Cost Proposal

for

MOL DATA COMPUTATION SUBSYSTEM GROUP (DCSG)
Engineering Development Phase (EDP) Program (U)

to

Douglas Aircraft Company, Inc.
Missile and Space Systems Division
Los Angeles, California

In Response to RFP No.: A3-800-E100-L-461

12 October 1966

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GLOSSARY OF TERMS

ADCU	Aerospace Digital Computer Unit
LVDA/CU	Lab Vehicle Data Adapter/Controller Unit
KDU	Keyboard and Display Unit
PRU	Printer Unit
MCU	Master Control Unit
ASU	Auxiliary Storage Unit

Section 1

INTRODUCTION

Section 1

INTRODUCTION

This document contains IBM's Fixed Price Incentative (FPI) proposal in response to DAC RFP A3-800-E100-L-461, dated 22 September 1966. This proposal represents significant changes from the May 27 proposal submitted by IBM. Section 2 outlines some of the more significant of these changes.

In addition to the changes that were incorporated, we were unable to incorporate the following three (3) directed changes into the proposal. The details on these changes will be provided within the next two (2) weeks.

- DC 1 - Buffering equipment, Printer-Auxiliary Memory Adapter, (PAM) for GE, as described in Section 5 and required by the RFP cover letter.

- DC 2 - Channel adapters for GE, as described in Section 5 and required by DAC TWX 303, dated 28 September 1966.

- DC 3 - Connector change as described in STD-207

We have analyzed the revised statement of work and work breakdown structure (WBS), and have provided in Section 3 a detailed description outlining the effort included in each work package. Section 4 contains clarifications, interpretations, and exceptions, where required, to the technical requirements.

The schedules and cost have been developed to maxiumize production efficiencies which results in a continuous build schedule of approximately 1 per month.

Section 2

COST ANALYSIS

Section 2

COST ANALYSIS

Changes have been incorporated into the program since the May 27 Proposal, the most significant of which are:

- Expanded Systems Effectiveness Requirements
- Keyboard/Display Unit
  - a) Divided into 2 discrete units
  - b) Reduced quantity per System from 2 to 1
  - c) Increased the electronics in the single unit to build in redundancy, due to item b)
- Increased Resident support to include both Douglas and General Electric
- Increased MGE requirements to include capability for complete system testing in lieu of the previous simplex system testing
- Added a 360/30 computer to the MGE Test Set
- Reduced Hardware Quantities
- Deferred Mission Support Requirements
- Tightened Schedule requirements for both Hardware and Software

Table 2-1 shows the average prices for production hardware.

Table 2-1

FLIGHT HARDWARE SUMMARY

Equipment	Qty. /Sys.	Avg. Unit Price	Flight Sys. Price (K)
ADC	2	201	402
LDA	1	84	84
KU	1	37	37
DU	1	43	43
PU	2	19	38
AMU	1	58	58
Total			662

A summary for the total DCSG Program is shown in Table 2-2

Table 2-2
COST SUMMARY
(In Thousands)
of Dollars

AVE HARDWARE			7,025
19	ADC	4131	
10	LDA	783	
15	KU	635	
15	DU	668	
18	PU	315	
9	AMU	493	
DESIGN/DEV.			4,834
	ADC	1969	
	LDA	1096	
	KU	566	
	DU	510	
	PU	337	
	AMU	356	
MGE			1,608
	HDW	563	
	DES/DEV	953	
	Test	48	
	ST & TE	44	
SYSTEM ENGINEERING			1,529
PROGRAMMING			714
SYSTEM EFFECTIVENESS			1,244
PROGRAM MANAGEMENT			1,152
	Mfg. Management	200	
	Eng. Management	164	
	Test Management	23	
	Program Control	765	
DAC SUPPORT			705
OTHER			474
	Training	139	
	Dev. Fixture	45	
	SIL Refurbish	87	
	Prod. Assy. Chk-out	203	
TOTAL			19,285
360/30			400
TOTAL			19,685

Section 3

STATEMENT OF WORK

STATEMENT OF WORK

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
1.0	Not Applicable	Not Applicable	This Work Statement delineates the tasks to be accomplished by IBM on the Data Computation Subsystem Group (DCSG) during the Engineering Development Phase (EDP). This effort shall include engineering, testing, integrating, producing and evaluating the subsystem. IBM will provide the manpower, materials, facilities and necessary support to accomplish the tasks contained within this Work Statement. This Work Statement is identified to a Work Breakdown Structure (WBS) and is written so as to be able to cross reference DAC's Statement of Work to DAC's WBS to IBM work packages. The WBS referenced includes DAC's identifying numbers as well as IBM's work package numbers and work package managers. This work statement includes references to all plans submitted during CDP, which are to be implemented during EDP. The last page of this SOW shows allocation of hardware to IBM Work Packages and DAC WBS numbers. All reporting requirements as identified in the SDRL will stop with the final hardware delivery to DAC from IBM. Any reports required as a result of effort to support DAC after last hardware delivery will be included in that effort.
2.1			System Effectiveness Engineering IBM will provide reliability, maintainability, human engineering and safety engineering in accordance with the following subtasks noted below:
2.1.1	1502	2285	Reliability Program (Non-Recurring) Task 1 - Diagrams and Models for DCSG Subsystem

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	• Provide functional logic diagrams which show series hardware elements identifiable to a major function path or alternate mode of operation. Diagrams generally will be developed to a pluggable page level. If a major function path requires only partial page hardware, the diagram will provide this subdivision. • Provide reliability data associated with the hardware element blocks of the above diagrams. This includes operating and non-operating stress level, operating and non= operating times for each mission phase, and failure rates. • Provide mathematical model to calculate the reliability and system effectiveness of the DCSG, including all the alternate mode capabilities. Task 2 - Reliability Allocations • Allocate to each hardware element block (shown in the functional logic diagrams) a level of reliability which will enable the DCSG subsystem to meet its specified requirement. Task 3 - Critical Item Control Program Prepare in accordance with SDI-R-039 and submit for approval a plan to select and control critical modules, components, or piece parts within critical items. MOL DCSG critical items are presently defined as being the Computer and Com-

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	puter Subsystem Controller. Task 4 and 5 - Parts Application Analysis and Approved Parts List Establish a parts program to assure the use of properly applied approved parts in the subsystem. • Review specifications for new standard parts and critical items to ensure that effectiveness requirements and controls are established as an integral part of the specifications prior to approval and release. • Prepare, issue and maintain an approved parts list for the subsystem. • Upon receipt from Douglas of a list of parts which have proven unsatisfactory in man-rated or high reliability space programs, undertake a search for the use of such parts in the subsystem to ensure their elimination or a detailed justification of their use. • Provide a set of rules to vendors and subcontractors for parts application analysis. • Review vendor's and subcontractor's parts analyses upon submittal for acceptability. • Verify that vendors and subcontractors have identified and limited their suppliers of critical parts and that effective drawing controls will prevent the substitution of any of these parts without approval and

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	analysis. • Participate in the selection of components and parts for the subsystem. • Establish derating requirements for the parts to be used on the subsystem. • Prepare or review substantiating data, including control drawings. This documentation will be available for Douglas to review at IBM. • Prepare parts approval requests as outlined in SDI-R-040 as modified by IBM. This task shall be limited to: Critical parts only Electrical, electronic and electromechanical parts only. Task 6 - Reliability Analysis Conduct reliability engineering analysis which shall result in elimination of weak links from the design of the subsystem and which shall support the design and product engineers in their detail analyses, selection and production of a design. • Identify and define the elements of subsystem design and manufacture that affect the subsystem reliability. This shall include analyses on the

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	effects of use, handling, and storage environments, procurement specifications, manufacturing processes and controls, and maintenance procedures. • Research and record in-house and vendor history on critical items to identify design deficiencies. • Perform trade-off studies on the subsystem AVE. • Perform failure mode and effects analysis to the component (i.e., page) level on all subsystem AVE units. • Provide part failure rates and rate justification per SDI-016 for all subsystem AVE units. (Page level) • Perform effectiveness optimization in accordance with Annex A to Attachment VI of the DACo SOW for the AVE units. • Analyze all proposed designs in light of capabilities to achieve the required subsystem effectiveness and recommend improvements as required. • Record analyses and recommendations in documents which shall be on record for review by Douglas. Task 7 - Test and Assessment Support Perform reliability assessment of, and provide support to, the subsystem test program as follows:

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	• Assist in the preparation of test plans, documentation and reports. • Ensure that procurement specifications and test control drawings reflect the proper environmental, test and effectiveness requirements. • Review design changes, vendor information, requests for deviations from or effect on testing requirements and validity. • Review test data and reports for completeness, accuracy and applicability. • Monitor development, qualification and acceptance testing in laboratories and test areas. • Ensure proper recording of operating time and/or cycles and data as required. • Evaluate the results of development, qualification, production and acceptance tests of the subsystem to extract reliability data to be used in providing a measure of equipment effectiveness. This task terminates with delivery of the last unit at IBM (June 30, 1969). Task 8 - Design Review • Provide periodic design reviews on component parts, circuits, logic and mechanical packaging to insure the applicable reliability requirements are included in the design.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	• Review all drawings for effectiveness requirements; parts and materials will be released via CPMAR procedure to insure screening and selection by the Component Assurance Section in Reliability. • Provide approval by signature on major design layouts. • Prepare data for formal review of each unit of the subsystem (ADC, LDAU, etc.). • Participate in formal design reviews with DACo. Task 9 - Change Review • Provide review of subsystem design changes for impact on effectiveness prior to submittal to the Configuration Change Control Board. Task 10 - Supplier Support and Audit Support and audit suppliers to ensure proper execution of their reliability programs: • Assist in, and review, the selection of subcontractor selected suppliers of equipment and parts. • Provide specific guidance to suppliers concerning requirements for the reliability portion of their effectiveness program. Ensure compliance with these requirements by participation in periodic audits

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	and continual review of documentation and test results. Task 11 - Support of Specification and Contracting Activities Effort will be expended to provide the procurement and contracting organizations in the following: • Assist the procurement and contracting activities by supplying the necessary reviews of proposals and reports submitted. • Verify the adequacy of the effectiveness requirements and parameters which shall be imposed on suppliers. • Assist in the preparation of formal change proposals with appropriate data and analyses. Task 12 - Effectiveness Criteria • Establish effectiveness design criteria. • Provide criteria to designers and assist in development of the final detail design. • Ensure measurement of critical design parameters by incorporation on applicable drawings and specifications. Task 13 - Plan Special Tests Prepare a plan, in coordination with Douglas Effectiveness Engineering, a search-for-critical weakness test

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	program. The plan will outline recommended testing of selected, newly designed, unflown, critical items to determine approximate environmental safety factors. The tests will be planned as an adjunct to the qualification test phases which extend the parametric levels of the test environment beyond the qualification level until successive failures occur. Two types of tests shall be considered (1) step stress to failure and (2) truncated life test at a temperature of the qualification test level. Task 14 - Review and Monitor Qualification Tests • Review qualification test plans and procedures to insure adequate test requirements, environments, time periods, sample size and test phasing. • Stop testing and notify DACo when a failure of a critical items occurs (ADC or CSC). • Follow up on all failures to certify that a full analysis has been made and included in test report. • Review and approval all qualification test reports to insure required documentation and data is provided. Task 15 - Determine Environmental Acceptance Test Criteria The environmental acceptance test criteria determination will be performed as follows:

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	• Review the list of critical items and identify those items which shall be subjected to environmental testing as part of their acceptance test. • Establish the level of the vibration test and any other test that may be required. Base the level upon the operational boost phase requirement. • Establish the time limitations of such testing for each identified item. • Review the acceptance test plan in order to verify that the environmental test criteria have been incorporated. Indicate formal concurrence with the test plan. • Verify that the requirements determined above are made part of the engineering and manufacturing control drawings and procedures. Task 16 - Corrective Action/Problem Identification and Control Provide effort to define and control problems and corrective action as follows: • Formally define equipment and operational problems and obtain corrective and preventive action. Maintain a problem summary and status report.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285	• Participate in problem investigations. This effort shall be in conjunction with production and field activities including follow up of failure analysis and the tabulation of recurring functional failures. This task is continued after FACI under WP 2286. • Submit the problem summary and status report to Douglas as part of the monthly status report. This task terminates with the delivery of the last unit at IBM (June 30, 1969) Task 17 - Failure Analysis This analysis will be diveded into two categories: 1. Analysis of failures prior to hardware delivery. This analysis will be conducted on equipment failures prior to delivery of equipment. It includes: • Failure analysis to micro-physical level on selected failures from all phases of manufacturing and test. • Determination of failure mode and cause. • Collection, reduction and analysis of failure data from all phases of testing and data on failures from the field. This task is continued after FACI under WP 2286. It should be noted that the parts failure analysis activity is covered

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	under hardware support items for each hardware unit. Costs incurred on the other activities are included under this section of the task and work package. All failure analysis reporting shall cease with the last delivery of hardware. 2. Analysis of Field Failures This effort will support DACo in the analysis of field failures occurring at DACo, WTR, and in-flight. It shall include determination of the cause of failure through laboratory analysis of the field equipment, theoretical analysis, experiments or simu--lations required to reproduce the reported failure; and recommended changes to design or procedures. Effort is limited to a total of 80 man months over a period beginning with the first delivery and extending through 1970. Task 18 - Effectiveness Data Assembly for Product Acceptance Assemble pertinent effectiveness data for each subsystem and associated AGE in preparation for product acceptance. The data to be presented shall include the following: • Corrective action for discrepancies and malfunctions experienced by equipment to be presented. • Corrective action taken on problems experienced by like MOL equipment and by comparable equipment on

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2285 (cont'd)	other projects. • Repairs conducted on equipment to be presented. • Limited-life component status for those components in the equipment to be presented. • A historical summary for these critical components in the equipment to be accepted. • All open problems/discrepancies which pertain to the specific assembly to be accepted. Task 27 - Training and Motivation Program Provide a training and motivation program consisting of formal training courses for test and manufacturing personnel and informal presentations to management and engineering personnel.
		2286	Reliability Program (Recurring) Maintain the failure recurrent control system throughout the production and field evaluation phase to include: • Collection and reduction of failure data including necessary historical research and review of associated failures from qualification and production acceptance testing and field evaluation.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.1	1502	2286 (cont'd)	• Participation in the closed corrective action loop by providing limited analysis required for problem identification. • Monthly summaries of equipment failures and status of failure analysis and corrective action. This task terminates with delivery of the last unit at IBM on June 30, 1969.
2.1.2	1503		Maintainability Program Provide effort to manage and implement a Maintainability Program on the DCSG AVE equipment which is integrated with System Engineering, Effectiveness and Design efforts. Program shall be performed in accordance with the tasks noted below from Attachment VI to the DACo SOW - "Major Subcontractors System Effectiveness Requirements for the LV System Segment", dated 30 August 1966. Tasks 2, 19, 20, 21, 25 and 26 shall be performed based upon a maintenance concept as follows: • On-Orbit - Fault isolation to module (black box) level with subsequent switchover to redundant module. • Ground (DACo, WTR) - Fault isolation to module level (black box) with removal and replacement of the module. Task 22 (Maintainability Predictions) and Task 24 (Maintainability Engineering Analysis) shall be performed in consonance with the above maintenance concept. They shall also be performed for a system effectiveness optimization study to determine feasibility of changing the maintenance concept to a component (pluggable page) level for both

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2.1.2	1503		ground and on-orbit maintenance. Results of this study will be reported in SDRL Item 166, "Effectiveness Analysis Reports". Implementation of any change in concept would be covered by ECP action. Maintainability design requirements will be submitted to second tier subcontractors and suppliers, but no formal Maintainability program will be imposed.
		2287	Maintainability Program (Non-Recurring) The following maintainability tasks are non-recurring activities performed prior to CDR. Task 2 - Allocation Perform maintainability allocations in support of System Effectiveness allocation effort. Task 19 - Maintainability Design Criteria Determine and promulgate maintainability design criteria to system engineering and design groups. Provide necessary design criteria interpretation and design assistance. Task 20 - Maintainability Support of Design Review Participate in formal design and ECP reviews, and arrange and conduct informal maintainability design reviews. Identify maintainability design problem areas, recommend and document corrective action. Task 21 - Development of Maintainability Verification procedures Identify critical maintenance tasks and develop appropriate maintainability verification procedures.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.2	1503	2287 (cont'd)	Task 22 - Maintainability Predictions Perform maintainability predictions and update as required in consonance with maintainability and maintenance analysis and compare with maintainability allocations. Task 23 - Parts Requirement Support Review part selection and application information as necessary to insure compatibility with tool and accessories interface. Task 24 - Maintainability Engineering Analysis Analyze all maintainability input data to support maintainability objectives, and participate in System Effectiveness optimization study to define optimum repair level, maintenance methods and spares provisioning. Task 25 - Maintainability Analysis of Handling Problems Review development of packaging, handling and storage features and procedures for effect on maintainability objectives. Task 26 - Maintainability Failure Analysis Support Participate in the failure analysis and reporting effort to identify critical malfunction - maintenance task interface, and recommend corrective actions.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.2	1503	2287 (cont'd)	Task 36 - Maintainability Verification Witness and verify acceptability of critical repair tasks conducted in accordance with maintainability verification procedure.
		2288	Maintainability Program (Recurring) The following maintainability tasks are recurring activities performed after CDP. Task 20 - Maintainability Support of Design Reviews Review manufacturing drawings and processes to assure realization of maintainability design requirements. Task 24 - Maintainability Analysis of Handling Problems Perform necessary maintainability analysis in support of packaging, handling and storage features and procedures and failure analysis. Task 36 - Maintainability Verification Witness and verify acceptability of accomplishment of critical repair tasks conducted in accordance with maintainability verification procedure.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.3			Human Engineering Plan, conduct, and monitor a Human Engineering effort integrated with system engineering, effectiveness and design efforts. This effort will consider MIL-H-27894A Requirements. These requirements will be limited to design, verification, and documentation; specifically portions of paragraphs 3.6.3, 3.6.4, 3.10 and 4.4 will be met for this phase of work. This includes Equipment Detail Design Drawings (para. 3.6.3). The detail equipment drawings, packaging drawings, and panel layout drawings shall reflect the application of human engineering principles and criteria to equipment detail design, and shall demonstrate that; (1) the design satisfies the technical design requirements generated from applicable system functions, and (2) the equipment can be efficiently, reliably and safely maintained and operated. Equipment - Procedure Development (para. 3.6.4) includes the application of human engineering principles to the development of procedures for operating, maintaining and otherwise using the equipment. A Documentation File (para. 3.10) will also be kept. This file will be a definative source of data that will appear, in summary form, in the human engineering aspects of the System Effectiveness progress reports. The Human Engineering Design Verification (para. 4.4) will serve two purposes. It will document the design verification aspects of IBM's effort and will provide inputs to the prime contractors. PST/E effort for their Category II testing of the system. Work effort will be performed in accordance with the following tasks identified in SOW

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.3 (cont'd)			Attachment VI, Major Subcontractors System Effectiveness Requirements.
	1504	2289	Human Engineering (Non-Recurring) Task 34 - H. E. Support of Design Reviews Support effectiveness control by participating in design reviews for the DCSG AVE equipment. Task 35 • Support design development through analysis of the man-machine interface and recommendation of design features to minimize probability of human error. • Provide functional description of man - machine interface on the AVE. • Review selected drawings where man-machine interface is affected to assure design reflects good human engineering.
		2290	Human Engineering (Recurring) Task 33 - Human Error Failure Analysis • Review failure analysis on AVE equipment prior to delivery and determine whether failures were influenced or caused by human error or improper procedures. Provide corrective action feedback to minimize possibility of recurrence.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.1.3			Safety Engineering Plan conduct and monitor a Safety Engineering Program integrated with system engineering, effectiveness and design efforts. The program will be conducted in accordance with DAC SOW attachment VI, Task 28 through 32. Work items under these tasks are listed below:
2.1.4	1505	2291	System Safety Engineering (Non-Recurring) Provide effort to accomplish the subcontractors proposed safety engineering program plan requirements to assure that a minimum of risk exists to cause personal injury or degradation to the system. Activity will include: • Review drawings • Review test plans for safety requirements • Audit equipment hardware • Conduct safety analysis (ie Fault tree diagrams) • Failure mode assessment • Establish safety requirements for training, operation, and maintenance.
		2292	System Safety Engineering (Recurring) Provide support to DAC or Air Force System safety personnel, where required. Provide safety reports such as: • Failure/Hazard analysis reports • Accident/Incident reports

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2			Laboratory Vehicle System Hardware (AVE) Provide effort to design, develop, test and manufacture DCSG AVE and the special tooling and test equipment as required in fabrication, assembly, integration, check-out and evaluation. IBM shall deliver hardware in accordance with the proposed delivery schedule. The Quality Assurance effort on DCSG shall be in accordance with MIL-Q-9858A and with the added provisions of DQS-100B as defined in the IBM Quality Assurance Program Plan. Implementation of MIL-Q-9858A and the added provisions of DQS-100B will be on a progressive basis beginning with the first prototype. Full compliance with MIL-Q-9858A and the added provisions of DQS-100B, subject to the above, will be attained with the production prototype qualification model. Due to the nature of the early phases of the program, full implementation may not be feasible or practicable. Full quality controls will not be final until the Engineering design and processes are firm. Partial compliance on the early models will be achieved to insure an acceptable end item, but interim packaging techniques and production facilities will limit the degree of finalized control. Earlier Prototypes are not required to be flight certified or have final configuration. Parts preservation and packaging shall be per Subtask 83023100. All effort shall include implementation of applicable configuration identification, control and accounting requirements as specified in the DCSG Statement of Work. IBM requests a waiver to the requirement that DQS-104B apply to the Data Computation Sub-System Group or to the MGE Test

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2 (cont'd)			Equipment. Approval is requested to use facilities and agencies qualified by IBM (to Government Specifications), rather than Douglas.
2.2.1	22014100	2293 Product Support	Laboratory Module (LM) Production Support. IBM shall provide one (1) resident field engineer at Douglas Huntington Beach to support the delivered DCSG - AVE hardware during receiving inspection, installation and checkout as part of the LM. The resident shall be available from the 20th month through the 42nd month inclusive, at which time hardware deliveries will have been completed.
2.2.2			IBM will provide the necessary effort required to accomplish detailed subsystem and interface design of the DCSG AVE in accordance with Technical Requirements Specification TR00534, support make or buy determinations and source surveys, prepare layouts, detail production drawings and specifications and prepare procedural support data. Procedural Support Data will consist of engineering type procedures in a format that could be used for incorporation into an official AFTO. No theory of operation or illustrated parts breakdown will be included. Level of writing shall be oriented to use by skilled test technicians. The elements to be included are: Test Procedures, Preventive Maintenance data, and Handling Procedures. (Maintenance Analysis will be included in work package 2441).
2.2.2.1	22085111	2294 Eng.	Provide a minimum of 5 resident personnel at Douglas, Huntington Beach and 3 residents at GE, Randor, Pa. in support of overall systems engineering analysis, design, development test, and system integration. Of these personnel, 1 shall be qualified in computer design; 4 in the area of programming, 1 in the AVE system analysis and 1 in MGE hardware and 1 in MGE Software. These 8

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.2.1 (cont'd)	22085111		people will be provided for sustaining engineering for from ATP +1 to ATP +24 months. One resident will be provided at DAC from ATP +24 through ATP +52. The effort includes resident support to continue engineering analysis, maintain and revise system engineering documentation and provide technical support to the Electronic Development and Compatability Test Unit and a Systems Integration Laboratory Vehicle. It is assumed that Douglas and GE will supply the space and normal office supplies for these resident personnel, and that GE will supply secretarial support for those residents located at GE.
		2295 Eng.	Perform common system level DCSG design which is not attributable to design of modules or devices under paragraphs 2.2.2.2 through 2.2.2.6. This work package covers all of those design items which cannot be separated between the individual units of the DCSG.
		2296	Perform System Design This work shall provide for the overall technical direction of the design of the equipments making up the DCSG; including the interpretation and establishment of design objectives, the control of the various subsystem interfaces (both internal and external) and the monitoring of and checking of completed equipment designs to ensure that the appropriate specifications have been met. This task also includes system configuration Part I specification of the individual DCSG units, interface control and documentation. Review and approval of DCSG software will be performed to assure hardware and software compatibility and adequate performance.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.2.1 (cont'd)	22085111		Effort to support Douglas in the updating of the Part I of the AVE Technical Requirements Specification (TRS) and/or Critical Component Specifications. Assist in updating of the Part I of the AVE Technical Requirements Specifications (TRS) and/or Critical Components Specifications. Support Douglas in continuing development of associated systems engineering documentation within the intent of 375-1 and 375-5. Define and analyze modal capabilities of the DCSG.
		2297 Eng.	Generate and maintain Part II of the DCSG TRS Specification. Test Programs requirements will be defined and an overall system test specification developed for integrated checkout of the DCSG. Coordinate test programs, test procedures, and MGE testing requirements to assure AVE-MGE compatability, and testing capability to satisfy TRS Part II requirements. Provide coordination and controls to insure the incorporation of system effectiveness requirements in the design of the DCSG. Provide a means for trading and evaluating alternate designs, approaches, and design changes in a cost effective manner. This includes implementation of the methodology during EDP. Provide engineering effort to perform systems trade studies as requested by DAC. This effort is limited to a total of 30 man-months.
		2298 Eng.	PDR and CDR Reviews Assist Douglas in AF AVE PDR and CDR. This includes efforts with Douglas and the IBM design subcontractors to coordinate agendas, participate in the reviews, record minutes and perform action item follow-up.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.2.1 (cont'd)	22085111	2299	Technical Meetings Provide participation in, and support of, informal Douglas design or test status reviews, coordination meetings and technical direction meetings as requested by Douglas. This task provides a maximum of 3 M/M and 23 trips to Los Angeles.
		2300	Weight Control Effort shall be provided to initiate and maintain, throughout the design phase of the program, an effective, independent weight control effort to ensure that contractual weight limits are being met. This effort shall include a continuing examination of the design to verify that the designer is applying adequate weight control principles consistent with the system requirements. The weight control effort will be an integral part of the DCSG Mass Properties Control Plan dated 28 April 1966 (IBM 66-M22-021B).
		2301	EMC Control Effort includes the preparation of an EMC Design Control Plan. This control plan will detail the EMC design for each component part of the DCSG necessary to comply with the requirement of TR00534. Monitoring and guidance will be provided to the design areas to insure that designs are consistent with EMC requirements. Exception to Paragraphs 3.2.5.1.3 and 3.3.1.1.1 of SAFSL Exhibit 11005, as modified by TR00534, is taken to avoid excessive weight and size penalties which would be imposed by these requirements.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.2.2	22085112	2302 Eng.	Electrical Design of the Digital Computer This work package covers all of the unique effort associated with the electrical design and electrical technology for the digital computer. Effort includes the unique logic design associated with features unique to the MOL DCSG. These include special features, such as priority interrupt system, memory protect control unit design for interface with the keyboard, special ROS programming. Included is the automatic logic design of these features, the generation of all electrical documentation including wiring lists and logic diagrams meeting the specification of the MOL DCSG. Wire lists to be generated include those for the unique pages and for back panels necessary to adapt to these features and the specialized interface of DCSG. Also included is unique power supply design and power system design including power switching to minimize total mission power utilization, the release and maintenance of engineering documentation for the main memory, and also the ROS. Documentation for the unique ROS personality have also been included under this work package.
		2303	Computer Mechanical Design This work package covers the unique mechanical design effort for the computer. It includes necessary stress analysis and structure layout, power supply design and overall assembly drawings. It includes the layout for artwork generation of the multilayer interconnection boards for unique pages and also for pages requiring changes as determined by test and the layout for artwork generation of the multilayer interconnection back panel to satisfy the unique requirements of the MOL DCSG and its interface. Also included in this

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.2.2	22085112	2303 (cont'd)	effort is Material Engineering Laboratory support to the selection and specifications to the materials meeting the unique MOL DCSG environment to be utilized as technology within the computer unit and also other units within the DCSG. Effort required to produce and release all fabrication drawings and engineering instructions is also included. The maintenance of master drawing files, number assignment information, current status cards and source document information relative to the computer is included in this work package.
2.2.2.3	22085113	2304 Eng.	LDA Electrical Design Provide effort necessary to provide the electrical design of the LDAU. This includes logic design including automatic logic design documentation, the generation of wire lists required for the multilayer interconnection of pages, back panels and input/output interface. It includes the preparation of all electrical documentation associated with the LDAU, including schematics, wire lists, test specifications for page assemblies and unit assemblies, and the generation of the unit test specification. Under this work package, the unique interface circuit design and development test and evaluation will be accomplished. Also included is the electrical design effort for the design of the power supplies, power distribution system including switching for the conservation of power and to meet the constraints of the laboratory vehicle prime power system.
		2305	LDA Mechanical Design Provide effort for mechanical design of the LDA. This includes the preparation of all detailed drawings, subassembly drawings

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.2.3	22085113	2305 (cont'd)	and assembly drawings, including assembly specifications required for the fabrication of the LDA. The mechanical design effort and drafting effort for design of the structure, power supply assembly and the layout of wiring for artwork generation of the page assemblies and back panels is all part of this effort. Also included under this effort is processing of engineering changes, the construction of release and change bills of materials, maintenance of master drawing files, maintenance of part number assignment information, current status cards, source document information and "where used" information in relation to the unique drawings associated with the LDA.
2.2.2.4	22085114	2306 Eng.	Electrical Design of the Keyboard Unit Provide the effort for the electrical and logic design of the keyboard unit. It includes the logic design, circuit design and the release of all electrical documentation pertaining to this unit. This documentation includes logic diagrams, schematic diagrams, page wiring lists, back panel wiring lists, input/output cable wiring lists, subassembly and unit test specs, and preparation of test specification for this unit. Automatic logic design, processing and preparation and support is also included as part of this effort. That engineering effort required to design the power supplies and power distribution system unique to the keyboard unit and the display unit associated is also included under this work package.
		2307	Mechanical Design of the Keyboard Unit This includes all mechanical design effort associated with the design of the keyboard unit. This includes the preparation for re-

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.2.4	22085114	2307 (cont'd)	lease to manufacturing of all detail drawings, subassembly drawings, assembly drawings, assembly specifications and other documentation required for the manufacture of this unit. The mechanical design and drafting effort required for the preparation of this documentation associated with the design of the structure, the power supply subassembly, the page assembly layout and the back panel layout for artwork as well as documentation of the input/output harnesses is included as part of this effort. The maintenance of release files, the construction of release and change bills of material, the maintenance of master drawing files, the maintenance of part number assignment information, current status cards, source document information, the "where used" information associated with the drawing releases unique to this unit are also included as part of this work package.
	22085119	2308	Design Support - Display Provide design specifications for the display by in-house engineering functions. Perform liaison with the display subcontractor for design evaluation, pre-acceptance testing and design audit. Assist in the resolution of manufacturing problems.
		2309	Subcontract Design - Display Design of the display includes the preparation of design layouts, preparation and release of detailed drawings, subassembly drawings, assembly drawings, assembly specifications and test specifications required for the manufacture of the display. Preparation and release of all electrical drawings required for mechanical packaging, test and maintenance.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.2.5	22085115	2310 Eng.	Design Support - Printer Provide design specifications for the printer by in-house engineering functions. Perform liaison with the printer subcontractor for design evaluation, pre-acceptance testing and design audit. Assist in the resolution of manufacturing problems.
		2311	Subcontractor Design - Printer Design of the printer includes the preparation of design layouts, preparation and release of detailed drawings, subassembly specifications and test specifications required for the manufacture of the printer. Preparation and release of all electrical drawings required for mechanical packaging, test and maintenance.
2.2.2.6	22085116	2312 Eng.	Design Support - Auxiliary Memory Unit Provide design specifications for the auxiliary memory unit by in-house engineering functions. Perform liaison with the auxiliary memory unit subcontractor for design evaluation, pre-acceptance testing and design audit. Assist in the resolution of manufacturing problems. Perform audit on subcontractor design of the AMU and continue engineering liaison with the subcontractor.
		2313 Sub-Cont.	Subcontractor Design - Aux. Memory Unit Design of the auxiliary memory unit includes the preparation of design layouts, preparation and release of detailed drawings, subassembly drawings, assembly drawings, assembly specifications and test specifications required for the manufacture of the AMU. Preparation and release of all electrical drawings required for mechanical packaging, test and maintenance.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.2.7	22085117	2314	Transportation Packaging Design Provide the effort to design the transportation packaging for the DCSG AVE.
2.2.2.8	22085118	2315	Provide the engineering effort to prepare and maintain mock-up drawings for the DCSG units.
2.2.3			Laboratory Vehicle On-Board Computer Program Procedure
2.2.3.1	22085151	2316	DCSG On-Orbit Software Provide the DCSG on-orbit software, participate in PDR and CDR activity, and deliver the programs in accordance with the required schedules. Tasks include developing an executive control system, a DCSG self-check program, and a maintenance and diagnostic program. The executive control program will include capabilities to initiate, support and terminate execution of all operating support programs as well as the following services: Input/Output Memory Management Program Loading Data Pool Management The DCSG self-check program shall consist of a resident program for cyclic self check and a non-resident program for diagnostic checking. Utilities Programs - Provide the effort necessary to generate algebraic and trigonometric functions as follows:

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.3.1	22085151		Matrix Product Square Root Exponentiation Sine Cosine Arc Tangent Arc Sine
2.2.3.2	22085152	2318	DCSG Ground Support Software Prepare and furnish the following programs in support of the Ground System DCSG: Test Monitor On-Line Print Routine On-Line Card Read Routine On-Line Card Punch Routine Magnetic Tape Read Write Program In addition, a number of debug aids will be incorporated as features of the test monitor and include memory and register dump, conditional snapshot, impact and change, and a conditional program trace. Participate in PDR and CDR activity.
		2319	Test Routines - Test data routines will be provided to read test data files from cards or tape and to output the test data file to the tape or printer.
2.2.3.3	22085153	2320	Provide the effort to prepare program specifications, validation of test plans, program system descriptions, procedures and reports, and operating and programming manuals in accordance with DAC's SDRL and in compliance with applicable SDI's.
2.2.4			DCSG Development Test Perform development testing to support design of the DCSG AVE hardware and trans-

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.4 (cont'd)			portation packaging. Includes test hardware, test planning and evaluation, conduct and reporting of tests. Includes performance of testing defined by TRS DCSG and by the Ground Test Plan. The following clarifications and exceptions to the MOL Engineering Development Phase Work Statement for DCSG dated 9/1/66 are noted: • Paragraph 2.2.4, paragraph 4. Delete "The results of development tests conducted per the ground test plan shall be approved by Douglas. Development test result approval shall be a constraint or initiation of qualification tests." Reason: Development tests are planned to assist in the design and to provide assurance that articles submitted for qualification will pass. IBM must retain the right, under a fixed price contract, to alter, add or delete these tests as deemed necessary. Only the qualification test plan and approval of test results should be subject to DAC approval. • Paragraph 2.2.4, paragraph 3. Add to this paragraph, "Circuit testing shall consist of qualification over temperature range only." Reason: Clarification of IBM intent. Any new circuit design will normally be tested to temperature extremes as part of the normal design cycle. No additional testing is planned or budgeted. • Paragraph 2.2.4.2. Delete from the first paragraph, "Deliver to Douglas one set of prototype AVE as defined in Attachment IV, after the successful completion of the System Integration Development test."

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.4 (cont'd)			Reason: IBM will retain this for development support in accordance with our program planning. • Paragraph 2.2.4.2.- Add to the second paragraph, "Subsystem development tests will be functional tests only conducted under room ambient environmental conditions." Reason: To clarify subsystem development tests. • Paragraph 2.2.4.9. Change entire paragraph to read, "Provide engineering prototype hardware in accordance with attachment IV for delivery to G.E. Engineering prototype is defined as being functionally equivalent and electrically similar but not necessarily conforming to the mechanical configuration of the flight articles." Reason: Early schedule requirements do not allow time for design and packaging of power supplies or design of an enclosure having integral cooling. Air cooling is planned on these machines with an enclosure to permit easy access for testing and evaluation of changes.
2.2.4.1	22085210	2321 Eng.	Common Development Test and Test Support This work package includes the cost of the hardware components, circuits, and other items required for development test. Conduct and support DCSG AVE development test and support to include initial functional, structural, and thermal evaluation of those piece parts and subassemblies common to the various AVE units.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.4.3	22085221		Digital Computer Development Testing
		2322	Provide the hardware requirements for unit environment and development test of the ADC.
		2323 Eng.	Perform exploratory qualification development testing to support the design of the DCSG AVE hardware to gain assurance that this hardware will meet the full qualification levels of the DCSG system. This includes test planning and evaluation, conduct and reporting of the test, it includes performance of testing as defined by the Ground Test Plan.
		2324 Test	Conduct and support development test of ADC to include functional and environmental evaluation of those subassemblies peculiar to the ADC.
2.2.4.4	22085222		LDA Testing
		2325 Mfg.	Provide the hardware requirements for unit environment and development test of the LDA.
		2326 Eng.	Conduct and Support Development Test of the LDA.
			Provide effort for the exploratory qualification testing in accordance with the Ground Test Plan of production prototype LDA to gain assurance that this unit will meet the full qualification requirements as imposed to the TRS. Effort includes preparation of test plans, conduct of test analysis of data and reporting of results.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.4.4	22085222	2327 Test	Conduct Vibration, EMC and Thermal Tests Conduct and support development test of LDA for unit environmental test on the LDA. The effort included covers the preparation of test procedures and required test reports.
2.2.4.5	22085223		Keyboard Unit Development Test
		2228	This work package provides the hardware requirements for the performance of unit environment and development test.
		2329	Provide effort for the exploratory qualification testing in accordance with the Ground Test Plan of production prototype KU to gain assurance that this unit will meet the full qualification requirements as imposed to the TRS. Effort includes preparation of test plans, conduct of test analysis of data and reporting of results.
		2330 Test	Conduct Vibration, EMC and Thermal Tests Conduct and support development test of the Keyboard Unit for unit environmental test on the Keyboard Unit. The effort included covers the preparation of test procedures and required test reports.
		2331	This work package provides the hardware requirements for the performance of unit environment and development test.
		2332 Eng.	Conduct and support development test of the display to include functional evaluation of those subassemblies peculiar to the Display Unit.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.4.5 (cont'd)		2333 Test & Subcont.	Conduct Vibration, EMC and Thermal Tests Conduct and support development test of the display and display unit for unit environmental test. The effort included covers the preparation of test procedures and required test reports.
2.2.4.6	22085224		Printer Development Test
		2334 Mfg.	This work package provides the hardware requirements for the performance of unit environment and development test.
		2335 Eng.	Conduct and support development test of the PU to include functional and environmental evaluation of those subassemblies peculiar to the PU.
		2336 Test & Subcont.	Conduct Vibration, EMC and Thermal environmental tests on the PU to determine adequacy of design. Included is the review and approval of subcontract test procedures and test reports and liaison with subcontractor during tests.
2.2.4.7	22085225		Auxiliary Memory Development Test
		2337 Mfg.	This work package provides the hardware requirements for the performance of unit environment and development test. A production prototype unit will be used, and therefore, no costs appear in this work package.
		2338 Eng.	Conduct and support development test of the AMU to include functional and environmental evaluation of those subassemblies peculiar to the AMU.
		2339 Test & Subcont.	Conduct Vibration, EMC and Thermal unit environmental test of the AMU. Includes review and approval of subcontract procedures, liaison with subcontractor during test.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.4.2	2208530		DCSG Subsystem Development Testing
		2340 Mfg.	Provide the hardware necessary for the DCSG subsystem testing. The system required for subsystem testing is one Engineering Prototype DCSG system (Simplex).
		2341 Eng.	Conduct and support DCSG subsystem testing to evaluate new designs and optimize designs as defined in the Ground Test Plan. Under this task, the integration and checkout of the final engineering model will be accomplished. Initially the computer is debugged and tested, followed by a progressive integration of the other peripheral equipments until a complete operating DCSG system has been checked out. Effort includes compatibility testing with the prototype MGE, hardware assistance during the software program validation. Engineering evaluation of equipment performance, change proposals, and software changes will be performed on this equipment. The engineering prototype will be replaced by the Production Prototype Development Test Model after this latter equipment has completed environmental testing. The Development Test Model will not be shipped to DAC as specified, but will be retained by IBM for development support.
		2342	This task includes the design and build of special test equipment and cables used in the integration laboratory. It includes a simulated Master Control Unit and the cables which attach the ADC to its interface.
2.2.4.8	22085241		Production Prototype
		2343 Mfg.	Provide one complete production prototype DCSG subsystem to Douglas to support Douglas testing. This production prototype hardware is defined as being functionally,

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.4.8	22085241	2343 (cont'd)	electrically and mechanically equivalent to the flight article but not flight qualified.
		2344 Eng.	Provide the support to manufacturing during the fabrication cycle of the production prototype system. This includes the support necessary from Engineering, Quality, Reliability and Manufacturing Engineering to resolve design, production, manufacturing, quality and reliability problems. Supply support to procurement, provide vendor liaison on an "as needed" basis, update routings and procedures and assist in the incorporation of manufacturing improvements.
		2345	Provide the effort to debug the production prototype DCSG subsystem and perform acceptance test prior to shipment of the system to DAC.
2.2.4.9	22085242		Engineering Prototype
		2346 Mfg.	Provide prototype hardware for delivery to General Electric. Engineering prototype is defined as being functionally equivalent and electrically similar to the flight article.
		2347 Eng.	Provide the support to manufacturing during the fabrication cycle of prototype systems. This includes the support necessary from Engineering, Quality, Reliability and Manufacturing Engineering to resolve design, production, manufacturing, quality and reliability problems. Supply support to Procurement, provide vendor liaison on an as needed basis, update routings and procedures and assist in the incorporation of manufacturing improvements.
		2348 Test	Provide the effort to debug the engineering prototype DCSG subsystem and perform acceptance test prior to shipment to General Electric.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.5			DCSG Qualification Testing Perform qualification testing to verify and demonstrate design of the DCSG AVE hardware. Qualification testing shall be in accordance with the requirements of the Technical Requirements Specification TR00534 (Attachment I) and with the Subcontractor Ground Test Plan, which is included herein by reference. Software validation tests shall be performed as described in TR00534. Qualification and validation testing effort include design and fabrication of test fixtures, test planning and evaluation, conduct and reporting of tests. Test specimens are provided under Subtask 2.2.6 as furnished hardware. Qualification testing shall not be initiated until development test results have been approved by Douglas (Reference 2.2.4). Qualification testing shall be performed on two units of each piece of non-redundant equipment and one unit of each unit of redundant equipment in the DCSG, unless specific justification is provided to Douglas and approved. Qualification testing will only be performed on components that have successfully passed component acceptance test on both systems and a system acceptance test on at least one set. Douglas shall have the option of witnessing qualification tests. Notification shall be provided to Douglas on such test two weeks prior to initiation of these tests. Final qualification results shall require Douglas approval. Interconnecting cables and coolant similar to the final installation as required for the development tests shall be supplied by Douglas in accordance with Douglas milestone schedule.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.5.1	22085310	2349 Eng.	Effort to perform full certification testing to environmental and life requirements on components which have no test history. Perform partial certification on components which have incomplete test data to MOL requirements.
2.2.5.2	22085321	2350 Eng.	Provide the effort to design and fabricate multi-purpose test fixtures for unit environment, development and formal qualification test of the ADC.
		2351 Test	Plan, conduct, evaluate and report on the formal qualification test of the ADC.
2.2.5.3	22085322	2352 Eng.	Provide the effort to design and fabricate a multi-purpose test fixture for formal qualification test of the LDAU.
		2353 Test	Plan, conduct, evaluate and report on the formal qualification testing of the LDAU.
2.2.5.4	22085323	2354 Eng.	Provide the effort to design and fabricate multi-purpose test fixtures for unit qualification test of the Keyboard Unit.
		2355	Plan, conduct, evaluate and report on the formal qualification testing of the Keyboard Unit.
	22085326	2356 Test	Plan, conduct, evaluate and report on the formal qualification testing of the Display Unit.
2.2.5.5	22085324	2357 Test	Plan, monitor, evaluate and report on the formal qualification testing of the PU at the vendor.
2.2.5.6	22085325	2358 Test	Plan, conduct, evaluate and report on the formal qualification testing of the AMU.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.5.7	22085351	2359 Eng.	Plan, conduct, evaluate and report on the validation testing of the DCSG on-orbit software.
2.2.5.8	22085352	2360 Eng.	Plan, conduct, evaluate and report on the validation testing of the DCSG support software.
2.2.6			Laboratory Vehicle System Hardware Provide the effort to manufacture sufficient quantities of production DCSG AVE hardware and transportation packaging to satisfy the requirements of the subcontractor test usage and delivery of hardware in accordance with the proposed delivery schedule. The delivered AVE will include hardware to support the Mission Simulator as delineated in attachment of the RFP. This hardware shall be defined as being functionally, electrically and mechanically identical to the flight articles, but need not be flight qualified.
2.2.6.1	2208541100	2361	Provide production support effort not identifiable to DCSG items under Paragraph 2.2.6.2 through 2.2.6.7.
2.2.6.3	2208541210	2362	Provide the effort and material to manufacture assemble and checkout the Digital Computer.
		2363 Eng.	Provide the support to the manufacturing floor during the fabrication cycle of Digital Computer. This support includes that necessary, from Engineering, Quality, Reliability and Manufacturing Engineering to resolve design, production, manufacturing, Quality and Reliability problems. Supply support to Procurement, provide vendor liaison on an "as needed" basis, update routings and procedures and assist in the

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.6.3	2208541210	2363 (cont'd)	incorporation of manufacturing improvements.
		2364 Test	Provide the effort necessary to debug the ADC and perform formal acceptance test on each ADC prior to shipment of the unit to Douglas in accordance with the proposed delivery schedule. Included is the preparation of test procedures and reports.
2.2.6.4	2208541220	2365 Mfg.	Provide the effort and materials to manufacture, assemble and checkout the LDA.
		2366 Eng.	Provide the support to the manufacturing floor during the fabrication cycle of LDA. This support includes that necessary from Engineering, Quality, Reliability and Manufacturing Engineering to resolve design, production, manufacturing, quality and reliability problems. Supply support to Procurement, provide vendor liaison on an "as needed" basis, update routings and procedures and assist in the incorporation of manufacturing improvements.
		2367 Test	Provide the effort necessary to debug the LDA and perform formal acceptance test prior to shipment of the unit to DAC in accordance with the proposed delivery schedule. Included is the preparation of test procedures and reports.
2.2.6.5	2208541230	2368	Provide the effort and material to manufacture, assembly, and checkout the KU.
		2369	Provide the support to the Manufacturing floor during the fabrication cycle of KU. This support includes that necessary from Engineering, Quality, Reliability and Manufacturing Engineering to resolve design, production, manufacturing, quality and reliability problems.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.6.5	2208541230	2369 (cont'd)	Supply support to Procurement, provide vendor liaison on an "as needed" basis, update routings and procedures and assist in the incorporation of manufacturing improvements.
		2370 Test	Provide the effort necessary to debug the KU and perform formal acceptance test prior to shipment of the unit to Douglas in accordance with the proposed delivery schedule. Included is the preparation of test procedures and reports.
	2208541260	2371 Sub - Cont.	Provide the effort and material to manufacture, assemble and checkout the Display.
		2372	Provide the support to the manufacturing floor during the fabrication cycle of the Display. This support includes that necessary from Engineering, Quality, Reliability and Manufacturing Engineering to resolve design, production, manufacturing, quality and reliability problems. Supply support to Procurement, provide vendor liaison on an "as needed" basis, update routings and procedures and assist in the incorporation of manufacturing improvements.
		2373 Test	Provide the effort necessary to debug the Display and perform formal acceptance test prior to shipment of the unit to Douglas in accordance with the proposed delivery schedule. Included is the preparation of test procedures and reports.
2.2.6.6	2208541240	2374 Sub- Cont.	Provide the effort and material to manufacture, assemble and checkout the Printer Unit.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
		2375 Eng.	Provide the support to the Manufacturing floor during the fabrication and/or subcontracting cycle of PU. This support includes that necessary from Engineering, Quality, Reliability and Manufacturing Engineering to resolve design, production, manufacturing, Quality and Reliability problems. Supply support to Procurement, provide vendor liaison on an "as needed" basis, including resident personnel at the subcontractor facility to perform a manufacturing surveillance.
		2376	Monitor the effort to perform Formal Acceptance Test of the PU prior to shipment of the unit to DAC from the vendor.
2.2.6.7	2208541250	2377 Subcont.	Provide the effort and material necessary to manufacture, assemble, and checkout the AMU.
		2378 Eng.	Provide the support to the Manufacturing floor during the fabrication cycle of the AMU. This support includes that necessary from Engineering, Quality, Reliability and Manufacturing Engineering to resolve design, production, manufacturing, quality and reliability problems. Supply support to Procurement, provide vendor liaison on an "as needed" basis, including resident personnel at the subcontractor facility to perform a manufacturing surveillance.
		2379 Test	Monitor the effort to perform formal acceptance of the AMU prior to shipment of the units to DAC from the vendor.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.6.2	2280541300		DCSG Subsystem Production Assembly, Checkout and Acceptance
		2380	System Software Provide the necessary effort to perform program validation for system acceptance test of the DCSG with the MGE.
		2381	Provide assembly checkout and preparation for shipment of the completed DCSG Subsystem. The first two production systems shall be subjected to a complete duplex system functional acceptance test in addition to the component acceptance tests, when used for the first qualification-test subsystem and the first flight subsystem as delivered to Douglas (reference Attachment IV). Provide the effort to design, fabricate and test MGE adapter equipment to provide a capability to perform a duplex system test.
2.2.7	22085421		Subsystem Special Tools and Special Test Equipment Design and Hardware.
2.2.7.1			Provide the effort to perform design of Special Tools and Test Equipment required for the DCSG subsystem, perform design reviews to determine manufacturing ability, tool design analysis, process development, routings, process procedures, develop method instruction, vendor liaison on manufacturing problems.
		2382 Eng.	Provide the effort to design the tools necessary for the manufacture of the ADC.
		2383	Provide the effort to design the tools necessary for the manufacturing of the LDA.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.7.1		2384 Eng.	Provide the effort to design the special tools necessary for the manufacture of the Keyboard Unit.
		2385 Subcont.	Provide the effort to design the special tools necessary for the manufacture of the Display.
		2386 Subcont.	Provide the effort to monitor the design of the special tools necessary for the manufacture of the PU and provide support to the design of subcontract tools for changes and drawing releases. Costs for this effort are included in Work Package 2400.
		2387 Subcont.	Provide the effort to monitor the design of the special tools necessary for the manufacture of the auxiliary memory unit and provide support to the design of the subcontractor tools for changes and drawing releases. Costs for this effort are included in Work Package 2401.
		2388 Eng.	Special Processes in Design of Special Tools Provide the effort necessary to perform design reviews and provide consultation to properly establish manufactureability and process requirements. Perform design analysis for methods tooling, process, and equipment requirements. Initiate process development, definition and application to the specific tool design. Develop the necessary routing and prepare the documentation associated with the routings. Define the final tool design requirements and authorize the initiation of the tool design. Provide the effort to document the processes in process procedures, develop detailed methods instruction sheets for operators, perform vendor liaison on manufacturing problems and purchased parts and assure process qualification.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.7.1			Special Test Equipment Design
2.2.7.1		2389 Eng.	Provide the necessary effort to design the special test equipment required for the fabrication and checkout of the ADC.
		2390 Eng.	Provide the necessary effort to design the special test equipment required for the fabrication and checkout of the LDAU.
		2391 Eng.	Provide the necessary effort to design the Special Test Equipment required for fabrication and checkout of the Keyboard Unit. Costs for this effort are included in Work Package 2405.
		2392	Provide the necessary effort to design the Special Test Equipment required for fabrication and checkout of the Display Unit. Costs for this effort are included in Work Package 2406.
		2393 Subcont.	Provide the necessary effort to design the Special Test Equipment required for fabrication and checkout of the Printer. Costs for this effort are included in Work Package 2407.
		2394 Subcont.	Provide the necessary effort to design the Special Test Equipment required for fabrication and checkout of the AMU.
		2395 Eng.	Special Processes for Design of Special Test Equipment includes the generation of test programs and the related computer time associated with the verification of test programs.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.7.2	22085424		Subsystems Special Tools and Special Test Equipment Hardware
		2396 Tool Eng.	Furnish the necessary effort, material and support to build the special tools, artwork and numerical controlled machine tool program tapes required for fabrication of the ADC.
		2397 Tool Eng.	Furnish the necessary effort, material and support to build the special tools, artwork and numerical controlled machine tool program tapes required for fabrication of the LDA.
		2398	Provide the necessary effort, material and support to build the special tools, artwork and numerical controlled machine tool program tapes required for the fabrication of the Keyboard.
		2399 Sub-Cont.	Provide the necessary effort, material and support to build the special tools, artwork and numerical controlled machine tool program tape required for the fabrication of the Display Unit.
		2400 Sub-Cont.	Provide the necessary effort, material and support to design and build the special tools, artwork and numerical controlled machine tool program tape required for the fabrication of the Printer Unit.
		2401 Sub-Cont.	Provide the necessary effort, material and support to design and build the special tools, artwork and numerical controlled machine tool program tape required for the fabrication of the AMU.
		2402 Eng.	Provide the necessary effort, materials, and support to build the Special Test Equipment necessary for checkout of the ADC

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.7.2	22085424	2402 (cont'd)	during the fabrication of the ADC.
		2403 Eng.	Provide the necessary effort, materials and support to build the Special Test Equipment necessary for checkout of the LDA during the fabrication.
		2404 Tool Eng.	Provide the necessary effort, material and support to build the Special Test Equipment required for checkout of the Keyboard during the fabrication of the Keyboard.
		2405 Sub-Cont.	Display Unit Provide the necessary effort, material and support to design and build the Special Test Equipment required for checkout of the Display Unit during the fabrication of the Display Unit.
		2406 Sub-Cont.	Printer Provide the necessary effort, material and support to design and build the Special Test Equipment required for checkout of the Printer during the fabrication of the Printer.
		2407 Sub-Cont.	Auxiliary Memory Unit Provide the necessary, effort, material and support to design and build the Special Test Equipment required for checkout of the Auxiliary Memory Unit during the fabrication of the AMU.
2.2.8	22085430	2408 Mfg.	Refurbishment of System Based on the present understanding of the test environment for this system and the reliability of the equipment, it is not expected that any repair or rework would be required. If parts should be required, it is recommended that the spares be provided for.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.8	22085430	2409 Test	Testing The effort is included to inspect the equipment returned, perform testing and comparison of data with the initial acceptance. A formal acceptance test of the equipment is included.
2.2.9	22085440		DCSG AVE Spares Hardware Effort and material to manufacture and deliver spare parts for program support shall be subject to supplemental authorization.
2.2.10			Programming Support System and Laboratory Programming Support System Provide a Programming Support Computer Subsystem as defined in the PSCS Hardware/ Software Requirements and delivered in accordance with DAC program requirements. The period of pperation shall be considered as 12 months.
2.2.10.1	22085910	2410	Provide the common supporting services required to install, operate and maintain the PSCS. Provide operation manuals in accordance with DAC's SDRL. (Line item 174.1) Participate in PDR and CDR activity.
2.2.10.2	22085920	2411	PSCS and LPSS Software Provide the software required for use on PSCS and LPSS Computers. In addition to the type 1 support for the 360 Model 44 computer, the following features and programs will be delivered: • Standard Model 44 operating systems control program which will be augmented with a trace facility which can be optionally entered in "time out" mode and a line of trace output which can be optionally produced during

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.2.10.2	22085920	2411 (cont'd)	this same "time out" mode. • A program preparation processor will be written to translate normal 44 programs into a format suitable for writing on the AMU of the DCSG computer. Provide the effort required to prepare program specifications, validation test plans, program system descriptions, procedures and reports, operating manuals in accordance with SDRL (Attachment XVI).
2.2.10.3	22085930	2412	PSCS and LPSS Software Validation Test Perform validation testing to verify and demonstrate design of the PSCS and LPSS software provided in accordance with sub-task 22085920.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.3		2413	Aerospace Ground Equipment (MGE) The subcontractor shall provide MGE design, development, test, production, and support in accordance with Attachment I - Technical Requirements Specification, Attachment III - Configuration Management Requirements, Attachment IV - Hardware and Software Requirements and Schedule, and Attachment VII - Packaging and Transportation Plan. Design shall be accomplished in accordance with the Subcontractor updated EMC Control Plan which will be included herein by reference. (The EMC Control Plan will be updated to incorporate applicable portions of SAFSL Exhibit 21005, dated 1 September 1966 and applicable TRS's and CEI's requirements). Quality Assurance effort shall be in accordance with MIL-I-45208A. Parts preservation, packaging, and all implementation of applicable configuration identification, functional acceptance shall be made within one month prior to scheduled delivery per Attachment IV. The MGE Test Equipment consists of primarily commercial type items, hence MIL-I-45208A is more appropriate. The nature of this equipment doesn't require the peripheral and more stringent controls indicated in MIL-Q-9858A and DQS-100B. This equipment is not in direct support of flight or launch operations. MIL-Q-9858A and DQS-100B would require additional unnecessary controls and result in an additional cost impact which was not planned nor budgeted.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.3.1	32035111		Provide MGE design and design support not identifiable to specific MGE end items.
		2413	OGE Requirements IBM will provide OGE Design Support Requirements reports which define the DCSG/ OGE interface and checkout requirements imposed on the DAC OGE and prelaunch checkout data requirements.
		2414	Non-Recurring Design Provide AGE design and design support not identifiable to specific AGE end items (There is no unidentifiable support.)
		2415	Reviews PDR and CDR Assist DAC in AF MGE PDR and CDR. This includes effort with DAC to coordinate agendas, participate in the reviews, record minutes and perform action item follow-up.
2.3.2	32035112	2416 Eng.	Perform the non-recurring design and preparation of Part II of the AGE CEI Specification of the MGE end item, Digital Computation Unit Test Set and associated packaging. This includes applicable specifications, procedures and procedural support. Procedural support data will consist of engineering type procedures in a format that could be used for incorporation into an official AFTO. No theory of operation or illustrated parts breakdown will be included. Level of writing shall be oriented to use by skilled test technicians. The elements to be included are: Test Procedures, Preventive Maintenance Data, Corrective Maintenance Data and Handling Procedures.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.3.2	32035112	2416 Eng. (cont'd)	The design of the Digital Computation Unit Test Set will be in accordance with Interim AGE CEI Specification CP00342. This design covers the electrical and mechanical design of the test set and includes making the necessary design layouts, preparation of detail drawings, subassembly drawings, assembly drawings, assembly specifications and test specifications in accordance with DAC SDI's. Provide Engineering design support to process Engineering releases and changes, construct release and change Bills of Material, maintain master drawing files, current status cards and where-used information. (Maintenance Analysis is included in Work Package 2441.)

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.3.2 (Cont'd)	32035112	2417 Eng.	Provide the recurring support to the manufacture and test of the Digital Computation Unit Test Set and covers the investigation of problems arising during the manufacturing cycle and providing the solution to problems through processing of engineering orders and engineering changes.
		2418 Eng.	The non-recurring design for preparation of MGE programs includes generating: • Test programs for units test (Computer, LDAU/CU, AMU, PRU and KDU) • Systems test programs. • MGE Self-Test programs.
		2419 Eng.	The MGE programs recurring support includes the definition of test programs, continued debugging of test programs and updating the programs.
	32035113	2420	MGE Transportation Package Provide the effort to design the transportation package for the Digital Computation Unit Test Set.
2.3.3	32035120		MGE Development Test
2.3.3.1	32035121		Perform development testing on Digital Computation Unit Test Set testing by AGE End Item to support design of the subsystem AGE in accordance with AGE Interim CEI Spec and Ground Test Plan. The cost for this effort is included in the MGE design work package 2416. The test shall be a complete functional test in accordance with the MGE preliminary acceptance procedure and will be performed on a prototype MGE.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.3.4	3203514100	2421 Eng.	Provide effort to support the processes of selection, procurement, handling, inspection, process surveillance, and accountability for AGE hardware during manufacture which is not directly relatable to specific produced end items. This also includes the support required to provide routings, self test, fabrication and assembly support for the MGE.
		2422	MGE Programs Provide the effort necessary to generate the MGE programs required to check out the MGE.
2.3.5			Provide the effort and material to manufacture MGE end items and the associated packaging to support subcontractor requirements and to deliver MGE to Douglas in accordance with the IBM proposed delivery schedule.
2.3.5.1	3203514120	2423 Mfg.	Provide the effort to manufacture, assemble, and check out the Digital Computation Test Set Hardware.
2.3.5.1	3203514120	2424 Test	Provide the effort to debug, perform preliminary calibration, evaluation, checkout and perform acceptance test of the Digital Computation Test Set prior to shipment.
2.3.6	3203514210	2425 Tool Eng.	Digital Computation Test Set, Special Tools and Special Test Equipment design. Provide the necessary effort to design the Special Tools and Gages required for the fabrication of the DC Test Set. Special Test Equipment is not required for the fabrication of MGE.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.3.7	3203514240	2426 Tool Eng.	Digital Computation Test Set, Special Tools and Special Test Equipment Hardware Provide the necessary materials and support to build the Special Tools necessary during the fabrication of the DC Test Set. Special Test Equipment is not required for the fabrication of MGE.
2.3.8	32035144		MGE Spares Effort and material to manufacture and deliver spare parts for program life shall be subject to supplemental authorization.
2.4			Training
2.4.1	4201	2427 Prod. Support	Provide services of one qualified instructor to conduct special training activities at Douglas Aircraft Company or VAFB. Training services shall include the following: • Prepare for and conduct familiarization courses. These courses will emphasize interface with other spacecraft subsystems and will include operating modes of the DCSG equipment. The course level will be established to be applicable for engineering and/or technician personnel. • Prepare for and support detailed DCSG mechanization courses. Course material will be presented in detail to allow performance of maintenance and operational tasks. Equipment will be presented to a schematic diagram level. • Assist in the developing of Crew and/or Individual Certification and Rehearsals. Provide assistance during these exercises as required.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.4.1 (cont'd)	4201	2427 Prod. Support	• Revise and update course materials to reflect significant modifications or changes which impact trained personnel requirements. Attend periodic retraining sessions, at IBM facilities, scheduled at the convenience of Douglas. Provide qualified instructor personnel as follows: • One instructor will begin course preparation at EDP - ATP and report to Douglas to begin initial support of DCSG training at ATP plus 5 months and continue for 36 months (ATP + 41 months). The above instructor will work with the Douglas training group on individual work assignments. Training methods used will be compatible with Douglas procedures and format. These services will last for the period as shown above. Provide services of a training specialist at the IBM facilities, to support the one instructor assigned at Douglas. His duties will include the following services: • Screen and review engineering data to determine applicability to the DCSG, AVE or MGE training effort at Douglas. • Prepare special course write up and/or training aids to reflect significant changes in performance or operation of the DCSG, AVE or MGE. • Conduct periodic retraining sessions at IBM Owego for the IBM resident instructor at Douglas.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.4.1 (cont'd)	4201	2427 Prod. Support	• Conduct three special on-site instructions as required in support of the resident instructor at Douglas. • Provide for space pilot visitations to IBM Owego facilities for three groups of not more than eight space pilots for the purpose of informal orientation and familiarization. This familiarization shall include limited utilization of development hardware, fixtures, and simulation equipment as available. The duration of each visit shall not exceed three days.
2.5	52065100		DCSG Development Fixture
2.5.1	52065110	2428 Eng.	Development Test Fixture Design Provide the effort to design the Development Test Fixture associated with the DCSG AVE described in Subtask 52065140 and provide the drawings for the Development Fixture to support the Lab. Vehicle Design and Development.
2.5.2	52065140	2429 Mfg.	Development Fixture Fabrication Provide material and services to fabricate the Development Fixture associated with the DCSG AVE. The Development Fixture is identical in appearance to a hard mockup except for full inspection of all hardware and attachment requirements. Parts will be inspected externally to production drawings and internal detail parts will not be furnished. All hard points shall be suitable for attachment of wiring tubing and all mounting points shall be within manufacturing tolerance. Hard point for tubing development

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.5.2 (cont'd)	52065140	2429 Mfg.	shall be capable of taking torque loads. Actual parts such as rough castings, test parts, sheels, etc., will be furnished, wherever possible, to specially built simulated hardware. The envelope shape will be representative of the production part and within tolerance. One set of Development Fixture parts shall be used for standby use on the assembly line to be used as temporary point of attachment in the event of late deliveries, failure in test or receiving inspection rejection. Functional parts will be made available only on special request or in the event that cost of the functional part is in excess to the cost of a simulated part.
2.6	6		Launch and Flight Operations These Task 6 subtasks are included for planning purposes only. No task effort is required until it is authorized at a later date.
2.6.1	61034		On Site Launch Support (VAFB)
2.6.2	61035		In Plant Support
2.6.3	62031		In Plant - Mission Control Support
2.6.4	62032		Orbit Operations Support (MCC)
2.7	7		Program Documentation The subcontractor shall provide the effort necessary to document the design, development, test, production, support and management phases of the DCSG subsystem as required in the Statement of Work (including the attachments).

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.7.1	72	2430 Prog. Cont.	LV Documentation Effort to monitor, maintain, edit and provide documentation in accordance with subcontractors approved Documentation and Data Requirement Implementation Plan. All effort for preparation of SDRL items is budgeted in with the task that is being performed by function. The SDRL list in Section 6 indicates the estimated hours and cost for organizing, charting, typing, duplicating, data processing, and distributing the final reports to Douglas. Note: No effort for the research involved is included on this schedule.
2.7.2	73	2431	Photo Documentation Provide effort to manage and provide the photographic documentation of program milestones in accordance with AFSCM 95-1; Photographic Documentation of AFSC Programs under contract to industry, Paragraphs 5, 6a, 7 and 8. (Not to exceed 100 per month for 31 months.)
2.8	8		Provide manpower, materials, facilities and support necessary to administer, monitor and manage engineering, integration, production and evaluation of the subsystem and the contractor services. Effort shall be in accordance with proposed planning documents. Specific subtasks under this section are as follows:
2.8.1	8101	2432 Prog. Control	Provide and maintain overall program planning and scheduling for the subsystem in accordance with program requirements. This includes the authorization of program work assignments, manpower loading control and reporting controls, program milestones and monitor reporting and specification reviews. The subcontractor

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.8.1 (cont'd)	8101	2432 Prog. Control	shall maintain a definition organization to maintain the EDP WBS and propose changes as required to maintain it current with program requirements and financial management objectives.
2.8.3	8102	2434	Financial Planning and Control System Provide effort to operate and maintain a Financial Planning and Control System in accordance with the subcontractor proposed plan as approved by Douglas.
2.8.2	8103	2435 Prog. Cont.	Provide effort to operate and maintain a PERT/Time system for the DCSG Subsystem through the delivery of the first flight vehicle and all AGE hardware for the subcontracted subsystem in accordance with the PERT requirements as provided in the CDP work statement.
2.8.4	82011	2436 Conf. Mgmt.	Provide effort to manage the configuration identification functions. Administer Part/Drawing No. control identification procedures and CM number assignments.
2.8.5	82012	2437 Config. Mgmt.	Manage CM activity and configuration control efforts such as administration of the Configuration Control Board, release and change procedures, ECP coordination and CM Plan update.
2.8.6	82014	2438 Config. Mgmt.	Provide effort to manage the configuration status accounting function and prepare status accounting reports per SDI-C-012.
2.8.7	8203	2439 Config. Mgmt.	Manage AVE, MGE and Software FACI's and support DAC in the AF FACI. This includes efforts with DAC and the IBM design subcontractors to coordinate agendas, participate in the events, record minutes and perform action item follow-up.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.8.8	8301	2440 Eng.	Provide effort to manage and control the Quality Assurance Program. • Conduct initial planning, including basic design review and preparation of inspection criteria. • Revise the program plan as necessary to assure product quality and satisfy customer requirements. Included is the effort required by IBM sub-contractors to implement a quality assurance program consistant with MOL requirements within their facilities.
2.8.9	83021	2441 Prod. Supp.	Maintenance Support Provide management function and the effort to accomplish maintenance analysis as required by SDI-S-044 (Maintenance Data Sheets).
		2442 Prod. Supp.	Provide management function for the in plant repair of equipment returned from test and launch sites for maintenance action. Prepare IBM assigned portions of the Integrated Graphic Illustration requirements per SDI-R-012.
2.8.10	83022	2443 Prod. Supp.	Supply Support Provisioning and Control • Effort to identify and recommend spare parts, document recommendations, changes to recommendations, and design changes affecting support material, and the acquisition/control of spares ordered by DAC shall be subject to supplemental authorization based on final determination of maintenance and support concept. • Maintenance of custodial responsibility over set aside spare parts for factory repair is a normal function of Government Property Accounting personnel. This is an overhead activity and no costs are included for this activity.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.8.11	83023100	2444 Prod. Support	Provide the effort to manage and provide for the in-plant parts protection, space packaging, preservation packaging, packing and package testing of equipment prescribed in the packaging and transportation section of the Material Support Plan. Establish protective measures to prevent immediate malfunction of prime equipment and to prevent delayed malfunction due to foreign elements or damaged components: • Develop wraps, containers, protective atmospheres or other means to protect component parts from dust, dirt or corrosive elements during the manufacturing and assembly cycle. • Provide protection for sensitive components and sensitive selections of subassemblies against damage in normal plant handling. Provide for each Contract End Item (CEI) to be preserved and packaged for protection against adverse natural and induced environmental conditions in transit and for enclosed ninety day storage. Assure that the packaging of piece parts by suppliers is in accordance with MIL-P-38105. Provide supporting packaging documentation in accordance with SDI-L-001. Provide for packing CEI's in accordance with Level C FED-STD-102. When practical shipments will be consolidated and equipped for handling by mechanical material handling devices. Reusable containers will be used when quantity and/or repairability warrants their use.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.8.12	83023200	2445	Transportation and Traffic IBM will provide the effort necessary to manage and provide for the transportation and traffic activities in the shipment of all DCSG elements. Note: This effort is an IBM overhead activity and no costs are included in our proposal.
2.8.13	8303	2446	Provide effort to manage and implement procurement functions defined in subcontractor proposed make or buy, subcontracting and GFE plans. Where management implementation of this effort, as applied in other sections of the Work Breakdown Structure, creates additional effort such added effort shall be defined and included in that section. Provide effort to manage production planning, tooling, fabrication, assembly, as defined in the subcontractor proposed Production Plan.
2.8.15	84		Provide that Engineering and Test management effort which is not identifiable to other specific subtask groupings.
		2447	Engineering AVE Management Provide engineering AVE management not otherwise identifiable. Provide coordination and liaison with DAC on engineering matters.
		2448	Engineering MGE Management All MGE engineering management has been identified under other work packages.

SOW (Paragraph Number)	WBS # (DAC End Item)	Work Pkg. No.	Description
2.8.15 (cont'd)	84		
		2449	Test AVE Management Provide Test AVE Management not otherwise identifiable to other specific tasks. Provide coordination and liaison with DAC on program Test AVE Management.
		2450	Test MGE Management Provide Test MGE Management not otherwise identifiable. Provide coordination and liaison with DAC on program Test MGE Management.

Hardware Quantity

	Prod. Proto 2322	Prod. Proto 2325	Prod. Proto 2328	Prod. Proto 2331	Prod. Proto 2234	Prod. Proto 2337	Prod. Proto 2340	Prod. Proto 2343	Eng. Proto 2346	Prod. 2362	Prod. 2365	Prod. 2368	Prod. 2371	Prod. 2374	Prod. 2377	Total
Computer	1							2	2	14						19
Data Adapter		1					1	1			7					10
Keyboard			1				1	1	2			10				15
Display				1			1	1	2				10			15
Printer					1		1	2	2					12		18
AMU							1	1							7	9

WORK BREAKDOWN STRUCTURE

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0	1	2	3	4	5	6	7	8	9	10	WORK PACKAGE MANAGER & WORK PACKAGE NUMBER
0 LABORATORY VEHICLE	SYSTEMS ENGINEERING	15 SYSTEMS EFFECTIVENESS ENGINEERING	1502 RELIABILITY	15021 NON RECURRING							R. F. BRANI 2285
				15022 RECURRING							R. F. BRANI 2286
			1503 MAINTAINABILITY	15031 NON RECURRING							H. T. NEAL 2287
				15032 RECURRING							H. T. NEAL 2288
			1504 HUMAN ENGINEERING	15041 NON RECURRING							W. M. GADDES 2289
				15042 RECURRING							W. M. GADDES 2290
			1505 SAFETY ENGINEERING	1501 NON RECURRING							J. R. STANLEY 2291
				15052 RECURRING							J. R. STANLEY 2292
	2 LABORATORY VEHICLE SYSTEM HARDWARE	22 LAB. VEHICLE	2201 L.V. COMMON	22014 LV HARDWARE	23014.00 LM PRODUCTION SUPPORT AT DAC						H. T. NEAL 2293
					22085100 DCSG DESIGN	22085110 DCSG HARDWARE DESIGN	22085.11 DCSG COMMON SUBSYSTEM DESIGN	220851111 RESIDENTS AT DAC			J. N. MITCHELL 2294
								220851112 DCSG COMMON			J. T. CAULFIELD 2295
								220851113 SYSTEM DESIGN			D. J. PETRONE 2296
								220851114 SYSTEM ENGINEERING			J. R. RIDDLE 2297
								220851115 PDR & CDR REVIEWS			W. F. GOEROLD 2298
								220851116 TECHNICAL MEETINGS			G. BARBIERI 2299
								220851117 WEIGHT CONTROL			M. BYER 2300
								220851118 EMC CONTROL			M. BYER 2301
							22085112 DIGITAL COMPUTER DESIGN	220851121 COMPUTER DESIGN			R. BETTS 2302
								220851122 COMPUTER MECHANICAL DESIGN			J. F. PRICE 2303
							22085113 LDA UNIT DESIGN	220851131 ELECTRICAL DESIGN			E. S. FLANDERS 2304
								220851132 MECHANICAL DESIGN			F. H. EASTON 2305
							22085114 KEYBOARD UNIT DESIGN	220851141 ELECTRICAL DESIGN			E. S. FLANDERS 2306
								220851142 MECHANICAL DESIGN			F. H. EASTON 2307
							22085119 DISPLAY UNIT DESIGN	220851191 DESIGN SUPPORT			D. J. PETRONE 2308
								220851192 SUBCONTRACT DESIGN			D. T. BUCCHIONI 2309
							22085115 PRINTER UNIT DESIGN	220851151 DESIGN SUPPORT			D. J. PETRONE 2310
								220851152 SUBCONTRACT DESIGN			D. T. BUCCHIONI 2311
							22085116 AUXILIARY MEMORY UNIT DESIGN	220851161 DESIGN SUPPORT			D. J. PETRONE 2312
								220851162 SUBCONTRACT DESIGN			D. T. BUCCHIONI 2313
							22085117 TRANSPORTATION PACKAGING DES.				R. A. WARNER 2314
							22085118 MOCK UP DRAWINGS				D. J PETRONE 2315
			2206 DATA MANAGEMENT	22085 DATA MANAGEMENT MSK		22085150 DCSG ON BOARD PROG/PROCEDURES	22085151 DCSG ON ORBIT SOFTWARE				B. WHIPPLE 2316
							22085152 DCSG GROUND SUPPORT SOFTWARE				B. WHIPPLE 2318
							22085153 DCSG SOFTWARE PROCEDURES				B. WHIPPLE 2320
					22085200 DCSG DEVELOPMENT TEST	22085210 COMMON DEV. TEST & TEST SUPPORT					H. T. NEAL 2321
						22085221 DIGITAL COMPUTER DEV. TESTING	220852211 AVE HARDWARE				J. T. RAFFA 2322
							220852212 DEVELOPMENT TEST				F. J. PRICE 2323
							220852213 UNIT ENVIRONMENT TEST				I. L. ISCH 2324
						22085222 LDA UNIT DEVELOPMENT TEST	220852221 AVE HARDWARE				J. T. RAFFA 2325
							220852222 DEVELOPMENT TEST				F. H. EASTON 2326
							220852223 UNIT ENVIRONMENT TEST				I. L. ISCH 2327
						22085223 KEYBOARD UNIT DEV. TEST	220852231 AVE HARDWARE				J. T. RAFFA 2328
							220852232 DEVELOPMENT TEST				E. S. FLANDERS 2329
							220852233 UNIT ENVIRONMENT TEST				I. L. ISCH 2330
						22085226 DISPLAY UNIT DEVELOPMENT TEST	220852261 AVE HARDWARE				D. T. BUCCHIONI 2331
							220852262 DEVELOPMENT TEST				D. J. PETRONE 2332
							220852263 UNIT ENVIRONMENT TEST				I. L. ISCH 2333
						22085224 PRINTER I UNIT DEV. TEST	220852241 AVE HARDWARE				D. T. BUCCHIONI 2334
							220852242 DEVELOPMENT TEST				D. T. PETRONE 2335
							220852243 UNIT ENVIRONMENT TEST				I. L. ISCH 2336
						22085225 AUXILIARY MEMORY UNIT DEV. TEST	220852251 AVE HARDWARE				D. T. BUCCHIONI 2337
							220852252 DEVELOPMENT TEST				D. T. PETRONE 2338
							220852253 UNIT ENVIRONMENT TEST				I. L. ISCH 2339
						22085230 DCSG SUBSYSTEM DEVELOPMENT TEST	220852301 AVE HARDWARE				F. C. WHITNEY 2340
							220852302 DEVELOPMENT TEST				J. R. RIDDLE 2341
							220852303 SIMULATORS				J. R. RIDDLE 2342
						22085241 PRODUCTION PROTOTYPE	220853411 AVE HARDWARE				F. C. WHITNEY 2343
							220853412 SUPPORT				J. C. HUNDLEY 2344
							220852413 ACCEPTANCE TEST				I. L. ISCH 2345
						22085242 ENGINEERING PROTOTYPE	220853421 AVE HARDWARE				F. C. WHITNEY 2346
							220853422 SUPPORT				J. C. HUNDLEY 2347
							220853423 ACCEPTANCE TEST				J. R. RIDDLE 2348

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LEVEL 0	1	2	3	4	5	6	7	8	9	10	WORK PACKAGE MANAGER & WORK PACKAGE NUMBER	
0 LABORATORY VEHICLE						22085310 COMMON DCSG QUAL TEST & TEST SUPPORT					W. MURRAY	2349
						22085321 DIGITAL COMPUTER QUAL. TEST	220853211 DESIGN & FAB. FIXTURES				D. LOZIER	2350
							220853212 QUALIFICATION TEST				I. L. ISCH	2351
						22085322 LDA QUALIFICATION TEST	220853221 DESIGN & FAB. FIXTURES				D. LOZIER	2352
							220853222 QUALIFICATION TEST				I.L. ISCH	2353
						22085323 KEYBOARD QUALIFICATION TEST	220853231 DESIGN & FAB. FIXTURES				D. [illegible]	2354
							220853232 QUALIFICATION TEST				I. L. ISCH	2355
						22085326 DISPLAY QUALIFICATION TEST					I. L. ISCH	2356
						22085324 PRINTER QUALIFICATION TEST					I. L. ISCH	2357
						22085325 AUXILIARY MEMORY QUAL. TEST					I. L. ISCH	2358
						22085351 DCSG ON-ORBIT SOFTWARE VALID.					B. WHIPPLE	2359
						22085352 DCSG SUPPORT SOFTWARE VALID.					B. WHIPPLE	2360
	2 LABORATORY VEHICLE SYSTEM HARDWARE	22 LAB. VEHICLE	2208 DATA MANAGEMENT	2205 DATA MANAGEMENT MSK	22085300 DCSG QUALIFICATION TEST	22085410 LV HARDWARE	2208541100 COMMON DCSG PRODUCTION SUPPORT					
							2208541210 DIGITAL COMPUTER	2208541211 HARDWARE FABRICATION			J. T. RAFFA	2362
								2208541212 HARDWARE SUPPORT TO PRODUCTION			J. E. TURNS	2363
								2208541213 ACCEPTANCE TEST			I. L. ISCH	2364
							2208541220 LDA	2208541221 HARDWARE FABRICATION			J. T. RAFFA	2365
								2208541222 HARDWARE SUPPORT TO PRODUCTION			J. E. TURNS	2366
								2208541223 ACCEPTANCE TEST			I.L. ISCH	2367
							2208541230 KEYBOARD	2208541231 HARDWARE FABRICATION			J. T. RAFFA	2368
								2208541232 HARDWARE SUPPORT TO PRODUCTION			J. E. TURNS	2369
								2208541233 ACCEPTANCE TEST			I.L. ISCH	2370
							2208541260 DISPLAY	2208541261 HARDWARE FABRICATION			D. T. BUCCHIONI	2371
								2208541262 HARDWARE SUPPORT TO PRODUCTION			J. C. HUNDLEY	2372
								2208541263 ACCEPTANCE TEST			I.L. ISCH	2373
							2208541240 PRINTER	2208541241 HARDWARE FABRICATION			D. T. BUCCHIONI	2374
								2208541242 HARDWARE SUPPORT TO PRODUCTION			J. C. HUNDLEY	2375
								2208541243 ACCEPTANCE TEST			I.L. ISCH	2376
							2208541250 AUXILIARY MEMORY	2208541251 HARDWARE FABRICATION			D. T. BUCCHIONI	2377
								2208541252 HARDWARE SUPPORT TO PRODUCTION			J.C. HUNDLEY	2378
								2208541253 ACCEPTANCE TEST			I.L. ISCH	2379
							2208541300 PRODUCTION ASSEMBLY CHECKOUT	2208541301 SYSTEM SOFTWARE			I.L. ISCH	2380
								2208541302 SYSTEM TEST			I.L. ISCH	2381
					22085400 DCSG HARDWARE	22085420 AVE SPECIAL TOOL & SPECIAL TEST EQUIPMENT	22085421 SPECIAL TOOL AND TEST EQUIP. DES.	22085411 SPECIAL TOOLS DESIGN	2208542111 DIGITAL COMP.		J. R. CASE	2382
									2208542112 LDA		J. R. CASE	2383
									2208542113 KEYBOARD		J. R. CASE	2384
									2208542114 DISPLAY		D. T. BUCCHIONI	2385
									2208542115 PRINTER		D. T. BUCCHIONI	2386
									2208542116 AUXILIARY MEMORY		D. T. BUCCHIONI	2387
									2208542117 SPECIAL PROCESSES		J. R. CASE	2388
								22085412 SPECIAL TEST EQUIPMENT DESIGN	2208542121 DIGITAL COMPUTER		D. L. MARSHALL	2389
									2208542122 LDA		D. L. MARSHALL	2390
									2208542123 KEYBOARD		D. L. MARSHALL	2391
									2208542124 DISPLAY		D. T. BUCCHIONI	2392
									2208542125 PRINTER		D. T. BUCCHIONI	2393
									2208542126 AUXILIARY MEMORY		D. T. BUCCHIONI	2394
									2208542127 SPECIAL PROCESSES		D. L. MARSHALL	2395
							22085424 SPECIAL TOOLS & TEST EQUIP. HARD.	22085414 SPECIAL TOOLS HARDWARE	2208542411 DIGITAL COMPUTER		J. R. CASE	2396
									2208542412 LDA		J. R. CASE	2397
									2208542413 KEYBOARD		J. R. CASE	2398
									2208542414 DISPLAY		D. T. BUCCHIONI	2399
									2208542415 PRINTER		D. T. BUCCHIONI	2400
									2208542416 AUXILIARY MEMORY		D. T. BUCCHIONI	2401
								22085422 SPECIAL TEST EQUIPMENT HARDWARE	2208542421 DIGITAL COMPUTER		D. L. MARSHALL	2402
									2208542422 LDA		D. L. MARSHALL	2403
									2208542423 KEYBOARD		D. L. MARSHALL	2404
									2208542424 DISPLAY		D. T. BUCCHIONI	2405
									2208542425 PRINTER		D. T. BUCCHIONI	2406
									2208542426 AUXILIARY MEMORY		D. T. BUCCHIONI	2407
						22085430 SIL REFURBISHMENT	22085431 REFURBISHMENT				F. C. WHITNEY	2408
							22085432 TEST				I.L. ISCH	2409
						22085440 LV SPARES						
					22085900 ASSOCIATE SUPPORT AND SERVICES	22085910 PSCS COMMON					B. WHIPPLE	2410
						22085920 PSCS SOFTWARE					B. WHIPPLE	2411
						22085930 SOFTWARE VALIDATION TEST					B. WHIPPLE	2412
	3 AEROSPACE GROUND EQUIPMENT	32 LAB VEHICLE	3203 MAINTENANCE GROUND EQUIPMENT	32035 MSK	32035100 DCSG MGE	32035110 MGE DESIGN	32035111 COMMON DESIGN & DES. SUPPORT	320351111 OGE REQUIREMENTS			D. J. PETRONE	2413
								320351112 NON RECURRING DESIGN			H. K. WADMAN	2414
								320351113 REVIEWS PDR & CDR			W. F. GOEROLD	2415
							32035112 TEST SET, DIGITAL COMP. UNIT DES.	320351121 TEST SET DIGITAL COMP. UNIT	320351211 NON RECURRING		H. K. WADMAN	2416
									320351212 RECURRING		H. K. WADMAN	2417
								320351122 MGE PROGRAMS	320351221 NON RECURRING		C. CORVETTE	2418
									320351222 RECURRING		C. CORVETTE	2419

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LEVEL 0	1	2	3	4	5	6	7	8	9	10	WORK PACKAGE MANAGER & WORK PACKAGE NUMBER
0 LABORATORY VEHICLE						32035110 MGE DESIGN	32035113 MGE TRANSPORTATION PACKAGING				R.A WARNER 3420
						32035130 MGE DEVELOPMENT TEST	32035131 TEST SET DIGITAL COMP. UNIT TEST.				
	3 AEROSPACE GROUND EQUIPMENT	32 LAB. VEHICLE	3203 MAINTENANCE GROUND EQUIPMENT	3205 MSK	32035100 DCSG MGE	32035140 HARDWARE	32035141 MGE HARDWARE	3203514110 LV AGE PRODUCTION SUPPORT			
								3203514120 TEST SET DIGITAL COMP. UNIT	3203514121 HARDWARE FABRICATION 3203514122 ACCEPTANCE TEST		J. T. RAFFA 3423 S. M. RENFRO 3424
							32035142 MGE SPECIAL TOOLS & TEST EQUIP.	3203514210 MGE ST & TE DESIGN 3203514240 MGE ST & TE HARDWARE			J. R. CASE 3425 J. R. CASE 3426
							32035144 MGE SPARES				
	4 TRAINING	42 SERVICES	4201 TRAINING & REHEARSAL SUPPORT								F. KALLEN 3427
	5 SYSTEM TEST	52 LABORATORY VEHICLE	5206 LV SYSTEM DEV. FIXTURES	52065 MSK DEV. FIXTURE	52065100 DCSG DEVELOPMENT FIXTURE	32052110 DCSG DEV. FIXTURE DESIGN 32052140 DCSG DEV. FIXTURE HARDWARE					F. J. PRICE 3428 F.C. WHITNEY 3429
	6 LAUNCH & FLIGHT OPERATIONS	61 LAUNCH OPERATIONS	6103 VEHICLE PREPARATION & LAUNCH	61034 GN2 SITE SUPPORT – LAUNCH 61035 AM PLANT SUPPORT							
		62 FLIGHT OPERATIONS	6203 MISSION OPERATION	62081 IN PLANT ACT. MISSION CONTROL 62082 SCF ACTIVITIES							
	7 PROGRAM DOCUMENTATION	72 LV DOCUMENTATION									V. M. VASSIL 3430
		73 PHOTO DOCUMENTATION									V. M. VASSIL 3431
	8 PROGRAM MANAGEMENT	81 PROGRAM CONTROL MANAGEMENT	8101 PLANNING & SCHEDULES								G. BARBIERI 3432
			8102 FINANCIAL PLANNING & CONTROL	81021 BUDGET CONTROL 81022 FINANCIAL PLANNING AND CONTROL							V. M. VASSIL 3433 V. M. VASSIL 3434
			8103 PERT/TIME								G. BARBIERI 3435
		82 CONFIGURATION MANAGEMENT	8201 LV CONFIGURATION MANAGEMENT	82011 CONFIGURATION IDENTIFICATION 82012 CONFIGURATION CONTROL 82014 CONFIGURATION ACCOUNTING							W. F. GOEROLD 3436 W. F. GOEROLD 3437 W. F. GOEROLD 3438
			8202 FACT PREPARATION AND CONDUCTION								W. F. GOEROLD 3439
		83 MANUFACTURING MANAGEMENT	8301 QUALITY ASSURANCE								J. MELROSE 3440
			8302 LOGISTICS SUPPORT MANAGEMENT	83021 MAINTENANCE SUPPORT	830211 MAINTENANCE ANALYSIS 830213 MAINTENANCE SUPPORT						H. T. NEAL 3441 H. T. NEAL 3442
				83022 SUPPLY SUPPORT							
				83023 TRANSPORTATION SUPPORT	83028100 PRESERVATION, PACKAGING & PACK. 83032200 TRANSPORTATION AND TRAFFIC						R. A. WARNER 3444 F. C. WHITNEY 3445
			8303 PROCUREMENT & PRODUCTION MANAGEMENT								F. C. WHITNEY 3446
		84 ENGINEERING AND TEST MANAGEMENT	841 ENGINEERING MANAGEMENT	8411 AVE 8412 MGE							
			842 TEST MANAGEMENT	8421 AVE 8422 MGE							H. T. NEAL 3449 H. T. NEAL 3450
		88 TRAVEL									J. C. HUNDLEY 3451

Section 4

EXCEPTIONS AND COMMENTS TO DOUGLAS TECHNICAL REQUIREMENTS SPECIFICATION TR00534 AND CONTRACT END ITEM SPECIFICATION CP00342

Section 4. 1

EXCEPTIONS AND COMMENTS TO DOUGLAS TECHNICAL REQUIREMENTS SPECIFICATION TR00534

Item No.	Location	Description	
1	Page I-9 Figure 1	Change:	Laboratory Data Adapter to Laboratory Data Adapters.
		Reason:	Clarification
2	Page I-15, Paragraph 3.1.1.2.1.1.2.1	Change:	Second sentence to read: "Each register shall consist of 32 bits and should be addressable by the instruction word R, B and X fields."
		Reason:	Accuracy
3	Page I-15, Paragraph 3.1.1.2.1.1.3.1	Change To Read:	"A 24 bit logical address shall be formed for addressing mainstore to the byte location level. Only those address bits actually used shall be transmitted to the mainstore system. Two byte address bits and up to 17 word address bits are physically implemented."
		Reason:	Clarification
4	Page I-15, Paragraph 3.1.1.2.1.1.3.2	Change To Read:	"The operand shall be generated from up to 3 binary numbers specified by the instruction word."
		Reason:	Clarification
5	Page I-16, Paragraph 3.1.1.2.1.1.4.1	Change:	Second sentence to read: "..... shall use the RR, RX, RS and SI formats."
		Reason:	Accuracy
6	Page I-17, I-18, I-19, I-20, I-21, &22 Tables I, II, & III	Change:	See Attachment
		Reason:	Update information. Further clarification to be transmitted by separate letter.

Item No.	Location	Description	
7	Page I-20, Paragraph 3.1.1.2.1.2.1.1	Change:	Subheading letters b, c and d to c, d and e respectively. Insert subheading letter "b". b. External -- (U) Conditions generated external to the CUP. 1. General class -- An externally set 6 bit interruption code will be provided with priority established by software. 2. External Priority -- Six levels shall be provided with priority determined by hardware.
		Reason:	Clarification
8	Page I-20, Paragraph 3.1.1.2.1.2.1.2	Change:	In "b" delete the words "bump storage" and add "In addition 2 PSW's shall be provided for each of the six priority interrupts.
		Reason:	The 2 PSW's are in unique storage location but are not in bump storage.
9	Page I-21, Paragraph 3.1.1.2.1.2.1.3	Change:	Add to the first paragraph after the second sentance: "A six stage register shall be provided in hardware, loadable by the change Priority Mask instruction, for masking off each of the six priority interrupts.
		Reason:	Clarification
10	Page I-22, Paragraph 3.1.1.2.1.2.1.3	Change To Read:	Program mask shall cause certain program interruptions to be ignored.
		Reason:	Clarification

Table 4-1

Fixed Point Instructions (U)

Instruction	Average Execution Times (usec)	Format
Load	1.9	RR
Load	5.0	RX
Load Halfword	5.0	RX
Load and Test	1.9	RR C
Load Complement	2.1	RR C
Load Positive	2.1	RR C
Load Negative	2.1	RR C
Add	2.1	RR C
Add	5.0	RX C
Add Halfword	5.4	RX C
Add Logical	2.1	RR C
Add Logical	5.0	RX C
Subtract	2.1	RR C
Subtract	5.0	RX C
Subtract Halfword	5.4	RX C
Subtract Logical	2.1	RR C
Subtract Logical	5.0	RX C
Compare	2.1	RR C
Compare	5.0	RX C
Compare Halfword	6.0	RX C
Multiply	9.2	RR
Multiply	10.4	RX
Multiply Halfword	11.6	RX
Divide	20.4	RR
Divide	21.2	RX
Store	5.0	RX
Store Halfword	5.0	RX
Shift Left Single	2.5+*	RS C
Shift Right Single	2.5+*	RS C
Shift Left Double	2.7+#	RS C
Shift Right Double	2.7+#	RS C
Sum Check	2.5 + 2.5 (no. of locations checked)	

Note: C = Condition Code Is Set

* .4167 usec/shift for shifts of 1 or 4 cycles
\# .8334 usec/shift for shifts of 1 or 4 cycles

Table 4-2

Logical Instructions (U)

Instruction	Execution Times (usec)	Format
Compare Logical	1.9	RR C
Compare Logical	5.0	RX C
Compare Logical	5.0	SI C
AND	3.4	RR C
AND	5.0	RX C
OR	3.4	RR C
OR	5.0	RX C
Exclusive OR	3.4	RR C
Exclusive OR	5.0	RX C
Test Under Mask	5.0	SI C
Insert Character	5.0	RX
Store Character	5.0	RX
Load Address	2.9	RX
Shift Left Single Logical	2.5+*	RS
Shift Right Single Logical	2.5+*	RS
Shift Left Double Logical	2.5+#	RS
Shift Right Double Logical	2.5+#	RS
Test Parity	5.0	RX C

Note: C = Condition Code Is Set

* .4167 usec/shift for shifts of 1 or 4 cycles
\# .8334 usec/shift for shifts of 1 or 4 cycles

Table 4-3

Branching, Input/Output and Status Switching Instructions (U)

Instruction	Execution Times (usec)	Format
Branch on Condition	2.7 or 4.2	RR
Branch on Condition	2.7 or 4.4	RX
Branch and Link	2.2 or 4.0	RR
Branch and Link	2.2 or 4.2	RX
Branch on Count	2.2 or 4.2	RR
Branch on Count	2.2 or 4.4	RX
	Input/Output Instructions	
Start I/O	25 + CRT	SI, C M
Test I/O	32 + CRT	SI, C M
Halt I/O	20 + CRT	SI, C M
Test Channel	6.2 + CRT	SI, C M
Direct Input	20.0	SI, C M
Direct Output	20.0	SI, C M
	Status Switching Instructions	
Lead PSW	9.0	SI, L M
Load PSW Special	9.0	SI
Set Program Mask	2.1	RR, L
Set System Mask	5.0	SI, M
Supervisor Call	15.0	RR
Change Priority Mask	5.4	SI, M

Note: These numbers are highly dependent upon channel operation and are therefore rough estimates only.

Note: C = Condition Code Is Set
M = Privileged Operation Exception
CRT = Channel Response Time

Note: The specified execution times are average execution times and should be used only for programming estimates.

Item No.	Location	Description	
11	Page I-23, Paragraph 3.1.1.2.1.2.3.2.1	Change:	Delete lower part of the figure from "Standard Interface Lines" down.
		Reason:	This approach is unreasonably restricting - there is a better method being used namely hardwired logic.
12	Page I-24, Paragraph 3.1.1.2.1.2.3.2.1	Change:	Line 6 "when operating in the burst mode ---" to read "when operating in the high speed burst mode ---"
		Reason:	There are really two distinct burst modes depending on the inhibiting of the CPU.
		Change:	Line 11, "A maximum data transfer rate ---" to read "A maximum low speed burst data transfer rate ---."
13	Page I-25, Paragraph 3.1.1.2.12.3.2.3	Change:	Second sentence to read as follows: "An address byte, a control byte and two data bytes shall be transferred between....."
		Reason:	Accuracy
14	Page I-25, Paragraph 3.1.1.2.1.2.3.3.2	Change:	Rates of 9 to 54,000 byte per second and 9 to 400,000 bytes per second to up to 54,000 and up to 400,000 respectively.
		Reason:	Clarification
15	Page I-25, Paragraph 3.1.1.2.1.2.3.4.1	Change:	Line 5, change minimum of 4 microseconds to approximately 5 microseconds.
			Line 6, change nominal 11 microseconds to approximately 14 microseconds.
		Reason:	There are only approximations, specifications of a minimum or nominal are meaningless.
	Page I-25, Paragraph 3.1.1.2.1.2.3.4.2	Change:	Line 4, change 5.0 microseconds to 20.
		Reason:	To be consistent with times given in Table III.

Item No.	Location	Description	
16	Page I-27, Listing	Change:	Bit 16 from "chaining check to "undefined."
		Reason:	Chaining check presently not used.
17	Page I-29, Paragraph 3.1.1.2.1.2.3.6	Change:	"add" should be "all".
		Reason:	Typographical error.
		Change:	The second and third sentences to read: "For outputs the parity bit is generated by the channel."
		Reason:	Clarification
		Change:	The second sentence in the second paragraph to read: "All data shall be checked for parity and an interface machine check indication generated upon detection of an error."
		Reason:	Clarification
18	Page I-29, Paragraph 3.1.1.2.1.2.5	Change:	Delete the word "hardware" in the first sentence.
		Reason:	Clarification
19	Page I-30, Paragraph 3.1.1.2.1.3.3.8	Change:	The first sentence to read "Twenty of the 44...." and the second sentence to read "An additional 24 locations....".
		Reason:	24 locations are needed for this storage rather than 12.
20	Page I-31, Paragraph 3.1.1.2.1.3.8.2	Change:	Line 5, change 112,500 to 100,000.
		Reason:	Make compatable with high speed burst mode.

Item No.	Location	Description	
21	Page I-31, Paragraph 3.1.1.2.1.3.9.2	Change:	Last line should read: "shall be regenerated during the 2.5 second cycle unless the memory is operating in a read-compute-write mode."
		Reason:	Clarification
22	Page I-32, Paragraph 3.1.1.2.2.1	Change:	Paragraph 1 and 2 - Change LDAU to LDA. Insert after present paragraph 3 a new paragraph as follows: Signal Transfer (DCSG to Other Laboratory Subsystems) Each subsystem group is assumed to have an independent signal grounding system, isolated from chassis ground, which is connected to the Laboratory Module primary structure only at the specified Structure Ground Point. Signal transfers between a unit of the DCSG and units of other on-board subsystems shall be made via balanced circuits utilizing shielded twisted pair wire with length not to exceed 40 feet. Signal logic levels are as follows: Logic "O" = +0.2 $\pm$ 0.2 volt, logic "1" = +3.7 $\pm$ 1.3 volts. Common mode noise rejection (ground shift) shall be $\pm$ 4.0 volts. Insert after present paragraph 5 a new paragraph as follows: Signal Transfer (Within DCSG) Within the DCSG a radial signal grounding system, isolated fr from chassis ground, shall be used which is connected to the Laboratory Module primary structure only at the specified Structure Ground Point. Signal transfers between units of the DCSG shall be made via single, unbalanced circuits with length not to exceed 25 feet. Signal logic levels are as follows: Logic "0" = + 0.2 $\pm$ 0.2 volt, logic "1" = + 3.7 $\pm$ 1.3 volts. Line-to-ground noise rejection shall be $\pm$ 1.5 volts.
		Reason:	Clarification of inter/intra face transfers.

Item No.	Location	Description	
23	Page I-39	Change:	Signal levels - Change logic 1 to read 3.7 $\pm$ 1.3 v.
		Reason:	This is the external logic level for transfer.
24	Page I-40	Change:	Signal Levels - Change to read "Logic 1 = 3.7 $\pm$ 1.3 v".
		Reason:	This is the proper logic level for transfer.
25	Page I-45, Paragraph 3.1.1.2.7.2c	Change:	Second sentence to read as follows: These indications shall use Logic Power derived from the associated unit power supplies to provide a true indication.
		Reason:	To clarify intent and prevent ambiguity.
26	Page I-47, Table IV	Change:	Table IV (Attachment) to read as shown.
		Reason:	Update information.
27	Page I-48, Table V	Change:	Discrete output numbers 11 and 27 changed from one output to two outputs. (Attachment)
		Reason:	Signals needed to inhibit receiver circuit outputs during computer turn on or turn off. Note: The MDAU service signals will probably require changing to the ADC_n Power ON RESET type signal for the same reason- receiver circuit inhibit.
28	Page I-50, Paragraph 3.1.1.2.3.1.1	Delete:	The paragraph section which reads, "The keyboard shall be capable of operating in either the normal or maintenance mode of operation. The keyboard shall provide the capability of presetting the contents of computer hardware registers in the maintenance mode of operation."
		Reason:	The maintenance mode has been deleted.

Item No. 26 - (ATTACHMENT)

Bit Position	Counter Set Words	Mode Set Words	Configuration Set Words
1	1	0	0
2	ADC Standby	1	0
3	Computer Load	0	1
4	15 Bit Word	Spare	Master Power Off
5	15 Bit Word	Spare	Master Power On
6	15 Bit Word	Spare	ADC 1/2 Master
7	15 Bit Word	ADC1 Operate	ADC1 On/Off
8	15 Bit Word	ADC2 Operate	ADC2 On/Off
9	15 Bit Word	ADC1 Reset	LDA1 On/Off
10	15 Bit Word	ADC2 Reset	LDA2 On/Off
11	15 Bit Word	ADC1 Start	MDA1 On/Off
12	15 Bit Word	ADC2 Start	MDA2 On/Off
13	15 Bit Word	ADC1 Halt	PTR1 On/Off
14	15 Bit Word	ADC2 Halt	PTR2 On/Off
15	15 Bit Word	ADC1 Load and Go	Spare
16	15 Bit Word	ADC2 Load and Go	Spare
17	15 Bit Word	Spare	Spare
18	Spare	Spare	Spare
19	Spare	Spare	Spare
20	Parity	Parity	Parity

Item No. 27 - (ATTACHMENT)

Number	Name	To Unit	Function
11A	LDA1 Service ADC1	LDA1	ACTS as I/O Circuit
11B	LDA1 Service ADC2	LDA1	Inhibit and Service Signal
27A	LDA2 Service ADC1	LDA2	Inhibit and Service Signal
27B	LDA2 Service ADC2	LDA2	Inhibit and Service Signal

Item No.	Location	Description	
29	Page I-50, Paragraph 3.1.1.2.3.1.2	Delete:	Sentence, "In the maintenance mode the display shall be capable of displaying the contents of a selected set of hardware registers in the computer."
		Reason:	The maintenance mode has been deleted.
30	Page I-51, Paragraph 3.1.1.2.3.2	Delete:	"Keyboard Power Selection is not independent."
		Reason:	Keyboard Logic and Power Selection is not independent.
31	Page I-51, Paragraph 3.1.1.2.3.2.b	Add:	*Function Control (16)
		Reason:	Omission in list of controls.
32	Page I-52, Paragraph	Delete:	"Computer No. 1 Single Cycle" "Computer No. 2 Single Cycle" "Keyboard/Display Maintenance/Operate"
		Reason:	Deletion of Maintenance Mode
33	Page I-53, Paragraph 3.1.1.2.4.1	Change:	In "c" Reeling Method - Delete the word "motor".
		Reason:	Clarification
34	Page I-54	Change:	"f" Operating Modes - Revise as follows: "The on-orbit operating modes shall consist of the following: 1. Power ON/OFF 2. Read Forward 3. Read Reverse
		Reason:	To identify the on-orbit modes.

Item No.	Location		
35	Page I-55, Paragraph 3.1.1.2.5.1	Change:	In paragraph "b" change "with 6 lines per inch" to read with 5 lines per inch" and "The last 18 print lines shall be ---" to read "The last 15 print lines shall be ----".
		Reason:	To reflect printer design.
36	Page I-55, Paragraph 3.1.1.2.5.1	Change:	In "c" add the word "minimum" after "100-foot cartridges".
		Reason:	Not to limit to 100 ft. only. Our printer vendor is presently recommending 150 foot rolls of paper.
37	Page I-55	Comment:	There is some question concerning the capability of the Printer to meet this requirement, refer letter of August 10, 1966, IBM No. M866-07.
38	Page I-56, Paragraph 3.1.1.2.6.C	Change:	Excluding cabling and cabling connectors "..... shall not exceed 235 pounds".
		Reason:	Additional page per LDAU, 1/2 page per Keyboard and discrete EMI filters to meet new DACo requirements raised the system weight 5 1/2 pounds, therefore, the limit should be changed. N. B. This does not include weight penalties associated with flow rate, connectors or mounting. (See item 43, 45 and 46).
39	Page I-66, Paragraph 3.1.2.1	Change:	The first paragraph should be re-written to conform to intent of DACo STD-126, dated 13 April 1966. "Reliability as a measure of performance is supplemented in the MOL Program by Effectiveness - the measure of mission accomplishment. The DCSG effectiveness shall be developed to the highest level consistent with maximum program cost effectiveness. The DCSG effectiveness shall not be less than .995 for the mission duration under the mission environmental conditions specified in ST 9003. Effectiveness shall be determined under the duty cycles noted in 3.1.1.2.6 and include all prime and degraded mode capabilities.

Item No.	Location	Description	
40	Page I-90, Paragraph 3.1.2.1	Change:	The second paragraph, "The reliability program------- exception" to "The reliability program for the DCSG shall conform to the requirements of MIL-STD-785 to the extent necessary to meet the DCSG reliability requirement with the following exceptions".
		Reason:	Clarification of the 785 requirement to be compatible with the program plan.
41	Page I-90, Paragraph 3.1.2.2	Change:	First sentence, "------maintainability." Add next sentences, "On orbit maintenance shall consist of malfunction isolation to a DCSG module (black box) level with subsequent switching to redundant modules. Ground maintenance shall consist of malfunction isolation to a DCSG module level with subsequent removal and replacement of the failed module."
		Reason:	To clarify replacement level.
42	Page I-84, Paragraph 3.2.1.2.1	Change:	"b" should read. ".... but not more than 22.5 inches and a height ....."
		Reason:	Box is 22.5 inches long.
		Change:	Add to b. The Printer may be 9 3/8 inches high.
		Reason:	This is present Printer size.
		Add:	Coldplate mounting shall be as defined in TR00534-010D.
		Reason:	Possibly AMU and Printer to be coldplate mounted and present document doesn't define coldplates.
43	Page I-84, Paragraph 3.2.1.2.1c	Change:	Add "or 1/4 - 20" after "10-32".
		Reason:	The use of 10-32 holes will cause weight gains on ADC and LDAU because of multiple mounting legs.

Item No.	Location	Description	
44	Page I-84, Paragraph 3.2.1.2.2	Change:	Delete requirement for induced vibration.
		Reason:	Since the structure parameters are not defined we cannot design equipment to avoid any specific level of induced vibration.
45	Page I-86, Paragraph 3.2.1.2.4.c	Comment:	Statement is not clear since SAFSL Exhibit 21005 Paragraph 3.5 does not exist in DACo supplied documents. The connectors being used are Bendix JT Series.
	Page I-86, Paragraph 3.2.1.2.4.e	Change:	Reword second sentence to read: "Excessive coupling modes shall be avoided by appropriate mounting and design.
		Reason:	Not to unduly restrict design.
	Page I-86, Paragraph 3.2.1.2.4.g	Change:	This paragraph should be changed to permit gold plated bearings lubricated with Dry Molydisulfide.
		Reason:	These are presently being used on the Printer.
46	Page I-86, Paragraph 3.2.1.2.5	Change:	The paragraph should read as follows: "The use of integral cooling shall be made on the ADC and LDAU. Fluid temperature shall be 60° F to 110° F. The pressure drop across any unit shall not exceed 1.5 psc at a flow rate of 150#/hr. The two ADC units and the Laboratory Data Adapter Unit will be connected in parallel in the system. The fluid will be water of purity or inhibited sufficient to guarantee satisfactory operation of magnesium and aluminum alloys.
		Reason:	These are the design parameters being used.
47	Page I-88, Paragraph 3.3.3.2	Change:	Modify the first sentence of paragraph a 1 as follows: "....Douglas Standard ST-P006 or IBM specifications approved by the Air Force on previously developed hardware. NASA approval shall be acceptable in similar uses of hardware."
		Reason:	Our specifications cover all magnesium applications not covered by government agencies. We don't have ST-P006.

Item No.	Location	Description	
48	Page I-88, Paragraph 3.3.3 and Page 89, Paragraph 3.3.6	Comment:	It is understood that these sections are to be used as guides. The specifications called for are somewhat out of date for aerospace applications. Strict adherence to the specifications would require some new tooling with a decrease rather than an increase in performance. ANA400 for instance, is very restrictive in the use of magnesium which is proposed to meet weight goals. In addition, the materials approved by DACo called for in 3.3.3 need definition with regard to time and method. In order to be responsible for schedule, we must have freedom of action in this area. With the approval undefined, our schedule would be completely at the mercy of an action outside our control.
49	Page I-89, Paragraph 3.3.6	Change:	Request MIL-F-7197 of this paragraph be waived for the AMU.
		Reason:	The MIL Specification requires painting of the inside surfaces. This is detrimental to the AMU because of possible paint flaking on the inside of the unit.
50	Page I-92, Paragraph i-1.	Change:	Delete "Single event----------10 microseconds or longer."
		Reason:	This requirement could have rather severe weight penalties on the system. IBM cannot accept the requirement and in addition cannot even evaluate its impact without more complete specification of the 28 VDC source characteristics and the impedance of the distribution system.
51	Page I-95,	Change:	Delete last sentence on page.
		Reason:	This sentence calls for test specimens to be retained until Douglas provides direction for disposition. According to present program plans it is planned after the tests to use the units in the System Engineering Lab.

Item No.	Location	Description	
52	Page I-98, Paragraph	Comment:	This paragraph calls for breadboards to be subjected to high and low temperature testing. For the engineering test and evaluation more than one type of equipment is involved; namely, engineering prototypes and production prototypes. The present program planning calls for the environmental testing to be done on the production prototypes only.
53	Page I-102, Paragraph 4.1.1.7	Add:	"For the AMU the foregoing does not apply. The leak rate shall be such that after pressurization the unit shall function properly in a hard vacuum for the prescribed operational period."
		Reason:	For the small volume of the AMU the leak rate given is unrealistic.
54	Page I-108, Paragraph 4.1.3.6.6	Change:	Delete last sentence.
		Reason:	Paragraph 3.3.1 (d) does not exist.
55	Page I-108, Paragraph 4.1.3.6.7	Change:	Flow rate to 150 lb./hr.
		Reason:	150 lb./hr. is the design point of the equipment.
56	Page I-111, Paragraph 10.2.1	Change:	Revise Paragraph 1 to read - "Keyboard (U). The Keyboard shall be packaged in an envelope not exceeding a size of 4.75 in. wide by 11 in. long by 9.75 in. deep exclusive of panel mounting provisions."
		Reason:	IBM has assumed that provisions for mounting to panel could exceed the 4 x 11 in. dimensions since no mounting flange restrictions were specified. Cannot meet the 4 in. and 7 in. restrictions even assuming use of Bendix pancake type connectors.

Item No.	Location	Description	
57	Page I-111, Paragraph 10.2.1.e	Change:	Paragraph 6 should read; "Key switches similar to Jay Eal Products, Inc. Switch No. C10454 shall be employed."
		Reason:	Switch No. C10451 as stated is not a part number of Jay Eal Products, Inc. (perdiscussion with Mr. Andre Johnson of Jay Eal Products, Inc. 8/12/66).
58	Page I-111, Paragraph 10.2.1	Change:	Delete Paragraphs f and g having to do with Key spacing, color, shape, etc., and position, number, and size of connectors and cables.
		Reason:	These parameters cannot be respecified at a later date without having an impact on the design of the system.
59	Page I-111, Paragraph 10.2.2	Change:	Revise Paragraph 1 to read - "The display unit shall be packaged in an envelope not exceeding in size: 4.5 in. wide, 12.75 in. long, by 9 in. deep, exclusive of panel mounting provisions."
		Reason:	IBM has assumed that provisions for mounting would be in addition to the specified envelope since no mounting flange restrictions were specified. Cannot meet the 4 in. and 7 in. dimensions even assuming use of Bendix pancake connectors.
60	Page I-112, Paragraph 10.2.2	Change:	Delete Paragraphs b and c having to do with spacing, color, shape, etc., and position, number, and size of connectors and cables.
		Reason:	These parameters cannot be respecified at a later date without having an impact on the design of the system.

Section 4.2

COMMENTS AND DEVIATIONS TO CONTRACT END ITEM SPECIFICATION CP00342

Item No.	Location	Description	
1	Section 2, Page 3	Delete:	MIL-STD-785, Requirements for Reliability Program (for Systems and Equipments) - 30 June 1965
		Reason:	Paragraph 3.1.2.1 revised to delete any reference to this specification.
2	Page 5, Paragraph 3.1.1 3.1.1.1 Page 7, Paragraph 3.1.1.2a 5	Delete:	One (1) DCSG Master Control Unit
		Reason:	The Master Control Unit has been deleted from the DCSG and no longer exists as a unit.
3	Page 5, Paragraph 3.1.1 (10th line)	Change:	"Detect and isolate malfunction to the lowest specified subassembly level ---."
		To:	"Aid in the detection of and facilitate the isolation of malfunction to the subassembly level --."
		Reason:	The isolation of the malfunction to the subassembly level is a function of the design of the units under test. This degree of isolation is not being provided because of its severe impact on the flight hardware.
4	Page 6, Paragraph 3.1.1.1.e	Change to Read:	e. The test set shall provide means for allowing the monitoring of voltage levels, waveforms, frequencies and similar parameters for selected interface lines.
		Reason:	e. Amount of monitoring is dependent on output from units under test. IBM has not planned to supply standard test instrumentation for this monitoring as part of the MGE. It is deemed that all instrumentation needed would be that available in standard laboratory and therefore would not be economical to duplicate this in the test equipment. Requirements for these equipments have been identified on facility interface sheets previously submitted by IBM.

Item No.	Location	Description	
5	Page 6, Paragraph 3.1.1.1	Add	Item g as follows
			g. The test set shall provide all of the functions originally contained within the DCSG Master Control Unit.
		Reason:	These functions are essential to the operation of the DCSG.
6	Page 8, Paragraph 3.1.1.2.b	First Sentence:	Not understandable; requires clarification
		Reason:	Could be interpreted as disallowing configuration changes for testing with the use of cables.
7	Page 9, Paragraph 3.1.1.2.f	Change to Read:	The AGE self test shall include the necessary stimuli, cabling, interconnections cabling, displays, indicators, test points and monitoring required to verify the overall performance of the test set.
		Reason:	Self test features of the MGE are planned for distribution throughout the entire test set to make maximum utilization of existing circuitry and will not consist of a separate rack. To perform overall calibration may require standard laboratory instruments which are not planned to be provided as part of the test set. The lists of this equipment were provided on the facility interface sheets previously submitted by IBM.
8	Page 10, Paragraph 3.1.2.1	Change to Read:	The maximum design goal for the test set shall be .96 probability of successfully completing a 4-hour continuous test cycle.
		Reason:	Design requirement cannot be accepted without a related program effort. Present scope of work does not include a formal Reliability Program for MGE.
9	Page 11, Paragraph 3.1.2.2	Change:	"Time for accomplishing primary maintenance shall not exceed the following"
		To:	"The following test set design objectives will be considered."

Item No.	Location	Description	
10	Page 11, Paragraph 3.1.2.2.1 and 3.1.2.2.2	Change:	"The test set shall comply with the following requirements."
		To:	"The following test set design objectives will be considered."
		Reason:	There is no formal maintainability program on the MGE.
11	Page 12, Paragraph 3.1.2.3	Comment:	Subcontractor Technical Directive 193, dated August 1, 1966, changing useful life from five to ten years under the ground rules stated in this STD. At this time, we cannot identify any parts or equipment having significant or limited life degradation characteristics. It should be pointed out, however, that additional spares would be consumed over the longer life span with consequent ultimate cost increase. We cannot, at this time, identify required spares on which production will have been terminated.
12	Page 14, Paragraph 3.1.2.6	Delete Paragraph in its entirety.	
		Reason:	Not in scope of original or present proposal.
13	Page 17, Paragraph 3.3.1.d	Change to Read:	Standard commercial instrumentation such as voltmeters and power supplies, which are necessary for the operation of the test set shall be an integral part of the test set.
		Reason:	Commercial equipment which is required on a near continuous basis, i.e., power supplies will be included. Equipment such as oscilloscopes which would be required for troubleshooting and waveform measurements would be considered roll-up equipment.
14	Page 19, Paragraph 3.3.1.m	Delete Paragraph	
		Reason:	Test set is on casters.

Item No.	Location	Description	
15	Page 24, Paragraph 3.3.2	Add to the end of the first sentence:	"... where necessary and feasible."
		Reason:	MIL-STD-143 is not being adhered to in the design of this equipment due to the cost effectiveness commercial approach being followed.
16	Page 24, Paragraph 3.3.3	Interpretation:	This paragraph is assumed to allow usage of IBM SLT type of parts and materials.
		Reason:	Proposed configuration is dependent on the use of IBM commercial SLT hardware. The functional and environmental requirements of the CEI can be met with this approach.
17	Page 27, Paragraph 4.1.1	Change:	First sentence to read, "Tests shall be conducted to verify the design to determine equipment compatibility, to evaluate performance and to develop acceptance test procedures.
		Reason:	To clarify that Engineering Test and Evaluation does not include Acceptance Testing.
18	Page 27, Paragraph 4.1.1.1.b	Delete in its entirety.	
		Reason:	Paragraph 3.1.2.6 requirements have been deleted.
19	Page 28, Paragraph 4.1.1.1.d	Change:	(Second line) g through m
		To:	g through l
		Reason:	Paragraph 3.3.1.m was deleted.

Item No.	Location	Description
20	Page 28, Paragraph 4.1.1.2.a	Delete in its entirety. Reason: Utilization of commercial design approach makes the performance of this analysis work non cost effective, therefore, it will not be done.
21	Page 28, Paragraph 4.1.1.2.b	Change to Read: 3.1.2.2 Maintainability "The maintainability design objectives shall be evaluated by review of equipment drawings and test results." Reason: There is no formal maintainability program on the MGE.
22	Page 28, Paragraph 4.1.1.2.c	Change to Read: 3.1.2.2.1 Maintenance and Repair Cycles "The maintenance and repair cycle design objectives shall be evaluated by review of equipment drawings and test results." Reason: There is no formal maintainability program on the MGE.
23	Page 28, Paragraph 4.1.1.2.d	Delete in its entirety. Reason: The effort required is not consistent with program scope since there is no reliability program.
24	Page 29, Paragraph 4.1.1.2.i	Delete "0 through ab" Reason: - "0 through ab" - shall be verified by demonstration of compatibility with the DCSC in the normal environment.
25	Page 32, Paragraph 4.1.1.3a.10	Change to Read: "The AGE self-test features (requirements 3.1.1.2.b and 3.1.1.2.f) shall be demonstrated by running the self-test program and observing the indicators for the correct display."

Item No.	Location	Description	
25 (Cont'd.)		Reason:	Paragraph 3.1.1.2.f was revised and it is not economically feasible to purposely malfunction the MGE to verify the self-test capability. The self-test program will be thoroughly evaluated during the MGE debug and checkout phases to assure that it will detect malfunctions.

4-24

Section 5

MGE DUPLEX, SYSTEM BUFFERS, AND UNIT ADAPTERS

Section 5

MGE DUPLEX, SYSTEM BUFFERS, AND UNIT ADAPTERS

5.1 INTRODUCTION

This section provides a brief description of the Adapters and Simulators required for the GE systems. It also includes information on the MGE Adapter required to provide a Duplex System Test capability for the SIL Vehicle and the Second Flight Article.

5.2 MGE DUPLEX TEST ADAPTER CONSOLE

The Duplex Test Adapter Console used in conjunction with the MOL MGE forms a duplex test system for dynamically exercising and controlling all interfaces into the duplex MOL Digital Computer Subsystem Group (DCSG).

This console interfaces with the 360-30 processor of the MGE and supplies the logic and control circuitry for externally simulating the Mission Module Data Adapter #2 and the External Interrupt System #2 interfaces. These interfaces in the MOL System are part of the GE and DAC subsystem groups. In addition, this console contains an extensive data display, a duplicate of the MGE data display, for systems troubleshooting and systems evaluation and monitor.

The console is a stand-alone wheel-up item containing all power and power control (see Fig. 5-1) necessary for ADC #2, and Printer #2, along with all power necessary for internal Duplex Test Adapter logic. It contains all necessary single ended or differential transmitters and receivers for interfacing with the members of the duplex DCSG. Its control and display logic along with its data display panel allow for comprehensive control and display of ADC #2 operation. Data flow through ADC #2 can be followed and/or controlled as desired via this control and display system. A manual capability to alter main storage is afforded by this system in the event troubleshooting becomes necessary. The display function allows for selected display of all data available over the scan bus of the ADC. This display along with the ROS address and CPU discretes form a comprehensive display of CPU operation. (See Figure 5-2)

The control logic function of the console performs the task of taking 360-30 controlled data and formatting it into MMDA simulated transfers or interrupt discretes into the DCSG. Necessary buffering of data is supplied where required to most nearly approach real-time system operation.

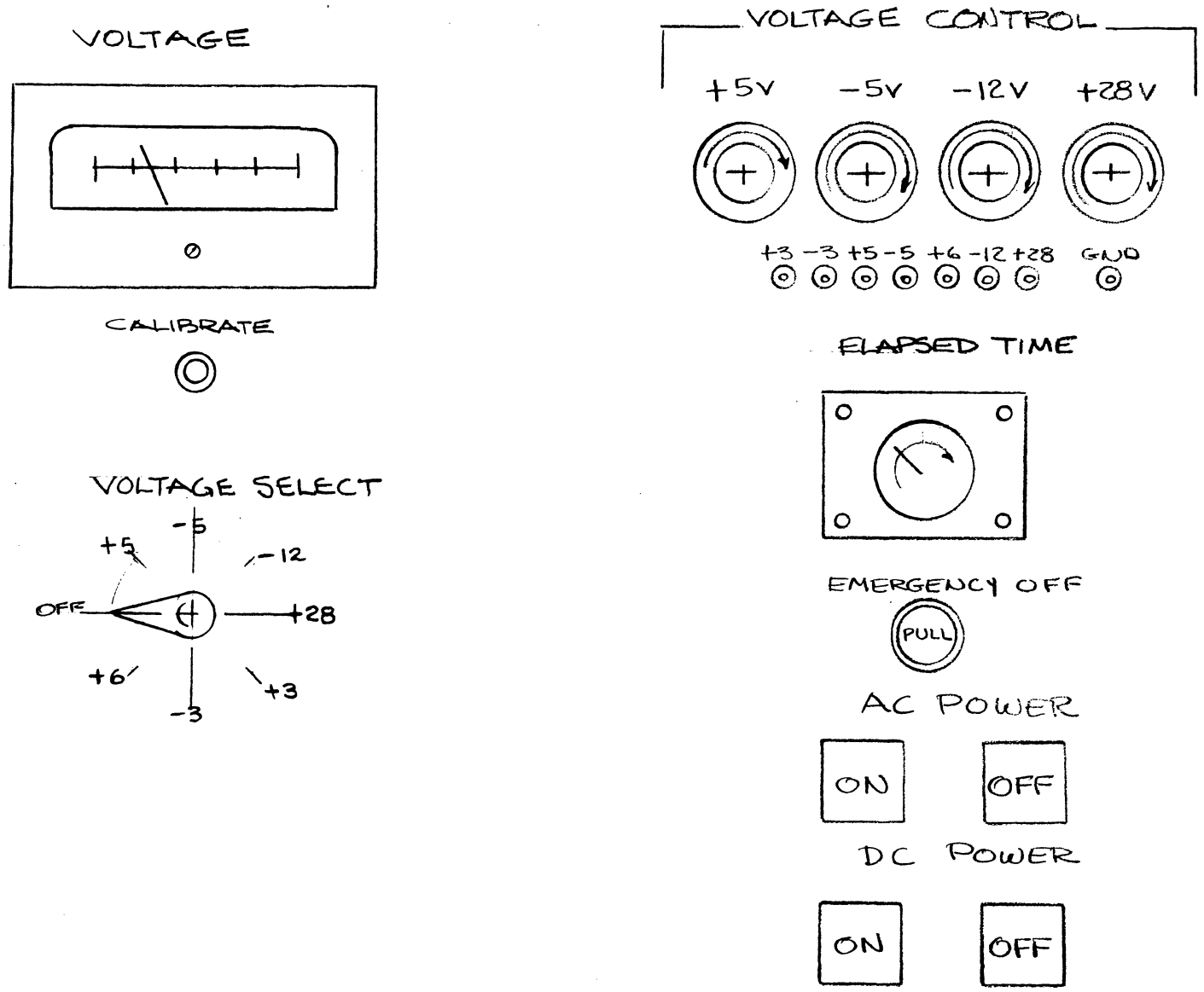

Figure 5-1 POWER CONTROL PANEL

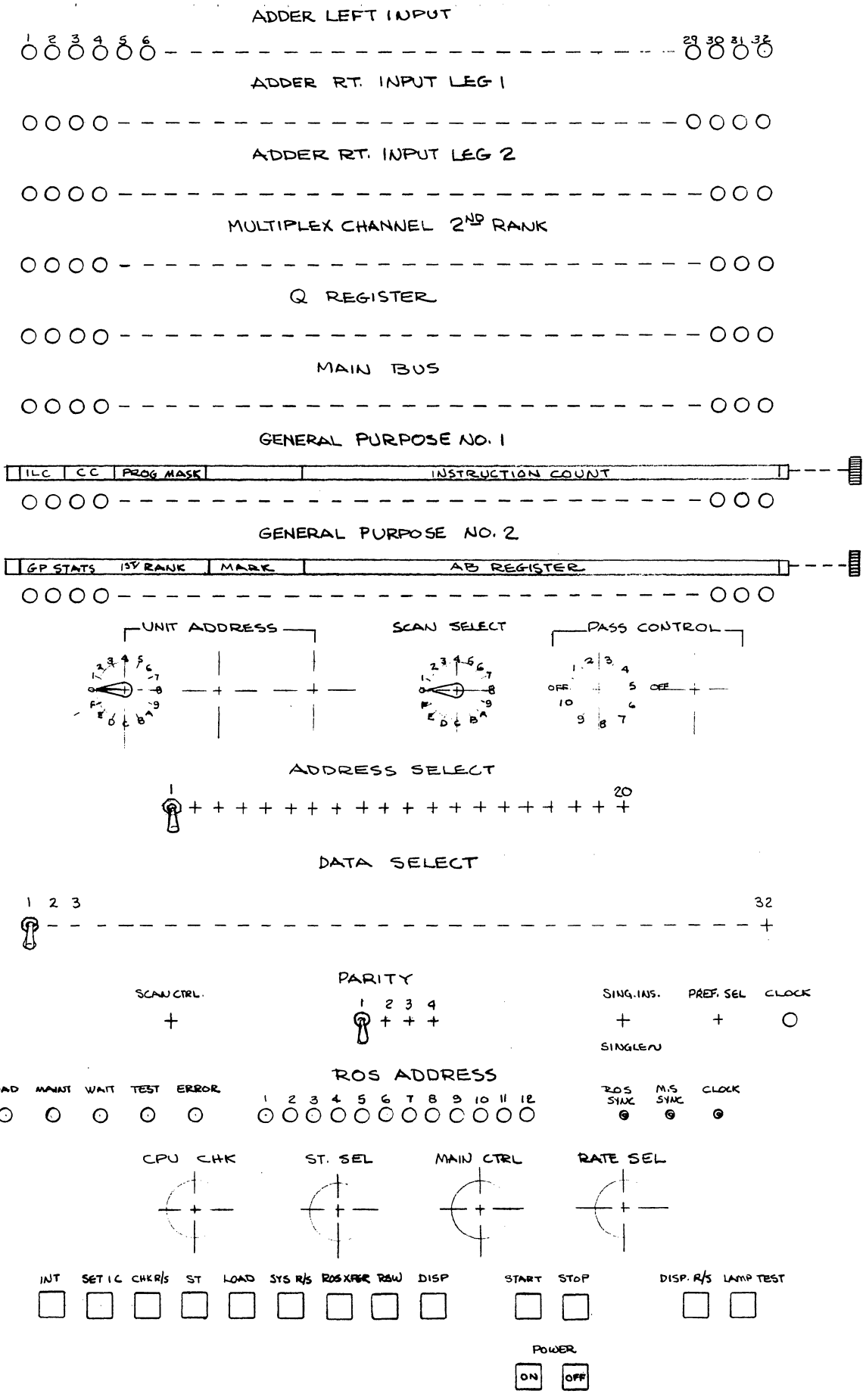

Figure 5-2 DATA DISPLAY PANEL

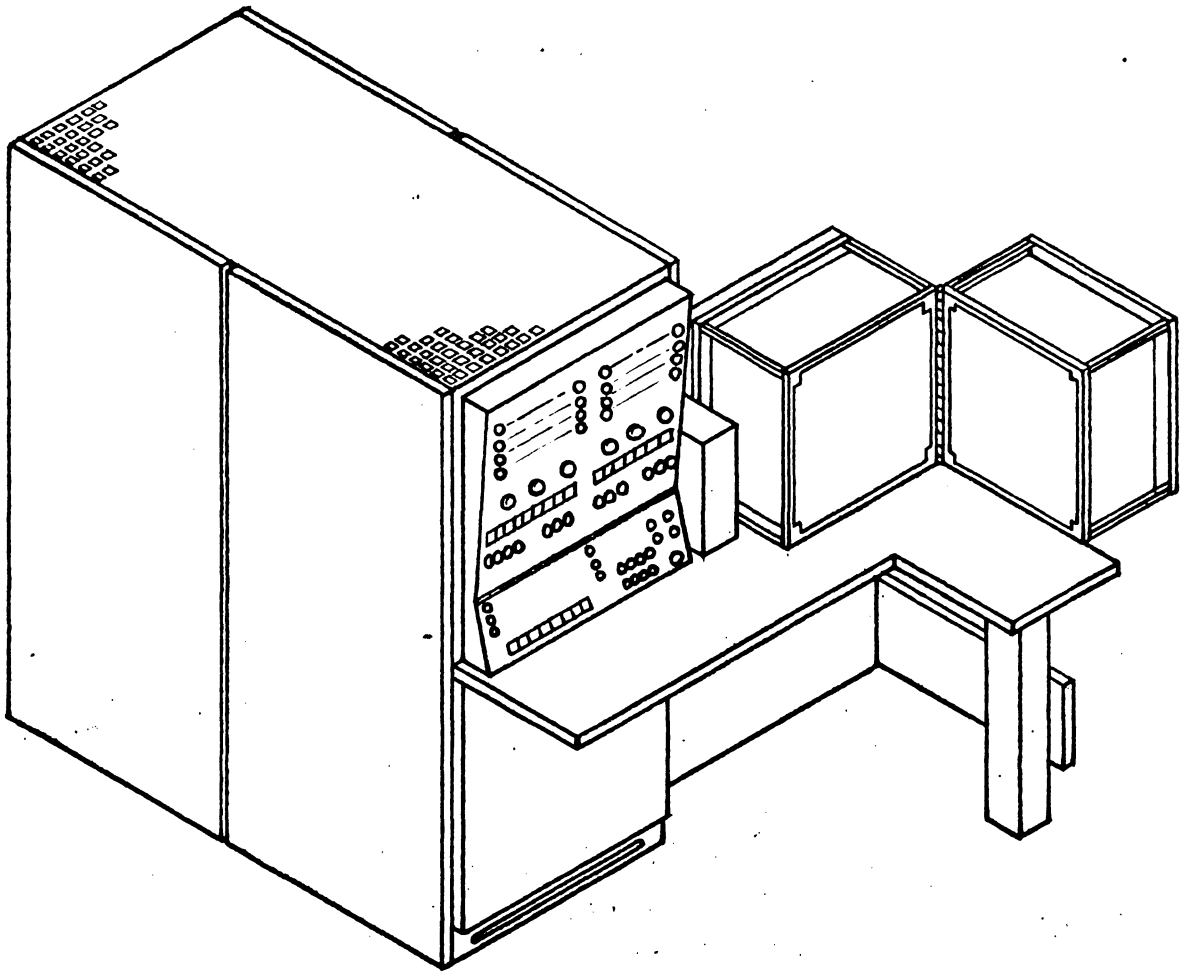

Figure 5-3 DUPLEX TEST ADAPTER CONSOLE

Figure 5-3 is a sketch of the Duplex Test Adapter Console. All power, power control, logic, display and interface circuitry is contained within the main frame. A fixture for holding the necessary second computer and second printer is made available on a table-top extension external to the main frame. Cooling is supplied, where required, using Douglas' Temperature Control Unit.

5.3 ADC CHANNEL ADAPTER SIMULATOR (ADCAS)

The Channel Adapter is provided to enable and synchronize operations between the ADC and 360/44 channels. The Adapter appears to each of 360/44 and ADC channels to be a control unit when connected to them by means of the I/O interface. It is selected and responds in the same manner as any control unit, and will accept and decode commands from the channel. The Adapter, however, unlike a control unit, does not use these commands to operate and control input/output devices; instead, it uses them to open a path between the two channels it connects and then synchronizes the operations performed between the two channels.

The Adapter may be thought of as functionally consisting of two control units which are connected to and communicate with each other by means of a common one-byte buffer register and several signal lines. One of the two control elements serves one channel and the other control element the other channel. (See Figure 5-4)

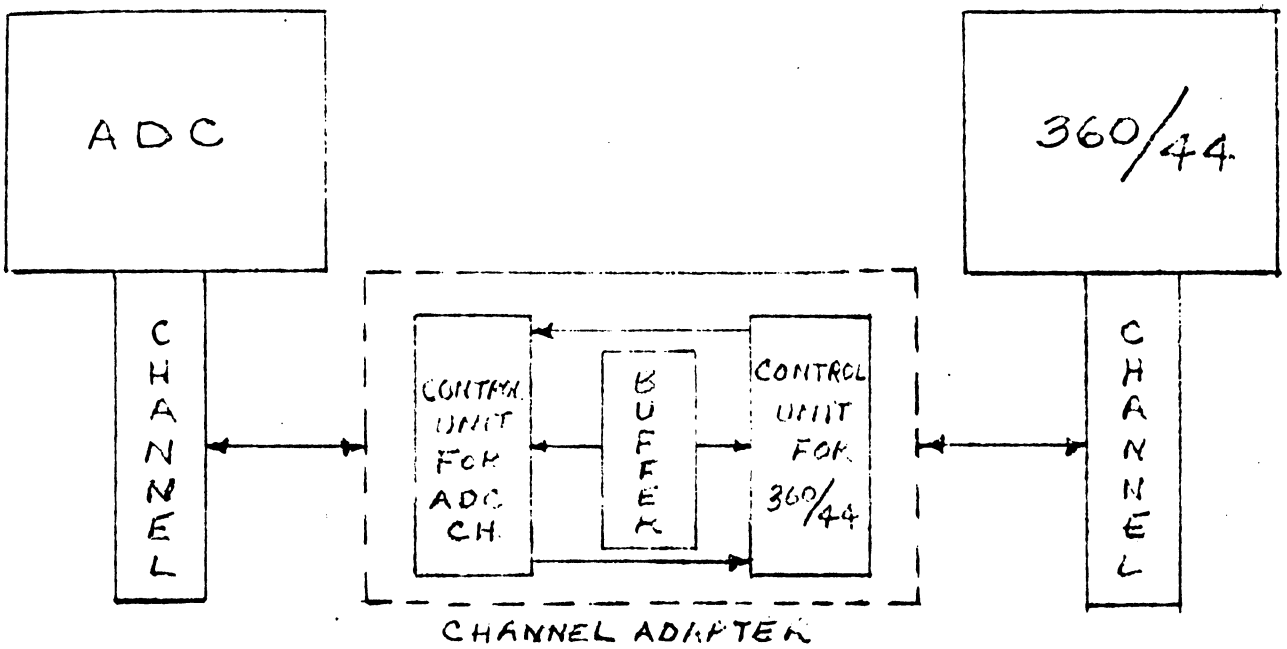

Figure 5-4 DATA FLOW-THRU CHANNEL ADAPTER

The Channel Adapter requirements will be fulfilled by implementing the functions required to enable ADC - 360/44 data transfer as outlined in IBM Solid Logic Technology (SLT) circuitry wherever practical. The only area where this approach may not be practical is in the signal conditioning/ translation required between the ADC and the SLT logic families.

5.4 PRINTER AMU SIGNAL CONDITIONER (PAM)

The AMU-Printer Signal Conditioner provides the data adaption necessary to interface the Auxiliary Memory Unit (AMU) and the Printer of the Digital Computer Subsystem Group (DCSG) with the Aerospace Digital Computer (ADC) in the absence of the Laboratory Data Adapter. In addition, it provides the signal conditioning necessary to adapt a System 360 magnetic tape unit to the ADC 4 Pi standard interface.

The AMU-Printer Signal Conditioner consists functionally of a system panel, a control unit, AMU printer, printer adapter, and a magnetic tape signal conditioner (See Figure 5-5).

Each of the functional sections is described in more detail in the following paragraphs.

5.4.1 System Control Panel (See Figure 5-2)

The System Control Panel (SCP) provides processor control and data display capabilities for the ADC. All of the ADC control functions normally provided by the Master Control Unit (MCU) of the MOL system are provided by this panel. The display function provides the display of data from all registers and buses selectable by the ADC scan bus. In addition, this panel provides the capability of storing data into any register selectable by the scan bus or into any main storage location. The Read Only Store (ROS) address is also displayed on this panel.

5.4.2 Control Unit

The Control Unit portion of the AMU-Printer Signal Conditioner provides the sequencing of the tag and select lines of the standard interface necessary for the proper data flow across the interface. It also decodes address and command "bytes" from the ADC in order to route the data to, and properly control, either the AMU or the printer.

5.4.3 AMU Adapter

The AMU Adapter section provides the control of the AMU and the formatting of the AMU output data during read operations. In addition, by utilizing the System 360 magnetic tape unit as the source document, it

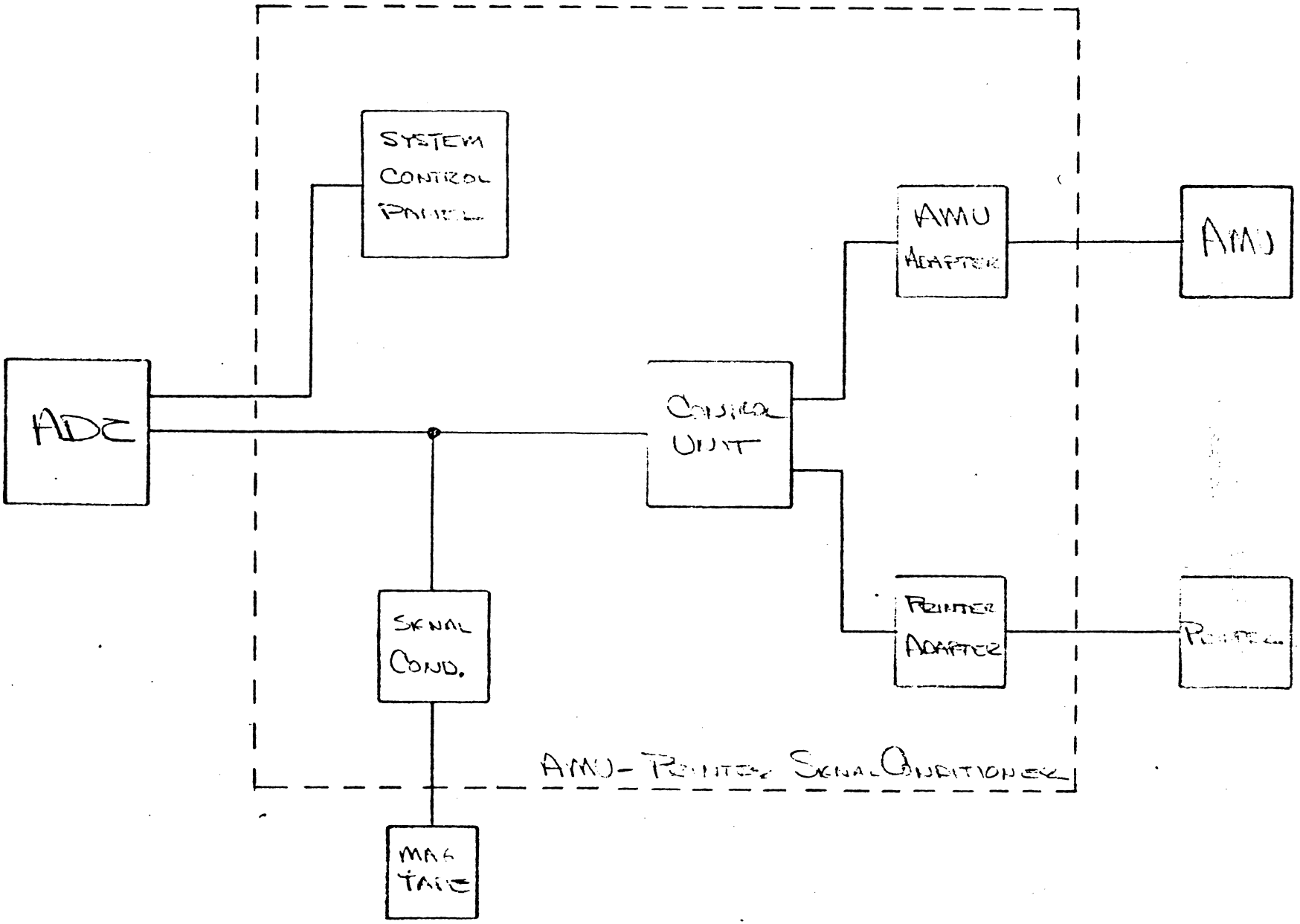

Figure 5-5 AMU PRINTER SIGNAL CONDITIONER FUNCTIONAL BLOCK DIAGRAM

provides the capability to load and verify the AMU. Manual controls and displays are provided as shown in Figure 5-6.

5.4.4 Printer Adapter

The Printer Adapter provides the control and data formatting necessary for proper operation of the printer with the ADC. The printer control and display panel (See Figure 5-7) provides manual selection and printing of any desired character.

5.4.5 Tape Unit Signal Conditioner

The Tape Unit Signal Conditioner adapts the System 360 standard interface of the magnetic tape to the 4 Pi standard interface of the ADC. This signal conditioner was physically included within the cabinet of the AMU - Printer Signal Conditioner in order to avoid providing an additional cabinet and power supplies to house and operate only one board of SLT logic. In addition, the connection of the magnetic tape unit to the ADC standard interface is more readily facilitated by this physical arrangement.

Program loading of the ADC is facilitated by the AMU-Printer Signal Conditioner by utilizing the System 360 magnetic tape unit and the Initial Program Load (IPL) feature of the ADC. Program verification, while not specifically provided by this unit, can be accomplished by the ADC itself utilizing a small verify sub-routine to compare the memory contents to the magnetic tape data.

5.5 PACKAGING DESIGN

The Adapters will be packaged in two units:

- AMU - Printer Signal Conditioner
- Channel Adapter

The AMU Printer Signal Conditioner (Figure 5-8) will contain display and control panels, logic gates, AC Power Distribution Assembly, DC Power Supplies and Interface Connection Panel Assembly.

The Channel Adapter (Figure 5-9) will contain a small display control panel, logic gates, AC Power Distribution Assembly, DC Power Supplies and Interface Connection Panel Assembly. The control panel for this unit is shown in Figure 5-10.

It is assumed that the customer will provide holding fixtures to retain the AVE units and adequate cooling for these units.

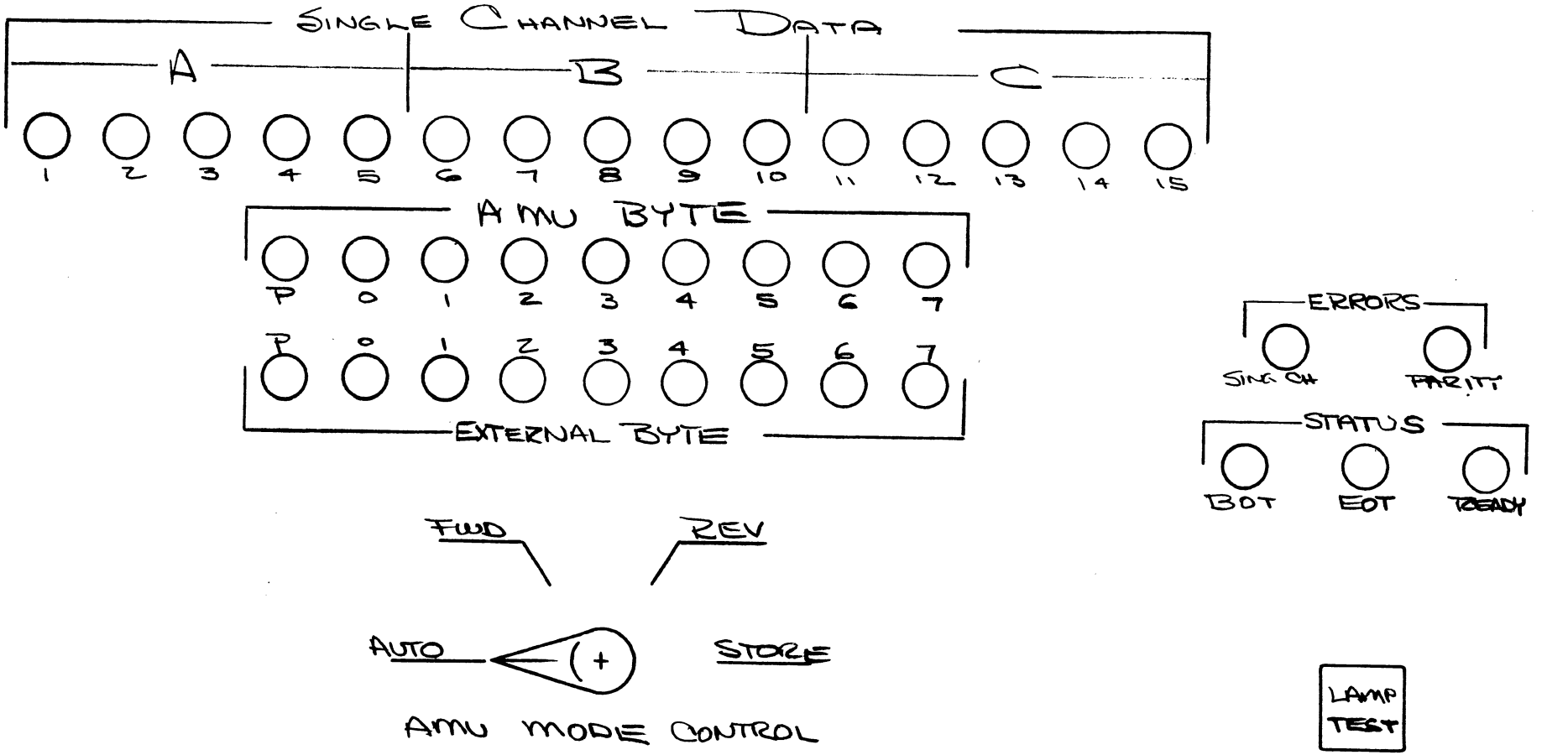

Figure 5-6 AMU CONTROL AND DISPLAY PANEL

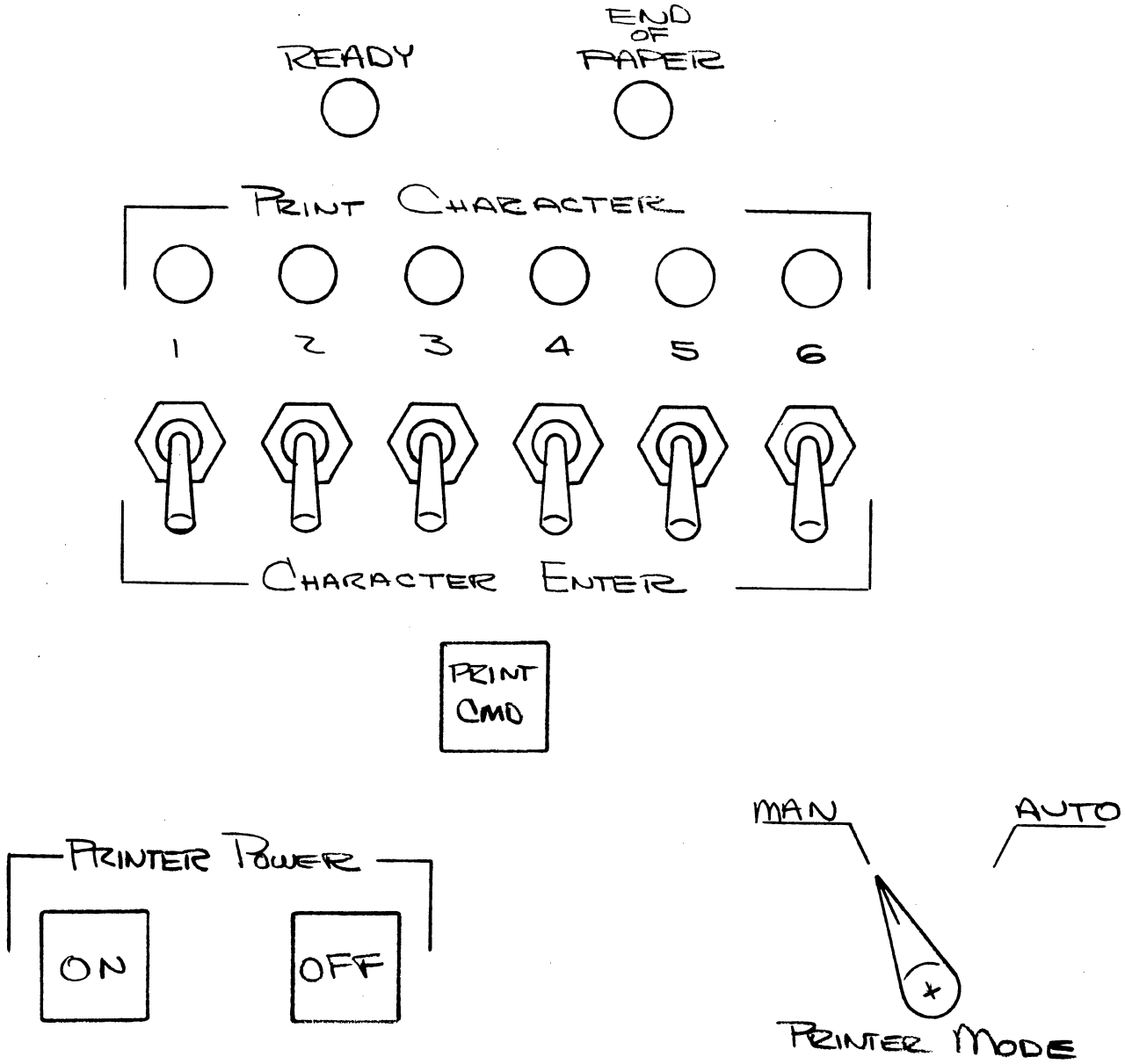

Figure 5-7 PRINTER CONTROL AND DISPLAY PANEL

CORRELL 10-5-66

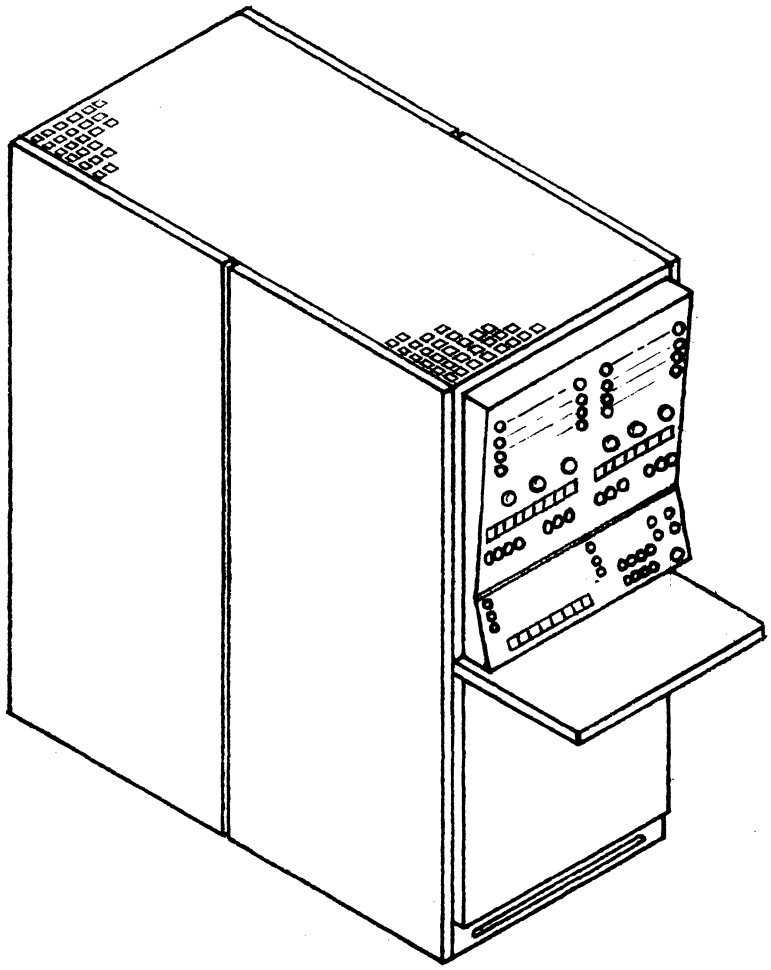

Figure 5-8 AMU PRINTER SIGNAL CONDITIONER (PAM)

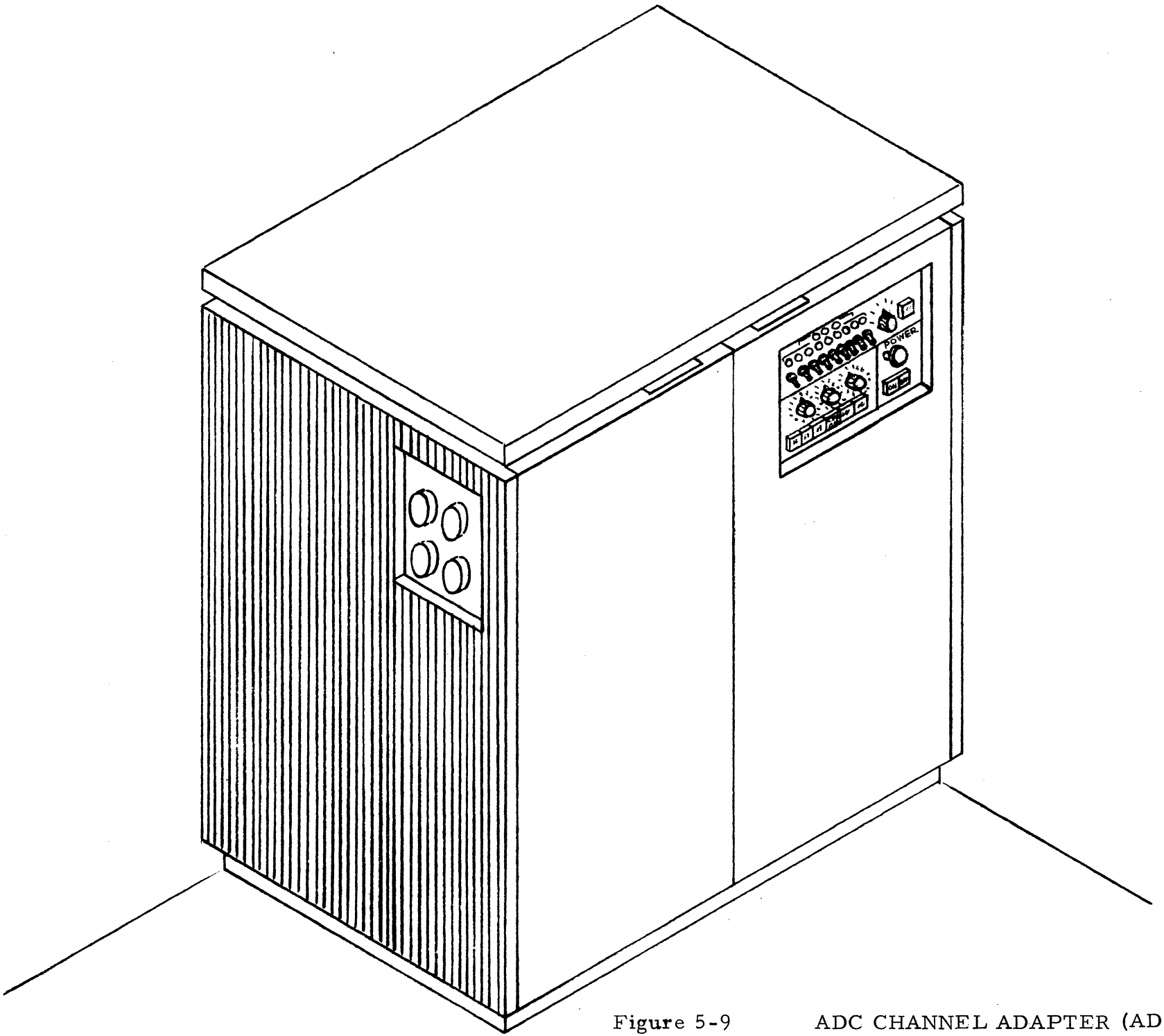

Figure 5-9 ADC CHANNEL ADAPTER (ADCAS)

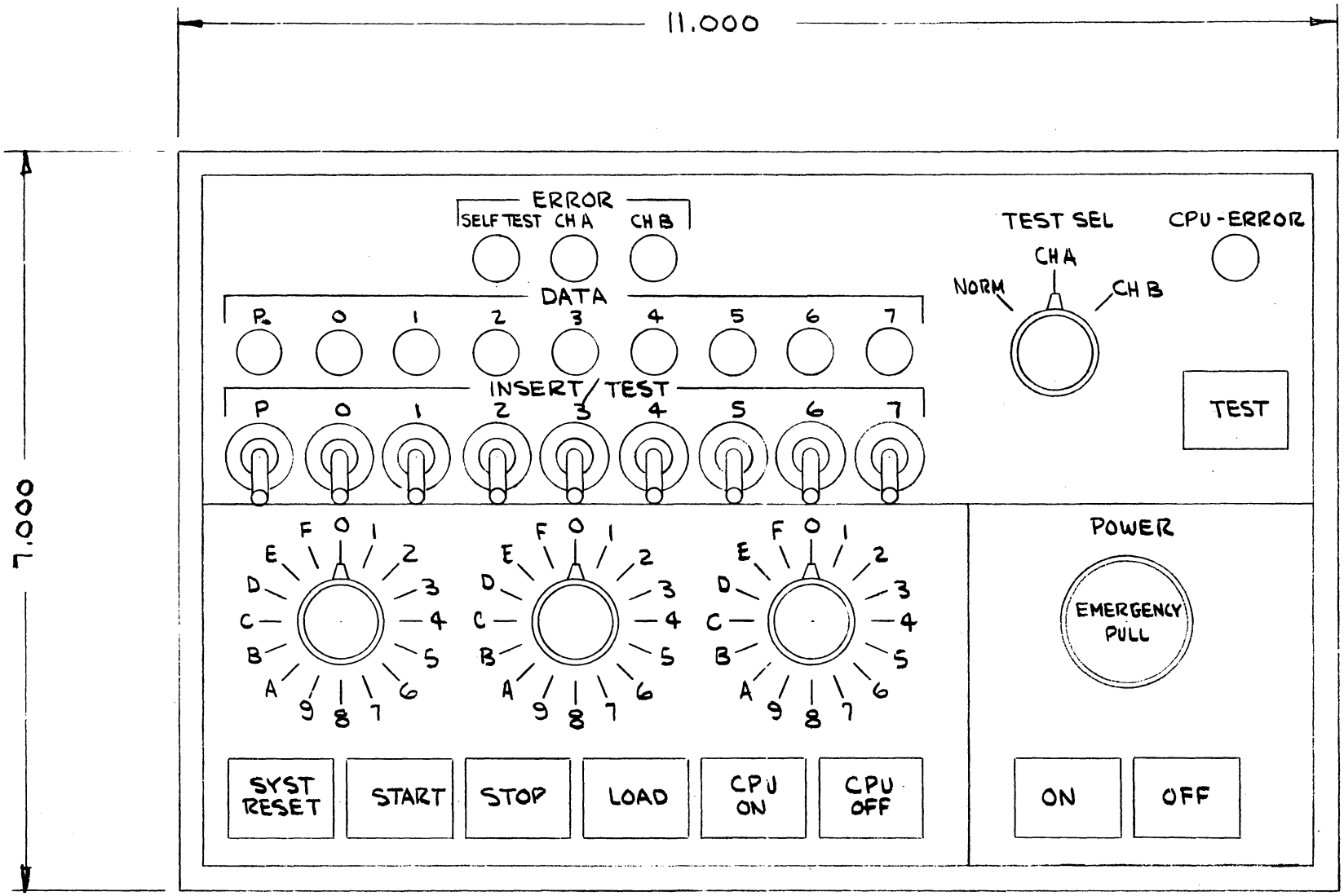

Figure 5-10 ADC SIGNAL ADAPTER PANEL CONT. OPER.

5.5.1 Packaging Concepts

The basic packaging of the Adapters will utilize hardware developed for the IBM/System/360 family of processing systems. The hardware is in production, thus making it available and economical. The equipment will use existing, proven component and equipment design wherever possible. Standard and commercial items will be used where cost effective. The design, fabrication and manufacture of the equipment will be executed in a manner commensurate with the intended use of the end item and accepted industry practices.

The equipment will be designed for ease of assembly, disassembly, isolation and maintenance with a minimum of tools and test equipment. Units that are subject to replacement or service will be accessible through hinged doors. Special tools and test equipment will not be required for service beyond that necessary to remove or replace components, access panels, etc.

5.5.2 Logic Package

The basic logic package used in the equipment is three self-contained gates which are hinged and swing out for service and accessibility. These frames are standard commercial items. The AMU Printer Signal Conditioner Unit will be integrally air cooled, receiving filtered air from the lower front and discharging it to the top. The Channel Adapter will have logic boards which are mounted on two swing out gates. Air discharge in the Channel Adapter will be in the top area. It is anticipated that board to board power and signal lines will be flat tape cable.

Section 6

SPECIAL TOOLS AND SPECIAL TEST EQUIPMENT

Section 6

SPECIAL TOOLS AND SPECIAL TEST EQUIPMENT

Table 6-1 lists IBM Special Tools and Test Equipment. Table 6-2 presents MOL EDP Related Technology Tools and Test Equipment. Table 6-3 lists IBM Subcontractor Special Tools and Test Equipment. Government-owned equipment is listed in Table 6-4.

Special Tools	Quantity	Special Test Equipment	Quantity
LDAU Environmental Test Fixture	1	LDAU Unit Tester	1
Keyboard Environmental Test Fixture	1	Special Console for Duplex System Testing	1
ADC Environmental Test Fixture	1	Testing	1
Display Environmental Test Fixture	1	Manual Control Unit (MCU) Simulator	1
AMU Environmental Test Fixture	1		

Table 6-1 IBM SPECIAL TOOLS AND TEST EQUIPMENT

Table 6-2

MOL PHASE II RELATED TECHNOLOGY TOOLS AND TEST EQUIPMENT

AC Electronics - IBM Purchase Order FNP 14101
AC Electronics - Prime Contract AF 04(694)-177

Nomenclature	ID Number	Acq. Cost	% Mo. Rental	Mo. Rental	% of Use/Mo.	Months of Use	Rental Charge
Hi Frequency Transistor Tester	1250031	$ 4,051	2%	$ 81.02	3%	40	$ 97.20
Pulse Transformer Test Set	1250039	6,357	2%	127.14	1%	40	50.80
Filter Test Set	1250046	14,027	2%	280.54	1%	40	112.40
Voltage Output Test Set	1250048	4,980	2%	99.60	2%	40	79.60
Component Tester	1250283	3,640	2%	72.80	3%	40	87.20
Logic Module Test Set	1250034	22,006	2%	440.12	1%	40	176.00
Logic Module Vibrator	1250276	900	2%	18.00	1%	40	7.20
Circuit Module Test Set	1250006	33,408	2%	668.16	1%	40	267.20
Hysteresis Graph	1250461	36,090	2%	721.80	1%	40	288.80
Power Supply Tester	1250012	17,575	2%	351.50	2%	40	281.20
							$1,341.40
McDonnell/IBM Purchase Order Y-20163R, McDonnell Prime Contract NAS 9-170							
Circuit Module Tester	630802	31,726	2%	634.52	1%	40	254.00
Asset II Tester	630850	19,682	2%	393.64	1%	40	157.60
Noise Figure Tester	630876	2,574	2%	51.48	1%	40	20.40
							$ 432.00
Grumman/IBM Purchase Order H-74749-C, Grumman Prime Contract NAS 5-814							
SAC Tester	637589	$13,870	2%	$277.40	2%	40	$ 222.00
Semiconductor Oven Tester	637593	8,443	2%	168.86	1%	40	67.60
Power Supply	637595	97,706	2%	1,954.12	1%	40	781.60
							$1,071.20
Prime Contracts NAS 8-11561, and NAS 8-5125							
Diode Tester	620090	$ 1,293	2%	$ 25.86	2%	40	$ 20.80
							$ 20.80
Contract AF 34(601)-23990							
MG Tester	646043	$10,264	2%	$205.28	2%	40	$ 164.40
Relay Tester	646093	31,667	2%	663.34	2%	40	506.80
Resistance Decade	661163	168	2%	3.36	2%	40	2.80
Transformer Tester	678654	7,000	2%	140.00	1%	40	56.00
							$730.00
AC Electronics/IBM Purchase Order ENP 48920, Prime Contract AF 04(695)-282							
Cooling Cart	1253609	$ 500	2%	$ 10.00	10%	40	$ 40.00
Purging Service Cart	1253745	408	2%	8.16	10%	40	32.80
							$ 72.80
							$ 3,668.20

Note: IBM will also use 4 DAC-Furnished Temperature Control Units, Mobile.

Table 6-3

IBM SUBCONTRACTOR SPECIAL TOOLS & TEST EQUIPMENT

Special Tools	Quantity
Motor Test Fixture	1
Transport Assembly Fixture	1
Electronics Housing Assembly Fixture	1
Sealing Fixture	1
Purging Fixture	1
Extrusion Die	1
Holding Fixtures	4
Rivet Tools	1
Injection Molding Die (Housing Printer)	1
Vacuum Die (Housing Cartridge)	1
Casting Mold (Printer, Print Chain)	1
Vacuum Die (Housing Cover)	1
Drill Jig (Hammer Support)	1
Broach Drill Jig (Gear)	1
Pattern (Mounting Bracket)	1
Drill Fixture Master Art (PCB)	1
Extrusion Die (Backup Plate)	1
Pattern (Chain Block Backup)	1
Injection Die (Tractors)	1
Drill Jigs (Pulleys)	2
Pattern (Support Plate)	1
Broach (Drive Pulleys)	1

Special Test Equipment	Quantity
S/P Converter Test Jig	1
Manchester Encode Test Jig	1
Head Driver Test Jig	1
Manchester Decode Test Jig	1
Voter Matrix Test Jig	1
P/S Converter Test Jig	1
Parity Generator Test Jig	1
Record Control Test Jig	1
Reproduce Control Test Jig	1
Capstan Ervo Test Jig	1
Power Supply Test Jig	1
Transport Test Console	1
Micro Circuit Inspection Station	1
System Test Console	1
Final Test Set	1
Power Supply	1
Lamp Drive Test Set	1
Holding Fixture	1
Decoder	1
Holding Fixture	2
Decoding Circuit Board	1
Module Checking Fixture (Use with Lamp Driver Test Set)	1
Flat Pack Stick Checking Fixture	1
Stick Module Assembly Fixture	10
Component Module Assembly Fixture	5
System Tester (Printer)	1
Type 3 Testers (Modules)	2

Table 6-4

MOL PHASE II GOVERNMENT-OWNED MACHINERY AND EQUIPMENT
FACILITIES CONTRACT AF 33(657)-15470

Nomenclature	ID Number	Acq. Value	Year of Acq.	ASPR Mo. Rental Rate	Mo. Rental Cost	% of use per month on MOL Phase II	Est. Mo. of use	Est. Rental Cost
Vertical Milling Machine	376177	$ 18,840	1957	1%	$ 188.40	1%	40	$ 753.40
Lapping Machine	376200	6,145	1957	1%	61.45	1%	40	24.40
Center Lap Machine	376111	1,310	1957	1%	13.10	1%	40	5.20
Surface Grinder	240190	8,255	1953	3/4%	61.91	1%	40	24.80
Jig Borer N/C	218746	62,080	1957	1%	620.80	1%	40	248.40
Milling-Drilling Machine N/C	443200	125,370	1964	1-3/4%	2,193.98	1%	40	877.60
Milling-Drilling Machine N/C	443002	178,417	1961	1-1/2%	2,676.00	2%	40	2,140.80
Paint Spray Booth	376188	5,352	1956	3/4%	40.14	1%	40	16.00
Temperature Chamber	2636	5,730	1957	2%	115.60	15%	40	693.60
Temperature Chamber	2637	5,780	1957	2%	115.60	15%	40	693.60
Temperature Chamber	2638	6,787	1957	2%	135.60	15%	40	814.40
Recorder	2681	1,394	1957	2%	27.88	15%	40	167.20
Recorder	2695	22,096	1957	2%	441.92	15%	40	2,651.60
Tumbling Barrel	218795	3,495	1957	1%	34.95	1%	40	14.00
Sand and Dust Chamber	2643	5,440	1955	2%	108.80	2%	12	26.16
Fungus Control Cabinet	1037	2,715	1954	2%	54.30	10%	12	65.16
							TOTAL	$9,202.32

Section 7

SUBCONTRACTOR DATA REQUIREMENTS LIST

Section 7

SUBCONTRACTOR DATA REQUIREMENTS LIST

This section contains IBM's response to DAC's SDRL, provided in Attachment XVI to DAC RFP No. A3-800-E100-L-461 submitted to IBM on 22 September 1966.

Table 7-1 contains IBM's estimate of the manhours and cost for a single preparation of each line item. The SDI's listed in this table have been reviewed and, unless noted in Table 7-2, have been accepted by IBM and will be used as the baseline for preparing the respective SDRL items. The version of the SDI's to be used will be in accordance with the dates listed in RFP Letter No. A3-800-E100-L-461.

To satisfy an ATP of 1 September 1966, as requested in DAC TWX A3-176-E100-TWX-304, IBM finds it necessary to revise several initial SDRL item due dates. These revised dates are summarized in Table 7-3 and impact the initial SDRL submittal only.

FORM 60-1656 (7-65)

Table 7-1

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDP)		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
5.	Financial Plan and Data		2.8.3		SDI-A-001	PP	R/ASR 1R/5N	ASREQ	REV+30	12.5	$ 50
139.	Manpower Projection/Utilization Report*		2.8.3		SDI-A-004	PC	-----	-------	-------		
139.1	Manpower Projection Report*		2.8.3		SDI-A-004	PC	Qrtly 1R/5N	LSQ	AOD+15	0.5	2
139.2	Manpower Utilization Report*		2.8.3		SDI-A-004	PC	Mthly 1R/5N	LSM	AOD+10	0.5	2
118.	Financial Forecast Report		2.8.3		SDI-A-005	PC	Qrtly 1R/5N	LSQ	AOD+15	0.5	2
107.	Contract End Item Detail Specification (Prime Equipment) Part II		2.3.1, 2.3.2		SDI-C-001	SD	One/R 1R/5N	CDR-30	CDR-20	125.0	1750
41.	Technical Requirements Specification (TRS) (Part II)		2.2.2, 2.3.2		SDI-C-006	SD	One/R 1R/5N	CDR-30	CDR-30	300.0	2100
88.	Engineering Change Proposals (ECP's)		2.8.5		SDI-C-007	SD	ASREQ 1R/10N	SC/CCB Approval	AOD+5	7.5	105
21.	Configuration Management Accounting Reports (Machine Inputs)		2.8.6		SDI-C-012	PC	Mthly 1R	20th of Month	24th of Month	5.0	20

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOL Contracts	

FORM 60-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDI)		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
94.	As Built Configuration List (ABCL)		2.8.8		SDI-C-014	CM	------	------	------		
94.1	AVE		2.2.3.1		SDI-C-014	CM	One/R 1R/4N	FACI Revs Thru Launch	AOD	50.0	$ 700
94.2	AGE		2.3.3.1		SDI-C-014	CM	O Time 1R/4N	DWE	AOD	50.0	700
174.	Programming System Detail Specifications		2.2.10		SDI-C-025	SD	------	------	------		
174.1	PSCS and LPSS Software		2.2.10		SDI-C-025	SD	One/R 1R/6N	ATP+3 Mos	AOD	---	---
174.3	DCSG On-Orbit Software		2.2.10		SDI-C-025	SD	One/R 1R/6N	ATP+6 Mos	AOD	---	---
190.0	Version Description Document (Computer Program)				SDI-C-026	SD	------	------	-------		
190.1	PSCS and LPSS Software		2.2.10		SDI-C-026	SD	O Time 1R/5N	Milestone 5-15	Milestone 5 (illegible)	5.0	70
190.2	DCSG Support Software		2.2.3		SDI-C-026	SD	O Time 1R/5N	Milestone 5-30	Milestone 5 (illegible)	5.0	70
190.3	SCSG On-Orbit Software		2.2.3		SDI-C-026	SD	O Time 1R/5N	Milestone 5-15	Milestone 5 (illegible)	10.0	140
191.0	Contract End Item Detail Specification (Computer Program) - Part I				SDI-C-027	SD	------	------	------		
191.1	Programming Support Computer System (PSCS) and Laboratory Programming Support System (LPSS) Software		2.2.10		SDI-C-027	SD	O Time 1R/5N	Milestone 2-15	Milestone 2 (illegible)	10.0	140

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	A W Schilling Branch Manager Data Management Branch MOL Contracts	9/13/66

FORM 60-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDF)		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
191.2	DCSG Support Software		2.2.3		SDI-C-027	SD	O Time 1R/5N	Milestone 2-30	Milestone 2 (illegible)	12.5	$ 175
191.3	DCSG On-Orbit Software		2.2.3		SDI-C-027	SD	O Time 1R/5N	Milestone 2-15	Milestone 2 (illegible)	35.0	290
192.0	Contract End Item Detail Specification (Computer Program) Part II				SDI-C-028	SD	------	------	------		
192.1	PSCS and LESS Software		2.2.10		SDI-C-028	SD	O Time 1R/5N	Milestone 4-15	Milestone 4 (illegible)	30.0	420
192.2	DCSG Support Software		2.2.3		SDI-C-028	SD	O Time 1R/5N	Milestone 4-30	Milestone 4 (illegible)	37.5	525
192.3	DCSG On-Orbit Software		2.2.3		SDI-C-028	SD	O Time 1R/5N	Milestone 4-15	Milestone 4 (illegible)	100.0	1,400
200.	Technical Requirements Specification (TRS) (Component) Part I		2.2.2		SDI-C-029	SD	One/R 1R/4N	PDR-20	AOD	25.0	350
42.	Drawings (Design Evaluation)		2.2.2, 2.3.2		SDI-E-001	SD	One/R 1R/8N	PDR-15	PDR-10	200.0	2,800
92.	Drawings, Specifications, Standards, and Lists for Production Items		2.2.2.1, 2.3.2		SDI-E-002	SD	One/R 1R/8N	CDR-30	CDR-20	100.0	1,400
90.	Drawings, Standards and Lists Preparation of				SDI-E-004	SD	No Submittal Required				

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOI Contracts	1- (illegible)

FORM 60-1856 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDRL)		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
80.	Drawing and Data-Reproduction				SDI-E-005	SD	No Submittal Required				
43.	Mock-Up Drawings		2.2.2.8		SDI-E-006	SD	One/R 1R/8N	ATP+30	ATP+40	24.0	$ 336
201.	Interface Control Drawings		2.2.2		SDI-E-008	SD	One/R 1R/4N	PDR-15	PDR-10	100.0	1,400
103.	Indentured Parts Lists		2.2.2, 2.3.2, 2.8.5		SDI-E-009	SD	One/R 1R/1N	DWE	DWE	25.0	350
194.	Subsystems Operations and Maintenance Procedures		2.2.2		SDI-H-007	OS	One/R 1R/40N	Firm Hardware	AOD-45	1,100.0	14,500
193.0	(Computer Program) Users Manual				SDI-H-009	SD	------	------	------		
193.1	PSCS and LESS Software		2.2.10		SDI-H-009	SD	O Time 1R/5N	Milestone 4-15	Milestone 4	5.0	70
193.2	DCSG Support Software		2.2.5		SDI-H-009	SD	O Time 1R/5N	Milestone 4-30	Milestone 4	10.0	140
193.3	DCSG On-Orbit Software		2.2.5		SDI-H-009	SD	O Time 1R/5N	Milestone 4-15	Milestone 4	20.0	280
PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE) W. Gray. Ext 4110, Data Management Group			DATE PREPARED 11 Sep 68	APPROVED BY (NAME, TITLE & DEPARTMENT) Branch Manager Data Management Branch MOL Contracts					DATE APPROVED		

FORM 80-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDI)		SYSTEM Data Computation Subsystem (COS)		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
8.	Preservation and Packaging Data (Subcontractors Standard Format)		2.2.2, 2.8.11		SDI-T-001	OS	One/R 2R/5N	ASREQ	DWE-120	37.5	$ 525
160.	Transportation and Transportability Report		2.8.12		SDI-T-007	OS	One/R 1R/5N	ASREQ	ASREQ	---	---
25.	PERT Network		2.8.2		SDI-M-002	PC	------	------	------		
25.1	Detail Network		2.8.2		SDI-M-002	PC	Every 4 Mo 1R/4N	EOM	AOD+5	80.0	320
25.3	Summary Network		2.8.2		SDI-M-002	PC	Ea PERT Cycle 1R/5N	Time Now	AOD+5	24.0	96
24.	PERT TWX		2.8.2		SDI-M-003	PC	Ea PERT Cycle	Time Now	AOD+2	3.0	12
22.	PERT/Time Computer Printout		2.8.2		SDI-M-004	PC	Ea PERT Cycle 1R/4N	Time Now	AOD+4	1 Hour Computer Time	218
28.	Event Dictionary		2.8.2		SDI-M-006	PC	One/R 1R/3N	Time Now	Request+5	25.0	100
12.	Management Action Report		2.8.2		SDI-M-007	PC	Ea PERT Cycle 1R/5N	Time Now	AOD+5	5.0	20

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOL Contracts	9-13-66

FORM 60-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDP)		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
74.	Financial Management Report*		2.8.3		SDI-M-012	PC	Qrtly 1R/5N	LSQ	AOD+15	1.0	$ 4
2.	Program Progress Report		2.8		SDI-M-015	PP	Mthly 1R/10N	EOM	AOD+5	22.5	90
7.	Douglas Interface Accounting Log (DIAL)		2.8.1		SDI-M-016	PC	Mthly 1 Doc/4N	Coff W/Ltst PERT Coff	AOD+3	2.0	8
23.	Problem Analysis Report		2.8.3		SDI-M-019	PC	Mthly 1R/5N	LSM	AOD+10	0.5	2
26.	Financial Planning and Control System Data Inputs*		2.8.3		SDI-M-020	PC	Mthly 1R/4N	LSM	AOD+10	7.5	30
10.	Milestone Reports		2.8.1		SDI-M-021	PC	Weekly 1R/10N	Friday	AOD+3	1.0	4
11.	Red Flag Report (TWX)		2.8		SDI-M-022	PP	ASREQ	ASREQ	Same Day	1.0	4
14.	Motion Picture Coverage (Footage)		2.7.2		SDI-M-024	MK	Mthly 1R/1N	EOM-5	EOM+5	66.0	800

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOL Contracts	9-12-66

FORM 60-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDP)		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
13.	Still Photo Coverage		2.7.2		SDI-M-025	MK	Mthly 1R/1N	EOM-5	EOM+5	33.0	$ 400
143.	Hardware Schedules		2.8.1		SDI-M-032	PP	One/R 1R/5N	ATP Rev+30	ATP+45 Rev+5	30.0	120
148.	Cost Account Dictionary*		2.8.3		SDI-M-035	PC	One/R 1R/4N	ATP	AOD+30	1.5	6
56.	Log Book		2.8.8		SDI-P-001	SE	ASREQ 1R/2N	DWE	AOD	400.0	5,600
157.	Quality Assurance Program Plan		2.8.8		SDI-P-003	SE	One/R 1R/6N	ATP	AOD+30	35.0	490
58.	Notification of Shipment (TWX)		2.8.12		SDI-P-004	PP	O Time	Day Shipped	AOD	0.5	2
3.	Procurement Plan and Data		2.8.13		SDI-P-005	PP	One/R 1R/5N	ATP	AOD+120	25.0	100
156.	Production Plan and Data		2.8.13		SDI-P-006	PP	One/R 1R/5N	ATP Rev+30	ATP+45 Rev+5	140.0	560

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOL Contracts	

FORM 60-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDP)		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
30.	Classification and Approval of Special Test Equipment and Other Special Equipment		2.8.13		SDI-P-008	PP	One/R 1R/8N	ATP+30 Revs	ATP+35 Rev+5	7.5	$ 30
35.	GFAE Shortage/Status Report		2.8.13	DD Form 610	SDI-P-012	PP	Mthly 1R/8N	ATP	Start ATP+30	---	---
158.	Test Points Data		2.2.2.1		SDI-R-010	SD	One/R 1R/4N	CDR-20	CDR-10	5.0	70
114.	Graphic Illustration Data Requirements		2.8.9		SDI-R-012	OS	One/R 1R/2N	ATP+15	ATP+30	4.5	63
44.	Parts Failure Rate Data Report		2.1.1		SDI-R-016	SD	One/R 1R/8N	ATP+30 Rev EOQ	ATP+45 EOQ+15	25.0	350
136.	Completion of Douglas Failure and Rejection Report, Form X37-104		2.1.1	Douglas Form X37-104	SDI-R-023	SE	ASREQ 1R	Receipt	AOD+10	1.0	14
137.	Completion of Douglas Supplemental Failure Analysis Report, Form 60-732		2.1.1	Douglas Form 60-732	SDI-R-024	SE	ASREQ 1R	Receipt	AOD+20	1.0	14
134.	System Effectiveness Status Report		2.8.8		SDI-R-026	SE	Mthly 1R/8N	EOM	AOD+10	7.5	105

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	[signature] Branch Manager, Data Management Branch, MOL Contracts	[illegible]

FORM 60-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDP)		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
167.	Functional Failure, Failure Analysis, and Maintenance Action Summary Reports				SDI-R-035	SD	-----	-------	-------		
167.1	Summary Reports		2.1 2.2.4		SDI-R-035	SD	Mthly 1R/5N	Test Start+30	Test Start+45	15.0	$ 210
167.2	Critical Item Failure Report (TWX)		2.1.1 2.2.4		SDI-R-035	SD	ASREQ	ASREQ	Same Day	1.0	4
167.3	Critical Item Failure Follow-Up Report		2.1.1 2.2.4		SDI-R-035	SD	One/R 1R/5N	Failure +7	Failure +10	2.5	35
166.	Effectiveness Analysis Reports		2.1.1		SDI-R-036	SD	Mthly 1R/5N	ATP+30	ATP+45	17.5	245
178.	Training and Motivation Program Plan		2.1.2		SDI-R-037	SD	O Time 1R/5N	ATP+45	AOD	5.0	66
180.	Critical Item Control Plan		2.1.1		SDI-R-039	SD	One/R 1R/5N	ATP+90	AOD	12.5	175
181.	AVE Subsystem and Mission-Critical AGE Parts Approval Request		2.1.1		SDI-R-040	SD	One/R 1R/5N	PDR-30	AOD	7.5	105
121.	Mass Properties Report		2.2.2		SDI-S-003	SD	Mthly 1R/5N	ATP+30	ATP+35	2.5	35

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOL Contracts	

FORM 60-1856 (7-68)

SUBCONTRACTOR DATA REQUIREMENTS LIST (EDP)		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.			International Business Machines		
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
105.	High Risk Areas and Long Lead Time Items List		2.2.2, 2.3.2		SDI-S-006	SD	One/R 1R/5N	PDR	PDR+10	2.0	$ 28
162.	Contamination Control Plan		2.2.2.1		SDI-S-013	SD	O Time 1R/5N	ATP+30	ATP+30	10.0	140
49.	Design Analysis Reports		2.2.2, 2.3.2		SDI-S-015	SD	2 Time 1R/5N	PDR CDR	AOD+15	25.0 25.0	350 350
125.	Stress Analysis Reports		2.2.2.1		SDI-S-016	SD	One/R 1R/5N	CDR-30	CDR-20	42.0	587
130.	Hazard Reports		2.1.4		SDI-S-035	SE	ASREQ 1R/4N	ASREQ	AOD+3	2.0	28
129.	Accident/Incident Reports		2.1.4		SDI-S-036	SE	ASREQ 1R/4N	ASREQ	AOD+5	2.0	28
127.	Circuit Return Analysis		2.2.2, 2.3.2		SDI-S-037	SD	Two/R 1R/5N	PDR-15 CDR-30	PDR-10 CDR-20	10.0 10.0	140 140
138.	OGE Design Support Requirements		2.3.1		SDI-S-038	SD	2 Time 1R/5N	PDR-20 CDR-20	PDR-10 CDR-10	20.0	280

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOL Contracts	

FORM 60-1856 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.					
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
168.	Calibration Requirements		2. 3. 2		SDI-S-045	SD	One/R 1R/5N	DWE-90	DWE-60	600.0	$ 8,400
163.	Maintenance Data Sheets - Subcontractor Requirements		2. 2. 2. 1 2. 3. 2. 1		SDI-S-044	SD	Weekly 1R/2N	ATP+15	ATP+30	1,000.0	* 14,000
177.	Safety Analysis Report		2. 1. 4		SDI-S-046	SE	One/R 1R/4N	CDR	Prelim-60 Final+15	3.0	42
75.	Ground Test Plan		2. 2. 4		SDI-T-001	SD					
75. 1	Development Test Plan				SDI-T-001	SD	One/R 1R/15N	ATP+105 Rev AsReq	ATP+120 Rev AsReq	513.0	7,180
75. 2	Qualification Test Plan				SDI-T-001	SD	One/R 1R/15N	ATP+135 Rev AsReq	ATP+150 Rev AsReq	215.0	3,010
75. 3	Acceptance Test Plan				SDI-T-001	SD	One/R 1R/15N	ATP+135 Rev AsReq	ATP+150 Rev AsReq	800.0	11,200
75. 4	Effectiveness Test Plan				SDI-T-001	SD	One/R 1R/15N	ATP+225 Rev AsReq	ATP+240 Rev AsReq	158.0	2,210
52.	Development Test Report		2. 2. 4		SDI-T-005	SD	O Time 1R/4N	Test Complete	AOD+5	1,025.0	14,350
77.	Acceptance Test Procedures		2. 2. 4		SDI-T-006	SD	One/R 1R/4N	Test Start - 90	Test Start - 80	1,575.0	21,900
PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE) W. Gray, Ext 4110, Data Management Group			DATE PREPARED 1 Sep 66	APPROVED BY (NAME, TITLE & DEPARTMENT) Branch Manager Data Management Branch MOL Contracts					DATE APPROVED		

* Total program requirements submitted individually over the life of the program.

FORM 60-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.					
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
84.	Formal Qualification Test Report		2. 2. 5		SDI-T-008	SD	O Time 1R/8N	Test Complete	AOD+15 AOD+45	138.0	$ 1,932
	Electro-Magnetic Compatibility Control Plan		2. 3. 2, 2. 2. 2. 1		SDI-T-013	SD	One/R 1R/5N	ATP+30	AOD	2.5	35
164.	Test Control Drawings (TCD's)		2. 2. 4		SDI-T-020	SD	One/R 1R/5N	Test Start -90	Test Start -75	292.0	4,088
182.	Effectiveness Special Tests		2. 1. 1		SDI-T-024	SD	O Time 1R/6N	ATP +6 Mos	AOD	12.5	175
183.	Test Methods and Control Plan		2. 2. 2. 1, 2. 3. 2		SDI-T-025	SD	One/R 1R/4N	ATP+30	AOD	108.0	1,512
185.	Hardware Qualification Configuration Summary		2. 2. 5		SDI-T-027	SD	ASREQ 1R/5N	ASREQ	ASREQ	43.0	602
186.	Reliability Critical Items Data Summary		2. 1. 1, 2. 2		SDI-T-028	SD	ASREQ 1R/5N	ASREQ	ASREQ	7.5	105
202.	Acceptance Summary Report		2. 8. 8		SDI-T-029	SE	One/R 1R/5N	DWE	AOD+20	3.0	42

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOL Contracts	

FORM 60-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.					
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
187.0	Item Test Plan (Computer Program)				SDI-T-030	SD	-----	-------	-------		
187.1	PSCS and LPSS Software		2.2.10		SDI-T-030	SD	O Time 1R/5N	Milestone 2-15	Milestone 2	20.0	$ 280
187.2	DCSG Support Software		2.2.3		SDI-T-030	SD	O Time 1R/5N	Milestone 2-30	Milestone 2	20.0	280
187.3	DCSG On-Orbit Software		2.2.3		SDI-T-030	SD	O Time 1R/5N	Milestone 2-15	Milestone 2	40.0	560
188.0	Item Test Procedures (Computer Program)				SDI-T-031	SD	----	------	-------		
188.1	PSCS and LPSS Software		2.2.10		SDI-T-031	SD	O Time 1R/5N	Milestone 4-15	Milestone 4	50.0	700
188.2	DCSG Support Software		2.2.3		SDI-T-031	SD	O Time 1R/5N	Milestone 4-30	Milestone 4	50.0	700
188.3	DCSG On-Orbit Software		2.2.3		SDI-T-031	SD	O Time 1R/5N	Milestone 4-15	Milestone 4	100.0	1,400
189.0	Item Test Report (Computer Program)				SDI-T-032	SD	-----	------	------		
189.1	PSCS and LPSS Software		2.2.10		SDI-T-032	SD	O Time 1R/5N	Milestone 5-15	Milestone 5	100.0	1,400
189.2	DCSG Support Software		2.2.3		SDI-T-032	SD	O Time 1R/5N	Milestone 5-30	Milestone 5	100.0	1,400
189.3	DCSG On-Orbit Software		2.2.3		SDI-T-032	SD	O Time 1R/5N	Milestone 5-15	Milestone 5	200.0	2,800

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOL Contracts	

FORM 60-1656 (7-65)

SUBCONTRACTOR DATA REQUIREMENTS LIST		SYSTEM Data Computation Subsystem Group		RFP NO.		SUBCONTRACT NO.					
LINE ITEM NO.	TITLE	SUBCONTRACTOR DOCUMENT NO.	TASK REFERENCE	FORM NO.	DATA ITEM NO.	REQUIRED BY (BRANCH OR SECTION)	FREQ. & NO. OF COPIES	AS OF DATE	DUE DATE	EST M/H REQ FOR SINGLE PREP.	EST PREP. COST FOR SINGLE PREP.
161.	Recommended Spare Parts List		2.8.10		SDI-V-007	OS	ASREQ 1R/4N	CWD	Longest Lead Time Item -60	----	----
	*Price for Fixed Price incentive contract only										

PREPARED BY (NAME & FUNCTIONAL DEPARTMENT TITLE)	DATE PREPARED	APPROVED BY (NAME, TITLE & DEPARTMENT)	DATE APPROVED
W. Gray, Ext 4110, Data Management Group	11 Sep 66	Branch Manager Data Management Branch MOL Contracts	

Table 7-2

RECOMMENDED CHANGES/COMMENTS TO SDRL

SDRL No.	Title	SDI No.	Recommendation
118.	Financial Forecast Report	A-005	Delete - Reason: Not required on Fixed Price Incentive Programs.
192.1	PSCS and LPSS Software	C-028	Change due date from 1-2-67 to 2-15-67. Reason: This Program Preparation Processor Document depends on the Executive Control Program SDRL 192.3, which is scheduled for delivery on 3-1-67.
174.3	DCSG On-Orbit Software	C-025	Delete - Reason: It is redundant and conflicts with SDRL 193.3 and SDI-H-009.
8.	Preservation and Packaging Data (Subcontractors Standard Format)	L-001	Comment: Revision date should be ASREQ + 15.
160.	Transportation and Transportability Report	L-007	Delete - Reason: We have no equipment which will produce the problems indicated with SDI.
23.	Problem Analysis Report	M-019	Comment: Provide on a monthly basis only as problems arise.
14.	Motion Picture Coverage (Footage)	M-024	Comment: In conjunction with our budgets, only 100 feet per month for 31 months will be provided under the SDI.
56.	Log Book	P-001	Comment: Log books per P-001 are considered applicable to production prototype and production equipments only.

Tabel 7-2 (cont'd)

SDRL No.	Title	SDI No.	Recommendation
			Informal log books will be maintained on Engineering prototype equipment. Attachment F - No components in the deliverable CEI's are considered as reliability critical. Attachment G - Missing; acceptance pending receipt and review of attachment. Attachment M - No components or items are considered as requiring replacement at a specified calendar time. Attachment N - No components in the deliverable CEI's are considered as subject to deterioration with time. Attachment Q - No deliverable hardware is classified as loose items. IBM feels that these five items do not apply.
35	GFAE Shortage/Status Report	P-012	Delete - Reason: No GFAE is required on this program.
181.	AVE Subsystem and Mission-Critical AGE Parts Approval Request	R-040	Comment: This item is considered applicable only to AVE, since IBM's MGE is not classified as Mission Critical AGE. First list will be preliminary and updates will be provided on a monthly basis through CDR.

Table 7-2 (cont'd)

SDR L No.	Title	SDI No.	Recommendation
138.	OGE Design Support Requirements	S-038	Comment: Provide a third submittal at ATP + 240.
168.	Calibration Requirements	S-045	IBM feels that the requirements of this data item do not apply to AVE. It only applies to MGE.
75.	Ground Test Plan	T-001	Ground Test Plan (Test Summary Sheet), Qualification Test Plan, and Effectiveness Test Plan. IBM feels that the requirements of this data item do not apply to MGE. It only applies to AVE.
84.	Formal Qualification Test Report	T-008	Comment: IBM feels that the requirements of these data items do not apply to MGE. They only apply to AVE.
164.	Test Control Drawings (TCD's)	T-020	Comment: IBM feels that the requirements of these data items do not apply to MGE. They only apply to AVE.
183.	Test Methods and Control Plan	T-025	Comment: IBM feels that the requirements of these data items do not apply to MGE. They only apply to AVE.
185.	Hardware Qualification Configuration Summary	T-027	Comment: IBM feels that the requirements of these data items do not apply to MGE. They only apply to AVE.

Table 7-2 (cont'd)

SDRL No.	Title	SDI No.	Recommendation
186.	Reliability Critical Items Data Summary	T-028	Comment: This item applies to production deliveries only.
202.	Acceptance Summary Report	T-029	Comment: This item applies to production units only.
161.	Recommended Spare Parts List	V-007	Delete - Reason: No requirement at present. Will be negotiated later as a contract change.

Note: Attachment IIB to the RFP specifies SDRL Item 74, Financial Management Report, in conjunction with SDI-M-013, while SDRL specifies SDI-M-012, for same report. Since both SDI's are identical, we recommend deleting M-013 for purposes of clarity.

The financial reporting requirements will be firmly resolved at the meeting between Douglas and IBM Financial Representatives on October 25 in Owego (Ref: Douglas letter A3-174-E100-L-429 dated 30 September 1966).

Table 7-3

REVISED SDRL SUBMITTAL DATES

SDRL #	Title	SDI #	Initial Due Date	Proposed Revision
139.2	Manpower Utilization Report	A-004	LSM +10 (Oct. 5)	Nov. 9
21.	Configuration Management Accounting Reports (Machine Inputs)	C-012	24th of Month	24th of Mo. beginning with FACI-30
191.1	Programming Support Computer System (PSCS) and Laboratory Programming Support System (LPSS) Software	C-027	Milestone 2 (Nov. 1)	Nov. 15
191.3	DCSG On-Oribt Software	C-027	Milestone 2 (Nov. 1)	Nov. 15
200.	Technical Requirements Specification (TRS) (Component) Part I	C-029	PDR-20 (Oct. 9)	Oct. 30
42.	Drawings (Design Evaluation)	E-001	PDR-10 (Oct. 19)	Nov. 8
43.	Mock-Up Drawings	E-006	ATP +40 (Oct. 11)	Oct. 31
201.	Interface Control Drawings	E-008	PDR - 10 (Oct 19)	Nov. 8

Table 7-3 (cont'd)

SDRL #	Title	SDI #	Initial Due Date	Proposed Revision
25.3	Summary Network	M-002	Time Now + 5	Nov. 11
24.	PERT TWX	M-003	Time Now +2	Nov. 11
22.	PERT/Time Computer Printout	M-004	Time Now + 4	Nov. 11
12.	Management Action Report	M-007	Time Now + 5	Nov. 11
2.	Program Progress Report	M-015	EOM + 5 (Oct. 5)	Nov. 5
7.	Douglas Interface Accounting Log (DIAL)	M-016	Coff W/LTST PERT Coff +3	Nov. 14
26.	Financial Planning and Control System Data Inputs	M-020	LSM + 10 (Oct. 5)	Nov. 9
10.	Milestone Reports	M-021	Weekly (Fri. + 3)	TBD
14.	Motion Picture Coverage (Footage)	M-024	EOM + 5	Nov. 5

Table 7-3 (cont'd)

SDRL #	Title	SDI #	Initial Due Date	Proposed Revision
13.	Still Photo Coverage	M-025	EOM + 5	Nov. 5
143.	Hardware Schedules	M-032	ATP + 45 (Oct. 15)	Submit with Proposal
148.	Cost Account Dictionary	M-035	ATP + 30 (Oct. 1)	Nov. 18
157.	Quality Assurance Program Plan	P-003	ATP + 30 (Oct. 1)	Nov. 1
156.	Production Plan and Data	P-006	ATP + 45 (Oct. 15)	Nov. 15
114.	Graphic Illustration Data Requirements	R-012	ATP + 30 (Oct. 15)	Oct. 30
44.	Parts Failure Rate Data Report	R-016	ATP + 45 (Oct. 15)	Nov. 3
134.	System Effectiveness Status Report	R-026	EOM + 10 (Oct. 9)	Oct. 31
166.	Effectiveness Analysis Reports	R-036	ATP + 45 (Oct. 15)	Nov. 10

Table 7-3 (cont'd)

SDRL #	Title	SDI #	Initial Due Date	Proposed Revision
178.	Training and Motivation Program Plan	R-037	ATP + 45 (Oct. 15)	Nov. 18
181.	AVE Subsystem and Mission-Critical AGE Parts Approval Request	R-040	PDR- 30 (Sept. 29)	Oct. 29
121.	Mass Properties Report	S-003	ATP + 35 (Oct. 5)	Nov. 5
162.	Contamination Control Plan	S-013	ATP + 30 (Oct. 1)	Nov. 15
127.	Circuit Return Analysis	S-037	PDR - 10 (Oct. 19)	Nov. 8
138.	OGE Design Support Requirements	S-038	PDR - 10 (Oct. 19)	Nov. 8
163.	Maintenance Data Sheets - Subcontractor Requirements	S-044	ATP + 30 (Oct. 1)	Oct. 30
75.1	Development Test Plan	T-001	ATP + 120 (Dec. 24)	Jan. 15
	Electro-Magnetic Compatibility	T-013	ATP + 30 (Oct. 1)	Oct. 31

Table 7-3 (cont'd)

SDRL #	Title	SDI #	Initial Due Date	Proposed Revision
183	Test Methods and Control Plan	T-025	ATP + 30 (Oct. 1)	Oct. 31
187.1	PSCS and LPSS Software	T-030	Milestone 2 (Nov. 1)	Nov. 15
187.3	DCSG On-Orbit Software	T-030	Milestone 2 (Nov. 1)	Nov. 15

Section 8

COST EXHIBITS

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. TOTAL PROGRAM DCSG PHASE II

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A		20,511	178,718	1,126	9,988	21,637	188,706
B		58,882	399,364	9,363	63,951	68,245	463,315
C		150,262	790,381	126,760	675,118	277,022	1,465,499
D		86,158	360,166	10,349	44,208	96,507	404,374
E		45,276	136,947	3,039	9,353	48,315	146,300
2. BURDEN			2,299,590		961,995		3,261,585
3. COMPUTER			107,760		6,274		114,034
4. TRAVEL			18,525		28,734		47,259
5. PURCHASES			99,456		4,700		104,156
6. PURCHASE BURDEN			5,611		268		5,879
	TOTAL	361,089*	$4,396,518*	150,637*	$1,804,589*	511,726*	$6,201,107*
B. ENGINEERING-SSC							
1. LABOR A		31,242	272,616	12,544	110,639	43,786	383,255
B		50,681	343,808	32,911	229,443	83,592	573,251
C		29,460	154,946	23,707	126,398	53,167	281,344
D		8,452	35,076			8,452	35,076
E		3,017	9,191	10,216	31,471	13,233	40,662
2. BURDEN			627,060		400,574		1,027,634
3. COMPUTER			77,466		3,300		80,766
4. TRAVEL			74,230		63,411		137,641
5. PURCHASES			40,000				40,000
6. PURCHASE BURDEN			2,160				2,160
	TOTAL	122,852*	$1,636,553*	79,378*	$965,236*	202,230*	$2,601,789*
D. CUSTOMER PREMISE							
1. LABOR A				15,592	138,715	15,592	138,715
B				11,230	76,631	11,230	76,631
C				11,074	59,186	11,074	59,186
D							
E							
2. BURDEN					148,476		148,476
3. TRAVEL					105,140		105,140
4. PURCHASES					17,688		17,688
5. PURCHASE BURDEN					960		960
	TOTAL	*	$*	37,896*	$546,796*	37,896*	$546,796*
E. MANUFACTURING							
1. LABOR		23,011	77,886	142,880	486,183	165,891	564,069
2. BURDEN			151,330		945,366		1,096,696
3. COMPUTER			368		6,520		6,888
4. PURCHASES			79,195		2,047,229		2,126,424
5. PURCHASE BURDEN			4,411		113,352		117,763
6. SUBCONTRACT			839,876		1,007,224		1,847,100
7. SUBCONTRACT BURDEN			47,217		55,857		103,074
	TOTAL	23,011*	$1,200,283*	142,880*	$4,661,731*	165,891*	$5,862,014*
F. TECHNICAL PUBLICATIONS							
1. LABOR		6,553	30,659	5,496	25,799	12,049	56,458
2. BURDEN			27,538		23,144		50,682
3. TRAVEL					1,575		1,575
4. PURCHASES			3,200		3,335		6,535
5. PURCHASE BURDEN			177		203		380
	TOTAL	6,553*	$61,574*	5,496*	$54,056*	12,049*	$115,630*
J. TOTAL FACTORY COSTS			$7,294,928*		$8,032,408*		$15,327,336*
1. G&A, IRAD, GEN. RES.			$1,038,459*		$1,166,219*		$2,204,678*
2. ESTIMATED TOTAL COST			$8,333,387*		$9,198,627*		$17,532,014*
3. PROFIT			$833,489*		$919,948*		$1,753,437*
4. SELLING PRICE			$9,166,876*		$10,118,575*		$19,285,451*
System 360/30 IBM Commercial Selling Price							$400, 260
Total Selling Price							$19,685, 711

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO.1 SYSTEMS ENGINEERING

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A	3,153	27,730	280	2,537	3,433	30,267
	B	8,246	56,213	4,189	28,482	12,435	84,695
	C	8,557	45,328	1,725	9,421	10,282	54,749
	D	14,374	61,463	1,214	5,342	15,588	66,805
	E	2,958	9,096	700	2,233	3,658	11,329
2. BURDEN			238,915		51,952		290,867
3. COMPUTER			3,052		654		3,706
4. TRAVEL			6,555		2,050		8,605
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	37,288*	$448,352*	8,108*	$102,671*	45,396*	$551,023*
B. ENGINEERING-SSC							
1. LABOR	A			776	6,904	776	6,904
	B	4,972	33,581	18,574	131,349	23,546	164,930
	C	623	3,261	459	2,449	1,082	5,710
	D						
	E			958	2,991	958	2,991
2. BURDEN			28,629		103,641		132,270
3. COMPUTER							
4. TRAVEL			410		15,930		16,340
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	5,595*	$65,881*	20,767*	$263,264*	26,362*	$329,145*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			58,555				58,555
7. SUBCONTRACT BURDEN			3,278				3,278
	TOTAL	*	$61,833*	*	$*	*	$61,833*
F. TECHNICAL PUBLICATIONS							
1. LABOR		4,969	23,289			4,969	23,289
2. BURDEN			20,921				20,921
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	4,969*	$44,210*	*	$*	4,969*	$44,210*
J. TOTAL FACTORY COSTS			$620,276*		$365,935*		$986,211*
1. G&A, IRAD, GEN. RES.			$89,313*		$53,691*		$143,004*
2. ESTIMATED TOTAL COST			$709,589*		$419,626*		$1,129,215*
3. PROFIT			$70,974*		$41,976*		$112,950*
4. SELLING PRICE			$780,563*		$461,602*		$1,242,165*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 2 LAB VEHICLE SYSTEM HARDWARE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	12,252	106,383	846	7,451	13,098	113,834
	B	41,228	279,452	5,032	34,503	46,260	313,955
	C	114,044	599,699	121,501	646,951	235,545	1,246,650
	D	58,656	244,051	9,135	38,866	67,791	282,917
	E	25,988	78,493	2,310	7,032	28,298	85,525
2. BURDEN			1,607,179		886,439		2,493,618
3. COMPUTER			61,196		5,620		66,816
4. TRAVEL			4,050		26,684		30,734
5. PURCHASES			97,456		4,500		101,956
6. PURCHASE BURDEN			5,497		257		5,754
	TOTAL	252,168*	$3,083,456*	138,824*	$1,658,303*	390,992*	$4,741,759*
B. ENGINEERING-SSC							
1. LABOR							
	A	29,657	258,636			29,657	258,636
	B	39,741	269,238	2,449	16,775	42,190	286,013
	C	26,202	137,490	1,920	10,173	28,122	147,663
	D	8,452	35,076			8,452	35,076
	E	2,080	6,266			2,080	6,266
2. BURDEN			542,328		22,335		564,663
3. COMPUTER			76,158				76,158
4. TRAVEL			57,080		900		57,980
5. PURCHASES			40,000				40,000
6. PURCHASE BURDEN			2,160				2,160
	TOTAL	106,132*	$1,424,432*	4,369*	$50,183*	110,501*	$1,474,615*
D. CUSTOMER PREMISE							
1. LABOR							
	A			15,592	138,715	15,592	138,715
	B			11,230	76,631	11,230	76,631
	C			11,074	59,186	11,074	59,186
	D						
	E						
2. BURDEN					148,476		148,476
3. TRAVEL					105,140		105,140
4. PURCHASES					17,688		17,688
5. PURCHASE BURDEN					960		960
	TOTAL	*	$*	37,896*	$546,796*	37,896*	$546,796*
F. MANUFACTURING							
1. LABOR		19,332	65,466	125,531	427,443	144,863	492,909
2. BURDEN			127,209		831,089		958,298
3. COMPUTER			368		6,520		6,888
4. PURCHASES			64,286		1,750,425		1,814,711
5. PURCHASE BURDEN			3,576		96,761		100,337
6. SUBCONTRACT			689,688		871,250		1,560,938
7. SUBCONTRACT BURDEN			38,821		48,273		87,094
	TOTAL	19,332*	$989,414*	125,531*	$4,031,761*	144,863*	$5,021,175*
F. TECHNICAL PUBLICATIONS							
1. LABOR		315	1,465			315	1,465
2. BURDEN			1,317				1,317
3. TRAVEL							
4. PURCHASES			1,000				1,000
5. PURCHASE BURDEN			56				56
	TOTAL	315*	$3,838*	*	$*	315*	$3,838*
J. TOTAL FACTORY COSTS			$5,501,140*		$6,287,043*		$11,788,183*
1. G&A, IRAD, GEN. RES.			$780,538*		$914,361*		$1,694,899*
2. ESTIMATED TOTAL COST			$6,281,678*		$7,201,404*		$13,483,082*
3. PROFIT			$628,292*		$720,188*		$1,348,480*
4. SELLING PRICE			$6,909,970*		$7,921,592*		$14,831,562*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 3 AEROSPACE GROUND EQUIPMENT

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A	5,106	44,605			5,106	44,605
	B	9,065	61,380	142	966	9,207	62,346
	C	22,805	119,813	3,534	18,746	26,339	138,559
	D	13,128	54,652			13,128	54,652
	F	16,330	49,358	29	88	16,359	49,446
2. BURDEN			420,339		23,604		443,943
3. COMPUTER			43,512				43,512
4. TRAVEL			6,560				6,560
5. PURCHASES			2,000		200		2,200
6. PURCHASE BURDEN			114		11		125
	TOTAL	66,434*	$802,333*	3,705*	$43,615*	70,139*	$845,948*
B. ENGINEERING-SSC							
1. LABOR	A	462	4,002			462	4,002
	B	1,243	8,422			1,243	8,422
	C	175	923			175	923
	D						
	E						
2. BURDEN			9,639				9,639
3. COMPUTER			1,308				1,308
4. TRAVEL			2,110				2,110
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	1,880*	$26,404*	*	$*	1,880*	$26,404*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		2,840	9,599	17,349	58,740	20,189	68,339
2. BURDEN			18,572		114,277		132,849
3. COMPUTER							
4. PURCHASES					296,804		296,804
5. PURCHASE BURDEN					16,591		16,591
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	2,840*	$28,171*	17,349*	$486,412*	20,189*	$514,583*
F. TECHNICAL PUBLICATIONS							
1. LABOR		1,269	5,905			1,269	5,905
2. BURDEN			5,300				5,300
3. TRAVEL							
4. PURCHASES			2,200				2,200
5. PURCHASE BURDEN			121				121
	TOTAL	1,269*	$13,526*	*	$*	1,269*	$13,526*
J. TOTAL FACTORY COSTS			$870,434*		$530,027*		$1,400,461*
1. G&A, IRAD, GEN. RES.			$125,197*		$75,588*		$200,785*
2. ESTIMATED TOTAL COST			$995,631*		$605,615*		$1,601,246*
3. PROFIT			$99,564*		$60,562*		$160,126*
4. SELLING PRICE			$1,095,195*		$666,177*		$1,761,372*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 4 TRAINING

	NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. COMPUTER						
4. TRAVEL						
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC						
1. LABOR						
A						
B			622	4,301	622	4,301
C			6,387	34,262	6,387	34,262
D						
E						
2. BURDEN				35,254		35,254
3. COMPUTER						
4. TRAVEL				11,416		11,416
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	7,009*	$85,233*	7,009*	$85,233*
D. CUSTOMER PREMISE						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING						
1. LABOR						
2. BURDEN						
3. COMPUTER						
4. PURCHASES						
5. PURCHASE BURDEN						
6. SUBCONTRACT						
7. SUBCONTRACT BURDEN						
TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS						
1. LABOR			2,631	12,356	2,631	12,356
2. BURDEN				11,085		11,085
3. TRAVEL				1,575		1,575
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	2,631*	$25,016*	2,631*	$25,016*
J. TOTAL FACTORY COSTS		$*		$110,249*		$110,249*
1. G&A, IRAD, GEN. RES.		$*		$15,993*		$15,993*
2. ESTIMATED TOTAL COST		$*		$126,242*		$126,242*
3. PROFIT		$*		$12,622*		$12,622*
4. SELLING PRICE		$*		$138,864*		$138,864*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 5 SYSTEM TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B	343	2,319			343	2,319
	C	495	2,599			495	2,599
	D						
	E						
2. BURDEN			5,303				5,303
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	838*	$10,221*	*	$*	838*	$10,221*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		839	2,821			839	2,821
2. BURDEN			5,549				5,549
3. COMPUTER							
4. PURCHASES			7,514				7,514
5. PURCHASE BURDEN			428				428
6. SUBCONTRACT			8,913				8,913
7. SUBCONTRACT BURDEN			508				508
	TOTAL	839*	$25,733*	*	$*	839*	$25,733*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$35,954*		$*		$35,954*
1. G&A, IRAD, GEN. RES.			$4,956*		$*		$4,956*
2. ESTIMATED TOTAL COST			$40,910*		$*		$40,910*
3. PROFIT			$4,092*		$*		$4,092*
4. SELLING PRICE			$45,002*		$*		$45,002*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 7 PROGRAM DOCUMENTATION

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C			2,414	12,760	2,414	12,760
	D						
	E			1,908	5,831	1,908	5,831
2. BURDEN					21,926		21,926
3. COMPUTER							
4. TRAVEL					1,230		1,230
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	4,322*	$41,747*	4,322*	$41,747*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT					12,152		12,152
7. SUBCONTRACT BURDEN					674		674
	TOTAL	*	$*	*	$12,826*	*	$12,826*
F. TECHNICAL PUBLICATIONS							
1. LABOR				2,865	13,443	2,865	13,443
2. BURDEN					12,059		12,059
3. TRAVEL							
4. PURCHASES					3,335		3,335
5. PURCHASE BURDEN					203		203
	TOTAL	*	$*	2,865*	$29,040*	2,865*	$29,040*
J. TOTAL FACTORY COSTS			$*		$83,613*		$83,613*
1. G&A, IRAD, GEN. RES.			$*		$12,076*		$12,076*
2. ESTIMATED TOTAL COST			$*		$95,689*		$95,689*
3. PROFIT			$*		$9,578*		$9,578*
4. SELLING PRICE			$*		$105,267*		$105,267*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 8 PROGRAM MANAGEMENT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C	4,361	22,942			4,361	22,942
	D						
	E						
2. BURDEN			27,854				27,854
3. COMPUTER							
4. TRAVEL			1,360				1,360
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	4,361*	$52,156*	*	$*	4,361*	$52,156*
B. ENGINEERING-SSC							
1. LABOR							
	A	1,123	9,978	11,768	103,735	12,891	113,713
	B	4,725	32,567	11,266	77,018	15,991	109,585
	C	2,460	13,272	12,527	66,754	14,987	80,026
	D						
	E	937	2,925	7,350	22,649	8,287	25,574
2. BURDEN			46,464		217,418		263,882
3. COMPUTER					3,300		3,300
4. TRAVEL			14,630		33,935		48,565
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	9,245*	$119,836*	42,911*	$524,809*	52,156*	$644,645*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES			7,395				7,395
5. PURCHASE BURDEN			407				407
6. SUBCONTRACT			82,720		123,822		206,542
7. SUBCONTRACT BURDEN			4,610		6,910		11,520
	TOTAL	*	$95,132*	*	$130,732*	*	$225,864*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$267,124*		$655,541*		$922,665*
1. G&A, IRAD, GEN. RES.			$38,455*		$94,510*		$132,965*
2. ESTIMATED TOTAL COST			$305,579*		$750,051*		$1,055,630*
3. PROFIT			$30,567*		$75,022*		$105,589*
4. SELLING PRICE			$336,146*		$825,073*		$1,161,219*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 15 SYSTEMS EFFECTIVENESS EN7

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	3,153	27,730	280	2,537	3,433	30,267
	B	8,246	56,213	4,189	28,482	12,435	84,695
	C	8,557	45,328	1,725	9,421	10,282	54,749
	D	14,374	61,463	1,214	5,342	15,588	66,805
	E	2,958	9,096	700	2,233	3,658	11,329
2. BURDEN			238,915		51,952		290,867
3. COMPUTER			3,052		654		3,706
4. TRAVEL			6,555		2,050		8,605
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	37,288*	$448,352*	8,108*	$102,671*	45,396*	$551,023*
B. ENGINEERING-SSC							
1. LABOR							
	A			776	6,904	776	6,904
	B	4,972	33,581	18,574	131,349	23,546	164,930
	C	623	3,261	459	2,449	1,082	5,710
	D						
	E			958	2,991	958	2,991
2. BURDEN			28,629		103,641		132,270
3. COMPUTER							
4. TRAVEL			410		15,930		16,340
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	5,595*	$65,881*	20,767*	$263,264*	26,362*	$329,145*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			58,555				58,555
7. SUBCONTRACT BURDEN			3,278				3,278
	TOTAL	*	$61,833*	*	$*	*	$61,833*
F. TECHNICAL PUBLICATIONS							
1. LABOR		4,969	23,289			4,969	23,289
2. BURDEN			20,921				20,921
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	4,969*	$44,210*	*	$*	4,969*	$44,210*
J. TOTAL FACTORY COSTS			$620,276*		$365,935*		$986,211*
1. G&A,IRAD, GEN. RES.			$89,313*		$53,691*		$143,004*
2. ESTIMATED TOTAL COST			$709,589*		$419,626*		$1,129,215*
3. PROFIT			$70,974*		$41,976*		$112,950*
4. SELLING PRICE			$780,563*		$461,602*		$1,242,165*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 2201 L V COMMON

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B			584	4,093	584	4,093
	C			488	2,626	488	2,626
	D						
	E						
2. BURDEN					5,321		5,321
3. COMPUTER							
4. TRAVEL					900		900
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	1,072*	$12,940*	1,072*	$12,940*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C			3,584	19,562	3,584	19,562
	D						
	E						
2. BURDEN					14,326		14,326
3. TRAVEL					10,660		10,660
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	3,584*	$44,548*	3,584*	$44,548*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$57,488*		$57,488*
1. G&A, IRAD, GEN. RES.			$*		$8,457*		$8,457*
2. ESTIMATED TOTAL COST			$*		$65,945*		$65,945*
3. PROFIT			$*		$6,593*		$6,593*
4. SELLING PRICE			$*		$72,538*		$72,538*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085110 DCSG HARDWARE DESIGN

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A	10,896	94,614			10,896	94,614
	B	25,583	172,562			25,583	172,562
	C	43,542	227,783			43,542	227,783
	D	32,703	135,313			32,703	135,313
	E	20,972	63,326			20,972	63,326
2. BURDEN			854,091				854,091
3. COMPUTER			41,096				41,096
4. TRAVEL			2,035				2,035
5. PURCHASES			52,000				52,000
6. PURCHASE BURDEN			2,952				2,952
	TOTAL	133,696*	$1,645,772*	*	$*	133,696*	$1,645,772*
B. ENGINEERING-SSC							
1. LABOR	A	20,618	179,766			20,618	179,766
	B	23,170	156,751			23,170	156,751
	C	10,455	54,768			10,455	54,768
	D	2,194	9,116			2,194	9,116
	E	2,080	6,266			2,080	6,266
2. BURDEN			299,097				299,097
3. COMPUTER			3,108				3,108
4. TRAVEL			36,490				36,490
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	58,517*	$745,362*	*	$*	58,517*	$745,362*
D. CUSTOMER PREMISE							
1. LABOR	A			15,592	138,715	15,592	138,715
	B			11,230	76,631	11,230	76,631
	C			7,490	39,624	7,490	39,624
	D						
	E						
2. BURDEN					134,150		134,150
3. TRAVEL					94,480		94,480
4. PURCHASES					17,688		17,688
5. PURCHASE BURDEN					960		960
	TOTAL	*	$*	34,312*	$502,248*	34,312*	$502,248*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			524,264				524,264
7. SUBCONTRACT BURDEN			29,569				29,569
	TOTAL	*	$553,833*	*	$*	*	$553,833*
F. TECHNICAL PUBLICATIONS							
1. LABOR		315	1,465			315	1,465
2. BURDEN			1,317				1,317
3. TRAVEL							
4. PURCHASES			1,000				1,000
5. PURCHASE BURDEN			56				56
	TOTAL	315*	$3,838*	*	$*	315*	$3,838*
J. TOTAL FACTORY COSTS			$2,948,805*		$502,248*		$3,451,053*
1. G&A, IRAD, GEN. RES.			$413,479*		$72,439*		$485,918*
2. ESTIMATED TOTAL COST			$3,362,284*		$574,687*		$3,936,971*
3. PROFIT			$336,270*		$57,470*		$393,740*
4. SELLING PRICE			$3,698,554*		$632,157*		$4,330,711*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085150 DCSG ON BOARD PROG/PROCE4

	NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-FSC						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. COMPUTER						
4. TRAVEL						
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC						
1. LABOR						
A	2,626	22,703			2,626	22,703
B	7,002	47,301			7,002	47,301
C	6,783	35,448			6,783	35,448
D	5,121	21,239			5,121	21,239
E						
2. BURDEN		110,027				110,027
3. COMPUTER		44,500				44,500
4. TRAVEL		5,130				5,130
5. PURCHASES		40,000				40,000
6. PURCHASE BURDEN		2,160				2,160
TOTAL	21,532*	$328,508*	*	$*	21,532*	$328,508*
D. CUSTOMER PREMISE						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING						
1. LABOR						
2. BURDEN						
3. COMPUTER						
4. PURCHASES						
5. PURCHASE BURDEN						
6. SUBCONTRACT						
7. SUBCONTRACT BURDEN						
TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS						
1. LABOR						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS		$328,508*		$*		$328,508*
1. G&A, IRAD, GEN. RES.		$46,712*		$*		$46,712*
2. ESTIMATED TOTAL COST		$375,220*		$*		$375,220*
3. PROFIT		$37,526*		$*		$37,526*
4. SELLING PRICE		$412,746*		$*		$412,746*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 22085200 DCSG DEVELOPMENT TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	971	8,415	616	5,437	1,587	13,852
	B	4,796	32,797	3,007	20,582	7,803	53,379
	C	7,682	40,614	27,642	145,406	35,324	186,020
	D	4,339	18,244	1,998	8,403	6,337	26,647
	E	1,166	3,531	472	1,435	1,638	4,966
2. BURDEN			120,782		213,635		334,417
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			4,360		500		4,860
6. PURCHASE BURDEN			245		28		273
	TOTAL	18,954*	$228,988*	33,735*	$395,426*	52,689*	$624,414*
B. ENGINEERING-SSC							
1. LABOR							
	A	6,323	55,387			6,323	55,387
	B	7,178	48,994	1,865	12,682	9,043	61,676
	C	4,532	23,995	1,432	7,547	5,964	31,542
	D						
	E						
2. BURDEN			91,914		17,014		108,928
3. COMPUTER							
4. TRAVEL			3,720				3,720
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	18,033*	$224,010*	3,297*	$37,243*	21,330*	$261,253*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				45,357	152,884	45,357	152,884
2. BURDEN					299,064		299,064
3. COMPUTER					1,892		1,892
4. PURCHASES					517,666		517,666
5. PURCHASE BURDEN					28,947		28,947
6. SUBCONTRACT			57,055		291,245		348,300
7. SUBCONTRACT BURDEN			3,138		16,020		19,158
	TOTAL	*	$60,193*	45,357*	$1,307,718*	45,357*	$1,367,911*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$513,191*		$1,740,387*		$2,253,578*
1. G&A, IRAD, GEN. RES.			$74,489*		$250,111*		$324,600*
2. ESTIMATED TOTAL COST			$587,680*		$1,990,498*		$2,578,178*
3. PROFIT			$58,784*		$199,055*		$257,839*
4. SELLING PRICE			$646,464*		$2,189,553*		$2,836,017*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085300 DCSG QUALIFICATION TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A		385	3,354			385	3,354
B		3,020	20,814			3,020	20,814
C		9,541	50,730			9,541	50,730
D		6,159	26,001			6,159	26,001
E		1,777	5,370			1,777	5,370
2. BURDEN			133,688				133,688
3. COMPUTER			1,526				1,526
4. TRAVEL							
5. PURCHASES			25,100				25,100
6. PURCHASE BURDEN			1,405				1,405
	TOTAL	20,882*	$267,988*	*	$*	20,882*	$267,988*
B. ENGINEERING-SSC							
1. LABOR A							
B		1,237	8,412			1,237	8,412
C		2,769	14,604			2,769	14,604
D		626	2,623			626	2,623
E							
2. BURDEN			23,872				23,872
3. COMPUTER			17,750				17,750
4. TRAVEL			9,000				9,000
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	4,632*	$76,261*	*	$*	4,632*	$76,261*
D. CUSTOMER PREMISE							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			31,161				31,161
7. SUBCONTRACT BURDEN			1,714				1,714
	TOTAL	*	$32,875*	*	$*	*	$32,875*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$377,124*		$*		$377,124*
1. G&A, IRAD, GEN. RES.			$54,972*		$*		$54,972*
2. ESTIMATED TOTAL COST			$432,096*		$*		$432,096*
3. PROFIT			$43,233*		$*		$43,233*
4. SELLING PRICE			$475,329*		$*		$475,329*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085410 L V HARDWARE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A			230	2,014	230	2,014
	B			2,025	13,921	2,025	13,921
	C			93,859	501,545	93,859	501,545
	D			7,137	30,463	7,137	30,463
	E			1,838	5,597	1,838	5,597
2. BURDEN					672,804		672,804
3. COMPUTER					5,620		5,620
4. TRAVEL					26,684		26,684
5. PURCHASES					4,000		4,000
6. PURCHASE BURDEN					229		229
	TOTAL	*	$*	105,089*	$1,262,877*	105,089*	$1,262,877*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				80,174	274,559	80,174	274,559
2. BURDEN					532,025		532,025
3. COMPUTER					4,628		4,628
4. PURCHASES					1,232,759		1,232,759
5. PURCHASE BURDEN					67,814		67,814
6. SUBCONTRACT					580,005		580,005
7. SUBCONTRACT BURDEN					32,253		32,253
	TOTAL	*	$*	80,174*	$2,724,043*	80,174*	$2,724,043*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$3,986,920*		$3,986,920*
1. G&A, IRAD, GEN. RES.			$*		$583,354*		$583,354*
2. ESTIMATED TOTAL COST			$*		$4,570,274*		$4,570,274*
3. PROFIT			$*		$457,070*		$457,070*
4. SELLING PRICE			$*		$5,027,344*		$5,027,344*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085421 SPECIAL TOOL/TEST EQP DE2

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	7,488	50,940			7,488	50,940
	B	47,790	251,224			47,790	251,224
	C	7,201	29,982			7,201	29,982
	D	1,981	5,992			1,981	5,992
	E		408,976				408,976
2. BURDEN			17,702				17,702
3. COMPUTER			2,015				2,015
4. TRAVEL			600				600
5. PURCHASES			34				34
6. PURCHASE BURDEN							
	TOTAL	64,460*	$767,465*	*	$*	64,460*	$767,465*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		2,036	6,864			2,036	6,864
2. BURDEN			13,394				13,394
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	2,036*	$20,258*	*	$*	2,036*	$20,258*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$787,723*		$*		$787,723*
1. G&A, IRAD, GEN. RES.			$113,166*		$*		$113,166*
2. ESTIMATED TOTAL COST			$900,889*		$*		$900,889*
3. PROFIT			$90,117*		$*		$90,117*
4. SELLING PRICE			$991,006*		$*		$991,006*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085424 SPECIAL TOOL/TE HARDWARE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A							
B		293	1,992			293	1,992
C		3,877	20,382			3,877	20,382
D		8,063	33,636			8,063	33,636
E		92	274			92	274
2. BURDEN			77,609				77,609
3. COMPUTER			872				872
4. TRAVEL							
5. PURCHASES			15,096				15,096
6. PURCHASE BURDEN			844				844
	TOTAL	12,325*	$150,705*	*	$*	12,325*	$150,705*
B. ENGINEERING-SSC							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		15,547	52,445			15,547	52,445
2. BURDEN			102,115				102,115
3. COMPUTER							
4. PURCHASES			37,470				37,470
5. PURCHASE BURDEN			2,101				2,101
6. SUBCONTRACT			77,208				77,208
7. SUBCONTRACT BURDEN			4,400				4,400
	TOTAL	15,547*	$275,739*	*	$*	15,547*	$275,739*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$426,444*		$*		$426,444*
1. G&A, IRAD, GEN. RES.			$60,553*		$*		$60,553*
2. ESTIMATED TOTAL COST			$486,997*		$*		$486,997*
3. PROFIT			$48,711*		$*		$48,711*
4. SELLING PRICE			$535,708*		$*		$535,708*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 22085430 SIL REFURBISHMENT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B	48	347			48	347
	C	1,612	8,966			1,612	8,966
	D	191	875			191	875
	E						
2. BURDEN			12,033				12,033
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			300				300
6. PURCHASE BURDEN			17				17
	TOTAL	1,851*	$22,538*	*	$*	1,851*	$22,538*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		1,749	6,157			1,749	6,157
2. BURDEN			11,700				11,700
3. COMPUTER			368				368
4. PURCHASES			26,816				26,816
5. PURCHASE BURDEN			1,475				1,475
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	1,749*	$46,516*	*	$*	1,749*	$46,516*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$69,054*		$*		$69,054*
1. G&A, IRAD, GEN. RES.			$10,159*		$*		$10,159*
2. ESTIMATED TOTAL COST			$79,213*		$*		$79,213*
3. PROFIT			$7,921*		$*		$7,921*
4. SELLING PRICE			$87,134*		$*		$87,134*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 22085900 ASSOC SUPPORT & SERVICES

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A	90	780			90	780
	B	1,154	7,780			1,154	7,780
	C	1,663	8,675			1,663	8,675
	D	511	2,098			511	2,098
	E						
2. BURDEN			17,418				17,418
3. COMPUTER			10,800				10,800
4. TRAVEL			2,740				2,740
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	3,418*	$50,291*	*	$*	3,418*	$50,291*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$50,291*		$*		$50,291*
1. G&A, IRAD, GEN. RES.			$7,008*		$*		$7,008*
2. ESTIMATED TOTAL COST			$57,299*		$*		$57,299*
3. PROFIT			$5,730*		$*		$5,730*
4. SELLING PRICE			$63,029*		$*		$63,029*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 32035110 MGE DESIGN

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	5,106	44,605			5,106	44,605
	B	9,065	61,380			9,065	61,380
	C	19,768	103,895	3,046	16,120	22,814	120,015
	D	13,128	54,652			13,128	54,652
	E	16,330	49,358			16,330	49,358
2. BURDEN			401,036		19,362		420,398
3. COMPUTER			43,512				43,512
4. TRAVEL			6,560				6,560
5. PURCHASES			2,000				2,000
6. PURCHASE BURDEN			114				114
	TOTAL	63,397*	$767,112*	3,046*	$35,482*	66,443*	$802,594*
B. ENGINEERING-SSC							
1. LABOR							
	A	462	4,002			462	4,002
	B	1,243	8,422			1,243	8,422
	C	175	923			175	923
	D						
	E						
2. BURDEN			9,639				9,639
3. COMPUTER			1,308				1,308
4. TRAVEL			2,110				2,110
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	1,880*	$26,404*	*	$*	1,880*	$26,404*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		2,840	9,599	835	2,822	3,675	12,421
2. BURDEN			18,572		5,461		24,033
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	2,840*	$28,171*	835*	$8,283*	3,675*	$36,454*
F. TECHNICAL PUBLICATIONS							
1. LABOR		1,269	5,905			1,269	5,905
2. BURDEN			5,300				5,300
3. TRAVEL							
4. PURCHASES			2,200				2,200
5. PURCHASE BURDEN			121				121
	TOTAL	1,269*	$13,526*	*	$*	1,269*	$13,526*
J. TOTAL FACTORY COSTS			$835,213*		$43,765*		$878,978*
1. G&A, IRAD, GEN. RES.			$120,184*		$6,382*		$126,566*
2. ESTIMATED TOTAL COST			$955,397*		$50,147*		$1,005,544*
3. PROFIT			$95,540*		$5,013*		$100,553*
4. SELLING PRICE			$1,050,937*		$55,160*		$1,106,097*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 32035141 MGE HARDWARE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A						
	B			142	966	142	966
	C			488	2,626	488	2,626
	D						
	E			29	88	29	88
2. BURDEN					4,242		4,242
3. COMPUTER							
4. TRAVEL					200		200
5. PURCHASES					11		11
6. PURCHASE BURDEN							
	TOTAL	*	$*	659*	$8,133*	659*	$8,133*
B. ENGINEERING-SSC							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				16,514	55,918	16,514	55,918
2. BURDEN					108,816		108,816
3. COMPUTER							
4. PURCHASES					296,804		296,804
5. PURCHASE BURDEN					16,591		16,591
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	16,514*	$478,129*	16,514*	$478,129*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$486,262*		$486,262*
1. G&A, IRAD, GEN. RES.			$*		$69,206*		$69,206*
2. ESTIMATED TOTAL COST			$*		$555,468*		$555,468*
3. PROFIT			$*		$55,549*		$55,549*
4. SELLING PRICE			$*		$611,017*		$611,017*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 32035142 MGE SPECIAL TOOL/TEST EQ7

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A B C D E		3,037	15,918			3,037	15,918
2. BURDEN			19,303				19,303
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	3,037*	$35,221*	*	$*	3,037*	$35,221*
B. ENGINEERING-SSC							
1. LABOR A B C D E F							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR A B C D E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$35,221*		$*		$35,221*
1. G&A, IRAD, GEN. RES.			$5,013*		$*		$5,013*
2. ESTIMATED TOTAL COST			$40,234*		$*		$40,234*
3. PROFIT			$4,024*		$*		$4,024*
4. SELLING PRICE			$44,258*		$*		$44,258*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 4 TRAINING

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B			622	4,301	622	4,301
	C			6,387	34,262	6,387	34,262
	D						
	E						
2. BURDEN					35,254		35,254
3. COMPUTER							
4. TRAVEL					11,416		11,416
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	7,009*	$85,233*	7,009*	$85,233*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR				2,631	12,356	2,631	12,356
2. BURDEN					11,085		11,085
3. TRAVEL					1,575		1,575
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	2,631*	$25,016*	2,631*	$25,016*
J. TOTAL FACTORY COSTS			$*		$110,249*		$110,249*
1. G&A, IRAD, GEN. RES.			$*		$15,993*		$15,993*
2. ESTIMATED TOTAL COST			$*		$126,242*		$126,242*
3. PROFIT			$*		$12,622*		$12,622*
4. SELLING PRICE			$*		$138,864*		$138,864*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 52065 MSK DEV FIXTURE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B	343	2,319			343	2,319
	C	495	2,599			495	2,599
	D						
	E						
2. BURDEN			5,303				5,303
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	838*	$10,221*	*	$*	838*	$10,221*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		839	2,821			839	2,821
2. BURDEN			5,549				5,549
3. COMPUTER							
4. PURCHASES			7,514				7,514
5. PURCHASE BURDEN			428				428
6. SUBCONTRACT			8,913				8,913
7. SUBCONTRACT BURDEN			508				508
	TOTAL	839*	$25,733*	*	$*	839*	$25,733*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$35,954*		$*		$35,954*
1. G&A, IRAD, GEN. RES.			$4,956*		$*		$4,956*
2. ESTIMATED TOTAL COST			$40,910*		$*		$40,910*
3. PROFIT			$4,092*		$*		$4,092*
4. SELLING PRICE			$45,002*		$*		$45,002*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 7 PROGRAM DOCUMENTATION

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C			2,414	12,760	2,414	12,760
	D						
	E			1,908	5,831	1,908	5,831
2. BURDEN					21,926		21,926
3. COMPUTER							
4. TRAVEL					1,230		1,230
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	4,322*	$41,747*	4,322*	$41,747*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT					12,152		12,152
7. SUBCONTRACT BURDEN					674		674
	TOTAL	*	$*	*	$12,826*	*	$12,826*
F. TECHNICAL PUBLICATIONS							
1. LABOR				2,865	13,443	2,865	13,443
2. BURDEN					12,059		12,059
3. TRAVEL							
4. PURCHASES					3,335		3,335
5. PURCHASE BURDEN					203		203
	TOTAL	*	$*	2,865*	$29,040*	2,865*	$29,040*
J. TOTAL FACTORY COSTS			$*		$83,613*		$83,613*
1. G&A, IRAD, GEN. RES.			$*		$12,076*		$12,076*
2. ESTIMATED TOTAL COST			$*		$95,689*		$95,689*
3. PROFIT			$*		$9,578*		$9,578*
4. SELLING PRICE			$*		$105,267*		$105,267*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 81 PROGRAM CONTROL MGMT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A			5,591	48,837	5,591	48,837
	B			3,287	22,396	3,287	22,396
	C			10,224	54,553	10,224	54,553
	D						
	E			1,595	5,042	1,595	5,042
2. BURDEN					105,101		105,101
3. COMPUTER					3,300		3,300
4. TRAVEL					22,920		22,920
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	20,697*	$262,149*	20,697*	$262,149*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$262,149*		$262,149*
1. G&A, IRAD, GEN. RES.			$*		$37,890*		$37,890*
2. ESTIMATED TOTAL COST			$*		$300,039*		$300,039*
3. PROFIT			$*		$30,006*		$30,006*
4. SELLING PRICE			$*		$330,045*		$330,045*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 82 CONFIGURATION MGMT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A	1,123	9,978	3,406	30,519	4,529	40,497
	B	1,320	9,122	3,770	25,845	5,090	34,967
	C	2,460	13,272	2,303	12,201	4,763	25,473
	D						
	E	937	2,925	2,501	7,621	3,438	10,546
2. BURDEN			29,217		60,508		89,725
3. COMPUTER							
4. TRAVEL			14,630		1,175		15,805
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	5,840*	$79,144*	11,980*	$137,869*	17,820*	$217,013*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			40,978				40,978
7. SUBCONTRACT BURDEN			2,274				2,274
	TOTAL	*	$43,252*	*	$*	*	$43,252*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$122,396*		$137,869*		$260,265*
1. G&A, IRAD, GEN. RES.			$17,832*		$20,090*		$37,922*
2. ESTIMATED TOTAL COST			$140,228*		$157,959*		$298,187*
3. PROFIT			$14,028*		$15,801*		$29,829*
4. SELLING PRICE			$154,256*		$173,760*		$328,016*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 83 MANUFACTURING MGMT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A							
B							
C		4,361	22,942			4,361	22,942
D							
E							
2. BURDEN			27,854				27,854
3. COMPUTER							
4. TRAVEL			1,360				1,360
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	4,361*	$52,156*	*	$*	4,361*	$52,156*
B. ENGINEERING-SSC							
1. LABOR							
A				2,099	18,486	2,099	18,486
B		3,405	23,445	4,209	28,777	7,614	52,222
C							
D							
E				2,099	6,427	2,099	6,427
2. BURDEN			17,247		42,544		59,791
3. COMPUTER							
4. TRAVEL					9,840		9,840
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	3,405*	$40,692*	8,407*	$106,074*	11,812*	$146,766*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES			7,395				7,395
5. PURCHASE BURDEN			407				407
6. SUBCONTRACT			41,742				41,742
7. SUBCONTRACT BURDEN			2,336				2,336
	TOTAL	*	$51,880*	*	$*	*	$51,880*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$144,728*		$106,074*		$250,802*
1. G&A, IRAD, GEN. RES.			$20,623*		$15,366*		$35,989*
2. ESTIMATED TOTAL COST			$165,351*		$121,440*		$286,791*
3. PROFIT			$16,539*		$12,156*		$28,695*
4. SELLING PRICE			$181,890*		$133,596*		$315,486*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 84 ENGINEERING & TEST MGMT

	NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. COMPUTER						
4. TRAVEL						
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC						
1. LABOR						
A			672	5,893	672	5,893
B						
C						
D						
E			1,155	3,559	1,155	3,559
2. BURDEN				9,265		9,265
3. COMPUTER						
4. TRAVEL						
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	1,827*	$18,717*	1,827*	$18,717*
D. CUSTOMER PREMISE						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
F. MANUFACTURING						
1. LABOR						
2. BURDEN						
3. COMPUTER						
4. PURCHASES						
5. PURCHASE BURDEN						
6. SUBCONTRACT				123,822		123,822
7. SUBCONTRACT BURDEN				6,910		6,910
TOTAL	*	$*	*	$130,732*	*	$130,732*
F. TECHNICAL PUBLICATIONS						
1. LABOR						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS		$*		$149,449*		$149,449*
1. G&A, IRAD, GEN. RES.		$*		$21,164*		$21,164*
2. ESTIMATED TOTAL COST		$*		$170,613*		$170,613*
3. PROFIT		$*		$17,059*		$17,059*
4. SELLING PRICE		$*		$187,672*		$187,672*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 1502 RELIABILITY

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A	3,153	27,730	280	2,537	3,433	30,267
	B	6,044	41,312			6,044	41,312
	C	8,557	45,328	1,725	9,421	10,282	54,749
	D	14,374	61,463	1,214	5,342	15,588	66,805
	E	2,958	9,096	700	2,233	3,658	11,329
2. BURDEN			224,924		25,478		250,402
3. COMPUTER			3,052		654		3,706
4. TRAVEL			5,735				5,735
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	35,086*	$418,640*	3,919*	$45,665*	39,005*	$464,305*
B. ENGINEERING-SSC							
1. LABOR	A			776	6,904	776	6,904
	B	1,852	12,510	16,503	116,866	18,355	129,376
	C	623	3,261	459	2,449	1,082	5,710
	D						
	E			958	2,991	958	2,991
2. BURDEN			12,665		93,282		105,947
3. COMPUTER							
4. TRAVEL					15,930		15,930
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	2,475*	$28,436*	18,696*	$238,422*	21,171*	$266,858*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			40,095				40,095
7. SUBCONTRACT BURDEN			2,245				2,245
	TOTAL	*	$42,340*	*	$*	*	$42,340*
F. TECHNICAL PUBLICATIONS							
1. LABOR		4,969	23,289			4,969	23,289
2. BURDEN			20,921				20,921
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	4,969*	$44,210*	*	$*	4,969*	$44,210*
J. TOTAL FACTORY COSTS			$533,626*		$284,087*		$817,713*
1. G&A, IRAD, GEN. RES.			$77,057*		$41,761*		$118,818*
2. ESTIMATED TOTAL COST			$610,683*		$325,848*		$936,531*
3. PROFIT			$61,080*		$32,593*		$93,673*
4. SELLING PRICE			$671,763*		$358,441*		$1,030,204*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 1503 MAINTAINABILITY

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
A							
B		3,120	21,071	2,071	14,483	5,191	35,554
C							
D							
E							
2. BURDEN			15,964		10,359		26,323
3. COMPUTER							
4. TRAVEL			410				410
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	3,120*	$37,445*	2,071*	$24,842*	5,191*	$62,287*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			18,460				18,460
7. SUBCONTRACT BURDEN			1,033				1,033
	TOTAL	*	$19,493*	*	$*	*	$19,493*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$56,938*		$24,842*		$81,780*
1. G&A, IRAD, GEN. RES.			$8,024*		$3,653*		$11,677*
2. ESTIMATED TOTAL COST			$64,962*		$28,495*		$93,457*
3. PROFIT			$6,499*		$2,853*		$9,352*
4. SELLING PRICE			$71,461*		$31,348*		$102,809*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 1504 HUMAN ENGINEERING

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A B C D E		2,051	13,865	246	1,693	2,297	15,558
2. BURDEN			13,028		1,580		14,608
3. COMPUTER							
4. TRAVEL			820				820
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	2,051*	$27,713*	246*	$3,273*	2,297*	$30,986*
B. ENGINEERING-SSC							
1. LABOR A B C D E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR A B C D E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$27,713*		$3,273*		$30,986*
1. G&A, IRAD, GEN. RES.			$3,942*		$484*		$4,426*
2. ESTIMATED TOTAL COST			$31,655*		$3,757*		$35,412*
3. PROFIT			$3,166*		$375*		$3,541*
4. SELLING PRICE			$34,821*		$4,132*		$38,953*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 1505 SAFETY ENGINEERING

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A							
B		151	1,036	3,943	26,789	4,094	27,825
C							
D							
E							
2. BURDEN			963		24,894		25,857
3. COMPUTER					2,050		2,050
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	151*	$1,999*	3,943*	$53,733*	4,094*	$55,732*
B. ENGINEERING-SSC							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$1,999*		$53,733*		$55,732*
1. G&A, IRAD, GEN. RES.			$290*		$7,793*		$8,083*
2. ESTIMATED TOTAL COST			$2,289*		$61,526*		$63,815*
3. PROFIT			$229*		$6,155*		$6,384*
4. SELLING PRICE			$2,518*		$67,681*		$70,199*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22014 LV HARDWARE

	NON-RECURRING		RECURRING		TOTAL	
	HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. COMPUTER						
4. TRAVEL						
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC						
1. LABOR						
A						
B			584	4,093	584	4,093
C			488	2,626	488	2,626
D						
E						
2. BURDEN				5,321		5,321
3. COMPUTER						
4. TRAVEL				900		900
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	1,072*	$12,940*	1,072*	$12,940*
D. CUSTOMER PREMISE						
1. LABOR						
A						
B						
C			3,584	19,562	3,584	19,562
D						
E						
2. BURDEN				14,326		14,326
3. TRAVEL				10,660		10,660
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	3,584*	$44,548*	3,584*	$44,548*
E. MANUFACTURING						
1. LABOR						
2. BURDEN						
3. COMPUTER						
4. PURCHASES						
5. PURCHASE BURDEN						
6. SUBCONTRACT						
7. SUBCONTRACT BURDEN						
TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS						
1. LABOR						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS		$*		$57,488*		$57,488*
1. G&A, IRAD, GEN. RES.		$*		$8,457*		$8,457*
2. ESTIMATED TOTAL COST		$*		$65,945*		$65,945*
3. PROFIT		$*		$6,593*		$6,593*
4. SELLING PRICE		$*		$72,538*		$72,538*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085111 DCSG COMMON SUBSYS DES

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	166	1,441			166	1,441
	B	3,540	23,933			3,540	23,933
	C	12,132	63,512			12,132	63,512
	D	5,308	22,100			5,308	22,100
	E	1,450	4,419			1,450	4,419
2. BURDEN			143,731				143,731
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			500				500
6. PURCHASE BURDEN			29				29
	TOTAL	22,596*	$259,665*	*	$*	22,596*	$259,665*
B. ENGINEERING-SSC							
1. LABOR							
	A	17,721	154,556			17,721	154,556
	B	17,521	118,588			17,521	118,588
	C	6,565	34,384			6,565	34,384
	D	2,194	9,116			2,194	9,116
	E	2,080	6,266			2,080	6,266
2. BURDEN			235,423				235,423
3. COMPUTER			3,108				3,108
4. TRAVEL			27,770				27,770
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	46,081*	$589,211*	*	$*	46,081*	$589,211*
D. CUSTOMER PREMISE							
1. LABOR							
	A			15,592	138,715	15,592	138,715
	B			11,230	76,631	11,230	76,631
	C			7,490	39,624	7,490	39,624
	D						
	E						
2. BURDEN					134,150		134,150
3. TRAVEL					94,480		94,480
4. PURCHASES					17,688		17,688
5. PURCHASE BURDEN					960		960
	TOTAL	*	$*	34,312*	$502,248*	34,312*	$502,248*
F. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR		315	1,465			315	1,465
2. BURDEN			1,317				1,317
3. TRAVEL							
4. PURCHASES			1,000				1,000
5. PURCHASE BURDEN			56				56
	TOTAL	315*	$3,838*	*	$*	315*	$3,838*
J. TOTAL FACTORY COSTS			$852,714*		$502,248*		$1,354,962*
1. G&A, IRAD, GEN. RES.			$121,324*		$72,439*		$193,763*
2. ESTIMATED TOTAL COST			$974,038*		$574,687*		$1,548,725*
3. PROFIT			$97,417*		$57,470*		$154,887*
4. SELLING PRICE			$1,071,455*		$632,157*		$1,703,612*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085112 DIGITAL COMPUTER DES

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	7,213	62,634			7,213	62,634
	B	17,263	116,354			17,263	116,354
	C	15,856	82,807			15,856	82,807
	D	14,044	57,997			14,044	57,997
	E	11,845	35,836			11,845	35,836
2. BURDEN			423,307				423,307
3. COMPUTER			21,108				21,108
4. TRAVEL							
5. PURCHASES			15,000				15,000
6. PURCHASE BURDEN			851				851
	TOTAL	66,221*	$815,894*	*	$*	66,221*	$815,894*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	F						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$815,894*		$*		$815,894*
1. G&A, IRAD, GEN. RES.			$114,454*		$*		$114,454*
2. ESTIMATED TOTAL COST			$930,348*		$*		$930,348*
3. PROFIT			$93,038*		$*		$93,038*
4. SELLING PRICE			$1,023,386*		$*		$1,023,386*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 22085113 LDA UNIT DESIGN

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A	3,230	28,041			3,230	28,041
	B	2,319	15,680			2,319	15,680
	C	8,531	44,691			8,531	44,691
	D	7,713	31,863			7,713	31,863
	E	5,343	16,051			5,343	16,051
2. BURDEN			173,625				173,625
3. COMPUTER			13,112				13,112
4. TRAVEL			1,820				1,820
5. PURCHASES			23,500				23,500
6. PURCHASE BURDEN			1,337				1,337
	TOTAL	27,136*	$349,720*	*	$*	27,136*	$349,720*
B. ENGINEERING-SSC							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$349,720*		$*		$349,720*
1. G&A,IRAD, GEN. RES.			$48,916*		$*		$48,916*
2. ESTIMATED TOTAL COST			$398,636*		$*		$398,636*
3. PROFIT			$39,875*		$*		$39,875*
4. SELLING PRICE			$438,511*		$*		$438,511*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085114 KEYBOARD UNIT DESIGN

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	287	2,498			287	2,498
	B	2,461	16,595			2,461	16,595
	C	4,656	24,360			4,656	24,360
	D	5,264	21,805			5,264	21,805
	E	2,334	7,020			2,334	7,020
2. BURDEN			96,039				96,039
3. COMPUTER			6,876				6,876
4. TRAVEL			215				215
5. PURCHASES			12,000				12,000
6. PURCHASE BURDEN			680				680
	TOTAL	15,002*	$188,088*	*	$*	15,002*	$188,088*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$188,088*		$*		$188,088*
1. G&A,IRAD, GEN. RES.			$26,299*		$*		$26,299*
2. ESTIMATED TOTAL COST			$214,387*		$*		$214,387*
3. PROFIT			$21,445*		$*		$21,445*
4. SELLING PRICE			$235,832*		$*		$235,832*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085119 DISPLAY UNIT DESIGN

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A							
B							
C		1,022	5,356			1,022	5,356
D							
E							
2. BURDEN			6,488				6,488
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	1,022*	$11,844*	*	$*	1,022*	$11,844*
B. ENGINEERING-SSC							
1. LABOR							
A		976	8,494			976	8,494
B		1,876	12,674			1,876	12,674
C		1,022	5,356			1,022	5,356
D							
E							
2. BURDEN			19,835				19,835
3. COMPUTER							
4. TRAVEL			2,800				2,800
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	3,874*	$49,159*	*	$*	3,874*	$49,159*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			251,603				251,603
7. SUBCONTRACT BURDEN			14,238				14,238
	TOTAL	*	$265,841*	*	$*	*	$265,841*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$326,844*		$*		$326,844*
1. G&A, IRAD, GEN. RES.			$44,612*		$*		$44,612*
2. ESTIMATED TOTAL COST			$371,456*		$*		$371,456*
3. PROFIT			$37,149*		$*		$37,149*
4. SELLING PRICE			$408,605*		$*		$408,605*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 22085115 PRINTER UNIT DESIGN

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A							
B							
C		1,022	5,356			1,022	5,356
D							
E							
2. BURDEN			6,488				6,488
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	1,022*	$11,844*	*	$*	1,022*	$11,844*
B. ENGINEERING-SSC							
1. LABOR							
A		945	8,222			945	8,222
B		1,902	12,850			1,902	12,850
C		613	3,211			613	3,211
D							
E							
2. BURDEN			17,714				17,714
3. COMPUTER							
4. TRAVEL			1,820				1,820
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	3,460*	$43,817*	*	$*	3,460*	$43,817*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			134,590				134,590
7. SUBCONTRACT BURDEN			7,538				7,538
	TOTAL	*	$142,128*	*	$*	*	$142,128*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$197,789*		$*		$197,789*
1. G&A, IRAD, GEN. RES.			$27,757*		$*		$27,757*
2. ESTIMATED TOTAL COST			$225,546*		$*		$225,546*
3. PROFIT			$22,559*		$*		$22,559*
4. SELLING PRICE			$248,105*		$*		$248,105*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085116 AUX MEMORY UNIT DESIGN

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C	325	1,713			325	1,713
	D						
	E						
2. BURDEN			2,032				2,032
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	325*	$3,745*	*	$*	325*	$3,745*
B. ENGINEERING-SSC							
1. LABOR							
	A	976	8,494			976	8,494
	B	1,871	12,639			1,871	12,639
	C	2,255	11,817			2,255	11,817
	D						
	E						
2. BURDEN			26,125				26,125
3. COMPUTER							
4. TRAVEL			4,100				4,100
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	5,102*	$63,175*	*	$*	5,102*	$63,175*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			138,071				138,071
7. SUBCONTRACT BURDEN			7,793				7,793
	TOTAL	*	$145,864*	*	$*	*	$145,864*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$205,294*		$*		$205,294*
1. G&A, IRAD, GEN. RES.			$28,308*		$*		$28,308*
2. ESTIMATED TOTAL COST			$233,602*		$*		$233,602*
3. PROFIT			$23,362*		$*		$23,362*
4. SELLING PRICE			$256,964*		$*		$256,964*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085117 TRANSPORTATION PKG DESIGS

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A						
	B						
	C	633	3,336			633	3,336
	D						
	E						
2. BURDEN			3,958				3,958
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			1,000				1,000
6. PURCHASE BURDEN			55				55
	TOTAL	633*	$8,349*	*	$*	633*	$8,349*
B. ENGINEERING-SSC							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$8,349*		$*		$8,349*
1. G&A, IRAD, GEN. RES.			$1,230*		$*		$1,230*
2. ESTIMATED TOTAL COST			$9,579*		$*		$9,579*
3. PROFIT			$957*		$*		$957*
4. SELLING PRICE			$10,536*		$*		$10,536*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085118 MOCK UP DRAWINGS

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C	15	78			15	78
	D	374	1,548			374	1,548
	E						
2. BURDEN			2,487				2,487
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	389*	$4,113*	*	$*	389*	$4,113*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$4,113*		$*		$4,113*
1. G&A, IRAD, GEN. RES.			$579*		$*		$579*
2. ESTIMATED TOTAL COST			$4,692*		$*		$4,692*
3. PROFIT			$468*		$*		$468*
4. SELLING PRICE			$5,160*		$*		$5,160*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 2085151 DCSG ON ORBIT SOFTWARE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A	1,237	10,766			1,237	10,766
	B	2,036	13,798			2,036	13,798
	C	2,274	11,910			2,274	11,910
	D	1,911	7,965			1,911	7,965
	E						
2. BURDEN			38,256				38,256
3. COMPUTER			24,150				24,150
4. TRAVEL			3,150				3,150
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	7,458*	$109,995*	*	$*	7,458*	$109,995*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$109,995*		$*		$109,995*
1. G&A, IRAD, GEN. RES.			$15,775*		$*		$15,775*
2. ESTIMATED TOTAL COST			$125,770*		$*		$125,770*
3. PROFIT			$12,577*		$*		$12,577*
4. SELLING PRICE			$138,347*		$*		$138,347*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085152 DCSG GROUND SUP SOFTWARE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A	36	315			36	315
	B	1,864	12,648			1,864	12,648
	C	1,291	6,779			1,291	6,779
	D	1,732	7,258			1,732	7,258
	E						
2. BURDEN			25,350				25,350
3. COMPUTER			20,350				20,350
4. TRAVEL			1,980				1,980
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	4,923*	$74,680*	*	$*	4,923*	$74,680*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$74,680*		$*		$74,680*
1. G&A, IRAD, GEN. RES.			$10,884*		$*		$10,884*
2. ESTIMATED TOTAL COST			$85,564*		$*		$85,564*
3. PROFIT			$8,558*		$*		$8,558*
4. SELLING PRICE			$94,122*		$*		$94,122*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085153 DCSG SOFTWARE PROCEED

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A	1,353	11,622			1,353	11,622
	B	3,102	20,855			3,102	20,855
	C	3,218	16,759			3,218	16,759
	D	1,478	6,016			1,478	6,016
	E						
2. BURDEN			46,421				46,421
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			40,000				40,000
6. PURCHASE BURDEN			2,160				2,160
	TOTAL	9,151*	$143,833*	*	$*	9,151*	$143,833*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$143,833*		$*		$143,833*
1. G&A, IRAD, GEN. RES.			$20,053*		$*		$20,053*
2. ESTIMATED TOTAL COST			$163,886*		$*		$163,886*
3. PROFIT			$16,391*		$*		$16,391*
4. SELLING PRICE			$180,277*		$*		$180,277*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085210 COMMON DEV TEST/TEST SUP7

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	876	7,575			876	7,575
	B	475	3,199			475	3,199
	C	2,849	14,949			2,849	14,949
	D	276	1,132			276	1,132
	E	196	579			196	579
2. BURDEN			30,001				30,001
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			1,500				1,500
6. PURCHASE BURDEN			87				87
	TOTAL	4,672*	$59,022*	*	$*	4,672*	$59,022*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C	656	3,462			656	3,462
	D						
	E						
2. BURDEN			3,340				3,340
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	656*	$6,802*	*	$*	656*	$6,802*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$65,824*		$*		$65,824*
1. G&A, IRAD, GEN. RES.			$9,216*		$*		$9,216*
2. ESTIMATED TOTAL COST			$75,040*		$*		$75,040*
3. PROFIT			$7,508*		$*		$7,508*
4. SELLING PRICE			$82,548*		$*		$82,548*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085221 DIGITAL COMP DEV TESTING

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	95	840			95	840
	B	1,269	8,719			1,269	8,719
	C	1,268	6,716			1,268	6,716
	D	127	540			127	540
	E						
2. BURDEN			17,505				17,505
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	2,759*	$34,320*	*	$*	2,759*	$34,320*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B	330	2,279			330	2,279
	C						
	D						
	E						
2. BURDEN			1,654				1,654
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	330*	$3,933*	*	$*	330*	$3,933*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				5,463	18,465	5,463	18,465
2. BURDEN					35,727		35,727
3. COMPUTER					284		284
4. PURCHASES					63,579		63,579
5. PURCHASE BURDEN					3,497		3,497
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	5,463*	$121,552*	5,463*	$121,552*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$38,253*		$121,552*		$159,805*
1. G&A, IRAD, GEN. RES.			$5,626*		$17,880*		$23,506*
2. ESTIMATED TOTAL COST			$43,879*		$139,432*		$183,311*
3. PROFIT			$4,387*		$13,943*		$18,330*
4. SELLING PRICE			$48,266*		$153,375*		$201,641*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085222 LDA UNIT DEV TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A		1,202	8,289			1,202	8,289
B		1,725	9,209			1,725	9,209
C		652	2,807			652	2,807
D		154	467			154	467
E			23,961				23,961
2. BURDEN							
3. COMPUTER							
4. TRAVEL			1,600				1,600
5. PURCHASES			88				88
6. PURCHASE BURDEN							
	TOTAL	3,733*	$46,421*	*	$*	3,733*	$46,421*
B. ENGINEERING-SSC							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				2,721	9,197	2,721	9,197
2. BURDEN					17,795		17,795
3. COMPUTER					66		66
4. PURCHASES					13,434		13,434
5. PURCHASE BURDEN					740		740
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	2,721*	$41,232*	2,721*	$41,232*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$46,421*		$41,232*		$87,653*
1. G&A, IRAD, GEN. RES.			$6,829*		$6,064*		$12,893*
2. ESTIMATED TOTAL COST			$53,250*		$47,296*		$100,546*
3. PROFIT			$5,327*		$4,730*		$10,057*
4. SELLING PRICE			$58,577*		$52,026*		$110,603*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085223 KEYBOARD UNIT DEV TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	376	2,593			376	2,593
	B	848	4,510			848	4,510
	C	846	3,618			846	3,618
	D	189	579			189	579
	E		14,444				14,444
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			1,260				1,260
6. PURCHASE BURDEN			70				70
	TOTAL	2,259*	$27,074*	*	$*	2,259*	$27,074*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				595	2,011	595	2,011
2. BURDEN					3,891		3,891
3. COMPUTER					18		18
4. PURCHASES					14,259		14,259
5. PURCHASE BURDEN					784		784
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	595*	$20,963*	595*	$20,963*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$27,074*		$20,963*		$48,037*
1. G&A, IRAD, GEN. RES.			$3,983*		$3,082*		$7,065*
2. ESTIMATED TOTAL COST			$31,057*		$24,045*		$55,102*
3. PROFIT			$3,113*		$2,404*		$5,517*
4. SELLING PRICE			$34,170*		$26,449*		$60,619*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085226 DISPLAY UNIT DEV TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C	76	404			76	404
	D						
	E						
2. BURDEN			484				484
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	76*	$888*	*	$*	76*	$888*
B. ENGINEERING-SSC							
1. LABOR							
	A	111	972			111	972
	B	111	755			111	755
	C						
	D						
	E						
2. BURDEN			1,146				1,146
3. COMPUTER							
4. TRAVEL			840				840
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	222*	$3,713*	*	$*	222*	$3,713*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			17,705		34,447		52,152
7. SUBCONTRACT BURDEN			974		1,895		2,869
	TOTAL	*	$18,679*	*	$36,342*	*	$55,021*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$23,280*		$36,342*		$59,622*
1. G&A, IRAD, GEN. RES.			$3,424*		$5,346*		$8,770*
2. ESTIMATED TOTAL COST			$26,704*		$41,688*		$68,392*
3. PROFIT			$2,671*		$4,169*		$6,840*
4. SELLING PRICE			$29,375*		$45,857*		$75,232*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085224 PRINTER 1 UNIT DEV TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B	62	426			62	426
	C						
	D						
	E						
2. BURDEN			396				396
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	62*	$822*	*	$*	62*	$822*
B. ENGINEERING-SSC							
1. LABOR							
	A	113	990			113	990
	B	113	768			113	768
	C						
	D						
	E						
2. BURDEN			1,166				1,166
3. COMPUTER							
4. TRAVEL			420				420
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	226*	$3,344*	*	$*	226*	$3,344*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			16,238		9,000		25,238
7. SUBCONTRACT BURDEN			893		495		1,388
	TOTAL	*	$17,131*	*	$9,495*	*	$26,626*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$21,297*		$9,495*		$30,792*
1. G&A,IRAD, GEN. RES.			$3,134*		$1,397*		$4,531*
2. ESTIMATED TOTAL COST			$24,431*		$10,892*		$35,323*
3. PROFIT			$2,444*		$1,089*		$3,533*
4. SELLING PRICE			$26,875*		$11,981*		$38,856*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085225 AUX MEMORY UNIT DEV TEST

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B	62	426			62	426
	C						
	D						
	E						
2. BURDEN			396				396
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	62*	$822*	*	$*	62*	$822*
B. ENGINEERING-SSC							
1. LABOR							
	A	113	990			113	990
	B	113	768			113	768
	C						
	D						
	E						
2. BURDEN			1,166				1,166
3. COMPUTER							
4. TRAVEL			1,230				1,230
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	226*	$4,154*	*	$*	226*	$4,154*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			23,112				23,112
7. SUBCONTRACT BURDEN			1,271				1,271
	TOTAL	*	$24,383*	*	$*	*	$24,383*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$29,359*		$*		$29,359*
1. G&A, IRAD, GEN. RES.			$4,319*		$*		$4,319*
2. ESTIMATED TOTAL COST			$33,678*		$*		$33,678*
3. PROFIT			$3,369*		$*		$3,369*
4. SELLING PRICE			$37,047*		$*		$37,047*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085230 DCSG SUBSYSTEM DEV TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A		1,350	9,145			1,350	9,145
B		916	4,826			916	4,826
C		2,438	10,147			2,438	10,147
D		627	1,906			627	1,906
E			33,595				33,595
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	5,331*	$59,619*	*	$*	5,331*	$59,619*
B. ENGINEERING-SSC							
1. LABOR A		5,986	52,435			5,986	52,435
B		6,511	44,424			6,511	44,424
C		3,876	20,533			3,876	20,533
D							
E							
2. BURDEN			83,442				83,442
3. COMPUTER							
4. TRAVEL			1,230				1,230
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	16,373*	$202,064*	*	$*	16,373*	$202,064*
D. CUSTOMER PREMISE							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				5,869	19,721	5,869	19,721
2. BURDEN					38,870		38,870
3. COMPUTER					268		268
4. PURCHASES					56,360		56,360
5. PURCHASE BURDEN					3,184		3,184
6. SUBCONTRACT					75,952		75,952
7. SUBCONTRACT BURDEN					4,178		4,178
	TOTAL	*	$*	5,869*	$198,533*	5,869*	$198,533*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$261,683*		$198,533*		$460,216*
1. G&A, IRAD, GEN. RES.			$37,958*		$28,275*		$66,233*
2. ESTIMATED TOTAL COST			$299,641*		$226,808*		$526,449*
3. PROFIT			$29,965*		$22,683*		$52,648*
4. SELLING PRICE			$329,606*		$249,491*		$579,097*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085241 PRODUCTION PROTOTYPE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A			226	2,021	226	2,021
	B			335	2,324	335	2,324
	C			9,045	47,888	9,045	47,888
	D			421	1,818	421	1,818
	E						
2. BURDEN					63,425		63,425
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	10,027*	$117,476*	10,027*	$117,476*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				12,799	43,368	12,799	43,368
2. BURDEN					83,936		83,936
3. COMPUTER					652		652
4. PURCHASES					153,267		153,267
5. PURCHASE BURDEN					8,430		8,430
6. SUBCONTRACT					84,952		84,952
7. SUBCONTRACT BURDEN					4,673		4,673
	TOTAL	*	$*	12,799*	$379,278*	12,799*	$379,278*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$496,754*		$496,754*
1. G&A, IRAD, GEN. RES.			$*		$73,073*		$73,073*
2. ESTIMATED TOTAL COST			$*		$569,827*		$569,827*
3. PROFIT			$*		$56,982*		$56,982*
4. SELLING PRICE			$*		$626,809*		$626,809*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085242 ENGINEERING PROTOTYPE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A			390	3,416	390	3,416
	B			2,672	18,258	2,672	18,258
	C			18,597	97,518	18,597	97,518
	D			1,577	6,585	1,577	6,585
	F			472	1,435	472	1,435
2. BURDEN					150,210		150,210
3. COMPUTER							
4. TRAVEL							
5. PURCHASES					500		500
6. PURCHASE BURDEN					28		28
	TOTAL	*	$*	23,708*	$277,950*	23,708*	$277,950*
B. ENGINEERING-SSC							
1. LABOR	A						
	B			1,865	12,682	1,865	12,682
	C			1,432	7,547	1,432	7,547
	D						
	E						
2. BURDEN					17,014		17,014
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	3,297*	$37,243*	3,297*	$37,243*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				17,910	60,122	17,910	60,122
2. BURDEN					118,845		118,845
3. COMPUTER					604		604
4. PURCHASES					216,767		216,767
5. PURCHASE BURDEN					12,312		12,312
6. SUBCONTRACT					86,894		86,894
7. SUBCONTRACT BURDEN					4,779		4,779
	TOTAL	*	$*	17,910*	$500,323*	17,910*	$500,323*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$815,516*		$815,516*
1. G&A, IRAD, GEN. RES.			$*		$114,994*		$114,994*
2. ESTIMATED TOTAL COST			$*		$930,510*		$930,510*
3. PROFIT			$*		$93,055*		$93,055*
4. SELLING PRICE			$*		$1,023,565*		$1,023,565*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085310 COMMON DCSG QUAL TEST/SU7

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A		385	3,354			385	3,354
B		385	2,604			385	2,604
C		3,366	17,644			3,366	17,644
D		3,000	12,465			3,000	12,465
E		1,349	4,069			1,349	4,069
2. BURDEN			53,815				53,815
3. COMPUTER			1,526				1,526
4. TRAVEL							
5. PURCHASES			10,000				10,000
6. PURCHASE BURDEN			562				562
	TOTAL	8,485*	$106,039*	*	$*	8,485*	$106,039*
B. ENGINEERING-SSC							
1. LABOR							
A							
B							
C		124	666			124	666
D							
E							
2. BURDEN			612				612
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	124*	$1,278*	*	$*	124*	$1,278*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$107,317*		$*		$107,317*
1. G&A, IRAD, GEN. RES.			$15,290*		$*		$15,290*
2. ESTIMATED TOTAL COST			$122,607*		$*		$122,607*
3. PROFIT			$12,269*		$*		$12,269*
4. SELLING PRICE			$134,876*		$*		$134,876*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085321 DIGITAL COMP QUAL TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	1,055	7,306			1,055	7,306
	B	785	4,203			785	4,203
	C	394	1,683			394	1,683
	D	139	422			139	422
	E		15,284				15,284
2. BURDEN							
3. COMPUTER			4,300				4,300
4. TRAVEL							
5. PURCHASES			238				238
6. PURCHASE BURDEN							
	TOTAL	2,373*	$33,436*	*	$*	2,373*	$33,436*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$33,436*		$*		$33,436*
1. G&A, IRAD, GEN. RES.			$4,919*		$*		$4,919*
2. ESTIMATED TOTAL COST			$38,355*		$*		$38,355*
3. PROFIT			$3,841*		$*		$3,841*
4. SELLING PRICE			$42,196*		$*		$42,196*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085322 LDA QUAL TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A		557	3,833			557	3,833
B		1,520	8,147			1,520	8,147
C		1,257	5,383			1,257	5,383
D		289	879			289	879
E			23,273				23,273
2. BURDEN							
3. COMPUTER			4,200				4,200
4. TRAVEL			233				233
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	3,623*	$45,948*	*	$*	3,623*	$45,948*
B. ENGINEERING-SSC							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$45,948*		$*		$45,948*
1. G&A, IRAD, GEN. RES.			$6,760*		$*		$6,760*
2. ESTIMATED TOTAL COST			$52,708*		$*		$52,708*
3. PROFIT			$5,272*		$*		$5,272*
4. SELLING PRICE			$57,980*		$*		$57,980*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 22085323 KEYBOARD QUAL TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A		841	5,809			841	5,809
B		1,741	9,281			1,741	9,281
C		580	2,466			580	2,466
D							
E							
2. BURDEN			20,245				20,245
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			2,700				2,700
6. PURCHASE BURDEN			152				152
	TOTAL	3,162*	$40,653*	*	$*	3,162*	$40,653*
B. ENGINEERING-SSC							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$40,653*		$*		$40,653*
1. G&A, IRAD, GEN. RES.			$5,979*		$*		$5,979*
2. ESTIMATED TOTAL COST			$46,632*		$*		$46,632*
3. PROFIT			$4,667*		$*		$4,667*
4. SELLING PRICE			$51,299*		$*		$51,299*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085326 DISPLAY QUAL TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A			1,262			182	1,262
B		1,316	7,080			1,316	7,080
C		502	2,166			502	2,166
D							
E							
2. BURDEN			13,011				13,011
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			2,200				2,200
6. PURCHASE BURDEN			124				124
	TOTAL	2,000*	$25,843*	*	$*	2,000*	$25,843*
B. ENGINEERING-SSC							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			10,292				10,292
7. SUBCONTRACT BURDEN			566				566
	TOTAL	*	$10,858*	*	$*	*	$10,858*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$36,701*		$*		$36,701*
1. G&A, IRAD, GEN. RES.			$5,397*		$*		$5,397*
2. ESTIMATED TOTAL COST			$42,098*		$*		$42,098*
3. PROFIT			$4,213*		$*		$4,213*
4. SELLING PRICE			$46,311*		$*		$46,311*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085324 PRINTER QUAL TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C	62	334			62	334
	D						
	E						
2. BURDEN			403				403
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	62*	$737*	*	$*	62*	$737*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			9,492				9,492
7. SUBCONTRACT BURDEN			522				522
	TOTAL	*	$10,014*	*	$*	*	$10,014*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$10,751*		$*		$10,751*
1. G&A,IRAD, GEN. RES.			$1,581*		$*		$1,581*
2. ESTIMATED TOTAL COST			$12,332*		$*		$12,332*
3. PROFIT			$1,233*		$*		$1,233*
4. SELLING PRICE			$13,565*		$*		$13,565*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085325 AUX MEMORY QUAL TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A							
B							
C		751	4,041			751	4,041
D		426	1,838			426	1,838
E							
2. BURDEN			7,657				7,657
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			1,700				1,700
6. PURCHASE BURDEN			96				96
	TOTAL	1,177*	$15,332*	*	$*	1,177*	$15,332*
B. ENGINEERING-SSC							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			11,377				11,377
7. SUBCONTRACT BURDEN			626				626
	TOTAL	*	$12,003*	*	$*	*	$12,003*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$27,335*		$*		$27,335*
1. G&A, IRAD, GEN. RES.			$4,018*		$*		$4,018*
2. ESTIMATED TOTAL COST			$31,353*		$*		$31,353*
3. PROFIT			$3,135*		$*		$3,135*
4. SELLING PRICE			$34,488*		$*		$34,488*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085351 DCSG ON-ORB SOFTWARE VAL

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B	626	4,257			626	4,257
	C	1,562	8,231			1,562	8,231
	D	154	645			154	645
	E						
2. BURDEN			12,083				12,083
3. COMPUTER			10,200				10,200
4. TRAVEL			5,000				5,000
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	2,342*	$40,416*	*	$*	2,342*	$40,416*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$40,416*		$*		$40,416*
1. G&A, IRAD, GEN. RES.			$5,945*		$*		$5,945*
2. ESTIMATED TOTAL COST			$46,361*		$*		$46,361*
3. PROFIT			$4,637*		$*		$4,637*
4. SELLING PRICE			$50,998*		$*		$50,998*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085352 DCSG SUPP SOFTWARE VAL

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B	611	4,155			611	4,155
	C	1,083	5,707			1,083	5,707
	D	472	1,978			472	1,978
	E						
2. BURDEN			11,177				11,177
3. COMPUTER			7,550				7,550
4. TRAVEL			4,000				4,000
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	2,166*	$34,567*	*	$*	2,166*	$34,567*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$34,567*		$*		$34,567*
1. G&A, IRAD, GEN. RES.			$5,083*		$*		$5,083*
2. ESTIMATED TOTAL COST			$39,650*		$*		$39,650*
3. PROFIT			$3,966*		$*		$3,966*
4. SELLING PRICE			$43,616*		$*		$43,616*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 2208541210 DIGITAL COMPUTER

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A			902	6,220	902	6,220
	B			49,881	266,557	49,881	266,557
	C			2,117	9,176	2,117	9,176
	D			73	222	73	222
	E						
2. BURDEN					339,485		339,485
3. COMPUTER							
4. TRAVEL							
5. PURCHASES					1,600		1,600
6. PURCHASE BURDEN					92		92
	TOTAL	*	$*	52,973*	$623,352*	52,973*	$623,352*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	F						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				59,000	201,945	59,000	201,945
2. BURDEN					391,266		391,266
3. COMPUTER					3,986		3,986
4. PURCHASES					950,550		950,550
5. PURCHASE BURDEN					52,279		52,279
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	59,000*	$1,600,026*	59,000*	$1,600,026*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$2,223,378*		$2,223,378*
1. G&A, IRAD, GEN. RES.			$*		$327,059*		$327,059*
2. ESTIMATED TOTAL COST			$*		$2,550,437*		$2,550,437*
3. PROFIT			$*		$255,054*		$255,054*
4. SELLING PRICE			$*		$2,805,491*		$2,805,491*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 2208541220 LDA

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A						
	B			406	2,811	406	2,811
	C			15,969	85,724	15,969	85,724
	D			636	2,755	636	2,755
	E						
2. BURDEN					109,641		109,641
3. COMPUTER							
4. TRAVEL							
5. PURCHASES					1,400		1,400
6. PURCHASE BURDEN					80		80
	TOTAL	*	$*	17,011*	$202,411*	17,011*	$202,411*
B. ENGINEERING-SSC							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				13,454	46,306	13,454	46,306
2. BURDEN					89,768		89,768
3. COMPUTER					462		462
4. PURCHASES					118,228		118,228
5. PURCHASE BURDEN					6,503		6,503
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	13,454*	$261,267*	13,454*	$261,267*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$463,678*		$463,678*
1. G&A, IRAD, GEN. RES.			$*		$68,207*		$68,207*
2. ESTIMATED TOTAL COST			$*		$531,885*		$531,885*
3. PROFIT			$*		$53,194*		$53,194*
4. SELLING PRICE			$*		$585,079*		$585,079*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 2208541230 KEYBOARD

	NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC						
1. LABOR						
A			99	673	99	673
B			6,906	36,920	6,906	36,920
C			592	2,562	592	2,562
D						
E						
2. BURDEN				48,656		48,656
3. COMPUTER						
4. TRAVEL						
5. PURCHASES				500		500
6. PURCHASE BURDEN				29		29
TOTAL	*	$*	7,597*	$89,340*	7,597*	$89,340*
B. ENGINEERING-SSC						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. COMPUTER						
4. TRAVEL						
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING						
1. LABOR			5,126	17,545	5,126	17,545
2. BURDEN				33,997		33,997
3. COMPUTER				180		180
4. PURCHASES				146,721		146,721
5. PURCHASE BURDEN				8,068		8,068
6. SUBCONTRACT						
7. SUBCONTRACT BURDEN						
TOTAL	*	$*	5,126*	$206,511*	5,126*	$206,511*
F. TECHNICAL PUBLICATIONS						
1. LABOR						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS		$*		$295,851*		$295,851*
1. G&A, IRAD, GEN. RES.		$*		$43,517*		$43,517*
2. ESTIMATED TOTAL COST		$*		$339,368*		$339,368*
3. PROFIT		$*		$33,944*		$33,944*
4. SELLING PRICE		$*		$373,312*		$373,312*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 2208541260 DISPLAY

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C			6,250	33,338	6,250	33,338
	D			190	806	190	806
	E						
2. BURDEN					41,093		41,093
3. COMPUTER							
4. TRAVEL					7,050		7,050
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	6,440*	$82,287*	6,440*	$82,287*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT					244,470		244,470
7. SUBCONTRACT BURDEN					13,690		13,690
	TOTAL	*	$*	*	$258,160*	*	$258,160*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$340,447*		$340,447*
1. G&A, IRAD, GEN. RES.			$*		$48,142*		$48,142*
2. ESTIMATED TOTAL COST			$*		$388,589*		$388,589*
3. PROFIT			$*		$38,864*		$38,864*
4. SELLING PRICE			$*		$427,453*		$427,453*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 2208541240 PRINTER

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C			5,111	27,259	5,111	27,259
	D			291	1,257	291	1,257
	E						
2. BURDEN					34,485		34,485
3. COMPUTER							
4. TRAVEL					4,994		4,994
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	5,402*	$67,995*	5,402*	$67,995*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT					108,000		108,000
7. SUBCONTRACT BURDEN					6,048		6,048
	TOTAL	*	$*	*	$114,048*	*	$114,048*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$182,043*		$182,043*
1. G&A, IRAD, GEN. RES.			$*		$25,927*		$25,927*
2. ESTIMATED TOTAL COST			$*		$207,970*		$207,970*
3. PROFIT			$*		$20,804*		$20,804*
4. SELLING PRICE			$*		$228,774*		$228,774*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 2208541250 AUX MEMORY

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A			5,507	29,398	5,507	29,398
	B			155	664	155	664
	C						
	D						
	E						
2. BURDEN					36,187		36,187
3. COMPUTER							
4. TRAVEL					14,640		14,640
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	5,662*	$80,889*	5,662*	$80,889*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT					227,535		227,535
7. SUBCONTRACT BURDEN					12,515		12,515
	TOTAL	*	$*	*	$240,050*	*	$240,050*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$320,939*		$320,939*
1. G&A, IRAD, GEN. RES.			$*		$47,208*		$47,208*
2. ESTIMATED TOTAL COST			$*		$368,147*		$368,147*
3. PROFIT			$*		$36,817*		$36,817*
4. SELLING PRICE			$*		$404,964*		$404,964*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 2208541300 PROD ASSEM CHECKOUT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A			230	2,014	230	2,014
	B			618	4,217	618	4,217
	C			4,235	22,349	4,235	22,349
	D			3,156	13,243	3,156	13,243
	E			1,765	5,375	1,765	5,375
2. BURDEN					63,257		63,257
3. COMPUTER					5,620		5,620
4. TRAVEL							
5. PURCHASES					500		500
6. PURCHASE BURDEN					28		28
	TOTAL	*	$*	10,004*	$116,603*	10,004*	$116,603*
B. ENGINEERING-SSC							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				2,594	8,763	2,594	8,763
2. BURDEN					16,994		16,994
3. COMPUTER							
4. PURCHASES					17,260		17,260
5. PURCHASE BURDEN					964		964
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	2,594*	$43,981*	2,594*	$43,981*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$160,584*		$160,584*
1. G&A, IRAD, GEN. RES.			$*		$23,294*		$23,294*
2. ESTIMATED TOTAL COST			$*		$183,878*		$183,878*
3. PROFIT			$*		$18,393*		$18,393*
4. SELLING PRICE			$*		$202,271*		$202,271*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 220854211 SPECIAL TOOLS DESIGN

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	5,593	38,154			5,593	38,154
	B	31,195	164,554			31,195	164,554
	C	2,706	11,342			2,706	11,342
	D	1,427	4,312			1,427	4,312
	E						
2. BURDEN			258,560				258,560
3. COMPUTER							
4. TRAVEL			2,015				2,015
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	40,921*	$478,937*	*	$*	40,921*	$478,937*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$478,937*		$*		$478,937*
1. G&A, IRAD, GEN. RES.			$69,734*		$*		$69,734*
2. ESTIMATED TOTAL COST			$548,671*		$*		$548,671*
3. PROFIT			$54,892*		$*		$54,892*
4. SELLING PRICE			$603,563*		$*		$603,563*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 220854212 SPECIAL TEST EQUIP DESIGS

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	1,895	12,786			1,895	12,786
	B	16,595	86,670			16,595	86,670
	C	4,495	18,640			4,495	18,640
	D	554	1,680			554	1,680
	E						
2. BURDEN			150,416				150,416
3. COMPUTER			17,702				17,702
4. TRAVEL							
5. PURCHASES			600				600
6. PURCHASE BURDEN			34				34
	TOTAL	23,539*	$288,528*	*	$*	23,539*	$288,528*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		2,036	6,864			2,036	6,864
2. BURDEN			13,394				13,394
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	2,036*	$20,258*	*	$*	2,036*	$20,258*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$308,786*		$*		$308,786*
1. G&A, IRAD, GEN. RES.			$43,432*		$*		$43,432*
2. ESTIMATED TOTAL COST			$352,218*		$*		$352,218*
3. PROFIT			$35,225*		$*		$35,225*
4. SELLING PRICE			$387,443*		$*		$387,443*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 220854241 SPECIAL TOOLS HARDWARE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A							
B							
C		3,715	19,528			3,715	19,528
D		6,923	28,859			6,923	28,859
E							
2. BURDEN			67,046				67,046
3. COMPUTER			872				872
4. TRAVEL							
5. PURCHASES			6,596				6,596
6. PURCHASE BURDEN			364				364
	TOTAL	10,638*	$123,265*	*	$*	10,638*	$123,265*
B. ENGINEERING-SSC							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		9,278	31,362			9,278	31,362
2. BURDEN			60,676				60,676
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			40,041				40,041
7. SUBCONTRACT BURDEN			2,282				2,282
	TOTAL	9,278*	$134,361*	*	$*	9,278*	$134,361*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$257,626*		$*		$257,626*
1. G&A, IRAD, GEN. RES.			$36,954*		$*		$36,954*
2. ESTIMATED TOTAL COST			$294,580*		$*		$294,580*
3. PROFIT			$29,465*		$*		$29,465*
4. SELLING PRICE			$324,045*		$*		$324,045*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 220854242 SPECIAL TEST EQUIP HDWRE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	293	1,992			293	1,992
	B	162	854			162	854
	C	1,140	4,777			1,140	4,777
	D	92	274			92	274
	E		10,563				10,563
2. BURDEN							
3. COMPUTER			8,500				8,500
4. TRAVEL			480				480
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	1,687*	$27,440*	*	$*	1,687*	$27,440*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		6,269	21,083			6,269	21,083
2. BURDEN			41,439				41,439
3. COMPUTER			37,470				37,470
4. PURCHASES			2,101				2,101
5. PURCHASE BURDEN			37,167				37,167
6. SUBCONTRACT			2,118				2,118
7. SUBCONTRACT BURDEN							
	TOTAL	6,269*	$141,378*	*	$*	6,269*	$141,378*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$168,818*		$*		$168,818*
1. G&A, IRAD, GEN. RES.			$23,599*		$*		$23,599*
2. ESTIMATED TOTAL COST			$192,417*		$*		$192,417*
3. PROFIT			$19,246*		$*		$19,246*
4. SELLING PRICE			$211,663*		$*		$211,663*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085430 SIL REFURBISHMENT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A	48	347			48	347
	B	1,612	8,966			1,612	8,966
	C	191	875			191	875
	D						
	E						
2. BURDEN			12,033				12,033
3. COMPUTER							
4. TRAVEL							
5. PURCHASES			300				300
6. PURCHASE BURDEN			17				17
	TOTAL	1,851*	$22,538*	*	$*	1,851*	$22,538*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		1,749	6,157			1,749	6,157
2. BURDEN			11,700				11,700
3. COMPUTER			368				368
4. PURCHASES			26,816				26,816
5. PURCHASE BURDEN			1,475				1,475
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	1,749*	$46,516*	*	$*	1,749*	$46,516*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$69,054*		$*		$69,054*
1. G&A, IRAD, GEN. RES.			$10,159*		$*		$10,159*
2. ESTIMATED TOTAL COST			$79,213*		$*		$79,213*
3. PROFIT			$7,921*		$*		$7,921*
4. SELLING PRICE			$87,134*		$*		$87,134*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085910 PSCS COMMON

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A	90	780			90	780
	B						
	C						
	D						
	E						
2. BURDEN			459				459
3. COMPUTER							
4. TRAVEL			820				820
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	90*	$2,059*	*	$*	90*	$2,059*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$2,059*		$*		$2,059*
1. G&A, IRAD, GEN. RES.			$287*		$*		$287*
2. ESTIMATED TOTAL COST			$2,346*		$*		$2,346*
3. PROFIT			$234*		$*		$234*
4. SELLING PRICE			$2,580*		$*		$2,580*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085920 PSCS SOFTWARE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B	821	5,516			821	5,516
	C	1,485	7,737			1,485	7,737
	D	511	2,098			511	2,098
	E						
2. BURDEN			14,323				14,323
3. COMPUTER			9,150				9,150
4. TRAVEL			1,800				1,800
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	2,817*	$40,624*	*	$*	2,817*	$40,624*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$40,624*		$*		$40,624*
1. G&A, IRAD, GEN. RES.			$5,602*		$*		$5,602*
2. ESTIMATED TOTAL COST			$46,226*		$*		$46,226*
3. PROFIT			$4,623*		$*		$4,623*
4. SELLING PRICE			$50,849*		$*		$50,849*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 22085930 SOFTWARE VALID TEST

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B	333	2,264			333	2,264
	C	178	938			178	938
	D						
	E						
2. BURDEN			2,636				2,636
3. COMPUTER			1,650				1,650
4. TRAVEL			120				120
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	511*	$7,608*	*	$*	511*	$7,608*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$7,608*		$*		$7,608*
1. G&A, IRAD, GEN. RES.			$1,119*		$*		$1,119*
2. ESTIMATED TOTAL COST			$8,727*		$*		$8,727*
3. PROFIT			$873*		$*		$873*
4. SELLING PRICE			$9,600*		$*		$9,600*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 32035111 COMMON DES & SUPPORT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A	462	4,002			462	4,002
	B	1,243	8,422			1,243	8,422
	C	175	923			175	923
	D						
	E						
2. BURDEN			9,639				9,639
3. COMPUTER			1,308				1,308
4. TRAVEL			2,110				2,110
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	1,880*	$26,404*	*	$*	1,880*	$26,404*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$26,404*		$*		$26,404*
1. G&A, IRAD, GEN. RES.			$3,778*		$*		$3,778*
2. ESTIMATED TOTAL COST			$30,182*		$*		$30,182*
3. PROFIT			$3,019*		$*		$3,019*
4. SELLING PRICE			$33,201*		$*		$33,201*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 32035112 TST SET DIG COMP UNIT DE2

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A		5,106	44,605			5,106	44,605
B		9,065	61,380			9,065	61,380
C		19,615	103,089	3,046	16,120	22,661	119,209
D		13,128	54,652			13,128	54,652
E		16,330	49,358			16,330	49,358
2. BURDEN			400,080		19,362		419,442
3. COMPUTER			43,512				43,512
4. TRAVEL			6,560				6,560
5. PURCHASES			2,000				2,000
6. PURCHASE BURDEN			114				114
	TOTAL	63,244*	$765,350*	3,046*	$35,482*	66,290*	$800,832*
B. ENGINEERING-SSC							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		2,840	9,599	835	2,822	3,675	12,421
2. BURDEN			18,572		5,461		24,033
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	2,840*	$28,171*	835*	$8,283*	3,675*	$36,454*
F. TECHNICAL PUBLICATIONS							
1. LABOR		1,269	5,905			1,269	5,905
2. BURDEN			5,300				5,300
3. TRAVEL							
4. PURCHASES			2,200				2,200
5. PURCHASE BURDEN			121				121
	TOTAL	1,269*	$13,526*	*	$*	1,269*	$13,526*
J. TOTAL FACTORY COSTS			$807,047*		$43,765*		$850,812*
1. G&A, IRAD, GEN. RES.			$116,147*		$6,382*		$122,529*
2. ESTIMATED TOTAL COST			$923,194*		$50,147*		$973,341*
3. PROFIT			$92,319*		$5,013*		$97,332*
4. SELLING PRICE			$1,015,513*		$55,160*		$1,070,673*

		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A							
B							
C		153	806			153	806
D							
E							
2. BURDEN			956				956
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	153*	$1,762*	*	$*	153*	$1,762*
B. ENGINEERING-SSC							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$1,762*		$*		$1,762*
1. G&A, IRAD, GEN. RES.			$259*		$*		$259*
2. ESTIMATED TOTAL COST			$2,021*		$*		$2,021*
3. PROFIT			$202*		$*		$202*
4. SELLING PRICE			$2,223*		$*		$2,223*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 3203514120 TEST SET DIG COMP UNIT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A			142	966	142	966
	B			488	2,626	488	2,626
	C						
	D						
	E			29	88	29	88
2. BURDEN					4,242		4,242
3. COMPUTER							
4. TRAVEL							
5. PURCHASES					200		200
6. PURCHASE BURDEN					11		11
	TOTAL	*	$*	659*	$8,133*	659*	$8,133*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR				16,514	55,918	16,514	55,918
2. BURDEN					108,816		108,816
3. COMPUTER							
4. PURCHASES					296,804		296,804
5. PURCHASE BURDEN					16,591		16,591
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	16,514*	$478,129*	16,514*	$478,129*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$486,262*		$486,262*
1. G&A, IRAD, GEN. RES.			$*		$69,206*		$69,206*
2. ESTIMATED TOTAL COST			$*		$555,468*		$555,468*
3. PROFIT			$*		$55,549*		$55,549*
4. SELLING PRICE			$*		$611,017*		$611,017*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 3203514240 MGE ST & TE HARDWARE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A B C D E		3,037	15,918			3,037	15,918
2. BURDEN			19,303				19,303
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	3,037*	$35,221*	*	$*	3,037*	$35,221*
B. ENGINEERING-SSC							
1. LABOR A B C D E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR A B C D E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$35,221*		$*		$35,221*
1. G&A, IRAD, GEN. RES.			$5,013*		$*		$5,013*
2. ESTIMATED TOTAL COST			$40,234*		$*		$40,234*
3. PROFIT			$4,024*		$*		$4,024*
4. SELLING PRICE			$44,258*		$*		$44,258*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 4201 TRAINING/REHEARSAL SUPP

	NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. COMPUTER						
4. TRAVEL						
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC						
1. LABOR						
A						
B			622	4,301	622	4,301
C			6,387	34,262	6,387	34,262
D						
E						
2. BURDEN				35,254		35,254
3. COMPUTER						
4. TRAVEL				11,416		11,416
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	7,009*	$85,233*	7,009*	$85,233*
D. CUSTOMER PREMISE						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING						
1. LABOR						
2. BURDEN						
3. COMPUTER						
4. PURCHASES						
5. PURCHASE BURDEN						
6. SUBCONTRACT						
7. SUBCONTRACT BURDEN						
TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS						
1. LABOR			2,631	12,356	2,631	12,356
2. BURDEN				11,085		11,085
3. TRAVEL				1,575		1,575
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	2,631*	$25,016*	2,631*	$25,016*
J. TOTAL FACTORY COSTS		$*		$110,249*		$110,249*
1. G&A, IRAD, GEN. RES.		$*		$15,993*		$15,993*
2. ESTIMATED TOTAL COST		$*		$126,242*		$126,242*
3. PROFIT		$*		$12,622*		$12,622*
4. SELLING PRICE		$*		$138,864*		$138,864*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 52065100 DCSG DEVELOPMENT FIXTURE

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B	343	2,319			343	2,319
	C	495	2,599			495	2,599
	D						
	E						
2. BURDEN			5,303				5,303
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	838*	$10,221*	*	$*	838*	$10,221*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR		839	2,821			839	2,821
2. BURDEN			5,549				5,549
3. COMPUTER							
4. PURCHASES			7,514				7,514
5. PURCHASE BURDEN			428				428
6. SUBCONTRACT			8,913				8,913
7. SUBCONTRACT BURDEN			508				508
	TOTAL	839*	$25,733*	*	$*	839*	$25,733*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$35,954*		$*		$35,954*
1. G&A, IRAD, GEN. RES.			$4,956*		$*		$4,956*
2. ESTIMATED TOTAL COST			$40,910*		$*		$40,910*
3. PROFIT			$4,092*		$*		$4,092*
4. SELLING PRICE			$45,002*		$*		$45,002*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 72 LV DOCUMENTATION

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C			2,414	12,760	2,414	12,760
	D						
	E			1,908	5,831	1,908	5,831
2. BURDEN					21,926		21,926
3. COMPUTER							
4. TRAVEL					1,230		1,230
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	4,322*	$41,747*	4,322*	$41,747*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT					12,152		12,152
7. SUBCONTRACT BURDEN					674		674
	TOTAL	*	$*	*	$12,826*	*	$12,826*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$54,573*		$54,573*
1. G&A, IRAD, GEN. RES.			$*		$7,867*		$7,867*
2. ESTIMATED TOTAL COST			$*		$62,440*		$62,440*
3. PROFIT			$*		$6,250*		$6,250*
4. SELLING PRICE			$*		$68,690*		$68,690*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 73 PHOTO DOCUMENTATION

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR				2,865	13,443	2,865	13,443
2. BURDEN					12,059		12,059
3. TRAVEL							
4. PURCHASES					3,335		3,335
5. PURCHASE BURDEN					203		203
	TOTAL	*	$*	2,865*	$29,040*	2,865*	$29,040*
J. TOTAL FACTORY COSTS			$*		$29,040*		$29,040*
1. G&A, IRAD, GEN. RES.			$*		$4,209*		$4,209*
2. ESTIMATED TOTAL COST			$*		$33,249*		$33,249*
3. PROFIT			$*		$3,328*		$3,328*
4. SELLING PRICE			$*		$36,577*		$36,577*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 8101 PLANNING & SCHEDULES

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A			5,591	48,837	5,591	48,837
	B			1,710	11,652	1,710	11,652
	C			719	3,771	719	3,771
	D						
	E						
2. BURDEN					40,978		40,978
3. COMPUTER							
4. TRAVEL					18,410		18,410
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	8,020*	$123,648*	8,020*	$123,648*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$123,648*		$123,648*
1. G&A, IRAD, GEN. RES.			$*		$17,783*		$17,783*
2. ESTIMATED TOTAL COST			$*		$141,431*		$141,431*
3. PROFIT			$*		$14,145*		$14,145*
4. SELLING PRICE			$*		$155,576*		$155,576*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 8102 FINANCIAL PLAN/CONTROL

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B						
	C			7,972	42,719	7,972	42,719
	D						
	E			1,595	5,042	1,595	5,042
2. BURDEN					48,243		48,243
3. COMPUTER							
4. TRAVEL					2,870		2,870
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	9,567*	$98,874*	9,567*	$98,874*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$98,874*		$98,874*
1. G&A, IRAD, GEN. RES.			$*		$14,399*		$14,399*
2. ESTIMATED TOTAL COST			$*		$113,273*		$113,273*
3. PROFIT			$*		$11,333*		$11,333*
4. SELLING PRICE			$*		$124,606*		$124,606*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CF NO. 8103 PERT/TIME

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A						
	B			1,577	10,744	1,577	10,744
	C			1,533	8,063	1,533	8,063
	D						
	E						
2. BURDEN					15,880		15,880
3. COMPUTER					3,300		3,300
4. TRAVEL					1,640		1,640
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	3,110*	$39,627*	3,110*	$39,627*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$39,627*		$39,627*
1. G&A, IRAD, GEN. RES.			$*		$5,708*		$5,708*
2. ESTIMATED TOTAL COST			$*		$45,335*		$45,335*
3. PROFIT			$*		$4,528*		$4,528*
4. SELLING PRICE			$*		$49,863*		$49,863*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 8201 LV CONFIG MGMT

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A			3,406	30,519	3,406	30,519
	B	158	1,071	3,770	25,845	3,928	26,916
	C	2,121	11,447	2,303	12,201	4,424	23,648
	D						
	E	629	1,961	2,501	7,621	3,130	9,582
2. BURDEN			14,586		60,508		75,094
3. COMPUTER							
4. TRAVEL					1,175		1,175
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	2,908*	$29,065*	11,980*	$137,869*	14,888*	$166,934*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			40,978				40,978
7. SUBCONTRACT BURDEN			2,274				2,274
	TOTAL	*	$43,252*	*	$*	*	$43,252*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$72,317*		$137,869*		$210,186*
1. G&A, IRAD, GEN. RES.			$10,465*		$20,090*		$30,555*
2. ESTIMATED TOTAL COST			$82,782*		$157,959*		$240,741*
3. PROFIT			$8,284*		$15,801*		$24,085*
4. SELLING PRICE			$91,066*		$173,760*		$264,826*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 8203 FACI PREP & CONDUCT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A	1,123	9,978			1,123	9,978
	B	1,162	8,051			1,162	8,051
	C	339	1,825			339	1,825
	D						
	E	308	964			308	964
2. BURDEN			14,631				14,631
3. COMPUTER							
4. TRAVEL			14,630				14,630
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	2,932*	$50,079*	*	$*	2,932*	$50,079*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$50,079*		$*		$50,079*
1. G&A, IRAD, GEN. RES.			$7,367*		$*		$7,367*
2. ESTIMATED TOTAL COST			$57,446*		$*		$57,446*
3. PROFIT			$5,744*		$*		$5,744*
4. SELLING PRICE			$63,190*		$*		$63,190*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 8301 QUALITY ASSURANCE

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
A							
B							
C		4,051	21,303			4,051	21,303
D							
E							
2. BURDEN			25,907				25,907
3. COMPUTER							
4. TRAVEL			840				840
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	4,051*	$48,050*	*	$*	4,051*	$48,050*
B. ENGINEERING-SSC							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE							
1. LABOR							
A							
B							
C							
D							
E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT			41,742				41,742
7. SUBCONTRACT BURDEN			2,336				2,336
	TOTAL	*	$44,078*	*	$*	*	$44,078*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$92,128*		$*		$92,128*
1. G&A, IRAD, GEN. RES.			$12,979*		$*		$12,979*
2. ESTIMATED TOTAL COST			$105,107*		$*		$105,107*
3. PROFIT			$10,510*		$*		$10,510*
4. SELLING PRICE			$115,617*		$*		$115,617*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 8302 LOGISTICS SUPP MGMT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR A B C D E		310	1,639			310	1,639
2. BURDEN			1,947				1,947
3. COMPUTER							
4. TRAVEL			520				520
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	310*	$4,106*	*	$*	310*	$4,106*
B. ENGINEERING-SSC							
1. LABOR A B C D E		3,405	23,445			3,405	23,445
2. BURDEN			17,247				17,247
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	3,405*	$40,692*	*	$*	3,405*	$40,692*
D. CUSTOMER PREMISE							
1. LABOR A B C D E							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES			7,395				7,395
5. PURCHASE BURDEN			407				407
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$7,802*	*	$*	*	$7,802*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$52,600*		$*		$52,600*
1. G&A, IRAD, GEN. RES.			$7,644*		$*		$7,644*
2. ESTIMATED TOTAL COST			$60,244*		$*		$60,244*
3. PROFIT			$6,029*		$*		$6,029*
4. SELLING PRICE			$66,273*		$*		$66,273*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 8303 PROCURE & PROD MGMT

		NON-RECURRING		RECURRING		TOTAL	
		HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR							
	A			2,099	18,486	2,099	18,486
	B			4,209	28,777	4,209	28,777
	C						
	D						
	E			2,099	6,427	2,099	6,427
2. BURDEN					42,544		42,544
3. COMPUTER							
4. TRAVEL					9,840		9,840
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	8,407*	$106,074*	8,407*	$106,074*
D. CUSTOMER PREMISE							
1. LABOR							
	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$106,074*		$106,074*
1. G&A, IRAD, GEN. RES.			$*		$15,366*		$15,366*
2. ESTIMATED TOTAL COST			$*		$121,440*		$121,440*
3. PROFIT			$*		$12,156*		$12,156*
4. SELLING PRICE			$*		$133,596*		$133,596*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 841 ENGINEERING MGMT

	NON-RECURRING		RECURRING		TOTAL	
	HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
A. ENGINEERING-ESC						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. COMPUTER						
4. TRAVEL						
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. COMPUTER						
4. TRAVEL						
5. PURCHASES						
6. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
D. CUSTOMER PREMISE						
1. LABOR						
A						
B						
C						
D						
E						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING						
1. LABOR						
2. BURDEN						
3. COMPUTER						
4. PURCHASES						
5. PURCHASE BURDEN						
6. SUBCONTRACT				123,822		123,822
7. SUBCONTRACT BURDEN				6,910		6,910
TOTAL	*	$*	*	$130,732*	*	$130,732*
F. TECHNICAL PUBLICATIONS						
1. LABOR						
2. BURDEN						
3. TRAVEL						
4. PURCHASES						
5. PURCHASE BURDEN						
TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS		$*		$130,732*		$130,732*
1. G&A, IRAD, GEN. RES.		$*		$18,438*		$18,438*
2. ESTIMATED TOTAL COST		$*		$149,170*		$149,170*
3. PROFIT		$*		$14,918*		$14,918*
4. SELLING PRICE		$*		$164,088*		$164,088*

FUNCTIONAL COST HOUR REPORT

CONTRACT DCSG PHASE II

SOW/CE NO. 842 TEST MANAGEMENT

		NON-RECURRING HOURS	NON-RECURRING DOLLARS	RECURRING HOURS	RECURRING DOLLARS	TOTAL HOURS	TOTAL DOLLARS
A. ENGINEERING-ESC							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
B. ENGINEERING-SSC							
1. LABOR	A			672	5,893	672	5,893
	B						
	C						
	D						
	E			1,155	3,559	1,155	3,559
2. BURDEN					9,265		9,265
3. COMPUTER							
4. TRAVEL							
5. PURCHASES							
6. PURCHASE BURDEN							
	TOTAL	*	$*	1,827*	$18,717*	1,827*	$18,717*
D. CUSTOMER PREMISE							
1. LABOR	A						
	B						
	C						
	D						
	E						
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
E. MANUFACTURING							
1. LABOR							
2. BURDEN							
3. COMPUTER							
4. PURCHASES							
5. PURCHASE BURDEN							
6. SUBCONTRACT							
7. SUBCONTRACT BURDEN							
	TOTAL	*	$*	*	$*	*	$*
F. TECHNICAL PUBLICATIONS							
1. LABOR							
2. BURDEN							
3. TRAVEL							
4. PURCHASES							
5. PURCHASE BURDEN							
	TOTAL	*	$*	*	$*	*	$*
J. TOTAL FACTORY COSTS			$*		$18,717*		$18,717*
1. G&A, IRAD, GEN. RES.			$*		$2,726*		$2,726*
2. ESTIMATED TOTAL COST			$*		$21,443*		$21,443*
3. PROFIT			$*		$2,141*		$2,141*
4. SELLING PRICE			$*		$23,584*		$23,584*

Rate Schedule

	1966		1967		1968		1969		1970	
	Hours	Rate	Hours	Rate	Hours	Rate	Hours	Rate	Hours	Rate
Engineering Labor										
A	21,199	$ 8.59	41,493	$ 8.76	12,813	$ 8.94	3,646	$ 9.12	1,864	$ 9.30
B	35,141	6.67	84,674	6.80	29,400	6.94	7,370	7.08	6,482	7.22
C	57,319	5.17	183,077	5.27	84,124	5.38	14,132	5.49	2,611	5.60
D	27,390	4.07	59,789	4.19	13,262	4.32	4,087	4.45	431	4.58
E	13,052	2.95	39,108	3.04	7,700	3.13	1,315	3.22	373	3.32
Manufacturing Labor	11,049	3.31	97,688	3.38	55,405	3.45	1,749	3.52		
Tech. Publication Labor	762	4.50	6,903	4.64	4,095	4.78	289	4.92		
Engineering Burden										
ESC	106,278	6.57	289,823	6.25	100,233	6.50	13,714	6.50	1,678	6.50
SSC	42,683	5.04	103,408	5.16	35,148	4.96	13,108	4.97	7,883	5.01
Customer Premise Burden	5,140	3.83	14,910	3.87	11,918	3.95	3,728	4.01	2,200	4.11
Manufacturing Burden	11,049	6.83	97,688	6.54	55,405	6.69	1,749	6.69		
Tech. Publication Burden	762	4.01	6,903	4.16	4,095	4.31	289	4.31		
Procurement Burden										
ESC		5.7%		5.5%		5.5%		5.5%		5.5%
SSC		5.4%		5.4%		5.4%		5.4%		5.4%
G & A		1.0%		1.0%		1.0%		1.0%		1.0%
IRAD		1.81%		1.81%		1.81%		1.81%		1.81%
General Research		10.4%		11.9%		11.9%		11.9%		11.9%

Section 9

FIXED PRICE INCENTIVE PLAN

Section 9

FIXED PRICE INCENTIVE PLAN

The contract shall contain appropriate recognition of Fixed Price Multiple Incentives relating to cost, schedule and technical performance.

The incentive parameters are as further defined below:*

Target Cost	$17,532,228	
Target Profit	1,753,223	
Target Price	$19,285,451	
Ceiling Price	$21,038,674	(120%)

*** Commercial equipment is not included in target or ceiling prices.**

9.1 COST PERFORMANCE

Cost performance shall be measured in accordance with the parameters as specified below. Determination of final cost actuals shall be in accordance with the audit as conducted by the cognizant Government Auditor.

Profit adjustment as a function of cost performance will be determined in accordance with the following:

1. **If actual costs are:**

   a. **Below $17,532,228 - then the profit shall be increased at a rate of $.30 for each dollar by which the actual cost is lower than the target cost.**

   b. **Between $17,532,228 and $18,032,228 - then no adjustment to the target profit shall be made.**

   c. **Between $18,032,229 and $18,532,229 - then the target profit shall be reduced at a rate of $.20 for each dollar by which the actual costs exceed the target costs.**

   d. **Between $18,532,229 and $19,032,229 - then the target profit shall be reduced at a rate of $.30 for each dollar by which the actual costs exceed the target costs.**

   e. **In excess of $19,032,230 - then the target profit shall be reduced at a rate of $.50 for each dollar by which the actual costs exceed the target costs.**

The share ratios cited above shall be attained sequentially, and the next higher level of penalty shall not take effect until the full range of the prior succeeding sharing ratio is exhausted.

9.2 SCHEDULE

Deliveries:

Item	Allocation	System No.	Date
C, KU, DU	G.E.	El. Sim.	6/15
C, KU, DU, PU	G.E.	Dev. Test	12/15
System (Total)	DAC	EDCTU	3/29
System (Total)	DAC	SIL	7/5
System (Total)	DAC	AVE 2	11/15
System (Total)	DAC	AVE 3	3/14
System (Total)	DAC	AVE 4	8/1
System (Total)	DAC	AVE 5	11/26

Incentive rewards and/or penalties shall be applied for actual delivery of the foregoing items of equipment in accordance with the contractually negotiated schedule. The rewards and/or penalties for each actual delivery item shall be determined in accordance with the following plan:

If actual delivery of each item is:

15-30 days late	- $1500 per day
8-14 days late	- $1000 per day
1-7 days late	± 0

The foregoing incentives shall operate to a maximum penalty of $31,000 per deliverable item, and to a total maximum penalty for all deliverable items of $248,000.

Actual delivery date shall be defined as the date upon which the hardware, with its acceptance documentation, is presented at the place of manufacture to the Air Force and/or Douglas representative for signature. Unavailability of the Air Force and/or Douglas representative at the time of hardware and documentation presentation shall toll the time periods specified for award/penalty calculation. The contractor shall make every effort to provide at least 48 hours notice of the availability of hardware and documentation for presentation and acceptance.

For purposes of award/penalty calculation, the number of days that an item is deemed delivered early or late shall be measured in terms of calendar days.

It is understood that for the deliverable items incentivized, as set forth herein, that individual components comprise the deliverable items. The individual components are the airborne digital computer, laboratory data adapter, keyboard unit, display unit, printer unit, and auxiliary memory unit. In the event that either the airborne digital computer or the laboratory data adapter are not delivered with the other components called for, then the penalties specified shall apply, regardless of the delivery of the other components. In the event that both the airborne

digital computer and the laboratory data adapter are delivered, and certain of the other components are not simultaneously delivered, the parties agree that 50% of the awards or penalties specified for each deliverable "system" shall apply.

9.3 TECHNICAL PERFORMANCE

Incentive awards and penalties shall be applied to both the weight of the first production flight system, and the orbital performance of certain defined flight systems, as further defined below:

9.3.1 WEIGHT

The actual weight of the DCSG system is presently defined at 235* pounds for target purposes. For further measurement of performance against this objective, the DCSG, consisting of the airborne digital computer, laboratory data adapter, keyboard unit, display unit, printer unit, and the auxiliary memory unit, shall be considered as a total system against the target weight.

Incentive rewards and penalties shall be applied against weights requirements in accordance with the following plan:

a. If the actual system weight is within +5 pounds of the mutually agreed target weight, no penalty or award will be applied.

b. If the actual weight exceeds the target weight, then the profit shall be reduced by $2000 per pound for weights that occur between 6 and 15 pounds over target, and shall be further reduced at a rate of $5000 per pound for all weight overages in excess of 15 pounds over target. The maximum penalty that may be incurred under the foregoing provisions shall not exceed $60,000.

c. If the actual weight is less than the target weight, then the profit shall be increased by $3000 per pound for weights that occur between 1 and 10 pounds under target, and shall be further increased at a rate of $5000 per pound for all weight underages in excess of 10 pounds under target.

9.3.2 FLIGHT

Flight incentives shall be measured in terms of awards/penalties attendant to launch delays and, secondly, in terms of on-orbit reliability.

For the operational measurement of the foregoing incentives, currently planned flights shall be considered and the measurements shall apply to each flight as further defined below.

* Does not include impact of connector and cooling flow change.

9.3.2.1 Launch Delays

Awards/penalties applicable to this incentive determination shall be applied to each flight as follows:

1) If no delays attributable to the DCSG are realized for a period of 72 hours prior to a scheduled launch, an award of $5000 shall be made.

2) If no delays attributable to the DCSG are realized for a period of more than five days prior to a scheduled launch, an award of $10,000 shall be made.

3) In the event that delays attributable to the DCSG cause launch delays in the time period less than 72 hours prior to scheduled launch, a penalty of $10,000 per flight will be assessed. The maximum penalty under this provision will be in the amount of $50,000.

9.3.2.2 On-Orbit Reliability

Awards/penalties applicable to this incentive determination shall be applied to each flight as follows:

1)(a) Incentives will be based on the ability to perform essential payload functions for a maximum of 180 operating hours of the presently planned mission duration, whichever first occurs. On any flight in which the essential functions cannot be completed due to failure of the system not correctable by switching to a redundant element, a penalty of $160,000 shall be assessed.

(b) For each flight that is completed successfully, the contractor shall receive an award in the amount of $100,000.

2) As a consequence of contract definitization, the parties agree to further define in detail the on-orbit parameters to be measured, the definitions of failure, detection and recording, and the documentation and criteria to be employed in evaluation of this objective. As initial assumptions, it is considered that essential programs are permanently stored in core memory, and, if the auxiliary memory has failed, are reloadable through the data link to the other computer. No failure shall be counted which is determined to have been caused by abnormal environmental or abnormal operation of other vehicle subsystems, or errors in operational programs. Occasional intermittents which might potentially be discovered in the

telemetry data, or intermittent conditions in the spacecraft shall not be interpreted as a DCSG failure unless it can be proven that they originated within the DCSG.

It is understood that further definition of meaningful flight incentives are in the process of development by Douglas. Such considerations will be included in the finalization of the flight incentive parameters to be measured.

Section 10

MOL TERMS AND CONDITIONS