 | 2.6 | 2.2 |
| | 8 | 32900.0 | 2.4 | 2.0 |
| | 9 | 34300.0 | | |
| | 10 | 35600.0 | | |
| | TOTAL | 447100.0 | 14.5 | 12.3 |
| TOMAHAWK SLCM | 1 | 8300.0 | 0.0 | 0.0 |
| | 2 | 165600.0 | 0.0 | 0.0 |
| | 3 | 222800.0 | 0.0 | 0.0 |
| | 4 | 217300.0 | 0.0 | 0.0 |
| | 5 | 221000.0 | 8.3 | 7.0 |
| | 6 | 190550.0 | 14.3 | 12.1 |
| | 7 | 190640.0 | 12.5 | 10.6 |
| | 8 | 190580.0 | 10.9 | 9.3 |
| | 9 | 80820.0 | | |
| | 10 | 2140.0 | | |
| | TOTAL | 1489730.0 | 46.0 | 39.1 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| GANG PROBE HYB TEST | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 20.0 | -20.0 | -20.0 |
| | 4 | 20.0 | 16.1 | 10.7 |
| | 5 | 0.0 | 93.6 | 79.6 |
| | 6 | 0.0 | 63.7 | 54.1 |
| | 7 | 0.0 | 57.7 | 49.0 |
| | 8 | 0.0 | 18.1 | 15.4 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 40.0 | 229.3 | 188.9 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 8 REWORK STD HYB CIR

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 43.3 | 32.5 |
| | 5 | 144400.0 | 58.0 | 43.5 |
| | 6 | 100100.0 | 46.9 | 35.2 |
| | 7 | 104100.0 | 42.6 | 32.0 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 190.8 | 143.1 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 28.8 | 21.6 |
| | 5 | 98700.0 | 39.7 | 29.8 |
| | 6 | 100500.0 | 47.1 | 35.3 |
| | 7 | 105200.0 | 43.1 | 32.3 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 158.6 | 119.0 |
| TOMAHAWK SLCM | 1 | 8300.0 | 0.0 | 0.0 |
| | 2 | 165600.0 | 0.0 | 0.0 |
| | 3 | 222800.0 | 0.0 | 0.0 |
| | 4 | 217300.0 | 66.6 | 50.0 |
| | 5 | 221000.0 | 88.8 | 66.6 |
| | 6 | 190550.0 | 89.3 | 66.9 |
| | 7 | 190640.0 | 78.1 | 58.5 |
| | 8 | 190580.0 | | |
| | 9 | 80820.0 | | |
| | 10 | 2140.0 | | |
| | TOTAL | 1489730.0 | 322.7 | 242.1 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| REWORK STD HYB CIR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 200.0 | -200.0 | -200.0 |
| | 4 | 200.0 | -61.3 | -96.0 |
| | 5 | 200.0 | -13.5 | -60.1 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| REWORK STD HYB CIR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 200.0 | -200.0 | -200.0 |
| | 4 | 200.0 | -61.3 | -96.0 |
| | 5 | 200.0 | -13.5 | -60.1 |
| | 6 | 0.0 | 183.2 | 137.4 |
| | 7 | 0.0 | 163.8 | 122.8 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 600.0 | 72.2 | -95.9 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 9 VAPOR SOLDERING

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| AYK-14 COMPUTER | 1 | 4500.0 | 0.0 | 0.0 |
| | 2 | 2000.0 | 0.0 | 0.0 |
| | 3 | 16884.0 | 0.0 | 0.0 |
| | 4 | 19130.0 | 14.0 | 12.6 |
| | 5 | 21678.0 | 27.7 | 24.9 |
| | 6 | 24088.0 | 26.9 | 24.2 |
| | 7 | 23448.0 | 22.9 | 20.6 |
| | 8 | 20710.0 | | |
| | 9 | 21538.0 | | |
| | 10 | 13730.0 | | |
| | TOTAL | 167706.0 | 91.3 | 82.2 |
| HARPOON | 1 | 141700.0 | 0.0 | 0.0 |
| | 2 | 162000.0 | 0.0 | 0.0 |
| | 3 | 156200.0 | 0.0 | 0.0 |
| | 4 | 156300.0 | 47.9 | 43.1 |
| | 5 | 156400.0 | 83.8 | 75.4 |
| | 6 | 41700.0 | 19.5 | 17.6 |
| | 7 | 43400.0 | 17.3 | 16.0 |
| | 8 | 45100.0 | | |
| | 9 | 46900.0 | | |
| | 10 | 48800.0 | | |
| | TOTAL | 998500.0 | 169.0 | 152.1 |
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 43.3 | 39.0 |
| | 5 | 144400.0 | 77.4 | 69.6 |
| | 6 | 100100.0 | 46.9 | 42.2 |
| | 7 | 104100.0 | 42.6 | 38.4 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 210.2 | 189.2 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 28.8 | 25.9 |
| | 5 | 98700.0 | 52.9 | 47.6 |
| | 6 | 100500.0 | 47.1 | 42.4 |
| | 7 | 105200.0 | 43.1 | 38.8 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 28.8 | 25.9 |
| | 5 | 98700.0 | 52.9 | 47.6 |
| | 6 | 100500.0 | 47.1 | 42.4 |
| | 7 | 105200.0 | 43.1 | 38.8 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 171.8 | 154.6 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 25.2 | 22.7 |
| | 5 | 84100.0 | 45.1 | 40.6 |
| | 6 | 32700.0 | 15.3 | 13.8 |
| | 7 | 34500.0 | 14.1 | 12.7 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 99.7 | 89.7 |
| HARM | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 30300.0 | 0.0 | 0.0 |
| | 3 | 52800.0 | 0.0 | 0.0 |
| | 4 | 75100.0 | 23.0 | 20.7 |
| | 5 | 123800.0 | 66.3 | 59.7 |
| | 6 | 30500.0 | 14.3 | 12.9 |
| | 7 | 31800.0 | 13.0 | 11.7 |
| | 8 | 32900.0 | | |
| | 9 | 34300.0 | | |
| | 10 | 35600.0 | | |
| | TOTAL | 447100.0 | 116.7 | 105.0 |
| TOMAHAWK SLCM | 1 | 8300.0 | 0.0 | 0.0 |
| | 2 | 165600.0 | 0.0 | 0.0 |
| | 3 | 222800.0 | 0.0 | 0.0 |
| | 4 | 217300.0 | 66.6 | 59.9 |
| | 5 | 221000.0 | 118.4 | 106.6 |
| | 6 | 190550.0 | 89.3 | 80.3 |
| | 7 | 190640.0 | 78.1 | 70.3 |
| | 8 | 190580.0 | | |
| | 9 | 80820.0 | | |
| | 10 | 2140.0 | | |
| | TOTAL | 1489730.0 | 352.3 | 317.1 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| VAPOR SOLDERING | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 60.0 | -60.0 | -60.0 |
| | 4 | 50.0 | 198.8 | 173.9 |
| | 5 | 0.0 | 471.6 | 424.4 |
| | 6 | 0.0 | 259.2 | 233.3 |
| | 7 | 0.0 | 231.5 | 208.4 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | |
|---|---|---|---|
| 4 | 50.0 | 198.[illegible] | 173.9 |
| 5 | 0.0 | 471.6 | 424.4 |
| 6 | 0.0 | 259.2 | 233.3 |
| 7 | 0.0 | 231.5 | 208.4 |
| 8 | 0.0 | | |
| 9 | 0.0 | | |
| 10 | 0.0 | | |
| TOTAL | 110.0 | 1101.1 | 980.0 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

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SCIENCE APPLICATIONS, INC. MCLEAN, VA.

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 10 INTERACTIVE TESTING

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 12.7 | 8.9 |
| | 4 | 141200.0 | 69.2 | 48.5 |
| | 5 | 144400.0 | 61.9 | 43.3 |
| | 6 | 100100.0 | 37.5 | 26.3 |
| | 7 | 104100.0 | | |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 181.4 | 127.0 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 24.9 | 17.4 |
| | 4 | 93900.0 | 46.1 | 32.2 |
| | 5 | 98700.0 | 42.3 | 29.6 |
| | 6 | 100500.0 | 37.7 | 26.4 |
| | 7 | 105200.0 | | |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 150.9 | 105.6 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 23.2 | 16.2 |
| | 4 | 82200.0 | 40.3 | 28.2 |
| | 5 | 84100.0 | 36.1 | 25.2 |
| | 6 | 32700.0 | 12.3 | 8.6 |
| | 7 | 34500.0 | | |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 111.8 | 78.3 |
| MK15 PHALANX CIWS | 1 | 67200.0 | 0.0 | 0.0 |
| | 2 | 93800.0 | 0.0 | 0.0 |
| | 3 | 85500.0 | 28.6 | 20.0 |
| | 4 | 89600.0 | 52.3 | 36.6 |
| | 5 | 107000.0 | 54.6 | 38.2 |
| | 6 | 111280.0 | 49.6 | 34.8 |
| | 7 | 95310.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 3 | 85500.0 | 28.[illegible] | 20.0 |
| | 4 | 89600.0 | 52.[illegible] | 36.6 |
| | 5 | 107000.0 | 54.6 | 38.2 |
| | 6 | 111280.0 | 49.6 | 34.8 |
| | 7 | 95310.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 649690.0 | 185.1 | 129.6 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| INTERACTIVE TESTING | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 50.0 | 39.3 | 12.5 |
| | 4 | 0.0 | 207.9 | 145.5 |
| | 5 | 0.0 | 194.9 | 136.4 |
| | 6 | 0.0 | 137.1 | 95.9 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 50.0 | 579.2 | 390.4 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 11 DATA LNK-SUPPLR/ASMB

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 26.0 | 19.5 |
| | 5 | 144400.0 | 46.4 | 34.8 |
| | 6 | 100100.0 | 28.1 | 21.1 |
| | 7 | 104100.0 | 25.6 | 19.2 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 126.1 | 94.6 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 17.3 | 13.0 |
| | 5 | 98700.0 | 31.7 | 23.8 |
| | 6 | 100500.0 | 28.2 | 21.2 |
| | 7 | 105200.0 | 25.8 | 19.4 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 103.1 | 77.3 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 15.1 | 11.3 |
| | 5 | 84100.0 | 27.0 | 20.3 |
| | 6 | 32700.0 | 9.2 | 6.9 |
| | 7 | 34500.0 | 8.5 | 6.4 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 59.8 | 44.9 |
| MK15 PHALANX CIWS | 1 | 67200.0 | 0.0 | 0.0 |
| | 2 | 93800.0 | 0.0 | 0.0 |
| | 3 | 85500.0 | 0.0 | 0.0 |
| | 4 | 89600.0 | 19.6 | 14.7 |
| | 5 | 107000.0 | 41.0 | 30.7 |
| | 6 | 111280.0 | 37.2 | 27.9 |
| | 7 | 95310.0 | 27.9 | 20.9 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 12 AUTO FAULT ISOLATION

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 173.1 | 129.8 |
| | 5 | 144400.0 | 232.1 | 174.1 |
| | 6 | 100100.0 | 187.6 | 140.7 |
| | 7 | 104100.0 | 170.5 | 127.9 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 763.3 | 572.5 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 115.1 | 86.3 |
| | 5 | 98700.0 | 158.7 | 119.0 |
| | 6 | 100500.0 | 188.3 | 141.2 |
| | 7 | 105200.0 | 172.3 | 129.2 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 634.4 | 475.8 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 100.8 | 75.6 |
| | 5 | 84100.0 | 135.2 | 101.4 |
| | 6 | 32700.0 | 61.3 | 46.0 |
| | 7 | 34500.0 | 56.5 | 42.4 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 353.8 | 265.3 |
| MK15 PHALANX CIWS | 1 | 67200.0 | 0.0 | 0.0 |
| | 2 | 93800.0 | 0.0 | 0.0 |
| | 3 | 85500.0 | 0.0 | 0.0 |
| | 4 | 89600.0 | 130.8 | 98.1 |
| | 5 | 107000.0 | 204.8 | 153.6 |
| | 6 | 111280.0 | 248.2 | 186.2 |
| | 7 | 95310.0 | 185.8 | 139.4 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 3 | 85500.0 | 0. | 0.0 |
| | 4 | 89600.0 | 130.6 | 98.1 |
| | 5 | 107000.0 | 204.8 | 153.6 |
| | 6 | 111280.0 | 248.2 | 186.2 |
| | 7 | 95310.0 | 185.8 | 139.4 |
| | 8 | | | |
| | 9 | | | |
| | 10 | | | |
| | TOTAL | 649690.0 | 769.6 | 577.2 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| AUTO FAULT ISOLATION | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 100.0 | -100.0 | -100.0 |
| | 4 | 100.0 | 419.8 | 289.9 |
| | 5 | | 730.8 | 548.1 |
| | 6 | | 685.3 | 514.0 |
| | 7 | | 585.1 | 438.9 |
| | 8 | | | |
| | 9 | | | |
| | 10 | | | |
| | TOTAL | 200.0 | 2321.1 | 1690.8 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 14 LO COST HYBRID F14

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| F14A TOMCAT | 1 | 727600.0 | 0.0 | 0.0 |
| | 2 | 1058800.0 | 0.0 | 0.0 |
| | 3 | 1140300.0 | 0.0 | 0.0 |
| | 4 | 889300.0 | 46.7 | 42.1 |
| | 5 | 761700.0 | 67.1 | 60.4 |
| | 6 | 326190.0 | 25.1 | 22.6 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 4903890.0 | 138.9 | 125.0 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| LO COST HYBRID F14 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 300.0 | -300.0 | -300.0 |
| | 4 | 300.0 | -253.3 | -257.9 |
| | 5 | 0.0 | 67.1 | 60.4 |
| | 6 | 0.0 | 25.1 | 22.6 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 600.0 | -461.1 | -475.0 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 15 MFG MAG COMPONENTS

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| AWG-9 WPN CNTRL SYST | 1 | 120000.0 | 0.0 | 0.0 |
| | 2 | 124800.0 | 0.0 | 0.0 |
| | 3 | 90900.0 | 0.0 | 0.0 |
| | 4 | 114700.0 | 32.1 | 22.5 |
| | 5 | 49100.0 | 23.6 | 16.5 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 499500.0 | 55.7 | 39.0 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| MFG MAG COMPONENTS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 150.0 | -150.0 | -150.0 |
| | 4 | 300.0 | -267.9 | -277.5 |
| | 5 | 0.0 | 23.6 | 16.5 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 450.0 | -394.3 | -411.0 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 18 SAW REPLICATN DNA508

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| APS 115 RADAR | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2800.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | .4 | .2 |
| | 5 | 5100.0 | 1.0 | .5 |
| | 6 | 5300.0 | .9 | .5 |
| | 7 | 5500.0 | .9 | .4 |
| | 8 | -0.0 | | |
| | 9 | -0.0 | | |
| | 10 | -0.0 | | |
| | TOTAL | 26900.0 | 3.2 | 1.6 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| SAW REPLICATN DNA508 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 250.0 | -250.0 | -250.0 |
| | 4 | 0.0 | .4 | .2 |
| | 5 | 0.0 | 1.0 | .5 |
| | 6 | 0.0 | .9 | .5 |
| | 7 | 0.0 | .9 | .4 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 250.0 | -246.8 | -248.4 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 20 RF PACKG TECH DNE027

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 0.0 | 0.0 |
| | 4 | 9000.0 | 2.6 | 1.8 |
| | 5 | 9400.0 | 4.2 | 2.9 |
| | 6 | 9700.0 | 3.8 | 2.7 |
| | 7 | 10100.0 | 3.4 | 2.4 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 14.1 | 9.8 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| RF PACKG TECH DNE027 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 95.0 | -95.0 | -95.0 |
| | 4 | 45.0 | -42.4 | -43.2 |
| | 5 | 0.0 | 4.2 | 2.9 |
| | 6 | 0.0 | 3.8 | 2.7 |
| | 7 | 0.0 | 3.4 | 2.4 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 140.0 | -125.9 | -130.2 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 22 EBS DEVICES DNE042

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 1.9 | .6 |
| | 4 | 9000.0 | 3.4 | 1.0 |
| | 5 | 9400.0 | 3.1 | .9 |
| | 6 | 9700.0 | 2.8 | .8 |
| | 7 | 10100.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 11.1 | 3.3 |
| ALQ-78 ECM SET | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2700.0 | .6 | .2 |
| | 4 | 3100.0 | 1.2 | .3 |
| | 5 | 5100.0 | 1.7 | .5 |
| | 6 | 5300.0 | 1.5 | .5 |
| | 7 | 5500.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 26800.0 | 4.9 | 1.5 |
| ALR-59 EW SET | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | 1700.0 | .4 | .1 |
| | 4 | 1800.0 | .7 | .2 |
| | 5 | 1800.0 | .6 | .2 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 8500.0 | 1.6 | .5 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| EBS DEVICES DNE042 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 280.0 | -277.2 | -279.2 |
| | 4 | 0.0 | 5.2 | 1.6 |
| | 5 | 0.0 | 5.3 | 1.6 |

| | | | | |
|---|---|---|---|---|
| EBS DEVICES | DNE | 1 | 0.0 | 0. | 0.0 |
| | | 2 | 0.0 | 0.0 | 0.0 |
| | | 3 | 280.0 | -277.2 | -279.2 |
| | | 4 | 0.0 | 5.2 | 1.6 |
| | | 5 | 0.0 | 5.3 | 1.6 |
| | | 6 | 0.0 | 4.3 | 1.3 |
| | | 7 | 0.0 | | |
| | | 8 | 0.0 | | |
| | | 9 | 0.0 | | |
| | | 10 | 0.0 | | |
| | | TOTAL | 280.0 | -262.4 | -274.7 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 24 ION IMPLANTION DNA44

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| F14A TOMCAT | 1 | 727600.0 | 0.0 | 0.0 |
| | 2 | 1058800.0 | 0.0 | 0.0 |
| | 3 | 1140300.0 | 0.0 | 0.0 |
| | 4 | 889300.0 | 0.0 | 0.0 |
| | 5 | 761700.0 | 297.4 | 208.2 |
| | 6 | 326190.0 | 185.5 | 129.9 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 4903890.0 | 482.9 | 338.0 |
| F18 | 1 | -0.0 | 0.0 | 0.0 |
| | 2 | 309860.0 | 0.0 | 0.0 |
| | 3 | 565000.0 | 0.0 | 0.0 |
| | 4 | 824900.0 | 0.0 | 0.0 |
| | 5 | 1028800.0 | 401.7 | 281.2 |
| | 6 | 802440.0 | 456.4 | 319.5 |
| | 7 | 612000.0 | 304.3 | 213.0 |
| | 8 | 617190.0 | 268.2 | 187.8 |
| | 9 | 805560.0 | | |
| | 10 | 688410.0 | | |
| | TOTAL | 6254160.0 | 1430.6 | 1001.4 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| ION IMPLANTION DNA44 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 230.0 | -230.0 | -230.0 |
| | 4 | 100.0 | -100.0 | -100.0 |
| | 5 | 250.0 | 449.0 | 239.3 |
| | 6 | 0.0 | 642.0 | 449.4 |
| | 7 | 0.0 | 304.3 | 213.0 |
| | 8 | 0.0 | 268.2 | 187.8 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 580.0 | 1333.5 | 759.5 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| FNCODER OPMAG DNA504 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 170.0 | -170.0 | -170.0 |
| | 4 | 100.0 | -100.0 | -100.0 |
| | 5 | 90.0 | -84.6 | -85.9 |
| | 6 | | 9.0 | 6.8 |
| | 7 | | 7.0 | 5.3 |
| | 8 | | 5.6 | 4.2 |
| | 9 | | | |
| | 10 | | | |
| | TOTAL | 360.0 | -332.9 | -339.7 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

PROJECT - 25 ENCODER OPMAG DNA504

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| UYK-7 COMPUTER | 1 | 20176.0 | 0.0 | 0.0 |
| | 2 | 25958.0 | 0.0 | 0.0 |
| | 3 | 38920.0 | 0.0 | 0.0 |
| | 4 | 16378.0 | 0.0 | 0.0 |
| | 5 | 13626.0 | 2.1 | 1.6 |
| | 6 | 9616.0 | 2.6 | 1.9 |
| | 7 | 6580.0 | 1.5 | 1.2 |
| | 8 | 6843.0 | 1.4 | 1.0 |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 7.6 | 5.7 |
| AYK-14 COMPUTER | 1 | 4500.0 | 0.0 | 0.0 |
| | 2 | 2000.0 | 0.0 | 0.0 |
| | 3 | 16884.0 | 0.0 | 0.0 |
| | 4 | 19130.0 | 0.0 | 0.0 |
| | 5 | 21678.0 | 3.3 | 2.5 |
| | 6 | 24088.0 | 6.4 | 4.8 |
| | 7 | 23448.0 | 5.5 | 4.1 |
| | 8 | 20710.0 | 4.2 | 3.2 |
| | 9 | 21538.0 | | |
| | 10 | 13730.0 | | |
| | TOTAL | 167706.0 | 19.5 | 14.6 |
| AIMS | 1 | -0.0 | 0.0 | 0.0 |
| | 2 | -0.0 | 0.0 | 0.0 |
| | 3 | -0.0 | 0.0 | 0.0 |
| | 4 | -0.0 | 0.0 | 0.0 |
| | 5 | -0.0 | 0.0 | 0.0 |
| | 6 | -0.0 | 0.0 | 0.0 |
| | 7 | -0.0 | | |
| | 8 | -0.0 | | |
| | 9 | -0.0 | | |
| | 10 | -0.0 | | |
| | TOTAL | 0.0 | 0.0 | 0.0 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| ENCODER OPMAG DNA504 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 170.0 | -170.0 | -170.0 |
| | 4 | 100.0 | -100.0 | -100.0 |
| | 5 | 90.0 | -84.6 | -85.9 |

| | | | | |
|---|---|---|---|---|
| | 2 | [illegible] | [illegible] | [illegible] |
| | 3 | 85500.0 | 0.0 | 0.0 |
| | 4 | 89600.0 | 19.6 | 14.7 |
| | 5 | 107000.0 | 41.0 | 30.7 |
| | 6 | 111280.0 | 37.2 | 27.9 |
| | 7 | 95310.0 | 27.9 | 20.9 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 649690.0 | 125.7 | 94.3 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| DATA LNK-SUPPLR/ASMB | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 50.0 | -50.0 | -50.0 |
| | 4 | 0.0 | 78.0 | 58.5 |
| | 5 | 0.0 | 146.2 | 109.6 |
| | 6 | 0.0 | 102.8 | 77.1 |
| | 7 | 0.0 | 87.8 | 65.8 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 50.0 | 364.7 | 261.0 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 28 COAX MAG REFIN A608A

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 0.0 | 0.0 |
| | 4 | 9000.0 | 32.8 | 23.0 |
| | 5 | 9400.0 | 60.0 | 42.0 |
| | 6 | 9700.0 | 54.1 | 37.9 |
| | 7 | 10100.0 | 49.2 | 34.5 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 196.1 | 137.3 |
| APS 115 RADAR | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2800.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | 11.3 | 7.9 |
| | 5 | 5100.0 | 32.5 | 22.8 |
| | 6 | 5300.0 | 29.6 | 20.7 |
| | 7 | 5500.0 | 26.8 | 18.8 |
| | 8 | -0.0 | | |
| | 9 | -0.0 | | |
| | 10 | -0.0 | | |
| | TOTAL | 26900.0 | 100.2 | 70.1 |
| HARPOON | 1 | 141700.0 | 0.0 | 0.0 |
| | 2 | 162000.0 | 0.0 | 0.0 |
| | 3 | 156200.0 | 0.0 | 0.0 |
| | 4 | 156300.0 | 239.5 | 167.7 |
| | 5 | 156400.0 | 419.1 | 293.3 |
| | 6 | 41700.0 | 97.7 | 68.4 |
| | 7 | 43400.0 | 88.9 | 62.2 |
| | 8 | 45100.0 | | |
| | 9 | 46900.0 | | |
| | 10 | 48800.0 | | |
| | TOTAL | 998500.0 | 845.1 | 591.6 |
| PHOENIX | 1 | 69200.0 | 0.0 | 0.0 |
| | 2 | 79400.0 | 0.0 | 0.0 |
| | 3 | 100300.0 | 0.0 | 0.0 |
| | 4 | 93800.0 | 143.8 | 100.6 |
| | 5 | 90300.0 | 241.9 | 169.4 |
| | 6 | 16400.0 | 38.4 | 26.9 |
| | 7 | 17100.0 | 35.0 | 24.5 |
| | 8 | 18200.0 | | |
| | 9 | 18500.0 | | |
| | 10 | 19200.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 79400.0 | 0.0 | 0.0 |
| | 3 | 100300.0 | 0.0 | 0.0 |
| | 4 | 93800.0 | 143.8 | 100.6 |
| | 5 | 90300.0 | 241.9 | 169.4 |
| | 6 | 16400.0 | 38.4 | 26.9 |
| | 7 | 17100.0 | 35.0 | 24.5 |
| | 8 | 18200.0 | | |
| | 9 | 18500.0 | | |
| | 10 | 19200.0 | | |
| | TOTAL | 522400.0 | 459.1 | 321.4 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| COAX MAG REFIN A608A | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 100.0 | -100.0 | -100.0 |
| | 4 | 0.0 | 427.5 | 299.2 |
| | 5 | 0.0 | 753.5 | 527.4 |
| | 6 | 0.0 | 219.7 | 153.8 |
| | 7 | 0.0 | 199.9 | 139.9 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 100.0 | 1500.6 | 1020.4 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 29 MAG IMPROVMT A637A

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 0.0 | 0.0 |
| | 4 | 9000.0 | 0.0 | 0.0 |
| | 5 | 9400.0 | 12.0 | 8.4 |
| | 6 | 9700.0 | 16.2 | 11.4 |
| | 7 | 10100.0 | 14.8 | 10.3 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 43.0 | 30.1 |
| APS 115 RADAR | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2800.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | 0.0 | 0.0 |
| | 5 | 5100.0 | 6.5 | 4.6 |
| | 6 | 5300.0 | 8.9 | 6.2 |
| | 7 | 5500.0 | 8.0 | 5.6 |
| | 8 | -0.0 | | |
| | 9 | -0.0 | | |
| | 10 | -0.0 | | |
| | TOTAL | 26900.0 | 23.4 | 16.4 |
| HARPOON | 1 | 141700.0 | 0.0 | 0.0 |
| | 2 | 162000.0 | 0.0 | 0.0 |
| | 3 | 156200.0 | 0.0 | 0.0 |
| | 4 | 156300.0 | 0.0 | 0.0 |
| | 5 | 156400.0 | 83.8 | 58.7 |
| | 6 | 41700.0 | 29.3 | 20.5 |
| | 7 | 43400.0 | 26.7 | 18.7 |
| | 8 | 45100.0 | 24.2 | 16.9 |
| | 9 | 46900.0 | | |
| | 10 | 48800.0 | | |
| | TOTAL | 998500.0 | 164.0 | 114.8 |
| PHOENIX | 1 | 69200.0 | 0.0 | 0.0 |
| | 2 | 79400.0 | 0.0 | 0.0 |
| | 3 | 100300.0 | 0.0 | 0.0 |
| | 4 | 93800.0 | 0.0 | 0.0 |
| | 5 | 90300.0 | 48.4 | 33.9 |
| | 6 | 16400.0 | 11.5 | 8.1 |
| | 7 | 17100.0 | 10.5 | 7.4 |
| | 8 | 18200.0 | 9.8 | 6.8 |
| | 9 | 18500.0 | | |
| | 10 | 19200.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 6 | 16400.0 | 1 .5 | 8.1 |
| | 7 | 17100.0 | 1 .5 | 7.4 |
| | 8 | 18200.0 | 9.8 | 6.8 |
| | 9 | 18500.0 | | |
| | 10 | 19200.0 | | |
| | TOTAL | 522400.0 | 80.2 | 56.1 |

| PROJECT TITLE | | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|---|
| MAG IMPROVMT | A637A | 1 | 0.0 | 0.0 | 0.0 |
| | | 2 | 0.0 | 0.0 | 0.0 |
| | | 3 | 150.0 | -150.0 | -150.0 |
| | | 4 | 100.0 | -100.0 | -100.0 |
| | | 5 | 0.0 | 150.7 | 105.5 |
| | | 6 | 0.0 | 65.9 | 46.1 |
| | | 7 | 0.0 | 60.0 | 42.0 |
| | | 8 | 0.0 | 34.0 | 23.8 |
| | | 9 | 0.0 | | |
| | | 10 | 0.0 | | |
| | | TOTAL | 250.0 | 60.6 | -32.6 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 33 GAAS FET A6218

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| DDG47 AEGIS | 1 | 930000.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 1882900.0 | 0.0 | 0.0 |
| | 4 | 1945400.0 | 0.0 | 0.0 |
| | 5 | 2038300.0 | 16.6 | 11.7 |
| | 6 | 0.0 | 0.0 | 0.0 |
| | 7 | 1469750.0 | 13.8 | 9.6 |
| | 8 | 2292810.0 | 18.8 | 13.1 |
| | 9 | 2384520.0 | | |
| | 10 | 826630.0 | | |
| | TOTAL | 13770310.0 | 49.2 | 34.4 |
| PRC-104 RADIO | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | -0.0 | 0.0 | 0.0 |
| | 4 | -0.0 | 0.0 | 0.0 |
| | 5 | -0.0 | 0.0 | 0.0 |
| | 6 | -0.0 | 0.0 | 0.0 |
| | 7 | -0.0 | | |
| | 8 | -0.0 | | |
| | 9 | -0.0 | | |
| | 10 | -0.0 | | |
| | TOTAL | 3200.0 | 0.0 | 0.0 |
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 0.0 | 0.0 |
| | 4 | 9000.0 | 0.0 | 0.0 |
| | 5 | 9400.0 | 1.0 | .7 |
| | 6 | 9700.0 | 1.7 | 1.2 |
| | 7 | 10100.0 | 1.6 | 1.1 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 4.3 | 3.0 |
| DTP EW SUITE | 1 | 51100.0 | 0.0 | 0.0 |
| | 2 | 57600.0 | 0.0 | 0.0 |
| | 3 | 39400.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | 0.0 | 0.0 |
| | 6 | 0.0 | 0.0 | 0.0 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 57600.0 | 0.0 | 0.0 |
| | 3 | 39400.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | 0.0 | 0.0 |
| | 6 | 0.0 | 0.0 | 0.0 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 148100.0 | 0.0 | 0.0 |
| ALQ-78 ECM SET | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2700.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | 0.0 | 0.0 |
| | 5 | 5100.0 | .5 | .4 |
| | 6 | 5300.0 | .9 | .7 |
| | 7 | 5500.0 | .9 | .6 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 26800.0 | 2.3 | 1.6 |
| ALR-59 EW SET | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | 1700.0 | 0.0 | 0.0 |
| | 4 | 1800.0 | 0.0 | 0.0 |
| | 5 | 1800.0 | .2 | .1 |
| | 6 | 0.0 | 0.0 | 0.0 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 8500.0 | .2 | .1 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|---|
| GAAS FET | A621B | 1 | 0.0 | 0.0 | 0.0 |
| | | 2 | 0.0 | 0.0 | 0.0 |
| | | 3 | 250.0 | -250.0 | -250.0 |
| | | 4 | 250.0 | -250.0 | -250.0 |
| | | 5 | 0.0 | 18.3 | 12.8 |
| | | 6 | 0.0 | 2.7 | 1.9 |
| | | 7 | 0.0 | 16.2 | 11.3 |
| | | 8 | 0.0 | 18.8 | 13.1 |
| | | 9 | 0.0 | | |
| | | 10 | 0.0 | | |
| | | TOTAL | 500.0 | -444.1 | -460.8 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 36 LIGHTWT RF STRIPLINE

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 72.6 | 54.5 |
| | 4 | 9000.0 | 131.4 | 98.5 |
| | 5 | 9400.0 | 119.9 | 89.9 |
| | 6 | 9700.0 | 108.2 | 81.1 |
| | 7 | 10100.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 432.1 | 324.1 |
| ALQ-78 ECM SET | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2700.0 | 22.5 | 16.9 |
| | 4 | 3100.0 | 45.2 | 33.9 |
| | 5 | 5100.0 | 65.1 | 48.8 |
| | 6 | 5300.0 | 59.1 | 44.3 |
| | 7 | 5500.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 26800.0 | 192.0 | 144.0 |
| ALR-59 EW SET | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | 1700.0 | 14.2 | 10.6 |
| | 4 | 1800.0 | 26.3 | 19.7 |
| | 5 | 1800.0 | 23.0 | 17.2 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 8500.0 | 63.4 | 47.6 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| LIGHTWT RF STRIPLINE | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 120.0 | -10.6 | -38.0 |
| | 4 | 0.0 | 202.9 | 152.2 |
| | 5 | 0.0 | 208.0 | 156.0 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| LIGHTWT RF STRIPLINE | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 120.0 | -10.6 | -38.0 |
| | 4 | 0.0 | 202.9 | 152.2 |
| | 5 | 0.0 | 208.0 | 156.0 |
| | 6 | 0.0 | 167.3 | 125.5 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 120.0 | 567.5 | 395.6 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 38 GA-AS ICSMICROWA1218

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| DDG47 AEGIS | 1 | 930000.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 1882900.0 | 0.0 | 0.0 |
| | 4 | 1945400.0 | 0.0 | 0.0 |
| | 5 | 2038300.0 | 49.9 | 39.9 |
| | 6 | 0.0 | 0.0 | 0.0 |
| | 7 | 1469750.0 | 41.3 | 33.0 |
| | 8 | 2292810.0 | 56.3 | 45.0 |
| | 9 | 2384520.0 | | |
| | 10 | 826630.0 | | |
| | TOTAL | 13770310.0 | 147.5 | 118.0 |
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 0.0 | 0.0 |
| | 4 | 9000.0 | 0.0 | 0.0 |
| | 5 | 9400.0 | 3.8 | 3.1 |
| | 6 | 9700.0 | 5.2 | 4.2 |
| | 7 | 10100.0 | 4.7 | 3.8 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 13.8 | 11.0 |
| DTP EW SUITE | 1 | 51100.0 | 0.0 | 0.0 |
| | 2 | 57600.0 | 0.0 | 0.0 |
| | 3 | 39400.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | 0.0 | 0.0 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 148100.0 | 0.0 | 0.0 |
| ALQ-78 ECM SET | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2700.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | 0.0 | 0.0 |
| | 5 | 5100.0 | 2.1 | 1.7 |
| | 6 | 5300.0 | 2.8 | 2.3 |
| | 7 | 5500.0 | 2.6 | 2.1 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2700.0 | 0 | 0.0 |
| | 4 | 3100.0 | 0.0 | 0.0 |
| | 5 | 5100.0 | 2.1 | 1.7 |
| | 6 | 5300.0 | 2.8 | 2.3 |
| | 7 | 5500.0 | 2.6 | 2.1 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 26800.0 | 7.5 | 6.0 |
| ALR-59 EW SET | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | 1700.0 | 0.0 | 0.0 |
| | 4 | 1800.0 | 0.0 | 0.0 |
| | 5 | 1800.0 | .7 | .6 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 8500.0 | .7 | .6 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| GA-AS ICSMICROWA121B | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 500.0 | -500.0 | -500.0 |
| | 4 | 500.0 | -500.0 | -500.0 |
| | 5 | 0.0 | 56.6 | 45.3 |
| | 6 | 0.0 | 8.0 | 6.4 |
| | 7 | 0.0 | 48.6 | 38.9 |
| | 8 | 0.0 | 56.3 | 45.0 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 1000.0 | -830.5 | -864.4 |

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 39 MNOS MEMORY A1298

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PRC-104 RADIO | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | -0.0 | 0.0 | 0.0 |
| | 4 | -0.0 | 0.0 | 0.0 |
| | 5 | -0.0 | | |
| | 6 | -0.0 | | |
| | 7 | -0.0 | | |
| | 8 | -0.0 | | |
| | 9 | -0.0 | | |
| | 10 | -0.0 | | |
| | TOTAL | 3200.0 | 0.0 | 0.0 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| MNOS MEMORY A1298 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 200.0 | -200.0 | -200.0 |
| | 4 | 200.0 | -200.0 | -200.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 400.0 | -400.0 | -400.0 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 41 AUTOMATED TNT 603A

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| DDG47 AEGIS | 1 | 930000.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 1882900.0 | 0.0 | 0.0 |
| | 4 | 1945400.0 | 0.0 | 0.0 |
| | 5 | 2038300.0 | 390.1 | 273.1 |
| | 6 | 0.0 | 0.0 | 0.0 |
| | 7 | 1469750.0 | 429.9 | 300.9 |
| | 8 | 2292810.0 | 586.2 | 410.3 |
| | 9 | 2384520.0 | | |
| | 10 | 826630.0 | | |
| | TOTAL | 13770310.0 | 1406.1 | 984.3 |
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 0.0 | 0.0 |
| | 4 | 9000.0 | 0.0 | 0.0 |
| | 5 | 9400.0 | 30.0 | 21.0 |
| | 6 | 9700.0 | 54.1 | 37.9 |
| | 7 | 10100.0 | 49.2 | 34.5 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 133.3 | 93.3 |
| DTP EW SUITE | 1 | 51100.0 | 0.0 | 0.0 |
| | 2 | 57600.0 | 0.0 | 0.0 |
| | 3 | 39400.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 148100.0 | 0.0 | 0.0 |
| ALQ-78 ECM SET | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2700.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | 0.0 | 0.0 |
| | 5 | 5100.0 | 16.3 | 11.4 |
| | 6 | 5300.0 | 29.6 | 20.7 |
| | 7 | 5500.0 | 26.8 | 18.8 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 3 | 2700.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | 0.0 | 0.0 |
| | 5 | 5100.0 | 16.3 | 11.4 |
| | 6 | 5300.0 | 29.6 | 20.7 |
| | 7 | 5500.0 | 26.8 | 18.8 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 26800.0 | 72.6 | 50.8 |
| ALR-59 EW SET | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | 1700.0 | 0.0 | 0.0 |
| | 4 | 1800.0 | 0.0 | 0.0 |
| | 5 | 1800.0 | 5.7 | 4.0 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 8500.0 | 5.7 | 4.0 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| AUTOMATED TWT 603A | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 150.0 | -150.0 | -150.0 |
| | 4 | 225.0 | -225.0 | -225.0 |
| | 5 | 0.0 | 442.1 | 309.5 |
| | 6 | 0.0 | 83.6 | 58.6 |
| | 7 | 0.0 | 505.9 | 354.1 |
| | 8 | 0.0 | 586.2 | 410.3 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 375.0 | 1242.8 | 757.5 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 44 MACHTOOLCOMPCONTROL

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| BQQ-5 SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 115.9 | 81.1 |
| | 5 | 61200.0 | 93.7 | 65.6 |
| | 6 | 47700.0 | 63.8 | 44.7 |
| | 7 | 66100.0 | 77.3 | 54.1 |
| | 8 | 51600.0 | | |
| | 9 | 71500.0 | | |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 350.7 | 245.5 |
| SQQ-23 SONAR | 1 | 3700.0 | 0.0 | 0.0 |
| | 2 | 31500.0 | 0.0 | 0.0 |
| | 3 | 26600.0 | 0.0 | 0.0 |
| | 4 | 22900.0 | 20.1 | 14.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 84700.0 | 20.1 | 14.0 |
| BQR-21 SONAR | 1 | 11500.0 | 0.0 | 0.0 |
| | 2 | 12700.0 | 0.0 | 0.0 |
| | 3 | 2300.0 | 0.0 | 0.0 |
| | 4 | 900.0 | .8 | .6 |
| | 5 | 900.0 | 1.4 | 1.0 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 28300.0 | 2.2 | 1.5 |
| UYK-7 COMPUTER | 1 | 20176.0 | 0.0 | 0.0 |
| | 2 | 25958.0 | 0.0 | 0.0 |
| | 3 | 38920.0 | 0.0 | 0.0 |
| | 4 | 16378.0 | 14.3 | 10.0 |
| | 5 | 13626.0 | 20.9 | 14.6 |
| | 6 | 9616.0 | 12.9 | 9.0 |
| | 7 | 6580.0 | 7.7 | 5.4 |
| | 8 | 6843.0 | | |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 3 | 38920.0 | 0 | 0.0 |
| | 4 | 16378.0 | 14.3 | 10.0 |
| | 5 | 13626.0 | 20.9 | 14.6 |
| | 6 | 9616.0 | 12.9 | 9.0 |
| | 7 | 6580.0 | 7.7 | 5.4 |
| | 8 | 6843.0 | | |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 55.8 | 39.0 |
| AYK-14 COMPUTER | 1 | 4500.0 | 0.0 | 0.0 |
| | 2 | 2000.0 | 0.0 | 0.0 |
| | 3 | 16884.0 | 0.0 | 0.0 |
| | 4 | 19130.0 | 16.8 | 11.7 |
| | 5 | 21678.0 | 33.2 | 23.2 |
| | 6 | 24088.0 | 32.2 | 22.6 |
| | 7 | 23448.0 | 27.4 | 19.2 |
| | 8 | 20710.0 | | |
| | 9 | 21538.0 | | |
| | 10 | 13730.0 | | |
| | TOTAL | 167706.0 | 109.6 | 76.7 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| MACHTOOLCOMPCONTROL | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 375.0 | -375.0 | -375.0 |
| | 4 | 0.0 | 167.8 | 117.5 |
| | 5 | 0.0 | 149.1 | 104.4 |
| | 6 | 0.0 | 108.9 | 76.3 |
| | 7 | 0.0 | 112.5 | 78.7 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 375.0 | 163.3 | 1.8 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT = 45 AUTO STD MACH PROCSS

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| BQQ-5 SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 77.2 | 69.5 |
| | 5 | 61200.0 | 62.5 | 56.2 |
| | 6 | 47700.0 | 42.6 | 38.3 |
| | 7 | 66100.0 | 51.6 | 46.4 |
| | 8 | 51600.0 | | |
| | 9 | 71500.0 | | |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 233.8 | 210.4 |
| SQQ-23 SONAR | 1 | 3700.0 | 0.0 | 0.0 |
| | 2 | 31500.0 | 0.0 | 0.0 |
| | 3 | 26600.0 | 0.0 | 0.0 |
| | 4 | 22900.0 | 13.4 | 12.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 84700.0 | 13.4 | 12.0 |
| BQR-21 SONAR | 1 | 11500.0 | 0.0 | 0.0 |
| | 2 | 12700.0 | 0.0 | 0.0 |
| | 3 | 2300.0 | 0.0 | 0.0 |
| | 4 | 900.0 | .5 | .5 |
| | 5 | 900.0 | .9 | .8 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 28300.0 | 1.4 | 1.3 |
| UYK-7 COMPUTER | 1 | 20176.6 | 0.0 | 0.0 |
| | 2 | 25958.0 | 0.0 | 0.0 |
| | 3 | 38920.0 | 0.0 | 0.0 |
| | 4 | 16378.0 | 9.6 | 8.6 |
| | 5 | 13626.0 | 13.9 | 12.5 |
| | 6 | 9616.0 | 8.6 | 7.7 |
| | 7 | 6580.0 | 5.1 | 4.6 |
| | 8 | 6843.0 | | |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 37.2 | 33.5 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | [illegible] | [illegible] | [illegible] |
| | 3 | 38920.0 | 0.0 | 0.0 |
| | 4 | 16378.0 | 9.6 | 8.6 |
| | 5 | 13626.0 | 13.9 | 12.5 |
| | 6 | 9616.0 | 8.6 | 7.7 |
| | 7 | 6580.0 | 5.1 | 4.6 |
| | 8 | 6843.0 | | |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 37.2 | 33.5 |
| AYK-14 COMPUTER | 1 | 4500.0 | 0.0 | 0.0 |
| | 2 | 2000.0 | 0.0 | 0.0 |
| | 3 | 16884.0 | 0.0 | 0.0 |
| | 4 | 19130.0 | 11.2 | 10.1 |
| | 5 | 21678.0 | 22.1 | 19.9 |
| | 6 | 24088.0 | 21.5 | 19.3 |
| | 7 | 23448.0 | 18.3 | 16.5 |
| | 8 | 20710.0 | | |
| | 9 | 21538.0 | | |
| | 10 | 13730.0 | | |
| | TOTAL | 167706.0 | 73.1 | 65.8 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| AUTO STD MACH PROCSS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 250.0 | -250.0 | -250.0 |
| | 4 | 250.0 | -138.1 | -149.3 |
| | 5 | 0.0 | 99.4 | 89.5 |
| | 6 | 0.0 | 72.6 | 65.4 |
| | 7 | 0.0 | 75.0 | 67.5 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 500.0 | -141.1 | -177.0 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 46 AUTOPCBCOMPINSERT

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| BQQ-5 SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 23.2 | 20.9 |
| | 5 | 61200.0 | 18.7 | 16.9 |
| | 6 | 47700.0 | 12.8 | 11.5 |
| | 7 | 66100.0 | 15.5 | 13.9 |
| | 8 | 51600.0 | | |
| | 9 | 71500.0 | | |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 70.1 | 63.1 |
| SQQ-23 SONAR | 1 | 3700.0 | 0.0 | 0.0 |
| | 2 | 31500.0 | 0.0 | 0.0 |
| | 3 | 26600.0 | 0.0 | 0.0 |
| | 4 | 22900.0 | 4.0 | 3.6 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 84700.0 | 4.0 | 3.6 |
| BQR-21 SONAR | 1 | 11500.0 | 0.0 | 0.0 |
| | 2 | 12700.0 | 0.0 | 0.0 |
| | 3 | 2300.0 | 0.0 | 0.0 |
| | 4 | 900.0 | .2 | .1 |
| | 5 | 900.0 | .3 | .2 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 28300.0 | .4 | .4 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| AUTOPCBCOMPINSERT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 50.0 | -50.0 | -50.0 |
| | 4 | 0.0 | 27.3 | 24.6 |
| | 5 | 0.0 | 19.0 | 17.1 |

| PROJECT TITLE | YEAR | ($,THOUSANDS) | (UPPER) | (LOWER) |
|---|---|---|---|---|
| AUTOPCBCOMPINSERT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 50.0 | -50.0 | -50.0 |
| | 4 | 0.0 | 27.3 | 24.6 |
| | 5 | 0.0 | 19.0 | 17.1 |
| | 6 | 0.0 | 12.8 | 11.5 |
| | 7 | 0.0 | 15.5 | 13.9 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 50.0 | 24.6 | 17.1 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 47 FLATWIREINERCONNECT

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| BQQ-5 SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 48.3 | 36.2 |
| | 5 | 61200.0 | 39.0 | 29.3 |
| | 6 | 47700.0 | 26.6 | 19.9 |
| | 7 | 66100.0 | 32.2 | 24.2 |
| | 8 | 51600.0 | | |
| | 9 | 71500.0 | | |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 146.1 | 109.6 |
| SQQ-23 SONAR | 1 | 3700.0 | 0.0 | 0.0 |
| | 2 | 31500.0 | 0.0 | 0.0 |
| | 3 | 26600.0 | 0.0 | 0.0 |
| | 4 | 22900.0 | 8.4 | 6.3 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 84700.0 | 8.4 | 6.3 |
| BQR-21 SONAR | 1 | 11500.0 | 0.0 | 0.0 |
| | 2 | 12700.0 | 0.0 | 0.0 |
| | 3 | 2300.0 | 0.0 | 0.0 |
| | 4 | 900.0 | .3 | .2 |
| | 5 | 900.0 | .6 | .4 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 28300.0 | .9 | .7 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| FLATWIREINERCONNECT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 75.0 | -75.0 | -75.0 |
| | 4 | 0.0 | 57.0 | 42.7 |
| | 5 | 0.0 | 39.6 | 29.7 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| FLATWIREINTERCONNECT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 75.0 | -75.0 | -75.0 |
| | 4 | 0.0 | 57.0 | 42.7 |
| | 5 | 0.0 | 39.6 | 29.7 |
| | 6 | 0.0 | 26.6 | 19.9 |
| | 7 | 0.0 | 32.2 | 24.2 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 75.0 | 80.4 | 41.5 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY 06/07/77

PROJECT = 48 SYSTESTIMPROVMENT

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| BQQ-5 SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 0.0 | 0.0 |
| | 5 | 61200.0 | 0.0 | 0.0 |
| | 6 | 47700.0 | 106.4 | 79.8 |
| | 7 | 66100.0 | 257.8 | 193.3 |
| | 8 | 51600.0 | 263.8 | 197.9 |
| | 9 | 71500.0 | 319.6 | 239.7 |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 947.6 | 710.7 |
| SQQ-23 SONAR | 1 | 3700.0 | 0.0 | 0.0 |
| | 2 | 31500.0 | 0.0 | 0.0 |
| | 3 | 26600.0 | 0.0 | 0.0 |
| | 4 | 22900.0 | 0.0 | 0.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 84700.0 | 0.0 | 0.0 |
| BQR-21 SONAR | 1 | 11500.0 | 0.0 | 0.0 |
| | 2 | 12700.0 | 0.0 | 0.0 |
| | 3 | 2300.0 | 0.0 | 0.0 |
| | 4 | 900.0 | 0.0 | 0.0 |
| | 5 | 900.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 28300.0 | 0.0 | 0.0 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| SYSTESTIMPROVMENT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 600.0 | -600.0 | -600.0 |
| | 4 | 800.0 | -800.0 | -800.0 |
| | 5 | 600.0 | -600.0 | -600.0 |
| | 6 | 0.0 | 106.4 | 79.8 |
| | 7 | 0.0 | 257.8 | 193.3 |
| | 8 | 0.0 | 263.8 | 197.9 |

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THE NAVY MANUFACTURING TECHNOLOGY ELECTRONICS STUDY. A PLAN FOR--ETC(U)
JUN 77 N00039-77-C-0095

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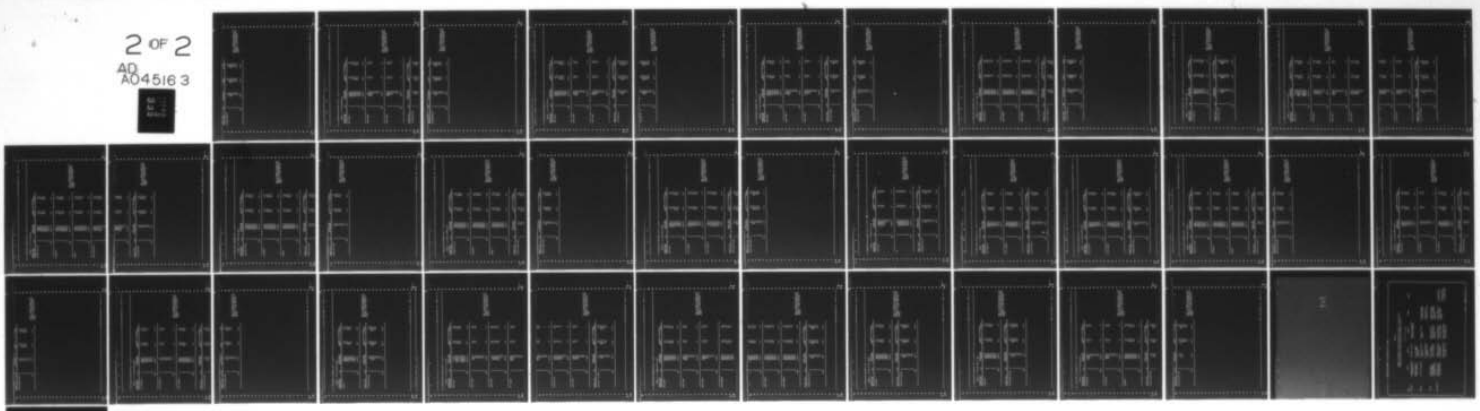

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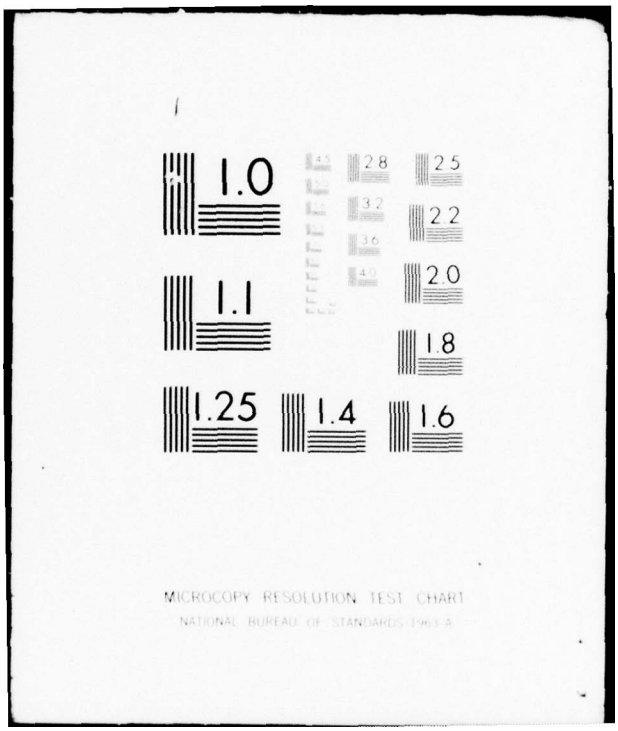
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

| PROJECT TITLE | YEAR | ($,THOUSANDS) | (UPPER) | (LOWER) |
|---|---|---|---|---|
| SYSTESTIMPROVMENT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 600.0 | -600.0 | -600.0 |
| | 4 | 800.0 | -800.0 | -800.0 |
| | 5 | 600.0 | -600.0 | -600.0 |
| | 6 | 0.0 | 106.4 | 79.8 |
| | 7 | 0.0 | 257.8 | 193.3 |
| | 8 | 0.0 | 263.8 | 197.9 |
| | 9 | 0.0 | 319.6 | 239.7 |
| | 10 | 0.0 | | |
| | TOTAL | 2000.0 | -1052.4 | -1289.3 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 49 MICROPROCREPLCMNT

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| RQQ-5 SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 0.0 | 0.0 |
| | 5 | 61200.0 | 106.2 | 63.7 |
| | 6 | 47700.0 | 144.7 | 86.8 |
| | 7 | 66100.0 | 175.3 | 105.2 |
| | 8 | 51600.0 | 119.6 | 71.8 |
| | 9 | 71500.0 | | |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 545.8 | 327.5 |
| SQQ-23 SONAR | 1 | 3700.0 | 0.0 | 0.0 |
| | 2 | 31500.0 | 0.0 | 0.0 |
| | 3 | 26600.0 | 0.0 | 0.0 |
| | 4 | 22900.0 | 0.0 | 0.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 84700.0 | 0.0 | 0.0 |
| BQR-21 SONAR | 1 | 11500.0 | 0.0 | 0.0 |
| | 2 | 12700.0 | 0.0 | 0.0 |
| | 3 | 2300.0 | 0.0 | 0.0 |
| | 4 | 900.0 | 0.0 | 0.0 |
| | 5 | 900.0 | 1.6 | .9 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 28300.0 | 1.6 | .9 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| MICROPROCREPLCMNT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 250.0 | -250.0 | -250.0 |
| | 4 | 250.0 | -250.0 | -250.0 |
| | 5 | 0.0 | 107.8 | 64.7 |

| PROJECT TITLE | YEAR | ($,THOUSANDS) | (UPPER) | (LOWER) |
|---|---|---|---|---|
| MICROPROCREPLCMNT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 250.0 | -250.0 | -250.0 |
| | 4 | 250.0 | -250.0 | -250.0 |
| | 5 | 0.0 | 107.8 | 64.7 |
| | 6 | 0.0 | 144.7 | 86.8 |
| | 7 | 0.0 | 175.3 | 105.2 |
| | 8 | 0.0 | 119.6 | 71.8 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 500.0 | 47.3 | -171.6 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 50 AUTO WIRE SYS

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| BQQ-5 SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 0.0 | 0.0 |
| | 5 | 61200.0 | 234.3 | 164.0 |
| | 6 | 47700.0 | 319.2 | 223.4 |
| | 7 | 66100.0 | 580.0 | 406.0 |
| | 8 | 51600.0 | 395.8 | 277.0 |
| | 9 | 71500.0 | | |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 1529.2 | 1070.4 |
| SQQ-23 SONAR | 1 | 3700.0 | 0.0 | 0.0 |
| | 2 | 31500.0 | 0.0 | 0.0 |
| | 3 | 26600.0 | 0.0 | 0.0 |
| | 4 | 22900.0 | 0.0 | 0.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 84700.0 | 0.0 | 0.0 |
| BQR-21 SONAR | 1 | 11500.0 | 0.0 | 0.0 |
| | 2 | 12700.0 | 0.0 | 0.0 |
| | 3 | 2300.0 | 0.0 | 0.0 |
| | 4 | 900.0 | 0.0 | 0.0 |
| | 5 | 900.0 | 3.4 | 2.4 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 28300.0 | 3.4 | 2.4 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| AUTO WIRE SYS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 500.0 | -500.0 | -500.0 |
| | 4 | 1000.0 | -1000.0 | -1000.0 |
| | 5 | 1000.0 | -762.3 | -833.6 |
| | 6 | 0.0 | 319.2 | 223.4 |
| | 7 | 0.0 | 580.0 | 406.0 |
| | 8 | 0.0 | 395.8 | 277.0 |

| | | | | |
|---|---|---|---|---|
| AUTO WIRE SYS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 500.0 | -500.0 | -500.0 |
| | 4 | 1000.0 | -1000.0 | -1000.0 |
| | 5 | 1000.0 | -762.3 | -833.6 |
| | 6 | 0.0 | 319.2 | 223.4 |
| | 7 | 0.0 | 580.0 | 406.0 |
| | 8 | 0.0 | 395.8 | 277.0 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 2500.0 | -967.4 | -1427.2 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

---- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 ----

PROJECT - 51 COMP SHOP INSTRUCT

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| BQQ-5 SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 289.7 | 202.8 |
| | 5 | 61200.0 | 117.1 | 82.0 |
| | 6 | 47700.0 | 79.8 | 55.9 |
| | 7 | 66100.0 | 96.7 | 67.7 |
| | 8 | 51600.0 | | |
| | 9 | 71500.0 | | |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 583.2 | 408.3 |
| SQQ-23 SONAR | 1 | 3700.0 | 0.0 | 0.0 |
| | 2 | 31500.0 | 0.0 | 0.0 |
| | 3 | 26600.0 | 0.0 | 0.0 |
| | 4 | 22900.0 | 50.1 | 35.1 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 84700.0 | 50.1 | 35.1 |
| AQR-21 SONAR | 1 | 11500.0 | 0.0 | 0.0 |
| | 2 | 12700.0 | 0.0 | 0.0 |
| | 3 | 2300.0 | 0.0 | 0.0 |
| | 4 | 900.0 | 2.0 | 1.4 |
| | 5 | 900.0 | 1.7 | 1.2 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 28300.0 | 3.7 | 2.6 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| COMP SHOP INSTRUCT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 200.0 | -200.0 | -200.0 |
| | 4 | 0.0 | 341.8 | 239.2 |
| | 5 | 0.0 | 118.8 | 83.2 |
| | 6 | 0.0 | 79.8 | 55.9 |
| | 7 | 0.0 | 96.7 | 67.7 |
| | 8 | 0.0 | | |

| PROJECT TITLE | YEAR | ($,THOUSANDS) | (UPPER) | (LOWER) |
|---|---|---|---|---|
| COMP SHOP INSTRUCT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 200.0 | -200.0 | -200.0 |
| | 4 | 0.0 | 341.8 | 239.2 |
| | 5 | 0.0 | 118.8 | 83.2 |
| | 6 | 0.0 | 79.8 | 55.9 |
| | 7 | 0.0 | 96.7 | 67.7 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 200.0 | 437.1 | 246.0 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 58 ENV TEST AUTOMT A211

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| SS041 SONOBUOY | 1 | 28500.0 | 0.0 | 0.0 |
| | 2 | 29800.0 | 0.0 | 0.0 |
| | 3 | 35200.0 | 0.0 | 0.0 |
| | 4 | 36300.0 | 0.0 | 0.0 |
| | 5 | 38300.0 | 5.9 | 4.4 |
| | 6 | 39832.0 | 8.9 | 7.1 |
| | 7 | 41425.0 | 8.1 | 6.5 |
| | 8 | 43082.0 | 7.3 | 5.9 |
| | 9 | 44806.0 | | |
| | 10 | 46598.0 | | |
| | TOTAL | 383843.0 | 30.2 | 23.8 |
| SS053 SONOBUOY | 1 | 33300.0 | 0.0 | 0.0 |
| | 2 | 32600.0 | 0.0 | 0.0 |
| | 3 | 24500.0 | 0.0 | 0.0 |
| | 4 | 27800.0 | 0.0 | 0.0 |
| | 5 | 28300.0 | 4.3 | 3.2 |
| | 6 | 29432.0 | 6.6 | 5.3 |
| | 7 | 30609.0 | 6.0 | 4.8 |
| | 8 | 31834.0 | 5.4 | 4.3 |
| | 9 | 33107.0 | | |
| | 10 | 34431.0 | | |
| | TOTAL | 305913.0 | 22.3 | 17.6 |
| SS062 SONOBUOY | 1 | 36400.0 | 0.0 | 0.0 |
| | 2 | 40000.0 | 0.0 | 0.0 |
| | 3 | 41200.0 | 0.0 | 0.0 |
| | 4 | 38900.0 | 0.0 | 0.0 |
| | 5 | 31300.0 | 4.8 | 3.6 |
| | 6 | 32552.0 | 7.3 | 5.8 |
| | 7 | 33854.0 | 6.6 | 5.3 |
| | 8 | 35208.0 | 6.0 | 4.8 |
| | 9 | 36617.0 | | |
| | 10 | 38081.0 | | |
| | TOTAL | 364112.0 | 24.7 | 19.5 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| ENV TEST AUTOMT A211 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 300.0 | -300.0 | -300.0 |
| | 4 | 400.0 | -400.0 | -400.0 |
| | 5 | 400.0 | -385.0 | -388.8 |

| PROJECT TITLE | YEAR | ($,THOUSANDS) | (UPPER) | (LOWER) |
|---|---|---|---|---|
| ENV TEST AUTOMT A211 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 300.0 | -300.0 | -300.0 |
| | 4 | 400.0 | -400.0 | -400.0 |
| | 5 | 400.0 | -385.0 | -388.8 |
| | 6 | 0.0 | 22.7 | 18.2 |
| | 7 | 0.0 | 20.6 | 16.5 |
| | 8 | 0.0 | 18.8 | 15.0 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 1100.0 | -1022.9 | -1039.1 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 59 PCB OCR INSP. A266

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| UYK-7 COMPUTER | 1 | 20176.0 | 0.0 | 0.0 |
| | 2 | 25958.0 | 0.0 | 0.0 |
| | 3 | 38920.0 | 0.0 | 0.0 |
| | 4 | 16378.0 | 0.0 | 0.0 |
| | 5 | 13626.0 | 0.0 | 0.0 |
| | 6 | 9616.0 | 42.9 | 34.3 |
| | 7 | 6580.0 | 25.7 | 20.5 |
| | 8 | 6843.0 | 23.3 | 18.7 |
| | 9 | 7117.0 | 21.2 | 17.0 |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 113.1 | 90.5 |

*Note:* For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PCB OCR INSP. A266 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 200.0 | -200.0 | -200.0 |
| | 4 | 300.0 | -300.0 | -300.0 |
| | 5 | 300.0 | -300.0 | -300.0 |
| | 6 | 0.0 | 42.9 | 34.3 |
| | 7 | 0.0 | 25.7 | 20.5 |
| | 8 | 0.0 | 23.3 | 18.7 |
| | 9 | 0.0 | 21.2 | 17.0 |
| | 10 | 0.0 | | |
| | TOTAL | 800.0 | -686.9 | -709.5 |

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 60 NR FLD ANT TST A224

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| DDG47 AEGIS | 1 | 930000.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 1882900.0 | 0.0 | 0.0 |
| | 4 | 1945400.0 | 340.7 | 204.4 |
| | 5 | 2038300.0 | 624.2 | 374.5 |
| | 6 | 0.0 | 0.0 | 0.0 |
| | 7 | 1469750.0 | 343.9 | 206.3 |
| | 8 | 2292810.0 | | |
| | 9 | 2384520.0 | | |
| | 10 | 826630.0 | | |
| | TOTAL | 13770310.0 | 1308.8 | 785.3 |
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 0.0 | 0.0 |
| | 4 | 9000.0 | 26.3 | 15.8 |
| | 5 | 9400.0 | 48.0 | 28.8 |
| | 6 | 9700.0 | 43.3 | 26.0 |
| | 7 | 10100.0 | 39.4 | 23.6 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 156.9 | 94.1 |
| DTP EW SUITE | 1 | 51100.0 | 0.0 | 0.0 |
| | 2 | 57600.0 | 0.0 | 0.0 |
| | 3 | 39400.0 | 0.0 | 0.0 |
| | 4 | 0.0 | | |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 148100.0 | 0.0 | 0.0 |
| ALQ-78 ECM SET | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2700.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | 9.0 | 5.4 |
| | 5 | 5100.0 | 26.0 | 15.6 |
| | 6 | 5300.0 | 23.6 | 14.2 |
| | 7 | 5500.0 | 21.4 | 12.9 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2700.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | 9.0 | 5.4 |
| | 5 | 5100.0 | 26.0 | 15.6 |
| | 6 | 5300.0 | 23.6 | 14.2 |
| | 7 | 5500.0 | 21.4 | 12.9 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 26800.0 | 80.2 | 48.1 |
| ALR-59 EN SET | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | 1700.0 | 0.0 | 0.0 |
| | 4 | 1800.0 | 5.3 | 3.2 |
| | 5 | 1800.0 | 9.2 | 5.5 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 8500.0 | 14.4 | 8.7 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| NR FLD ANT TST A224 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 250.0 | -250.0 | -250.0 |
| | 4 | 250.0 | 131.3 | -21.2 |
| | 5 | 0.0 | 707.3 | 424.4 |
| | 6 | 0.0 | 66.9 | 40.2 |
| | 7 | 0.0 | 404.7 | 242.8 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 500.0 | 1060.3 | 436.2 |

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 67 N/C CALIBRATION

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 51.9 | 41.5 |
| | 5 | 144400.0 | 46.4 | 37.1 |
| | 6 | 100100.0 | 28.1 | 22.5 |
| | 7 | 104100.0 | 25.6 | 20.5 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 152.1 | 121.7 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 34.5 | 27.6 |
| | 5 | 98700.0 | 31.7 | 25.4 |
| | 6 | 100500.0 | 28.2 | 22.6 |
| | 7 | 105200.0 | 25.8 | 20.7 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 120.4 | 96.3 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 30.2 | 24.2 |
| | 5 | 84100.0 | 27.0 | 21.6 |
| | 6 | 32700.0 | 9.2 | 7.4 |
| | 7 | 34500.0 | 8.5 | 6.8 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 74.9 | 60.0 |
| MK15 PHALANX CIWS | 1 | 67200.0 | 0.0 | 0.0 |
| | 2 | 93800.0 | 0.0 | 0.0 |
| | 3 | 85500.0 | 0.0 | 0.0 |
| | 4 | 89600.0 | 39.2 | 31.4 |
| | 5 | 107000.0 | 41.0 | 32.8 |
| | 6 | 111280.0 | 37.2 | 29.8 |
| | 7 | 95310.0 | 27.9 | 22.3 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 93800.0 | 0.0 | 0.0 |
| | 3 | 85500.0 | 0.0 | 0.0 |
| | 4 | 89600.0 | 39.2 | 31.4 |
| | 5 | 107000.0 | 41.0 | 32.8 |
| | 6 | 111280.0 | 37.2 | 29.8 |
| | 7 | 95310.0 | 27.9 | 22.3 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 649690.0 | 145.3 | 116.2 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| N/C CALIBRATION | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 30.0 | -30.0 | -30.0 |
| | 4 | 0.0 | 155.9 | 124.8 |
| | 5 | 0.0 | 146.2 | 116.9 |
| | 6 | 0.0 | 102.8 | 82.2 |
| | 7 | 0.0 | 87.8 | 70.2 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 30.0 | 462.7 | 364.1 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 68 HYBRID SEAL RINGS

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 43.3 | 34.6 |
| | 5 | 144400.0 | 77.4 | 61.9 |
| | 6 | 100100.0 | 46.9 | 37.5 |
| | 7 | 104100.0 | 42.6 | 34.1 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 210.2 | 168.1 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 28.8 | 23.0 |
| | 5 | 98700.0 | 52.9 | 42.3 |
| | 6 | 100500.0 | 47.1 | 37.7 |
| | 7 | 105200.0 | 43.1 | 34.5 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 171.8 | 137.5 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 25.2 | 20.2 |
| | 5 | 84100.0 | 45.1 | 36.1 |
| | 6 | 32700.0 | 15.3 | 12.3 |
| | 7 | 34500.0 | 14.1 | 11.3 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 99.7 | 79.8 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| HYBRID SEAL RINGS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 70.0 | -70.0 | -70.0 |
| | 4 | 0.0 | 97.3 | 77.8 |
| | 5 | 0.0 | 175.3 | 140.3 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| HYBRID SEAL RINGS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 70.0 | -70.0 | -70.0 |
| | 4 | 0.0 | 97.3 | 77.8 |
| | 5 | 0.0 | 175.3 | 140.3 |
| | 6 | 0.0 | 109.3 | 87.4 |
| | 7 | 0.0 | 99.8 | 79.9 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 70.0 | 411.7 | 315.4 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 69 PLASTIC MICROWV COMP

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 0.0 | 0.0 |
| | 4 | 141200.0 | 64.9 | 58.4 |
| | 5 | 144400.0 | 116.1 | 104.5 |
| | 6 | 100100.0 | 70.3 | 63.3 |
| | 7 | 104100.0 | 63.9 | 57.5 |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 315.3 | 283.7 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 0.0 | 0.0 |
| | 4 | 93900.0 | 43.2 | 38.9 |
| | 5 | 98700.0 | 79.3 | 71.4 |
| | 6 | 100500.0 | 70.6 | 63.6 |
| | 7 | 105200.0 | 64.6 | 58.2 |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 257.7 | 232.0 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 0.0 | 0.0 |
| | 4 | 82200.0 | 37.8 | 34.0 |
| | 5 | 84100.0 | 67.6 | 60.8 |
| | 6 | 32700.0 | 23.0 | 20.7 |
| | 7 | 34500.0 | 21.2 | 19.1 |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 149.6 | 134.6 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PLASTIC MICROWV COMP | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 140.0 | -140.0 | -140.0 |
| | 4 | 0.0 | 145.9 | 131.3 |
| | 5 | 0.0 | 263.0 | 236.7 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PLASTIC MICRONV COMP | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 140.0 | -140.0 | -140.0 |
| | 4 | 0.0 | 145.9 | 131.3 |
| | 5 | 0.0 | 263.0 | 236.7 |
| | 6 | 0.0 | 163.9 | 147.5 |
| | 7 | 0.0 | 149.7 | 134.8 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 140.0 | 582.6 | 510.3 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 70 LASER WELDING CABINT

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| 800-S SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 0.0 | 0.0 |
| | 5 | 61200.0 | 136.6 | 95.7 |
| | 6 | 47700.0 | 133.0 | 93.1 |
| | 7 | 66100.0 | 161.1 | 112.8 |
| | 8 | 51600.0 | 109.9 | 77.0 |
| | 9 | 71500.0 | | |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 540.7 | 378.5 |
| UYK-7 COMPUTER | 1 | 20176.0 | 0.0 | 0.0 |
| | 2 | 25958.0 | 0.0 | 0.0 |
| | 3 | 38920.0 | 0.0 | 0.0 |
| | 4 | 16378.0 | 0.0 | 0.0 |
| | 5 | 13626.0 | 30.4 | 21.3 |
| | 6 | 9616.0 | 26.8 | 18.8 |
| | 7 | 6580.0 | 16.0 | 11.2 |
| | 8 | 6843.0 | 14.6 | 10.2 |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 87.9 | 61.5 |
| AYK-14 COMPUTER | 1 | 0500.0 | 0.0 | 0.0 |
| | 2 | 2000.0 | 0.0 | 0.0 |
| | 3 | 16884.0 | 0.0 | 0.0 |
| | 4 | 19130.0 | 0.0 | 0.0 |
| | 5 | 21678.0 | 48.4 | 33.9 |
| | 6 | 24088.0 | 67.2 | 47.0 |
| | 7 | 23448.0 | 57.1 | 40.0 |
| | 8 | 20710.0 | 44.1 | 30.9 |
| | 9 | 21538.0 | | |
| | 10 | 13730.0 | | |
| | TOTAL | 167706.0 | 216.8 | 151.8 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| LASER WELDING CABINT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 300.0 | -300.0 | -300.0 |
| | 4 | 200.0 | -200.0 | -200.0 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| LASER WELDING CABINT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 300.0 | -300.0 | -300.0 |
| | 4 | 200.0 | -200.0 | -200.0 |
| | 5 | 0.0 | 215.5 | 150.8 |
| | 6 | 0.0 | 227.0 | 158.9 |
| | 7 | 0.0 | 234.3 | 164.0 |
| | 8 | 0.0 | 168.6 | 118.0 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 500.0 | 345.4 | 91.8 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 71 PROJECTION LITH SAW

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| F14A TOMCAT | 1 | 727600.0 | 0.0 | 0.0 |
| | 2 | 1058800.0 | 0.0 | 0.0 |
| | 3 | 1140300.0 | 0.0 | 0.0 |
| | 4 | 889300.0 | 6.2 | 3.1 |
| | 5 | 761700.0 | 9.3 | 6.5 |
| | 6 | 326190.0 | 3.5 | 2.4 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 4903890.0 | 19.1 | 12.1 |
| F18 | 1 | -0.0 | 0.0 | 0.0 |
| | 2 | 309860.0 | 0.0 | 0.0 |
| | 3 | 565000.0 | 0.0 | 0.0 |
| | 4 | 824900.0 | 0.0 | 0.0 |
| | 5 | 1028800.0 | 12.6 | 8.8 |
| | 6 | 802440.0 | 8.6 | 6.0 |
| | 7 | 612000.0 | 5.7 | 4.0 |
| | 8 | 617190.0 | 5.0 | 3.5 |
| | 9 | 805560.0 | | |
| | 10 | 688410.0 | | |
| | TOTAL | 6254160.0 | 32.0 | 22.4 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PROJECTION LITH SAW | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 60.0 | -60.0 | -60.0 |
| | 4 | 60.0 | -53.8 | -56.9 |
| | 5 | 0.0 | 21.9 | 15.4 |
| | 6 | 0.0 | 12.1 | 8.5 |
| | 7 | 0.0 | 5.7 | 4.0 |
| | 8 | 0.0 | 5.0 | 3.5 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 120.0 | -69.0 | -85.5 |

| | | | | |
|---|---|---|---|---|
| | TOTAL | 120.0 | -84.0 | -85.5 |

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SCIENCE APPLICATIONS, INC. MCLEAN, VA.

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MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 73 NC COMP PLACEMNT

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| UYK-7 COMPUTER | 1 | 20176.0 | 0.0 | 0.0 |
| | 2 | 25958.0 | 0.0 | 0.0 |
| | 3 | 38920.0 | 39.0 | 29.2 |
| | 4 | 16378.0 | 28.7 | 21.5 |
| | 5 | 13626.0 | 20.9 | 15.6 |
| | 6 | 9616.0 | 12.9 | 9.7 |
| | 7 | 6580.0 | | |
| | 8 | 6843.0 | | |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 101.4 | 76.1 |
| AYK-14 COMPUTER | 1 | 4500.0 | 0.0 | 0.0 |
| | 2 | 2000.0 | 0.0 | 0.0 |
| | 3 | 16884.0 | 16.9 | 12.7 |
| | 4 | 19130.0 | 33.5 | 25.1 |
| | 5 | 21678.0 | 33.2 | 24.9 |
| | 6 | 24088.0 | 32.2 | 24.2 |
| | 7 | 23448.0 | | |
| | 8 | 20710.0 | | |
| | 9 | 21538.0 | | |
| | 10 | 13730.0 | | |
| | TOTAL | 167706.0 | 115.9 | 86.9 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| NC COMP PLACEMNT | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 150.0 | -94.1 | -108.1 |
| | 4 | 0.0 | 62.2 | 46.6 |
| | 5 | 0.0 | 54.1 | 40.5 |
| | 6 | 0.0 | 45.1 | 33.8 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 150.0 | 67.3 | 12.9 |

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SCIENCE APPLICATIONS, INC. MCLEAN, VA.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 74 SEMIAUTO CORE STRGNG

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| UYK-7 COMPUTER | 1 | 20176.0 | 0.0 | 0.0 |
| | 2 | 25958.0 | 0.0 | 0.0 |
| | 3 | 38920.0 | 0.0 | 0.0 |
| | 4 | 16378.0 | 14.3 | 10.8 |
| | 5 | 13626.0 | 20.9 | 15.6 |
| | 6 | 9616.0 | 12.9 | 9.7 |
| | 7 | 6580.0 | 7.7 | 5.8 |
| | 8 | 6843.0 | | |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 55.8 | 41.8 |
| AYK-14 COMPUTER | 1 | 4500.0 | 0.0 | 0.0 |
| | 2 | 2000.0 | 0.0 | 0.0 |
| | 3 | 16884.0 | 0.0 | 0.0 |
| | 4 | 19130.0 | 16.8 | 12.6 |
| | 5 | 21678.0 | 33.2 | 24.9 |
| | 6 | 24088.0 | 32.2 | 24.2 |
| | 7 | 23448.0 | 27.4 | 20.6 |
| | 8 | 20710.0 | | |
| | 9 | 21538.0 | | |
| | 10 | 13730.0 | | |
| | TOTAL | 167706.0 | 109.6 | 82.2 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| SEMIAUTO CORE STRGNG | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 150.0 | -150.0 | -150.0 |
| | 4 | 250.0 | -218.9 | -226.7 |
| | 5 | 0.0 | 54.1 | 40.5 |
| | 6 | 0.0 | 45.1 | 33.8 |
| | 7 | 0.0 | 35.1 | 26.3 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 400.0 | -234.6 | -276.0 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 75 IMPVD HOLE ETCH/STRP

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| STANDARD ER (SM-2) | 1 | 37800.0 | 0.0 | 0.0 |
| | 2 | 39800.0 | 0.0 | 0.0 |
| | 3 | 45300.0 | 5.1 | 2.5 |
| | 4 | 141200.0 | 27.7 | 13.8 |
| | 5 | 144400.0 | 24.8 | 12.4 |
| | 6 | 100100.0 | 15.0 | 7.5 |
| | 7 | 104100.0 | | |
| | 8 | 108300.0 | | |
| | 9 | 112600.0 | | |
| | 10 | 117100.0 | | |
| | TOTAL | 950700.0 | 72.5 | 36.3 |
| STANDARD MR | 1 | 91200.0 | 0.0 | 0.0 |
| | 2 | 82600.0 | 0.0 | 0.0 |
| | 3 | 88600.0 | 19.9 | 9.9 |
| | 4 | 93900.0 | 36.8 | 18.4 |
| | 5 | 98700.0 | 33.8 | 16.9 |
| | 6 | 100500.0 | 30.1 | 15.1 |
| | 7 | 105200.0 | | |
| | 8 | 108700.0 | | |
| | 9 | 113800.0 | | |
| | 10 | 117600.0 | | |
| | TOTAL | 1000800.0 | 120.7 | 60.4 |
| SPARROW | 1 | 45600.0 | 0.0 | 0.0 |
| | 2 | 48400.0 | 0.0 | 0.0 |
| | 3 | 82700.0 | 46.4 | 23.2 |
| | 4 | 82300.0 | 80.6 | 40.3 |
| | 5 | 84100.0 | 72.1 | 36.1 |
| | 6 | 32700.0 | 24.5 | 12.3 |
| | 7 | 34500.0 | | |
| | 8 | 35400.0 | | |
| | 9 | 37300.0 | | |
| | 10 | 38300.0 | | |
| | TOTAL | 521200.0 | 223.6 | 111.8 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| IMPVD HOLE ETCH/STRP | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 45.0 | 26.4 | -9.3 |
| | 4 | 0.0 | 145.2 | 72.6 |
| | 5 | 0.0 | 130.7 | 65.4 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER | OHER) |
|---|---|---|---|---|
| IMPVD HOLE ETCH/STRP | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 45.0 | 26.4 | -9.3 |
| | 4 | 0.0 | 145.2 | 72.6 |
| | 5 | 0.0 | 130.7 | 65.4 |
| | 6 | 0.0 | 69.6 | 34.8 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 45.0 | 371.9 | 163.4 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 78 LASR WLDNG-CRE MEMRS

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| UYK-7 COMPUTER | 1 | 20176.0 | 0.0 | 0.0 |
| | 2 | 25958.0 | 0.0 | 0.0 |
| | 3 | 38920.0 | 0.0 | 0.0 |
| | 4 | 16378.0 | 119.5 | 59.8 |
| | 5 | 13626.0 | 130.4 | 91.3 |
| | 6 | 9616.0 | 80.4 | 56.3 |
| | 7 | 6580.0 | 48.1 | 33.7 |
| | 8 | 6843.0 | | |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 378.5 | 241.0 |
| UYK-20 COMPUTER | 1 | -0.0 | 0.0 | 0.0 |
| | 2 | -0.0 | 0.0 | 0.0 |
| | 3 | -0.0 | 0.0 | 0.0 |
| | 4 | -0.0 | 0.0 | 0.0 |
| | 5 | -0.0 | | |
| | 6 | -0.0 | | |
| | 7 | -0.0 | | |
| | 8 | -0.0 | | |
| | 9 | -0.0 | | |
| | 10 | -0.0 | | |
| | TOTAL | 0.0 | 0.0 | 0.0 |
| AYK-14 COMPUTER | 1 | 4500.0 | 0.0 | 0.0 |
| | 2 | 2000.0 | 0.0 | 0.0 |
| | 3 | 16884.0 | 0.0 | 0.0 |
| | 4 | 19130.0 | 139.6 | 69.8 |
| | 5 | 21678.0 | 207.4 | 145.2 |
| | 6 | 24088.0 | 201.5 | 141.0 |
| | 7 | 23448.0 | 171.4 | 120.0 |
| | 8 | 20710.0 | | |
| | 9 | 21538.0 | | |
| | 10 | 13730.0 | | |
| | TOTAL | 167706.0 | 720.0 | 476.1 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| LASR WLDNG-CRE MEMRS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 75.0 | -75.0 | -75.0 |
| | 4 | 75.0 | 184.1 | 54.6 |
| | 5 | 0.0 | 337.8 | 236.5 |

| PROJECT TITLE | YEAR | PROJECT COST (,THOUSANDS) | NET GAIN (,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| LASR BLDNG-CRE MEMRS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 75.0 | -75.0 | -75.0 |
| | 4 | 75.0 | 184.1 | 54.6 |
| | 5 | 0.0 | 337.8 | 236.5 |
| | 6 | 0.0 | 281.9 | 197.3 |
| | 7 | 0.0 | 219.6 | 153.7 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 150.0 | 948.4 | 567.1 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 79 SLK SCRN PRNTNG PCBS

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| UYK-7 COMPUTER | 1 | 20176.0 | 0.0 | 0.0 |
| | 2 | 25958.0 | 0.0 | 0.0 |
| | 3 | 38920.0 | 31.2 | 23.4 |
| | 4 | 16378.0 | 22.9 | 17.2 |
| | 5 | 13626.0 | 16.7 | 12.5 |
| | 6 | 9616.0 | 10.3 | 7.7 |
| | 7 | 6580.0 | | |
| | 8 | 6843.0 | | |
| | 9 | 7117.0 | | |
| | 10 | 7401.0 | | |
| | TOTAL | 152615.0 | 81.1 | 60.8 |
| UYK-20 COMPUTER | 1 | -0.0 | 0.0 | 0.0 |
| | 2 | -0.0 | 0.0 | 0.0 |
| | 3 | -0.0 | 0.0 | 0.0 |
| | 4 | -0.0 | 0.0 | 0.0 |
| | 5 | -0.0 | | |
| | 6 | -0.0 | | |
| | 7 | -0.0 | | |
| | 8 | -0.0 | | |
| | 9 | -0.0 | | |
| | 10 | -0.0 | | |
| | TOTAL | 0.0 | 0.0 | 0.0 |
| AYK-14 COMPUTER | 1 | 4500.0 | 0.0 | 0.0 |
| | 2 | 2000.0 | 0.0 | 0.0 |
| | 3 | 16884.0 | 13.5 | 10.1 |
| | 4 | 19130.0 | 26.8 | 20.1 |
| | 5 | 21678.0 | 26.6 | 19.9 |
| | 6 | 24088.0 | 25.8 | 19.3 |
| | 7 | 23448.0 | | |
| | 8 | 20710.0 | | |
| | 9 | 21538.0 | | |
| | 10 | 13730.0 | | |
| | TOTAL | 167706.0 | 92.7 | 69.5 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| SLK SCRN PRNTNG PCBS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 150.0 | -105.3 | -116.5 |
| | 4 | 0.0 | 49.8 | 37.3 |
| | 5 | 0.0 | 43.2 | 32.4 |

| PROJECT TITLE | YEAR | $,THOUSANDS) | (UPPER | OWER) |
|---|---|---|---|---|
| SLK SCRN PRNTAG PCBS | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 150.0 | -105.3 | -116.5 |
| | 4 | 0.0 | 49.8 | 37.3 |
| | 5 | 0.0 | 43.2 | 32.4 |
| | 6 | 0.0 | 36.1 | 27.1 |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 150.0 | 23.8 | -19.6 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 80 GK REACTON CNG.CAP.

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PHOENIX | 1 | 69200.0 | 0.0 | 0.0 |
| | 2 | 79400.0 | 0.0 | 0.0 |
| | 3 | 100300.0 | 0.0 | 0.0 |
| | 4 | 93800.0 | 172.5 | 86.3 |
| | 5 | 90300.0 | 217.8 | 108.9 |
| | 6 | 16400.0 | 46.1 | 23.0 |
| | 7 | 17100.0 | 42.0 | 21.0 |
| | 8 | 18200.0 | | |
| | 9 | 18500.0 | | |
| | 10 | 19200.0 | | |
| | TOTAL | 522400.0 | 478.4 | 239.2 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| GK REACTON CNG.CAP. | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 500.0 | -500.0 | -500.0 |
| | 4 | 600.0 | -427.5 | -513.7 |
| | 5 | 1000.0 | -782.2 | -891.1 |
| | 6 | 0.0 | 46.1 | 23.0 |
| | 7 | 0.0 | 42.0 | 21.0 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 2100.0 | -1621.6 | -1860.8 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

SCIENCE APPLICATIONS, INC. MCLEAN, VA.

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 89 GAAS FET YL IM A6188

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| DDG47 AEGIS | 1 | 930000.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 1882900.0 | 0.0 | 0.0 |
| | 4 | 1945400.0 | 27.3 | 13.6 |
| | 5 | 2038300.0 | 49.9 | 25.0 |
| | 6 | 0.0 | 0.0 | 0.0 |
| | 7 | 1469750.0 | 27.5 | 13.8 |
| | 8 | 2292810.0 | | |
| | 9 | 2384520.0 | | |
| | 10 | 826630.0 | | |
| | TOTAL | 13770310.0 | 104.7 | 52.4 |
| PRC-104 RADIO | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | -0.0 | 0.0 | 0.0 |
| | 4 | -0.0 | 0.0 | 0.0 |
| | 5 | -0.0 | | |
| | 6 | -0.0 | | |
| | 7 | -0.0 | | |
| | 8 | -0.0 | | |
| | 9 | -0.0 | | |
| | 10 | -0.0 | | |
| | TOTAL | 3200.0 | 0.0 | 0.0 |
| TPS-59 RADAR | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 8300.0 | 0.0 | 0.0 |
| | 3 | 8700.0 | 0.0 | 0.0 |
| | 4 | 9000.0 | 2.1 | 1.1 |
| | 5 | 9400.0 | 3.8 | 1.9 |
| | 6 | 9700.0 | 3.5 | 1.7 |
| | 7 | 10100.0 | 3.2 | 1.6 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 55200.0 | 12.6 | 6.3 |
| DTP EW SUITE | 1 | 51100.0 | 0.0 | 0.0 |
| | 2 | 57600.0 | 0.0 | 0.0 |
| | 3 | 39400.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 57600.0 | 0.0 | 0.0 |
| | 3 | 39400.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 148100.0 | 0.0 | 0.0 |
| ALQ-78 ECM SET | 1 | 2500.0 | 0.0 | 0.0 |
| | 2 | 2600.0 | 0.0 | 0.0 |
| | 3 | 2700.0 | 0.0 | 0.0 |
| | 4 | 3100.0 | .7 | .4 |
| | 5 | 5100.0 | 2.1 | 1.0 |
| | 6 | 5300.0 | 1.9 | .9 |
| | 7 | 5500.0 | 1.7 | .9 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 26800.0 | 6.4 | 3.2 |
| ALR-59 EW SET | 1 | 1600.0 | 0.0 | 0.0 |
| | 2 | 1600.0 | 0.0 | 0.0 |
| | 3 | 1700.0 | 0.0 | 0.0 |
| | 4 | 1800.0 | .4 | .2 |
| | 5 | 1800.0 | .7 | .4 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 8500.0 | 1.2 | .6 |

Note: For comparison purposes all Mt project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| GAAS FET YL IP A6188 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 650.0 | -650.0 | -650.0 |
| | 4 | 650.0 | -619.5 | -634.7 |
| | 5 | 0.0 | 56.6 | 28.3 |
| | 6 | 0.0 | 5.4 | 2.7 |
| | 7 | 0.0 | 32.4 | 16.2 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 1300.0 | -1175.2 | -1237.6 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 91 PIEZOELEC FILM A6018

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| BQQ-5 SONAR | 1 | 142000.0 | 0.0 | 0.0 |
| | 2 | 133000.0 | 0.0 | 0.0 |
| | 3 | 144000.0 | 0.0 | 0.0 |
| | 4 | 132300.0 | 0.0 | 0.0 |
| | 5 | 61200.0 | 19.5 | 9.8 |
| | 6 | 47700.0 | 26.6 | 13.3 |
| | 7 | 66100.0 | 32.2 | 16.1 |
| | 8 | 51600.0 | 22.0 | 11.0 |
| | 9 | 71500.0 | | |
| | 10 | 74400.0 | | |
| | TOTAL | 923800.0 | 100.3 | 50.2 |
| SQQ-23 SONAR | 1 | 3700.0 | 0.0 | 0.0 |
| | 2 | 31500.0 | 0.0 | 0.0 |
| | 3 | 26600.0 | 0.0 | 0.0 |
| | 4 | 22900.0 | 0.0 | 0.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 84700.0 | 0.0 | 0.0 |
| BQR-21 SONAR | 1 | 11500.0 | 0.0 | 0.0 |
| | 2 | 12700.0 | 0.0 | 0.0 |
| | 3 | 2300.0 | 0.0 | 0.0 |
| | 4 | 900.0 | 0.0 | 0.0 |
| | 5 | 900.0 | .3 | .1 |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 28300.0 | .3 | .1 |
| SS041 SONOBUOY | 1 | 28500.0 | 0.0 | 0.0 |
| | 2 | 29800.0 | 0.0 | 0.0 |
| | 3 | 35200.0 | 0.0 | 0.0 |
| | 4 | 36300.0 | 0.0 | 0.0 |
| | 5 | 38300.0 | 12.2 | 6.1 |
| | 6 | 39832.0 | 22.2 | 11.1 |
| | 7 | 41425.0 | 20.2 | 10.1 |
| | 8 | 43082.0 | 18.4 | 9.2 |
| | 9 | 44806.0 | | |
| | 10 | 46598.0 | | |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| | | | | |
|---|---|---|---|---|
| | 2 | 29800.0 | 0.0 | 0.0 |
| | 3 | 35200.0 | 0.0 | 0.0 |
| | 4 | 36300.0 | 0.0 | 0.0 |
| | 5 | 38300.0 | 12.2 | 6.1 |
| | 6 | 39832.0 | 22.2 | 11.1 |
| | 7 | 41425.0 | 20.2 | 10.1 |
| | 8 | 43082.0 | 18.4 | 9.2 |
| | 9 | 44806.0 | | |
| | 10 | 46598.0 | | |
| | TOTAL | 383843.0 | 73.0 | 36.5 |
| SS053 SONOBUOY | 1 | 33300.0 | 0.0 | 0.0 |
| | 2 | 32600.0 | 0.0 | 0.0 |
| | 3 | 24500.0 | 0.0 | 0.0 |
| | 4 | 27800.0 | 0.0 | 0.0 |
| | 5 | 28300.0 | 9.0 | 4.5 |
| | 6 | 29432.0 | 16.4 | 8.2 |
| | 7 | 30609.0 | 14.9 | 7.5 |
| | 8 | 31834.0 | 13.6 | 6.8 |
| | 9 | 33107.0 | | |
| | 10 | 34431.0 | | |
| | TOTAL | 305913.0 | 53.9 | 27.0 |
| SS062 SONOBUOY | 1 | 36400.0 | 0.0 | 0.0 |
| | 2 | 40000.0 | 0.0 | 0.0 |
| | 3 | 41200.0 | 0.0 | 0.0 |
| | 4 | 38900.0 | 0.0 | 0.0 |
| | 5 | 31300.0 | 10.0 | 5.0 |
| | 6 | 32552.0 | 18.2 | 9.1 |
| | 7 | 33854.0 | 16.5 | 8.3 |
| | 8 | 35208.0 | 15.0 | 7.5 |
| | 9 | 36617.0 | | |
| | 10 | 38081.0 | | |
| | TOTAL | 364112.0 | 59.6 | 29.8 |

*Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.*

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| PIEZOELEC FILM A6018 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 200.0 | -200.0 | -200.0 |
| | 4 | 175.0 | -175.0 | -175.0 |
| | 5 | 75.0 | -24.0 | -49.5 |
| | 6 | 0.0 | 83.4 | 41.7 |
| | 7 | 0.0 | 83.8 | 41.9 |
| | 8 | 0.0 | 68.9 | 34.5 |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 450.0 | -162.8 | -306.4 |

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 92 COMP MAT OPT ASMA301

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| SIDEWINDER | 1 | 30600.0 | 0.0 | 0.0 |
| | 2 | 27800.0 | 0.0 | 0.0 |
| | 3 | 25500.0 | 0.0 | 0.0 |
| | 4 | 23900.0 | 36.6 | 27.5 |
| | 5 | 24900.0 | 66.7 | 50.0 |
| | 6 | 25100.0 | 58.8 | 44.1 |
| | 7 | 26100.0 | 53.4 | 40.1 |
| | 8 | 27100.0 | | |
| | 9 | 28200.0 | | |
| | 10 | 29300.0 | | |
| | TOTAL | 268500.0 | 215.6 | 161.7 |

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| COMP MAT OPT ASMA301 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 250.0 | -250.0 | -250.0 |
| | 4 | 200.0 | -163.4 | -172.5 |
| | 5 | 0.0 | 66.7 | 50.0 |
| | 6 | 0.0 | 58.8 | 44.1 |
| | 7 | 0.0 | 53.4 | 40.1 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 450.0 | -234.4 | -288.3 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

----- MANUFACTURING TECHNOLOGY STUDY --- 06/07/77 -----

PROJECT - 93 DIAMND TRNED PL A331

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| SIDEWINDER | 1 | 30600.0 | 0.0 | 0.0 |
| | 2 | 27800.0 | 0.0 | 0.0 |
| | 3 | 25500.0 | 0.0 | 0.0 |
| | 4 | 23900.0 | 14.7 | 11.0 |
| | 5 | 24900.0 | 33.4 | 25.0 |
| | 6 | 25100.0 | 29.4 | 22.0 |
| | 7 | 26100.0 | 26.7 | 20.0 |
| | 8 | 27100.0 | | |
| | 9 | 28200.0 | | |
| | 10 | 29300.0 | | |
| | TOTAL | 268500.0 | 104.1 | 78.1 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| DIAMND TRNED PL A331 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 250.0 | -250.0 | -250.0 |
| | 4 | 200.0 | -185.3 | -189.0 |
| | 5 | 0.0 | 33.4 | 25.0 |
| | 6 | 0.0 | 29.4 | 22.0 |
| | 7 | 0.0 | 26.7 | 20.0 |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 450.0 | -345.9 | -371.9 |

MANUFACTURING TECHNOLOGY STUDY --- 06/07/77

PROJECT - 97 MLTH.FCL-PL-DET A302

| AFFECTED NAVY WEAPON SYSTEM | YEAR | SYSTEM COST ($,THOUSANDS) | SAVINGS ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| A6E INTRUDER | 1 | 137900.0 | 0.0 | 0.0 |
| | 2 | 181500.0 | 0.0 | 0.0 |
| | 3 | 96500.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 415900.0 | 0.0 | 0.0 |
| EA6B PROWLER | 1 | 88600.0 | 0.0 | 0.0 |
| | 2 | 93300.0 | 0.0 | 0.0 |
| | 3 | 80100.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | | |
| | 6 | 0.0 | | |
| | 7 | 0.0 | | |
| | 8 | 0.0 | | |
| | 9 | 0.0 | | |
| | 10 | 0.0 | | |
| | TOTAL | 262000.0 | 0.0 | 0.0 |
| SIDEWINDER | 1 | 30600.0 | 0.0 | 0.0 |
| | 2 | 27800.0 | 0.0 | 0.0 |
| | 3 | 25500.0 | 0.0 | 0.0 |
| | 4 | 23900.0 | 0.0 | 0.0 |
| | 5 | 24900.0 | 33.4 | 16.7 |
| | 6 | 25100.0 | 58.8 | 29.4 |
| | 7 | 26100.0 | 53.4 | 26.7 |
| | 8 | 27100.0 | 48.5 | 24.2 |
| | 9 | 28200.0 | | |
| | 10 | 29300.0 | | |
| | TOTAL | 268500.0 | 194.1 | 97.0 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

| PROJECT TITLE | YEAR | PROJECT COST ($,THOUSANDS) | NET GAIN ($,THOUSANDS) (UPPER) | (LOWER) |
|---|---|---|---|---|
| MLTH.FCL-PL-DET A302 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 300.0 | -300.0 | -300.0 |
| | 4 | 250.0 | -250.0 | -250.0 |
| | 5 | 0.0 | 33.4 | 16.7 |

| PROJECT TITLE | YEAR | PROJECT COST (THOUSANDS) | NET GAIN (THOUSANDS) (UPPER) | (INFR) |
|---|---|---|---|---|
| PLTH.FCL-PL-DET A302 | 1 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 300.0 | -300.0 | -300.0 |
| | 4 | 250.0 | -250.0 | -250.0 |
| | 5 | | 33.4 | 16.7 |
| | 6 | | 58.8 | 29.4 |
| | 7 | | 53.4 | 26.7 |
| | 8 | | 48.5 | 24.2 |
| | 9 | | | |
| | 10 | | | |
| | TOTAL | 550.0 | -355.9 | -453.0 |

Note: For comparison purposes all MT project savings are terminated after four years. In most cases successful projects will produce additional savings.

TABLE 5

and

TABLE 6

Table 5

Summary Forecasts of Key Technology Thrusts - Sources IEEE Spectrum, MTAG 76, ECOM Electronic MT Meeting, Mar 77

| Area | TIME PERIOD 1978-79 | 1980-81 | 1982-84 | 1985-87 | 1988-90 |
|---|---|---|---|---|---|
| Materials | • Liquid crystal display in widespread use<br>• Sapphire costs reduced dramatically | • CMOS/SOS available<br>• III, VI Compound crystal growth economical | • GaAs, and InP material available economically | | |
| Devices | • $I^2L$ logic introduced | • Low cost OCR devices available<br>• LSI substitutes for electronics modules available | • Fiber optic cables economic | • Josephson function devices available<br>• Solid State TW amplifier available | |
| Systems | • Hard software, packaged applications programs on semiconductor chips | • Fully automated optical inspection systems introduced | • Optical data bus architecture used with microprocessors interfaces | • Integrated system design - cabinets, cables, electronics components | |
| Manufacturing | • Widespread laser machinery (hole boring, welding, etc.) | • Standardized Hybrid manufacturing equipment available<br>• CAM introduced in the electronics industry successfully | • CAD/CAM interface successfully made in electronic industry<br>• Group Technology used successfully in electronics industry | • Robotic assembly of electronics systems a practical reality | • 0.1 micron line width available<br>• Widespread use of Ion, and/or E-beam in IC manufacture |

Table 6. Selected Advanced Technology Projects

| # | Title |
|---|---|
| 3) | Group Technology |
| 10) | Interactive Fault Isolation Hardware |
| 17) | Ion Beam Resistor Trimming |
| 21) | E-Beam IC Mask Preparation |
| 24) | Low Cost Ion Implementation Machine |
| 33) | FaAs FET/TWT Replacement (high power) |
| 38) | GaAs Microwave Circuits |
| 65) | Ribbon Sapphire |
| 70) | Laser Welding (cabinets) |
| 81) | Automation Interface-Standardization |
| 82) | Hierarchical Control Program/Robotics |
| 83) | Tacticle/Visual Sensor in Robotic Arms |
| 84) | Reembodiment of Semiconductor in LSI |
| 85) | Integrated Fiber Optics (airframes) |
| 88) | III-V Compound Crystal Growth |
| 98) | CMOS/SOS Manufacturability |