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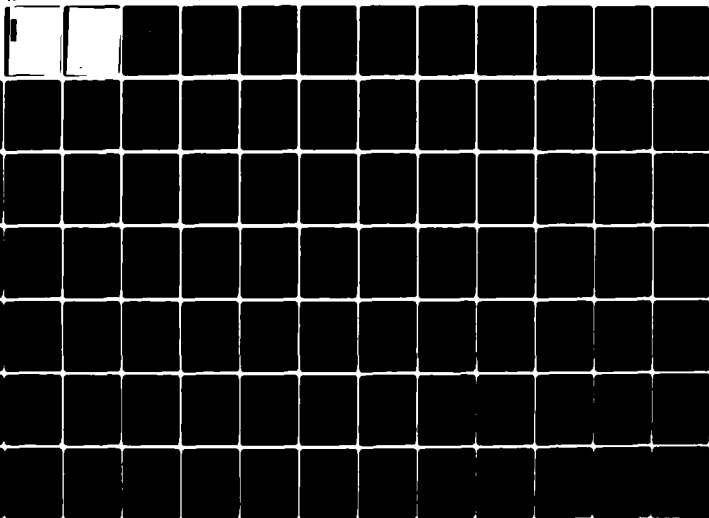
NAVAL SURFACE WEAPONS CENTER DAHLGREN VA
SYSTEM AND FORCE STRUCTURE COST ANALYSIS MODEL (SAFSCAM) USER'S--ETC(U)
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20. ABSTRACT (Continued)

In one computer run, SAFSCAM estimates and displays the static costs of the equipment and weapon systems relative to a specific fleet composition. The output includes four types of cost charts: the cost breakdown structure (CBS) elements by equipment for all ships in the fleet, the CBS elements by equipment for one ship in each class, the CBS elements for all ships in each class, and a summary of costs by ship class, equipment, contractor or government, and budget appropriation. The user has complete flexibility in the choice of the CBS, the level of detail to be costed, and the cost methodology. The model can use throughput costs and generate costs from cost estimating relationships (CERs).

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FOREWORD

The Combat Systems Department of the Naval Surface Weapons Center, Dahlgren, Virginia, was tasked by the Shipboard Intermediate Range Combat System (SIRCS) program office, PMS 404-40, to develop a computer model for use in estimating SIRCS life-cycle costs (LCCS).

The System and Force Structure Cost Analysis Model (SAFSCAM) was designed to meet this requirement. SAFSCAM development began in September 1976, by the late Dr. Barbara J. Bell, Combat Systems Department and Cornelia C. Mundy, Strategic Systems Department. It has been maintained and expanded by Michael R. Pabrinkis, Strategic Systems Department, and Carolyn P. Nelson, Combat Systems Department with direction from Alan R. Glazman, Combat Systems Department.

This technical report is the SAFSCAM User's Guide. It describes the model in terms of types of input data required, input formats, and output charts. Model documentation also includes a SAFSCAM Management Guide.

This report has been reviewed for accuracy by Alan R. Glazman.

Released by:

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SUMMARY

The System and Force Structure Cost Analysis Model (SAFSCAM) is a flexible computerized model that will be used by the Navy to facilitate weapon system life-cycle cost (LCC) estimates. SAFSCAM's basic purpose is to process and display equipment and weapon LCCs at the level of detail that will provide government program managers with the in-depth cost visibility required for orderly program planning and decision making.

To date, the model has generated weapon system LCC estimates for the Shipboard Intermediate Range Combat System (SIRCS) and the anti-ship missile defense (ASMD) programs. For these programs, the model proved useful in the following ways:

- Standardization of contractor estimates
- Independent cost capability
- Well-organized display of ship class and fleet LCC cost
- Concise display of LCC by budget appropriations
- Test the effects of programmatic changes
- Aid to performing top level trade-offs to system design

This report will describe the input and output of SAFSCAM in sufficient detail to allow the user to employ the model for cost estimation, evaluation, and analysis.

INTRODUCTION

BACKGROUND

SAFSCAM has a basis in the System LCC Model developed in 1975, for the ROLAND program office at the Missile Command (MICOM), Redstone Arsenal, Huntsville, Alabama. This model was designed to cost the ROLAND program. Its input and output formats and internal logic were specific to the costing needs of the ROLAND program; however, the model contained many of the features needed in a comprehensive cost model. Since the ROLAND model was programmed in FORTRAN IV on the CDC 7600 computer, and NSWC has a similar CDC 6700 computer, it was a logical candidate for the SIRCS program. The ROLAND model also has the ability to display, in one computer output, the costs by cost breakdown structure (CBS) for each equipment element in a weapon system. Thus, the costs of a total Navy system can be displayed. The model has been modified and expanded by the System's Cost and Simulation Branch, Combat Systems Department to make it a generalized LCC model.

SAFSCAM documentation consists of comments in the FORTRAN coding, the *User's Guide*, and the *Management Summary*.

CAPABILITIES

SAFSCAM's basic capability is that of processing and displaying equipment and weapon system LCC so that fast, flexible, and documented cost analyses can be performed. It allows the user complete flexibility in the choice of CBS elements to be displayed, the level of detail to be costed, and the cost methodology used to estimate system LCCs. The CBS is a data input to the model, and it is the same for each equipment element. SAFSCAM has the flexibility in the level of detail at which costs are estimated for any CBS element. Several subelements can be costed separately and then summed internally in the model to estimate the cost of a CBS element.

The model can use throughput costs or costs developed from cost estimating relationships (CERs).^{*} The throughput costs are those developed external to the model. CER forms are in the program code permitting parameter input to use a CER for a particular equipment and CBS element application. Learning curve theory is available within the CER forms to develop costs at any production quantity from a cost at another quantity. The production quantity for each equipment element can be calculated from input data. Costs for each CBS element can be assigned to budget appropriations.

At present, SAFSCAM output includes four major cost charts. The first chart gives a breakdown by equipment of the cost for each element in the CBS. The second set of charts shows the LCC by equipment per ship. The third chart gives the LCC summed over all equipment elements per ship class. The fourth chart gives a summary of costs per ship class by budget appropriations.

MODEL DESCRIPTION

SAFSCAM is programmed in FORTRAN IV EXTENDED with one small COMPASS subroutine. It is currently running on the CDC 6700 under the SCOPE 3.4 operating system. There are 16 subroutines and 1 function that requires approximately 150,000 octal words of central memory. Execution time varies from 3 to 300 seconds (s) depending on the size of the input. SAFSCAM is configured to consider 43 ship classes and 40 different equipments; however, it has been demonstrated that it can cost-out 100 equipments across 9 ship classes with minor changes to certain arrays. It is also possible to input equipment at the ship level and equipment components at the equipment level; thus, causing the model to cost many components across several equipment

^{*} A CER is a linear or nonlinear regression equation. It relates the cost of a product to some measurable characteristic such as weight, speed, range (cost-to-noncost), or with costs of other items (cost-to-cost). CERs may be developed from historical data.

configurations. Appendix A is a listing and further description of the SAFSCAM subroutines.

Figure 1 is a flow chart of SAFSCAM's major functions. It gives a broad description of how the model starts with input data, processes this data in several ways, and generates four major LCC charts. This report addresses SAFSCAM's input and output in sections labeled accordingly.

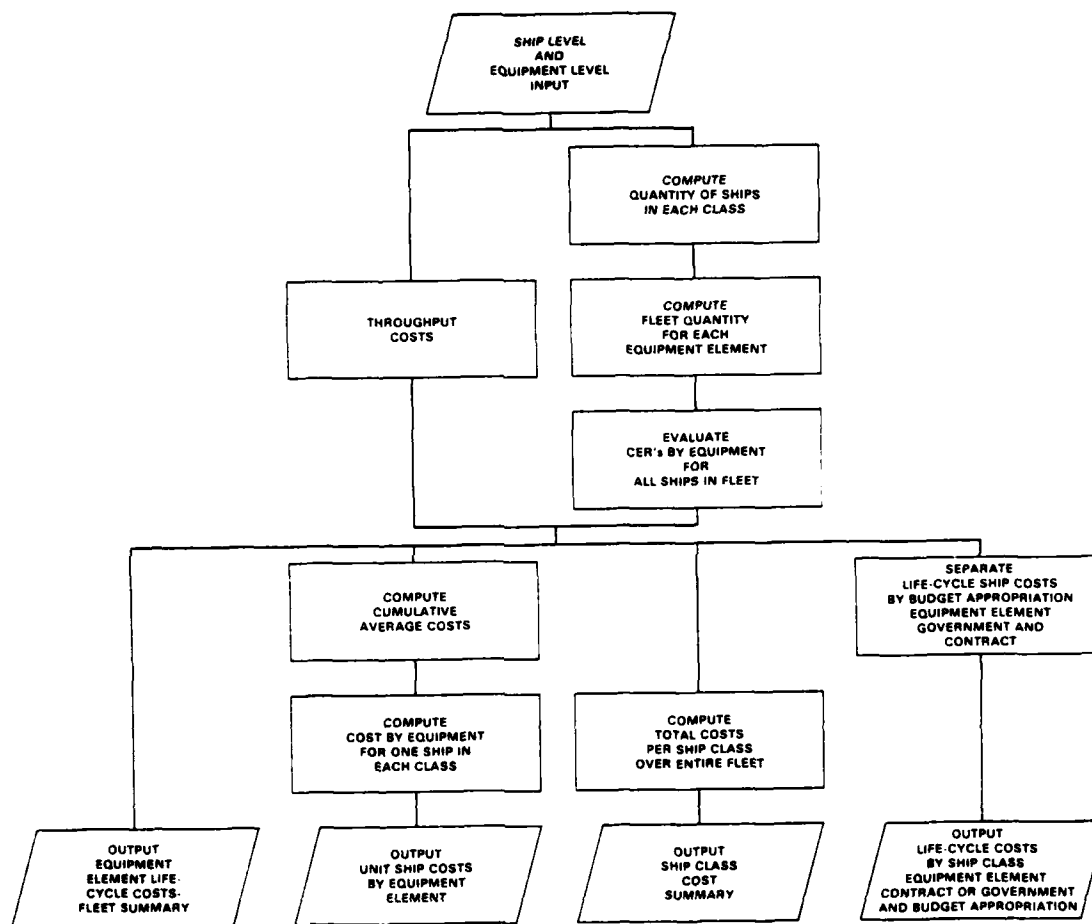


Figure 1. Major Functions of SAFSCAM

INPUT

This section of the *User's Guide* describes the input requirements of the model along with the mechanics of the cost estimating methodology. There are two basic levels of inputs needed for SAFSCAM: ship level (SL) and equipment level (EL) as shown in Figure 2.

The SL inputs are those that are independent of the equipment selected. These inputs include varying types of noncost information such as CBS, unit flyaway data, and installation schedule. The major portion of the input

is at the EL that includes equipment elements, quantities per ship, and equipment cost data.

- SHIP LEVEL
 - COST BREAKDOWN STRUCTURE (CBS)
 - BUDGET APPROPRIATION CODE BY CBS ELEMENT
 - UNIT FLYAWAY DATA
 - INSTALLATION SCHEDULE
- EQUIPMENT LEVEL
 - EQUIPMENT PER SHIP CLASS
 - EQUIPMENT COST DATA
 - THROUGHPUTS
 - CER DATA

Figure 2. SAFSCAM Input Levels

The input will be described in the same order as it is read by subroutine INPUPD.

1. Title and controls
2. Phase (SL)
3. CBS (SL)
4. Equipment elements per ship (EL)
5. Equipment element cost data
 - a. Throughput cost (EL)
 - b. CER data (EL)
6. Output control
7. Ship installation schedule (SL)
8. Unit flyaway data (SL)
9. Footnotes

Appendix B is the input format in summary form for easy use. The entire input stream is listed by the model as output and is given as a sample run in Appendix C.

TITLE AND CONTROLS

The first card of the input is the TITLE that identifies the case run. Its contents are the user's choice. The title can be coded anywhere in the first 26 columns. The second card, CONTROLS, provides some of the necessary controls for execution (see Table 1).

Table 1. Format for Title and Controls*

<u>Card Types</u>	<u>Input</u>	<u>Card Columns</u>	<u>Format</u>
1	TITLE	1-26	2A10, A6
2	NWBS	1-5	I5
	NPH	6-10	I5
	IPB(1)	11-15	I5
	IPB(2)	16-20	I5
	IPB(3)	21-25	I5

* TITLE defines the case run.
NWBS is the number of elements in the CBS.
NPH defines the number of life-cycle phases.
IPB(1), IPB(2), IPB(3) define the CBS element number at which a page break will occur in the output charts.

PHASE

The titles of the LCC phases, the first element number of the phases, and ROLLUP controls are defined on the PHASE cards. ROLLUP controls (NROLL) are the lowest cost levels for each phase at which the major LCC charts will be printed. The CBS can be input in great detail; however, the major cost charts may be desired at a reduced level. ROLLUP controls together with the cost level print control in the Output Control section provide for this reduced CBS level printout. The model allows up to four LCC phases (4 cards) as input (see Table 2). The standard breakdown is RDT&E, Investment, and Operations and Support.

Table 2. Format for Phase*

Card Type	Input	Card Columns	Format
3	IPHASE (1, K)	1-10	A10
	IPHASE (2, K)	11-20	A10
	IPH (K)	21-25	I5
	NROLL (K)	26-30	I5

* IPHASE (1, K) and IPHASE (2, K) define the Kth phase in two words (K takes on the values 1 to 4 depending on the phase that is being input). IPH (K) identifies the first CBS element number of the Kth phase. NROLL (K) defines the lowest cost element level to be printed in the output cards.

Figure 3 is an example of the first three types of input cards.

TEST CASE DATA

148	4	35	68	108		
					RDT&E	1 2
					PILOT PRODUCTION	36 3
					FULL PRODUCTION	69 3
					OPERATION & SUPPORT	109 2

Figure 3. Title, Controls, and Phases

COST BREAKDOWN STRUCTURE

The CBS defines, in detail, the elements of the LCC phases of a program. The user must determine the elements to be included in the CBS. The elements would then be structured into a cost hierarchy indicating the relationship of each element to the entire CBS. An abbreviated list of CBS elements is given in Table 3. Some of the elements in the CBS are costed directly from input data as throughput costs or costed through the use of CERs. Costs for other CBS elements are the summation of costs for lower level elements.

Table 3. Cost Breakdown Structure

Element No.	Appropriation Code	CBS Element	Element No.	Cost Level
(1)	RDT&E	RDT&E phase	1	1
(2)		Investment phase	2	1
(3)	PROC	Nonrecurring	3	2
(4)		Recurring	4	2
(5)	PROC	Contractor	5	3
(6)	PROC	Government	6	3
(7)	OMN	Operations and support phase	7	1
(8)		Total	8	1

The inputs for each CBS element are the element number, the budget appropriation code, the element name, and the cost level (see Table 4).

Table 4. Format for CBS*

Card Types	Input	Card Columns	Format
4	SYSTEM	1-10	A10
	System name (e.g., SAFSCAM)	11-20	A10
5	TPUT	1-10	A10
6	CBS element number	1-20	2A10
	Budget appropriation code(s)	21-30	A10
	CBS element name	31-60	3A10
	CBS element number	61-70	A10
	Cost level	71-72	A2

* SYSTEM must be the first word of the system name card.

System name defines the name of the particular system that is being costed.

TPUT is input at this position to act as a signal to the model that a certain type of input will follow; namely, the CBS.

CBS element number is a unique identifier used in relating a throughput cost or CER cost data to a specific CBS element. The element number is an input in either the throughput or CER sections of the input data.

Budget appropriation code indicates the budget appropriation to which the cost of a CBS element should be allocated. These appropriations are research development, test and evaluation (RDT&E),

procurement (PROC), military construction-Navy (MCN), military personnel-Navy (MPN), and operations and maintenance-Navy (OMN). The PROC code may be further broken down to ship construction-Navy (SCN), weapon procurement-Navy (WPN) and other procurement Navy (OPN). This breakdown gives greater flexibility to the budget chart allowing for each equipment on each ship class to be assigned a different PROC code. Input of this breakdown occurs in the Equipment Elements per Ship section. A CBS element cost can be assigned to a single appropriation such as RTD&E or divided between two appropriations. If a CBS element cost is divided between two appropriations, this is indicated by RD/PR, PR/MC, MP/OM, etc.

CBS element name is a description of what costs are included for that CBS element.

CBS cost level (1-10) indicates the position of an element relative to the total structure of the CBS hierarchy. Lower-level costs (indicated by a higher cost level number) will be summed to all successively higher cost levels. For example, in Table 3, recurring contractor and government costs (cost level 3) will be summed to give total recurring investment cost (cost level 2).

Guidelines

The following guidelines should be used in developing the CBS.

1. Card type 6 is repeated for each element in the CBS.
2. Input data may be positioned in any of the columns within the appropriate fields. The system name and CBS element name can contain alphabetic, numeric, or special characters.
3. The designation of the CBS element number in columns 1-20 of card type 6 must begin with an open parenthesis and end with a closed parenthesis. Blanks are allowed before and after the element number within these parentheses. For example, "(15)" is valid.
4. The order of the CBS input will be the order in which the CBS elements will be displayed in the output charts. The CBS elements must be in a logical sequence, so that lower-level costs will be summed to the proper higher-level costs.
5. The CBS can have a maximum of 150 elements including the total. The allowable number of CBS elements can be increased, if necessary, by changing the record length in the FORTRAN coding.
6. The CBS applies to all equipment elements. If there is no cost data for a CBS element, a zero will be shown in the cost output charts.
7. The CBS element names can be indented to indicate the cost hierarchy. This indentation is not required.

8. Each CBS element must have an element number. This number is used to relate cost data to a CBS element.

9. Each CBS element must have a cost level (1-10). Lower-level costs (indicated by a higher cost level number) will be summed to all successively higher cost levels.

10. Each directly costed CBS element should have a code or codes indicating the budget appropriations to which the cost will be allocated. If no code is given, the cost will not be included in the LCC by the budget appropriations output chart. The cost of a CBS element can be allocated to one budget appropriation or divided between two appropriations. The desired split between appropriations is indicated by (1) the first two letters of each code separated by a "/" (e.g., RD/OM indicates that the cost will be divided between the RDT&E and OMN appropriations) and (2) the percentage of the cost allocated to each appropriation. These percentages are designated in a data statement in INPUDD.

11. A CBS element can have CONTRACTOR or GOVERNMENT as the first word of its name. This indicates how the cost is allocated in the LCC by budget appropriations output chart. If the cost is a summation of lower-level costs, all lower-level costs will be allocated appropriately to either CONTRACTOR or GOVERNMENT. These lower-level CBS elements should not have CONTRACTOR or GOVERNMENT as the first word of their names. If a CBS element has a budget appropriation code, but is not identified as contractor or government, the cost is added to the contractor cost for the particular appropriation codes.

EQUIPMENT ELEMENTS PER SHIP

The equipment elements to be installed and operated on each ship in a class are defined in this section of input. This input and the Ship Installation Schedule will be used to generate the total operational and investment equipment quantities for use in some of the cost output charts. Table 5 gives an example of the input for the ship class name and the name and quantities of the equipment to be installed and operated on each ship of that class (see Table 6).

Guidelines

The following guidelines should be observed for the equipment elements per ship input.

1. The input sequence is a card giving the ship class name followed by a card for each of the equipment elements on the ship class.
2. The investment quantity will be less than the operational quantity when some of the equipment has previously been installed on the ship.

3. It is assumed that all ships in a class have the same equipment and operational and investment quantities. If any ship in a class has unique equipment or quantities, the user can give this ship a unique class name (e.g., HOC-A) and list the equipment peculiar to that ship.

4. The maximum number of ship classes and equipment elements are: 43 ship classes, 29 equipment elements per ship class, and 40 unique equipment elements over all ship classes. (Coding changes may be made to alter this requirement).

5. The ship class name is preceded by the word, SHIPCLASS and the equipment element name is preceded by the word, EQUIPMENT. These words are required. The FORTRAN coding recognizes these words as indications that the following words are the name of a ship class or equipment element. The SHIPCLASS and EQUIPMENT cards (card types 8 and 9) are repeated until all ship classes and their equipments have been defined.

6. The ship class and equipment element names from this section of input will be used in the titles of the cost output charts. The names should be centered in the fields on card types 8 and 9 exactly as desired on the output charts. For example, first radar could be coded on card type 9 as FIRST and RADAR. On the output charts, this would appear as a two-line column heading FIRST.

RADAR

7. All ship class and equipment element names are read by the input editor subroutine INPUPD as strings of seven characters. Any alphabetic, numeric, or special character is valid. Where an equipment element name is best described by two strings (2 words), each word is read as a string of seven characters. This is done to allow names that will not fit in seven characters to be spread over two fields, and later used on two lines in the column headings of the cost output charts.

8. The first six characters of each ship class or equipment element name must be unique. This six-character string will be used to relate equipment elements per ship to the equipment elements' cost data. SAFSCAM forms the six-character string by inspecting the name fields, finding and left-justifying the first nonblank character and the next five characters including blanks with the provision that any string of consecutive interior blanks is compressed into one blank.

Table 5. Equipment Elements per Ship

	<u>Operational Quantity</u>	<u>Investment Quantity</u>	<u>Procurement Breakout</u>
Ship class A	1	1	OPN
Equipment first radar	2	1	SCN
Equipment missile	20	0	WPN
Ship class B			
Equipment first radar	1	1	OPN
Equipment missile	40	10	SCN

Table 6. Format for Equipment Elements per Ship*

Card Types	Input	Card Columns	Format
7	NPUT	1-4	A4
8	SHIPCLASS	1-10	A10
	First word of ship class name (e.g., CGN) centered	11-17	A7
	Second word of ship class name (e.g., CLASS) centered	21-27	A7
9	EQUIPMENT	1-10	A10
	First word of equipment element name (e.g., FIRST) centered	11-17	A7
	Second word of equipment Element name (e.g., RADAR) centered	21-27	A7
	Operational quantity per ship	41-45	A5
	Investment quantity per ship	51-59	A9
	SCN, WPN or OPN	61-63	A3
10	\$END	1-4	A4

* NPUT is placed on the card preceding all of the equipment elements per ship data to indicate that this particular type of data will follow. SHIPCLASS is placed in front of the actual name of the ship class to designate the ship class name as a storage key. EQUIPMENT precedes the name of the equipment to set up the equipment name as a storage key. SCN, WPN, or OPN are used to breakout the procurement costs into SCN, WPN, or OPN. \$END indicates the end of the equipment elements per ship data.

As an example of left-justification of the first nonblank character and compression of consecutive interior blanks to form a six-character string, consider the two words in the equipment element name: FIRE and CONTROL. SAFSCAM searches for the first nonblank character "F" and compresses the two blanks following the E to form the left-justified six-character string FIRE C.

An example of invalid names is the designation of two different radars as RADAR ONE and RADAR TWO. The first six characters RADAR are not unique.

EQUIPMENT ELEMENT COST DATA

Equipment element cost data may be entered as throughput or CER data. The method of costing can be different for each equipment element. Cost data for each equipment element is entered only once, even if the equipment is operated on more than one ship class. The order in which the equipment element cost data is entered is the order in which the column headings for the first two sets of cost output charts (Appendix C) will be printed. For each equipment element, the cost data can be placed in the TPUT or CER subsections. Throughput costs are entered in the TPUT subsection; CER cost data are entered in the CER subsection. These subsections can be in any order within an equipment element. For example, the CER subsection can precede the TPUT subsection. SAFSCAM identifies the subsection by the codes TPUT or CER. If there is no cost data for one of these subsections, the code need not be entered. For example, if all CBS elements for FIRST RADAR are costed by CERs, the TPUT subsection can be deleted (see Table 7).

Table 7. Format for Equipment Element Cost Data*

<u>Card Type</u>	<u>Input</u>	<u>Card Columns</u>	<u>Format</u>
11	EQUIPMENT	1-10	A10
	Equipment element name	11-30	2A10

* EQUIPMENT is an identifier to indicate that the cost data to follow will be for the equipment named. Equipment element name is the actual name of the equipment. It must be left-justified. The first six characters of the name must correspond exactly to the left-justified name in the Equipment Elements per Ship section.

Throughput Cost

Throughput cost data are those cost estimates external to SAFSCAM that do not require any calculation by the model for the first cost chart. Examples are costs of representative systems and LCCs that are fixed. For each equipment element, only one throughput cost per CBS element is allowed (see Table 8).

Table 8. Format for Throughput Costs*

<u>Card Types</u>	<u>Input</u>	<u>Card Columns</u>	<u>Format</u>
12	TPUT	1-4	A4
13	CBS element numbers	1-20	2A10
	CBS element cost	21-30	A10
	CBS element cost	31-40	A10
	CBS element cost	41-50	A10
	CBS element cost	51-60	A10
	CBS element cost	61-70	A10
	CBS element cost	71-80	A10

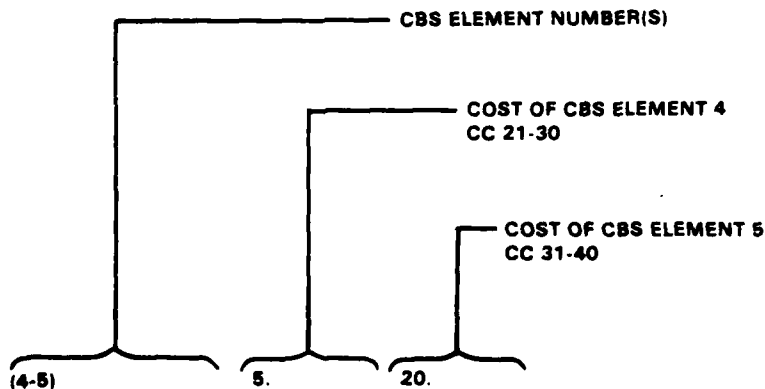
* TPUT indicates that throughput costs are to follow. CBS element numbers are the identifying number of the CBS elements for which costs are being entered. CBS element costs are the actual costs of the CBS element.

Guidelines

1. Card type 13 is repeated until all throughput costs have been entered.
2. Data can be entered in any of the columns within the appropriate fields.
3. The designation of the CBS element numbers in columns 1-20 must begin with an open parenthesis and end with a closed parenthesis. A sequence of numbers within these parentheses is indicated by a dash between the first and last numbers in the sequence (e.g., (4-5) and (7-10)).
4. A maximum of six costs can be entered on a card.
5. All costs on a card must be for sequential CBS elements and correspond in sequence to the CBS element numbers in columns 1-20. Examples are given below for CBS elements 4-5 and 7-10.

The throughput costs for CBS elements 4 and 5 are 5. and 20., respectively. The (4-5) indicates that the first cost in columns 21-30 will be for CBS element 4, and the next and last cost will be for CBS element 5.

6. An interruption in the CBS element number sequence requires that the next set of throughput costs be entered on another card.
7. Comment cards can be inserted in this subsection by entering an "*" in column 1.



CER Data

The cost of a CBS element can be estimated by a CER. These costs are referred to as CER data (Figure 6). A set of generalized CER equations (Table 9) has been incorporated in the FORTRAN coding. Each CER in Table 9 is a general equation containing no hard-coded parameter values. The set of CERs can be modified or increased by changing the coding in subroutine CERCOMP. In Table 9 each P represents an input parameter. This parameter could be a measureable characteristic or a factor calculated from a prior CER. A factor can be used in the calculation of another factor, until all information has been generated to cost a CBS element or subelement. When a particular cost is defined by a CER, the generalized forms from Table 9 that best suit the CER is chosen. Only the parameters P(1) through P(6) as specified by the cost data and needed by the CER form chosen are input as CER data.

Some of the CERs in Table 9 contain the symbols "Q1" or "Q2". These represent the total operations support quantity and investment quantity, respectively, of an equipment element over all ship classes. The quantities are calculated by SAFSCAM by multiplying the quantity of an equipment element on each ship in a class by the number of ships in that class and then summing over all ship classes (see Table 10).

EQUIPMENT & GUN										
CER	A	B	C	D	E	F	G	H	I	J
F 603	26	00	00	00	2.129000	1.106000	0.000000	0.000000	0.000000	0.000000
C 523	26	00	00	00	.250000	4.000000	0.000000	0.000000	0.000000	0.000000
C 530	16	00	00	00	.050000 F	50.000000	6.000000	0.000000	0.000000	0.000000
C 590	16	00	00	00	.100000 F	60.000000	0.000000	0.000000	0.000000	0.000000
C 630	16	00	00	00	.100000 F	50.000000	0.000000	0.000000	0.000000	0.000000
F 470	22	00	00	00	.40.000000	7.000000	0.000000	0.000000	0.000000	0.000000
F 60	16	00	00	00	.140000	16.200000	0.000000	0.000000	0.000000	0.000000
F 70	13	00	00	00	12.700000 F	6.000000	.022000	2000.000000	0.000000	0.000000
C 650	26	00	00	00 F	47.000000 F	7.000000	0.000000	0.000000	0.000000	0.000000
C 660	0	650			.090000	0.000000	0.000000	0.000000	0.000000	0.000000
F 80	18	00	00	00	.300400	0.000000	6.000000	1.230000	0.000000	0.000000
C 670	26	00	00	00 F	8.000000	10.000000	0.000000	0.000000	0.000000	0.000000
C 691	0	550			.020000	0.000000	0.000000	0.000000	0.000000	0.000000
C 692	0	670			.020000	0.000000	0.000000	0.000000	0.000000	0.000000
F 146	26	00	00	00	35.000000	1.000000	0.000000	0.000000	0.000000	0.000000
F 90	0	650			45.454545	0.000000	0.000000	0.000000	0.000000	0.000000
F 150	16	00	00	00	3.500000 F	9.000000	0.000000	0.000000	0.000000	0.000000
F 160	23	00	00	00 F	14.000000	15.000000	0.000000	0.000000	0.000000	0.000000
C 711	13	00	00	00	.020000	1.200000 F	14.000000	24.000000	0.000000	0.000000
C 712	13	00	00	00	.022000	1.200000 F	15.000000	24.000000	0.000000	0.000000
C 713	13	00	00	00	.060770	1.600000 F	16.000000	2.000000	0.000000	0.000000
C 714	13	00	00	00	.022000	1.600000 F	16.000000	360.000000	0.000000	0.000000

- A: Cost Element Row Number or Factor Number
 B: Designates whether CER value cumulates with another CER
 C: CER Number
 D: Cost Element Reference, e.g., CER for Row 66 dependent on row 65 computation
 E-J: CER parameter values
 O: No value entered

Figure 6. CER Cost Data

Table 9. CER Generalized Forms

CER Number	CER Form
1	$C = P(1) \times Q2^{P(2)}$
2	$C = P(1) \times Q2^{P(2)} / P(3)^{P(4)}$
3	$C = P(1) \times P(2)^{P(3)} / P(4)^{P(5)}$
4	$C = P(1) \times ((Q2 + P(2))^{P(3)} - P(2)^{P(3)})$
5	$C = P(1) \times ((Q2 + P(2))^{P(3)} - P(2)^{P(3)}) / P(4)^{P(5)}$
6	$C = P(1) \times ((P(2) + P(3))^{P(4)} - P(3)^{P(4)}) / P(5)^{P(6)}$
7	$C = P(1) \times P(2) \times Q2$
8	$C = P(1) \times \text{Cross-referenced CBS element cost}$
9	$C = P(1) \times P(2)^{P(3)} \times Q2^{P(5)}$
10	$C = P(1) \times P(2)^{P(3)} \times P(4)^{P(5)}$
11	$C = P(1) \times P(2)^{P(3)} \times P(4) \times P(5) \times P(6)$
12	$C = P(1) \times P(2) \times P(3) \times P(4)$
13	$C = P(1) \times P(2) \times P(3) / P(4)$
14	$C = P(1) \times P(2) \times P(3) \times P(4) \times P(5) \times P(6)$
15	$C = P(1) \times (P(2) + P(3) + P(4) + P(5) + P(6))$
16	$C = P(1) \times P(2) + P(3) \times P(4) + P(5) \times P(6)$
17	$C = P(1) + P(2) \times P(3) \times Q2$
18	$C = P(1) + P(2) \times P(3) \times P(4)$
19	$C = P(1) + P(2) \times P(3) \times P(4) \times P(5) \times P(6)$
20	$C = P(1) + P(2) \times P(3) \times P(4) \times P(5)^{P(6)}$
21	$C = P(1) \times P(2) \times P(3)^{P(4)} \times P(5)^{P(6)}$
22	$C = P(1) / (P(2) + P(3) + P(4))$
23	$C = P(1) + P(2) + P(3) + P(4) + P(5) + P(6)$
24	$C = P(1) \times Q1^{P(2)}$
25	$C = P(1) \times P(2)^{P(3)} \times Q1^{P(4)}$
26	$C = P(1) \times P(2) \times P(3) \times Q1$

Table 10. Format for CER Data*

Card Types	Input	Card Columns	Format
14	CER	1-3	A3
15	Calculation type (F = factor, C = CBS element or subelement)	6	A1
	Factor CBS element number	7-9	I3
	CBS subelement number (0 = a factor or no subelement, 1-6 = a subelement)	10	I1
	CER number	11-15	I5
	CBS element cross-reference number	16-19	I4
	CBS subelement cross-reference number (0=no subelement, 1-6 = a subelement)	20	I1
	Factor identification (F = factor, blank = value)	21	A1
	Parameter P(1) (Factor number or value)	22-30	F9.0
	Factor identification P(2)	31 32-40	A1 F9.0
	Factor identification P(3)	41 42-50	A1 F9.0
	Factor identification P(4)	51 52-60	A1 F9.0
	Factor identification P(5)	61 62-70	A1 F9.0
	Factor identification P(6)	71 72-80	A1 F9.0
16	ECER	1-4	A4
17	\$END	1-4	A4

* CER must precede the CER data to indicate that CER cost data will follow.

Calculation type - A CER can calculate either a factor to be used as a parameter in a succeeding CER or the cost of a CBS element (or subelement). A factor is designated by an "F"; a cost is designated by a "C".

Factor or CBS element number specifies either the factor or the line item in the CBS. The factor number is not related to any CBS element. It does not have to be the same as the number of a CBS element for which it is later used as a parameter.

CBS subelement number - A CBS line item can be broken down into a subelement, each of which is costed separately. Up to six subelements are allowed for each CBS element. A subelement cost is indicated by the numbers "1" through "6". Subelements can be costed in any order. The costs for each subelement are added to whatever cost is in the computer storage location for the CBS element. The subelement costs are added to any throughput cost previously entered for the CBS element. A "0" in this field initializes the computer storage location to zero. This is used only when no throughput costs have been entered for this CBS element, and there are no subelements.

CER number - The number of the CER from Table 9 that is to be used in the calculation of this factor or cost.

CBS element cross-reference number is the identification of a previously costed CBS element. It is entered as "0", except when CER 8 is specified. CER 8 costs a CBS element as a function (e.g., percent) of a previously costed CBS element. CBS subelement cross-reference number can be used as a cross-reference. This field identifies the previously costed subelement. A "0" is entered if the reference is to the total cost of a CBS element.

Parameters P(1-6) can be either a value to be used directly in the CER or the number of a factor whose value is to be used in the CER. A factor is identified by entering "F" in the first column of the parameter field. A blank in the first column indicates that the remainder of the field contains a value to be used directly in the CER. Some CERs do not require six parameters. If a parameter is not required, the field should be left blank.

ECER indicates the end of CER data for a particular equipment.

SEND signals the end of cost data input for all equipments.

Guidelines

1. The maximum number of CER data cards is 150 per equipment element.
2. Card type 15 is repeated until all CER cost data have been entered. Factors and CBS element costs are calculated according to the input sequence of card type 15's. The sequence is at the user's option, with the following two exceptions:
 - a. A factor card must precede any CER cards in which that factor is used as a parameter.

b. A CBS element card must precede any CER cards in which a cross-reference is made to that cost.

3. The CER forms can be adapted by setting some of the parameters equal to 1 or 0. For example, if the CER form, $CER = P(1) \times P(2)$, is desired, CER 12 can be used by setting $P(3)$ and $P(4)$ equal to one. If the CER form $CER = P(1) + P(2) + P(3)$ is desired, CER 23 can be used by setting $P(4)$, $P(5)$, and $P(6)$ equal to zero.

4. Costs estimated by CERs can be added to a throughput cost.

An example of inputting CER data is given below. It is for estimating mission hardware production cost for the propulsion section of a missile. The cumulative average unit cost (in thousands of dollars) of 1000 motors (CAC (1000)) is estimated by the CER:

$$CAC(1000) = 0.066 \times I^{0.42}$$

where I is the total impulse in lb/sec

The total production cost could be estimated using the learning curve theory by the CER:

$$CTC = CAC(1000) \times Q^{1+b}/1000^b$$

where

CTC = Cumulative total cost

Q = Production quantity

b = learning-curve exponent

If $I = 10,000$ lb/sec, $Q = 2000$, and $b = 0.152$, then $CTC = \$5688K$. To input these as CER data, CER No. 10 from Table 9 is chosen for $CAC(1000)$ and labeled FACTOR 1.

$$CER \text{ No. } 10 \quad C = P(1) \times P(2)^{P(3)} \times P(4)^{P(5)}$$

where

$$P(1) = 0.066$$

$$P(2) = 10,000$$

$$P(3) = 0.42$$

$$P(4) = 1.$$

$$P(5) = 1.$$

FACTOR 1 = $0.066 \times 10,000^{0.42} \times 1.1$.

FACTOR 1 = 8.16K

For the CTC, CER No. 2 would be the best choice.

$$\text{CER No. 2 } C = P(1) \times Q_2^{P(2)} / P(3)^{P(4)}$$

where

$$P(1) = \text{FACTOR 1}$$

$$P(2) = 0.848$$

$$P(3) = 1000.$$

$$P(4) = 0.152$$

$$\text{CTC} = \text{FACTOR 1} \times 2000^{0.848} \times 1000^{0.152}$$

$$\text{CTC} = \$5688\text{K}$$

Q2 would be internally set to the calculated production quantity (2000).

OUTPUT CONTROL

The major cost output from SAFSCAM consists of four sets of charts. The user selects which cost output charts are to be printed by the output control card. All cost calculations for these four sets of charts are performed and stored regardless of the output control card. Setting the chart control equal to zero causes the particular chart to be printed. Any other number will suppress the printing (see Table 11).

SHIP INSTALLATION SCHEDULE

The ship installation schedule gives by ship class, the number of ships per year, or which equipment will be installed. It provides the fleet composite to be used in computing the total operational and investment quantities over all ship classes for each equipment element. The maximum number of installation years is 12. Installation can be spread over less than 12 years by leaving the appropriate fields blank. An example is given in Table 12, and the format is given in Table 13.

Table 11. Format for CER Data

<u>Card Type</u>	<u>Input</u>	<u>Card Columns</u>	<u>Format</u>
18	Equipment LCC (fleet summary) Chart 5 print control (0 = print chart)	1-3	I3
	Unit ship LCC by equipment Chart 6 print control (0 = print chart)	4-6	I3
	Ship LCC summary Chart 7 print control (0 = print chart)	7-9	I3
	LCC by budget appropriation Chart 8 print control (0 = print chart)	10-12	I3
	Cost level print control (0 = print complete CBS)	13-15	I3

Table 12. Ship Installation Schedule

<u>Ship Classes</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
DD-963	0	0	1	0	0	0
CGN	0	0	0	0	0	2

Guidelines

1. Card type 21 is entered for each ship class.
2. The first six characters of each ship class name must be left-justified and identical to those in the equipment elements per ship section of input. Identification is made from the unique first six characters of the ship class name.
3. The order in which the ship classes are entered does not have to correspond to the order in the Equipment Elements per Ship section.

Table 13. Format for Ship Installation Schedule*

<u>Card Types</u>	<u>Input</u>	<u>Card Columns</u>	<u>Format</u>
19	Comment card	1-80	8A10
20	NOYRS	1-5	I5
21	Ship class name - left- justified	1-16	A6, 4 X
	Number of ships outfitted in the first year	11-15	I5
	Number of ships outfitted in the twelfth year	66-70	I5

* Comment card allows the user to insert a comment concerning the input data. Its purpose is to separate the ship installation data from the CER data for quick proof checking. NOYRS defines the number of years over which the installation schedule will cover.

UNIT FLYAWAY DATA

The last section of ship level input is the unit flyaway data. It consists of a listing of the CBS element numbers whose costs are to be summed for the unit flyaway costs. Flyaway costs as defined in DOD Instruction 5000.28 are those cost elements that are related to the production of a usable end item of military hardware. Since the number and the arrangement of elements in the CBS can vary to meet user requirements, the numbers of the CBS elements to be included in unit flyaway costs must be provided as input (see Table 14).

Table 14. Format for Unit Flyaway Data

<u>Card Types</u>	<u>Input</u>	<u>Card Columns</u>	<u>Format</u>
22	Comment card	1-80	8A10
23	Number of CBS elements Included in unit flyaway costs	1-5	I5
24	CBS element number	1-5	I5
	CBS element number	6-10	I5
	CBS element number	11-15	I5
	CBS element number	16-20	I5
	CBS element number	21-25	I5
	CBS element number	26-30	I5
	CBS element number	31-35	I5
	CBS element number	36-40	I5
	CBS element number	41-45	I5
	CBS element number	46-50	I5
	CBS element number	51-55	I5
	CBS element number	56-60	I5
	CBS element number	61-65	I5
	CBS element number	66-70	I5
	CBS element number	71-75	I5
	CBS element number	76-80	I5

Card type 25 is repeated until the list of CBS element numbers is complete.

FOOTNOTES

The final section of input to SAFSCAM is the 10 footnote cards. The user has the option of adding footnotes to the first three major output charts. If no footnotes are desired, these cards are left blank (see Table 15).

Table 15. Format for Footnotes

<u>Card Types</u>	<u>Input</u>	<u>Card Columns</u>	<u>Format</u>
25	FNOTES	1-80	8A10
26	FNOTES	1-40	4A10

Card types 25 and 26 are input in pairs allowing for five footnotes and 120 characters per footnote.

OUTPUT

One of the prime objectives of SAFSCAM is to display cost data in a logical, traceable, and useful format. The program produces eight output sections to accomplish this task as follows.

1. Secondary Output
 - a. Input data file
 - b. Reformatted listing of the input file
 - (1) CBS
 - (2) Equipment elements cost data
 - (3) Ship installation schedule
 - (4) Equipment elements per ship
 - (5) CBS elements included in unit flyaway costs
 - c. CER evaluation by equipment element
 - d. Equipment quantities - fleet summary
2. Primary Cost Charts
 - a. Equipment element LOC - fleet summary
 - b. Unit ship costs by equipment element
 - c. Ship class cost summary
 - d. LOC by budget appropriations

Appendix C is a computer listing of a sample run illustrating the secondary output and the four primary cost output charts.

INPUT DATA FILE AND REFORMATTED LISTING

The first output of SAFSCAM is a listing of the input data file in card image form. This listing is used in checking and locating input errors. The reformatted input listing is next and may be used to check whether the program is decoding the data properly. Its main purpose, however, is to provide the input data in an organized and labeled manner so that it may be used as traceable backup for the cost items in final output charts. The ship installation schedule, equipment elements per ship chart, and the next two sections of the reformatted listing present a good summary of the elements of the system being costed. Both charts are in a format suitable for publication.

CER EVALUATION BY EQUIPMENT ELEMENT

The output in this section gives the user the immediate values of all calculations performed in the evaluation of the CERs. The left section of the page lists for each input the CBS element number or factor and the value of all parameters (P1...P6) that make up the CER (TEMP). A factor must be calculated prior to the evaluation of the CER in which it is used. The value of the factor is then shown as a parameter in its proper CER. The right section of the page displays the SUBELS array. If a particular CBS element is composed of several CERs, each CER is stored in SUBEL 1 through SUBEL 6. A throughout cost would be stored in SUBEL 7. The total cost is found in SUBEL 8 and is incremented each time a subelement is stored in the array. For a factor, no data is stored in SUBEL 1-8, but the value of the factor is found under the FACTOR column.

EQUIPMENT QUANTITIES--FLEET SUMMARY

Fleet operational and investment quantities for each equipment element are given in this section. The quantities are generated from the ship installation schedule and the equipment elements per ship. For each equipment element, the quantity per ship is multiplied by the number of ships in the class. This procedure is repeated for each ship class and then summed over all ship classes.

EQUIPMENT ELEMENT LCC--FLEET SUMMARY

LCCs are calculated for each equipment element using the fleet operational and investment quantities. These cost estimates from the SUBEL arrays are presented in Figure 7. It is the first of the four primary output charts. Up to 10 columns can be printed on a page. If there is only one column left to be printed on the next page, SAFSCAM will print nine columns of the one page and two on the next page. This rule also applies to the next two charts as shown in Figures 8 and 9.

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19.15.76.

ESCAM
AMPL. TESTCASE

EQUIPMENT ELEMENT LIFE CYCLE COSTS
61 SHIP FLEET SUMMARY
P O T A E PHASE
(FY77 \$M)

APPRO. ROW	COST ELEMENT	FIRST PADAP	1 GUN	4 GUN	MISSILE	TOTAL
1	PUTLE PHASE	57.04	0.00	0.00	1949.13	2006.17
2	CONTRACTOR	49.60	0.00	0.00	1729.64	1779.24
3	SYSTEMS PROGRAM MGT	0.00	0.00	0.00	121.50	121.50
4	SYSTEMS ENGINEERING	17.73	0.00	0.00	184.14	201.87
5	TEST MANPOWER PAY	21.56	0.00	0.00	1340.46	1402.52
6	DEVELOPMENT TAX	4.04	0.00	0.00	0.00	4.04
7	INDUSTRIAL FACILITIES	0.00	0.00	0.00	0.00	0.00
8	DATA	0.00	0.00	0.00	13.07	13.07
9	SUPPORT EQUIPMENT	5.33	0.00	0.00	10.00	15.33
10	GOVERNMENT	7.44	0.00	0.00	259.45	266.89
11	SYSTEMS PROGRAM MGT	0.00	0.00	0.00	14.23	14.23
12	SYSTEMS ENGINEERING	2.46	0.00	0.00	27.62	30.28
13	DEVELOPMENT TAX	5.94	0.00	0.00	207.14	213.08
14	DATA	0.00	0.00	0.00	7.44	7.44
15	SUPPORT EQUIPMENT	0.00	0.00	0.00	1.50	1.50

Figure 7. Equipment Element ICCs

SAFSCAM
SAMPLE TESTCASE

09/08/77
19.15.26.

A SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 51 SHIP FLEET
P O T A E PHASE
(FY77 \$M)

APPRO. ROW	COST ELEMENT	FIRST PADAP	MISSILE	4 GUN	TOTAL
1	PUTLE PHASE	0.04	47.91	0.00	47.95
2	CONTRACTOR	0.00	41.66	0.00	41.66
3	SYSTEMS PROGRAM MGT	0.00	2.93	0.00	2.93
4	SYSTEMS ENGINEERING	0.29	4.44	0.00	4.73
5	TEST MANPOWER PAY	0.35	33.26	0.00	33.61
6	DEVELOPMENT TAX	0.00	0.00	0.00	0.00
7	INDUSTRIAL FACILITIES	0.00	0.00	0.00	0.00
8	DATA	0.00	0.00	0.00	0.00
9	SUPPORT EQUIPMENT	0.09	0.26	0.00	0.35
10	GOVERNMENT	0.12	6.25	0.00	6.37
11	SYSTEMS PROGRAM MGT	0.00	0.00	0.00	0.00
12	SYSTEMS ENGINEERING	0.04	0.71	0.00	0.75
13	DEVELOPMENT TAX	0.07	4.39	0.00	4.46
14	DATA	0.01	0.16	0.00	0.17
15	SUPPORT EQUIPMENT	0.01	0.04	0.00	0.05

Figure 8. A Ship Class--Unit Ship Costs Equipment Element

UNIT SHIP COSTS BY EQUIPMENT ELEMENT

This set of charts (Figure 8) presents LCCs by equipment elements for one ship in a particular ship class. The cost for each equipment element is determined by multiplying the unit cost of equipment by the quantity of that equipment on one ship in the class. It is assumed that all ships in a class will have the same operational and investment quantities. There is an output chart for each ship class.

SHIP CLASS COST SUMMARY

This chart (Figure 9) gives the total cost over all equipment elements for each ship class and the fleet LCCs. LCC for each ship are calculated by multiplying the total column from the previous set of charts (Figure 8) by the number of ships in that class from the Ship Installation Schedule.

LCCs BY BUDGET APPROPRIATIONS

The budget appropriation chart (Figure 10) gives costs by ship class, equipment element, contractor versus government, and budget appropriations. LCCs from Figure 8 are separated according to those four criteria. For each ship class, the costs in each category are multiplied by the number of ships in the class.

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SAFSCA 4
SAMPLE TESTCASE

SHIP CLASS COST SUMMARY
LIFE CYCLE COSTS - 51 SHIP FLEET
R O T I I PHASE
(FY77 FM)

APPRO RYM	COST ELEMENT	A	B	C	D	E	TOTAL
1	2011 PHASE	586.17	923.54	414.00	63.69	58.77	2046.17
2	CONTRACTOR	509.71	803.08	360.00	55.38	51.10	1779.24
3	SYSTEMS PROGRAM MGT	35.12	54.75	24.55	3.79	3.10	121.30
4	SYSTEMS ENGINEERING	56.71	91.41	40.94	6.30	6.46	201.87
5	TEST HARDWARE FAT	403.41	632.60	241.54	41.63	39.12	1402.52
6	DEVELOPMENT TAC	.94	2.37	1.06	.16	.41	4.94
7	INDUSTRIAL FACILITIES	4.90	0.00	0.00	0.00	0.00	4.90
8	DATA	9.24	14.90	6.64	1.03	.90	33.07
9	SUPPORT EQUIPMENT	3.74	7.74	3.16	.49	.71	15.33
10	CONTRACTOR	76.46	120.46	54.00	4.31	7.67	266.89
11	SYSTEMS PROGRAM MGT	5.27	8.21	3.64	.57	.50	18.23
12	SYSTEMS ENGINEERING	6.51	13.71	6.15	.95	.97	30.29
13	TEST HARDWARE FAT	40.66	95.24	42.70	6.57	5.96	211.13
14	DEVELOPMENT TAC	2.02	3.29	1.44	.23	.24	7.26
15	SUPPORT EQUIPMENT	.59	1.35	.47	.07	.11	2.30

Figure 9. Ship Class Cost Summary

NAF CAM
SAMPLE TEST CASE

09/08/77
19.15.26.

LIFE CYCLE COSTS BY BUDGET APPROPRIATION
BY EQUIPMENT ELEMENT WITHIN SHIP CLASS
61 SHIP FLEET
(FY77 \$M)

	CODE	FPCC	MCN	MPN	CMN	SYS TOT
FIRST PAIR						
CONTRACTOR	4,060	31,962	6,000	0,700	0,000	38,662
GOVERNMENT	4,673	2,532	0,000	0,000	0,000	7,205
TOTAL (C+G)	8,733	34,494	6,000	0,700	0,000	45,869
MIDSHIP						
CONTRACTOR	47,633	23,868	0,000	0,000	0,000	71,501
GOVERNMENT	7,097	4,821	0,000	0,000	0,000	11,918
TOTAL (C+G)	54,730	28,689	0,000	0,000	0,000	83,419
LAST PAIR						
CONTRACTOR	4,000	6,000	0,000	0,000	0,000	10,000
GOVERNMENT	0,000	0,000	0,000	0,000	0,000	0,000
TOTAL (C+G)	4,000	6,000	0,000	0,000	0,000	10,000
SHIP CLASS TOTAL						
CONTRACTOR	51,123	67,830	6,000	0,700	0,000	125,653
GOVERNMENT	7,770	7,353	0,000	0,000	0,000	15,123
TOTAL (C+G)	58,893	75,183	6,000	0,700	0,000	140,776
61 SHIP FLEET TOTAL						
CONTRACTOR	177,274	179,413	6,000	0,700	0,000	363,387
GOVERNMENT	26,131	23,868	0,000	0,000	0,000	49,999
TOTAL (C+G)	203,405	203,281	6,000	0,700	0,000	413,386

Figure 10. LCCs by Budget Appropriation

APPENDIX A

DESCRIPTION AND LISTING OF SAFSCAM SUBROUTINES

This appendix is a brief description and listing of the subroutines and functions that make up SAFSCAM. Figure A-1 shows the relationship of the routines.

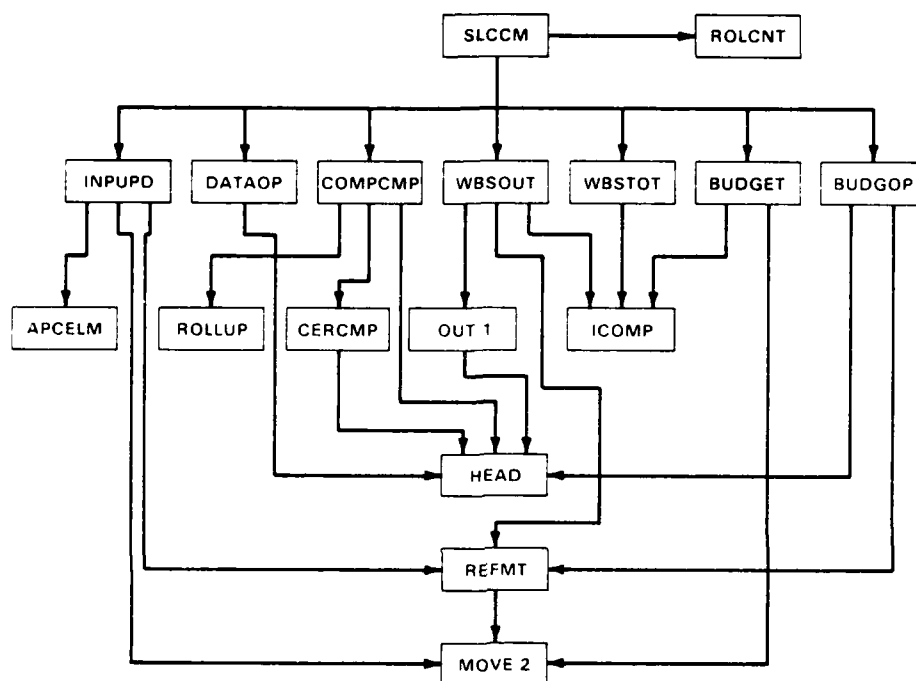


Figure A-1. Relationship of Routines

SLCCM is the main program that directs and controls all the operations. It calls all the primary subroutines as indicated in Figure A-1.

INPUPD reads and lists the input stream. It also sets up and initializes mass storage files for later use. The input is temporarily stored on a mass storage file.

DATAOP proofprints and reformats the input stream and stores it back on mass storage files. DATAOP also prints the reformatted backup cost data.

COMPCMP computes the LCC per equipment independent of ship class for all units of any class and stores the data on mass storage files.

CERCMP decodes the proper CER forms and computes the CBS element cost and stores them in the row array.

WBSOUT sets up the cost data and formats for printing in OUT1.

WBSTOT computes the equipment element cost totals for each ship. This routine is only called when the unit ship costs by equipment element chart is not used, but the equipment element cost totals are needed for other charts.

ROLCNT is called when ROLLUP control is selected and new line counts are needed for printing.

BUDGET divides the costs for each equipment on each ship class into budget appropriation codes and government or contractor costs.

BUDGOP sets up the budget cost data for printing.

APCELM sets up the IWORD array for printing. The IWORD array contains the appropriation code, CBS number, and the cost element names.

ROLLUP executes the ROLLUP procedure for automatically summing the CBS row entries.

OUT1 directs the output printing for the first three primary cost charts.

MOVE 2 is a machine language (COMPASS) routine that is used to move characters of input words into two specific locations of another word. It is used in decoding and testing input words.

HEAD is used to print the title and data on each page of output.

REFMT is used to reformat and shift data.

ICOMP is a function used to determine the position of a given equipment element in an array of ships and equipments.

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1      PROGRAM SLCCM (INPUT=192,OUTPUT=96,TAPE5=INPUT,TAPE6=OUTPUT,
C      TAPE2=256,TAPE3=256, TAPE4=256, TAPE7=1408,
C      TAPE8=384,TAPE9=256,TAPE10=256, TAPE11=1216)
C
C
C ***** SAFSCAM = SYSTEM FORCE STRUCTURE COST ANALYSIS MODEL *****
C
C SAFSCAM WAS WRITTEN IN 1975 BY CARL SINKBEIL, COMPUTER SCIENCE
C CORPORATION, HUNTSVILLE, AL. (256-837-7200) UNDER CONTRACT
C DAAH01-75-C-0007 FOR THE ARMY MISSILE COMMAND, REDSTONE ARSENAL
C AL, TO PROVIDE A LIFE CYCLE COST MODEL FOR THE ARMY SHORADS-
C ROLAND MISSILE SYSTEM. THIS MODEL, KNOWN AS THE ROLAND SYSTEM
C LIFE CYCLE COST MODEL (SLCCM) WAS OPERATED ON A CDC 7600 UNDER
C SCOPE 2.1.
C
C SLCCM WAS CHOSEN BY ALAN GLAZMAN, NSWC/DL (N-30) IN NOV, 1976
C FOR MODIFICATION AND EXECUTION ON A CDC 6700 UNDER SCOPE 3.4 TO CO
C SIMILAR MODELING FOR THE NAVY SIKCS (SHIPBOARD INTERMEDIATE
C RANGE COMBAT SYSTEM). AFTER MAJOR MODIFICATIONS UNDER THE
C SUPERVISION OF THE LATE DR. BARBARA BELL, SLCCM WAS CHANGED TO
C SAFSCAM.
C
C MODEL CHANGES WERE MADE BY THE FOLLOWING PERSONS:
C
C CONNIE MUNDY   NSWC/DLIK-74) AV249-7463   NOV 76 - MAR 77
C MIKE FAERINKIS NSWC/DLIK-74) AV249-7652   APR 77 - JAN 78
C CAROLYN NLLSON NSWC/DLIN-30) AV249-8575   FEB 78 - AUG 79
C
C ***** NAMES COMMON *****
C
C NMSYS      - NAME OF THE SYSTEM
C NOSUB      - TOTAL NUMBER OF SHIPCLASSES CONSIDERED
C NMSLB( , ) - NAME OF THE SHIPCLASS IN TWO WORDS
C NOCCMF( )  - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)
C             (RUNNING TOTAL FOR EQUIPMENTS)
C NMCCMF( , , ) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES
C             IN HUDOUT (INDEXED BY EQUIPMENT NUMBER
C             AND SHIPCLASS NUMBER)
C NAMESC( , ) - NAMES OF EQUIPMENT (2 WORDS, 7 CHARS EACH)
C             FOR EQUIPMENT QUANTITIES TABLE - FLEET
C             SUMMARY
C EQUI       - PRESENT EQUIPMENT (BEING PROCESSED)
C SHIPNM     - PRESENT SHIPCLASS (BEING PROCESSED)
C
C COMMON / NAMES / NMSYS, NOSUB, NMSLB(2,3), NOCCMF(43),
C 1 NMCCMF(2,10), NAMESC(100,2), EQUI, SHIPNM
C INTEGER EQUI, SHIPNM
C ***** MISC (MISCELLANEOUS) COMMON *****
C
C NAP        - COUNT OF DIFFERENT APPROPRIATION CODES
C APPRC( )   - APPROPRIATION CODE NAMES
C SPCL( , )  - PERCENTAGES FOR CBS ELEMENT COST SPLITS
C NPM        - COUNT OF THE LIFE CYCLE PHASES
C IPH( )     - FIRST CBS ELEMENT NUMBER OF EACH PHASE
C IPB( )     - CBS ELEMENT NUMBER FOR PAGE BREAKS

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C      (LAST CBS NUMBER FOR THE PAGE)
C      IPHASE( , ) - TITLES OF CBS PHASES
C      FLEETZ - FLEET (SYSTEM) SIZE
C      NROLL( ) - LOWEST COST ELEMENT LEVEL TO BE PRINTED
C      RDTOT - LOWEST LEVEL TO BE ROLLED UP WITHIN PHASE
C      TOTINV - TOTAL INVESTMENT COST MINUS TOTAL RIPOUT
C      TOTRIF - TOTAL RIPOUT COST
C      SMISRL - MISSILE FOTLE COST
C      NOFLY - NUMBER OF CBS ELEMENTS TO BE INCLUDED IN
C      FLYAWAY COSTS
C      IFLYRCH( ) - CBS ELEMENT NUMBER FOR FLYAWAY COSTS
C      NOYRS - NUMBER OF YEARS IN SHIP INSTALLATION TABLE
C      IYEARS - YEARS COVERED BY THE SHIP INSTALLATION TABLE
C      IYRS - NUMBER OF YEARS IN SHIP INSTALLATION TABLE
C      PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE)
C      FNOTES( , ) - FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS
C      COMMON / MISC / NAP,APPRO(7),SFCL(3,6,2),NPH,IPH(4),IPB(3),
1      IPHASE(2,4),FLEETZ,NROLL(4),RDTOT,TOTINV,TOTRIF,
2      SMISRL,NOFLY,IFLYRCH(25),NOYRS,IYEARS(12),IYRS,
3      FNOTES(5,12)
C      INTEGER APPRO,SPCL,FLEETZ
C      ***** INPUT COMMON *****
C      VARIOUS OTHER ARRAYS ARE EQUIVALENCED TO THE "ARRAY" ARRAY AS IN:
C      - SLECM : ROW = ARRAY(1,1)
C      - BUDGET : CG = ARRAY(1,2)
C      - INPUT : IOKEC = ARRAY(1,1)
C      - COMPCPF : FCW = ARRAY(1,1)
C      - APCELM : IRAY = ARRAY(1,1)
C      COMMON / INPUT / ARRAY(150,2)
C      ***** MS (LENGTH AND COUNTER) COMMON *****
C      LENR - MASS STORAGE UNITS COMMON RECORD LENGTH
C      (TYPICALLY 150)
C      NWBS - NUMBER OF ELEMENTS IN THE CBS (MAX 150)
C      ICGTR - NUMBER OF EQUIPMENTS IN THE EQUIPMENT
C      ELEMENTS TABLE
C      L150 - (150 WORDS) RECORD LENGTH OF 7 ARRAYS
C      IN THE "CERVL" COMMON
C      L900 - (900 WORDS) RECORD LENGTH OF 2 ARRAYS
C      IN THE "CERVL" COMMON
C      COMMON / MS2 / LENR,NWBS,ICGTR,L150,L900
C      ***** CSTAB (EQUIPMENT QUANTITIES) COMMON *****
C      CSTAB

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115      C      QCMFT      - QUANTITY OF EQUIPMENT ALREADY DEPLOYED      CSTAB      4
      C      (O & S) OVER ALL SHIPCLASSES (C1) (INTEGER)      CSTAB      5
      C      QCMFT2      - QUANTITY OF EQUIPMENT TO BE MANUFACTURED      CSTAB      6
      C      INSTALLED (INVESTMENT) OVER ALL SHIPCLASSES      CSTAB      7
      C      (Q2) (REAL)      CSTAB      8
120      C      CSTABLE      - SINGLY-DIMENSIONED ARRAY WHOSE MEMBERS ARE      CSTAB      9
      C      A SERIES OF:      CSTAB     10
      C      --SHIPCLASS NAME      CSTAB     11
      C      --O & S QUANTITY OF EQUIPMENT FOR EACH      CSTAB     12
      C      SHIP ON A PARTICULAR SHIPCLASS      CSTAB     13
125      C      --INV QUANTITY OF EQUIPMENT FOR EACH      CSTAB     14
      C      SHIP ON A PARTICULAR SHIPCLASS      CSTAB     15
      C      (THESE THREE MEMBERS ARE GIVEN FOR EACH      CSTAB     16
      C      SHIP CLASS MAKING A SERIES OF DATA TRIPLETS)      CSTAB     17
      C      (VALUES ARE INTEGER)      CSTAB     18
130      C      CSTABEL      - SINGLY-DIMENSIONED ARRAY OF THE INVESTMENT      CSTAB     19
      C      QUANTITY OF EQUIPMENT FOR EACH SHIP ON A      CSTAB     20
      C      PARTICULAR SHIPCLASS. DATA ELEMENTS MUST      CSTAB     21
      C      BE STORED IN THE SAME SHIPCLASS ORDER AS      CSTAB     22
      C      CSTABLE. THE TWO ARRAYS MAY BE THOUGHT      CSTAB     23
135      C      OF AS A SERIES OF DATA QUADRUPLETS.      CSTAB     24
      C      CSTAB     25
      C      CSTAB     26
      C      COMMON /CSTAB/QCMPT(100),QCMPT2(100),CSTABELE(3750),CSTABEL(1250)
      C      INTEGER QCMPT,CSTABLE      CSTAB     27
      C      CSTAB     28
140      C      ***** PARRAY (IREC ARRAY) COMMON *****      SHIPINS     2
      C      SHIPINS     3
      C      SHIPINS     4
      C      SHIPINS     5
      C      THE IREC ARRAY IS A SINGLY-SUBSCRIPTED ARRAY WHOSE FIRST POSITION      SHIPINS     6
145      C      IS THE TOTAL NUMBER OF UNIQUE SHIPCLASS/EQUIPMENT COMBINATIONS.      SHIPINS     7
      C      THE NEXT THREE POSITIONS START A SERIES OF TRIPLETS WHOSE      SHIPINS     8
      C      MEMBERS ARE: SHIPCLASS NAME, EQUIPMENT NAME, MS 3 INDEX.      SHIPINS     9
      C      IREC(1)      - THE RUNNING SUM OF THE TOTAL NUMBER OF UNIQUE      SHIPINS    10
      C      SHIPCLASS/EQUIPMENT COMBINATION IN THE      SHIPINS    11
150      C      EQUIPMENT LEVEL INPUT      SHIPINS    12
      C      IREC(2,5,6,      - THE NAME OF THE SHIP CLASS      SHIPINS    13
      C      11,ETC)      SHIPINS    14
      C      IREC(3,6,9      - THE NAME OF THE EQUIPMENT      SHIPINS    15
      C      12,ETC)      SHIPINS    16
155      C      IREC(4,7,10      - INDEX FOR MASS STORAGE UNIT 3. AN INTEGER      SHIPINS    17
      C      13,ETC)      NUMBER BEGINNING A 15 AND INCREMENTING BY      SHIPINS    18
      C      2 TO FORM 18,23,22,24,ETC. THIS INDEX IS      SHIPINS    19
      C      THE STARTING LOCATION OF A RECORD (LENGTH      SHIPINS    20
      C      "NMBS WORDS") ON MASS STORAGE 3 WHICH      SHIPINS    21
160      C      CONTAINS THE UNIT COSTS OF THE EQUIPMENTS      SHIPINS    22
      C      ON A UNIT SHIP (COMPLETED BY SUBROUTINE      SHIPINS    23
      C      COMFCMP).      SHIPINS    24
      C      SHIPINS    25
      C      SHIPINS    26
      C      COMMON / PARRAY / IRLC(3750)      SHIPINS    27
165      C      ***** SHIPINS (SHIP SUMMATION AND INSTALLATION TABLE) COMMON *****      SHIPINS    28
      C      SHIPINS    29
      C      SHIPSLM( )      - CONTAINS THE TOTAL NUMBER OF UNIT SHIPS FOR      SHIPINS    30
      C      EACH SHIP CLASS FOUND BY INSPECTION OF      SHIPINS    31
170      C      THE SHIP INSTALLATION TABLE      SHIPINS    32
      C      SINSTE( , )      - THE SHIP DEPLOYMENT/INSTALLATION SCHEDULE      SHIPINS    33

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	C	TABLE, FOR EACH SHIP CLASS:	SHIPINS	34
	C	SINSTR(X,1) - SHIP CLASS NAME	SHIPINS	35
	C	SINSTR(X,2-7) - THE YEARLY NUMBERS OF	SHIPINS	36
175	C	UNIT SHIPS OF THIS CLASS TO BE	SHIPINS	37
	C	DEPLOYED/INSTALLED	SHIPINS	38
	C	SHIFSP() - THE TOTAL NUMBER OF UNIT SHIPS FOR EACH	SHIPINS	39
	C	SHIP CLASS. IT IS THE SAME COUNT AS	SHIPINS	40
	C	SHIPSUM, HOWEVER, IT IS DEFINED IN A	SHIPINS	41
180	C	SPECIFIC ORDER AFTER EKFOR-CHECKING IN	SHIPINS	42
	C	SLOCM'S NESTED DO-LOOPS WHICH	SHIPINS	43
	C	DETERMINE THE TOTAL COSTS BY SHIP CLASS	SHIPINS	44
	C		SHIPINS	45
185	C	COMMON / SHIPINS / SHIPSUM(43), SINSTR(43,7), SHIFSP(43)	SHIPINS	46
	C	INTEGER SHIPSUM, SINSTR, SHIFSP	SHIPINS	47
	C		CERVLS	2
	C	***** CERVLS (COST ESTIMATING RELATIONSHIP (CER) VALUES) COMMON *****	CERVLS	3
	C		CERVLS	4
190	C	THE CERVLS COMMON CONTAINS LOCATIONS FOR STORAGE OF THE CER	CERVLS	5
	C	INPUT CARD COUNT, THE ROW ID'S, THE CER EQUATION NUMBERS, THE	CERVLS	6
	C	CROSS REFERENCE NUMBERS, THE INPUT PARAMETERS, THE ADDITION	CERVLS	7
	C	OF CERS CONTROL, STORAGE ARRAY FOR EQUIPMENT NAME, CER INDEX,	CERVLS	8
	C	AND INPUT/OUTPUT INDEXES FOR ALL EQUIPMENT INPUT.	CERVLS	9
195	C		CERVLS	10
	C	CERCT - NUMBER OF CER'S FOR THIS PARTICULAR EQUIPMENT	CERVLS	11
	C	(1 WORD)	CERVLS	12
	C	IFORC() - IF OR C) ALPHABETIC CHARACTER INDICATING	CERVLS	13
	C	'FACTOR' OR 'CER'. (150 WORDS)	CERVLS	14
200	C	IFOWIC - CBS ELEMENT NUMBER TO WHICH THIS CER APPLIES	CERVLS	15
	C	(150 WORDS)	CERVLS	16
	C	IAGO - CER CONTROL FLAGS (0 THRU 6) FOR ADDITIVE	CERVLS	17
	C	CERS OR SUBELEMENTS. 0 INDICATES NO ADDING.	CERVLS	18
	C	1 THRU 6 INDICATE ADD UP SUBELEMENTS.	CERVLS	19
205	C	(150 WORDS)	CERVLS	20
	C	ICERNC - REFERENCE NUMBER FOR CER EQUATIONS IN THE	CERVLS	21
	C	'CERCOMP' SUBROUTINE. (150 WORDS)	CERVLS	22
	C	IXREFNO - CBS ELEMENT NUMBER USED IN CROSS REFERENCING	CERVLS	23
	C	A PREVIOUSLY COMPUTED CBS ELEMENT. AT PRESENT	CERVLS	24
210	C	ONLY CER EQUATION NUMBER 8 ALLOWS CROSS	CERVLS	25
	C	REFERENCING. 0 INDICATES NO CROSS-REF.	CERVLS	26
	C	(150 WORDS)	CERVLS	27
	C	IXREFAO - CER CONTROL FLAGS FOR CROSS-REFERENCING	CERVLS	28
	C	CER SUB-ELEMENTS. (150 WORDS)	CERVLS	29
215	C	IFSTORE - STORES 'FACTOR' PARAMETERS. (900 WORDS)	CERVLS	30
	C	PSSTORE - STORES NUMERICAL PARAMETERS. (900 WORDS)	CERVLS	31
	C	ICEFI() - A SINGLY-SUBSCRIPTED ARRAY CONTAINING A	CERVLS	32
	C	MAXIMUM OF 100 DATA TRIPLETS WHOSE MEMBERS	CERVLS	33
	C	ARE:	CERVLS	34
220	C	ICEFI(1,4,7, - EQUIPMENT NAME	CERVLS	35
	C	ETC)	CERVLS	36
	C	ICEFI(2,4,8 - INDEX FOR MASS STORAGE UNIT 8. INDEX	CERVLS	37
	C	ETC) BEGINS AT 1 AND INCREMENTS BY 9 (1,10,19,	CERVLS	38
	C	ETC). THE FOLLOWING DATA RECORDS ARE	CERVLS	39
225	C	INDEXED:	CERVLS	40
	C	1 CERCT 6 IXREFNO	CERVLS	41
	C	2 IFORC 7 IXREFAO	CERVLS	42
	C	3 IFOWIC 8 IFSTORE	CERVLS	43
	C		CERVLS	44

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230 C          4 IADD          9 PSSTORE          CERVLS 45
C          5 ICERN          CERVLS 46
C          ICEF(1,6,9) - INDEX FOR MASS STORAGE UNIT 2 AND 3. CERVLS 47
C          INDEX BEGINS AT 18 AND INCREMENTS BY 2 CERVLS 48
C          (18,20,22,ETC) AND IS IDENTICAL TO THE CERVLS 49
C          THIRD MEMBER OF DATA TRIPLET STORED IN CERVLS 50
C          THE INEC ARRAY. CERVLS 51
235 C          SUBELS( , ) - SUBELS IS A CROSS-MATCHED ARRAY WHICH IS CERVLS 52
C          RELATED ONE-TO-ONE TO THE CBS. CERVLS 53
C          IT IS USED LOCALLY WITHIN 'COMPCMP' AND CERVLS 54
C          'CERCOMP' FOR INTERIM STORAGE OF UP TO CERVLS 55
240 C          SIX SUBELEMENTS, 1 THROUGH 6, AND 1 TOTAL CERVLS 56
C          VALUE FOR EACH CBS ELEMENT. CERVLS 57
C          FACTOR( ) - A FACTOR IS A PRECURSOR OF ONE OR MORE CERVLS 58
C          CERS. CERVLS 59
C          CERVLS 60
245 C          COMMON /CERVLS/ CEICCT, IFORC(150), IFORID(150), IADD(150), CERVLS 61
C          ICERN(150), IXREFND(150), IXREFAD(150), CERVLS 62
C          IFSTORE(6,150), PSSTORE(6,150), ICER(100), CERVLS 63
C          SUBELS(8,150), FACTORS(150) CERVLS 64
250 C          INTEGER CERCT CERVLS 65
C          CERVLS 66
C          ***** KOLUPCT COMMON ***** CERVLS 67
C          CERVLS 68
C          CERVLS 69
255 C          ***** CHARTS (CONTROL) COMMON ***** CHAFTS 2
C          CERVLS 3
C          CERVLS 4
C          CERVLS 5
C          CHRTCNT CONTAINS THE MAJOR OUTPUT CHART CONTROLS CHAFTS 6
C          0 - GENERATE CHART CHAFTS 7
C          1 - NO GENERATION OF CHART CHAFTS 8
260 C          CHRTCNT(1) - IF EQUAL TO 0 - CALLS WBSOUT(1) FOR EQUIPMENT CHAFTS 9
C          ELEMENT LIFE CYCLE COSTS - FLEET SUMMARY CHAFTS 10
C          CHRTCNT(2) - IF EQUAL TO 0 - CALLS WBSOUT(2) FOR UNIT CHAFTS 11
C          SHIP COSTS BY EQUIPMENT ELEMENT CHAFTS 12
265 C          - IF NE. TO 0 - CALLS WBSOTOT BECAUSE CHAFTS 13
C          WBSOUT(2) WAS NOT CALLED CHAFTS 14
C          CHRTCNT(3) - IF EQUAL TO 0 - CALLS WBSOUT(3) FOR SHIP CHAFTS 15
C          CLASS SUMMARY CHAFTS 16
270 C          CHRTCNT(4) - IF EQUAL TO 0 - CALLS BLDGOF FOR LIFE CHAFTS 17
C          CYCLE COSTS BY BUDGET APPROPRIATIONS CHAFTS 18
C          CHRTCNT(5) - IF NE. TO 0 - CALLS RCLCNT FOR OUTPUT BY CHAFTS 19
C          HULL-UP NUMBER CHAFTS 20
275 C          CHRTCNT(6) - IF EQUAL TO 0 - LISTS THE SUBELS ARRAY CHAFTS 21
C          FOR ENTIRE CBS FOR PROOFING CHAFTS 22
C          CHAFTS 23
C          CHAFTS 24
C          CHAFTS 25
C          COMMON / CHAFTS / CHRTCNT(15) CHAFTS 26
C          INTEGER CHRTCNT CHAFTS 27
280 C          ROW ARRAY IS EQUIVALENCED TO THE "ARRAY" ARRAY AND USED AS A COLUMN TO: SLCOM 39
C          - READ EBS COMPONENT UNIT COSTS FROM MASS STORAGE UNIT 3. SLCOM 40
C          - COMPUTE TOTAL FLEET EBS UNIT COSTS AND WRITE THEM ON MS UNIT 10. SLCOM 41
C          SLCOM 42
285 C          DIMENSION ROW(1) SLCOM 43
C          SLCOM 44

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	C	EQUIVALENC: (ROW, ARAY(1,1))	SLCCM	45
	C		SLCCM	46
	C	INITIALIZE 'HEAD' SUBROUTINE.	SLCCM	47
290	C	'HEAD' SUBROUTINE CAUSES A NEW PAGE AND PUTS TITLE AND SYSTEM	SLCCM	48
	C	NAME AT TOP OF THE NEW PAGE.	SLCCM	49
	C	*****	SLCCM	50
	C		SLCCM	51
	C	CALL HEAD1	SLCCM	52
295	C		SLCCM	53
	C	*****	SLCCM	54
	C	CALL "INPU0" SUBROUTINE TO:	SLCCM	55
	C	- DEFINE CONSTANTS	SLCCM	56
	C	- INITIALIZE INOLX, LENGTH AND COUNTER VARIABLES	SLCCM	57
300	C	- SET-UP AND INITIALIZE RECORD SPACES ON MASS STORAGE UNITS	SLCCM	58
	C	2, 3, 4, 9, AND 10	SLCCM	59
	C	- READ IN THE ENTIRE INPUT FILE AND STORE IT PIECE-MEAL ON	SLCCM	60
	C	THE APPROPRIATE MS UNIT. INPUT STREAM CONSISTS OF:	SLCCM	61
	C		SLCCM	62
305	C	- SHIP LEVEL INPUT	SLCCM	63
	C	- COST BREAKDOWN STRUCTURE (CBS)	SLCCM	64
	C	- BUDGET APPROPRIATION CODE BY CBS NO.	SLCCM	65
	C	- UNIT FLYAWAY DATA	SLCCM	66
	C	- SHIP INSTALLATION SCHEDULE	SLCCM	67
310	C	- EQUIPMENT LEVEL INPUT	SLCCM	68
	C	- EQUIPMENT PER SHIP CLASS	SLCCM	69
	C	- EQUIPMENT COST DATA	SLCCM	70
	C	- THROUGHPUT COST	SLCCM	71
	C	- CER DATA	SLCCM	72
315	C		SLCCM	73
	C	*****	SLCCM	74
	C		SLCCM	75
	C	CALL INPU0	SLCCM	76
	C		SLCCM	77
320	C	*****	SLCCM	78
	C	INITIALIZE TOTAL KOTAE AGGREGATE COST, TOTAL INVESTMENT	SLCCM	79
	C	AGGREGATE COSTS AND TOTAL AGGREGATE RIF-OUT COSTS FOR	SLCCM	80
	C	DETERMINING WBS FOR 1 PRIME AND 1 NAVY.	SLCCM	81
	C	ROTOT = 0.	SLCCM	82
325	C	TOTINV = 0.	SLCCM	83
	C	TOTRIP = 1.	SLCCM	84
	C	SMISKO = J.	SLCCM	85
	C		SLCCM	86
	C	COMPUTE THE SHIP CLASS SUMS OVER ALL INPUT YEARS	SLCCM	87
330	C	(COUNT THE NUMBERS OF UNIT SHIPS FOR EACH SHIP CLASS-SUBSYSTEM	SLCCM	88
	C	FOR EACH YEAR IN THE SHIP INSTALLATION TABLE)	SLCCM	89
	C		SLCCM	90
	C	DO 10 I=1,NOSUB	SLCCM	91
	C	SHIPSUM(I) = 0	SLCCM	92
335	C	DO 10 II=2,7	SLCCM	93
	C	SHIPSUM(II) = SHIPSUM(II) + SINSTB(I,II)	SLCCM	94
	C	10 CONTINUE	SLCCM	95
	C		SLCCM	96
	C	COMPLETE THE FLEET SIZE	SLCCM	97
340	C		SLCCM	98
	C	FLEETZ = J	SLCCM	99
	C	DO 11 II=1,NOSUB	SLCCM	100
			SLCCM	101

PROGRAM SLCCM

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	FLEETZ = FLEETZ + SHIPSUM(I1)	SLCCM	112
	11 CONTINUE	SLCCM	113
345	C	SLCCM	114
	C CALL "DATAOP" TO PROOF-PRINT THE INPUT DATA STREAM	SLCCM	115
	C READ AND STORED ON MASS STORAGE UNITS BY "INPUO".	SLCCM	116
	C	SLCCM	117
	C *****	SLCCM	118
350	CALL DATAOP	SLCCM	119
	C *****	SLCCM	120
	C COMPUTE WBS AND CBS	SLCCM	121
	C	SLCCM	122
355	NCER = 1	SLCCM	123
	NCT = IREC(1) * 3	SLCCM	124
	C	SLCCM	125
	C DO-LOOP 45 = MASTER LOOP TO COMPUTE UNIT COSTS	SLCCM	126
	C FOR EACH EQUIPMENT ACROSS COST BREAKDOWN STRUCTURE	SLCCM	127
361	C	SLCCM	128
	DO 45 I1=1,ICCTK	SLCCM	129
	I9 = I1	SLCCM	130
	EQUI = ICEN(INCEK)	SLCCM	131
	QCMP1(I1) = 0	SLCCM	132
365	QCMP2(I1) = 0.	SLCCM	133
	C	SLCCM	134
	C SUM QUANTITIES OF EQUIPMENT OVER ALL SHIP CLASSES	SLCCM	135
	C	SLCCM	136
	DO 40 I=1,NCT,3	SLCCM	137
370	I9J3 = (I+2) / 3	SLCCM	138
	IF(CSTABLE(I+1).NE.EQUI) GO TO 40	SLCCM	139
	C	SLCCM	140
	C FOR EACH "CCPF" FOUND IN "CSTABLE", MAKE CERTAIN THE SAME "CONF"	SLCCM	141
	C FOR EACH "EQUIP" FOUND IN THE "CSTABLE", MAKE CERTAIN THE SAME "EQUIP"	SLCCM	142
375	C IS DEPLOYED ON A SHIP CLASS IN THE "SINSTB"	SLCCM	143
	C	SLCCM	144
	DO 20 I3=1,NOSUB	SLCCM	145
	IF (CSTABLE(I).EQ. SINSTB(I3,1)) GO TO 30	SLCCM	146
	20 CONTINUE	SLCCM	147
380	C	SLCCM	148
	C ERROR MESSAGE - SHIP CLASS/"EQUIP" COMBO FROM "CSTABLE"	SLCCM	149
	C FAILED PROOF TEST IN "SINSTB"	SLCCM	150
	C	SLCCM	151
	WRITE (6,21) CSTABLE(I)	SLCCM	152
385	STOP "CSTABLE & SINSTB SHIP CLASS NAMES DO NOT CORRESPOND"	SLCCM	153
	21 FORMAT (1HJ, *SHIP *, A6, * IS NOT IN THE SHIP INSTALLATION*,	SLCCM	154
	1 * SCHEDULE*)	SLCCM	155
	C	SLCCM	156
	C SUM EQUIPMENT 'DEPLOYMENT' (O & S) QUANTITIES INTO THE "QCMP1"	SLCCM	157
390	C ARRAY (OQUAN & O)	SLCCM	158
	C SUM EQUIPMENT 'MANUFACTURE/INSTALL' (INVESTMENT) QUANTITIES INTO	SLCCM	159
	C THE "QCMP2" ARRAY (OQUAN2 & O2)	SLCCM	160
	C	SLCCM	161
	30 CONTINUE	SLCCM	162
395	QCMP1(I1) = QCMP1(I1) + SHIPSUM(I3) * CSTABLE(I+2)	SLCCM	163
	QCMP2(I1) = QCMP2(I1) + SHIPSUM(I3) * CSTABLE(I9J3)	SLCCM	164
	40 CONTINUE	SLCCM	165
	C	SLCCM	166
	C CALL "CORPCHE" (AND "CORCPP") TO GET UNIT EQUIPMENT COSTS	SLCCM	167
		SLCCM	168

PROGRAM SLCCM

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410	C	FROM TPLTS AND NPUTS (FACTORS & COST ESTIMATING RELATIONSHIPS),	SLCCM	159
	C	AND TO PERFORM TIME-PHASING AS NECESSARY.	SLCCM	160
	C	*****	SLCCM	161
	C	*****	SLCCM	162
	C	*****	SLCCM	163
405	C	CALL COMPCMP (I9,ICER(NCER+2),ICER(NCER+1),OCMPT(11),OCMPT2(11))	SLCCM	164
	C	*****	SLCCM	165
	C	NCER = NCER + 3	SLCCM	166
	C	45 CONTINUE	SLCCM	167
410	C	*****	SLCCM	168
	C	SECOND CALL OF "DATAP" SUBRTN PRINTS FOR EACH SHIP CLASS,	SLCCM	169
	C	THE UNIT SHIP DEPLOYMENT AND MFG/INSTALL EQUIPMENT QUANTITIES	SLCCM	170
	C	*****	SLCCM	171
	C	*****	SLCCM	172
415	C	*****	SLCCM	173
	C	CALL DATOP1	SLCCM	174
	C	*****	SLCCM	175
	C	*****	SLCCM	176
420	C	*****	SLCCM	177
	C	ORDER THE SHIP SUMMATIONS IN PROPER ORDER FOR PRINT	SLCCM	178
	C	USAGE AND SETUP STORAGE OF THE TOTAL NUMBER OF COMPONENTS	SLCCM	179
	C	PER SHIP CLASS. THIS LAST OUTPUT IS STORED ON UNIT 10 TO BE	SLCCM	180
	C	USED BY THE BUDGET ROUTINE.	SLCCM	181
	C	*****	SLCCM	182
425	C	NMBSP1 = NMBSP - 1	SLCCM	183
	C	IPH2 = IPH(2)	SLCCM	184
	C	IPHL = IPH(IPH1)	SLCCM	185
	C	INC = 3	SLCCM	186
	C	K = 3	SLCCM	187
430	C	KBY3 = K/3	SLCCM	188
	C	*****	SLCCM	189
	C	MAJOR DO-LOOP 49 TO READ EQUIPMENT UNIT COSTS FROM MS 3 INTO "ROW"	SLCCM	190
	C	MULTIPLY UNIT COSTS BY APPROPRIATE QUANTITY (Q OR Q2), AND	SLCCM	191
	C	PLACE RESULTS BACK IN "ROW" ARRAY & WRITE RESULTS ON MS UNIT 10.	SLCCM	192
435	C	*****	SLCCM	193
	C	THIS DO-LOOP COMPUTES FOR EACH SHIP CLASS THE SUMMARY COST	SLCCM	194
	C	OF EACH EQUIPMENT VS. CBS ELEMENTS	SLCCM	195
	C	*****	SLCCM	196
440	C	DO 49 ISUBS=1,NOSUB	SLCCM	197
	C	*****	SLCCM	198
	C	SETUP UNIT10 STORAGE INDEX	SLCCM	199
	C	*****	SLCCM	200
	C	INDEX10 = ICOMP(ISUBS)	SLCCM	201
445	C	*****	SLCCM	202
	C	SET UP BEGINNING AND ENDING INDICES FOR CBS DATA READ FROM MS 3	SLCCM	203
	C	*****	SLCCM	204
	C	IBEG = INDEX10*3 + 1	SLCCM	205
	C	IEND = IBEG + (NOCOMP(ISUBS) - 1) * 3	SLCCM	206
450	C	*****	SLCCM	207
	C	ORDER SHIP SUMMATIONS AND ERROR CHECKS FOR FIRST APPEARANCE	SLCCM	208
	C	OF SHIP CLASS NAME IN "SINSTB": IF FOUND, CONTINUE; IF NOT FOUND	SLCCM	209
	C	ABORT!	SLCCM	210
	C	*****	SLCCM	211
	C	FOR ALL TRIPLETS (SHIP CLASS/EQUIPMENT/MS3 INDEX) STORED IN THE	SLCCM	212
	C	"IIEC" ARRAY, THE SHIP CLASS NAME WILL BE CONSTANT FOR ALL TRIPLETS	SLCCM	213
455	C	OF THIS "ISUB" SHIP CLASS BETWEEN "IBEG - 2" AND "IEND"	SLCCM	214
	C	*****	SLCCM	215

	SHIPNM = IREC(IREG-2)	SLCCM	216
	DO 46 I1=1,NOSUB	SLCCM	217
	IONE = I1	SLCCM	218
460	IF (SHIPNM .EQ. SINSTD(I1,1)) GO TO 47	SLCCM	219
	46 CONTINUE	SLCCM	220
	WRITE (6,45) ISUBS,SHIPNM,NOSUB,IONE	SLCCM	221
465	FORMAT ('1FOR SHIP CLASS*,I3,* - *,A7,* SEARCHING*,I3,	SLCCM	222
	C * SUBSYSTEMS IN "SINSTE" ARRAY, "SLCCM" STOPPED *,	SLCCM	223
	C *WITH SEARCH-LOOP INDEX*,I3,* BUT NO MATCH!*)	SLCCM	224
465	STOP "IN SLCCM: DO-LOOP 46: SHIP NAME NOT FOUND IN SINSTD ARRAY"	SLCCM	225
	47 CONTINUE	SLCCM	226
	SHIPSM(ISUBS) = SHIPSUM(IONE)	SLCCM	227
	C	SLCCM	228
470	C MULTIPLY UNIT COSTS OF THE SHIP'S EQUIPMENT BY THE SHIP EQUIP-	SLCCM	229
	C MENT TABLE VALUES AND STORE ON MASS STORAGE UNIT 1)	SLCCM	230
	C	SLCCM	231
	C THE VARIOUS "IF" TESTS BETWEEN HERE AND "49" ASSURE PROPER MULTIPLIERS	SLCCM	232
	C AND SUMMATIONS ACCORDING TO THE NUMBER OF PHASE BREAKS IN THE "CBS"	SLCCM	233
475	C - EG) 1 PHASE = SIMPLE CBS	SLCCM	234
	C - EG) 2 PHASES = ASDO (ROTAE, INVESTMENT)	SLCCM	235
	C - EG) 3 PHASES = SIRUS (ROTAE, INVESTMENT, OAS)	SLCCM	236
	C IN ANY EVENT, THE "TO BE MANUFACTURED" QUANTITY IS USED FOR "ROTAE"	SLCCM	237
	C AND "INVESTMENT" PHASES; THE "DEPLOYED" QUANTITY IS USED FOR "OAS".	SLCCM	238
480	C	SLCCM	239
	DO 48 J=IREG,IEND,INC	SLCCM	240
	CALL READMS (3, ROW, NWBS, IREC(J))	SLCCM	241
	Q = CSTABL(K)	SLCCM	242
	Q2 = CSTABL(KBY3)	SLCCM	243
485	K = K + 3	SLCCM	244
	KBY3 = K/3	SLCCM	245
	DO 475 I=1,NWBSM1	SLCCM	246
	IF (IPM.EQ.2) GO TO 474	SLCCM	247
	IF (I.LT.IPHL) GO TO 474	SLCCM	248
490	ROW(I) = ROW(I) * Q	SLCCM	249
	GO TO 475	SLCCM	250
474	ROW(I) = ROW(I) * Q2	SLCCM	251
475	CONTINUE	SLCCM	252
	ROW(NWBS) = ROW(I) + ROW(IPM2) + ROW(IPHL)	SLCCM	253
495	IF (IPM2.EQ.IPHL) ROW(NWBS) = ROW(NWBS) - ROW(IPHL)	SLCCM	254
	CALL WRITPS (10, ROW, NWBS, INDX10)	SLCCM	255
	INDX10 = INDX10 + 1	SLCCM	256
	48 CONTINUE	SLCCM	257
	49 CONTINUE	SLCCM	258
500	C	SLCCM	259
	C PRINT A CHART OF TOTAL EQUIPMENT COSTS VS. CBS ELEMENTS	SLCCM	260
	C ACCORDING TO CHATCNT(1) INDICATOR (J=PRINT CHART)	SLCCM	261
	C	SLCCM	262
	IF(CHATCNT(1).NE.0) GO TO 50	SLCCM	263
505	C	SLCCM	264
	C CHATCNT(1) AND WBSOUT(1) CONTROL THE PRINTING AND	SLCCM	265
	C COMPUTATIONS FOR THE FIRST MAJOR OUTPUT CHART -	SLCCM	266
	C LIFE CYCLE COSTS - FLEET SUMMARY	SLCCM	267
	C	SLCCM	268
510	C	SLCCM	269
	CALL WFSOUT(1)	SLCCM	270
	C	SLCCM	271
	C	SLCCM	272

	50 CONTINUE	SLCCM 273
515	C	SLCCM 274
	C COMPUTE BUDGETARY CODE COSTS	SLCCM 275
	C	SLCCM 276
	DO 55 I=1,NUSUB	SLCCM 277
	NCONF = NCCGMP(I)	SLCCM 278
520	DO 55 J=1,NCONF	SLCCM 279
	C *****	SLCCM 280
	C	SLCCM 281
	CALL BLDGET (I, J)	SLCCM 282
	C	SLCCM 283
525	C *****	SLCCM 284
	55 CONTINUE	SLCCM 285
	C	SLCCM 286
	CHECK CHRTCNT(5) TO SEE IF OUTPUT BY ROLL-UP NUMBER	SLCCM 287
	IS REQUESTED. IF YES THEN CALL RCLCNT TO GET THE COST	SLCCM 288
530	ELEMENT COUNT AND VALUES FOR OUTPUT	SLCCM 289
	0 - FULL OUTPUT(NO), 1 - SELECTED OUTPLT(YES)	SLCCM 290
	C *****	SLCCM 291
	C	SLCCM 292
	IF(CHRTCNT(5).NE.0) CALL RCLCNT	SLCCM 293
535	C *****	SLCCM 294
	C	SLCCM 295
	CHECK CHRTCNT(2) TO SEE IF UNIT SHIP COST BY EQUIPMENT	SLCCM 296
	IS REQUIRED. (SECOND MAJOR OUTPUT CHART)	SLCCM 297
	0 - YES, 1 - NO	SLCCM 298
540	C	SLCCM 299
	IF(CHRTCNT(2).EQ.0) GO TO 70	SLCCM 300
	C	SLCCM 301
	IF CHRTCNT(2).NE.0, WBSOUT(2) IS NOT CALLED HOWEVER,	SLCCM 302
	UNIT SHIP CALCULATIONS ARE NEEDED THUS WBSOT IS CALLED	SLCCM 303
545	TO PERFORM THE NECESSARY COMPUTATIONS.	SLCCM 304
	C *****	SLCCM 305
	CALL WBSOT	SLCCM 306
	C	SLCCM 307
	C *****	SLCCM 308
550	GO TO 75	SLCCM 309
	C*	SLCCM 310
	CHRTCNT(2) AND WBSOUT(2) CONTROL THE PRINTING AND	SLCCM 311
	COMPUTATIONS FOR THE SECOND MAJOR OUTPUT CHART -	SLCCM 312
	UNIT SHIP COST BY EQUIPMENT	SLCCM 313
555	C	SLCCM 314
	70 CONTINUE	SLCCM 315
	C *****	SLCCM 316
	C	SLCCM 317
	CALL WBSOUT(2)	SLCCM 318
560	C *****	SLCCM 319
	C	SLCCM 320
	75 CONTINUE	SLCCM 321
	C	SLCCM 322
	TEST CHRTCNT(3) TO SEE IF SHIP SUMMARY CHARTS ARE TO	SLCCM 323
565	BE GENERATED	SLCCM 324
	0 - YES, 1 - NO	SLCCM 325
	C	SLCCM 326
	IF(CHRTCNT(3).NE.0) GO TO 80	SLCCM 327
570	C	SLCCM 328
		SLCCM 329

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	C CHRCNT(3) AND WBSQUT(3) CONTROL THE PRINTING AND	SLCCM	330
	C COMPUTATIONS FOR THE THIRD MAJOR OUTPUT CHART -	SLCCM	331
	C SHIP CLASS COST SUMMARY	SLCCM	332
	C	SLCCM	333
575	C	SLCCM	334
	CALL WBSQUT(3)	SLCCM	335
	C	SLCCM	336
	C	SLCCM	337
580	C 80 CONTINUE	SLCCM	338
	C	SLCCM	339
	C TEST CHRCNT(4) TO SEE IF BUDGETARY CODE COST CHART IS	SLCCM	340
	C TC BE GENERATED	SLCCM	341
	C 0 - YES, 1 - NO	SLCCM	342
585	C	SLCCM	343
	C IF(CHRCNT(4).NE.3) GO TO 60	SLCCM	344
	C	SLCCM	345
	C	SLCCM	346
	CALL BLEGGF	SLCCM	347
590	C	SLCCM	348
	C	SLCCM	349
	C 60 CONTINUE	SLCCM	350
	END	SLCCM	351
		SLCCM	352

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SUBROUTINE BUDGET

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C ***** MS (LENGTH AND COUNTER) COMMON *****
C
60 C      LENR      - MASS STORAGE UNITS COMMON RECORD LENGTH
C      (TYPICALLY 150)
C      NWBS      - NUMBER OF ELEMENTS IN THE CBS (MAX 150)
C      ICCTR      - NUMBER OF EQUIPPMENTS IN THE EQUIPMENT
85 C      L150      - (150 WORDS) RECORD LENGTH OF 7 ARRAYS
C      L190      - (190 WORDS) RECORD LENGTH OF 2 ARRAYS
C      L900      - (900 WORDS) RECORD LENGTH OF 2 ARRAYS
C      IN THE "CERVL" COMMON
C      IN THE "CERVL" COMMON
70 C
C      COMMON / MS2 / LENR,NWBS,ICCTR,L150,L190
C
C
75 C ***** NPUT COMMON *****
C
C      VARIOUS OTHER ARRAYS ARE EQUIVALENCED TO THE "ARAY" ARRAY AS IN:
C
80 C      - SLCCH : ROW = ARAY(1,1)
C      - BUDGET : CG = ARAY(1,2)
C      - INPUPT : IOKEC = ARAY(1,1)
C      - COMPCPP : ROW = ARAY(1,1)
C      - APCELP : IRAY = ARAY(1,1)
85 C
C      COMMON / NPUT / ARAY(150,2)
C
C      DIMENSION APSAV(150,2), CG(1), COL(150)
90 C
C      EQUIVALENCE (ARAY(1,2),CG)
C
C      INTEGER CHAR,APSAV,CG,APINDEX
C      INTEGER FCALL
95 C
C      AFINOX - INDEX ON FILE 3 FOR BEGINNING LOCATION FOR TEMPORARY
C      STORAGE OF APSAV(1,1) - 1ST PART APPRO
C      APSAV(1,2) - 2ND PART APPRO
C      CG 1 = CONTRACTOR
C      2 = GOVERNMENT
100 C
C      DATA AFINOX / 218 /
C      DATA FCALL / 0 /
C      IF (FCALL.EQ.1) GO TO 221
C      FCALL = 1
C      KK = 1
105 C*
C      READ AND STORE APPRO AND GOV/CENT
C      DO 200 I=1,5
C      CALL REACHS (3,ARAY,LENR,I)
C      NPP = LENR/5
C      DO 200 J=1,NPP
C      INOX = (I-1)*NPP+J
C      IF (INOX.GT.NWBS) GO TO 210
C      INOEX = J*5-4
C      IFLAG = 1
C      II = 1

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MS2      3
MS2      4
MS2      5
MS2      6
MS2      7
MS2      8
MS2      9
MS2     10
MS2     11
MS2     12
MS2     13
MS2     14
MS2     15
MS2     16
MS2     17
MS2     18
MS2     19
NPUT     2
NPUT     3
NPUT     4
NPUT     5
NPUT     6
NPUT     7
NPUT     8
NPUT     9
NPUT    10
NPUT    11
NPUT    12
NPUT    13
NPUT    14
BUDGET   7
BUDGET   8
BUDGET   9
BUDGET  10
BUDGET  11
BUDGET  12
BUDGET  13
BUDGET  14
BUDGET  15
BUDGET  16
BUDGET  17
BUDGET  18
BUDGET  19
BUDGET  20
BUDGET  21
BUDGET  22
BUDGET  23
BUDGET  24
BUDGET  25
BUDGET  26
BUDGET  27
BUDGET  28
BUDGET  29
BUDGET  30
BUDGET  31
BUDGET  32
BUDGET  33

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SUBROUTINE BUDGET

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110	100 CHAR = 1,M	BUDGET	34
	EQUI = 1,M	BUDGET	35
	DO 110 K=II,10	BUDGET	36
	CALL MOVE (ARRAY(INDEX),K,CHAR,1,1)	BUDGET	37
	IF (CHAR.EQ.1M.OR.CHAR.EQ.1M) GO TO 120	BUDGET	38
120	110 CONTINUE	BUDGET	39
	120 IF (K.EQ.11) GO TO 145	BUDGET	40
	CALL MOVE (ARRAY(INDEX),II,EQUI,1,K-11)	BUDGET	41
	IF ((K-11).GT.2) GO TO 133	BUDGET	42
	DO 125 L=1,NAP	BUDGET	43
125	CALL MOVE (APPRO(L),L,CHAR,1,K-11)	BUDGET	44
	IF (CHAR.NE.EQUI) GO TO 126	BUDGET	45
	EQUI = APPRO(L)	BUDGET	46
	GO TO 143	BUDGET	47
	126 IF (EQUI.NE.2+PK) GO TO 125	BUDGET	48
130	GO TO 141	BUDGET	49
	125 CONTINUE	BUDGET	50
	GO TO 145	BUDGET	51
	130 CONTINUE	BUDGET	52
	DO 135 L=1,NAP	BUDGET	53
135	IF (APPRO(L).EQ.EQUI) GO TO 140	BUDGET	54
	IF (EQUI.NE.4+PROC) GO TO 135	BUDGET	55
	GO TO 141	BUDGET	56
	135 CONTINUE	BUDGET	57
	GO TO 145	BUDGET	58
140	140 APSAV(INDEX,IFLAG) = L	BUDGET	59
	GO TO 142	BUDGET	60
	141 APSAV(INDEX,IFLAG) = 2	BUDGET	61
	142 CONTINUE	BUDGET	62
	IF (IFLAG.EQ.2) GO TO 150	BUDGET	63
145	II = K+1	BUDGET	64
	IFLAG = 2	BUDGET	65
	GO TO 103	BUDGET	66
	145 APSAV(INDEX,IFLAG) = J	BUDGET	67
	C* GET GOV/CONT INDICATOR	BUDGET	68
150	150 CONTINUE	BUDGET	69
	IFLAG = 1	BUDGET	70
	K = J	BUDGET	71
	INDEX = INDEX + 1	BUDGET	72
	DO 170 L=1,30	BUDGET	73
155	CALL MOVE (ARRAY(INDEX),L,CHAR,1,1)	BUDGET	74
	IF (CHAR.EQ.1M) GO TO (170,180), IFLAG	BUDGET	75
	K = K+1	BUDGET	76
	IFLAG = 2	BUDGET	77
	CALL MOVE (CHAR,1,EQUI,K,1)	BUDGET	78
160	IF (K.EQ.10) GO TO 180	BUDGET	79
	170 CONTINUE	BUDGET	80
	180 IF (EQUI.EQ.10+CONTRACTOR) KK = 1	BUDGET	81
	IF (EQUI.EQ.10+GOVERNMENT) KK = 2	BUDGET	82
	CG(INDEX) = KK	BUDGET	83
165	200 CONTINUE	BUDGET	84
	210 CONTINUE	BUDGET	85
	CALL WAITMS (3, APSAV(1,1), NWBS, AFINDX)	BUDGET	86
	CALL WAITMS (3, APSAV(1,2), NWBS, APINDX+1)	BUDGET	87
	CALL WAITMS (3, CG , NWBS, APINDX+2)	BUDGET	88
170	GO TO 240	BUDGET	89
	C*	BUDGET	90

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220 CONTINUE
      CALL READMS ( 3, AFSAV(1,1), NWBS, AFINDX )
      CALL READMS ( 3, AFSAV(1,2), NWBS, AFINDX+1 )
      CALL READMS ( 3, CG , NWBS, AFINDX+2 )
240 I = ICMF(15)+IC-1
      C
      C      SINCE THERE SO MANY C/S COMBINATIONS, UNIT 9 WILL
      C      STOP THE TOTC TOTALS USING AN INDEX GENERATED FROM
      C      C/S COMBINATION
      CALL READMS ( 5, TOTC, LEN 9, I )
      DO 250 J=1,50
250 TOTC(J) = 0.0
      CALL READMS ( 10, COL, NWBS, 1 )
      KK = 1
      II = 1
      DO 300 J=1,NWBS
      IBK = 1
      DO 340 JJ=1,NPH
340 IBK = (J-IPH(JJ))*IBK
      IF (IBK=0.0) KK = KK+1
      L = CG(J)
      K = AFSAV(J,1)
      IF (K=0.0) GO TO 360
      IF (K=0.0) K = IFRCOD(I)
      COLJ = COL(J)
      IF (J=0.SPCL(1,II) ) COLJ = COL(J)*SPCL(2,II)/10.
350 TOTC(K,L) = TOTC(K,L) + COLJ
      TOTC(KK,L,K) = TOTC(KK,L,K) + COLJ
      IF (J=PL.SPCL(1,II) ) GO TO 360
      K = AFSAV(J,2)
      IF (K=0.0) K = IFRCOD(I)
      COLJ = COL(J)*SPCL(3,II)/1.0
      II = II + 1
      GO TO 350
360 CONTINUE
      C
      C      STORE TOTC ARRAY FOR THIS C/S COMBINATION ON UNIT 9
      CALL WRITEMS ( 5, TOTC, LEN 9, I )
      RETURN
      END

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BUDGET 91
BUDGET 92
BUDGET 93
BUDGET 94
BUDGET 95
BUDGET 96
BUDGET 97
BUDGET 98
BUDGET 99
BUDGET 100
BUDGET 101
BUDGET 102
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BUDGET 120
BUDGET 121
BUDGET 122
BUDGET 123
BUDGET 124
BUDGET 125
BUDGET 126
BUDGET 127
BUDGET 128
BUDGET 129
BUDGET 130

LIBRARY BUDGET

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RTN 1.0043

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1      SUBROUTINE BUDGET
COMMON / BUDG / TOTL(7,2), TOTS(4,2,7), LENP5, TFRCCC(125)

C      ***** M5 (LENGTH AND COUNTER) (COMMON *****
C      C
C      C      LENA      - MASS STORAGE UNITS COMMON RECORD LENGTH
C      C                  (TYPICALLY 150)
C      C      NWBS      - NUMBER OF ELEMENTS IN THE CBS (MAX 150)
C      C      ICCTR      - NUMBER OF EQUIPMENTS IN THE EQUIPMENT
C      C                  ELEMENTS TABLE
C      C      L150      - (150 WORDS) RECORD LENGTH OF 7 A-WAYS
C      C                  IN THE "SERVUS" COMMON
C      C      L190      - (190 WORDS) RECORD LENGTH OF 2 A-WAYS
C      C                  IN THE "SERVUS" COMMON
C      C      COMMON / M52 / LENA,NWBS,ICCTR,L150,L190
C      C
C      C      ***** NAMES COMMON *****
C      C
C      C      NMSYS      - NAME OF THE SYSTEM
C      C      NOSUB      - TOTAL NUMBER OF SHIPCLASSES CONSIDERED
C      C      NMSLE( , ) - NAME OF THE SHIPCLASS IN TWO WORDS
C      C      NOCOMP( , ) - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)
C      C                  (RUNNING TOTAL FOR EQUIPMENTS)
C      C      NMCOMP( , , ) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES
C      C                  IN WORDS (INDEXED BY EQUIPMENT NUMBER
C      C                  AND SHIPCLASS NUMBER)
C      C      NAMESLC( , ) - NAMES OF EQUIPMENT (2 WORDS, 7 CHARACTERS EACH)
C      C                  FOR EQUIPMENT QUANTITIES TABLE - FLEET
C      C                  SUMMARY
C      C      EQUI      - PRESENT EQUIPMENT (BEING PROCESSED)
C      C      SHIPNM      - PRESENT SHIPCLASS (BEING PROCESSED)
C      C
C      C      COMMON / NAMES / NMSYS, NOSUB(2,43), NOCOMP(43),
C      C      1 NMCOMP(2,100,43), NAMESLC(100,2), EQUI, SHIPNM
C      C      INTEGER EQUI, SHIPNM
C      C      ***** MISL (MISCELLANEOUS) COMMON *****
C      C
C      C      NAP      - COUNT OF DIFFERENT APPROPRIATION CODES
C      C      APPRCL( , ) - APPROPRIATION CODE NAMES
C      C      SPCL( , ) - PERCENTAGES FOR CBS ELEMENT COST SPLIT
C      C      NPM      - COUNT OF THE LIFE CYCLE PHASES
C      C      IPH( , ) - FIRST CBS ELEMENT NUMBER OF EACH PHASE
C      C      IPB( , ) - CBS ELEMENT NUMBER FOR PAGE BREAKS
C      C                  (LAST CBS NUMBER FOR THE PAGE)
C      C      IPHASE( , ) - TITLES OF CBS PHASES
C      C      FLEET2      - FLEET (SYSTEM) SIZE
C      C      NCOLL( , ) - LOWEST COST ELEMENT LEVEL TO BE PRINTED
C      C                  (LOWEST LEVEL TO BE PULLING UP WITHIN PHASE)
C      C      PRCTOT      - TOTAL COST COST
C      C      TOTINV      - TOTAL INVESTMENT COST MINUS TOTAL RIFOUT

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C      TOTRIF      - TOTAL WITHOUT COST                      SYST      38
C      SMISFL      - MISSILE TOTAL COST                      SYST      39
C      NOFLY       - NUMBER OF CBS ELEMENTS TO BE INCLUDED IN SYST      40
C                  FLYAWAY COSTS                             SYST      41
C      IFLYP(4)    - CBS ELEMENT NUMBER FOR FLYAWAY COSTS    SYST      42
C      NOYRS       - NUMBER OF YEARS IN SHIP INSTALLATION TABLE SYST      43
C      IYEARS      - YEARS COVERED BY THE SHIP INSTALLATION TABLE SYST      44
C      IYPS        - NUMBER OF YEARS IN SHIP INSTALLATION TABLE SYST      45
C                  PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE) SYST      46
C      FNOTES( , ) - FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS SYST      47
C
C      COMMON / MISC / NAF,APPRO(7),SPCL(2,6,23),NPF,IFH(4),IFC(3), SYST      48
C      1 IFHASE(2,4),FLEET7,RCOLL(4),RCTOT,TOTINV,TOTNIF, SYST      49
C      2 SMISRU,NOPLY,IFLYP(4),NOYRS,IYEARS(12),IYNS, SYST      50
C      3 FNOTES(5,12) SYST      51
C      INTEGR APPRO,SPCL,FLEET7 SYST      52
C
C      ***** MARRAY (1REC ARRAY) COMMON ***** SHIFINS 2
C
C      THE MARRAY IS A SINGLY-SUBSCRIPTED ARRAY WHOSE FIRST POSITION SHIFINS 3
C      IS THE TOTAL NUMBER OF UNIQUE SHIPCLASS/EQUIPMENT COMBINATIONS. SHIFINS 4
C      THE NEXT THREE POSITIONS START A SERIES OF TRIPLETS WHOSE SHIFINS 5
C      MEMBERS ARE: SHIPCLASS NAME, EQUIPMENT NAME, MS 3 INDEX. SHIFINS 6
C      IPEC(1) - THE RUNNING SUM OF THE TOTAL NUMBER OF UNIQUE SHIFINS 7
C                  SHIPCLASS/EQUIPMENT COMBINATIONS IN THE SHIFINS 8
C                  EQUIPMENT LEVEL INPUT SHIFINS 9
C      IPEC(2,5,8) - THE NAME OF THE SHIP CLASS SHIFINS 10
C      11,ETC) SHIFINS 11
C      IPEC(3,6,9) - THE NAME OF THE EQUIPMENT SHIFINS 12
C      12,ETC) SHIFINS 13
C      IPEC(4,7,11) - INDEX FOR MASS STORAGE UNIT 3. AN INTEGER SHIFINS 14
C      13,ETC) NUMBER BEGINNING A 1 AND INCREMENTING BY SHIFINS 15
C                  2 TO FORM 18,20,22,24,ETC. THIS INDEX IS SHIFINS 16
C                  THE STARTING LOCATION OF A RECORD (LENGTH SHIFINS 17
C                  "INB5 WORDS") ON MASS STORAGE 3 WHICH SHIFINS 18
C                  CONTAINS THE UNIT COSTS OF THE EQUIPMENTS SHIFINS 19
C                  ON A UNIT SHIP (COMPLETED BY SUBROUTINE SHIFINS 20
C                  COMPCMP). SHIFINS 21
C
C      COMMON / MARRAY / IREC(375)) SHIFINS 22
C
C      ***** SHIFINS (SHIP SUMMATION AND INSTALLATION TABLE) COMMON ***** SHIFINS 23
C
C      SHIFSLM( ) - CONTAINS THE TOTAL NUMBER OF UNIT SHIPS FOR SHIFINS 24
C                  EACH SHIP CLASS FOUND BY INSPECTION OF SHIFINS 25
C                  THE SHIP INSTALLATION TABLE. SHIFINS 26
C      SINSTR( , ) - THE SHIP DEPLOYMENT/INSTALLATION SCHEDULE SHIFINS 27
C                  TABLE FOR EACH SHIP CLASS. SHIFINS 28
C                  SINSTR(X,1) - SHIP CLASS NAME SHIFINS 29
C                  SINSTR(X,2-7) - THE YEARLY NUMBERS OF SHIFINS 30
C                  UNIT SHIPS OF THIS CLASS TO BE SHIFINS 31
C                  DEPLOYED/INSTALLED SHIFINS 32
C      SHIFSUM( ) - THE TOTAL NUMBER OF UNIT SHIPS FOR EACH SHIFINS 33
C                  SHIP CLASS. IT IS THE SAME COUNT AS SHIFINS 34
C                  SHIFSLM, HOWEVER, IT IS DEFINED IN A SHIFINS 35

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.. 171/10 23.4.41

A-20

00000000 000000 04/74 001#2

FTN 4.0+433

07/31/73 23.53.41

	DO 101 J=1,0	BULGCP	55
	101 STOT(J,3) = STOT(J,1) + STOT(J,2)	BULGCP	59
	WRITE (6,1050)	BULGCP	60
175	WRITE (6,1050) (CGT(K), (STOT(J,K), J=1,3), K=1,3)	BULGCP	61
	1.2 CONTINUE	BULGCP	62
	DO 103 J=1,8	BULGCP	63
	DO 103 K=1,2	BULGCP	64
	103 SYTOT(J,K) = SYTOT(J,K) + STOT(J,K)	BULGCP	65
180	15 CONTINUE	BULGCP	66
	C OUTPUT SYSTEM TOTALS	BULGCP	67
	113 WRITE (6,1050) FORTZ	BULGCP	68
	DO 120 J=1,3	BULGCP	69
	120 SYTOT(J,3) = SYTOT(J,1) + SYTOT(J,2)	BULGCP	70
185	WRITE (6,1050) (CGT(K), (SYTOT(J,K), J=1,3), K=1,3)	BULGCP	71
	RETURN	BULGCP	72
	130 FORMAT (A1,4X, *LIFE CYCLE COSTS BY BUDGET APPROPRIATION* /	BULGCP	73
	1 5X, *BY EQUIPMENT ELEMENT WITHIN SHIP CLASS* /	BULGCP	74
	2 1X,15, * SHIP FLEET* /	BULGCP	75
190	3 5X, * (FY79 IN)* /	BULGCP	76
	4 1HL, 6X, 122 (1H-)	BULGCP	77
	1001 FORMAT (21,6X, 2A10, 3X, 7(2X, A4), 6X, *SYS TOT* /	BULGCP	78
	1 7X, 24 (1H-), 2X, 8 (2X, 10 (1H-))	BULGCP	79
	1020 FORMAT (11X, A10, A9)	BULGCP	80
195	1030 FORMAT (15X, A10, 6X, 2F12, 3)	BULGCP	81
	1040 FORMAT (1H-6X, 15, * SHIP FLEET TOTAL* / 7X, 24 (1H-))	BULGCP	82
	1050 FORMAT (1HL, 10X, *SHIP CLASS TOTAL* / 10X, 18 (1H-))	BULGCP	83
	END	BULGCP	84

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1      SUBROUTINE INFLU
C
C ***** NAME'S COMMON *****
C
C      NMSYS      - NAME OF THE SYSTEM
C      NMCOUNT     - TOTAL NUMBER OF SHIPCLASSES CONSIDERED
C      NMSUB( , )  - NAME OF THE SHIPCLASS IN TWO WORDS
C      NCCOMP( , ) - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)
C                  (RUNNING TOTAL FOR EQUIPMENT)
C      ANCCOMP( , , ) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES
C                  IN WPSOUT (INDEXED BY EQUIPMENT NUMBER
C                  AND SHIPCLASS NUMBER)
C      NAMESEC( , ) - NAME OF EQUIPMENT (2 WORDS, 7 CHAR'S EACH)
C                  FOR EQUIPMENT QUANTITIES TABLE - FLEET
C                  SUMMARY
C      EQUI        - PRESENT EQUIPMENT (BEING PROCESSED)
C      SHIPNM      - PRESENT SHIPCLASS (BEING PROCESSED)
C
C
C      COMMON / NAMES / NMSYS, NMSUB(2,43), NCCOMP(43),
C      1 NMCOUNT(2,10),43), NAMESEC(11,1,2), EQUI, SHIPNM
C      INTEGER EQUI, SHIPNM
C ***** MISC (MISCELLANEOUS) COMMON *****
C
C      NAP         - COUNT OF DIFFERENT APPROPRIATION CODES
C      APPRO( , )  - APPROPRIATION CODE NAMES
C      SPCL( , )   - PERCENTAGES FOR CBS ELEMENT COST SPLITS
C      NPM         - COUNT OF THE LIFE CYCLE PHASES
C      IFM( , )    - FIRST CBS ELEMENT NUMBER OF EACH PHASE
C      IFB( , )    - CBS ELEMENT NUMBER FOR PAGE BREAKS
C                  (LAST CBS NUMBER FOR THE PAGE)
C      IPHASE( , ) - TITLES OF CBS PHASES
C      FLEETZ      - FLEET (SYSTEM) SIZE
C      NFOLL( , )  - LOWEST COST ELEMENT LEVEL TO BE PRINTED
C                  (LOWEST LEVEL TO BE FOLLOWED OF WITHIN PHASE)
C      PCTCT       - TOTAL COST
C      TOTINV      - TOTAL INVESTMENT COST MINUS TOTAL RIFOUT
C      TOTRIF      - TOTAL RIFOUT COST
C      SMISPC      - MISSILE COST
C      NOFLY       - NUMBER OF CBS ELEMENTS TO BE INCLUDED IN
C                  FLYAWAY COSTS
C      IFLYN( , )  - CBS ELEMENT NUMBER FOR FLYAWAY COSTS
C      NOYFS       - NUMBER OF YEARS IN SHIP INSTALLATION TABLE
C      IYEARS      - YEARS COVERED BY THE SHIP INSTALLATION TABLE
C      IYPS        - NUMBER OF YEARS IN SHIP INSTALLATION TABLE
C                  PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE)
C      PHOTES( , ) - FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS
C
C      COMMON / MISC / NAP, APPRO(7), SPCL(7,2,2), NPM, IFM(4), IPB(3),
C      1 IPHASE(2,4), FLEETZ, NFOLL(4), PCTCT, TOTINV, TOTRIF,
C      2 SMISPC, NOFLY, IFLYN(12), NOYFS, IYEARS(12), IYPS,
C      3 PHOTES(5,12)
C      INTEGER APPRO, SPCL, FLEETZ
C
C ***** MS (LENGTH AND COUNTER) COMMON *****
C

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C
C      LNN      - MASS STORAGE UNITS COMMON RECORD LENGTH
C                (TYPICALLY 144)
C      NWBS      - NUMBER OF ELEMENTS IN THE CDB (MAX 150)
C      IOCTP      - NUMBER OF EQUIPMENTS IN THE EQUIPMENT
C                  ELEMENTS TABLE
C      L150      - (150 WORDS) RECORD LENGTH OF 7 ARRAYS
C                  IN THE "CERVLS" COMMON
C      L900      - (900 WORDS) RECORD LENGTH OF 2 ARRAYS
C                  IN THE "CERVLS" COMMON
C
C      COMMON / MS2 / LNN,NWBS,IOCTP,L150,L900
C
C
C
C ***** INPUT COMMON *****
C
C VARIOUS OTHER ARRAYS ARE EQUIVALENCED TO THE "ARRAY" ARRAY AS ILL
C
C - SLOCM I ROW = ARRAY(1,1)
C - BUDGET I CG = ARRAY(1,2)
C - INPUPD I ICNEC = ARRAY(1,1)
C - COMPCMF I ROW = ARRAY(1,1)
C - APCELM I IRAY = ARRAY(1,1)
C
C      COMMON / INPUT / ARRAY(150,2)
C
C
C ***** CERVLS (COST ESTIMATING RELATIONSHIP (CER) VALUES) COMMON *****
C
C THE CERVLS COMMON CONTAINS LOCATIONS FOR STORAGE OF THE CER
C INPUT CARD COUNT, THE ROW ID'S, THE CER EQUATION NUMBERS, THE
C ROW CROSS REFERENCE NUMBERS, THE INPUT PARAMETERS, THE ADDITION
C OF CERs CONTROL, STORAGE ARRAY FOR EQUIPMENT NAME, CER INDEX,
C AND INPUT/OUTPUT INDEXES FOR ALL EQUIPMENT INPUT.
C
C      CERCT      - NUMBER OF CER'S FOR THIS PARTICULAR EQUIPMENT
C                  (1 WORD)
C      IFORC( )    - (F OR C) ALPHABETIC CHARACTER INDICATING
C                  "FACTORY" OR "CER". (15 WORDS)
C      IFOWIF      - CDB ELEMENT NUMBER TO WHICH THIS CER APPLIES
C                  (150 WORDS)
C      IADD        - CER CONTROL FLAGS (0 THRU 6) FOR ADDITIVE
C                  CERs OF SUBELEMENTS. 0 INDICATES NO ADDING.
C                  1 THROUGH 6 INDICATE ADD UP SUB ELEMENTS.
C                  (150 WORDS)
C      ICEANC      - REFERENCE NUMBER FOR CER EQUATIONS IN THE
C                  "CERCOMP" SUBROUTINE. (15 WORDS)
C      IREFTO      - CDB ELEMENT NUMBER USED IN CROSS REFERENCING
C                  A PREVIOUSLY COMPUTED CER ELEMENT. AT PRESENT
C                  ONLY CER EQUATION NUMBER 8 ALLOWS CROSS
C                  REFERENCING. 0 INDICATES NO CROSS-REF.
C                  (150 WORDS)
C      IREFTO      - CER CONTROL FLAGS FOR CROSS-REFERENCING
C                  CER SUB-ELEMENTS. (150 WORDS)

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```

MS2      5
MS2      6
MS2      7
MS2      8
MS2      9
MS2     10
MS2     11
MS2     12
MS2     13
MS2     14
MS2     15
MS2     16
MS2     17
MS2     18
MS2     19
NFLT     2
NFLT     3
NFLT     4
NFLT     5
NFLT     6
NFLT     7
NFLT     8
NFLT     9
NFLT    10
NFLT    11
NFLT    12
NFLT    13
NFLT    14
CERVLS   2
CERVLS   3
CERVLS   4
CERVLS   5
CERVLS   6
CERVLS   7
CERVLS   8
CERVLS   9
CERVLS  10
CERVLS  11
CERVLS  12
CERVLS  13
CERVLS  14
CERVLS  15
CERVLS  16
CERVLS  17
CERVLS  18
CERVLS  19
CERVLS  20
CERVLS  21
CERVLS  22
CERVLS  23
CERVLS  24
CERVLS  25
CERVLS  26
CERVLS  27
CERVLS  28
CERVLS  29
CERVLS  30

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ROUTINE INPUT

74/74

OPT=2

FTN 4.6433

07/31/79 23.53.41

119	C	IFSTORE	- STORES 'FACTOR' PARAMETERS. (900 WORDS)	CERVLS	31
	C	PSSTORE	- STORES NUMERICAL PARAMETERS. (900 WORDS)	CERVLS	32
	C	ICER()	- A SINGLY-SUBSCRIPTED ARRAY CONTAINING A	CERVLS	33
	C		MAXIMUM OF 100 DATA TRIPLETS WHOSE MEMBERS	CERVLS	34
	C		ARE:	CERVLS	35
121	C	ICER(1,4,7,	- EQUIPMENT NAME	CERVLS	36
	C	ETC)		CERVLS	37
	C	ICER(2,4,9	- INDEX FOR MASS STORAGE UNIT 3. INDEX	CERVLS	38
	C	ETC)	BEGINS AT 1 AND INCREMENTS BY 9 (1,11,19,	CERVLS	39
	C		ETC). THE FOLLOWING DATA RECORDS ARE	CERVLS	40
125	C		INDEXED:	CERVLS	41
	C	1 CERCT	6 IXREFNO	CERVLS	42
	C	2 IFORC	7 IXREFAD	CERVLS	43
	C	3 IFOMIC	8 IFSTOFF	CERVLS	44
	C	4 IADD	9 PSSTORE	CERVLS	45
	C	5 ICERN		CERVLS	46
131	C	ICER(3,6,9	- INDEX FOR MASS STORAGE UNIT 2 AND 3.	CERVLS	47
	C		INDEX BEGINS AT 18 AND INCREMENTS BY 2	CERVLS	48
	C		(18,20,22,ETC) AND IS IDENTICAL TO THE	CERVLS	49
	C		THIRD MEMBER OF DATA TRIPLET STORED IN	CERVLS	50
	C		THE IREC ARRAY.	CERVLS	51
135	C	SUBELS(,)	- SUBELS IS A CROSS-MATCHED ARRAY WHICH IS	CERVLS	52
	C		RELATED ONE-TO-ONE TO THE CBS.	CERVLS	53
	C		IT IS USED LOCALLY WITHIN 'COMFCMP' AND	CERVLS	54
	C		'CERCOP' FOR INTERIM STORAGE OF UP TO	CERVLS	55
140	C		SIX SUBELEMENTS, 1 THROUGH, AND 1 TOTAL	CERVLS	56
	C		VALUE FOR EACH CBS ELEMENT.	CERVLS	57
	C	FACTOR()	- A FACTOR IS A PRECURSOR OF ONE OR MORE	CERVLS	58
	C		CBS.	CERVLS	59
145	C			CERVLS	60
	C	COMMON /CERVLS/ CERCT, IFORC(150), IROWID(150), IADD(150),	CERVLS	61	
	C	ICERNO(150), IXREFNO(150), IXREFAD(150),	CERVLS	62	
	C	IFSTORE(6,150), PSSTORE(6,150), ICER(300),	CERVLS	63	
	C	SUBELS(8,150), FACTORS(150)	CERVLS	64	
151	C	INTEGER CERCT	CERVLS	65	
	C		CERVLS	66	
	C	***** ROLUPCT COMMON *****	CERVLS	67	
	C		CERVLS	68	
	C		CERVLS	69	
155	C	ARRAY DEFINING THE ROLL-UP INPUT NUMBERS, TOTAL COUNT OF	ROLLPCT	2	
	C	CGST ELEMENTS WITH SPECIFIC ROLL-UP NUMBERS TO BE OUTPUT,	ROLLPCT	3	
	C	ARRAY OF SELECTED NBS ELEMENTS NUMBERS, SELECTED ROLL-UP	ROLLPCT	4	
	C	OUTPUT FLAG	ROLLPCT	5	
	C	COMMON / ROLUPCT / INCLL(150), ROLLTOT, ROLLSL(150), ROLLFLG	ROLLPCT	6	
160	C	INTEGER ROLLTOT, ROLLSL, ROLLFLG	ROLLPCT	7	
	C	***** BUDG COMMON *****	ROLLPCT	8	
	C		ROLLPCT	9	
	C		ROLLPCT	10	
	C	COMMON / BUDG / TOTC(7,2), TOTL(4,2,7), LENR9, IPACCCC(125L)	BUDG	2	
165	C		BUDG	3	
	C	***** CHARTS (CONTRL) COMMON *****	CHARTS	2	
	C		CHARTS	3	
	C		CHARTS	4	
	C		CHARTS	5	
	C	CHRTCNT CONTAINS THE MAJOR OUTPUT CHART CONTROLS	CHARTS	6	
171	C	J - GENERATE CHART	CHARTS	7	
	C	1 - NO GENERATION OF CHART	CHARTS	8	

```

C
C
C      CHRTCNT(1)  - IF EQUAL TO 1 - CALLS WBSOUT(1) FOR EQUIPMENT
C                  ELEMENT LIFE CYCLE COSTS - FLEET SUMMARY
175 C      CHRTCNT(2)  - IF EQUAL TO 0 - CALLS WESOUT(2) FOR UNIT
C                  SHIP COSTS BY EQUIPMENT ELEMENT
C                  - IF NE. TO 1 - CALLS WBSOTOT BECAUSE
C                  WBSOUT(2) WAS NOT CALLED
C
C      CHRTCNT(3)  - IF EQUAL TO 0 - CALLS WESOUT(3) FOR SHIP
C                  CLASS SUMMARY
180 C      CHRTCNT(4)  - IF EQUAL TO 1 - CALLS BUDGOP FOR LIFE
C                  CYCLE COSTS BY BUDGET APPROPRIATIONS
C      CHRTCNT(5)  - IF NE. TO 1 - CALLS ROLCNT FOR OUTPUT BY
C                  ROLL-UP NUMBER
185 C      CHRTCNT(6)  - IF EQUAL TO 1 - LISTS THE SUBELS ARRAY
C                  FOR ENTIRE GES FOR PROOFING
C
C
C      COMMON / CHARTS / CHRTCNT(15)
190 C      INTEGER CHRTCNT
C      ***** CSTAB (EQUIPMENT QUANTITIES) COMMON *****
C
C      QCMPT      - QUANTITY OF EQUIPMENT ALREADY DEPLOYED
C                  (O & S) OVER ALL SHIPCLASSES (C1) (INTEGER)
195 C      QCMPT2    - QUANTITY OF EQUIPMENT TO BE MANUFACTURED
C                  INSTALLED (INVESTMENT) OVER ALL SHIPCLASSES
C                  (Q2) (REAL)
C      CSTABLE    - SINGLY-DIMENSIONED ARRAY WHOSE MEMBERS ARE
C                  A SERIES OF:
200 C                  --SHIPCLASS NAME
C                  --O & S QUANTITY OF EQUIPMENT FOR EACH
C                  SHIP ON A PARTICULAR SHIPCLASS
C                  --INV QUANTITY OF EQUIPMENT FOR EACH
C                  SHIP ON A PARTICULAR SHIPCLASS
205 C                  (THESE THREE MEMBERS ARE GIVEN FOR EACH
C                  SHIP CLASS MAKING A SERIES OF DATA TRIPLETS)
C                  (VALUES ARE INTEGER)
C      CSTABEL    - SINGLY-DIMENSIONED ARRAY OF THE INVESTMENT
C                  QUANTITY OF EQUIPMENT FOR EACH SHIP ON A
210 C                  PARTICULAR SHIPCLASS. DATA ELEMENTS MUST
C                  BE STORED IN THE SAME SHIPCLASS ORDER AS
C                  CSTABLE. THE TWO ARRAYS MAY BE THOUGHT
C                  OF AS A SERIES OF DATA QUADRUPLTS.
C
C
215 C      COMMON /CSTAB/QCMPT(100),QCMPT2(100),CSTABLE(3750),CSTABEL(1250)
C      INTEGER QCMPT,CSTABLE
C      GENERAL TITLE TO BE USED ON ALL CHARTS
C      COMMON / GENTLE / TITLE(3)
220 C      INTEGER TITLE
C
C      ***** MARRAY (IREC ARRAY) COMMON *****
C
C
225 C      THE IREC ARRAY IS A SINGLY-SUBSCRIPTED ARRAY WHOSE FIRST POSITION
C      IS THE TOTAL NUMBER OF UNIQUE SHIPCLASS/EQUIPMENT COMBINATIONS.
C      THE NEXT THREE POSITIONS START A SERIES OF TRIPLETS WHOSE
C      MEMBERS ARE: SHIPCLASS NAME, EQUIPMENT NAME, MS 3 INDEX.

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CHAFTS 9
CHAFTS 10
CHAFTS 11
CHAFTS 12
CHAFTS 13
CHAFTS 14
CHAFTS 15
CHAFTS 16
CHAFTS 17
CHAFTS 18
CHAFTS 19
CHAFTS 20
CHAFTS 21
CHAFTS 22
CHAFTS 23
CHAFTS 24
CHAFTS 25
CHAFTS 26
CHAFTS 27
CSTAB 2
CSTAB 3
CSTAB 4
CSTAB 5
CSTAB 6
CSTAB 7
CSTAB 8
CSTAB 9
CSTAB 10
CSTAB 11
CSTAB 12
CSTAB 13
CSTAB 14
CSTAB 15
CSTAB 16
CSTAB 17
CSTAB 18
CSTAB 19
CSTAB 20
CSTAB 21
CSTAB 22
CSTAB 23
CSTAB 24
CSTAB 25
CSTAB 26
CSTAB 27
CSTAB 28
GENTLE 2
GENTLE 3
GENTLE 4
SHIPINS 2
SHIPINS 3
SHIPINS 4
SHIPINS 5
SHIPINS 6
SHIPINS 7
SHIPINS 8
SHIPINS 9

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SUBROUTINE INFUPC

74/74

UNIT=2

PTH 4.04433

07/31/79 23.53.41

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230  C      IREC(1)      - THE RUNNING SUM OF THE TOTAL NUMBER OF UNIQUE SHIPCLASS/EQUIPMENT COMBINATION IN THE
C      SHIPCLASS/EQUIPMENT COMBINATION IN THE
C      EQUIPMENT LEVEL INPUT
C      IREC(2,5,6,  - THE NAME OF THE SHIP CLASS
C      11,ETC)
C      IREC(3,6,9  - THE NAME OF THE EQUIPMENT
C      12,ETC)
235  C      IREC(4,7,10 - INDEX FOR MASS STORAGE UNIT 3. AN INTEGER
C      13,ETC)      NUMBER BEGINNING A 1: AND INCREMENTING BY
C      2 TO FORM 18,21,22,24,ETC. THIS INDEX IS
C      THE STARTING LOCATION OF A RECORD (LENGTH
240  C      "N4ES WORDS") ON MASS STORAGE 3 WHICH
C      CONTAINS THE UNIT COSTS OF THE EQUIPMENTS
C      ON A UNIT SHIP (COMPUTED BY SUBROUTINE
C      COMPCMP).
C      SHIFINS 25
245  C      COMMON / MARRY / IREC(13750)
C      SHIFINS 26
C      **** SHIFINS (SHIP SUMMATION AND INSTALLATION TABLE) COMMON ****
C      SHIFINS 27
C      SHIFSLN( )      - CONTAINS THE TOTAL NUMBER OF UNIT SHIPS FOR
C      EACH SHIP CLASS FOUND BY INSPECTION OF
250  C      THE SHIP INSTALLATION TABLE
C      SHIFINS 28
C      SINSTE( , )      - THE SHIP DEPLOYMENT/INSTALLATION SCHEDULE
C      TABLE FOR EACH SHIP CLASS
C      SHIFINS 29
C      SINSTB(X,1)      - SHIP CLASS NAME
C      SHIFINS 30
255  C      SINSTB(X,2-7) - THE YEARLY NUMBERS OF
C      UNIT SHIPS OF THIS CLASS TO BE
C      DEPLOYED/INSTALLED
C      SHIFINS 31
C      SHIPSP( )      - THE TOTAL NUMBER OF UNIT SHIPS FOR EACH
C      SHIP CLASS. IT IS THE SAME COUNT AS
260  C      SHIPSUM, HOWEVER, IT IS DEFINED IN A
C      SPECIFIC ORDER AFTER ERROR-CHECKING IN
C      SLOCN'S NESTED DO-LOOPS WHICH
C      DETERMINE THE TOTAL COSTS BY SHIP CLASS
C      SHIFINS 32
265  C      COMMON / SHIPINS / SHIPSUM(43), SINSTB(43,7), SHIPSP(43)
C      SHIFINS 33
C      INTEGER SHIPSUM, SINSTB, SHIPSP
C      DIMENSION IOREC(2)
C      SHIFINS 34
C      **** SETUP INDEX ARRAYS, MS INDEX LENGTHS, AND MS RECORD LENGTHS
C      SHIFINS 35
270  C      DIMENSION IX2(221),IX3(221),IX4(221)
C      DIMENSION IX8(1501),IX9(1251),IX10(1301)
C      DIMENSION INP(15)
C      DIMENSION FS(16),PS(16)
C      SHIFINS 36
275  C      INTEGER FS
C      DIMENSION NM(2)
C      EQUIVALENCE (ARRAY,IOREC)
C      SHIFINS 37
C      INTEGER CHAR,SHIP,SAVE
C      SHIFINS 38
C      INTEGER GENEND,LFOKSI,POMIG,ADDID,CERNO,XREFNC,XREFAC,CERCTX6
C      SHIFINS 39
280  C      DATA IXS/1/, IXMS/2/, IXSO/7/, IXSS/17/, IXSSO/12/, LENR/150/
C      DATA LNF / 220 /, CHAN / 10H /
C      SHIFINS 40
C      DATA LNES/5/, LSO/10/, LSC/2/
C      SHIFINS 41
C      MASK TO GET THE FIRST 6 CHARACTERS OF EITHER THE
C      SHIP CLASS OR EQUIPMENT NAMES
C      SHIFINS 42

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07/31/79 23.53.41

A-27

	READ(5,8J5) NMUS,NPH, (IPN(I),I=1,3)	INFUPC	90
	WRITE(6,207) NMUS,NPH, (IPN(I),I=1,3)	INFUPD	91
345	305 FORMAT(5I5)	INFUPC	92
	307 FORMAT(11X,5I5)	INFUPC	93
	C	INFUPC	94
	DO 77 K=1,4	INFUPC	95
	READ(5,8J6) IPHASE(1,K),IPHASE(2,K),IPH(K),NROLL(K)	INFUPC	96
350	WRITE(6,806) IPHASE(1,K),IPHASE(2,K),IPH(K),NROLL(K)	INFUPC	97
	77 CONTINUE	INFUPC	98
	306 FORMAT(2A11,2I5)	INFUPC	99
	308 FORMAT(11X,2A10,2I5)	INFUPC	100
	DO 5 I=1,LENH	INFUPC	101
355	IREF(I) = 0	INFUPC	102
	5 IOREC(I) = 0	INFUPC	103
	C	INFUPC	104
	C	INFUPC	105
	DO 56 I=LENR,LENK17	INFUPC	106
360	IREF(I) = 0	INFUPC	107
	56 CONTINUE	INFUPC	108
	C INITIALIZE THE CER ARRAYS	INFUPC	109
	CERCT = 0	INFUPC	110
	DO 6 I=1,L150	INFUPC	111
365	IFORC(I) = 10H	INFUPC	112
	IROWID(I) = 0	INFUPC	113
	ICERNO(I) = 0	INFUPC	114
	IXREFNO(I) = 0	INFUPC	115
	IXREFAC(I) = 0	INFUPC	116
370	IAOD(I) = 0	INFUPC	117
	DO 6 J=1,6	INFUPC	118
	IFSTORE(J,I) = 10H	INFUPC	119
	PSSTORE(J,I) = 0.	INFUPC	120
	6 CONTINUE	INFUPC	121
375	C*** USING "IREFC" AND "IREF", WRITE ALL ZERO RECORDS ON MS 4.	INFUPC	122
	DO 10 I=1,LENF	INFUPC	123
	IF (I.EQ. IXSS) GO TO 10	INFUPC	124
	CALL WRITMS (4, IOREC, LENR, I, -1)	INFUPC	125
380	10 CONTINUE	INFUPC	126
	CALL WRITMS (4, IOREC, LENK17, IXSS, -1)	INFUPC	127
	C	INFUPC	128
	C INITIALIZE THE CER STORAGE UNIT 8	INFUPC	129
	C*** WRITE ZEROS AND BLANKS ON MS 8.	INFUPC	130
	DO 11 I=1,LENF0,LENCER	INFUPC	131
385	CALL WRITMS (8, IREFC, 1, 1, -1)	INFUPC	132
	CALL WRITMS (8, IFUNC, L150, I+1, -1)	INFUPC	133
	CALL WRITMS (8, IROWID, L150, I+2, -1)	INFUPC	134
	CALL WRITMS (8, IAOD, L150, I+3, -1)	INFUPC	135
	CALL WRITMS (8, ICERNO, L150, I+4, -1)	INFUPC	136
390	CALL WRITMS (8, IXREFNO, L150, I+5, -1)	INFUPC	137
	CALL WRITMS (8, IXREFAC, L150, I+6, -1)	INFUPC	138
	CALL WRITMS (8, IFSTORE, L400, I+7, -1)	INFUPC	139
	CALL WRITMS (8, PSSTORE, L400, I+8, -1)	INFUPC	140
	11 CONTINUE	INFUPC	141
395	C GO TO 15	INFUPC	142
	C 12 CONTINUE	INFUPC	143
	C READ (5,25) INF	INFUPC	144
	C IF (EOF(5)) GO TO 15	INFUPC	145
	C 15 CONTINUE	INFUPC	146

410	C*** USING "IOREC" AND "IREC" (ZFROS), WRITE ZERCS ON MS 2.	INFLPD	147
	DO 16 I=1,LENF	INFLPD	148
	IF (I.EQ. IXSS) GO TO 16	INFLPD	149
	CALL READMS (4,IOREC,LENK,I)	INFLPD	150
	CALL WRITMS (2, IOREC, LENR, I, -1)	INFLPD	151
415	16 CONTINUE	INFLPD	152
	C	INFLPD	153
	CALL READMS (4, IREC, LENR17, IXSS)	INFLPD	154
	CALL WRITMS (2, IREC, LENR17, IXSS, -1)	INFLPD	155
	CALL READMS (2, IREC, LENR17, IXSS)	INFLPD	156
415	IF (EOF(5).NE.0) GO TO 500	INFLPD	157
	C READ AND OLCUOL INPUT DATA	INFLPD	158
	C (SYSTEM--CBS, EQUIPMENT QUANTITIES PER SHIP)	INFLPD	159
	C	INFLPD	160
	20 CONTINUE	INFLPD	161
415	IF (ICPFLG.EC. 1) GO TO 910	INFLPD	162
	HEAD (5,25) INF	INFLPD	163
	25 FORMAT (8A10)	INFLPD	164
	IF (EOF(5)) ADD, 30	INFLPD	165
	3) WRITE (6,31) INF	INFLPD	166
420	31 FORMAT (11X,cA10)	INFLPD	167
	C*** TEST FIRST 4 CHAR'S (INPUT) FOR SIGNIFICANCE.	INFLPD	168
	C***	INFLPD	169
	CALL MOVE (INP(1),1,CHAR,1,4)	INFLPD	170
	IF (CHAR.EQ.4HINPUT) GO TO 250	INFLPD	171
425	IF (CHAR.EQ.4HINPUT) GO TO 200	INFLPD	172
	IF (CHAR.EQ.4HEQUI) GO TO 150	INFLPD	173
	IF (CHAR.EQ.4HSHIP) GO TO 100	INFLPD	174
	IF (CHAR.EQ.4HSYST) GO TO 50	INFLPD	175
	IF (CHAR.EQ.4HSEND) GO TO 500	INFLPD	176
430	C*** TEST FIRST CHAR FOR COMMENT CARD.	INFLPD	177
	CALL MOVE (CHAR,8,CHAR,2,3)	INFLPD	178
	IF (CHAR.EQ.1H*) GO TO 20	INFLPD	179
	IF (CHAR.EQ.1H#) GO TO 20	INFLPD	180
	GO TO 300	INFLPD	181
435	C SYSTEM CARD READ	INFLPD	182
	5) IOREC(1) = INF(1)	INFLPD	183
	IOREC(2) = INF(2)	INFLPD	184
	NMSYS = INF(2)	INFLPD	185
	CALL WRITMS (2,IOREC,LENR,IXS,1)	INFLPD	186
440	SSFLAG = -1	INFLPD	187
	GO TO 20	INFLPD	188
	C SUBSYSTEM CARD READ	INFLPD	189
	100 CONTINUE	INFLPD	190
	C	INFLPD	191
445	C INCREMENT SHIP COUNTER AND STORE SHIP'S NAME	INFLPD	192
	ISHPCT = ISHPCT + 1	INFLPD	193
	NOSUB = ISHPCT	INFLPD	194
	ICONCT = 0	INFLPD	195
	NMSUB(1,ISHPCT) = INP(3)	INFLPD	196
450	NMSUB(2,ISHPCT) = INP(2)	INFLPD	197
	C*** REFORMAT THE "INP(2)" WORD INTO THE "NM" WORD FOR A LENGTH	INFLPD	198
	C*** OF 1 WORD, LEFT JUSTIFIED.	INFLPD	199
	CALL F1FMT (INP(2), NM, 1, 1HL)	INFLPD	200
	SHIP = NP(1).AND.MASK	INFLPD	201
455	SSFLAG = 1	INFLPD	202
	GO TO 20	INFLPD	203

SLEP-OUTLINE INFUPD

74/74 OPT=2

FTN 4.6+435

07/31/79 23.53.41

	C	COMPONENT CARD READ	INFUPC	204
		150 CONTINUE	INFUPC	205
	C	FROM THIS POINT TO LABEL "3.0", PROCESS A "EQUI" RECORD	INFUPC	206
46L	C	DURING SHIP CLASS DEFINITION	INFUPC	207
	C		INFUPC	208
	C	INCREPENT EQUIPMENT COUNTER AND STORE EQUIPMENT NAME	INFUPC	209
		ICOMCT = ICOMCT + 1	INFUPC	210
		NOCOMP(ISHPCT) = ICOMCT	INFUPC	211
46E	C		INFUPC	212
		IF (INP(2) .EQ. CHAR1) GO TO 160	INFUPC	213
		IF (INP(3) .EQ. CHAR1) GO TO 170	INFUPC	214
	C		INFUPC	215
		160 CONTINUE	INFUPC	216
47C	C***	SET UP 1 OF 2 WORD HEADING TITLE FOR WBSOUT.	INFUPC	217
		NMCOMP(1,ICOMCT,ISHPCT) = INP(2)	INFUPC	218
		NMCOMP(2,ICOMCT,ISHPCT) = INP(3)	INFUPC	219
		GO TO 180	INFUPC	220
47E	C		INFUPC	221
		170 CONTINUE	INFUPC	222
		NMCOMP(1,ICOMCT,ISHPCT) = INP(3)	INFUPC	223
		NMCOMP(2,ICOMCT,ISHPCT) = INP(2)	INFUPC	224
	C		INFUPC	225
		180 CONTINUE	INFUPC	226
48C	C	COMPILESS 1ST 6 LEFT JUSTIFIED CHAFACTERS INTO UNIQUE	INFUPC	227
	C	NAME FOR "SHIP"	INFUPC	228
		CALL RLFT (NMCOMP(1,ICOMCT,ISHPCT), NM, 2, 1ML)	INFUPC	229
		EQUI = NM(1) .AND. MASK	INFUPC	230
		SSFLAG = 2	INFUPC	231
48E		GO TO 260	INFUPC	232
	C	THRLPUT	INFUPC	233
		200 INC = 0	INFUPC	234
		GO TO 260	INFUPC	235
	C	INPUT	INFUPC	236
49C		250 INC = 1	INFUPC	237
	C***		INFUPC	238
	C***	"SSFLAG" ASSUMES 3 VALUES PRIOR TO FIRST "SEND" RECORD	INFUPC	239
	C***	= - 1 BETWEEN "SYST" AND 1ST "EQUI", "SHIP"	INFUPC	240
	C***	(WHILE READING WBS ELEMENTS)	INFUPC	241
49E	C***	= 1 EVERY TIME "SHIP" IS READ	INFUPC	242
	C***	= 2 EVERY TIME "EQUI" IS READ	INFUPC	243
	C***		INFUPC	244
		260 IF (SSFLAG.LT.3) GO TO 20	INFUPC	245
		IF(SSFLAG.EQ.1) EQUI = SHIP	INFUPC	246
50C	C***	WHILE READING SYSTEM DEFINITION FOR EVERY NEW "EQUI" UNDER	INFUPC	247
	C***	THIS "SHIP", ENTER A NEW UNIQUE TRIPLET IN THE "IREC" ARRAY.	INFUPC	248
	C***	TRIPLET = (SHIP CLASS/EQUIPMENT/PASS STORAGE 3 INDEX)	INFUPC	249
		N = IPIC(1)	INFUPC	250
	C	(SHIP CLASS/EQUIPMENT) NOT FOUND - ADD	INFUPC	251
50E		N = N + 1	INFUPC	252
		IREC(1) = N	INFUPC	253
		IREC(N*3-1) = SHIP	INFUPC	254
		IREC(N*3) = EQUI	INFUPC	255
		IREC(N*3+1) = IXSSD + (N-1)*2	INFUPC	256
51C		CSTAELE(N*3-2) = SHIP	INFUPC	257
		CSTAELE(N*3-1) = EQUI	INFUPC	258
		J=N	INFUPC	259
		LOCAT = (I*3+1)	INFUPC	260

SUBROUTINE INFUPD

74/74 OPT=2

FTN 4.c+433

07/31/79 23.53.41

	C DECODE INF(7) AND FORM IPROCOC ARRAY.	INFUPD	261
515	C INP(7) = PRODUCTION MONEY (SCN, WPN, OR UPN)	INFUPD	262
	C IPROCOC = 2 FOR SCN	INFUPD	263
	C = 3 FOR WPN	INFUPD	264
	C = 4 FOR UPN	INFUPD	265
	C = 0 FOR NO INP(7)	INFUPD	266
520	C INF7 = 3H	INFUPD	267
	CALL MOVE(INP(7),1,INF7,1,3)	INFUPD	268
	IF(INP7.EQ.3H) ICOSCOD = 0	INFUPD	269
	IF(INP7.EQ.3HSCN) ICOSCOD = 2	INFUPD	270
	IF(INP7.EQ.3HWPN) ICOSCOD = 3	INFUPD	271
525	IF(INP7.EQ.3HUPN) ICOSCOD = 4	INFUPD	272
	IPROCOC(N) = ICOSCOD	INFUPD	273
	C	INFUPD	274
	C DECODE & STORE THE C/S TABLE VALUES FROM "INP"(5) & "INP"(6).	INFUPD	275
530	C J5 = 0	INFUPD	276
	CHAR2 = CHAR1	INFUPD	277
	C	INFUPD	278
	C DO-LOOP 295 AND FOLLOWING CODE SCANS THE LEFTMOST (5) CHARACTERS	INFUPD	279
535	C OF INP(5) WORD, AND ENCODES ANY NON-BLANK ALPHANUMERIC INTEGER	INFUPD	280
	C CHARACTERS FOUND THERE INTO A 5-DIGIT INTEGER, STORED (AS THIRD	INFUPD	281
	C MEMBER OF A QUADRUPLT) IN CSTABLE ARRAY (I.E., TOTAL QUANTITY	INFUPD	282
	C OF ANY EBS ELEMENT REQUIRED ON EACH UNIT OF A GIVEN SHIP CLASS	INFUPD	283
	C FOR FULL OPERATIONAL CAPABILITY)	INFUPD	284
	C	INFUPD	285
540	C*** ENTER A NEW QUADRUPLT IN "CSTABLE"/"CSTABEL"	INFUPD	286
	C*** (SHIP CLASS/EQUIPMENT (PLCYMENT QTY) AND (ROT&E INV QTY)	INFUPD	287
	DO 295 II=1,5	INFUPD	288
	CALL MOVE (INF(5), II, CHAR2, 1, 1)	INFUPD	289
	IF (CHAR2 .EQ. 1H) GO TO 295	INFUPD	290
545	J5 = J5 + 1	INFUPD	291
	CALL MOVE (CHAR2,1,SAVE,J5,1)	INFUPD	292
	295 CONTINUE	INFUPD	293
	C	INFUPD	294
	IF (J5.NE.0) GO TO 296	INFUPD	295
550	CSTABLE(I*3) = 0	INFUPD	296
	GO TO 297	INFUPD	297
	C	INFUPD	298
	296 CONTINUE	INFUPD	299
555	C ENCODE (4,376,FMT) J5	INFUPD	300
	DECODE (J5,FMT,SAVE) CSTABLE(I*3)	INFUPD	301
	C	INFUPD	302
	C DO-LOOP 298 AND FOLLOWING CODE IS SIMILAR TO PRECEDING CODE:	INFUPD	303
560	C THE 9-CHARACTER REAL NUMBER FROM "INP"(6), STORED AS THE 4TH MEMBER	INFUPD	304
	C OF A QUADRUPLT IN THE "CSTABLE" ARRAY IS (THAT QUANTITY OR FRACTION	INFUPD	305
	C OF ANY EBS ELEMENT WHICH MUST BE BOTH MANUFACTURED AND INSTALLED	INFUPD	306
	C ON EACH UNIT OF A GIVEN SHIP CLASS)	INFUPD	307
	C	INFUPD	308
	297 CONTINUE	INFUPD	309
565	J6 = 0	INFUPD	310
	J7 = 0	INFUPD	311
	J8 = 0	INFUPD	312
	IPOINT = 0	INFUPD	313
	CHAR2 = CHAR1	INFUPD	314
570	DO 298 II=1,9	INFUPD	315
		INFUPD	316
		INFUPD	317

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      CALL MOVE (INP(I),II,CHAR2,1,1)
      IF (CHAR2.EQ.1H) GO TO 298
      IF (CHAR2.EQ.1H) IPOINT = IPOINT + 1
      JB = JB + 1
      IF (IPOINT.EQ.0) JB = JB + 1
      IF (IPOINT.EQ.1.AND. (JB-J6).GT.1) J7 = J7 + 1
      CALL MOVE (CHAR2,1,SAVE,J8,1)
298  CONTINUE
      IF (JB.NE.0) GO TO 299
      CSTARFL(I) = 0.
      GO TO 20
299  CONTINUE
      IF (IPOINT.EQ.0) JB = JB + 1
C
C STOP 31 PREVENTS ABORT ON "FORMAT 377" OR "FMTR" FROM A TOO-LONG NBR
C IF STOP 31 EVER OCCURS, REVIEW INPUT, AND SHORTEN COMPONENT COUNT(S)
C IN SECOND COLUMN (OF SYSTEM DESCRIPTION) TO 9 OR FEWER CHARACTERS!
C NOTE! THE CHARACTER COUNT INCLUDES NUMBERS TO LEFT OR RIGHT OF DECIMAL
C POINT AND THE DECIMAL POINT! IF YOU HAVE A 9-DIGIT INTEGER
C (PERISH FORBID & HEAVEN FORBID!) THE PROGRAM LOGIC WILL SUPPLY
C THE UNDERSTOOD DECIMAL POINT, INCREASING THE CHARACTER COUNT
C TO 10, AND CAUSING A STOP 31 CONDITION --- REDUCE TO 8-DIGITS!
C
      IF (JB.GT.9) STOP "INPUT NUMBER TOO LONG: SEE NOTE AT INFUPD 299"
      IF (IPOINT.EQ.0) CALL MOVE (PYCOT,1,SAVE,J8,1)
      ENCODE (6,377,FMTR) JB,J7
      DECODE (JB,FMTR,SAVE) CSTARFL(I)
      GO TO 20
C
C DATA CARD READ
C***
C*** "NTYPE" = INDICATOR DURING SCAN OF 1ST 20 CHAR OF DETAIL
C*** DATA CARD
C*** = 0 ONLY BLANKS SO FAR, OR JUST STARTING SCAN
C*** = 1 JUST SCANNED 1ST LEFT PAREN (PRESUMES SINGLE WBS EL)
C*** = 2 JUST SCANNED FIRST DASH (PRESUMES MULTIPLE WBS EL'S)
      J=0
      NTYPE = 0
      DO 350 I=1,20
      CALL MOVE (INP,I,CHAR,1,1)
      IF (NTYPE.GT.0) GO TO 310
      IF (CHAR.EQ.1H) NTYPE = 1
      GO TO 310
      IF (CHAR.EQ.1H) GO TO 350
      IF (CHAR.GE.1H0.AND.CHAR.LE.1H9) GO TO 340
      IF (CHAR.NE.1H-) GO TO 320
      IF (NTYPE.LE.2) GO TO 360
C*** "LOC" = POSITION IN J-COUNT OF DASH.
      LOC = J+1
      NTYPE = 2
      GO TO 340
      IF (CHAR.EQ.1H) GO TO 370
      GO TO 360
C*** "J" = COUNT OF LEGIT CHAR'S. (ANY DIGIT OR DASH)
      J = J+1
      CALL MOVE (CHAR,1,SAVE,J,1)
      GO TO 350
C
      OUTPUT ERROR MESSAGE

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      INFUPC 318
      INFUPC 319
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      INFUPC 372
      INFUPC 373
      INFUPC 374

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SUBROUTINE INFUPC 74/74 CPT=2

FTN 4.0+433

07/31/79 23.53.41

	363 WRITE (6,31) INP	INFLPC	375
	WRITE(6,301)	INFLPC	376
670	361 FORMAT (5X, 26HPRECEDING CARD IS IN ERROR)	INFLPC	377
	GO TO 20	INFUPC	378
	C	INFLPC	379
	C TEST FOR A "DASH" NOT FOLLOWED BY A SECOND SUBSCRIPT	INFUPC	380
	C	INFUPC	381
675	373 CONTINUE	INFLPC	382
	IF (IJ - LUC).EQ.J .AND. NTYPE.EQ.2) GO TO 372	INFLPC	383
	IF (NTYPE.EQ.2) GO TO 380	INFLPC	384
	GO TO 374	INFLPC	385
	C	INFLPC	386
680	C DECREMENT "J" & CHANGE "NTYPE" FOR DASH NOT FOLLOWED BY 2ND SUBSCRIPT	INFUPC	387
	C	INFLPC	388
	372 CONTINUE	INFLPC	389
	J = J - 1	INFLPC	390
	NTYPE = 1	INFUPC	391
685	C SINGLE SUBSCRIPT	INFUPC	392
	374 CONTINUE	INFLPC	393
	NUM = 1	INFLPC	394
	ENCODE (4,376,FMT) J	INFUPC	395
	C*** PICK OFF WBS ELEMENTS IN FIRST 10 CHAR'S.	INFLPC	396
690	376 FORMAT (2H(I,I1,1H))	INFLPC	397
	377 FORMAT (2H(F,I1,1H.,I1,1H))	INFLPC	398
	DECODE (J,FMT,SAVE) ISUBF	INFLPC	399
	GO TO 390	INFLPC	400
	C SUBSCRIPT RANGE	INFUPC	401
695	380 NO2 = J-LOL	INFLPC	402
	NO1 = J-NO2-1	INFLPC	403
	ENCODE (10,385,FMT) NO1,NO2	INFLPC	404
	385 FORMAT (2H(I,I1,5H,1X,I1,1H))	INFUPC	405
	DECODE (J,FMT,SAVE) ISUBF, ISUBL	INFLPC	406
695	NUM = ISUBL-ISUBF+1	INFLPC	407
	391 IF (SSFLAG.LT.0) GO TO 415	INFLPC	408
	C UPDATE SHIP CLASS/EQUIPMENT FILE RECORD	INFLPC	409
	C*** WORKING WITH "TPUT" COST LINE.	INFLPC	410
	C*** STORES UP TO 6 WBS EL'S. STORES "TPUT" COSTS ON MS 2 (A/N)	INFLPC	411
695	C*** AT INDEX = 18,20,22,ETC OR STORES "NFUT" AT INDEX = 19,	INFLPC	412
	21,23,ETC.	INFLPC	413
	C***	INFLPC	414
	INDEX = LOCAT + INC	INFLPC	415
	CALL PRACHS (2,ICREC,LENN,INDEX)	INFLPC	416
	DO 416 I=1,NUM	INFLPC	417
670	IOHPC(ISUBF+I-1) = INF(I+2)	INFLPC	418
	411 CONTINUE	INFUPC	419
	CALL WFITMS (2,ICREC,LENN,INDEX,1)	INFLPC	420
	GO TO 20	INFLPC	421
	C UPDATE WBS ON SYSTEM DATA	INFUPC	422
675	C*** WORKING WITH A WBS EL "TPUT" PRIOR TO FIRST "SENC" OR	INFLPC	423
	C*** A "TPUT" COST LINE OF AN EQUIPMENT	INFUPC	424
	415 IF (INC.EQ.1) GO TO 430	INFLPC	425
	INDEX = 1XWBS + (ISUBF-1)/(LENF/5)	INFLPC	426
	CALL PRACHS (2,ICREC,LENN,INDEX)	INFLPC	427
670	ISUBL = 501/ISUBF*5-4,LENN)	INFLPC	428
	C*** WRITING "APPROX COUL", "EL NAMES", AND ELEMENT NO. ON MS2.	INFUPC	429
	DO 420 I=1,5	INFLPC	430
	421 IOPEC(ISUBL+I-1) = INF(2+I)	INFLPC	431
	CALL WFITMS (2,ICREC,LENN,INDEX,1)	INFLPC	432

SUBROUTINE INFUPD

74/74 OPT=2

FTN 4.6+433

07/31/75 23.53.41

685	C		INFLPC	432
	C		INFUPC	433
	C	DECODE ROLL-UP VALUE	INFUPC	434
		J = 0	INFLPC	435
		CHAR2 = CHAR1	INFUPC	436
690		DO 425 II=1,2	INFLPC	437
		CALL MOVE (INF(8), II, CHAR2, 1, 1)	INFLPC	438
		IF (CHAR2.EQ. 1H) GO TO 425	INFLPC	439
		J = J + 1	INFLPC	440
		CALL MOVE (CHAR2, 1, SAVE, J, 1)	INFUPC	441
695	425	CONTINUE	INFLPC	442
	C		INFLPC	443
		ENCODE (4, 376, FMT) J	INFLPC	444
		DECODE (J, FMT, SAVE) IRCLL(1SUBF)	INFLPC	445
	C		INFLPC	446
700		GO TO 20	INFLPC	447
	430	INDEX = 1XSD + (1SUBF-1)/LENR	INFUPC	448
		CALL READMS (2, IOREC, LENR, INDEX)	INFUPC	449
		CALL READMS (2, IOREC(LENR+1), LENR, INDEX+1)	INFUPC	450
		DO 440 I=1,NUM	INFUPC	451
705		NOX = PCO(1SUBF-1, LENR)	INFUPC	452
	440	IOREC(INOX+I) = INP(I+2)	INFLPC	453
		CALL WFITMS (2, IOREC, LENR, INDEX, 1)	INFLPC	454
		CALL WFITMS (2, IOREC(LENR+1), LENR, INDEX+1, 1)	INFUPC	455
		GO TO 20	INFUPC	456
710	C		INFUPC	457
	C	***** END OF THE SYSTEM, WBS, EQUIPMENT NAME INPUT *****	INFLPC	458
	C		INFUPC	459
		500 CONTINUE	INFLPC	460
	C		INFUPC	461
715		C INITIALIZE MASS STORAGE FILES 9 & 10 IN TWO DO-LOOPS.	INFLPC	462
		C NOTE: MS9 & MS10 EACH HAS A LOW END FROM 1 THROUGH 1247 (43 X 29);	INFUPC	463
		C AND MS10 HAS A HIGH END FROM 1251 THROUGH LENF10.	INFUPC	464
		C LOW END OF MS 9 HOLDS UP TO 1247 "TOTC" ARRAYS FROM "ELDGET" SUBRTN,	INFLPC	465
720		C = SUMMARY TOTAL ARRAY OF 10 COSTS OVER ALL APPROPRIATIONS LOGS	INFLPC	466
		C FOR THIS "EQUI" ON THE "SHIP"	INFLPC	467
		C LOW END OF MS10 HOLDS UP TO 1247 "ROW" ARRAYS FROM "SLCCM" RTN,	INFLPC	468
		C = TOTAL COSTS VERSUS WBS OF UP TO 29 "EQUI'S" ON EACH CF	INFUPC	469
		C UP TO 43 "SHIP"	INFLPC	470
		C HIGH END OF MS10 HOLDS UP TO 43 "TOT" ARRAYS FROM "WBSOUT(1)" SUBRTN,	INFLPC	471
725		C = CROSS-FOOT ARRAY VERSUS WBS OF ALL "EQUI" COSTS	INFLPC	472
		C ON A UNIT SHIP OF THIS CLASS.	INFLPC	473
	C		INFLPC	474
		DO 506 L1=1,LENR	INFLPC	475
		IOREC(L1) = 0	INFUPC	476
730	506	CONTINUE	INFLPC	477
		L3 = IREC(L1)	INFUPC	478
		DO 507 L2=1,L3	INFUPC	479
		CALL WFITMS (9, IOREC, LENR9, L2, -1)	INFLPC	480
		CALL WFITMS (10, IOREC, LENR, L2, -1)	INFLPC	481
735	507	CONTINUE	INFLPC	482
		DO 508 L4=INDEXTOT, LENF10	INFLPC	483
		CALL WFITMS (10, IOREC, LENR, L4, -1)	INFLPC	484
	508	CONTINUE	INFLPC	485
	C		INFLPC	486
740		C START COMPONENT DEFINITION INPUT, TPOT, NFLT, CEF	INFLPC	487
	C	*** SET "ISFFLG" TO 1 AFTER 1ST "SEND" SO CONTROL WILL BRANCH	INFLPC	488

```

C*** HERE IMMEDIATELY AFTER STATEMENT "2L".
      ISFFLG = 1
745 C
C      READ IN EQUIPMENT DEFINITION DATA
      910 CONTINUE
      READ (5,25) INF
      IF ( ECF(5)) GO TO 920
750 C
      920 CONTINUE
      WRITE (6,31) INF
C
C      DETERMINE THE FIRST 4 CHARACTERS OF INP(1)
755 C      CALL MCVE ( INP(1), 1, CHAR, 1, 4 )
      IF ( CHAR .EQ. 4HNPOT ) GO TO 570
      IF ( CHAR .EQ. 4HPUT ) GO TO 960
      IF ( CHAR .EQ. 4HQUI ) GO TO 950
      IF ( CHAR .EQ. 4HEND ) GO TO 1020
760 C      IF ( CHAR .EQ. 4HCER ) GO TO 980
      CALL MCVE ( CHAR, 8, CHAR, 2, 3 )
      IF ( CHAR .EQ. 1H* ) GO TO 910
      IF ( CHAR .EQ. 1H$ ) GO TO 910
      GO TO 533
765 C
C      COMES HERE ON "EQUI"
      950 CONTINUE
C
C      COUNTER OF TOTAL NO. OF DIFFERENT EQUIPMENT DEFINITION
770 C      DATA INPUT
      ICCTR = ICCTR + 1
C
C      DEFINE THIS EQUIPMENT
775 C*** COMPRESS 1ST 6 LEFT JUST CHARACTER'S AS UNIQUE NAME OF "EQUI"
      CALL REPT ( INP(2), NM, 2, 1H )
      EQUI = NM(1) .AND. MASK
C
C      DEFINE A LOCATION OR INDEX FOR STORAGE OF THIS EQUIPMENT
780 C
C      LOCAT - MASS STORAGE 3 INDEX (18,20,22,ETC)
      LOCAT = IXSSD + (ICCTR - 1) * 2
C
C      INCREMENT INDEX FOR CER STORAGE
785 C      INDCER = INDCER + LENLCP
      "ICFR" ARRAY IS THE TEMPORARY STORAGE FOR THE INDICES OF THE
C CER DATA FOR EACH EQUIPMENT.
C      INDCER - MASS STORAGE 6 INDEX (1,10,19,ETC)
C
790 C      FILL "CER" TRIPLT WITH EQUI/PS-8 INDEX/MS-3(MS-2) INDEX
      ISUBCER = ISUBCER + 1
      ICER(ISUBCER) = EQUI
      ISUBCER = ISUBCER + 1
      ICER(ISUBCER) = INDCER
795 C      ISUBCER = ISUBCER + 1
      ICER(ISUBCER) = LOCAT
C*** SAVE 7 PLUS 7 CHAR'S AS "EQUI" NAME.
      NAMESC(ICCTR,1) = INP(2) .AND. MASK7

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INFUPC 489
INFLPC 490
INFLPC 491
INFLPC 492
INFLPC 493
INFLPC 494
INFLPC 495
INFLPC 496
INFLPC 497
INFLPC 498
INFUPD 499
INFLPC 500
INFLPC 501
INFLPC 502
INFLPC 503
INFLPC 504
INFLPC 505
INFLPC 506
INFLPC 507
INFLPC 508
INFLPC 509
INFLPC 510
INFLPC 511
INFLPC 512
INFLPC 513
INFUPD 514
INFLPC 515
INFLPC 516
INFLPC 517
INFLPC 518
INFLPC 519
INFLPC 520
INFLPC 521
INFLPC 522
INFLPC 523
INFLPC 524
INFLPC 525
INFLPC 526
INFLPC 527
INFLPC 528
INFLPC 529
INFLPC 530
INFLPC 531
INFLPC 532
INFLPC 533
INFLPC 534
INFLPC 535
INFLPC 536
INFUPD 537
INFLPC 538
INFLPC 539
INFLPC 540
INFLPC 541
INFLPC 542
INFUPD 543
INFLPC 544
INFLPC 545

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SUBROUTINE INFUPD

74/74 OPT=2

FTN 4.6+433

07/31/79 23.53.41

	NAMESC(ICCTR,2) = INP(3) .AND. MASK7	INFLPD	546
	IF (INF(1).EQ.16H) GO TO 955	INFLPD	547
	GO TO 911	INFUPC	548
810	955 NAMESC(ICCTR,2) = NAMESC(ICCTR,1)	INFLPD	549
	NAMESC(ICCTR,1) = 16H	INFLPD	550
	GO TO 913	INFLPD	551
815	C	INFLPD	552
	C THE INPUT VALUES ARE TPUT VALUES	INFLPD	553
	963 CONTINUE	INFLPD	554
	INC = 1	INFLPD	555
	GO TO 913	INFLPD	556
810	C	INFLPD	557
	C THE INPUT VALUES ARE NPUT VALUES	INFLPD	558
	973 CONTINUE	INFLPD	559
	INC = 1	INFLPD	560
	GO TO 913	INFLPD	561
815	C	INFLPD	562
	C THE INPUT VALUES ARE CER VALUES	INFLPD	563
	980 CONTINUE	INFLPD	564
	C	INFLPD	565
	C INITIALIZE CER INPUT COUNT CONTROL	INFLPD	566
820	C CERCT = 0	INFLPD	567
	C	INFLPD	568
	981 CONTINUE	INFLPD	569
	READ (5,983) CEREND,EFORSI,RCWID,ADDID,CERNQ,XREFNO,XREFAD,	INFLPD	570
	C (FS(11),FS(11),I1=1,6)	INFLPD	571
825	983 FORMAT (A5,A1,I3,I1,I5,I4,I1,6(A1,F9.0))	INFLPD	572
	IF (CEREND.EQ.5HEXER) GO TO 985	INFLPD	573
	WRITE (1,9823) CEREND,EFORSI,RCWID,ADDID,CERNQ,XREFNO,XREFAD,	INFLPD	574
	C (FS(11),PS(11),I=1,6)	INFLPD	575
	9823 FORMAT (10X,A5,A1,I3,I1,I5,I4,I1,6(1X,A1,F13.6))	INFLPD	576
830	CERCT = CERCT + 1	INFLPD	577
	IFORC(CERCT) = EFORSI	INFLPD	578
	IROWID(CERCT) = ROWID	INFLPD	579
	IADD(CERCT) = ADDID	INFLPD	580
	ICERNO(CERCT) = CERNQ	INFLPD	581
835	IXREFNO(CERCT) = XREFNO	INFLPD	582
	IXREFAD(CERCT) = XREFAD	INFLPD	583
	DO 984 I=1,6	INFLPD	584
	IFSTORE(I,CERCT) = FS(I)	INFLPD	585
	PSSTORE(I,CERCT) = PS(I)	INFLPD	586
840	984 CONTINUE	INFLPD	587
	GO TO 981	INFLPD	588
	C	INFLPD	589
	985 CONTINUE	INFLPD	590
	WRITE (6,986) CEREND	INFLPD	591
845	986 FORMAT (10X, A5)	INFLPD	592
	CERCTX6 = CERCT * 6	INFLPD	593
	C STORE "CER" DATA FOR THIS "EQUIP" ON MS 8 AT INDEX "INCCR"	INFLPD	594
	CALL WAITMS (8,CERCT,1,INCCR,1)	INFLPD	595
	CALL WAITMS (8,IFORC,CERCT,INCCR+1,1)	INFLPD	596
850	CALL WAITMS (8,IROWID,CERCT,INCCR+2,1)	INFLPD	597
	CALL WAITMS (8,IADD,CERCT,INCCR+3,1)	INFLPD	598
	CALL WAITMS (8,ICERNO,CERCT,INCCR+4,1)	INFLPD	599
	CALL WAITMS (8,IXREFNO,CERCT,INCCR+5,1)	INFLPD	600
	CALL WAITMS (8,IXREFAD,CERCT,INCCR+6,1)	INFLPD	601
955	CALL WAITMS (8,IFSTORE,CERCTX6,INCCR+7,1)	INFLPD	602

SUBROUTINE INFUPD

74/74 OPT=2

FTN 4.6+433

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	CALL WRTMS (6,PSSIORE,CEPCTX6,INOCF+1,1)	INFUPC	603
	GO TO 511	INFUPC	604
	C	INFUPC	605
	C END OF THE EQUIPMENT DEFINITION DATA	INFUPC	606
86C	C	INFUPC	607
	1020 CONTINUE	INFUPC	608
	C	INFUPC	609
	C STORAGE OF EQUIPMENT TPUT/INPUT INDEX INTO THE "IREC" ARRAY	INFUPC	610
	N = IREC(1) * 3	INFUPC	611
805	DO 1030 J=1,ISUBCEX,3	INFUPC	612
	EQUI = ICER(J)	INFUPC	613
	LOCAT = ICER(J+2)	INFUPC	614
	DO 1025 I=1,N,3	INFUPC	615
	IF(EQUI.NE.IREC(I)) GO TO 1025	INFUPC	616
87L	IREC(I+1) = LOCAT	INFUPC	617
	1025 CONTINUE	INFUPC	618
	1030 CONTINUE	INFUPC	619
	C	INFUPC	620
	C CALL WRTMS (2, IREC, LENR17, IXSS, 1)	INFUPC	621
875	C	INFUPC	622
	501 FORMAT (2,I3)	INFUPC	623
	5011 FORMAT (10X, 20I3)	INFUPC	624
	C	INFUPC	625
	C INPUT THE CHART GENERATION CONTROLS	INFUPC	626
876	C	INFUPC	627
	READ (5,25) INP	INFUPC	628
	WRITE (6,31) INP	INFUPC	629
	READ (5,501) CHRTCNT	INFUPC	630
	WRITE (6,5011) CHRTCNT	INFUPC	631
	C	INFUPC	632
885	C	INFUPC	633
	C INPUT TITLE AND SHIP INSTALLATION SCHEDULE	INFUPC	634
	READ (5,25) INF	INFUPC	635
	WRITE (6,31) INF	INFUPC	636
	C	INFUPC	637
	READ (5,5012) NOYRS,IYEARS	INFUPC	638
89L	IYRS = NOYRS + 1	INFUPC	639
	5012 FORMAT (I5,6X,12I5)	INFUPC	640
	WRITE (6,5013) NOYRS,((IYEARS(K),K=1,NOYRS)	INFUPC	641
	5013 FORMAT (10X,I4,* YEARS:*,12I5)	INFUPC	642
	DO 502 I=1,NUSL6	INFUPC	643
895	READ (5,503) (SINSTB(I,K),K=1,IYRS)	INFUPC	644
	WRITE (6,504) (SINSTB(I,K), K=1,IYRS)	INFUPC	645
	503 FORMAT (A6,4X,12I5)	INFUPC	646
	504 FORMAT (10X,A6,4X,12I5)	INFUPC	647
	SNAME = SINSTB(I,1) .AND. MASK	INFUPC	648
900	SINSTB(I,1) = SNAME	INFUPC	649
	502 CONTINUE	INFUPC	650
	READ (5,25) INP	INFUPC	651
	WRITE (6,31) INF	INFUPC	652
905	601 FORMAT (16I5)	INFUPC	653
	602 FORMAT (10X,16I5)	INFUPC	654
	READ (5,601) NOFLY	INFUPC	655
	WRITE (6,602) NOFLY	INFUPC	656
	READ (5,601) (IFLYROW(K), K=1,NOFLY)	INFUPC	657
	WRITE (6,602) (IFLYROW(K), K=1,NOFLY)	INFUPC	658
910	C READ IN FIVE LINES OF FOOTNOTES FOR CUTPUT CHARTS	INFUPC	659
	DO 60 P=1,5	INFUPC	660
	READ (5,25) (FNCTES(M,L),L=1,12)	INFUPC	661

SUBROUTINE INFUPD

14/74 OPT=2

FTN 4.6+433

07/31/79 23.53.41

	WRITE(6,604) (FNOTES(M,L),L=1,12)	INFUPC	660
	60 CONTINUE	INFUPC	661
915	604 FORMAT(10X,12A10)	INFUPC	662
	C BUILD WORKING FILE(3)	INFUPC	663
	DO 505 I=1,LENR	INFUPC	664
	505 IOREC(I) = 3	INFUPC	665
	CHAR = 10H	INFUPC	666
920	C	INFUPC	667
	C DO-LOOP 51, INITIALIZES "LENR" (100) RECORDS ON MS3 TO ZERO	INFUPC	668
	C	INFUPC	669
	DO 510 I=1,LENR	INFUPC	670
	510 CALL READMS (3,IOREC,LENR,I,-1)	INFUPC	671
925	520 INDEX = IXMBS	INFUPC	672
	INDEX3 = 1	INFUPC	673
	NREC = LMBS	INFUPC	674
	IGOTO = 3	INFUPC	675
	GO TO 600	INFUPC	676
930	530 INDEX = IXLD	INFUPC	677
	INDEX3 = LMBS + 1	INFUPC	678
	NREC = LSD	INFUPC	679
	IGOTO = 3	INFUPC	680
	GO TO 600	INFUPC	681
935	540 CALL READMS (2, INEC, LENR17, IXSS)	INFUPC	682
	IGOTO = 4	INFUPC	683
	NCR = 3	INFUPC	684
	NREC = 1	INFUPD	685
	IC = 0	INFUPC	686
940	550 CONTINUE	INFUPC	687
	IC = IC + 1	INFUPD	688
	IF (IC .GT. ICCTR) GO TO 700	INFUPC	689
	INDEX = ICER(INEC)	INFUPC	690
	INDEX3 = INDEX	INFUPC	691
945	NCR = NCR + 1	INFUPC	692
	C	INFUPC	693
	C DO-LOOP 660 AND INCLUDED (NESTED) DO-LOOPS:	INFUPC	694
	C - READS "AS IS" INPUT RECORDS FROM MS2	INFUPC	695
	C - TRANSLATES "AS IS" INTO "F-NOTATION" (F1.0 --- F10.0)	INFUPC	696
950	C ACCORDING TO THE NUMBER OF SIGNIFICANT CHARACTERS	INFUPC	697
	C (SUM OF DIGITS + DECIMAL POINT + (MINUS))	INFUPC	698
	C - WRITES "F-NOTATION" DATA ("IOREC") ON MS3	INFUPC	699
	C	INFUPC	700
	600 CONTINUE	INFUPC	701
955	DO 660 L=1,NREC	INFUPC	702
	CALL READMS (2,IOREC,LENR,INDEX+L-1)	INFUPC	703
	DO 650 J=1,LENR	INFUPC	704
	IPER = 0	INFUPD	705
	IBK = 0	INFUPC	706
960	INEG = 0	INFUPC	707
	NUM = 0	INFUPD	708
	DO 630 K=1,10	INFUPC	709
	CALL MOVE (IOREC(J),K,CHAR,1,1)	INFUPD	710
	IF (CHAR.NE.1H) GO TO 610	INFUPC	711
965	IEK = IBK + 1	INFUPC	712
	GO TO 630	INFUPC	713
	610 IF (CHAR.NE.1H) GO TO 615	INFUPD	714
	IF (IPER.NE.0) GO TO 650	INFUPC	715
	IPER = 1	INFUPC	716

SUBROUTINE INFUPD

,4/74 OPT=2

FTN 4.6+434

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570	GO TO 625	INFUPC	717
615	IF (CHAR.NC.1H-) GO TO 620	INFUPC	718
	IF (INFG.NE.4) GO TO 650	INFUPC	719
	INFG = 1	INFUPC	720
	GO TO 625	INFUPC	721
575	620 IF (CHAR.LT.1HJ.OR.CHAR.GT.1H9) GO TO 650	INFUPC	722
625	NUM = NUM + 1	INFUPC	723
	CALL MCVE (CHAR,1,SAVE,NUM,1)	INFUPC	724
630	CONTINUE	INFUPC	725
	IF (IBK.EQ.1J) GO TO 645	INFUPC	726
580	ENCODE (7,84J,FMT) NUM	INFUPC	727
640	FORMAT (2H(F,I2,3H,0))	INFUPC	728
	DECODE (NUM,FMT,SAVE) IOREC(J)	INFUPC	729
	GO TO 650	INFUPC	730
645	IOREC(J) = 0	INFUPC	731
650	CONTINUE	INFUPC	732
660	CALL WFITMS (3,IOREC,LENR,INOX3+L-1,1)	INFUPC	733
	GO TO (520, 530, 540, 550), IGCTO	INFUPC	734
700	CONTINUE	INFUPC	735
C		INFUPC	736
C	SETUP THE INWORD ARRAY CONTAINING APPRO. CODE,	INFUPC	737
C	WES ELEMENT DEFINITION AND EQUATION NUMBER.	INFUPC	738
	CALL AFCELM	INFUPC	739
	RETURN	INFUPC	740
600	CONTINUE	INFUPC	741
545	STOP "UNEXPECTED EOF AS INFUPD SUBRTN REACS DATA INPUT FILE"	INFUPC	742
	END	INFUPC	743

SUBROUTINE WBSOUT

74774 OPT=2

FTN 4.C+433

07/31/79 23.53.41

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1      SUBROUTINE WBSOUT (ICALL)
      C      GENERAL TITLE TO BE USED ON ALL CHARTS
      COMMON / GLNLT / TITLE(3)
      INTEGER TITLE
      C
      C ***** INPUT COMMON *****
      C
      C VARIOUS OTHER ARRAYS ARE EQUIVALENCED TO THE "ARRAY" ARRAY AS IN:
      C
      C - SLCCM : ROW = ARRAY(1,1)
      C - BUDGET : CG = ARRAY(1,2)
      C - INPUIC : IOREC = ARRAY(1,1)
      C - COMPCMP : ROW = ARRAY(1,1)
      C - APCFLM : IRAY = ARRAY(1,1)
      C
      C      COMMON / NPOT / ARRAY(150,2)
      C
      C ***** MS (LENGTH AND COUNTER) COMMON *****
      C
      C      LENR      - MASS STORAGE UNITS COMMON RECORD LENGTH
      C                  (TYPICALLY 150)
      C      NWBS      - NUMBER OF ELEMENTS IN THE CBS (MAX 150)
      C      ICCTR      - NUMBER OF EQUIPMENTS IN THE EQUIPMENT
      C                  ELEMENTS TABLE
      C      L150      - (150 WORDS) RECORD LENGTH OF 7 ARRAYS
      C                  IN THE "CERVL5" COMMON
      C      L900      - (900 WORDS) RECORD LENGTH OF 2 ARRAYS
      C                  IN THE "CERVL5" COMMON
      C
      C      COMMON / MS2 / LENR,NWBS,ICCTR,L150,L900
      C
      C ***** NAMES COMMON *****
      C
      C      NMSYS      - NAME OF THE SYSTEM
      C      NOSUB      - TOTAL NUMBER OF SHIPCLASSES CONSIDERED
      C      NMSUB( , ) - NAME OF THE SHIPCLASS IN TWO WORDS
      C      NCCMP( , ) - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)
      C                  (RUNNING TOTAL FOR EQUIPMENTS)
      C      NMCCMP( , , ) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES
      C                  IN WBSOUT (INDEXED BY EQUIPMENT NUMBER
      C                  AND SHIPCLASS NUMBER)
      C      NAMESC( , ) - NAMES OF EQUIPMENT (2 WORDS, 7 CHARS EACH)
      C                  FOR EQUIPMENT QUANTITIES TABLE - FLEET
      C                  SUMMARY
      C      EQUI      - PRESENT EQUIPMENT (BEING PROCESSED)
      C      SHIFNM    - PRESENT SHIPCLASS (BEING PROCESSED)
      C
      C      COMMON / NAMES / NMSYS, NOSUB, NMSUB(2,43), NCCMP(43),
      C      1 NMCCMP(2,100,43), NAMESC(100,2), EQUI, SHIFNM
      C      INTEGER EQUI, SHIFNM
      C ***** MISC (MISCELLANEOUS) COMMON *****

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WBSOUT      2
GENTLE      2
GENTLE      3
GENTLE      4
NFLT        2
NFLT        3
NFLT        4
NFLT        5
NFLT        6
NFLT        7
NFLT        8
NFLT        9
NFLT        10
NFLT        11
NFLT        12
NFLT        13
NFLT        14
MS2          2
MS2          3
MS2          4
MS2          5
MS2          6
MS2          7
MS2          8
MS2          9
MS2         10
MS2         11
MS2         12
MS2         13
MS2         14
MS2         15
MS2         16
MS2         17
MS2         18
MS2         19
SYST         2
SYST         3
SYST         4
SYST         5
SYST         6
SYST         7
SYST         8
SYST         9
SYST        10
SYST        11
SYST        12
SYST        13
SYST        14
SYST        15
SYST        16
SYST        17
SYST        18
SYST        19
SYST        20
SYST        21
SYST        22
SYST        23

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	C	NAP	- COUNT OF DIFFERENT APPROPRIATION CODES	SYST	24
	C	APPRO()	- APPROPRIATION CODE NAMES	SYST	25
60	C	SPCL(,)	- PERCENTAGES FOR CBS ELEMENT COST SPLITS	SYST	26
	C	NPH	- COUNT OF THE LIFE CYCLE PHASES	SYST	27
	C	IPH()	- FIRST CBS ELEMENT NUMBER OF EACH PHASE	SYST	28
	C	IPB()	- CBS ELEMENT NUMBER FOR PAGE BREAKS	SYST	29
65	C		(LAST CBS NUMBER FOR THE PAGE)	SYST	30
	C	IPHASE(,)	- TITLES OF CBS PHASES	SYST	31
	C	FLEETZ	- FLEET (SYSTEM) SIZE	SYST	32
	C	NROLL()	- LOWEST COST ELEMENT LEVEL TO BE PRINTED	SYST	33
	C		(LOWEST LEVEL TO BE ROLLED UP WITHIN PHASE)	SYST	34
70	C	RTOT	- TOTAL ROUTE COST	SYST	35
	C	TOTINV	- TOTAL INVESTMENT COST MINUS TOTAL RIFOUT	SYST	36
	C	TOTRIF	- TOTAL RIFOUT COST	SYST	37
	C	SMISFC	- MISSILE ROUTE COST	SYST	38
	C	NOFLY	- NUMBER OF CBS ELEMENTS TO BE INCLUDED IN	SYST	39
75	C		FLYAWAY COSTS	SYST	40
	C	IFLYRCW()	- CBS ELEMENT NUMBER FOR FLYAWAY COSTS	SYST	41
	C	NOYRS	- NUMBER OF YEARS IN SHIP INSTALLATION TABLE	SYST	42
	C	IYEARS	- YEARS COVERED BY THE SHIP INSTALLATION TABLE	SYST	43
	C	IYRS	- NUMBER OF YEARS IN SHIP INSTALLATION TABLE	SYST	44
80	C		PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE)	SYST	45
	C	FNOTES(,)	- FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS	SYST	46
	C			SYST	47
	C	COMMON / MISC / NAP,APPRO(7),SPCL(3,(,2),NPH,IPH(4),IPB(3),		SYST	48
	1	IPHASE(2,4),FLEETZ,NROLL(4),RTOT,TOTINV,TOTRIF,		SYST	49
85	2	SMISFC,NOFLY,IFLYRCW(25),NOYRS,IYEARS(12),IYRS,		SYST	50
	3	FNOTES(5,12)		SYST	51
		INTEGER APPRO,SPCL,FLEETZ		SYST	52
	C			SYST	53
	C			SHIFINS	54
90	C	***** MARFAY (IREC ARRAY) COMMON *****		SHIFINS	2
	C			SHIFINS	3
	C			SHIFINS	4
	C			SHIFINS	5
	C	THE IREC ARRAY IS A SINGLY-SUBSCRIPTED ARRAY WHOSE FIRST POSITION		SHIFINS	6
	C	IS THE TOTAL NUMBER OF UNIQUE SHIPCLASS/EQUIPMENT COMBINATIONS.		SHIFINS	7
95	C	THE NEXT THREE POSITIONS START A SERIES OF TRIPLETS WHOSE		SHIFINS	8
	C	MEMBERS ARE: SHIPCLASS NAME, EQUIPMENT NAME, MS 3 INDEX.		SHIFINS	9
	C	IREC(1)	- THE RUNNING SUM OF THE TOTAL NUMBER OF UNIQUE	SHIFINS	10
	C		SHIPCLASS/EQUIPMENT COMBINATION IN THE	SHIFINS	11
	C		EQUIPMENT LEVEL INPUT	SHIFINS	12
100	C	IREC(2,5,8,	- THE NAME OF THE SHIP CLASS	SHIFINS	13
	C	11,ETC)		SHIFINS	14
	C	IREC(3,6,9,	- THE NAME OF THE EQUIPMENT	SHIFINS	15
	C	12,ETC)		SHIFINS	16
	C	IREC(4,7,10	- INDEX FOR MASS STORAGE UNIT 3. AN INTEGER	SHIFINS	17
105	C	13,ETC)	NUMBER BEGINNING A 1 AND INCREMENTING BY	SHIFINS	18
	C		2 TO FORM 18,20,22,24,ETC. THIS INDEX IS	SHIFINS	19
	C		THE STARTING LOCATION OF A RECORD (LENGTH	SHIFINS	20
	C		"NUMBER WORDS") ON MASS STORAGE 3 WHICH	SHIFINS	21
	C		CONTAINS THE UNIT COSTS OF THE EQUIPMENTS	SHIFINS	22
110	C		ON A UNIT SHIP (COMPLETED BY SUBROUTINE	SHIFINS	23
	C		COMPCMP).	SHIFINS	24
	C			SHIFINS	25
	C	COMMON / MARFAY / IREC(3750)		SHIFINS	26
	C			SHIFINS	27

```

115      C **** SHIFINS (SHIP SUMMATION AND INSTALLATION TABLE) COMMON ****
      C
      C      SHIPSUM( ) - CONTAINS THE TOTAL NUMBER OF UNIT SHIPS FOR
      C                      EACH SHIP CLASS FOUND BY INSPECTION OF
      C                      THE SHIP INSTALLATION TABLE
120      C      SINSTE( , ) - THE SHIP DEPLOYMENT/INSTALLATION SCHEDULE
      C                      TABLE, FOR EACH SHIP CLASS:
      C                      SINSTE(X,1) - SHIP CLASS NAME
      C                      SINSTE(X,2-7) - THE YEARLY NUMBERS OF
      C                      UNIT SHIPS OF THIS CLASS TO BE
125      C                      DEPLOYED/INSTALLED
      C      SHIFSP( ) - THE TOTAL NUMBER OF UNIT SHIPS FOR EACH
      C                      SHIP CLASS. IT IS THE SAME COUNT AS
      C                      SHIPSUM, HOWEVER, IT IS DEFINED IN A
      C                      SPECIFIC ORDER AFTER ERROR-CHECKING IN
130      C                      SLCOM'S NESTED DO-LOOPS WHICH
      C                      DETERMINE THE TOTAL COSTS BY SHIP CLASS
      C
      C      COMMON / SHIFINS / SHIPSUM(43), SINSTE(43,7), SHIFSP(43)
      C      INTEGER SHIPSUM, SINSTE, SHIFSP
135      C ***** CSTAB (EQUIPMENT QUANTITIES) COMMON *****
      C
      C      QCMPT - QUANTITY OF EQUIPMENT ALREADY DEPLOYED
      C                      (Q & S) OVER ALL SHIPCLASSES (C1) (INTEGER)
      C      QCMPT2 - QUANTITY OF EQUIPMENT TO BE MANUFACTURED
140      C                      INSTALLED (INVESTMENT) OVER ALL SHIPCLASSES
      C                      (Q2) (REAL)
      C      CSTABLE - SINGLY-DIMENSIONED ARRAY WHOSE MEMBERS ARE
      C                      A SERIES OF:
      C                      --SHIPCLASS NAME
145      C                      --Q & S QUANTITY OF EQUIPMENT FOR EACH
      C                      SHIP ON A PARTICULAR SHIPCLASS
      C                      --INV QUANTITY OF EQUIPMENT FOR EACH
      C                      SHIP ON A PARTICULAR SHIPCLASS
      C                      (THESE THREE MEMBERS ARE GIVEN FOR EACH
150      C                      SHIP CLASS MAKING A SERIES OF DATA TRIPLETS)
      C                      (VALUES ARE INTEGER)
      C      CSTABEL - SINGLY-DIMENSIONED ARRAY OF THE INVESTMENT
      C                      QUANTITY OF EQUIPMENT FOR EACH SHIP ON A
      C                      PARTICULAR SHIPCLASS. DATA ELEMENTS MUST
155      C                      BE STORED IN THE SAME SHIPCLASS ORDER AS
      C                      CSTABLE. THE TWO ARRAYS MAY BE THOUGHT
      C                      OF AS A SERIES OF DATA QUADRUPLTS.
      C
      C      COMMON / CSTAB / QCMPT(100), QCMPT2(100), CSTABLE(3750), CSTABEL(1250)
      C      INTEGER QCMPT, CSTABEL
      C      ARRAY CONTAINING APPROPRIATE, LBS NUMBER, COST ELEMENT ID
160      C      COMMON / APELOUT / INORD(15), 5)
      C
      C ***** CHARTS (CONTROL) COMMON *****
      C
      C      CHRTCNT CONTAINS THE MAJOR OUTPUT CHART CONTROLS
      C      0 - GENERATE CHART
170      C      1 - NO GENERATION OF CHART

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SHIFINS 28
SHIFINS 29
SHIFINS 30
SHIFINS 31
SHIFINS 32
SHIFINS 33
SHIFINS 34
SHIFINS 35
SHIFINS 36
SHIFINS 37
SHIFINS 38
SHIFINS 39
SHIFINS 40
SHIFINS 41
SHIFINS 42
SHIFINS 43
SHIFINS 44
SHIFINS 45
SHIFINS 46
SHIFINS 47
CSTAB 2
CSTAB 3
CSTAB 4
CSTAB 5
CSTAB 6
CSTAB 7
CSTAB 8
CSTAB 9
CSTAB 10
CSTAB 11
CSTAB 12
CSTAB 13
CSTAB 14
CSTAB 15
CSTAB 16
CSTAB 17
CSTAB 18
CSTAB 19
CSTAB 20
CSTAB 21
CSTAB 22
CSTAB 23
CSTAB 24
CSTAB 25
CSTAB 26
CSTAB 27
CSTAB 28
APELOUT 2
APELOUT 3
CHAFTS 2
CHAFTS 3
CHAFTS 4
CHAFTS 5
CHAFTS 6
CHAFTS 7
CHAFTS 8
CHAFTS 9

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SUBROUTINE WBSOUT

7474 OPT=2

FTN 4.6433

07/31/79 23.53.41

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C      CHRTCNT(1)  - IF EQUAL TO 0 - CALLS WBSOUT(1) FOR EQUIPMENT CHARTS      10
C                  ELEMENT LIFE CYCLE COSTS - FLEET SUMMARY CHARTS      11
C      CHRTCNT(2)  - IF EQUAL TO 1 - CALLS WBSOUT(2) FOR UNIT CHARTS      12
175 C              SHIP COSTS BY EQUIPMENT ELEMENT CHARTS      13
C                  - IF NE. TO 0 - CALLS WBSOUT(2) BECAUSE CHARTS      14
C                  WBSOUT(2) WAS NOT CALLED CHARTS      15
C      CHRTCNT(3)  - IF EQUAL TO 2 - CALLS WBSOUT(3) FOR SHIP CHARTS      16
C                  CLASS SUMMARY CHARTS      17
190 C      CHRTCNT(4)  - IF EQUAL TO 3 - CALLS BUDGOP FOR LIFE CHARTS      18
C                  CYCLE COSTS BY BUDGET APPROPRIATIONS CHARTS      19
C      CHRTCNT(5)  - IF NE. TO 1 - CALLS ROLLCT FOR OUTPUT BY CHARTS      20
C                  ROLL-UP NUMBER CHARTS      21
195 C      CHRTCNT(6)  - IF EQUAL TO 0 - LISTS THE SUBFLS ARRAY CHARTS      22
C                  FOR ENTIRE CES FOR PROOFING CHARTS      23
C                  CHARTS      24
C                  CHARTS      25
C                  CHARTS      26
C                  CHARTS      27
C      COMMON / CHARTS / CHRTCNT(15)
C      INTEGER CHRTCNT
190 C      ARRAY DEFINING THE ROLL-UP INPUT NUMBERS, TOTAL COUNT OF ROLLUPCT      2
C      COST ELEMENTS WITH SPECIFIC ROLL-UP NUMBERS TO BE OUTPUT, ROLLUPCT      3
C      ARRAY OF SELECTED WBS ELEMENT NUMBERS, SELECTED ROLL-UP ROLLUPCT      4
C      OUTPUT FLAG ROLLUPCT      5
195 C      COMMON / ROLLUPCT / IROLL(150), ROLLTOT, ROLLSEL(150), ROLLFLG ROLLUPCT      6
C      INTEGER ROLLTOT, ROLLSEL, ROLLFLG ROLLUPCT      7
C      ROLLUPCT      8
C      ROLLUPCT      9
C      ROLLUPCT      10
C      WBSOUT ROUTINE COMPUTED VALUES, ARRAYS AND CONTROLS NEEDED CUTCNTS      2
200 C FOR THE CUT1 SUBROUTINE CUTCNTS      3
C      KSC ARRAY - SHIP NAMES CUTCNTS      4
C      IFLGCL - OUTPUT COLUMN FLAG CUTCNTS      5
C                  = 0 COMPS OR SHIPS LESS THAN 9 CUTCNTS      6
C                  = 1 COMPS OR SHIPS GREATER THAN 9 CUTCNTS      7
205 C                  = 2 LAST SET CUTCNTS      8
C      IPG - PAGING FLAG CUTCNTS      9
C      FMT11J ARRAY - ENCODED FORMAT 110 CUTCNTS      10
C      FMT12J ARRAY - ENCODED FORMAT 120 CUTCNTS      11
C      KPR ARRAY - COMPONENT OF SHIP NAMES FOR COLUMN HEADINGS CUTCNTS      12
210 C      KC, K1 - INDICES FOR THE KPR ARRAY CUTCNTS      13
C      ITOTAL - HOLLERITH CHARACTERS 'TOTAL' CUTCNTS      14
C      TCT ARRAY - SUMMATION ARRAY FOR FINAL COSTS OF EITHER CUTCNTS      15
C                  COMPONENTS OR SHIPS CUTCNTS      16
C      KCT - INDEX FOR THE AMORD ARRAY CUTCNTS      17
215 C      AMORD ARRAY - CONTAINS THE COSTS FOR ALL THE WBS VALUES CUTCNTS      18
C                  FOR AT MOST 10 COMPONENTS OR SHIPS CUTCNTS      19
C      COMMON / OUTCNTS / KSC(2), IFLGCL, IPG, FMT11J(14), FMT12J(4), CUTCNTS      20
1          KPR(20), KC, K1, ITOTAL, TOT(150), KCT, CUTCNTS      21
2          AMORD(150,10) CUTCNTS      22
220 3,FMT12J(4),KNORD(3),JKNORD(3),UNITFLY(4),TOTUPFLY,SHIFFLY(4) CUTCNTS      23
4,TOTSHIP CUTCNTS      24
C      CERVLS      2
C      CERVLS      3
C      ***** CERVLS (COST ESTIMATING RELATIONSHIP) (CERV) VALUES) COMMON ***** CERVLS      4
225 C      THE CERVLS COMMON CONTAINS LOCATIONS FOR STORAGE OF THE CERV CERVLS      5
C      INPUT CARD COUNT, THE ROW ID'S, THE CERV EQUATION NUMBERS, THE CERVLS      6
C      ROW CROSS REFERENCE NUMBERS, THE INPUT PARAMETERS, THE ADDITION CERVLS      7
C      CERVLS      8

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230	C ON CERS CONTROL, STORAGE ARRAY FOR EQUIPMENT NAME, CER INDEX, C AND TPUT/NPUT INDEXES FOR ALL EQUIPMENT INPUT.	CERVLS 9
	C	CERVLS 10
	C CERCT - NUMBER OF CERS FOR THIS PARTICULAR EQUIPMENT	CERVLS 11
	C (1 WORD)	CERVLS 12
	C IFORC () - (F OR C) ALPHABETIC CHARACTER INDICATING	CERVLS 13
235	C 'FACTOR' OR 'CER'. (150 WORDS)	CERVLS 14
	C IROWIC - CBS ELEMENT NUMBER TO WHICH THIS CER APPLIES	CERVLS 15
	C (150 WORDS)	CERVLS 16
	C IADD - CER CONTROL FLAGS (0 THRU 6) FOR ADDITIVE	CERVLS 17
	C CERS OR SUBELEMENTS. 0 INDICATES NO ADDING.	CERVLS 18
240	C 1 THRU 6 INDICATE ADD UP SUBELEMENTS.	CERVLS 19
	C (150 WORDS)	CERVLS 20
	C ICERN - REFERENCE NUMBER FOR CER EQUATIONS IN THE	CERVLS 21
	C 'CERCOMP' SUBROUTINE. (150 WORDS)	CERVLS 22
	C IXREFNO - CBS ELEMENT NUMBER USED IN CROSS REFERENCING	CERVLS 23
245	C A PREVIOUSLY COMPUTED CBS ELEMENT. AT PRESENT	CERVLS 24
	C ONLY CER EQUATION NUMBER 0 ALLOWS CROSS	CERVLS 25
	C REFERENCING. 0 INDICATES NO CROSS-REF.	CERVLS 26
	C (150 WORDS)	CERVLS 27
	C IXREFAD - CER CONTROL FLAGS FOR CROSS-REFERENCING	CERVLS 28
250	C CER SUB-ELEMENTS. (150 WORDS)	CERVLS 29
	C IFSTORE - STORES 'FACTCK' PARAMETERS. (900 WORDS)	CERVLS 30
	C PSSTORE - STORES NUMERICAL PARAMETERS. (900 WORDS)	CERVLS 31
	C ICER () - A SINGLY-SUBSCRIPTED ARRAY CONTAINING A	CERVLS 32
	C MAXIMUM OF 100 DATA TRIPLETS WHOSE MEMBERS	CERVLS 33
255	C ARE:	CERVLS 34
	C ICER(1,4,7, - EQUIPMENT NAME	CERVLS 35
	C ETC)	CERVLS 36
	C ICER(2,4,8 - INDEX FOR MASS STORAGE UNIT 0. INDEX	CERVLS 37
	C ETC)	CERVLS 38
260	C BEGINS AT 1 AND INCREMENTS BY 9 (1,10,19,	CERVLS 39
	C ETC). THE FOLLOWING DATA RECORDS ARE	CERVLS 40
	C INDEXED:	CERVLS 41
	C 1 CERCT 6 IXREFNO	CERVLS 42
	C 2 IFORC 7 IXREFAD	CERVLS 43
	C 3 IROWIC 8 IFSTORE	CERVLS 44
265	C 4 IADD 9 PSSTORE	CERVLS 45
	C 5 ICERN	CERVLS 46
	C ICER(3,6,9 - INDEX FOR MASS STORAGE UNIT 2 AND 3.	CERVLS 47
	C INDEX BEGINS AT 16 AND INCREMENTS BY 2	CERVLS 48
	C (18,20,22,ETC) AND IS IDENTICAL TO THE	CERVLS 49
270	C THIRD MEMBER OF DATA TRIPLET STORED IN	CERVLS 50
	C THE IREC ARRAY.	CERVLS 51
	C SUBELS (,) - SUBELS IS A CROSS-MATCHED ARRAY WHICH IS	CERVLS 52
	C RELATED ONE-TO-ONE TO THE CERS.	CERVLS 53
	C IT IS USED LOCALLY WITHIN 'CERCOMP' AND	CERVLS 54
275	C 'CERCOMP' FOR INTERIM STORAGE OF UP TO	CERVLS 55
	C SIX SUBELEMENTS, 1 THRUPUT, AND 1 TOTAL	CERVLS 56
	C VALUE FOR EACH CBS ELEMENT.	CERVLS 57
	C FACTOR () - A FACTOR IS A PRECURSOR OF ONE OR MORE	CERVLS 58
	C CERS.	CERVLS 59
280	C	CERVLS 60
	C	CERVLS 61
	C	CERVLS 62
	C COMMON /CERVLS/ CERCT, IFORC(150), IROWIC(150), IADD(150),	CERVLS 63
	C ICERN(150), IXREFNO(150), IXREFAD(150),	CERVLS 64
285	C IFSTORE(6,150), PSSTORE(6,150), ICER(300),	CERVLS 65
	C SUBELS(8,150), FACTORS(150)	CERVLS 66

[illegible]

SLEROUTINE WBSOUT

14/74 OPT=2

FTN 4.0+433

07/11/79 23.53.41

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345      IS2 = 11
          IFLGCL = 1
          SVIEND = IEND
          IEND = IBEG + 27
C
C      TEST TO SEE IF EXACTLY 10 EQUIPMENTS ARE TO BE OUTPUT.
C IF YES, THEN DECREASE TO 9 SO THAT ONE WILL APPEAR ALONG WITH
346 C THE "TOTAL" ON THE NEXT SET OF OUTPUT.
          IF ( NLP .NE. 10 ) GO TO 20
          NCOL = 9
          NNUM = 9
          IS2 = 0
349      IEND = IBEG + 24
C
C      20 CONTINUE
C
C      22 CONTINUE
          NSP = 50/NCOL - 8
          NSPP1 = NSP + 1
          ENCODE (120,111,FMT110) NN(M,NSPP1,NCOL,NSPP1,NCOL,NSP
          ENCODE ( 40,122,FMT120) NCOL,NSP
          ENCODE ( 40,123,FMT123) NCOL,NSP
349      23 CONTINUE
          IF ((TITLE.AND.MASK4) .EQ. (ASPTES.ANC.MASK4))
C      ENCODE (40,121,FMT120) NCOL,NSP
C
C      KCT = 0
          DO 107 K6=1,43
370      107 SHIPFLY(K6) = 0.0
          LO 40 J=IBEG,IEND,INC
          CAL' WEAOMS ( 3, ARAY, LENR, IREC(J) )
          KCT = KCT + 1
375      C
          IDXCS3 = JBEGX - 1
          IDXCS4 = IDXCS3/3
          CST3 = FLOAT(CSTABLE(IDXCS3))
          CST4 = CSTABLE(IDXCS4)
          AMORD(NWBS,KCT) = 0.0
          DO 30 I=1,NWBS*1
          IF (NPP.EQ.2) GO TO 24
          IF (I.LT.IPH1) GO TO 24
          AMORD(I,KCT) = ARAY(I,1) * CST3
          GO TO 26
          24 AMORD(I,KCT) = ARAY(I,1) * CST4
          26 TOT(I) = TOT(I) + AMORD(I,KCT)
          DO 127 K2=1,NOFLY
          IF(I.NE.JFLYROW(K2)) GO TO 127
          SHIPFLY(KCT) = SHIPFLY(KCT) + AMORD(I,KCT)
          IF(K2.FO.NOFLY) TOTSHIP = TOTSHIP + SHIPFLY(KCT)
          341 WRITE(6,111) SHIPFLY(KCT),TOTSHIP
C
          127 CONTINUE
          30 CONTINUE
345      C
          AMORD(NWBS,KCT) = AMORD(1,KCT) + AMORD(IPH2,KCT) + AMORD(IPHL,KCT)
          TOT(NWBS) = TOT(1) + TOT(IPH2) + TOT(IPHL)
          JBEGX = JBEGX + 3
          IF (IPH1.GT.IPH2) GO TO 40
          WBSOUT 68
          WBSOUT 69
          WBSOUT 70
          WBSOUT 71
          WBSOUT 72
          WBSOUT 73
          WBSOUT 74
          WBSOUT 75
          WBSOUT 76
          WBSOUT 77
          WBSOUT 78
          WBSOUT 79
          WBSOUT 80
          WBSOUT 81
          WBSOUT 82
          WBSOUT 83
          WBSOUT 84
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          WBSOUT 88
          WBSOUT 89
          WBSOUT 90
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          WBSOUT 111
          WBSOUT 112
          WBSOUT 113
          WBSOUT 114
          WBSOUT 115
          WBSOUT 116
          WBSOUT 117
          WBSOUT 118
          WBSOUT 119
          WBSOUT 120
          WBSOUT 121
          WBSOUT 122
          WBSOUT 123
          WBSOUT 124

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SUBROUTINE WBSOUT

74/74 CRT=2

FTN 4.6+433

L7/31/79 23.53.41

4.0	AMORD(NWBS,KCT) = AMORD(NWBS,KCT) - AMORD(IPHL,KCT)	WBSOUT	125
	TOT(NWBS) = TOT(NWBS) - TOT(IPHL)	WBSOUT	126
	40 CONTINUE	WBSOUT	127
	C	WBSOUT	128
	KC = 0	WBSOUT	129
4.15	DO 50 I1=IS1,IS2	WBSOUT	130
	KC = KC + 1	WBSOUT	131
	KPR(KC) = NMCCMP(1,I1,ISUBS)	WBSOUT	132
	K1 = KC + 10	WBSOUT	133
	KPR(K1) = NMCCMP(2,I1,ISUBS)	WBSOUT	134
4.16	50 CONTINUE	WBSOUT	135
	C	WBSOUT	136
	C	WBSOUT	137
	C GENERATE OUTPUT FOR ALL CBS COST ELEMENTS FOR 'K' NUMBER	WBSOUT	138
	C OF EQUIPMENTS	WBSOUT	139
4.19	C *****	WBSOUT	140
	C CALL OUT1 (ICALL)	WBSOUT	141
	C *****	WBSOUT	142
	C	WBSOUT	143
	C *****	WBSOUT	144
4.21	C	WBSOUT	145
	C CHECK FOR END OF THIS SHIP'S EQUIPMENTS	WBSOUT	146
	C	WBSOUT	147
	C	WBSOUT	148
	80 CONTINUE	WBSOUT	149
4.25	C	WBSOUT	150
	C	WBSOUT	151
	85 CONTINUE	WBSOUT	152
	IF (IFLGCL.NE.1) GO TO 90	WBSOUT	153
	IPG = 0	WBSOUT	154
4.30	IS1 = IS2 + 1	WBSOUT	155
	IS2 = IS2 + 10	WBSOUT	156
	IF (IS2.EQ.NUM .AND. (MOD(IS2,10)).EQ.0) IS2 = IS2 - 1	WBSOUT	157
	IF (IS2.GT.NUM) IS2 = NUM	WBSOUT	158
	NCOL = IS2 - IS1 + 1	WBSOUT	159
4.35	IF (IS2.EQ.NUM) NCOL = NCOL + 1	WBSOUT	160
	NNUM = NCOL	WBSOUT	161
	IF (IS2.EQ.NUM) NNUM = NNUM - 1	WBSOUT	162
	IBEG = IEND + 3	WBSOUT	163
	IEND = IBEG + ((IS2 - IS1) * 3)	WBSOUT	164
4.41	IF (IS2.EQ.NUM) IFLGCL = 2	WBSOUT	165
	GO TO 20	WBSOUT	166
	C	WBSOUT	167
	C	WBSOUT	168
	C OUTPUT TOTALS FOR THIS SHIP	WBSOUT	169
4.45	C	WBSOUT	170
	90 CONTINUE	WBSOUT	171
	INDX = INDXTOT + ISUBS - 1	WBSOUT	172
	CALL WHITMS (10, TOT, NWBS, INDX)	WBSOUT	173
	C	WBSOUT	174
4.51	95 CONTINUE	WBSOUT	175
	C	WBSOUT	176
	RETURN	WBSOUT	177
	C	WBSOUT	178
	C FLEET LEVEL OUTPUT - - -	WBSOUT	179
	C	WBSOUT	180
4.55	C LOOP THROUGH ALL EQUIPMENTS 10 AT A TIME AND LIST COSTS FOR	WBSOUT	181
	C THE TOTAL NUMBER OF EACH EQUIPMENT ACROSS THE CBS.	WBSOUT	182

SUBROUTINE WBSOUT

7/4/74 OPT=2

FTN 4.6+433

07/31/79 23.53.41

	C		WBSOUT	142
		100 CONTINUE	WBSOUT	143
		00 103 IT=1,NWBS	WBSOUT	144
460		103 TOT(IT) = 0.0	WBSOUT	145
	C		WBSOUT	146
	C	C THE FOLLOWING LOGIC SETS UP RECOVERY INDICES FOR COMMON ARRAYS	WBSOUT	147
	C	C AND MASS STORAGE FILES, AND ALSO COLUMN & SPACING COUNTERS FOR	WBSOUT	148
	C	C ENCODING OUTPUT FORMATS AND COUNTING OUTPUT ARRAY COLUMNS:	WBSOUT	149
465	C		WBSOUT	150
	C	IBEG - BEGINNING INDEX FOR READING EQUIPMENT COST	WBSOUT	151
	C	FROM MASS STORAGE UNIT 3	WBSOUT	152
	C	IENC - ENDING INDEX FOR SAME SERIES OF READS FROM	WBSOUT	153
	C	MS UNIT 3	WBSOUT	154
470	C	IPG - PAGINATION INDEX, INITIALIZED TO 0,	WBSOUT	155
	C	INCREMENTED IN "0011"	WBSOUT	156
	C	IFLGCL - COMPLETION FLAG	WBSOUT	157
	C	0 = INITIAL VALUE	WBSOUT	158
	C	1 = CONTINUE PROCESSING EQUIPMENT	WBSOUT	159
475	C	2 = COMPLETION. ALL EQUIPMENT PROCESSED.	WBSOUT	160
	C	IS1 - BEGINNING INDEX FOR RECOVERING EQUIPMENT	WBSOUT	161
	C	MAEMONICS	WBSOUT	162
	C	IS2 - ENDING INDEX FOR SAME SERIES OF MAEMONICS	WBSOUT	163
	C	NCOL - NUMBER OF COLUMNS OF OUTPUT TO SET UP	WBSOUT	164
480	C	NNUM - NUMBER OF EQUIPMENT COLUMNS TO SET UP	WBSOUT	165
		IBEG = 1	WBSOUT	166
		IEND = 1 + (ICCTR - 1) * 3	WBSOUT	167
		IPG = 0	WBSOUT	168
		IFLGCL = 0	WBSOUT	169
485		IS1 = 1	WBSOUT	170
		IS2 = ICCTR	WBSOUT	171
		NCOL = ICCTR + 1	WBSOUT	172
		NNUM = ICCTR	WBSOUT	173
490	C		WBSOUT	174
	C	MODIFY INDICES FOR SITUATION WHERE THERE ARE 9 OR MORE EQUIPMENTS	WBSOUT	175
	C		WBSOUT	176
		IF (NCOL.LE.10) GO TO 115	WBSOUT	177
		NCOL = 10	WBSOUT	178
495		NNUM = 10	WBSOUT	179
		IS2 = 10	WBSOUT	180
		IFLGCL = 1	WBSOUT	181
		IEND = IBEG + 27	WBSOUT	182
	C		WBSOUT	183
500	C	MODIFY INDICES FOR SITUATION WHERE THERE ARE EXACTLY 9 EQUIPMENTS	WBSOUT	184
	C		WBSOUT	185
		IF (ICLTH.EQ.9) GO TO 115	WBSOUT	186
		NCOL = 10	WBSOUT	187
		NNUM = 9	WBSOUT	188
505		IS2 = 9	WBSOUT	189
		IFLGCL = 2	WBSOUT	190
510		IEND = IBEG + 24	WBSOUT	191
	C		WBSOUT	192
	C	MAJOR DO-LOOP, THROUGH ALL EQUIPMENTS, 10 AT A TIME	WBSOUT	193
	C		WBSOUT	194
515		115 CONTINUE	WBSOUT	195
		JCT = 1	WBSOUT	196
		ICCTR2 = ICCTR	WBSOUT	197
		IF (MOD(ICCTR,40).EQ.0) ICCTR2 = ICCTR + 1	WBSOUT	198

SUBROUTINE WBSOUT

7474 OPT=2

FTN 4.6+433

07/11/79 23.53.41

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515      DO 195 ICOMPS=1,ICCTR2,10
116      CONTINUE
      NSP = 50/NCOL - 5
      NSPP1 = NSP + 1
      ENCODE (120,111,FMT110) NNUM,NSPP1,NCOL,NSPP1,NCOL,NSP
      ENCODE ( 40,122,FMT120) NCCL,NSP
520      ENCODE ( 40,123,FMT123) NCCL,NSP
117      CONTINUE
      IF ((ITITLE.AND.MASK4) .EQ. (ASMDIES.AND.MASK4))
      C   ENCODE (40,121,FMT120) NCCL,NSP
525      C DO-LOOP 14 STEPS ACROSS OUTPUT ARRAY ONE COLUMN AT A TIME
      C AND INDEX 'J' IDENTIFIES AN EQUIPMENT COLUMN
      C
      KCT = 1
      DO 105 K4=1,40
530      105  UNITFLY(K4) = J.0
      DO 140 J=ICEG,ICND,INC
      NOXMS3 = J + 2
      CALL READMS (3,ARRAY,NWBS,ICER(NOXMS3))
      JCT = JCT + 1
535      KCT = KCT + 1
      AMORD (NWBS,KCT) = 0.0
      Q1 = UCHFT(JCT)
      Q2 = 0.0/PT2(JCT)
      C
540      C DO-LOOP 130 STEPS DOWN THROUGH THE OUTPUT ARRAY ONE ROW AT A TIME
      C AND INDEX 'I' IDENTIFIES A CBS ELEMENT ROW
      C "C1" MULTIPLIER IS USED ONLY FOR CBS ELEMENTS IN "O & S" PHASES
      C "O2" MULTIPLIER IS USED FOR CBS ELEMENTS IN "ROT&E" AND "INV" PHASES
      C
545      DO 130 I=1,NWBSM1
      IF (APH.EQ.2) GO TO 124
      IF (I.LT.IFHL) GO TO 124
      IF (I.GT.IPH2M1.AND. I.LT.IFHL) GO TO 124
      AMORD(I,KCT) = ARRAY(I,1) * Q1
550      GO TO 126
      124 AMORD(I,KCT) = ARRAY(I,1) * Q2
      C
      C THE "TOT" ARRAY CONTAINS THE RUNNING CROSS-FOOT TOTALS THRU THE CBS
      C STRUCTURE: IT PRINTS AS THE LAST (RIGHT-MOST) COLUMN IN THE CHART.
555      C
      126 TOT(I) = TOT(I) + AMORD(I,KCT)
      DO 125 K=1,NOFLY
      IF (I.NE.IFLYROW(K)) GO TO 125
      UNITFLY(KCT) = UNITFLY(KCT) + ARRAY(I,1)
560      IF (K.EC.NOFLY) TOTUFLY = TOTUFLY + UNITFLY(KCT)
      C
      125 CONTINUE
      130 CONTINUE
      C
565      C "AMORD(NWBS,KCT)" IS THE COLUMN BOTTOM TOTAL FOR EACH EQUIPMENT
      C THIS CODE FOR EVALUATING "AMORD(NWBS,KCT)" AND "TOT(NWBS)" WORKS
      C FOR 2-PHASE WBS (I.E. ASMD RUN); AND FOR A 3- OR 4-PHASE WBS
      C (I.E. SINCS RUN) WITH THE PRESUMPTION THAT A 3-PHASE RUN HAS
      C ROT&E, INVESTMENT AND O&S, AND THAT A 4-PHASE RUN MERELY SPLITS
570      C THE INVESTMENT PHASE INTO "INITIAL" AND "FULL" PRODUCTION COSTS.

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WBSOUT 239
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WBSOUT 295

SLER-OUTLINE WBSOUT

74774 CFT=2

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C
  AMORD(NWBS,KCT) = AMORD(1,KCT) + AMORD(IPH2,KCT) + AMORD(IPH1,KCT) WBSOUT 296
  IF (APP.EQ.2) AMORD(NWBS,KCT) = AMORD(1,KCT) + AMORD(IPH2,KCT) WBSOUT 297
  140 CONTINUE WBSOUT 298
  IF (JCT.EQ.ICCTR) TOT(NWBS) = TOT(1) + TOT(IPH2) + TOT(IPH1) WBSOUT 299
  IF (APP.EQ.2 .AND. JCT.EQ.ICCTR) TOT(NWBS) = TOT(1) + TOT(IPH2) WBSOUT 300
C WBSOUT 301
C DO-LOOP 150 FILLS "KPR" ARRAY WITH EQUIP COLUMN HEADING MNEMONICS WBSOUT 302
C WBSOUT 303
C WBSOUT 304
540 CALL MCULEV (BLANK,KPR,20) WBSOUT 305
  KC = 0 WBSOUT 306
  DO 150 I1=IS1,IS2 WBSOUT 307
    KC = KC + 1 WBSOUT 308
    K1 = KC + 10 WBSOUT 309
    KPR(KC) = NAME$C(I1,1) WBSOUT 310
    KPR(K1) = NAME$C(I1,2) WBSOUT 311
  150 CONTINUE WBSOUT 312
C WBSOUT 313
C CALL SUBRTN "OUT1" TO PRINT PAGE HEADINGS AND LIST THE AMORD ARRAY WBSOUT 314
590 C ***** WBSOUT 315
C WBSOUT 316
C CALL OUT1 (ICALL) WBSOUT 317
C WBSOUT 318
C ***** WBSOUT 319
505 C THE FOLLOWING LOGIC COMPLEMENTS THE EARLIER WBSOUT 320
C RECOVERY INDEX AND COLUMN & SPACING COUNTER LOGIC WBSOUT 321
C WBSOUT 322
  IF (IFLGCL.NE.1) RETURN WBSOUT 323
  IPG = 0 WBSOUT 324
  IS1 = IS2 + 1 WBSOUT 325
  IS2 = IS2 + 10 WBSOUT 326
  IF (IS2.EQ.ICCTR .AND. (MOD(IS2,10)).EQ.0) IS2 = IS2 - 1 WBSOUT 327
  IF (IS2.GT.ICCTR) IS2 = ICCTR WBSOUT 328
  NCOL = IS2 - IS1 + 1 WBSOUT 329
  IF (IS2.EQ.ICCTR) NCOL = NCOL + 1 WBSOUT 330
  NNUM = NCOL WBSOUT 331
  IF (IS2.EQ.ICCTR) NNUM = NCOL - 1 WBSOUT 332
  IBEG = IEND + 3 WBSOUT 333
  IEND = IBEG + ((NNUM - 1) * 3) WBSOUT 334
  IF (IS2.EQ.ICCTR) IFLGCL = 2 WBSOUT 335
  195 CONTINUE WBSOUT 336
C WBSOUT 337
C OUTPUT SHIP SUMMARY CHARTS WBSOUT 338
  200 CONTINUE WBSOUT 339
C WBSOUT 340
  TOTSHIP = 0.0 WBSOUT 341
  IPG = 0 WBSOUT 342
  IBEG = INXTOT WBSOUT 343
  IEND = IBEG + NOSUB - 1 WBSOUT 344
  NUM = NOSUB WBSOUT 345
C WBSOUT 346
  DO 210 J=1,NWBS WBSOUT 347
    TOT(J) = 0.0 WBSOUT 348
  210 CONTINUE WBSOUT 349
C WBSOUT 350
  IFLGCL = 0 WBSOUT 351
  IPG = 0 WBSOUT 352

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OLFA OUTLINE WESOUT

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	ROLLFLG = J	WBSOUT	353
	ISHSUB = J	WBSOUT	354
637	IS1 = 1	WBSOUT	355
	IS2 = NUM	WBSOUT	356
	NCOL = NUM + 1	WBSOUT	357
	NNUM = NUM	WBSOUT	358
	IF (NCOL .LE. 10) GO TO 220	WBSOUT	359
641	C	WBSOUT	360
	NCOL = 10	WBSOUT	361
	NNUM = 10	WBSOUT	362
	IS2 = 10	WBSOUT	363
	IFLGCL = 1	WBSOUT	364
642	SVIEND = ILND	WBSOUT	365
	IEND = IREG + 9	WBSOUT	366
	C	WBSOUT	367
	C	WBSOUT	368
	C	WBSOUT	369
645	C	WBSOUT	370
	TEST TO SEE IF EXACTLY 10 SHIPS ARE TO BE	WBSOUT	371
	OUTPUT. IF YES - DECREASE TO 9 SO THAT 1 WILL APPEAR	WBSOUT	372
	ALONG WITH THE TOTAL ON NEXT SET OF OUTPUT.	WBSOUT	373
	IF (NUM .NE. 10) GO TO 220	WBSOUT	374
	NCOL = 9	WBSOUT	375
	NNUM = 9	WBSOUT	376
	IS2 = 9	WBSOUT	377
650	IEND = IEND - 1	WBSOUT	378
	C	WBSOUT	379
	220 CONTINUE	WBSOUT	380
	C	WBSOUT	381
	225 CONTINUE	WBSOUT	382
655	NSP = 90/NCOL - 8	WBSOUT	383
	NSPP1 = NSP + 1	WBSOUT	384
	ENCODE (120,111,FMT110) NNUM,NSPP1,NCOL,NSPP1,NCOL,NSP	WBSOUT	385
	ENCODE (40,122,FMT120) NCCL,NSP	WBSOUT	386
	ENCODE (40,123,FMT123) NCCL,NSP	WBSOUT	387
660	226 CONTINUE	WBSOUT	388
	IF (ITITLE.AND.MASK4) .EQ. (ASMTES.AND.MASK4))	WBSOUT	389
	C ENCODE (40,121,FMT120) NCCL,NSP	WBSOUT	390
	C	WBSOUT	391
	KCT = 0	WBSOUT	392
665	DO 106 K5=1,43	WBSOUT	393
	106 SHIPFLY(K5) = J.0	WBSOUT	394
	DO 240 J=IBEG,IEND	WBSOUT	395
	CALL PFAOMS (10, ARAY, NWBS, J)	WBSOUT	396
	ISHSUB = ISHSUB + 1	WBSOUT	397
670	KCT = KCT + 1	WBSOUT	398
	C	WBSOUT	399
	DO 230 I=1,NWBS	WBSOUT	400
	AMORD(I,KCT) = ARAY(I,1) * FLOAT(SHIFSM(ISHSUB))	WBSOUT	401
	TOT(I) = TOT(I) + AMORD(I,KCT)	WBSOUT	402
675	DO 128 K3=1,NOFLY	WBSOUT	403
	IF(I.NE.IFLYROW(K3)) GO TO 128	WBSOUT	404
	SHIPFLY(KCT) = SHIPFLY(KCT) + AMORD(I,KCT)	WBSOUT	405
	IF(K3.EQ.NOFLY) TOTSHIP = TOTSHIP + SHIPFLY(KCT)	WBSOUT	406
680	C WRITE(E,301) SHIPFLY(KCT),TOTSHIP	WBSOUT	407
	128 CONTINUE	WBSOUT	408
	230 CONTINUE	WBSOUT	409
	C	WBSOUT	410
	240 CONTINUE	WBSOUT	411
	C	WBSOUT	412

SUBROUTINE WBSOUT		74774	OPT=2	FTN 4.0+433	07/31/79	23.53.41
685	KC = 0				WBSOUT	410
	DO 250 I1=IS1,IS2				WBSOUT	411
	KC = KC + 1				WBSOUT	412
	KPF(KC) = NMSUB(1,I1)				WBSOUT	413
	K1 = KC + 1				WBSOUT	414
690	KPF(K1) = NMSUB(2,I1)				WBSOUT	415
	250 CONTINUE				WBSOUT	416
	C				WBSOUT	417
	C				WBSOUT	418
	C				WBSOUT	419
695	C				WBSOUT	420
	CALL OUT1 (ICALL)				WBSOUT	421
	C				WBSOUT	422
	C				WBSOUT	423
	280 CONTINUE				WBSOUT	424
700	C				WBSOUT	425
	IF (IFLGCL .NE. 1) GO TO 340				WBSOUT	426
	C				WBSOUT	427
	IPG = 0				WBSOUT	428
	ITEMP = NUM - IS2				WBSOUT	429
705	IF (ITEMP .LT. 1) GO TO 290				WBSOUT	430
	IS1 = IS2 + 1				WBSOUT	431
	IS2 = IS1 + 9				WBSOUT	432
	IFLGCL = 1				WBSOUT	433
	IBEG = IEND + 1				WBSOUT	434
710	IEND = IBEG + 9				WBSOUT	435
	NCOL = 10				WBSOUT	436
	NNUM = 10				WBSOUT	437
	IF (ROLLFLG .EQ. 2) ROLLFLG = 0				WBSOUT	438
	C				WBSOUT	439
715	C				WBSOUT	440
	TEST FOR EVEN NUMBER OF SHIPS TO BE OUTPUT				WBSOUT	441
	IF (IS2 .NE. NUM) GO TO 220				WBSOUT	442
	IS2 = IS2 - 1				WBSOUT	443
	IEND = IEND - 1				WBSOUT	444
	NCOL = 9				WBSOUT	445
720	NNUM = 9				WBSOUT	446
	GO TO 220				WBSOUT	447
	C				WBSOUT	448
	290 CONTINUE				WBSOUT	449
	IFLGCL = 2				WBSOUT	450
725	IS1 = IS2 + 1				WBSOUT	451
	IS2 = NUM				WBSOUT	452
	NCOL = ITEMP + 1				WBSOUT	453
	NNUM = NCOL - 1				WBSOUT	454
	IBEG = IEND + 1				WBSOUT	455
730	IEND = SVIEND				WBSOUT	456
	IF (ROLLFLG .EQ. 2) ROLLFLG = 0				WBSOUT	457
	GO TO 220				WBSOUT	458
	C				WBSOUT	459
735	C				WBSOUT	460
	300 CONTINUE				WBSOUT	461
	C				WBSOUT	462
	RETURN				WBSOUT	463
	104 FORMAT (1X)				WBSOUT	464
	110 FORMAT (5H(44X,,I2,1H(I2,8HX,A7) /,39H12H APPRC RCW,11X,12PCCS				WBSOUT	465
740	1T ELEMENT,9X,,I2,1H(I2,8HX,A7) /,31F1X,7(1H-),1X,3(1F-),2X,30(1H				WBSOUT	466
	2-),,I2,1H(I2,11HX, 7(1H-)))				WBSOUT	467

SUBROUTINE WBSOUT

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	111 FORMAT (5H14+X,,I2,1H(I,I2,7HX,A7) /,	WBSOUT	467
	C 39H12H APPXU KUM,11X,12HCOST ELEMENT,9X,,I2,1H(I,I2,7HX,A7) /,	WBSOUT	468
	C 31H1X,7(1H-),1X,3(1H-),2X,30(1H-),,I2,1H(I,I2,10FX,8(1H-)))	WBSOUT	469
745	120 FORMAT (21H(1X,A7,1X,I3,2X,3A10,,I2,1H(I,I2,9HX,F 7.2))))	WBSOUT	470
	121 FORMAT (21H(1X,A7,1X,I3,2X,3A10,,I2,1H(I,I2,8HX,F7.3)))	WBSOUT	471
	122 FORMAT (21H(1X,A7,1X,I3,2X,3A10,,I2,1H(I,I2,8HX,F8.2)))	WBSOUT	472
	123 FORMAT (13H(A1,13X,3A10,,I2,1H(I,I2,8HX,F8.2)))	WBSOUT	473
	301 FORMAT (1HU,*SHIPFLY(KCT) = *,F8.2,5X,*TOTSHIP = *,F8.2)	WBSOUT	474
746	302 FORMAT (1HG,*UNITFLY(KCT) = *,F8.2,5X,*TOTUFLY = *,F8.2)	WBSOUT	475
	END	WBSOUT	476

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3LEFOUTINE HEAD

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	C		HEAD	5
	C	PRINT SYSTEM HLADER (DATE AND SYSTEM NAME)	HEAD	6
60	C		HEAD	7
		WRITE (6,2.0) NMSYS,TODAY,TITLE,MMLN	HEAD	8
	200	FORMAT (1H1,A10,116X,A10 / 1X,2A10,A6,106X,A10)	HEAD	9
		RETURN	HEAD	10
	C		HEAD	11
65	C	ENTRY HEAD1	HEAD	12
	C		HEAD	13
	C	GET THE DATE AND TIME OF RUN FROM SYSTEM MAINFRAME	HEAD	14
	C		HEAD	15
		WHEN = TIME(D)	HEAD	16
70		TODAY = DATE(D)	HEAD	17
		RETURN	HEAD	18
		END	HEAD	19

1	C	SUBROUTINE DATAOP	CATACP	2
	C	***** MS (LENGTH AND COUNTER) COMMON *****	MS2	2
	C		MS2	3
	C		MS2	4
5	C		MS2	5
	C	LENR - MASS STORAGE UNITS COMMON RECORD LENGTH	MS2	6
	C	(TYPICALLY 150)	MS2	7
	C	NWBS - NUMBER OF ELEMENTS IN THE CBS (MAX 150)	MS2	8
	C	ICCTR - NUMBER OF EQUIPMENTS IN THE EQUIPMENT	MS2	9
10	C	ELEMENTS TABLE	MS2	10
	C	L150 - (150 WORDS) RECORD LENGTH OF 7 ARRAYS	MS2	11
	C	IN THE "CERVL" COMMON	MS2	12
	C	L190 - (190 WORDS) RECORD LENGTH OF 2 ARRAYS	MS2	13
	C	IN THE "CERVL" COMMON	MS2	14
15	C		MS2	15
	C	COMMON / MS2 / LENR,NWBS,ICCTR,L150,L190	MS2	16
	C		MS2	17
	C		MS2	18
	C		MS2	19
20	C	***** INPUT COMMON *****	NFLT	2
	C		NFLT	3
	C	VARIOUS OTHER ARRAYS ARE EQUIVALENCED TO THE "ARRAY" ARRAY AS IN:	NFLT	4
	C		NFLT	5
25	C	- SLCOM : ROW = ARRAY(1,1)	NFLT	6
	C	- BUDGET : CG = ARRAY(1,2)	NFLT	7
	C	- INPUPD : ICREC = ARRAY(1,1)	NFLT	8
	C	- COMPCMP : ROW = ARRAY(1,1)	NFLT	9
	C	- APCELP : IRAY = ARRAY(1,1)	NFLT	10
30	C		NFLT	11
	C	COMMON / NFUT / ARRAY(150,2)	NFLT	12
	C		NFLT	13
	C		NFLT	14
35	C	***** CERVL (COST ESTIMATING RELATIONSHIP (CER) VALUES) COMMON *****	CERVL	2
	C		CERVL	3
	C		CERVL	4
	C		CERVL	5
	C	THE CERVL COMMON CONTAINS LOCATIONS FOR STORAGE OF THE CER	CERVL	6
	C	INPUT CARD COUNT, THE ROW ID'S, THE CER EQUATION NUMBERS, THE	CERVL	7
	C	ROW CROSS REFERENCE NUMBERS, THE INPUT PARAMETERS, THE ADDITION	CERVL	8
40	C	OR CERS CONTROL, STORAGE ARRAY FOR EQUIPMENT NAME, CER INDEX,	CERVL	9
	C	AND INPUT/NFUT INDEXES FOR ALL EQUIPMENT INPUT.	CERVL	10
	C		CERVL	11
	C	CERCT - NUMBER OF CER'S FOR THIS PARTICULAR EQUIPMENT	CERVL	12
	C	(1 WORD)	CERVL	13
45	C	IFORC() - (IF OR C) ALPHABETIC CHARACTER INDICATING	CERVL	14
	C	'FACTOR' OR 'CER'. (150 WORDS)	CERVL	15
	C	IKOWIC - CBS ELEMENT NUMBER TO WHICH THIS CER APPLIES	CERVL	16
	C	(150 WORDS)	CERVL	17
	C	IAOD - CER CONTROL FLAGS (0 THRU 6) FOR ADDITIVE	CERVL	18
50	C	CERS OR SUBELEMENTS. 0 INDICATES NO ADDING.	CERVL	19
	C	1 THRU 6 INDICATE ADD UP SUBELEMENTS.	CERVL	20
	C	(150 WORDS)	CERVL	21
	C	ICERNC - REFERENCE NUMBER FOR CER EQUATIONS IN THE	CERVL	22
	C	'CERCOMP' SUBROUTINE. (150 WORDS)	CERVL	23
55	C	IXREFNO - CBS ELEMENT NUMBER USED IN CROSS REFERENCING	CERVL	24
	C	A PREVIOUSLY COMPUTED CBS ELEMENT. AT PRESENT	CERVL	25
	C	ONLY CER EQUATION NUMBER 0 ALLOWS CROSS	CERVL	26

	C	REFERENCING. 0 INDICATES NO CROSS-REF.	CERVLS	27
	C	(150 WORDS)	CERVLS	28
60	C	IXREFAD - CTR CONTROL FLAGS FOR CROSS-REFERENCING	CERVLS	29
	C	CTR SUB-ELEMENTS. (150 WORDS)	CERVLS	30
	C	IFSTORE - STORES 'FACTOR' PARAMETERS. (900 WORDS)	CERVLS	31
	C	PSSTORE - STORES NUMERICAL PARAMETERS. (900 WORDS)	CERVLS	32
65	C	ICER() - A SINGLY-SUBSCRIPTED ARRAY CONTAINING A	CERVLS	33
	C	MAXIMUM OF 100 DATA TRIPLETS WHOSE MEMBERS	CERVLS	34
	C	ARE	CERVLS	35
	C	ICER(1,4,7, - EQUIPMENT NAME	CERVLS	36
	C	ETC)	CERVLS	37
70	C	ICER(12,4,3 - INDEX FOR MASS STORAGE UNIT 5. INDEX	CERVLS	38
	C	ETC) BEGINS AT 1 AND INCREMENTS BY 9 (1,10,19,	CERVLS	39
	C	ETC). THE FOLLOWING DATA RECORDS ARE	CERVLS	40
	C	INDEXED:	CERVLS	41
	C	1 CERCT 6 IXREFNO	CERVLS	42
	C	2 IFORC 7 IXREFAD	CERVLS	43
75	C	3 IROWID 8 IFSTORE	CERVLS	44
	C	4 IADD 9 PSSTORE	CERVLS	45
	C	5 ICERNC	CERVLS	46
	C	ICER(3,6,9 - INDEX FOR MASS STORAGE UNIT 2 AND 3.	CERVLS	47
80	C	INDEX BEGINS AT 18 AND INCREMENTS BY 2	CERVLS	48
	C	(18,20,22,ETC) AND IS IDENTICAL TO THE	CERVLS	49
	C	THIRD MEMBER OF DATA TRIPLET STORED IN	CERVLS	50
	C	THE IREC ARRAY.	CERVLS	51
	C	SUBELS(,) - SUBELS IS A CROSS-HATCHED ARRAY WHICH IS	CERVLS	52
85	C	RELATED ONE-TO-ONE TO THE CBS.	CERVLS	53
	C	IT IS USED LOCALLY WITHIN 'COMFCMP' AND	CERVLS	54
	C	'ICERCOMP' FOR INTERIM STORAGE OF UP TO	CERVLS	55
	C	SIX SUBELEMENTS, 1 THROUGHPUT, AND 1 TOTAL	CERVLS	56
	C	VALUE FOR EACH CBS ELEMENT.	CERVLS	57
90	C	FACTOR() - A FACTOR IS A PRECURSOR OF ONE OR MORE	CERVLS	58
	C	CBS.	CERVLS	59
	C		CERVLS	60
	C		CERVLS	61
	C	COMMON /CERVLS/ CERCT, IFORC(150), IROWID(150), IADD(150),	CERVLS	62
95	C	ICERNC(150), IXREFNO(150), IXREFAD(150),	CERVLS	63
	C	IFSTORE(6,150), PSSTORE(6,150), ICER(300),	CERVLS	64
	C	SUBELS(8,150), FACTORS(150)	CERVLS	65
	C	INTEGER CERCT	CERVLS	66
	C		CERVLS	67
100	C	***** ROLLUPCT COMMON *****	CERVLS	68
	C		CERVLS	69
	C	ARRAY DEFINING THE ROLL-UP INPUT NUMBERS, TOTAL COUNT OF	ROLLUPCT	2
	C	COST ELEMENTS WITH SPECIFIC ROLL-UP NUMBERS TO BE OUTPUT.	ROLLUPCT	3
	C	ARRAY OF SELECTED WBS ELEMENTS NUMBERS, SELECTED ROLL-UP	ROLLUPCT	4
	C	OUTPUT FLAG	ROLLUPCT	5
105	C	COMMON / ROLLUPCT / IROLL(150), ROLLTOT, ROLLSEL(150), ROLLFLG	ROLLUPCT	6
	C	INTEGER ROLLTOT, ROLLSEL, ROLLFLG	ROLLUPCT	7
	C		ROLLUPCT	8
	C	***** BULG COMMON *****	ROLLUPCT	9
	C		ROLLUPCT	10
110	C		CHARTS	2
	C	*****CHARTS (CONTROL) COMMON *****	CHARTS	3
	C		CHARTS	4
	C		CHARTS	5
	C	CHRTCNT CONTAINS THE MAJOR OUTPUT CHART CONTROLS	CHARTS	6

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AD-A087 930

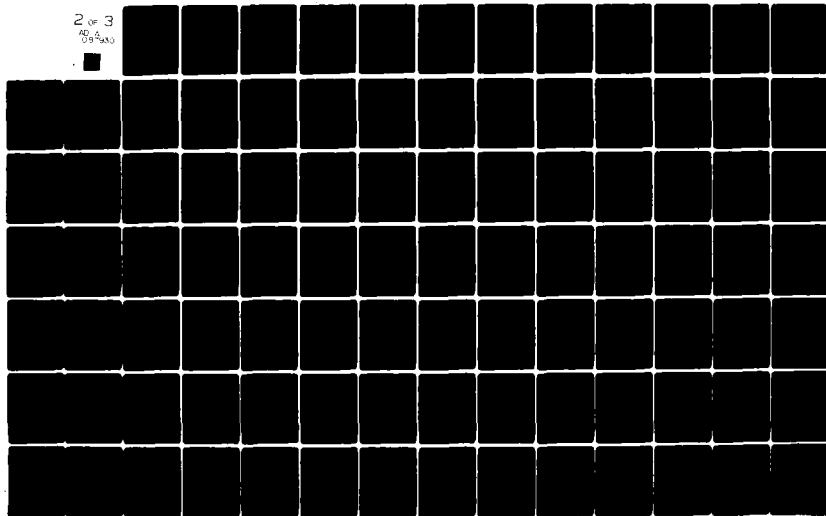
NAVAL SURFACE WEAPONS CENTER DAHLGREN VA
SYSTEM AND FORCE STRUCTURE COST ANALYSIS MODEL (SAFSCAM) USER'S--ETC(U)
SEP 79 C P NELSON
NSWC/TR-79-250

F/G 14/1

UNCLASSIFIED

NL

2 OF 3
AD-A
087 930



SUBROUTINE DATAOF

74/74 OPT=2

FTN 4.6+433

07/31/79 23.53.41

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C THE NEXT THREE POSITIONS START A SERIES OF TRIPLETS WHOSE
C MEMBERS ARE: SHIPCLASS NAME, EQUIPMENT NAME, MS 3 INDEX.
C IREC(1) - THE RUNNING SUM OF THE TOTAL NUMBER OF UNIQUE
175 C SHIPCLASS/EQUIPMENT COMBINATION IN THE
C EQUIPMENT LEVEL INPUT
C IREC(2,5,8, - THE NAME OF THE SHIP CLASS
C 11,ETC)
C IREC(3,6,9 - THE NAME OF THE EQUIPMENT
180 C 12,ETC)
C IREC(4,7,10 - INDEX FOR MASS STORAGE UNIT 3. AN INTEGER
C 13,ETC) NUMBER BEGINNING A 18 AND INCREMENTING BY
C 2 TO FORM 18,20,22,24,ETC. THIS INDEX IS
C THE STARTING LOCATION OF A RECORD (LENGTH:
185 C "NWS WORDS") ON MASS STORAGE 3 WHICH
C CONTAINS THE UNIT COSTS OF THE EQUIPMENTS
C ON A UNIT SHIP (COMPLETED BY SUBROUTINE
C CUMPCMP).
C
190 C COMMON / MARKAY / IREC(3750)
C
C **** SHIFINS (SHIP SUMMATION AND INSTALLATION TABLE) COMMON ****
C
C SHIPSUM( ) - CONTAINS THE TOTAL NUMBER OF UNIT SHIPS FOR
195 C EACH SHIP CLASS FOUND BY INSPECTION OF
C THE SHIP INSTALLATION TABLE
C SINSTE( , ) - THE SHIP DEPLOYMENT/INSTALLATION SCHEDULE
C TABLE FOR EACH SHIP CLASS
C SINSTB(X,1) - SHIP CLASS NAME
200 C SINSTB(X,2-7) - THE YEARLY NUMBERS OF
C UNIT SHIPS OF THIS CLASS TO BE
C DEPLOYED/INSTALLED
C SHIPSM( ) - THE TOTAL NUMBER OF UNIT SHIPS FOR EACH
C SHIP CLASS. IT IS THE SAME COUNT AS
205 C SHIPSUM, HOWEVER, IT IS DEFINED IN A
C SPECIFIC ORDER AFTER ERROR-CHECKING IN
C SLCCH'S NESTED DO-LOOPS WHICH
C DETERMINE THE TOTAL COSTS BY SHIP CLASS
C
210 C COMMON / SHIFINS / SHIPSUM(43), SINSTB(43,7), SHIPSM(43)
C INTEGER SHIPSUM, SINSTB, SHIPSM
C
C ***** NAMES COMMON *****
C
C NMSYS - NAME OF THE SYSTEM
215 C NOSUB - TOTAL NUMBER OF SHIPCLASSES CONSIDERED
C NMSUB( , ) - NAME OF THE SHIPCLASS IN TWO WORDS
C NOCCMF( ) - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)
C (RUNNING TOTAL FOR EQUIPMENTS)
220 C NMCCMF( , , ) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES
C IN WBSOUT (INDEXED BY EQUIPMENT NUMBER
C AND SHIPCLASS NUMBER)
C NAMESC( , ) - NAMES OF EQUIPMENT(2 WORDS, 7 CHARS EACH)
C FOR EQUIPMENT QUANTITIES TABLE - FLEET
225 C SUMMARY
C EQUI - PRESENT EQUIPMENT (BEING PROCESSED)
C SHIFNP - PRESENT SHIPCLASS (BEING PROCESSED)

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SHIPINS 8
SHIFINS 9
SHIFINS 10
SHIFINS 11
SHIFINS 12
SHIFINS 13
SHIFINS 14
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SHIFINS 47
SYST 2
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SYST 12
SYST 13
SYST 14
SYST 15
SYST 16
SYST 17
SYST 18

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230	C	COMMON / NAMES / NPSYS, NUSIB, NMSUF(2,43), NCCOMP(43),	SYST	19
	1	AMCOMP(2,100,43), NAMESC(100,2), EQUI, SHIPAM	SYST	20
		INTEGER EQUI, SHIPAM	SYST	21
	C	*****MISC (MISCELLANEOUS) COMMON *****	SYST	22
	C		SYST	23
235	C	NAP - COUNT OF DIFFERENT APPROPRIATION CODES	SYST	24
	C	APPRO() - APPROPRIATION CODE NAMES	SYST	25
	C	SPCL(,) - PERCENTAGES FOR CBS ELEMENT COST SPLITS	SYST	26
	C	NPH - COUNT OF THE LIFE CYCLE PHASES	SYST	27
	C	IPH() - FIRST CBS ELEMENT NUMBER OF EACH PHASE	SYST	28
240	C	IPB() - CBS ELEMENT NUMBER FOR PAGE BREAKS	SYST	29
	C	(LAST CBS NUMBER FOR THE PAGE)	SYST	30
	C	IPHAS(,) - TITLES OF CBS PHASES	SYST	31
	C	FLEETZ - FLEET (SYSTEM) SIZE	SYST	32
	C	NROLL() - LOWEST COST ELEMENT LEVEL TO BE PRINTED	SYST	33
245	C	(LOWEST LEVEL TO BE ROLLED UP WITHIN PHASE)	SYST	34
	C	ROTC - TOTAL ROTAE COST	SYST	35
	C	TOTINV - TOTAL INVESTMENT COST MINUS TOTAL RIFOUT	SYST	36
	C	TOTRIF - TOTAL RIFOUT COST	SYST	37
	C	SMISRE - MISSILE ROTAE COST	SYST	38
250	C	NOFLY - NUMBER OF CBS ELEMENTS TO BE INCLUDED IN	SYST	39
	C	FLYAWAY COSTS	SYST	40
	C	IFLYROW() - CBS ELEMENT NUMBER FOR FLYAWAY COSTS	SYST	41
	C	NOYRS - NUMBER OF YEARS IN SHIP INSTALLATION TABLE	SYST	42
	C	IYEARS - YEARS COVERED BY THE SHIP INSTALLATION TABLE	SYST	43
255	C	IYRS - NUMBER OF YEARS IN SHIP INSTALLATION TABLE	SYST	44
	C	PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE)	SYST	45
	C	FNOTES(,) - FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS	SYST	46
	C		SYST	47
260	1	COMMON / MISC / NAP, APPRO(7), SPCL(3,6,2), NPH, IPH(4), IPB(3),	SYST	48
	2	IPHAS(2,4), FLEETZ, NROLL(4), ROTC, TOTINV, TOTRIF,	SYST	49
	3	SMISRE, NOFLY, IFLYROW(25), NOYRS, IYEARS(12), IYRS,	SYST	50
		FNOTES(5,12)	SYST	51
		INTEGER APPRO, SPCL, FLEETZ	SYST	52
265	C		SYST	53
		DIMENSION IOUMMY(10)	SYST	54
		DIMENSION AMOUM(43)	CATAOP	13
		REAL IOUMMY	CATAOP	14
		INTEGER CERCTX6	CATAOP	15
		DIMENSION FMT1100(3), FMT1191(3)	CATAOP	16
270		INTEGER FMT1100, FMT1191	CATAOP	17
	C	OUTPUT COST ELEMENT DESCRIPTIONS	CATAOP	18
		KZERO = 1H0	CATAOP	19
		KONE = 1H1	CATAOP	20
		CALL HEAD	CATAOP	21
275		WRITE (6,1001) KZERO	CATAOP	22
		WRITE (6,1002) KONE	CATAOP	23
		IROLLIT = 0	CATAOP	24
		INDEX = 1	CATAOP	25
		MOPR = LENK/5	CATAOP	26
280		LITMLS = 1	CATAOP	27
		DO 20 I=1,5	CATAOP	28
		CALL REACHS (2,AKAY,LENR,INDEX+I)	CATAOP	29
		DO 20 J=1,MOPR	CATAOP	30
		INDXL = J%5	CATAOP	31
285		INDXF = INDXL-4	CATAOP	32
			CATAOP	33

SLEP OUTLINE DATAOP

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	NO = (I-1)*MDPR + J	CATACF	24
	IROLLIC = IROLLID + 1	CATACF	25
	WRITE (6,1011) NO, (ARAY(K), K=INDEXF,INDEXL), IROLL(IROLLID)	CATACF	26
	IF ((I-1)*MDPR+J.GE.NHBS) GO TO 30	CATACF	27
290	C	CATACF	28
	C PERFORM THE LITHUS TEST: IF TRUE, WRITE PHASE-BREAK PAGE HEADING	CATACF	29
	C	CATACF	30
	IF (LITHUS.GT.3) GO TO 20	CATACF	31
	IF (((I-1)*MDPR + J) .EQ. IPB(LITHUS)) GO TO 10	CATACF	32
295	GO TO 20	CATACF	33
	10 LITHUS = LITHUS + 1	CATACF	34
	WRITE (6,1006) KUNE	CATACF	35
	20 CONTINUE	CATACF	36
	C OUTPUT SYSTEM DATA	CATACF	37
300	30 INDEX = 6	CATACF	38
	MDPR = MDPR/2	CATACF	39
	C	CATACF	40
	C OUTPUT SHIP CLASS/EQUIPMENT DATA	CATACF	41
	C	CATACF	42
315	C NCT - NCT IS THE TOTAL NUMBER OF VALUES STORED IN THE	CATACF	43
	"IREC" ARRAY	CATACF	44
	C ISUBCER - ISUBCER IS A LOCATION COUNTER FOR GETTING VALUES	CATACF	45
	IN THE "ICER" ARRAY	CATACF	46
	C	CATACF	47
	4040 CONTINUE	CATACF	48
310	NCT = IREC(1) * 3	CATACF	49
	ISUBCER = 1	CATACF	50
	ISNC = 1	CATACF	51
	C	CATACF	52
	C PRINT ALL TPUT NPUT, & CER INPUT (FROM MS UNITS) BY EQUIPMENT	CATACF	53
315	C	CATACF	54
	DO 75 I=1,ICCTR	CATACF	55
	C	CATACF	56
	C GET ALL THE SHIP CLASS NAMES THAT THIS EQUIPMENT IS ON	CATACF	57
	ICOUNT = 0	CATACF	58
321	DO 41 II=3,NCT,3	CATACF	59
	IF (ICER(ISUBCER) .NE. IREC(II)) GO TO 41	CATACF	60
	ICOUNT = ICOUNT + 1	CATACF	61
	NMCUP(ICOUNT) = IREC(II-1)	CATACF	62
	INDEX = IREC(II+1)	CATACF	63
325	41 CONTINUE	CATACF	64
	C	CATACF	65
	C WRITE A HEADING LINE WITH THE EQUIPMENT NAME & ITS SHIP CLASS NAMES	CATACF	66
	C	CATACF	67
	WRITE (6,1040) NAMESC(ISNC,1),NAMESC(ISNC,2), (NMDUM(K),K=1,ILCLNT)	CATACF	68
331	IPUT = 10HTHROUGHPUT	CATACF	69
	WRITE (6,1051) IPUT	CATACF	70
	CALL READMS (2,ARAY,LENR,INDEX)	CATACF	71
	DO 54 J=1,MDPR	CATACF	72
	INDEXL = J*10	CATACF	73
335	INDEXF = INDEXL-9	CATACF	74
	ISUBDUM = 0	CATACF	75
	DO 45 IDUM=INDEXF,INDEXL	CATACF	76
	ISUBDUM = ISUBDUM + 1	CATACF	77
	IF (ARAY(IDUM) .NE. 0) GO TO 42	CATACF	78
340	IDUMMY(ISUBDUM) = 10H	CATACF	79
	GO TO 45	CATACF	80
	42 CONTINUE	CATACF	81

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	IDUMPY(ISUBDUM) = AKAY(IDUM)	CATAOP	51
	45 CONTINUE	CATACP	52
345	53 WRITE (6,1030) INDXF, INDXL, (IDUMY(K), K=1,ISUBDUM)	DATAOP	53
	C	CATAOP	54
	C	CATAOP	55
	GET EQUIPMENT RAW CLR DATA FROM MASS STORAGE UNIT 3	CATACF	56
	C	CATAOP	57
	INOCER = ICEK(ISUBCER+1)	CATAOP	58
351	CALL READMS (6, CERCT, 1, INOCER)	CATAOP	59
	IF (CERCT.GT.0) GO TO 61	CATACF	100
	GO TO 65	DATAOP	101
	61 CONTINUE	CATACP	102
	IPUT = 10HCEK INPUT	CATAOP	103
355	WRITE (6,1070) IPUT	CATAOP	104
	CERCTX6 = CERCT * 6	CATAOP	105
	CALL READMS (8,1F0K6,CERCT,INOCER+1)	CATACF	106
	CALL READMS (8,1K0WID,CERCT,INOCER+2)	CATAOP	107
	CALL READMS (8,1ADD,CERCT,INOCER+3)	CATACF	108
360	CALL READMS (8,1ICERNO,CERCT,INOCER+4)	CATAOP	109
	CALL READMS (8,1XREFNO,CERCT,INOCER+5)	CATACF	110
	CALL READMS (8,1XREFAD,CERCT,INOCER+6)	DATAOP	111
	CALL READMS (8,1FSTORE,CERCTX6,INOCER+7)	CATAOP	112
	CALL READMS (8,1PSTORE,CERCTX6,INOCER+8)	CATAOP	113
365	WRITE (6,1100) (K2,K2=1,6)	CATACF	114
	C	CATAOP	115
	C	CATAOP	116
	WRITE AN OUTPUT DETAIL LINE FOR EACH CLR FOR THIS EQUIPMENT	CATAOP	117
	DO 62 K=1,CERCT	CATACF	118
371	WRITE (6,1085) 1F0K6(K),1RCWID(K),1ADD(K),1ICERNO(K),	CATAOP	119
	1XREFAD(K),1XREFAD(K),1FSTORE(K1,K),1PSTORE(K1,K),K1=1,6)	DATAOP	120
	62 CONTINUE	CATACF	121
	65 CONTINUE	CATAOP	122
	ISUBCER = 1SUBCER + 3	CATAOP	123
375	ISNC = ISNC + 1	CATAOP	124
	75 CONTINUE	CATAOP	125
	C	CATAOP	126
	C	CATAOP	127
	OUTPUT SHIP INSTALLATION SCHEDULE	DATAOP	128
380	CALL HEAD	CATACF	129
	WRITE (6,1090) FLEETZ	CATAOP	130
	ITOTAL = 5HTOTAL	CATACF	131
	ISPACE = (136 - ((IYRS*8) + 10))/2	CATAOP	132
	ISPAC1 = ISPACE + 15	DATAOP	133
385	1191 FORMAT(4F(1H0,I2,2HX,,I2,11H(14,4X),A5))	CATAOP	134
	ENCODE(3J,1191,FMT1191) ISFAC(1,NOYRS	CATACF	135
	WRITE(6,FMT1191) (IYEARS(I),I=1,NOYRS),ITOTAL	CATAOP	136
	1100 FORMAT(4F(1H0,I2,9HX,A6,4X,,I2,3MI8))	CATACF	137
	ENCODE(3J,1100,FMT1100) ISFAC(2,IYRS	DATAOP	138
390	DO 80 I=1,NOSUB	CATACF	139
	WRITE(6,FMT1100) (SINSTB(I,K),K=1,IYRS),SHIPSUM(I)	CATAOP	140
	80 CONTINUE	CATACF	141
	C	CATAOP	142
	C	CATACF	143
395	OUTPUT EQUIPLNT SCHEDULE PER SHIP	DATAOP	144
	CALL HEAD	CATACF	145
	WRITE (6,1110)	CATAOP	146
	NCT = 2	CATACF	147
	NCTBY3 = 3		

SLFRoutine DATAOP

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436	NCTBY1 = 1	CATAOP	148
	C	CATAOP	149
	DO 120 I=1,NOSLB	CATAOP	150
	NCOMP = NCLOMP(I)	CATAOP	151
405	WRITE (6,1120) INEC(NCT)	CATAOP	152
	KARAK = 1H*	CATAOP	153
	C	CATAOP	154
	DO 110 J=1,NCOMP	CATAOP	155
	WRITE (6,1140) KARAK, INEC(NCT+1), CSTABLE(NCTBY3), CSTABEL(NCTBY1)	CATAOP	156
	NCT = NCT + 3	CATAOP	157
410	NCTBY3 = NCTBY3 + 3	CATAOP	158
	NCTBY1 = NCTBY1 + 1	CATAOP	159
	KARAK = 1H	CATAOP	160
	110 CONTINUE	CATAOP	161
	120 CONTINUE	CATAOP	162
415	CALL HEAD	CATAOP	163
	WRITE(6,1003) NZERO,NOFLY	CATAOP	164
	1003 FORMAT(A1,6X,'LISTING OF THE *,I3,* COST ELEMENTS INCLUDED IN FLYA	CATAOP	165
	1WAY COSTS*)	CATAOP	166
	WRITE(6,1004) NZERO,(IFLYMON(N),N=1,NOFLY)	CATAOP	167
420	1004 FORMAT(A1,9X,1415)	CATAOP	168
	1000 FORMAT (A1,9X,*APPHO CCODE COST ELEMENT*,35X,*ROLLUP* /)	CATAOP	169
	1001 FORMAT (A1,*FORMATTED LISTING OF INPUT FILE FROM "DATAOP"*)	CATAOP	170
	1010 FORMAT (10X, 15, 5X, 5A10, 110)	CATAOP	171
	1020 FORMAT (1H1,9X,*SYSTEM INPUT CATA*//	CATAOP	172
425	* 1X,*INDEX*,8X,*1*,11X,*2*,11X,*3*,11X,*4*,11X,*5*,11X,*6*,	CATAOP	173
	* 11X,*7*,11X,*8*,11X,*9*,11X,*0*//)	CATAOP	174
	1030 FORMAT (1X,I4,*-*,I4,10(2X,A10))	CATAOP	175
	1040 FORMAT (1H1,A7,1X,A7,* IS OPERATED ON SHIP CLASSES*,10(3X,A6)/	CATAOP	176
	(43X,10(3X,A6)))	CATAOP	177
430	1050 FORMAT (*-*,A10 / 1X,10H----- /	CATAOP	178
	* 1X,*INCLX*,4X,*1*,11X,*2*,11X,*3*,11X,*4*,11X,*5*,11X,*6*,	CATAOP	179
	* 11X,*7*,11X,*8*,11X,*9*,10X,*10* /)	CATAOP	180
	1060 FORMAT (///)	CATAOP	181
	1070 FORMAT (*-*,A10 / 1X,10H-----)	CATAOP	182
435	1080 FORMAT (19HGF CBS CER CES ,6(5X,*PARAMETER #*,I2) /	CATAOP	183
	1 19H C ROW NO. XREF ,6(5X,*F = FACTOR1*)/)	CATAOP	184
	1085 FORMAT (1X,A1,I4,I2,I5,I4,I2,6(5X,A1,1FG12.6))	CATAOP	185
	1090 FORMAT (1H-,42X,*SHIP INSTALLATION SCHEDULE - *,	CATAOP	186
	1*BASED ON*,I4,* SHIP FLEET*)	CATAOP	187
440	1110 FORMAT (1H-,51X,*EQUIPMENT ELEMENTS PER SHIP*/	CATAOP	188
	1 1H0,52X,*EQUIPMENT*,5X,*OPERATIONAL*,5X,*INVESTMENT*/	CATAOP	189
	2 37X,*SHIP CLASS*,6X,*ELEMENT*,7X,*QUANTITY*,8X,*QUANTITY*)	CATAOP	190
	1120 FORMAT (1H0,36X,A6)	CATAOP	191
	1140 FORMAT (A1,53X,A6,I12,F10.2)	CATAOP	192
445	RETURN	CATAOP	193
	C	CATAOP	194
	C SECOND CALL OF DATAOP PRINTS FLEET TOTAL EQUIPMENT REQUIREMENTS	CATAOP	195
	C	CATAOP	196
	ENTRY DATCH1	CATAOP	197
450	CALL HEAD	CATAOP	198
	WRITE (6,1160) FLEETZ	CATAOP	199
	DO 130 I=1,ICCTR	CATAOP	200
	WRITE (6,1170) NAMELC(I,1),NAMESC(I,2),QCMPT(I),QCMPT2(I)	CATAOP	201
	130 CONTINUE	CATAOP	202
455	1160 FORMAT (1H-,42X,*EQUIPMENT ELEMENT QUANTITIES - *,I3,* SHIP FLEET SU	CATAOP	203
	2HMARY*/1H),42X,*EQUIPMENT*,14X,*OPERATIONAL*,10X,*INVESTMENT*/	CATAOP	204

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3 43X,*ELEMENT*,16X,*QUANTITY*,13X,*QUANTITY*)
1170 FORMAT (1H0,38X,2(1X,A7),10X,I7,13X,F11.2)
RETURN
END

CATACF 205
CATACF 206
CATACF 207
DATAOP 208

400

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1      FUNCTION ILOHP (ISUB)
C
C ***** NAMES CLPMCN *****
C
C      NMSYS      - NAME OF THE SYSTEM
C      NOSUB      - TOTAL NUMBER OF SHIPCLASSES CONSIDERED
C      NMSUB( , ) - NAME OF THE SHIPCLASS IN TWO WORDS
C      NOCMP( )   - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)
C                  (RUNNING TOTAL FOR EQUIPMENTS)
C      NMCMF( , , ) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES
C                  IN WBSOUT (INDEXED BY EQUIPMENT NUMBER
C                  AND SHIPCLASS NUMBER)
C      NAMES( , ) - NAMES OF EQUIPMENT (2 WORDS, 7 CHARACTERS EACH)
C                  FOR EQUIPMENT QUANTITIES TABLE - FLEET
C                  SUMMARY
C      EQUI       - PRESENT EQUIPMENT (BEING PROCESSED)
C      SHIPNM     - PRESENT SHIPCLASS (BEING PROCESSED)
C
C
C      COMMON / NAMES / NMSYS, NOSUB, NMSUB(2,43), NOCMP(43),
C      1 NMCMF(2,10),43), NAMESC(100,2), EQUI, SHIPNM
C      INTEGER EQUI, SHIPNM
C ***** MISC (MISCELLANEOUS) COMMON *****
C
C      NAP        - COUNT OF DIFFERENT APPROPRIATION CODES
C      APPRO( )   - APPROPRIATION CODE NAMES
C      SPCL( , )  - PERCENTAGES FOR CBS ELEMENT COST SPLITS
C      NPH        - COUNT OF THE LIFE CYCLE PHASES
C      IPH( )     - FIRST CBS ELEMENT NUMBER OF EACH PHASE
C      IPB( )     - CBS ELEMENT NUMBER FOR PAGE BREAKS
C                  (LAST CBS NUMBER FOR THE PAGE)
C      IPHASE( , ) - TITLES OF CBS PHASES
C      FLEETZ     - FLEET (SYSTEM) SIZE
C      NROLL( )   - LOWEST COST ELEMENT LEVEL TO BE PRINTED
C                  (LOWEST LEVEL TO BE ROLLED UP WITHIN PHASE)
C      ROTCT      - TOTAL ROT&E COST
C      TOTINV     - TOTAL INVESTMENT COST MINUS TOTAL RIFOUT
C      TOTRIF     - TOTAL RIFOUT COST
C      SMISRC     - MISSILE ROT&E COST
C      NOFLY      - NUMBER OF CBS ELEMENTS TO BE INCLUDED IN
C                  FLYAWAY COSTS
C      IFLYRCM( ) - CBS ELEMENT NUMBER FOR FLYAWAY COSTS
C      NOYRS      - NUMBER OF YEARS IN SHIP INSTALLATION TABLE
C      IYEARS     - YEARS COVERED BY THE SHIP INSTALLATION TABLE
C      IYRS       - NUMBER OF YEARS IN SHIP INSTALLATION TABLE
C                  PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE)
C      FNOTES( , ) - FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS
C
C      COMMON / MISC / NAP, APPRO(7), SPCL(3,6,2), NPH, IPH(4), IPB(3),
C      1 IPHASE(2,4), FLEETZ, NROLL(4), ROTCT, TOTINV, TOTRIF,
C      2 SMISRC, NOFLY, IFLYRCM(25), NOYRS, IYEARS(12), IYRS,
C      3 FNOTES(5,12)
C      INTEGER APPRO, SPCL, FLEETZ
C
C      NCP = 1
C      IF (ISUB.EQ.1) GO TO 40
C      IS = ISUB-1

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ICCP  2
SYST  2
SYST  3
SYST  4
SYST  5
SYST  6
SYST  7
SYST  8
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SYST 43
SYST 44
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SYST 47
SYST 48
SYST 49
SYST 50
SYST 51
SYST 52
SYST 53
SYST 54
ICCP  4
ICCP  5
ICCP  6

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FUNCTION ICOMP 74/74 OPT=2

FTN 4.6+433

07/31/75 23.53.41

60 DO 20 I=1,IS
20 NCP = NGCONF(I) + NCP
40 ICOMP = NCP
 RETURN
 END

ICOMP	7
ICOMP	8
ICOMP	9
ICOMP	10
ICOMP	11

SLEPOUTINE REFMT

74/74 OPT=2

FTN 4.2+433

07/31/79 21.53.41

1	SUBROUTINE REFMT (IMORD, (MCRD, NWDS, ISHIFT)	REFPT	2
	DIMENSION IMORD(1)	REFPT	3
	INTEGER EQUI, TEMP(20), OMCRD(1)	REFPT	4
	NCHARS = 10*NWDS	REFPT	5
5	EQUI = 10H	REFPT	6
	COMP1 = EQUI	REFPT	7
	INC = J	REFPT	8
	IBK = 1	REFPT	9
	DO 5 I=1, NCHARS	REFPT	10
10	5 TEMP(I) = 10H	REFPT	11
	DO 30 I=1, NWDS	REFPT	12
	DO 30 J=1, 10	REFPT	13
	CALL MCVE (IMORD(I), J, EQUI, 1, 1)	REFPT	14
	IF (EQUI.EQ.1H) GO TO 10	REFPT	15
15	IF (IBK.EQ.1) GO TO 30	REFPT	16
	IBK = 1	REFPT	17
	GO TO 20	REFPT	18
20	IBK = 0	REFPT	19
	INC = INC+1	REFPT	20
20	CALL MCVE (EQUI, 1, TEMP(INC), 1, 1)	REFPT	21
	30 CONTINUE	REFPT	22
	IF (IBK.EQ.1) INC=INC-1	REFPT	23
	IF (INC.EQ.-1) GO TO 40	REFPT	24
	ISKIP = 0	REFPT	25
25	IF (ISHIFT.EQ.1HC) ISKIP = (NCHARS-INC)/2	REFPT	26
	IF (ISHIFT.EQ.1HR) ISKIP = NCHARS-INC	REFPT	27
	ENCODE (10, 10, IFMT) ISKIP, INC	REFPT	28
100	FORMAT (1H, 12, 2HX, 12, 3HA1)	REFPT	29
	ENCODE (NCHARS, IFMT, OMORD) (TEMP(I), I=1, INC)	REFPT	30
30	RETURN	REFPT	31
C		REFPT	32
C	A BLANK WORD HAS BEEN FOUND RETURN A BLANK	REFPT	33
	40 CONTINUE	REFPT	34
C		REFPT	35
35	DO 50 I=1, NWDS	REFPT	36
	OMORD(I) = COMP1	REFPT	37
	50 CONTINUE	REFPT	38
	RETURN	REFPT	39
	END	REFPT	40

MOVE.2
STORAGE ALLOCATION.

COMPASS 1.3-42..

07/31/79 23.54.37.

ADDRESS LENGTH

0 24
54

BINARY CONTROL CARDS.

IDENT MOVE.2
ENC

ENTRY POINTS.

MOVE 1+

[illegible]

COMPASS 1.2-42.0 07/31/75 23.54.37.

MOVE 1.2

22	54311	67076	SB0	B7-B0	MOVE	59
			S43	A1+01	MOVE	60
			NG	X3,MOVE5	MOVE	61
			SA4	X3	MOVE	62
23	040300025 +	53433	EQ	MOVE	MOVE	63
24	01443		R44	X3	MOVE	64
25	03340		SB3	X4	MOVE	65
			MX3	6	MOVE	66
			SB2	B0	MOVE	67
			LX3	6	MOVE	68
26	014000006	20336	SB4	6	MOVE	69
			NG	X1,MOVE7	MOVE	70
27	36110	033100030 +	IX1	X1+X0	MOVE	71
			SA4	X1	MOVE	72
			LQ	MOVE8	MOVE	73
30	43401	040000032 +	MX4	1	MOVE	74
			MX1	-X4+X1	MOVE	75
			IX1	X1+X0	MOVE	76
			MX1	X4+X1	MOVE	77
			R44	X1	MOVE	78
			NG	X2,MOVE9	MOVE	79
			IX2	X2+X7	MOVE	80
			SA5	X2	MOVE	81
			LX4	E5,X4	MOVE	82
			EQ	MOVE10	MOVE	83
			MX5	1	MOVE	84
			MX2	-X5+X2	MOVE	85
			IX2	X2+X7	MOVE	86
			MX2	X5+X2	MOVE	87
			R45	X2	MOVE	88
			LX4	B5,X4	MOVE	89
			MX6	X3+X4	MOVE	90
			LX6	B6,X6	MOVE	91
			LX8	B0,X3	MOVE	92
			MX5	-X0+X5	MOVE	93
			MX5	X5+X6	MOVE	94
			SB5	L5+84	MOVE	95
			GE	B7,B5,MOVE12	MOVE	96
			SX0	B1	MOVE	97
			SB5	B4	MOVE	98
			NG	X1,MOVE11	MOVE	99
			IX1	X1+X0	MOVE	100
			SA4	X1	MOVE	101
			LQ	MOVE12	MOVE	102
			MX4	1	MOVE	103
			IX1	-X4+X1	MOVE	104
			IX1	X1+X0	MOVE	105
			MX1	X4+X1	MOVE	106
			R44	X1	MOVE	107
			SB6	B6-B4	MOVE	108
			GE	E6,E0,MOVE16	MOVE	109
			MX1	X5	MOVE	110
			SB6	B7-B4	MOVE	111
			NG	X2,MOVE14	MOVE	112
			SA6	A5	MOVE	113
			SA5	A5+B1	MOVE	114
			LQ	MOVE15	MOVE	115

COMPASS 1.3-620. 07/31/79 23.54.37.

MOV. 2	47	76710	01562	43501	15225	MOVLI4	SX7 MX6 MX5 BX2 TX2 BX2 PX5	B1 X2 1 -X5+X2 X2+X7 X5+X2 X2	MOVE MOVE MOVE MOVE MOVE MOVE MOVE	116 117 118 119 120 121 122	
	50	36227	12252	01452							
	51	641000001 +				MOVLI5	EQ	E1,B0,MOVE	MOVE	123	
	52	66221				MOVLI6	S62	B2+61	MOVE	124	
		20406					LX4	6	MOVE	125	
	53	66100	0723601036 +				LI	B2,B3,MOVE 10	MOVE	126	
							SB1	B0	MOVE	127	
	54	040700045 +					EQ	MOVLI3	MOVE	128	
							END		MOVE	129	

560006 CM STORAGE USED 120 STATEMENTS 16 SYMBOLS
MODEL 74 ASSEMBLY 1.050 SECONDS 40 REFERENCES

MOVL2
SYNCLIC REFERENCE TABLE.

COMPASS 3.3-42.0 67/21/75 23.54.37.

MOVE	1	PROGRAM*	2/11 E	2/11	2/12 L	4/18
MOVE 1	3	PROGRAM*	2/15 L	2/47		
MOVE 10	36	PROGRAM*	3/25	3/32 L	4/11	
MOVE 11	42	PROGRAM*	3/41	3/45 L		
MOVE 12	44	PROGRAM*	3/38	3/44	3/50 L	
MOVE 13	45	PROGRAM*	3/52 L	4/13		
MOVE 14	47	PROGRAM*	3/54	4/01 L		
MOVE 15	51	PROGRAM*	3/57	4/08 L		
MOVE 16	52	PROGRAM*	3/51	4/09 L		
MOVE 2	5	PROGRAM*	2/17	2/20 L		
MOVE 3	6	PROGRAM*	2/19	2/21 L		
MOVE 3A	13	PROGRAM*	2/33	2/37 L		
MOVE 4	17	PROGRAM*	2/37	2/46 L		
MOVE 5	24	PROGRAM*	3/03	3/06 L		
MOVE 6	25	PROGRAM*	3/35	3/07 L		
MOVE 7	31	PROGRAM*	3/12	3/16 L		
MOVE 8	32	PROGRAM*	3/15	3/21 L		
MOVE 9	34	PROGRAM*	3/21	3/26 L		

14774 OFT=2

FTN 4.2+433

07/31/79 23.53.41

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1      SUBROUTINE COMPCMF (I9,NOMXS,NOMXCR,QUAN,QZ)
C*
C*      THIS ROUTINE COMPUTES THE LIFE CYCLE COST PER COMPONENT
C*      INDEPENDENT OF SHIP CLASS, FOR ONE UNIT
5      C*      OF ANY EBS COMPONENT OVER ALL SHIP CLASSES
C*
C
C ***** NAMES COMMON *****
10     C
C      NMSYS      - NAME OF THE SYSTEM
C      NOSUB      - TOTAL NUMBER OF SHIPCLASSES CONSIDERED
C      NMSUB( , ) - NAME OF THE SHIPCLASS IN TWO WORDS
C      NOCCMF( )  - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)
15     C      (RUNNING TOTAL FOR EQUIPMENTS)
C      NMCCMF( , ) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES
C      IN HQSOUT (INDEXED BY EQUIPMENT NUMBER
C      AND SHIPCLASS NUMBER)
C      NAMESC( , ) - NAMES OF EQUIPMENT (2 WORDS, 7 CHARACTERS EACH)
20     C      FOR EQUIPMENT QUANTITIES TABLE - FLEET
C      SUMMARY
C      EQUI       - PRESENT EQUIPMENT (BEING PROCESSED)
C      SHIFNP     - PRESENT SHIPCLASS (BEING PROCESSED)
C
25     C
C      COMMON / NAMES / NMSYS, NOSUB, NMSUB(2,43), NOCCMF(43),
1      NMCCMF(2,10),43), NAMESC(100,2), EQUI, SHIFNP
C      INTEGER EQUI, SHIFNP
C ***** MISC (MISCELLANEOUS) COMMON *****
30     C
C      NAP        - COUNT OF DIFFERENT APPROPRIATION CODES
C      APPRO( )   - APPROPRIATION CODE NAMES
C      SPCL( , )  - PERCENTAGES FOR CBS ELEMENT COST SPLITS
C      NPH        - COUNT OF THE LIFE CYCLE PHASES
35     C      IPH( ) - FIRST CBS ELEMENT NUMBER OF EACH PHASE
C      IPB( )     - CBS ELEMENT NUMBER FOR PAGE BREAKS
C      (LAST CBS NUMBER FOR THE PAGE)
C      IPHASE( , ) - TITLES OF CBS PHASES
C      FLEETZ     - FLEET (SYSTEM) SIZE
40     C      NRCLL( ) - LOWEST COST ELEMENT LEVEL TO BE PRINTED
C      (LOWEST LEVEL TO BE ROLLED UP WITHIN PHASE)
C      ROTOT      - TOTAL ROTTE COST
C      TOTINV     - TOTAL INVESTMENT COST MINUS TOTAL RIFOUT
C      TOTRIF     - TOTAL RIFOUT COST
45     C      SHISRC  - MISSILE POT&E COST
C      NOFLY      - NUMBER OF CBS ELEMENTS TO BE INCLUDED IN
C      FLYAWAY COSTS
C      IFLYPCW( ) - CBS ELEMENT NUMBER FOR FLYAWAY COSTS
C      NOYRS      - NUMBER OF YEARS IN SHIP INSTALLATION TABLE
50     C      IYEARS  - YEARS COVERED BY THE SHIP INSTALLATION TABLE
C      IYRS       - NUMBER OF YEARS IN SHIP INSTALLATION TABLE
C      PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE)
C      FNOTES( , ) - FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS
C
55     C
C      COMMON / MISC / NAP, APPRO(17), SPCL(13,6,2), NPH, IPH(4), IPB(13),
1      IPHASE(12,4), FLEETZ, NRCLL(14), ROTOT, TOTINV, TOTRIF,
2      SHISRC, NOFLY, IFLYPCW(25), NOYRS, IYEARS(12), IYRS,

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47/31/79 23.53.41

A-74

115	C	COMMON / CHARTS / CHRTCNT(15)	CHARTS	25
	C	INTEGER CHRTCNT	CHARTS	26
	C		CHARTS	27
	C		CERVLS	2
	C		CERVLS	3
120	C	***** CERVLS (COST ESTIMATING RELATIONSHIP (CER) VALUES) COMMON *****	CERVLS	4
	C		CERVLS	5
	C	THE CERVLS COMMON CONTAINS LOCATIONS FOR STORAGE OF THE CER	CERVLS	6
	C	INPUT CARD COUNT, THE ROW ID'S, THE CER EQUATION NUMBERS, THE	CERVLS	7
	C	CROSS REFERENCE NUMBERS, THE INPUT PARAMETERS, THE ADDITION	CERVLS	8
125	C	OR CERS CONTROL, STORAGE ARRAY FOR EQUIPMENT NAME, CER INDEX,	CERVLS	9
	C	AND INPUT/OUTPUT INDEXES FOR ALL EQUIPMENT INPUT.	CERVLS	10
	C		CERVLS	11
	C	CERCT - NUMBER OF CER'S FOR THIS PARTICULAR EQUIPMENT	CERVLS	12
	C	(1 WORD)	CERVLS	13
130	C	IFORC() - (F OR C) ALPHABETIC CHARACTER INDICATING	CERVLS	14
	C	'FACTOR' OR 'CER'. (150 WORDS)	CERVLS	15
	C	IROWIC - CBS ELEMENT NUMBER TO WHICH THIS CER APPLIES	CERVLS	16
	C	(150 WORDS)	CERVLS	17
	C	IAOD - CER CONTROL FLAGS (0 THRU 6) FOR ADDITIVE	CERVLS	18
135	C	CERS OR SUBELEMENTS. 0 INDICATES NO ADDING.	CERVLS	19
	C	1 THRU 6 INDICATE ADD UP SUBELEMENTS.	CERVLS	20
	C	(150 WORDS)	CERVLS	21
	C	ICERNC - REFERENCE NUMBER FOR CER EQUATIONS IN THE	CERVLS	22
	C	'CERCOMP' SUBROUTINE. (150 WORDS)	CERVLS	23
140	C	IXREFNO - CBS ELEMENT NUMBER USED IN CROSS REFERENCING	CERVLS	24
	C	A PREVIOUSLY COMPUTED CBS ELEMENT. AT PRESENT	CERVLS	25
	C	ONLY CER EQUATION NUMBER 8 ALLOWS CROSS	CERVLS	26
	C	REFERENCING. 0 INDICATES NO CROSS-REF.	CERVLS	27
	C	(150 WORDS)	CERVLS	28
145	C	IXREFAD - CER CONTROL FLAGS FOR CROSS-REFERENCING	CERVLS	29
	C	CER SUB-ELEMENTS. (150 WORDS)	CERVLS	30
	C	IFSTORE - STORES 'FACTOR' PARAMETERS. (900 WORDS)	CERVLS	31
	C	PSSTORE - STORES NUMERICAL PARAMETERS. (900 WORDS)	CERVLS	32
	C	ICER() - A SINGLY-SUBSCRIPTED ARRAY CONTAINING A	CERVLS	33
150	C	MAXIMUM OF 100 DATA TRIPLETS WHOSE MEMBERS	CERVLS	34
	C	ARE:	CERVLS	35
	C	ICER(1,4,7, - EQUIPMENT NAME	CERVLS	36
	C	ETC)	CERVLS	37
	C	ICER(2,4,6 - INDEX FOR MASS STORAGE UNIT 8. INDEX	CERVLS	38
155	C	ETC)	CERVLS	39
	C	BEGINS AT 1 AND INCREMENTS BY 9 (1,10,19,	CERVLS	40
	C	ETC). THE FOLLOWING DATA RECORDS ARE	CERVLS	41
	C	INDEXED:	CERVLS	42
	C	1 CERCT 6 IXREFNO	CERVLS	43
	C	2 IFORC 7 IXREFAD	CERVLS	44
160	C	3 IROWIC 8 IFSTORE	CERVLS	45
	C	4 IAOD 9 PSSTORE	CERVLS	46
	C	5 ICERNC	CERVLS	47
	C	ICER(3,6,9 - INDEX FOR MASS STORAGE UNIT 2 AND 3.	CERVLS	48
	C	INDEX BEGINS AT 18 AND INCREMENTS BY 2	CERVLS	49
165	C	(18,20,22,ETC) AND IS IDENTICAL TO THE	CERVLS	50
	C	THIRD MEMBER OF DATA TRIPLET STORED IN	CERVLS	51
	C	THE IREC ARRAY.	CERVLS	52
	C	SUBELS(,) - SUBELS IS A CROSS-MATCHED ARRAY WHICH IS	CERVLS	53
	C	RELATED ONE-TO-ONE TO THE CBS.	CERVLS	54
170	C	IT IS USED LOCALLY WITHIN 'COMPCMP' AND	CERVLS	55
	C	'CERCOMP' FOR INTERIM STORAGE OF UP TO	CERVLS	55

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C          SIX SUBELEMENTS, 1 THRUPUT, AND 1 TOTAL
C          VALUE FOR EACH CBS ELEMENT.
C          FACTOR( 1 ) - A FACTOR IS A PRECURSOR OF ONE OR MORE
175 C          CERS.
C
C          COMMON /CENVL5/ CERLT, IFORC(150), IROWID(150), IADD(150),
C          ICENNO(150), IXREFNO(150), IXREFAC(150),
180 C          IFSTGR(6,150), PSTGR(6,150), ICER(150),
C          SUBELS(8,150), FACTORS(150)
C          INTEGER CERCT
C
C          ***** ROLUPCT COMMON *****
185 C
C          DIMENSION ROW(150)
C
C          EQUIVALENCE ( ROW, ARAY(1,1) )
190 C
C          INTEGER QCUAN, CERCTX6
C          DATA IIPRIM / 34552J221115000000008 /
C          DATA IINAVY / 345516012631000000008 /
C          DATA IINAMM / 345515011515000000008 /
195 C          DATA IICANN / 345503011616000000008 /
C          DATA IIMLCM / 345515140310000000008 /
C          DATA IZGAMM / 355507011515000000008 /
C          DATA I6FCS / 415506032355000000008 /
200 C          2222 FORMAT (4H- ** /4H ** ,A10, " CERCT = ",I5, " ** ,021.5X,16/4H ** )
C
C          READ THRUPTS AND INPUTS
C
C          CALL READMS ( 3, ROW, NMBS, NCMS )
C          CALL READMS ( 3, ARAY(1,2), LENR, NOCMS+1 )
205 C
C          INITIALIZE THE COMMON "SUBELS" & "FACTORS" ARRAYS TO ALL ZERUES;
C          PUT TPUTS IN "SUBELS(7,X)" AND "SUEELS(8,X)" FOR TIME-PHASING.
C
C          DO 2 IZ=1,150
C          FACTORS(IZ) = 3.
C          DO 1 I1=1,8
C          SUBELS(1,I2) = 0.
210 C          1 CONTINUE
C          2 CONTINUE
C          DO 4 I3=1,NMBS
C          SUBELS(7,I3) = ROW(I3)
C          SUBELS(8,I3) = ROW(I3)
C          4 CONTINUE
C
C          READ IN CER DATA
215 C
C          CALL READMS ( 4, CERCT, 1, NOXCER )
C          IF (CERCT.GT.1) GO TO 5
C          GO TO 10
C          5 CERCTX6 = CERCT * 6
220 C          CALL READMS ( 6, IFORC , CERCT , NOXCER+1 )
C          CALL READMS ( 8, IROWID , CERCT , NOXCER+2 )
C          CALL READMS ( 6, IADD , CERCT , NOXCER+3 )
C          CALL READMS ( 8, ICENNO , CERCT , NOXCER+4 )
225 C

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SUBROUTINE COMPCMP

74/74 GIT=2

FTN 4.6+433

07/31/75 23.53.41

230	CALL READMS (8, IXREFNC, CCRCT, NOXCEA+5)	CCPFCHP	57
	CALL READMS (8, IXREFAU, CCRCT, NOXCEA+6)	CCPFCHP	58
	CALL READMS (8, IFSTONE, CCRCT, NOXCEA+7)	CCPFCHP	59
	CALL READMS (8, PSSTONE, CCRCT, NOXCEA+9)	CCPFCHP	60
	C TEST FOR SPECIAL COMP'S, 1 FRIME AND 1 NAVY	CCPFCHP	61
	C	CCPFCHP	62
235	IF (EQUI.EQ.I1FRIP) GO TO 40	CCPFCHP	63
	IF (EQUI.EQ.I1NAVY) GO TO 50	CCPFCHP	64
	GO TO 60	CCPFCHP	65
	C	CCPFCHP	66
	C ***** 1 FRIME *****	CCPFCHP	67
240	C DEFINE AGGREGATE WBS COSTS OF 1 FRIME. WBS ELEMENTS	CCPFCHP	68
	C FOR 1 FRIME ARE BASED ON PERCENTAGES OF ALL PREVIOUS	CCPFCHP	69
	C WBS COMPONENT ELEMENTS AT A PARTICULAR WBS LEVEL.	CCPFCHP	70
	40 ROW(11) = .009*ROTOT + 2.	CCPFCHP	71
	ROW(12) = .136*ROTOT	CCPFCHP	72
245	ROW(14) = .104*ROTOT	CCPFCHP	73
	ROW(16) = .023*ROTOT + 1.31	CCPFCHP	74
	ROW(20) = .002*(TOTINV - TOTRIP)	CCPFCHP	75
	2226 FORMAT(1H0,*TOTINV = *,F10.2,5X,*TOTRIP = *,F10.2,5X,	CCPFCHP	76
	1*ROW(20) = *,F10.2)	CCPFCHP	77
250	WRITE(6,2226) TOTINV,TOTRIP,ROW(20)	CCPFCHP	78
	GO TO 60	CCPFCHP	79
	C ***** 1 NAVY *****	CCPFCHP	80
	C DEFINE AGGREGATE WBS COSTS OF 1 NAVY. WBS ELEMENTS	CCPFCHP	81
	C FOR 1 NAVY ARE BASED ON PERCENTAGES OF ALL PREVIOUS	CCPFCHP	82
255	C WBS COMPONENT ELEMENTS AT A PARTICULAR WBS LEVEL.	CCPFCHP	83
	50 ROW(11) = .142*(ROTOT + SMISRD)	CCPFCHP	84
	ROW(14) = .071*(ROTOT + SMISRD)	CCPFCHP	85
	ROW(20) = .1*(TOTINV - TOTRIP)	CCPFCHP	86
	60 CONTINUE	CCPFCHP	87
260	C	CCPFCHP	88
	C EVALUATE THE ROW ELEMENTS IN THE CERCMP ROUTINE	CCPFCHP	89
	C *****	CCPFCHP	90
	C	CCPFCHP	91
265	CALL CERCMP (19,ROW,QUAN,Q2)	CCPFCHP	92
	C *****	CCPFCHP	93
	C	CCPFCHP	94
	CALL FCLLUP (ROW)	CCPFCHP	95
	C *****	CCPFCHP	96
	C	CCPFCHP	97
270	IF (EQUI.EQ.I1PAPP) GO TO 300	CCPFCHP	98
	IF (EQUI.EQ.I1CANN) GO TO 300	CCPFCHP	99
	IF (EQUI.EQ.I1PLCH) GO TO 300	CCPFCHP	100
	IF (EQUI.EQ.I2GAMH) GO TO 300	CCPFCHP	101
	IF (EQUI.EQ.I6FCS) GO TO 300	CCPFCHP	102
275	ROTOT = ROTOT + ROW(11)	CCPFCHP	103
	GO TO 400	CCPFCHP	104
	300 SMISRD = SMISRD + ROW(11)	CCPFCHP	105
	400 TOTINV = TOTINV + ROW(16)	CCPFCHP	106
	TOTRIP = TOTRIP + ROW(16)	CCPFCHP	107
280	2226 FORMAT(1H0,*TOTINV = *,F10.2,5X,*TOTRIP = *,F10.2,5X,	CCPFCHP	108
	1*ROTOT = *,F10.2,5X,*SMISRD = *,F10.2)	CCPFCHP	109
	C WRITE(6,2226) TOTINV,TOTRIP,ROTOT,SMISRD	CCPFCHP	110
	10 CONTINUE	CCPFCHP	111
285	IF (CERCT.EQ.0) CALL FCLLUP (ROW)	CCPFCHP	112
	C	CCPFCHP	113

	C LIST THE "SUBELS" ARRAY FOR PROGRAM PROVING	CCPFCMP	114
	C	CCPFCMP	115
	IF(CHRTENT(6).NE.0) GO TO 30	CCPFCMP	116
	CALL HEAD	CCPFCMP	117
290	WRITE (6,1111) NAMESC(I9,1),NAMESC(I9,2),(M,M=1,6)	CCPFCMP	118
	1111 FORMAT (10AFTER "CLRCMP" AND BEFORE "TYMFAZ" LIST THE "SUBELS",	CCPFCMP	119
	C * ARRAY FROM "COMPCMP" FOR COMPONENT *,A7,* *,A7 /	CCPFCMP	120
	C * U M B S *,8(13X,"SUBELEMENT",I2) /	CCPFCMP	121
	C * LLLMENT*,9(3X,"TPUT VALUE",4X,"TOTAL VALUE" / 1X)	CCPFCMP	122
295	DO 11 J=1,NMBS	CCPFCMP	123
	WRITE (6,1112) J,(SUBELS(K,J),K=1,8)	CCPFCMP	124
	11 CONTINUE	CCPFCMP	125
	1112 FORMAT (2X,I3,3X,8(3X,F10.5,2X))	CCPFCMP	126
	C	CCPFCMP	127
300	C THE FIRST HALF OF "NOM" ARRAY NOW CONTAINS AGGREGATE COMPONENT COSTS	CCPFCMP	128
	C TIME-PHASE APPROPRIATE WBS ELEMENTS, SUB-ELEMENTS AND TPLTS HERE.	CCPFCMP	129
	C	CCPFCMP	130
	30 CONTINUE	CCPFCMP	131
305	C	CCPFCMP	132
	C PRODUCE THE UNIT COSTS PER EQUIPMENT	CCPFCMP	133
	C	CCPFCMP	134
	Q1 = QCUAN	CCPFCMP	135
	IPHL = IFH(INFH)	CCPFCMP	136
	NMBSM1 = NMBS - 1	CCPFCMP	137
310	DO 20 I=1,NMBSM1	CCPFCMP	138
	IF (INP.EQ.2) GO TO 15	CCPFCMP	139
	IF (I.LT.IPHL) GO TO 15	CCPFCMP	140
	IF(Q1.EQ.0.) GO TO 12	CCPFCMP	141
	ROW(I) = ROW(I)/Q1	CCPFCMP	142
315	GO TO 20	CCPFCMP	143
	12 CONTINUE	CCPFCMP	144
	ROW(I) = 0.	CCPFCMP	145
	GO TO 20	CCPFCMP	146
	15 CONTINUE	CCPFCMP	147
320	IF (Q2.EQ.0.) GO TO 17	CCPFCMP	148
	ROW(I) = POW(I)/Q2	CCPFCMP	149
	GO TO 20	CCPFCMP	150
	17 CONTINUE	CCPFCMP	151
	POW(I) = 0.	CCPFCMP	152
325	20 CONTINUE	CCPFCMP	153
	C*	CCPFCMP	154
	C* TOTAL UNIT COST FOR THE COMPONENT	CCPFCMP	155
	C	CCPFCMP	156
	C* WRITE UNIT COST TOTALS BACK TO MASS STORAGE	CCPFCMP	157
330	C* IN THE SAME POSITIONS WHENCE CAME THE "TPUT" VALUES	CCPFCMP	158
	C	CCPFCMP	159
	CALL WRTPTS (1, ROW, NMBS, NMBSM1)	CCPFCMP	160
	RETURN	CCPFCMP	161
	END	CCPFCMP	162

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1      SUBROUTINE CERCOMP (I9,ROW,CQUAN,Q2)                                CERCOMP  2
C      C      THIS ROUTINE DECODES THE PROPER CER EQUATION NUMBER,      CERCOMP  3
C      C      COMPLETES THE FOM ELEMENT USING THE PROPER PARAMETERS      CERCOMP  4
C      C      AND A XREF NUMBER IF NEEDED.                                CERCOMP  5
5      C      THIS ROUTINE WILL ALSO SUM THE CER'S WHEN THE PROPER      CERCOMP  6
C      C      CONTROL IS SET.                                             CERCOMP  7
C      C      IADD = 0 NO SUMMATION                                       CERCOMP  8
C      C      = 1 INITIALIZE LOCATION FOR SUMMATION                     CERCOMP  9
10     C      = 2 ADD NEW CER EVALUATION TO WHATEVER IS IN THE ROW      CERCOMP 10
C      C      ID                                                         CERCOMP 11
C      C      ID                                                         CERCOMP 12
C      C      ID                                                         CERCOMP 13
C      C      ***** NAMES COMMON *****                             SYST    2
15     C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES      SYST    3
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST    4
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST    5
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST    6
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST    7
20     C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST    8
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST    9
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   10
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   11
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   12
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   13
25     C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   14
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   15
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   16
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   17
30     C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   18
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   19
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   20
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   21
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   22
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   23
35     C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   24
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   25
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   26
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   27
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   28
40     C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   29
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   30
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   31
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   32
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   33
45     C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   34
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   35
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   36
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   37
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   38
50     C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   39
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   40
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   41
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   42
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   43
55     C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   44
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   45
C      C      NAMES COMMON NAMES COMMON NAMES COMMON NAMES            SYST   46

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	C	FNOTES(,)	- FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS	SYST	47
	C			SYST	48
60	C	COMMON / MISC / NAP,APPRO(7),SFCL(3,6,2),NPH,IPH(4),IFB(J),		SYST	49
	C	1 IPHASE(2,4),FLEETZ,NROLL(4),ROTOR,TOTINV,TOTRIP,		SYST	50
	C	2 SMISRO,NOFLY,IFLY,OW(25),NOYKS,IYEARS(12),IYRS,		SYST	51
	C	3 FNOTES(5,12)		SYST	52
	C	INTEGER APPRO,SFCL,FLEETZ		SYST	53
65	C			SYST	54
	C	***** MS (LENGTH AND COUNTER) COMMON *****		MS2	2
	C			MS2	3
	C			MS2	4
	C			MS2	5
70	C	LENR	- MASS STORAGE UNITS COMMON RECORD LENGTH (TYPICALLY 150)	MS2	6
	C	NWBS	- NUMBER OF ELEMENTS IN THE CBS (MAX 150)	MS2	7
	C	ICCTR	- NUMBER OF EQUIPMENTS IN THE EQUIPMENT ELEMENTS TABLE	MS2	8
	C			MS2	9
75	C	L150	- (150 WORDS) RECORD LENGTH OF 7 ARRAYS IN THE "CERVL" COMMON	MS2	10
	C			MS2	11
	C	L900	- (900 WORDS) RECORD LENGTH OF 2 ARRAYS IN THE "CERVL" COMMON	MS2	12
	C			MS2	13
	C			MS2	14
80	C	COMMON / MS2 / LENR,NWBS,ICCTR,L150,L900		MS2	15
	C			MS2	16
	C			MS2	17
	C			MS2	18
	C			MS2	19
85	C	***** CERVL (COST ESTIMATING RELATIONSHIP (CER) VALUES) COMMON *****		CERVL	2
	C			CERVL	3
	C			CERVL	4
	C			CERVL	5
	C	THE CERVL COMMON CONTAINS LOCATIONS FOR STORAGE OF THE CER		CERVL	6
	C	INPUT CARD COUNT, THE ROW ID'S, THE CER EQUATION NUMBERS, THE		CERVL	7
90	C	ROW CROSS REFERENCE NUMBERS, THE INPUT PARAMETERS, THE ADDITION		CERVL	8
	C	OR CERS CONTROL, STORAGE ARRAY FOR EQUIPMENT NAME, CER INDEX,		CERVL	9
	C	AND INPUT/OUTPUT INDEXES FOR ALL EQUIPMENT INPUT.		CERVL	10
	C			CERVL	11
95	C	CERCT	- NUMBER OF CER'S FOR THIS PARTICULAR EQUIPMENT (1 WORD)	CERVL	12
	C	IFORC()	- (F OR C) ALPHABETIC CHARACTER INDICATING 'FACTOR' OR 'CER'. (150 WORDS)	CERVL	13
	C	IRONIC	- CBS ELEMENT NUMBER TO WHICH THIS CER APPLIES (150 WORDS)	CERVL	14
	C			CERVL	15
100	C	IAOC	- CER CONTROL FLAGS (0 THRU 6) FOR ADDITIVE CERS OR SUBELEMENTS. 0 INDICATES NO ADDING. 1 THRU 6 INDICATE ADD UP SUBELEMENTS. (150 WORDS)	CERVL	16
	C			CERVL	17
	C	ICERNC	- REFERENCE NUMBER FOR CER EQUATIONS IN THE 'CERCOMP' SUBROUTINE. (150 WORDS)	CERVL	18
105	C			CERVL	19
	C	IXREFAO	- CBS ELEMENT NUMBER USED IN CROSS REFERENCING A PREVIOUSLY COMPUTED CBS ELEMENT. AT PRESENT ONLY CER EQUATION NUMBER 0 ALLOWS CROSS REFERENCING. 0 INDICATES NO CROSS-REF. (150 WORDS)	CERVL	20
	C			CERVL	21
110	C	IXREFAO	- CER CONTROL FLAGS FOR CROSS-REFERENCING CER SUB-ELEMENTS. (150 WORDS)	CERVL	22
	C			CERVL	23
	C	IFSTORE	- STORES 'FACTOR' PARAMETERS. (900 WORDS)	CERVL	24
	C	PESTORE	- STORES NUMERICAL PARAMETERS. (900 WORDS)	CERVL	25
	C			CERVL	26
	C			CERVL	27
	C			CERVL	28
	C			CERVL	29
	C			CERVL	30
	C			CERVL	31
	C			CERVL	32

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115      C      ICER( )      - A SINGLY-SUBSCRIPTED ARRAY CONTAINING A
      C      MAXIMUM OF 100 DATA TRIPLETS WHOSE MEMBERS
      C      ARE:
      C      ICEF(1,4,7, - EQUIPMENT NAME
      C      ETC)
120      C      ICEN(2,4,0 - INDEX FOR MASS STORAGE UNIT 9. INDEX
      C      ETC)        BEGINS AT 1 AND INCREMENTS BY 9 (1,10,19,
      C                        ETC). THE FOLLOWING DATA RECORDS ARE
      C                        INDEXED:
      C                        1  CERCT      6  IXREFNO
      C                        2  IFORC      7  IXREFAD
      C                        3  IROWID    8  IFSTORE
      C                        4  IADD      9  PSSTORE
      C                        5  ICERNC
125      C      ICER(3,6,9 - INDEX FOR MASS STORAGE UNIT 2 AND 3.
      C      INDEX BEGINS AT 18 AND INCREMENTS BY 2
      C      (18,20,22,ETC) AND IS IDENTICAL TO THE
      C      THIRD MEMBER OF DATA TRIPLET STORED IN
      C      THE IREC ARRAY.
130      C      SUBELS( , ) - SUBELS IS A CROSS-PATCHED ARRAY WHICH IS
      C      RELATED ONE-TO-ONE TO THE CBS.
      C      IT IS USED LOCALLY WITHIN 'COMPCMP' AND
      C      'CERCOMP' FOR INTERIM STORAGE OF UP TO
      C      SIX SUBELEMENTS, 1 THRUPUT, AND 1 TCIAL
      C      VALUE FOR EACH CBS ELEMENT.
135      C      FACTOR( )   - A FACTOR IS A PRECURSOR OF ONE OR MORE
      C      CLRS.
      C
      C      COMMON /CERVLS/ CERCT, IFORC(150), IROWID(150), IADD(150),
140      C      ICERNC(150), IXREFNO(150), IXREFAD(150),
      C      IFSTORE(6,150), PSSTORE(6,150), ICER(300),
      C      SUBELS(8,150), FACTORS(150)
      C      INTEGER CERCT
145      C
      C      ***** ROLUPGT COMMON *****
150      C
      C      DIMENSION ROW(1)
      C      DIMENSION F(6),P(6)
      C      INTEGER QQUAN,F
155      C      DATA IFF / 1MF / , ISLE / 1MC /
      C      DATA NCNCH / 3000 /
      C      2222 FORMAT (4H-*, /4H **,A10,* CERCT = *,15,* **,021,5X,16/4H **)
      C      Q1 = QQUAN = DEPLOYMENT QUANTITY
160      C      Q1 = QQUAN
      C
      C      DO-LOOP 10.0 IS MASTER DO-LOOP AND HAS 3 DISTINCT FUNCTIONS:
      C      - EARLY CODE (THROUGH 5) EVALUATES LOCAL VARIABLES FROM MSB VALUES
165      C      FOR CLR IDENTIFIERS AND PARAMETERS AND FACTORS:
      C      - MIDDLE CODE (FROM COMPUTED 50 TO THROUGH 990) SELECTS
      C      AND EVALUATES A "CLR" OR "FACTOR":
      C      - FINAL CODE (FROM 990 THROUGH 1000) POSITS RESULTS IN
      C      "FACTORS" AND "SUBELS" ARRAYS.
170      C
      C      CALL MEAC

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CERVLS 33
CERVLS 34
CERVLS 35
CERVLS 36
CERVLS 37
CERVLS 38
CERVLS 39
CERVLS 40
CERVLS 41
CERVLS 42
CERVLS 43
CERVLS 44
CERVLS 45
CERVLS 46
CERVLS 47
CERVLS 48
CERVLS 49
CERVLS 50
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CERVLS 52
CERVLS 53
CERVLS 54
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CERVLS 56
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CERVLS 58
CERVLS 59
CERVLS 60
CERVLS 61
CERVLS 62
CERVLS 63
CERVLS 64
CERVLS 65
CERVLS 66
CERVLS 67
CERVLS 68
CERVLS 69
CERCOMP 17
CERCOMP 18
CERCOMP 19
CERCOMP 20
CERCOMP 21
CERCOMP 22
CERCOMP 23
CERCOMP 24
CERCOMP 25
CERCOMP 26
CERCOMP 27
CERCOMP 28
CERCOMP 29
CERCOMP 30
CERCOMP 31
CERCOMP 32
CERCOMP 33
CERCOMP 34
CERCOMP 35
CERCOMP 36

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SUBROUTINE CERCFM

14/74 OPT=2

FTN 4.6+433

07/31/79 23.53.41

	WRITE (6,6) NAMESC(I9,1),NAMESC(I9,2),(IN,A=1,6),(P,M=1,6)	CERCFM	37
	6 FORMAT(1H+,*5X,*EVALUATION OF CER'S AND FACTORS FOR *,	CERCFM	38
	C A7,1X,A7 / *U NOM CER TEMP *,6(3X,*F*,I2,3X),1X,	CERCFM	39
175	C 8(* SUBEL*,I1),2X,*FACTOR*)	CERCFM	40
	DO 100 I=1,CERFCT	CERCFM	41
	IFRO = IFORC(I)	CERCFM	42
	IROW = IFROW(I)	CERCFM	43
	IRAO = IADD(I)	CERCFM	44
190	JCER = ICER(I)	CERCFM	45
	IXRF = IXREFNU(I)	CERCFM	46
	IXAD = IXREFAD(I)	CERCFM	47
	DO 5 J=1,6	CERCFM	48
	F(J) = IFSTORE(J,I)	CERCFM	49
195	P(J) = PSSTORE(J,I)	CERCFM	50
	IF (F(J).EQ.IEFF) P(J) = FACTORS(IFIX(P(J)))	CERCFM	51
	5 CONTINUE	CERCFM	52
	C	CERCFM	53
	C SELECT EQUATION AND EVALUATE "CER" OR "FACTOR"	CERCFM	54
196	C	CERCFM	55
	GO TO (10, 20, 30, 40, 50, 60, 70, 80, 90, 100,	CERCFM	56
	C 110, 120, 130, 140, 150, 160, 170, 180, 190, 200,	CERCFM	57
	C 210,220,230,240,250,260) JCER	CERCFM	58
	10 TEMP = P(1) * Q2**P(2)	CERCFM	59
195	GO TO 590	CERCFM	60
	20 TEMP = P(1) * Q2**P(2) / P(3)**P(4)	CERCFM	61
	GO TO 59J	CERCFM	62
	30 TEMP = P(1) * P(2)**P(3) / P(4)**P(5)	CERCFM	63
	GO TO 59J	CERCFM	64
200	40 TEMP = P(1) * ((Q2 + P(2))**P(3) - P(2)**F(3))	CERCFM	65
	GO TO 590	CERCFM	66
	50 TEMP = P(1) * ((Q2 + F(2))**P(3) - P(2)**F(3)) / F(4)**P(5)	CERCFM	67
	GO TO 590	CERCFM	68
205	60 TEMP = P(1) * ((P(2) + P(3))**F(4) - P(3)**P(4)) / P(5)**P(6)	CERCFM	69
	GO TO 59J	CERCFM	70
	70 TEMP = P(1) * P(2) * Q2	CERCFM	71
	GO TO 59J	CERCFM	72
	80 CONTINUE	CERCFM	73
	IF (IXAD.EQ.0) IXAD = 8	CERCFM	74
210	TEMP = P(1) * SUBELS(IXAD,IXRF)	CERCFM	75
	GO TO 51J	CERCFM	76
	90 TEMP = P(1) * F(2)**P(3) * Q2**P(5)	CERCFM	77
	GO TO 590	CERCFM	78
215	100 TEMP = P(1) * P(2)**P(3) * P(4)**P(5)	CERCFM	79
	GO TO 59J	CERCFM	80
	110 TEMP = P(1) * P(2)**P(3) * P(4) * P(5) * F(6)	CERCFM	81
	GO TO 59J	CERCFM	82
	120 TEMP = F(1) * P(2) * P(3) * P(4)	CERCFM	83
	GO TO 59J	CERCFM	84
220	130 TEMP = F(1) * P(2) * F(3) / P(4)	CERCFM	85
	GO TO 59J	CERCFM	86
	140 TEMP = F(1) * P(2) * P(3) * P(4) * P(5) * P(6)	CERCFM	87
	GO TO 59J	CERCFM	88
	150 TEMP = P(1) * (F(2)*P(3)*P(4)+F(5)+P(6))	CERCFM	89
225	GO TO 590	CERCFM	90
	160 TEMP = P(1)*P(2) + P(3)*P(4) + P(5)*P(6)	CERCFM	91
	GO TO 59J	CERCFM	92
	170 TEMP = (F(1) + P(2)*P(3)) * Q2	CERCFM	93

SLEFULTINE CLRCMP

74/74 OPT=2

FTN 4.64433

07/31/79 23.53.41

	GO TO 59J	CEACMP	54
230	180 TEMP = (P(1) + P(2)*P(3)) * P(4)	CEACMP	55
	GO TO 59J	CEACMP	56
	190 TEMP = (P(1) + P(2)*P(3)) * P(4) * P(5) * P(6)	CEACMP	57
	GO TO 59J	CEACMP	58
	200 TEMP = (P(1) + P(2)*P(3)) * P(4) * P(5)**P(6)	CEACMP	59
235	GO TO 59J	CEACMP	100
	210 TEMP = P(1) * P(2) * P(3) ** P(4) * P(5) ** P(6)	CEACMP	101
	GO TO 59J	CEACMP	102
	220 TEMP = P(1) / (P(2) + P(3) + P(4))	CEACMP	103
	GO TO 59J	CEACMP	104
240	230 TEMP = P(1) + P(2) + P(3) + P(4) + P(5) + P(6)	CEACMP	105
	GO TO 59J	CEACMP	106
	240 TEMP = P(1) * Q1 ** P(2)	CEACMP	107
	GO TO 59J	CEACMP	108
	250 TEMP = P(1) * P(2) ** P(3) * Q1 ** P(4)	CEACMP	109
245	GO TO 59J	CEACMP	110
	260 TEMP = P(1) * P(2) * P(3) * Q1	CEACMP	111
	990 CONTINUE	CEACMP	112
	CC MYCCC = 1H0	CEACMP	113
	CC WRITE (6,991) MYCCC,IFRC,IKOW,IKAD,JCEP,TEMP,	CEACMP	114
250	CC C (P(N),N=1,6), (SUEELS(M,IKOW),M=1,8),FACTORS(IKOW)	CEACMP	115
	991 FORMAT (A1,A1,I3,I1,I2,1X,F8.3,1X,6(1X,1PG6.2),	CEACMP	116
	C 1X,0P,8F7.1,1X,F7.1)	CEACMP	117
	C	CEACMP	118
	C POSIT RESULT "TEMP" IN "FACTORS" OF "SUBELS" ARRAY	CEACMP	119
255	C	CEACMP	120
	IF (IFRC.EQ.ISEE) GO TO 992	CEACMP	121
	IF (IFRC.NE.IEFF) STOP 02	CEACMP	122
	FACTORS(IKOW) = TEMP	CEACMP	123
	GO TO 59J	CEACMP	124
260	992 IF (IKAD.EQ.0) GO TO 998	CEACMP	125
	SUBELS(IKAD,IKOW) = TEMP	CEACMP	126
	998 SUBELS(8,IKOW) = SUBELS(8,IKOW) + TEMP	CEACMP	127
	999 CONTINUE	CEACMP	128
	MYCCC = 1H0	CEACMP	129
265	WRITE (6,991) MYCCC,IFRC,IKOW,IKAD,JCEP,TEMP,	CEACMP	130
	C (P(N),N=1,6), (SUEELS(M,IKOW),M=1,8),FACTORS(IKOW)	CEACMP	131
	1390 CONTINUE	CEACMP	132
	C	CEACMP	133
	DO 1100 K=1,CEACT	CEACMP	134
270	IF (IFRC(K).NE.ISEE) GO TO 1100	CEACMP	135
	KK = IFQWID(K)	CEACMP	136
	ROW(KK) = SUBELS(8,KK)	CEACMP	137
	1100 CONTINUE	CEACMP	138
	RETURN	CEACMP	139
275	END	CEACMP	140

SUBROUTINE ROLLUP

74774 DP1=2

PTR 4.64433

07/31/75 23.03.41

1		SUBROUTINE ROLLUP (ROW)	ROLLUP	2
	C		ROLLUP	3
	C	THIS ROUTINE EXECUTES THE ROLL-UP PROCEDURE FOR	ROLLUP	4
	C	AUTOMATICALLY SUMMING THE ROW ENTRIES. THIS ROUTINE	ROLLUP	5
5	C	IS CALLED EACH TIME THE ROW ELEMENTS ARE ALTERED.	ROLLUP	6
	C		ROLLUP	7
	C	***** MS (LENGTH AND COUNTER) COMMON *****	MS2	2
	C		MS2	3
	C		MS2	4
14	C	LENH - MASS STORAGE UNITS COMMON RECORD LENGTH	MS2	5
	C	(TYPICALLY 150)	MS2	6
	C	NWBS - NUMBER OF ELEMENTS IN THE CBS (MAX 150)	MS2	7
	C	ICCTR - NUMBER OF EQUIPMENTS IN THE EQUIPMENT	MS2	8
15	C	ELEMENTS TABLE	MS2	9
	C	L150 - (150 WORDS) RECORD LENGTH OF 7 ARRAYS	MS2	10
	C	IN THE "CERVL5" COMMON	MS2	11
	C	L900 - (900 WORDS) RECORD LENGTH OF 2 ARRAYS	MS2	12
	C	IN THE "CERVL5" COMMON	MS2	13
23	C	COMMON / MS2 / LENH,NWBS,ICCTR,L150,L900	MS2	14
	C		MS2	15
	C		MS2	16
	C		MS2	17
	C		MS2	18
	C		MS2	19
25	C	ARRAY DEFINING THE ROLL-UP INPUT NUMBERS, TOTAL COUNT OF	ROLUPCT	2
	C	COST ELEMENTS WITH SPECIFIC ROLL-UP NUMBERS TO BE OUTPUT,	ROLUPCT	3
	C	ARRAY OF SELECTED WBS ELEMENTS NUMBERS, SELECTED ROLL-UP	ROLUPCT	4
	C	OUTPUT FLAG	ROLUPCT	5
30	C	COMMON / ROLUPCT / IROLL(150), ROLLTOT, ROLLSL(150), ROLLFLG	ROLUPCT	6
	C	INTEGER ROLLTOT, ROLLSL, ROLLFLG	ROLUPCT	7
	C	***** BUDG COMMON *****	ROLUPCT	8
	C		ROLUPCT	9
	C		ROLUPCT	10
35	C	DIMENSION TOT(10)	ROLLUP	11
	C	DIMENSION ROW(1)	ROLLUP	12
	C		ROLLUP	13
	C	INITIALIZE THE SUMMATION ARRAY (TEMPORARY STORAGE)	ROLLUP	14
	C	TC ZERO	ROLLUP	15
40	C	DO 10 I=1,10	ROLLUP	16
	C	TOT(I) = 0.0	ROLLUP	17
	C	10 CONTINUE	ROLLUP	18
	C		ROLLUP	19
45	C	SUBTRACT OUT THE LOCATION OF THE FINAL TOTAL	ROLLUP	20
	C	(IF THE TOTAL LOCATION IS MOVED FROM THE NWBS LOCATION	ROLLUP	21
	C	TO ANY OTHER LOCATION, THIS LOGIC WILL HAVE TO ALTERED)	ROLLUP	22
	C	N1 = NWBS - 1	ROLLUP	23
	C		ROLLUP	24
50	C	20 CONTINUE	ROLLUP	25
	C		ROLLUP	26
	C	SAVE THE INPUT ROLL NUMBERS AND ADD TO RUNNING SUM	ROLLUP	27
	C	IR = IROLL(N1)	ROLLUP	28
	C	TOT(IR) = TOT(IR) + ROW(N1)	ROLLUP	29
55	C	30 CONTINUE	ROLLUP	30
	C		ROLLUP	31
	C		ROLLUP	32
	C	DECREMENT N1, TEST FOR COMPLETION AND TEST TO SEE IF	ROLLUP	33

SUBROUTINE ROLLUP

74/74 OPT=2

FTN 4.6+433

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	C	THERE IS A ROLL VALUE PRESENT	ROLLUP	34
		N1 = N1 - 1	ROLLUP	35
60		IF (N1 .EQ. 0) GO TO 50	ROLLUP	36
		IF (IROLL(N1) .EQ. 0) GO TO 30	ROLLUP	37
	C		ROLLUP	38
	C	TEST ROLL VALUES TO GET TO NEXT STUFF -	ROLLUP	39
	C	IF PREVIOUS IS EQUAL TO PRESENT OR PREVIOUS LESS THAN PRESENT	ROLLUP	40
65	C	SUM IT	ROLLUP	41
	C	IF (IROLL(N1+1) - IROLL(N1)) 20, 20, 40	ROLLUP	42
	C		ROLLUP	43
	C		ROLLUP	44
	C	IF PREVIOUS IS GREATER THAN PRESENT -	ROLLUP	45
70	C	PLACE SUMMATION IN PRESENT AND IF THE ROLL NUMBER IS NOT	ROLLUP	46
	C	1, FORCE THE ROLL SUMMATION LOCATION BACK TO ZERO	ROLLUP	47
	C	40 CONTINUE	ROLLUP	48
	C		ROLLUP	49
		ROW(N1) = ROW(N1) + TOT(IR)	ROLLUP	50
75		IF (IR .EQ. 1) GO TO 20	ROLLUP	51
		TOT(IR) = 0.	ROLLUP	52
		GO TO 20	ROLLUP	53
	C		ROLLUP	54
	C	FINAL TOTAL SUMMATION IN WBS CALLED TOTAL	ROLLUP	55
80	C	50 CONTINUE	ROLLUP	56
		ROW(NWES) = TOT(1)	ROLLUP	57
	C		ROLLUP	58
		RETURN	ROLLUP	59
		END	ROLLUP	60

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A-86

	C	ON A UNIT SHIP (COMPUTED BY SUBROUTINE	MARRAY	23
	C	COMPCMP).	MARRAY	24
60	C		MARRAY	25
	C	COMMON / MARRAY / IREG(3750)	MARRAY	26
	C	***** MS (LENGTH AND COUNTER) COMMON *****	MS2	2
	C		MS2	3
65	C		MS2	4
	C		MS2	5
	C	LENR - MASS STORAGE UNITS COMMON RECORD LENGTH	MS2	6
	C	(TYPICALLY 150)	MS2	7
	C	NWBS - NUMBER OF ELEMENTS IN THE CBS (MAX 150)	MS2	8
	C	ICCTR - NUMBER OF EQUIPMENTS IN THE EQUIPMENT	MS2	9
70	C	ELEMENTS TABLE	MS2	10
	C	L150 - (150 WORDS) RECORD LENGTH OF 7 ARRAYS	MS2	11
	C	IN THE "CERVL" COMMON	MS2	12
	C	L900 - (900 WORDS) RECORD LENGTH OF 2 ARRAYS	MS2	13
	C	IN THE "CERVL" COMMON	MS2	14
75	C		MS2	15
	C	COMMON / MS2 / LENR,NWBS,ICCTR,L150,L900	MS2	16
	C		MS2	17
	C		MS2	18
	C		MS2	19
80	C	***** NPUT COMMON *****	NPUT	2
	C		NPUT	3
	C		NPUT	4
	C	VARIOUS OTHER ARRAYS ARE EQUIVALENCED TO THE "ARRAY" ARRAY AS IN:	NPUT	5
	C		NPUT	6
85	C	- SLCCM : ROW = ARRAY(1,1)	NPUT	7
	C	- BUDGET : CG = ARRAY(1,2)	NPUT	8
	C	- INPUPO : IOREC = ARRAY(1,1)	NPUT	9
	C	- COMPCMP : ROW = ARRAY(1,1)	NPUT	10
	C	- APCELM : IRAY = ARRAY(1,1)	NPUT	11
90	C		NPUT	12
	C	COMMON / NPUT / ARRAY(150,2)	NPUT	13
	C		NPUT	14
	C	***** NAMES COMMON *****	SYST	2
	C		SYST	3
95	C		SYST	4
	C	NMSYS - NAME OF THE SYSTEM	SYST	5
	C	NOSUB - TOTAL NUMBER OF SHIPCLASSES CONSIDERED	SYST	6
	C	NMSUE(,) - NAME OF THE SHIPCLASS IN TWO WORDS	SYST	7
	C	NCCOMP() - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)	SYST	8
100	C	(RUNNING TOTAL FOR EQUIPMENTS)	SYST	9
	C	NMCOMP(, ,) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES	SYST	10
	C	IN WBSOUT (INDEXED BY EQUIPMENT NUMBER	SYST	11
	C	AND SHIPCLASS NUMBER)	SYST	12
	C	NAMESC(,) - NAMES OF EQUIPMENT (2 WORDS, 7 CHARS EACH)	SYST	13
105	C	FOR EQUIPMENT QUANTITIES TABLE - FLEET	SYST	14
	C	SUMMARY	SYST	15
	C	EQUI - PRESENT EQUIPMENT (BEING PROCESSED)	SYST	16
	C	SHIPNM - PRESENT SHIPCLASS (BEING PROCESSED)	SYST	17
	C		SYST	18
110	C		SYST	19
	C	COMMON / NAMES / NMSYS, NOSUB, NMSUP(2,43), NOCOMP(43),	SYST	20
	C	1 NMCOMP(2,103,43), NAMESC(1,0,2), EQUI, SHIPNM	SYST	21
	C	INTEGER EQUI, SHIPNM	SYST	22
	C	***** MISC (MISCELLANEOUS) COMMON *****	SYST	23

SUBROUTINE WBSTOT

74/74

CPT=2

FT4 4.6+433

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115	C			SYST	24
	C	NAP	- COUNT OF DIFFERENT APPROPRIATION CODES	SYST	25
	C	APPRO()	- APPROPRIATION CODE NAMES	SYST	26
	C	SPCL(,)	- PERCENTAGES FOR CBS ELEMENT COST SPLITS	SYST	27
	C	NPH	- COUNT OF THE LIFE CYCLE PHASES	SYST	28
120	C	IPH()	- FIRST CBS ELEMENT NUMBER OF EACH PHASE	SYST	29
	C	IPB()	- CBS ELEMENT NUMBER FOR PAGE BREAKS	SYST	30
	C		(LAST CBS NUMBER FOR THE PAGE)	SYST	31
	C	IPHASE(,)	- TITLES OF CBS PHASES	SYST	32
	C	FLEETZ	- FLEET (SYSTEM) SIZE	SYST	33
125	C	NROLL()	- LOWEST COST ELEMENT LEVEL TO BE PRINTED	SYST	34
	C		(LOWEST LEVEL TO BE ROLLED UP WITHIN PHASE)	SYST	35
	C	RDTOT	- TOTAL RDTIE COST	SYST	36
	C	TOTINV	- TOTAL INVESTMENT COST MINUS TOTAL RIPOUT	SYST	37
	C	TOTRIP	- TOTAL RIPOUT COST	SYST	38
130	C	SMISPD	- MISSILE RDTIE COST	SYST	39
	C	NOFLY	- NUMBER OF CBS ELEMENTS TO BE INCLUDED IN	SYST	40
	C		FLYAWAY COSTS	SYST	41
	C	IFLYROW()	- CBS ELEMENT NUMBER FOR FLYAWAY COSTS	SYST	42
	C	NOYRS	- NUMBER OF YEARS IN SHIP INSTALLATION TABLE	SYST	43
135	C	IYEARS	- YEARS COVERED BY THE SHIP INSTALLATION TABLE	SYST	44
	C	IYRS	- NUMBER OF YEARS IN SHIP INSTALLATION TABLE	SYST	45
	C		PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE)	SYST	46
	C	FNOTES(,)	- FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS	SYST	47
	C			SYST	48
140		COMMON / MISC / NAP,APPRO(7),SPCL(3,6,2),NPH,IPH(4),IPB(3),		SYST	49
	1	IPHASE(2,4),FLEETZ,NROLL(4),RDTOT,TOTINV,TOTRIP,		SYST	50
	2	SMISPD,NOFLY,IFLYROW(25),NOYRS,IYEARS(12),IYRS,		SYST	51
	3	FNOTES(5,12)		SYST	52
		INTEGER APPRO,SPCL,FLEETZ		SYST	53
145	C			SYST	54
	C			WBSTOT	16
	C	DIMENSION TOT(150)		WBSTOT	17
	C			WBSTOT	18
	C	STARTING INDEX FOR STORAGE OF THE SHIP SUMMARIES		WBSTOT	19
150	C	TOTALS ON UNIT 10		WBSTOT	20
	C	DATA INDXTOT / 1251 /		WBSTOT	21
	C			WBSTOT	22
	C	IPH2 = IPH(2)		WBSTOT	23
	C	IPHL = IPH(NPH)		WBSTOT	24
155	C	NWBSM1 = NWBS - 1		WBSTOT	25
	C	DO 150 ISUBS=1,NOSUB		WBSTOT	26
	C			WBSTOT	27
	C	DEFINE INDEXES FOR PICKING THE PROPER COMPONENTS		WBSTOT	28
	C	FOR THIS SHIP		WBSTOT	29
160	C	IBEG = ICOMP(ISUBS) * 3 + 1		WBSTOT	30
	C	IEND = IBEG + (NOCOMP(ISUBS) - 1) * 3		WBSTOT	31
	C	JBEG = (IBEG-1)/3		WBSTOT	32
	C			WBSTOT	33
	C	INITIALIZE SUMMATION LOCATIONS		WBSTOT	34
165	C	DO 10 J=1,NWBS		WBSTOT	35
	C	TOT(J) = 0.0		WBSTOT	36
	C	10 CONTINUE		WBSTOT	37
	C			WBSTOT	38
	C	DEVELOP THE COMPONENT TOTALS FOR THIS SHIP		WBSTOT	39
170	C			WBSTOT	40
	C	THE FINAL TOTAL (NWBS LINE) IS OBTAINED BY SUMMING THE PHASE BREAK LINES		WBSTOT	41

SUBROUTINE WBSTOT

74/74 OPT=2

FTN 4.6+433

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	C		WBSTOT	42
		00 100 I=1,NWRSN1	WBSTOT	43
		IBEGX = IBEG	WBSTOT	44
175		JBFGX = JBFG	WBSTOT	45
		IF (I.LT.IPHL) GO TO 60	WBSTOT	46
		IF (NPH.EQ.2) GO TO 60	WBSTOT	47
	C		WBSTOT	48
		00 50 J=IBEG,IEND,3	WBSTOT	49
180		CALL READMS (3, ARAY(1,2), LENR, IREC(J))	WBSTOT	50
		TOT(I) = TOT(I) + ARAY(I,2) * FLOAT(CSTABLE(IBEGX-1))	WBSTOT	51
		IBEGX = IBEGX + 3	WBSTOT	52
	50	CONTINUE	WBSTOT	53
		GO TO 100	WBSTOT	54
185	60	CONTINUE	WBSTOT	55
		00 70 J=IBEG,IEND,3	WBSTOT	56
		CALL READMS (3, ARAY(1,2), LENR, IREC(J))	WBSTOT	57
		TOT(I) = TOT(I) + ARAY(I,2) * CSTABLE(JBEGX)	WBSTOT	58
	70	CONTINUE	WBSTOT	59
190	C		WBSTOT	60
	100	CONTINUE	WBSTOT	61
		TOT(NWRS) = TOT(I) + TOT(IPH2) + TOT(IPHL)	WBSTOT	62
	C		WBSTOT	63
	C	DEFINE INDEX FOR STORAGE	WBSTOT	64
195		INX = INXTOT + ISURS - 1	WBSTOT	65
	C		WBSTOT	66
	C	STORAGE OF TOTALS ON UNIT 10	WBSTOT	67
		CALL WRITMS (10, TOT, NWRS, INX)	WBSTOT	68
	C		WBSTOT	69
200	150	CONTINUE	WBSTOT	70
	C		WBSTOT	71
		RETURN	WBSTOT	72
		END	WBSTOT	73

SUBROUTINE APCELM

74/74 OPT=2

FTN 4.0+433

J7/31/75 23.53.41

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1      SUBROUTINE APCELM
      C
      C      THIS ROUTINE DEFINES THE IMORD ARRAY USED IN THE
      C      WESGUT ROUTINE -
      C      IMORD(I,1) - APPRO CODE
      C      IMORD(I,2) - ELEMENT NUMBER
      C      IMORD(I,3) -
      C      IMORD(I,4) - THESE 3 COST ELEMENT TITLE (CBS)
      C      IMORD(I,5) -
10     C      WHERE 'I' GOES FROM ONE TO NMBS
      C
      C      ARRAY CONTAINING APPRO CODE, CBS NUMBER, COST ELEMENT ID
      C      COMMON / APCLUT / IMORD(150,5)
      C
15     C ***** NPLT COMMON *****
      C
      C      VARIOUS OTHER ARRAYS ARE EQUIVALENCED TO THE "ARRAY" ARRAY AS IN:
      C
      C      - SLOCH : ROW = ARRAY(1,1)
      C      - BUDGET : CG = ARRAY(1,2)
      C      - INPUTD : IOEC = ARRAY(1,1)
      C      - COMPCMP : ROW = ARRAY(1,1)
      C      - APCELM : IRAY = ARRAY(1,1)
20     C
25     C      COMMON / NPUT / ARRAY(150,2)
      C
      C ***** MS (LENGTH AND COUNTER) COMMON *****
      C
      C      LENF      - MASS STORAGE UNITS COMMON RECORD LENGTH
      C                  (TYPICALLY 150)
      C      NMBS      - NUMBER OF ELEMENTS IN THE CBS (MAX 150)
      C      ICCTR      - NUMBER OF EQUIPMENTS IN THE EQUIPMENT
30     C                  ELEMENTS TABLE
      C      L150      - (150 WORDS) RECORD LENGTH OF 7 ARRAYS
      C                  IN THE "CERVL5" COMMON
      C      L900      - (900 WORDS) RECORD LENGTH OF 2 ARRAYS
      C                  IN THE "CERVL5" COMMON
35     C
40     C      COMMON / MS2 / LENF,NMBS,ICCTR,L150,L900
      C
      C
      C
45     C
      C      DIMENSION IRAY(1)
      C
      C      INTEGER BLANK
      C
50     C      EQUIVALENCE ( ARAY, IRAY)
      C
      C      DATA BLANK / 10H /
      C
      C      SETUP NBS COUNTER
      C
55     C      I = 0
      C
      C      LOOP FOR 5 FILLS OF DATA ON UNIT 3

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```

APCELM      2
APCELM      3
APCELM      4
APCELM      5
APCELM      6
APCELM      7
APCELM      8
APCELM      9
APCELM     10
APCELM     11
APCELM     12
APCLUT      2
APCLUT      3
NPLT        2
NPLT        3
NPLT        4
NPUT        5
NPUT        6
NPLT        7
NPLT        8
NPLT        9
NPLT       10
NPLT       11
NPLT       12
NPLT       13
NPUT       14
MS2         2
MS2         3
MS2         4
MS2         5
MS2         6
MS2         7
MS2         8
MS2         9
MS2        10
MS2        11
MS2        12
MS2        13
MS2        14
MS2        15
MS2        16
MS2        17
MS2        18
MS2        19
APCELM     16
APCELM     17
APCELM     18
APCELM     19
APCELM     20
APCELM     21
APCELM     22
APCELM     23
APCELM     24
APCELM     25
APCELM     26
APCELM     27
APCELM     28

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SELFOUTLINE APCFLM

74/74 OPT=2

FTN 4.6*433

47/21/79 23.53.41

		DO 40 P=1,5	APCFLM	29
		CALL RIADMS (3, ARAY, LENF, M)	APCELM	30
61	C		APCELM	31
	C	DEFINE ALL ELEMENTS ON INDEX M	APCELM	32
		DO 30 J=1,30	APCELM	33
		I = I + 1	APCELM	34
	C		APCELM	35
65	C	TEST FOR NMBS ELEMENTS	APCELM	36
		IF (I .GT. NMBS) GO TO 50	APCELM	37
		IWORD(I,1) = IRAY(J*5-4)	APCELM	38
		IF (IWORD(I,1) .EQ. 0) IWORD(I,1) = BLANK	APCELM	39
	C		APCELM	40
76		IWORD(I,2) = I	APCELM	41
	C		APCELM	42
		IWORD(I,3) = IRAY(J*5-3)	APCELM	43
		IWORD(I,4) = IRAY(J*5-2)	APCELM	44
		IWORD(I,5) = IRAY(J*5-1)	APCELM	45
75		DO 20 N=1,5	APCELM	46
		IF (IWORD(I,N) .EQ. 0) IWORD(I,N) = BLANK	APCELM	47
		20 CONTINUE	APCELM	48
	C		APCELM	49
		30 CONTINUE	APCELM	50
90	C		APCELM	51
		40 CONTINUE	APCELM	52
	C		APCELM	53
		50 CONTINUE	APCELM	54
	C		APCELM	55
85		RETURN	APCELM	56
		END	APCELM	57

```

1      SUBROUTINE ROLCNT
C
C      THIS ROUTINE WILL BE CALLED WHEN CHRTONT(5) OPTION IS
C      SET TO 1. THIS ROUTINE WILL COUNT UP THE NUMBER OF CCSI
5      ELEMENTS TO BE OUTPUT ON THE COMPONENT CHARTS AND THE SHIP
C      SUMMARY CHARTS. THE COST ELEMENTS ARE SELECTED BY HAVING
C      A ROLL-UP NUMBER EQUAL TO OR LESS THAN THE VALUES INPUT
C      IN BLOCK DATA. THE INPUT VALUES ARE IN ARRAY NRCLL AND THERE
10     IS A SEPARATE VALUE FOR EACH PHASE AND/OR PAGE BREAK IF FULL
C      PRINTOUT WERE REQUESTED.
C
C      ***** MS (LENGTH AND COUNTER) COMMON *****
C
15     LENR      - MASS STORAGE UNITS COMMON RECORD LENGTH
C                (TYPICALLY 150)
C      NWBS      - NUMBER OF ELEMENTS IN THE CBS (MAX 150)
C      ICCTR      - NUMBER OF EQUIPMENTS IN THE EQUIPMENT
20     ELEMENTS TABLE
C      L150      - (150 WORDS) RECORD LENGTH OF 7 ARRAYS
C                IN THE "CERVL5" COMMON
C      L900      - (900 WORDS) RECORD LENGTH OF 2 ARRAYS
C                IN THE "CERVL5" COMMON
25     COMMON / MS2 / LENR,NWBS,ICCTR,L150,L900
C
C
C      ARRAY DEFINING THE ROLL-UP INPUT NUMBERS, TOTAL COUNT OF
30     COST ELEMENTS WITH SPECIFIC ROLL-UP NUMBERS TO BE OUTPUT,
C      ARRAY OF SELECTED WBS ELEMENTS NUMBERS, SELECTED ROLL-UP
C      OUTPUT FLAG
C      COMMON / ROLUPCT / IROLL(15), ROLLTOT, ROLL5L(15), ROLLFLG
35     INTEGER ROLLTOT, ROLL5L, ROLLFLG
C
C      ***** BUDG COMMON *****
C
C
40     ***** NAMES COMMON *****
C
C      NMSYS      - NAME OF THE SYSTEM
C      NOSUB      - TOTAL NUMBER OF SHIPCLASSES CONSIDERED
C      NMSUB( , ) - NAME OF THE SHIPCLASS IN TWO WORDS
45     NOCMF( , ) - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)
C                (RUNNING TOTAL FOR EQUIPMENTS)
C      NMCMF( , , ) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES
C                IN WBSOUT (INDEXED BY EQUIPMENT NUMBER
C                AND SHIPCLASS NUMBER)
50     NAMESC( , ) - NAMES OF EQUIPMENT (2 WORDS, 7 CHARS EACH)
C                FOR EQUIPMENT QUANTITIES TABLE - FLEET
C                SUMMARY
C      EQUI       - PRESENT EQUIPMENT (BEING PROCESSED)
C      SHIPNT     - PRESENT SHIPCLASS (BEING PROCESSED)
55     COMMON / NAMES / NMSYS, NOSUB, NMSUB(2,43), NOCMF(43),
C
C      ROLCNT      2
C      ROLCNT      3
C      ROLCNT      4
C      ROLCNT      5
C      ROLCNT      6
C      ROLCNT      7
C      ROLCNT      8
C      ROLCNT      9
C      ROLCNT     10
C      ROLCNT     11
C      ROLCNT     12
C      MS2         2
C      MS2         3
C      MS2         4
C      MS2         5
C      MS2         6
C      MS2         7
C      MS2         8
C      MS2         9
C      MS2        10
C      MS2        11
C      MS2        12
C      MS2        13
C      MS2        14
C      MS2        15
C      MS2        16
C      MS2        17
C      MS2        18
C      MS2        19
C      ROLLFACT    2
C      ROLLFACT    3
C      ROLLFACT    4
C      ROLLFACT    5
C      ROLLFACT    6
C      ROLLFACT    7
C      ROLLFACT    8
C      ROLLFACT    9
C      ROLLFACT   10
C      SYST        2
C      SYST        3
C      SYST        4
C      SYST        5
C      SYST        6
C      SYST        7
C      SYST        8
C      SYST        9
C      SYST       10
C      SYST       11
C      SYST       12
C      SYST       13
C      SYST       14
C      SYST       15
C      SYST       16
C      SYST       17
C      SYST       18
C      SYST       19
C      SYST       20

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SUBROUTINE ROLCNT

74/74 OPT=2

FTN 4.64433

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1      NMCOMP(2,100,43),NAME$C(100,2),EQUI,SHIFNM      SYST      21
      INTEGER EQUI,SHIFNM      SYST      22
60     C *****MISC (MISCELLANEOUS) COMMON *****      SYST      23
      C      SYST      24
      C      NAP      - COUNT OF DIFFERENT APPROPRIATION CODES      SYST      25
      C      APPRO(1)      - APPROPRIATION CODE NAMES      SYST      26
      C      SPCL(1,1)      - PERCENTAGES FOR CBS ELEMENT COST SPLITS      SYST      27
65     C      NPM      - COUNT OF THE LIFE CYCLE PHASES      SYST      28
      C      IPH(1)      - FIRST CBS ELEMENT NUMBER OF EACH PHASE      SYST      29
      C      IPB(1)      - CBS ELEMENT NUMBER FOR PAGE BREAKS      SYST      30
      C      (LAST CBS NUMBER FOR THE PAGE)      SYST      31
      C      IPHASE(1,1)      - TITLES OF CBS PHASES      SYST      32
70     C      FLEET2      - FLEET (SYSTEM) SIZE      SYST      33
      C      NPOLL(1)      - LOWEST COST ELEMENT LEVEL TO BE PRINTED      SYST      34
      C      (LOWEST LEVEL TO BE ROLLED UP WITHIN PHASE)      SYST      35
      C      ROTOT      - TOTAL ROTULE COST      SYST      36
      C      TOTINV      - TOTAL INVESTMENT COST MINUS TOTAL RIFOUT      SYST      37
75     C      TOTRIF      - TOTAL RIFOUT COST      SYST      38
      C      SMISRC      - MISSILE ROTULE COST      SYST      39
      C      NOFLY      - NUMBER OF CBS ELEMENTS TO BE INCLUDED IN      SYST      40
      C      FLYAWAY COSTS      SYST      41
      C      IFLYRCM(1)      - CBS ELEMENT NUMBER FOR FLYAWAY COSTS      SYST      42
80     C      NOYRS      - NUMBER OF YEARS IN SHIP INSTALLATION TABLE      SYST      43
      C      IYEARS      - YEARS COVERED BY THE SHIP INSTALLATION TABLE      SYST      44
      C      IYRS      - NUMBER OF YEARS IN SHIP INSTALLATION TABLE      SYST      45
      C      PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE)      SYST      46
      C      FNOTES(1,1)      - FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS      SYST      47
85     C      SYST      48
      C      COMMON / MISC / NAP,APPRO(17),SPCL(3,6,2),NPM,IPH(4),IPB(3),      SYST      49
      C      1 IPHASE(12,4),FLEET2,NROLL(4),ROTOT,TOTINV,TOTRIF,      SYST      50
      C      2 SMISRC,NOFLY,IFLYRCM(25),NOYRS,IYEARS(12),IYRS,      SYST      51
      C      3 FNOTES(1,12)      SYST      52
90     C      INTEGER APPRO,SPCL,FLEET2      SYST      53
      C      SYST      54
      C      ROLLTOT = 0      ROLCNT      16
      C      ROLCNT      17
95     C      DO 10 I=1,NMBS      ROLCNT      18
      C      ROLCNT      19
      C      IF (I.EQ. 1) NOUT = NROLL(1)      ROLCNT      20
      C      IF (I.EQ. (IPB(1) + 1)) NOUT = NR(LL(2))      ROLCNT      21
      C      IF (I.EQ. (IPB(2) + 1)) NOUT = NR(LL(3))      ROLCNT      22
100    C      IF (I.EQ. (IPB(3) + 1)) NOUT = NR(LL(4))      ROLCNT      23
      C      ROLCNT      24
      C      IF (I=OLL(I).GT. NOUT) GO TO 10      ROLCNT      25
      C      ROLCNT      26
      C      ROLLTOT = ROLLTOT + 1      ROLCNT      27
105    C      ROLL$$(ROLLTOT) = I      ROLCNT      28
      C      ROLCNT      29
      C      10 CONTINUE      ROLCNT      30
      C      RETURN      ROLCNT      31
110    C      END      ROLCNT      32
      ROLCNT      33
      ROLCNT      34

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SUBROUTINE OUT1

74/74 OPT=2

FTN 4.6+433

07/31/79 23.53.41

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1      SUBROUTINE OUT1 (ICALL)
      C
      C      THIS SUBROUTINE, OUT1, WILL GENERATE OUTPUT FOR ALL NWBS
      C      COST ELEMENTS FOR THE FLEET SUMMARY CHARTS, THE UNIT SHIP COSTS
      C      CHARTS, OR THE SHIP CLASS SUMMARY COSTS CHARTS.
      C      ICALL = 1 FLEET SUMMARY CHARTS
      C      ICALL = 2 UNIT SHIP COSTS
      C      ICALL = 3 SHIP CLASS SUMMARY CHARTS
10     C      ARRAY CONTAINING APPRO CODE, CBS NUPEER, COST ELEMENT ID
      C      COMMON / APELOUT / IWORD(150,5)
      C      ***** MS (LENGTH AND COUNTER) COMMON *****
15     C      LENR          - MASS STORAGE UNITS COMMON RECORD LENGTH
      C                      (TYPICALLY 150)
      C      NWBS          - NUMBER OF ELEMENTS IN THE CBS (MAX 150)
      C      ICCTR          - NUMBER OF EQUIPPMENTS IN THE EQUIPMENT
20     C                      ELEMENTS TABLE
      C      L150           - (150 WORDS) RECORD LENGTH OF 7 ARRAYS
      C                      IN THE "CERVLS" COMMON
      C      L900           - (900 WORDS) RECORD LENGTH OF 2 ARRAYS
      C                      IN THE "CERVLS" COMMON
25     C      COMMON / MS2 / LENR,NWBS,ICCTR,L150,L900
      C
      C      MSCUT ROUTINE COMPUTED VALUES, ARRAYS AND CONTROLS NEEDED
30     C      FOR THE OUT1 SUBROUTINE
      C      KSC ARRAY      - SHIP NAMES
      C      IFLGCL          - OUTPUT COLUMN FLAG
      C                      = 0 COMPS OR SHIPS LESS THAN 9
      C                      = 1 COMPS OR SHIPS GREATER THAN 9
      C                      = 2 LAST SET
      C      IPG             - PAGING FLAG
      C      FMT110 ARRAY    - ENCODED FORMAT 110
      C      FMT120 ARRAY    - ENCODED FORMAT 120
40     C      KPR ARRAY      - COMPONENT OR SHIP NAMES FOR COLUMN HEADINGS
      C      KC, K1          - INDICES FOR THE KPR ARRAY
      C      ITOTAL          - HOLLERITH CHARACTERS 'TOTAL'
      C      TOT ARRAY       - SUMMATION ARRAY FOR FINAL COSTS OF EITHER
      C                      COMPONENTS OR SHIPS
45     C      KCT            - INDEX FOR THE AMGRC ARRAY
      C      AMOFO ARRAY     - CONTAINS THE COSTS FOR ALL THE NWBS VALUES
      C                      FOR AT MOST 10 COMPONENTS OR SHIPS
      C      COMMON / OUTCNTS / KSC(2), IFLGCL, IPG, FMT110(14), FMT120(4),
50     1      KPR(20), KC, K1, ITOTAL, TOT(150), KCT,
      2      AMOFO(150,16)
      3,FMT123(4),KWORD(3),JWOPD(3),UNITFLY(40),TOTUFLY,SHIFFLY(43)
      4,TOTSHIP
      C      ARRAY DEFINING THE ROLL-UP INPUT NUMBERS, TOTAL COUNT OF
      C      COST ELEMENTS WITH SPECIFIC ROLL-UP NUMBERS TO BE OUTPUT,
      C      ARRAY OF SELECTED WBS ELEMENTS NUMBERS, SELECTED ROLL-UP
      C      OUTPUT FLAG
      C      COMMON / ROLUPCT / IROLL(150), ROLLTOT, ROLLSL(150), ROLLFLG

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```

      CUT1      2
      CUT1      3
      CLT1      4
      CUT1      5
      CUT1      6
      CUT1      7
      OUT1      8
      CLT1      9
      OUT1     10
      APELCLT   2
      APELQUT   3
      MS2       2
      MS2       3
      MS2       4
      MS2       5
      MS2       6
      MS2       7
      MS2       8
      MS2       9
      MS2      10
      MS2      11
      MS2      12
      MS2      13
      MS2      14
      MS2      15
      MS2      16
      MS2      17
      MS2      18
      MS2      19
      OUTCNTS   2
      OUTCNTS   3
      OUTCNTS   4
      OUTCNTS   5
      OUTCNTS   6
      OUTCNTS   7
      OUTCNTS   8
      OUTCNTS   9
      OUTCNTS  10
      OUTCNTS  11
      OUTCNTS  12
      OUTCNTS  13
      OUTCNTS  14
      OUTCNTS  15
      OUTCNTS  16
      OUTCNTS  17
      OUTCNTS  18
      OUTCNTS  19
      OUTCNTS  20
      OUTCNTS  21
      OUTCNTS  22
      OUTCNTS  23
      OUTCNTS  24
      ROLLUPCT  2
      ROLLUPCT  3
      ROLLUPCT  4
      ROLLUPCT  5
      ROLLUPCT  6

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SUBROUTINE OUT1

74/74 OPT=2

FTN 4.6+433

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		INTEGER ROLLTOT, ROLLSEL, ROLLFLG		RCLUFCT	7
6.	C	***** BUDG CLMCHN *****		RCLLFCCT	8
	C			RCLUFCT	9
	C			RCLLFCCT	10
	C	***** CHARTS (CONTROL) COMMON *****		CHAFTS	2
	C			CHAFTS	3
	C			CHAFTS	4
65	C			CHAFTS	5
	C	CHRTCNT CONTAINS THE MAJOR OUTPUT CHART CONTROLS		CHAFTS	6
	C	0 - GENERATE CHART		CHAFTS	7
	C	1 - NO GENERATION OF CHART		CHAFTS	8
	C			CHAFTS	9
70	C	CHRTCNT(1) - IF EQUAL TO 0 - CALLS WBSOUT(1) FOR EQUIPMENT		CHAFTS	10
	C	ELEMENT LIFE CYCLE COSTS - FLEET SUMMARY		CHAFTS	11
	C	CHRTCNT(2) - IF EQUAL TO 0 - CALLS WBSOUT(2) FOR UNIT		CHAFTS	12
	C	SHIP COSTS BY EQUIPMENT ELEMENT		CHAFTS	13
	C	- IF NE. TO 0 - CALLS WBSOT BECAUSE		CHAFTS	14
75	C	WBSOUT(2) WAS NOT CALLED		CHAFTS	15
	C	CHRTCNT(3) - IF EQUAL TO 0 - CALLS WBSOUT(3) FOR SHIP		CHAFTS	16
	C	CLASS SUMMARY		CHAFTS	17
	C	CHRTCNT(4) - IF EQUAL TO 0 - CALLS BLDGOP FOR LIFE		CHAFTS	18
	C	CYCLE COSTS BY BUDGET APPROPRIATIONS		CHAFTS	19
80	C	CHRTCNT(5) - IF NE. TO 0 - CALLS RCLCNT FOR OUTPUT BY		CHAFTS	20
	C	ROLL-UP NUMBER		CHAFTS	21
	C	CHRTCNT(6) - IF EQUAL TO 0 - LISTS THE SUBELS ARRAY		CHAFTS	22
	C	FOR ENTIRE CBS FOR PROOFING		CHAFTS	23
	C			CHAFTS	24
85	C			CHAFTS	25
	C	COMMON / CHARTS / CHRTCNT(15)		CHAFTS	26
	C	INTEGER CHRTCNT		CHAFTS	27
	C	***** NAMES COMMON *****		SYST	2
90	C			SYST	3
	C			SYST	4
	C	NMSYS - NAME OF THE SYSTEM		SYST	5
	C	NOSUB - TOTAL NUMBER OF SHIPCLASSES CONSIDERED		SYST	6
	C	NMSUB(1,) - NAME OF THE SHIPCLASS IN TWO WORDS		SYST	7
	C	NOCOMP() - INDEX NUMBER FOR EQUIPMENTS (COMPONENTS)		SYST	8
95	C	(RUNNING TOTAL FOR EQUIPMENTS)		SYST	9
	C	NMCOMP(, ,) - NAMES OF EQUIPMENT (2 WORDS) FOR TITLES		SYST	10
	C	IN WBSOUT (INDEXED BY EQUIPMENT NUMBER		SYST	11
	C	AND SHIPCLASS NUMBER)		SYST	12
	C	NAMESC(,) - NAMES OF EQUIPMENT (2 WORDS, 7 CHARS EACH)		SYST	13
100	C	FOR EQUIPMENT QUANTITIES TABLE - FLEET		SYST	14
	C	SUMMARY		SYST	15
	C	EQUI - PRESENT EQUIPMENT (BEING PROCESSED)		SYST	16
	C	SHIPNM - PRESENT SHIPCLASS (BEING PROCESSED)		SYST	17
	C			SYST	18
105	C			SYST	19
	C	COMMON / NAMES / NMSYS, NOSUB, NMSUB(2,43), NMCOMP(43),		SYST	20
	C	1 NMCOMP(2,101,43), NAMESC(100,2), EQUI, SHIPNM		SYST	21
	C	INTEGER EQUI, SHIPNM		SYST	22
	C	***** MISC (MISCELLANEOUS) COMMON *****		SYST	23
110	C			SYST	24
	C	NAP - COUNT OF DIFFERENT APPROPRIATION CODES		SYST	25
	C	APPRO() - APPROPRIATION CODE NAMES		SYST	26
	C	SPCL(,) - PERCENTAGES FOR CBS ELEMENT COST SPLITS		SYST	27
	C	NPM - COUNT OF THE LIFE CYCLE PHASES		SYST	28

JLE-OUTLINE OUT1

74/74 OP1=2

FTN 4.6+433

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115	C	IPH()	- FIRST CBS ELEMENT NUMBER OF EACH PHASE	SYST	29
	C	IPB()	- CBS ELEMENT NUMBER FOR PAGE BREAKS	SYST	30
	C		(LAST CBS NUMBER FOR THE PAGE)	SYST	31
	C	IPHASE(,)	- TITLES OF CBS PHASES	SYST	32
	C	FLEETZ	- FLEET (SYSTEM) SIZE	SYST	33
120	C	NKOLL()	- LOWEST COST ELEMENT LEVEL TO BE PRINTED	SYST	34
	C		(LOWEST LEVEL TO BE ROLLED UP WITHIN PHASE)	SYST	35
	C	ROTCY	- TOTAL ROT&E COST	SYST	36
	C	TOTINV	- TOTAL INVESTMENT COST MINUS TOTAL RIFOUT	SYST	37
	C	TOTRIF	- TOTAL RIFOUT COST	SYST	38
125	C	SMISRC	- MISSILE ROT&E COST	SYST	39
	C	NOFLY	- NUMBER OF CBS ELEMENTS TO BE INCLUDED IN	SYST	40
	C		FLYAWAY COSTS	SYST	41
	C	IFLYFCW()	- CBS ELEMENT NUMBER FOR FLYAWAY COSTS	SYST	42
	C	NOYRS	- NUMBER OF YEARS IN SHIP INSTALLATION TABLE	SYST	43
130	C	IYEAFS	- YEARS COVERED BY THE SHIP INSTALLATION TABLE	SYST	44
	C	IYRS	- NUMBER OF YEARS IN SHIP INSTALLATION TABLE	SYST	45
	C		PLUS ONE (COLUMNS FOR PRINTING SHIP/INST TABLE)	SYST	46
	C	FNOTES(,)	- FOOTNOTES FOR FIRST TWO MAJOR OUTPUT CHARTS	SYST	47
	C			SYST	48
135		COMMON / MISC / NAF,APPRO(7),SFCL(3,6,2),APH,IPH(4),IPB(3),		SYST	49
	1	IPHASE(2,4),FLEETZ,NKOLL(4),ACTOT,TOTINV,TOTRIF,		SYST	50
	2	SMISRC,NOFLY,IFLYFCW(25),NOYRS,IYEAFS(12),IYRS,		SYST	51
	3	FNOTES(5,12)		SYST	52
		INTEGER APPRO,SPCL,FLEETZ		SYST	53
140	C			SYST	54
	C			CUT1	17
		DATA IELANK/1H /, IPLUS/1H+/, IONE/1H1/, IZERO/1H0/, IMINUS/1H-/		CUT1	18
		DATA KWORD(1) / 10HUNIT FLYAW /		CUT1	19
		DATA KWORD(2) / 10HAY COST /		CUT1	20
145		DATA KWORD(3) / 10H /		CUT1	21
		DATA JWCRC(1) / 10HSHIP FLYAW /		CUT1	22
		DATA JWCRC(2) / 10HAY COST /		CUT1	23
		DATA JWCRC(3) / 10H /		CUT1	24
	101	FORMAT (A1,51X,*(EQUIPMENT ELEMENT LIFE CYCLE COSTS*))		CUT1	25
150	102	FORMAT (A1,56X,I4,*(SHIP FLEET SUMMARY*))		CUT1	26
	103	FORMAT (A1,61X,*(FLEET SUMMARY*))		CUT1	27
	104	FORMAT (A1,55X,2A10,*(PHASE*))		CUT1	28
	105	FORMAT (A1,63X,*(FY79 \$M*))		CUT1	29
155	106	FORMAT (A1,24X,2A10,*(SHIP CLASS - UNIT SHIP COSTS BY*,		CUT1	30
	107	1* EQUIPMENT ELEMENT*))		CUT1	31
	108	FORMAT (A1,51X,*(LIFE CYCLE COSTS -*,I4,*(SHIP FLEET*))		CUT1	32
	109	FORMAT (A1,56X,*(SHIP CLASS COST SUMMARY*))		CUT1	33
	110	FORMAT (A1,136(1H-) / 1X)		CUT1	34
160	C			CUT1	35
	C	DO-LOOP FOR ALL NWES VALUES		CUT1	36
	C			CUT1	37
		ICHARTS = CHRTCNT(5)		CUT1	38
		KELMNTS = NWPS		CUT1	39
		IF (ICHARTS.NE.0.AND.ICALL.NE.1) KELMNTS = ROLLTOT		CUT1	40
165		DO 30 K=1,KELMNTS		CUT1	41
		I = K		CUT1	42
		IF (ICHARTS.NE.0.AND.ICALL.NE.1) I = ROLLSL(K)		CUT1	43
	C			CUT1	44
	C	CHECK FOR PAGE BREAKS FOR NEW HEADINGS		CUT1	45
170	C			CUT1	46
	C	C LINE 1 OR CBS ELEMENT 1 ALWAYS FORCES A PAGE BREAK:		CUT1	47

SUBROUTINE OUT1

74/74 GPT=2

FTN 4.6+433

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	C EACH WBS ELEMENT WHICH IMMEDIATELY FOLLOWS ONE OF THE LINE NUMBERS	CUT1	48
	C SPECIFIED IN THE "IPB" ARRAY FORCES A PAGE BREAK:	CUT1	49
	C TO FORCE FEWER PAGE BREAKS SET TWO OR MORE MEMBERS OF "IPB"	CUT1	50
175	C EQUAL TO THE SAME LINE NUMBER (IN BLOCK DATA "INIT"):	CUT1	51
	C TO SUPPRESS ALL PAGE BREAKS OTHER THAN LINE 1 ON WBS ELEMENT 1	CUT1	52
	C SET ALL 3 "IPB" VALUES EQUAL TO 1.	CUT1	53
	C	CUT1	54
	IF (I .EQ. 1) GO TO 10	CUT1	55
180	IF (I .EQ. (IPB(1) + 1)) GO TO 10	CUT1	56
	IF (I .EQ. (IPB(2) + 1)) GO TO 10	CUT1	57
	IF (I .EQ. (IPB(3) + 1)) GO TO 10	CUT1	58
	GO TO 20	CUT1	59
	C	CUT1	60
185	10 CONTINUE	CUT1	61
	C	CUT1	62
	C OUTPUT HEADINGS	CUT1	63
	IPG = IPG + 1	CUT1	64
	CALL HEAD	CUT1	65
190	C	CUT1	66
	GO TO (60,40,50) ICALL	CUT1	67
	40 CONTINUE	CUT1	68
	WRITE (6,105) IMINUS,KSC(1),KSC(2)	CUT1	69
195	WRITE (6,106) IBLANK,FLEETZ	CUT1	70
	GO TO 70	CUT1	71
	50 CONTINUE	CUT1	72
	WRITE (6,107) IMINUS	CUT1	73
	WRITE (6,106) IBLANK,FLEETZ	CUT1	74
	GO TO 70	CUT1	75
200	60 CONTINUE	CUT1	76
	WRITE (6,101) IMINUS	CUT1	77
	WRITE (6,102) IBLANK, FLEETZ	CUT1	78
	70 CONTINUE	CUT1	79
	WRITE (6,103) IBLANK,IPHASE(1,IPG),IPHASE(2,IPG)	CUT1	80
205	WRITE (6,104) IBLANK	CUT1	81
	WRITE (6,114) IBLANK	CUT1	82
	C	CUT1	83
	IF (IFLGCL .NE. 1) WRITE (6,FMT110) (KPR(J),J=1,KC), (KFR(J),	CUT1	84
	1J=11,K1), ITOTAL	CUT1	85
210	IF (IFLGCL .EQ. 1) WRITE (6,FMT110) (KPR(J),J=1,KC), (KFR(J),	CUT1	86
	1J=11,K1)	CUT1	87
	C	CUT1	88
	C OUTPUT THE WBS COST ELEMENT FOR THESE COMPONENTS	CUT1	89
	20 CONTINUE	CUT1	90
215	IF (IFLECL .NE. 1) WRITE (6,FMT120) (1WORD(I,N),N=1,5),	CUT1	91
	1(AWORD(I,N),N=1,KCT), TOT(I)	CUT1	92
	IF(IFLGCL.EQ.1) GO TO 200	CUT1	93
	IF (ICALL.NE.1) GO TO 201	CUT1	94
	IF(I.EC.(IPH(3) - 1)) WRITE(6,FMT123) IZERO,(KWCRC(N),N=1,3),	CUT1	95
220	1(UNITFLY(IN),N=1,KCT),TOTUFLY	CUT1	96
	GO TO 200	CUT1	97
	201 IF(I.EC.(IPH(3)-1)) WRITE(6,FMT123) IZERO, (JWORD(N),N=1,3),	CUT1	98
	1(SHIPFLY(N),N=1,KCT),TOTSHIP	CUT1	99
	200 CONTINUE	CUT1	100
225	IF (IFLGCL .EQ. 1) WRITE (6,FMT120) (1WORD(I,N),N=1,5),	CUT1	101
	1(AWORD(I,N),N=1,KCT)	CUT1	102
	IF(IFLGCL.NE.1) GO TO 30	CUT1	103
	IF (ICALL.NE.1) GO TO 202	CUT1	104

SUBROUTINE OUT1		74/74	CPT=2	FTN 4.6+433	6/731/75	23.53.41
230	IF(I.EG.(IPH(3)-1)) WRITE(6,FMT123) IZERO, (KWORD(N),N=1,3),				OUT1	105
	1(UNITFLY(N),N=1,KCT)				CUT1	106
	GO TO 30				CUT1	107
	202 IF(I.EG.(IPH(3)-1)) WRITE(6,FMT123) IZERO, (JHORE(N),N=1,3),				CUT1	108
	1(SHIPFLY(N),N=1,KCT)				CUT1	109
	C				CUT1	110
235	3) CONTINUE				CUT1	111
	C				CUT1	112
	DO 80 P=1,5				CUT1	113
	WRITE(6,124) (FNUC(S(M,L),L=1,12)				CUT1	114
	80 CONTINUE				CUT1	115
240	124 FORMAT(1H0,0X,12A10)				CUT1	116
	RETURN				CUT1	117
	END				CUT1	118

APPENDIX B
INPUT FORMAT GUIDE

This input format guide provides the user with a summary of the format for the input file to SAFSCAM. The input variables are named as they are read by the READ statements in the INPUPD subroutine and will vary slightly from the descriptive names given in the main text.

Card Types	Input	Card Columns	Format
1	TITLE Identifies case run	1-26	2A10,A6
2	NWBS number of cost elements in CBS	1-5	I5
	NPH number of phases in CBS	6-10	I5
	IPB (1) page break	11-15	I5
	IPB (2) page break	16-20	I5
	IPB (3) page break	21-25	I5
3	IPHASE (1,K) name of Kth phase in 2 words	1-10	A10
	IPHASE (2,K)	11-20	A10
	IPH (K) first CBS element of Kth phase	21-25	I5
	NROLL (K) lowest cost level of Kth phase	26-30	I5
	(Up to four card type 3s may be used, one for each of 4 phases, K = 1, 4)		
4	INP(1) SYSTEM	1-6	A6*
	INP(2) System name	11-20	A10
5	INP(1) TPUT	1-4	A4*
6	INP(3) CBS element number	1-20	A10
	INP(3) budget appropriation code	21-30	
	INP(4) CBS element name	31-40	A10
	INP(5) CBS element name	41-50	A10
	INP(6) CBS element name	51-60	A10
	INP(7) CBS element number	61-70	A10
	INP(8) cost level	71-72	A2*
7	INP(1) NPUT	1-4	A4*
8	INP(1) SHIPCLASS	1-10	A10
	INP(2) first word of ship class name (centered)	11-17	A-7*
	INP(3) second word of ship class name	21-27	A-7*
9	INP(1) Equipment	1-10	A10
	INP(2) first word of equipment element name - centered	11-17	A7*

Card Types	Input	Card Columns	Format
	INP(3) second word of equipment name - centered	21-27	A7*
	INP(4) -----	30-40	A10
	INP(5) O&S quantity per ship	41-45	A-5*
	INP(6) INV. quantity per ship	51-59	A-9*
	INP(7) appropriation code for Proc breakdown ("SCN", "OPN", or "WPN")	61-63	A-3*
10	INP(1) SEND	1-4	A-4*
11	INP(1) EQUIPMENT	1-10	A10
	INP(2) first word equipment elevation name	11-30	A10
	INP(3) second word equipment elevation name	31-40	A10
12	INP(1) TPUT	1-4	A-4
13	INP(1) CBS element number	1-20	A10
	INP(3) CBS element cost	21-30	A10
	INP(4) CBS element cost	31-40	A10
	INP(5) CBS element cost	41-50	A10
	INP(6) CBS element cost	51-60	A10
	INP(7) CBS element cost	61-70	A10
	INP(8) CBS element cost	71-80	A10
14	INP(1) CER	1-3	A-3
15-a	CEREND (blank)	1-4	A-5
	EFORSI "F" or "C" caculation type	6	A-1
	F = Factor, C = CBS element or subelement		
	ROWID factor or CBS element number	7-9	I3
	ADDID CBS subelement number	10	I1
	0 - a factor or number subelement		
	1 - 6 = a subelement		
	CERNO CER number	11-15	I5
	XREFNO CBS element cross-reference number	16-19	I4
	XREFAD CBS subelement cross-reference number (0 = no subelement, 1 - 6 = a subelement)	20	I1
		FS(11)	PS(11)
FS(II)	P(1) factor identification	21,	22-30
	P(2) (F = factor, blank = value)	31,	32-40
PS(II)	P(3) parameter	41,	42-50
	P(4)	51,	52-60
	P(5)	61,	62-70
	P(6)	71,	72-80

Card Types	Input	Card Columns	Format
15-b	CEREND ECER	1-4	A-5
16	INP(1) \$END	1-4	A-4
17	INP(1)-INP(8) comment card for chart control	1-80	8A10
18	CHRTCNT(1) print control for: equipment LCC fleet summary chart (0 = print chart) CHRTCNT(2) print control for: unit ship cost by equipment chart (0 = print chart) CHRTCNT(3) print control for: ship cost summary (0 = print chart) CHRTCNT(4) print control for: LCC by budget (0 = print chart) CHRTCNT(5) cost level print control (0 = print complete CBS)	1-3 4-6 7-9 10-12 13-15	I-3 I-3 I-3 I-3 I-3
19	INP(1)-INP(8) comment card for equipment installation	1-80	8A10
20	NOYRS numbers of years in ship installation table	1-5	I5
	IYEARS(1) first year for installation	6-11	6X
	IYEARS(2)	12-16	I5
	.	17-60	I5
	.	(etc)	.
	.	(etc)	.
	.	(etc)	.
	IYEARS(12) 12th year for installation	67-72	I5
21	SINSTB(I,1) ship class name (left-justified) SINSTB (I,2) number of ships outfitted first year SINSTB(I,13) number of ships outfitted 12th years (A type 12 installation card is input for each ship. Numbers for ship to be outfitted may be input for up to 12 years).	1-6 11-15 66-70	A-6 12I5
22	INP(1)-INP(8) comment card for unit flyaway cost data	1-80	8A10

<u>Card Types</u>	<u>Input</u>	<u>Card Columns</u>	<u>Format</u>
23	NOFLY number of flyaway elements to be included in unit flyaway cost	1-5	I5
24	IFLYROW(1) CBS element number for unit flyaway: IFLYROW(16)	1-5 76-80	16I5
25	FNOTES (1,12)	1-80	8A10
	.	1-40	4A10
	.		
	FNOTES (5,12)	1-80	8A10
		1-40	4A10
	(Must have 10 cards for footnotes) Blank cards may be used.		

* Format for the READ is A10; however, other restrictions place the limit of the format as indicated.

APPENDIX C

SAMPLE RUN

CARD INPUT LISTING

TESTCASE DATA

148	4	35	68	108	
	R D T & E			1	2
	PILCT PRODUCTION			36	3
	FULL PRODUCTION			69	3
	OPERATION & SUPPORT			109	2
	SYSTEM	SLCCM			

TFUT

(1)		RDTE PHASE	1	1
(2)		VALIDATION	2	2
(3)		CONTRACTOR	3	3
(4)	RD/OM	SYSTEM/PROGRAM MGT	4	4
(5)	RDTE	SYSTEMS ENGINEERING	5	4
(6)	RDTE	TEST HARDWARE FAB	6	4
(7)	RDTE	DEVELOPMENT T&E	7	4
(8)	RD/MC	INDUSTRIAL FACILITIES	8	4
(9)	RDTE	DATA	9	4
(10)	RDTE	OTHER	10	4
(11)		GOVERNMENT	11	3
(12)	RD/OM	SYSTEM/PROGRAM MGT	12	4
(13)	RDTE	SYSTEMS ENGINEERING	13	4
(14)	RDTE	TEST HARDWARE FAB	14	4
(15)	RDTE	DEVELOPMENT T&E	15	4
(16)	RD/MC	INDUSTRIAL FACILITIES	16	4
(17)	RDTE	DATA	17	4
(18)	RDTE	OTHER	18	4
(19)		FULL SCALE DEVELOPMENT	19	2
(20)		CONTRACTOR	20	3
(21)	RD/CM	SYS/PRCG/LOG SUPT MGT	21	4
(22)	RDTE	SYSTEMS ENGINEERING	22	4
(23)	RDTE	TEST HARDWARE FAB	23	4
(24)	RDTE	PROTOTYPE TESTS	24	4
(25)	RD/MC	TOOLING AND IND FAC	25	4
(26)	RDTE	DATA	26	4
(27)	RDTE	OTHER	27	4
(28)		GOVERNMENT	28	3
(29)	RD/OM	SYS/PROG/LOG SUPT MGT	29	4
(30)	RDTE	SYSTEMS ENGINEERING	30	4
(31)	RDTE	TEST HARDWARE FAB	31	4
(32)	RDTE	PROTOTYPE TESTS	32	4
(33)	RD/MC	TOOLING AND IND FAC	33	4
(34)	RDTE	DATA	34	4
(35)	RDTE	OTHER	35	4
(36)		INVESTMENT PHASE	36	1
(37)		PILOT/LIMITED PRODUCTION	37	2
(38)		NONRECURRING	38	3
(39)		CONTRACTOR	39	4
(40)	FR/OM	SYSTEM/PROGRAM MGT	40	5
(41)	FRCC	ADV PRODUCTION ENG	41	5
(42)	FR/OM	SYSTEM T&E	42	5
(43)	FRCC	LOGISTIC SUPPORT	43	5
(44)	FR/MC	TOOLING AND IND FAC	44	5
(45)	FR/CM	DATA	45	5
(46)	FR/CM	INITIAL TRAINING	46	5
(47)	FRCC	OTHER	47	5

(48)		GOVERNMENT	48	4
(49)	PR/CM	SYSTEM/PROGRAM MGT	49	5
(50)	FR/CM	SYSTEM T&E	50	5
(51)	FRCC	LOGISTIC SUPPORT	51	5
(52)	PR/MC	TOOLING AND IND FAC	52	5
(53)	PR/OM	DATA	53	5
(54)	FR/CM	INITIAL TRAINING	54	5
(55)	FRCC	OTHER	55	5
(56)		RECUPRING	56	3
(57)		CONTRACTOR	57	4
(58)	FRCC	MISSION HARDWARE PROD	58	5
(59)	FRCC	ECP/ECO	59	5
(60)	PR/OM	1ST DEST TRANS/PKG	60	5
(61)	FRCC	RIP-OUT, INSTALL, INTEG	61	5
(62)	FRCC	OTHER	62	5
(63)		GOVERNMENT	63	4
(64)	FRCC	MISSION HARDWARE PROD	64	5
(65)	FRCC	ECP/ECO	65	5
(66)	PR/OM	1ST DEST TRANS/PKG	66	5
(67)	FRCC	RIP-OUT, INSTALL, INTEG	67	5
(68)	FRCC	OTHER	68	5
(69)		FULL PRODUCTION	69	2
(70)		NONRECURRING	70	3
(71)		CONTRACTOR	71	4
(72)	PR/OM	SYSTEM/PROGRAM MGT	72	5
(73)	FRCC	PRODUCTION ENGINEERING	73	5
(74)	PR/OM	SYSTEM T&E	74	5
(75)	FRCC	LOGISTICS SUPPORT	75	5
(76)	PR/MC	OPERATIONAL SITE ACT	76	5
(77)	PR/MC	TOOLING AND IND FAC	77	5
(78)	PR/OM	DATA	78	5
(79)	PR/CM	INITIAL TRAINING	79	5
(80)	FRCC	OTHER	80	5
(81)		GOVERNMENT	81	4
(82)	FR/CM	SYSTEM/PROGRAM MGT	82	5
(83)	PR/OM	SYSTEM T&E	83	5
(84)	FRCC	LOGISTICS SUPPORT	84	5
(85)	PR/MC	OPERATIONAL SITE ACT	85	5
(86)	PR/MC	TOOLING AND IND FAC	86	5
(87)	PR/OM	DATA	87	5
(88)	PR/CM	INITIAL TRAINING	88	5
(89)	FRCC	OTHER	89	5
(90)		RECURRING	90	3
(91)		CONTRACTOR	91	4
(92)	FRCC	MISSION HARDWARE PROD	92	5
(93)	PR/OM	INITIAL SPARES	93	5
(94)	FRCC	SUSTAINING ENGINEERING	94	5
(95)	FRCC	ECP/ECO	95	5
(96)	PR/CM	1ST DEST TRANS/PKG	96	5
(97)	FRCC	SUST TOOL, TEST EQUIP	97	5
(98)	FRCC	RIP-OUT, INSTALL, INTEG	98	5
(99)	FRCC	OTHER	99	5
(100)		GOVERNMENT	100	4
(101)	FRCC	MISSION HARDWARE PROD	101	5
(102)	PR/OM	INITIAL SPARES	102	5
(103)	FRCC	SUSTAINING ENGINEERING	103	5
(104)	FRCC	ECP/ECO	104	5
(105)	PR/OM	1ST DEST TRANS/PKG	105	5
(106)	FRCC	SUST TOOL, TEST EQUIP	106	5
(107)	FRCC	RIP-OUT, INSTALL, INTEG	107	5
(108)	FRCC	OTHER	108	5

(109)		OPERATIONS AND SUPPORT PHASE	109	1
(110)		OPERATIONS	110	2
(111)		CONTRACTOR	111	3
(112)	CMN	CONSUMABLES	112	4
(113)	CMN	OTHER	113	4
(114)		GOVERNMENT	114	3
(115)	OM/MF	ORGANIZATIONAL PERSONNEL	115	4
(116)	CMN	EQUIPMENT LEASEHOLD	116	4
(117)	CM/MC	OPERATIONAL FACILITIES	117	4
(118)	CMN	CONSUMABLES	118	4
(119)	CMN	OTHER	119	4
(120)		LOGISTIC SUPPORT	120	2
(121)		CONTRACTOR	121	3
(122)	CMN	SYSTEM ILS MANAGEMENT	122	4
(123)	CMN	SYS ENG, FIELD SERVICE	123	4
(124)		SUPPLY	124	4
(125)	PR/OM	SPARE PARTS, REPAIR MAT	125	5
(126)	CMN	TRANS AND PACKAGING	126	5
(127)	CMN	DATA AND DOCUMENTATION	127	4
(128)	CMN	OTHER ILS	128	4
(129)		GOVERNMENT	129	3
(130)	CMN	SYSTEM ILS MANAGEMENT	130	4
(131)		MAINTENANCE	131	4
(132)	OM/MC	MAINTENANCE FACILITIES	132	5
(133)	CM/MF	MAINTENANCE PERSONNEL	133	5
(134)	CMN	SUPPORT EQUIP MAINT	134	5
(135)	CMN	SYS ENG, FIELD SERVICE	135	4
(136)		SUPPLY	136	4
(137)	CM/MF	SUPPLY PERSONNEL	137	5
(138)	CM/MC	SUPPLY FACILITIES	138	5
(139)	PR/OM	SPARE PARTS, REPAIR MAT	139	5
(140)	CMN	INVENTORY ADMIN	140	5
(141)	CMN	TRANS AND PACKAGING	141	5
(142)	CMN	DATA AND DOCUMENTATION	142	4
(143)	CMN	OTHER ILS	143	4
(144)	CMN	CONTRACTOR - TRAINING	144	2
(145)	CMN	GOVERNMENT - TRAINING	145	2
(146)	CMN	CONTRACTOR - OTHER	146	2
(147)	CMN	GOVERNMENT - OTHER	147	2
(148)		TOTAL	148	1
NFUT				
SHIPCLASS	HOC			
EQUIPMENT	FIRST	RADAR	1	1
EQUIPMENT	SECND	RADAR	2	1
EQUIPMENT	MISSILE		20	20
SHIPCLASS	FFX			SCN
EQUIPMENT	FIRST	RADAR	1	1
EQUIPMENT	SECOND	RADAR	2	0
EQUIPMENT	MISSILE		20	20
SHIPCLASS	DD-963			WPN
EQUIPMENT	FIRST	RADAR	1	1
EQUIPMENT	SECOND	RADAR	2	1
EQUIPMENT	MISSILE		20	0
SHIPCLASS	AOE			WPN
EQUIPMENT	FIRST	RADAR	1	1
EQUIPMENT	SECND	RADAR	1	1
EQUIPMENT	MISSILE		20	10
SHIPCLASS	ZIPGUN			SCN
EQUIPMENT	FIRST	RADAR	1	1
EQUIPMENT	SECOND	RADAR	5	3
SHIPCLASS	BOOMER			OPN
EQUIPMENT	FIRST	RADAR	1	1
EQUIPMENT	MISSILE		40	10
SHIPCLASS				WPN
				SCN

(25-27)	3.65	1.35	2.6		
(29-30)	1.2	7.			
(33-35)	3.	1.	1.5		
*INVESTMENT PHASE					
*PILOT / LIMITED PRODUCTION					
*NONRECURRING - CONTRACTOR					
(41)	10.				
(43-47)	2.	10.	2.	1.	5.
*NONRECURRING - GOVERNMENT					
(50-55)	10.	1.	3.	1.	4.
*RECURRING - CONTRACTOR					
(59-62)	1.	.1	3.2	.1	
*RECURRING - GOVERNMENT					
(65-68)	1.	.1	.8	.1	
*FULL PRODUCTION					
*NONRECURRING - CONTRACTOR					
(72-76)	5.6	12.3	2.5	1.	1.
(78-80)	4.2	3.3	4.		
*NONRECURRING - GOVERNMENT					
(82-85)	2.4	.86	1.	1.	
(87-89)	1.5	1.2	2.		
*RECURRING - CONTRACTOR					
(94-99)	1.	2.	2.4	1.6	5.2
*RECURRING - GOVERNMENT					
(103-108)	1.	2.	1.05	.7	20.8
*OPERATIONS AND SUPPORT PHASE					
*OPERATIONS - CONTRACTOR					
(113)	5.				
*OPERATIONS - GOVERNMENT					
(116-117)	10.	3.			
(119)	10.				
*LOGISTIC SUPPORT - CONTRACTOR					
(122-123)	1.5	1.3			
(125-128)	10.	1.	1.4	1.	
*LOGISTIC SUPPORT - GOVERNMENT					
(130)	4.				
(132-135)	7.2	6.	1.	3.2	
(137-142)	3.	3.6	10.	2.3	1.
(143-147)	1.		4.6	1.5	1.5

NPUT

CER

C 60	18	00	.050000	11.200000	1.000000	5.700000	0.000000	0.000000
C 140	18	00	.050000	11.200000	1.000000	12.000000	0.000000	0.000000
C 230	18	00	.025000	10.000000	1.000000	40.000000	0.000000	0.000000
C 240	12	00	.050000	40.000000	1.000000	1.000000	0.000000	0.000000
C 310	18	00	.025000	10.000000	1.000000	20.000000	0.000000	0.000000
C 320	12	00	.050000	20.000000	1.000000	1.000000	0.000000	0.000000
C 400	12	00	100.000000	.050000	1.000000	1.000000	0.000000	0.000000
C 420	12	00	1.500000	2.000000	10.000000	1.000000	0.000000	0.000000
C 490	12	00	50.000000	.050000	1.000000	1.000000	0.000000	0.000000
C 580	1	00	1.400000	.840000	0.000000	0.000000	0.000000	0.000000
C 640	1	00	.600000	.840000	0.000000	0.000000	0.000000	0.000000
C 770	10	00	.009800	.934000	1.140000	2.100000	.440000	0.000000
C 860	18	00	.004200	.934000	1.140000	2.100000	.440000	0.000000
C 920	4	00	1.400000	150.000000	.840000	0.000000	0.000000	0.000000
C 930	8	920	.050000	0.000000	0.000000	0.000000	0.000000	0.000000
C1010	4	00	.600000	150.000000	.840000	0.000000	0.000000	0.000000
C1020	8	1010	.050000	0.000000	0.000000	0.000000	0.000000	0.000000
C1120	8	920	.120000	0.000000	0.000000	0.000000	0.000000	0.000000
C1150	12	00	10.000000	1.000000	.030000	150.000000	0.000000	0.000000
C1180	8	1010	.120000	0.000000	0.000000	0.000000	0.000000	0.000000

ECER

EQUIPMENT SECOND RADAR

TFUT

*POTLE PHASE

*VALIDATION - CONTRACTOR

(14-5) .8 16. 1.2 .6

(7-10) 8. 2.72

*VALIDATION - GOVERNMENT

(12-13) 3.2 16. .8 .8

(15-18) 8.8 .8

*FULL SCALE DEVELOPMENT - CONTRACTOR

(21-22) 3.04 12.4

(25-27) 2.91 1.08 2.08

(29-30) .96 5.6

(33-35) 2.4 .8 1.2

*INVESTMENT PHASE

*PILOT / LIMITED PRODUCTION

*NONRECURRING - CONTRACTOR

(41) 8. 1.6 .8 4.

(43-47) 1.6 8. 2.4 .8 3.2 1.6

*ACNRRECURRING - GOVERNMENT

(50-55) 8. .8 2.56 .08

*RECURRING - CONTRACTOR

(59-62) .8 .08 .64 .08

*RECURRING - GOVERNMENT

(65-68) .8 .08 .64 .08

*FULL PRODUCTION

*NONRECURRING - CONTRACTOR

(72-76) 4.48 9.84 2. .8 .8

(78-81) 3.36 2.64 3.2

*NONRECURRING - GOVERNMENT

(82-85) 1.52 .69 .8 .8

(87-89) 1.2 .96 1.6

*RECURRING - CONTRACTOR

(94-99) .8 1.6 1.92 1.28 4.16 .8

*RECURRING - GOVERNMENT

(103-108) .8 1.6 .84 .56 16.64 .8

*OPERATIONS AND SUPPORT PHASE

*OPERATIONS - CONTRACTOR

(113) 4.

*OPERATIONS - GOVERNMENT

(116-117) 8. 2.4

(119) .8

*LOGISTIC SUPPORT - CONTRACTOR

(122-123) 1.2 1.04

(125-128) 8. .8 1.12 .8

*LOGISTIC SUPPORT - GOVERNMENT

(130) 3.2

(132-135) 5.76 4.8 .8 2.56

(137-142) 2.4 2.88 8. 1.84 .8 1.2

(143-147) .8 3.68 1.2 1.2

NPLT

CEK

C 60	18	00	.050000	0.000000	0.000000	0.000000	0.000000	0.000000
C 140	18	00	.050000	11.200000	.800000	12.000000	0.000000	0.000000
C 230	18	00	.025000	10.000000	.800000	40.000000	0.000000	0.000000
C 240	12	00	.040000	40.000000	1.000000	1.000000	0.000000	0.000000
C 310	18	00	.025000	10.000000	.800000	20.000000	0.000000	0.000000
C 320	12	00	.040000	20.000000	1.000000	1.000000	0.000000	0.000000
C 400	12	00	.050000	.050000	1.000000	1.000000	0.000000	0.000000
C 420	12	00	.050000	1.000000	10.000000	1.000000	0.000000	0.000000
C 490	12	00	.050000	.050000	1.000000	1.000000	0.000000	0.000000
C 580	1	10	1.120000	.840000	0.000000	0.000000	0.000000	0.000000
C 640	1	10	.840000	.840000	0.000000	0.000000	0.000000	0.000000
C 770	10	10	.018000	.747000	1.140000	2.100000	.440000	0.000000
C 860	10	10	.004200	.747000	1.140000	2.100000	.440000	0.000000
C 920	4	00	1.120000	15.000000	.840000	.000000	0.000000	0.000000
C 930	8	920	.050000	0.000000	0.000000	0.000000	0.000000	0.000000
C1010	4	00	.050000	15.000000	.840000	0.000000	0.000000	0.000000
C1020	8	1010	.050000	0.000000	0.000000	0.000000	0.000000	0.000000
C1120	8	920	.120000	0.000000	0.000000	0.000000	0.000000	0.000000
C1150	12	00	10.000000	1.000000	.030000	15.000000	0.000000	0.000000
C1180	8	1010	.120000	0.000000	0.000000	0.000000	0.000000	0.000000

EGER

EQUIPMENT MISSILE

TFUT

*ROUTE PHASE

*VALIDATION - CONTRACTOR

(4-5) 1. 4. 1.5

(7-10) 2. .68 .3

*VALIDATION - GOVERNMENT

(12-13) .8 4. .2 .2

(15-18) 2.2 .2

*FULL SCALE DEVELOPMENT - CONTRACTOR

(21-22) .76 3.1

(25-27) .73 .27 .56

(29-30) .24 1.4

(33-35) .6 .2 .3

*INVESTMENT PHASE

*PILOT / LIMITED PRODUCTION

*NONRECURRING - CONTRACTOR

(41) 2. .4 .2 1.

(43-47) .4 2. .6 .2 .8 .4

*NONRECURRING - GOVERNMENT

(50-55) 2. .2 .6 .2 .8 .4

*RECURRING - CONTRACTOR

(59-62) .2 .02 .64 .02

*RECURRING - GOVERNMENT

(65-68) .2 .02 .16 .02

*FULL PRODUCTION

*NONRECURRING - CONTRACTOR

(72-76) 1.12 2.46 .5 .2 .2

(78-80) .84 .66 .8

*NONRECURRING - GOVERNMENT

(82-85) .42 .17 .2 .2

(87-91) .3 .24 .4

*RECURRING - CONTRACTOR

(94-98) .2 .4 11. 7.3 1.04 .2

*RECURRING - GOVERNMENT

(103-108) .2 .4 4.7 3.1 4.16 .2

*OPERATIONS AND SUPPORT PHASE

*OPERATIONS - CONTRACTOR

(113) 1.

*OPERATIONS - GOVERNMENT

(116-117) 2. 1.5

(119) 2.

*LOGISTIC SUPPORT - CONTRACTOR

(122-123) .3 .26

(125-128) 2. .2 .28 .2

*LOGISTIC SUPPORT - GOVERNMENT

(130) .8

(132-135) 1.44 1.2 .2 .64

(137-142) .6 .72 2. .46 .2 .3

(143-147) .2 .92 .3 .3

NFUT

CER

F 10	10	00	.000073	9.790000	.970000	70.000000	1.000000	0.000000
F 20	3	00	1.000000	1.000000	.766000	500.000000	-.234000	0.000000
F 30	10	00	.066000	30000.000000	.610000	1.000000	1.000000	0.000000
F 40	3	00	3.000000	1.000000	.840000	1000.000000	-.152000	0.000000
F 50	10	00	2.000000	10000.000000	-.234000	1.000000	1.000000	0.000000
C 60	10	00	.050000	11.200000	.500000	5.000000	0.000000	0.000000
C 140	10	00	.050000	11.200000	.500000	12.000000	0.000000	0.000000
C 231	10	00	.090000	9.900000	5.000000	10.000000	0.000000	0.000000
C 232	10	00	.040000	5.200000	3.000000	10.000000	0.000000	0.000000
C 240	12	00	.025000	40.000000	1.000000	1.000000	0.000000	0.000000
C 310	10	00	.025000	10.000000	.500000	20.000000	0.000000	0.000000
C 320	12	00	.025000	20.000000	1.000000	1.000000	0.000000	0.000000
C 470	12	00	50.000000	.050000	1.000000	1.000000	0.000000	0.000000
C 420	12	00	1.500000	1.000000	10.000000	1.000000	0.000000	0.000000
C 490	12	00	25.000000	.050000	1.000000	1.000000	0.000000	0.000000
C 580	1	00	.700000	.840000	0.000000	0.000000	0.000000	0.000000
C 640	1	00	.300000	.840000	0.000000	0.000000	0.000000	0.000000
C 770	10	00	.009000	.467000	1.140000	2.100000	.440000	0.000000
C 860	10	00	.004200	.467000	1.140000	2.100000	.440000	0.000000
C 921	4	00	2.000000	150.000000	.766000	0.000000	0.000000	0.000000
C 922	4	00	4.000000	300.000000	.840000	0.000000	0.000000	0.000000
C 930	15	00	91.000000	5.000000	3.000000	0.000000	0.000000	0.000000
C1010	4	00	.300000	150.000000	.840000	0.000000	0.000000	0.000000
C1020	8	1010	.350000	0.300000	0.000000	0.000000	0.000000	0.000000
C1120	8	920	.120000	0.000000	0.000000	0.000000	0.000000	0.000000
C1150	12	00	10.000000	2.000000	.030000	150.000000	0.000000	0.000000
C1180	8	1010	.120000	0.000000	0.000000	0.000000	0.000000	0.000000
C1391	8	921	.250000	0.000000	0.000000	0.000000	0.000000	0.000000
C1392	8	922	.500000	0.000000	0.000000	0.000000	0.000000	0.000000

ECER

SEND

*CHART CONTROL

0 0 0 0 0 1 0 0 0 0 0 0 0 0 0

* SHIP INSTALLATION SCHEDULE - BASED ON 10 SHIPS AND 6 YEARS
6 YEARS: 1985 1986 1987 1988 1989 1990

HOC	1	0	0	0	0	0
FFX	0	2	0	0	0	0
DD-963	0	0	1	0	0	0
AOE	0	0	0	2	0	0
ZIFGUN	0	0	0	0	2	0
BOOMER	0	0	0	0	0	2

*FLYAWAY DATA: LISTING OF 11 CBS ELEMENTS INCLUDED IN FLYAWAY COSTS

11

72 73 74 77 80 92 94 95 96 97 99

FOOTNOTE 1

FOOTNOTE 2

08/01/79
00.07.10.

SLOCM
TESTCASE DATA

FORMATTED LISTING OF INPUT FILE FROM "DATAOP"

AFPRO	CODE	COST ELEMENT	RCLLUP
1		RD&E PHASE	1
2		VALIDATION	2
3		CONTRACTOR	3
4	RD/CM	SYSTEM/PROGRAM MGT	4
5	RDTE	SYSTEMS ENGINEERING	4
6	RDTE	TEST HARDWARE FAB	4
7	RDTE	DEVELOPMENT T&E	4
8	RD/PMC	INDUSTRIAL FACILITIES	4
9	RDTE	DATA	4
10	RDTE	OTHER	4
11		GOVERNMENT	4
12	RD/CM	SYSTEM/PROGRAM MGT	3
13	RDTE	SYSTEMS ENGINEERING	4
14	RDTE	TEST HARDWARE FAB	4
15	RDTE	DEVELOPMENT T&E	4
16	RD/PMC	INDUSTRIAL FACILITIES	4
17	RDTE	DATA	4
18	RDTE	OTHER	4
19		FULL SCALE DEVELOPMENT	2
20		CONTRACTOR	3
21	FD/CM	SYS/PRCG/LOG SUPT MGT	4
22	RDTE	SYSTEMS ENGINEERING	4
23	RDTE	TEST HARDWARE FAB	4
24	RDTE	PROTOTYPE TESTS	4
25	RD/PMC	TOOLING AND IND FAC	4
26	RDTE	DATA	4
27	RDTE	OTHER	4
28		GOVERNMENT	3
29	RD/CM	SYS/PRCG/LOG SUPT MGT	4
30	RDTE	SYSTEMS ENGINEERING	4
31	RDTE	TEST HARDWARE FAB	4
32	RDTE	PROTOTYPE TESTS	4
33	FD/PMC	TOOLING AND IND FAC	4
34	RDTE	DATA	4
35	RDTE	OTHER	4

APPRO	CODE	COST ELEMENT		RCLLUP
36		INVESTMENT PHASE	36	1
37		FILCT/LIMITED PRODUCTION	37	2
38		NONRECURRING	38	3
39		CONTRACTOR	39	4
40	PR/CM	SYSTEM/PROGRAM MGT	40	5
41	PROC	ADV PRODUCTION ENG	41	5
42	PR/CM	SYSTEM T&E	42	5
43	PROC	LOGISTIC SUPPORT	43	5
44	PR/CM	TOOLING AND INC FAC	44	5
45	PR/OM	DATA	45	5
46	PR/OM	INITIAL TRAINING	46	5
47	PROC	OTHER	47	5
48		GOVERNMENT	48	4
49	PR/CM	SYSTEM/PROGRAM MGT	49	5
50	PR/CM	SYSTEM T&E	50	5
51	PROC	LOGISTIC SUPPORT	51	5
52	PR/CM	TOOLING AND INC FAC	52	5
53	PR/OM	DATA	53	5
54	PR/OM	INITIAL TRAINING	54	5
55	PROC	OTHER	55	5
56		RECURRING	56	3
57		CONTRACTOR	57	4
58	PROC	MISSION HARDWARE PROD	58	5
59	PROC	ECP/ECO	59	5
60	PR/CM	1ST DEST TRANS/PKG	60	5
61	PROC	RIP-OUT, INSTALL, INTEG	61	5
62	PROC	OTHER	62	5
63		GOVERNMENT	63	4
64	PROC	MISSION HARDWARE PROD	64	5
65	PROC	ECP/ECO	65	5
66	PR/CM	1ST DEST TRANS/PKG	66	5
67	PROC	RIP-OUT, INSTALL, INTEG	67	5
68	PROC	OTHER	68	5

APPRO	CODE	COST ELEMENT		RCLLUP
69		FULL PRODUCTION	69	2
70		NONRECURRING	70	3
71		CONTRACTOR	71	4
72	PR/OM	SYSTEM/PROGRAM MGT	72	5
73	PROC	PRODUCTION ENGINEERING	73	5
74	PR/CM	SYSTEM T&E	74	5
75	PROC	LOGISTICS SUPPORT	75	5
76	PR/MC	OPERATIONAL SITE ACT	76	5
77	PR/MC	TOOLING AND IND FAC	77	5
78	PR/CM	DATA	78	5
79	PR/OM	INITIAL TRAINING	79	5
80	PROC	OTHER	80	5
81		GOVERNMENT	81	4
82	PR/CM	SYSTEM/PROGRAM MGT	82	5
83	PR/CM	SYSTEM T&E	83	5
84	PROC	LOGISTICS SUPPORT	84	5
85	PR/MC	OPERATIONAL SITE ACT	85	5
86	PR/MC	TOOLING AND IND FAC	86	5
87	PR/CM	DATA	87	5
88	PR/CM	INITIAL TRAINING	88	5
89	PROC	OTHER	89	5
90		RECURRING	90	3
91		CONTRACTOR	91	4
92	PROC	MISSION HARDWARE PROD	92	5
93	PR/CM	INITIAL SPARES	93	5
94	PROC	SUSTAINING ENGINEERING	94	5
95	PROC	ECP/ECO	95	5
96	PR/CM	1ST DEST TRANS/PKG	96	5
97	PROC	SUST TOOL, TEST EQUIP	97	5
98	PROC	RIP-OUT, INSTALL, INTEG	98	5
99	PROC	OTHER	99	5
100		GOVERNMENT	100	4
101	PROC	MISSION HARDWARE PROD	101	5
102	PR/CM	INITIAL SPARES	102	5
103	PROC	SUSTAINING ENGINEERING	103	5
104	PROC	ECP/ECO	104	5
105	PR/OM	1ST DEST TRANS/PKG	105	5
106	PROC	SUST TOOL, TEST EQUIP	106	5
107	PROC	RIP-OUT, INSTALL, INTEG	107	5
108	PROC	OTHER	108	5

AFFRO	CODE	COST ELEMENT		RCLLUP
109		OPERATIONS AND SUPPORT PHASE	109	1
110		OPERATIONS	110	2
111		CONTRACTOR	111	3
112	OMN	CONSUMABLES	112	4
113	OMN	OTHER	113	4
114		GOVERNMENT	114	3
115	OM/MF	ORGANIZATIONAL PERSONNEL	115	4
116	OMN	EQUIPMENT LEASEHOLD	116	4
117	OM/MC	OPERATIONAL FACILITIES	117	4
118	OMN	CONSUMABLES	118	4
119	OMN	OTHER	119	4
120		LOGISTIC SUPPORT	120	2
121		CONTRACTOR	121	3
122	OMN	SYSTEM ILS MANAGEMENT	122	4
123	OMN	SYS ENG, FIELD SERVICE	123	4
124		SUPPLY	124	4
125	PR/OM	SPARE PARTS, REPAIR MAT	125	5
126	OMN	TRANS AND PACKAGING	126	5
127	OMN	DATA AND DOCUMENTATION	127	4
128	OMN	OTHER ILS	128	4
129		GOVERNMENT	129	3
130	OMN	SYSTEM ILS MANAGEMENT	130	4
131		MAINTENANCE	131	4
132	OM/MC	MAINTENANCE FACILITIES	132	5
133	OM/MF	MAINTENANCE PERSONNEL	133	5
134	OMN	SUPPORT EQUIP MAINT	134	5
135	OMN	SYS ENG, FIELD SERVICE	135	4
136		SUPPLY	136	4
137	OM/MF	SUPPLY PERSONNEL	137	5
138	OM/MC	SUPPLY FACILITIES	138	5
139	PR/CM	SPARE PARTS, REPAIR MAT	139	5
140	OMN	INVENTORY ADMIN	140	5
141	OMN	TRANS AND PACKAGING	141	5
142	OMN	DATA AND DOCUMENTATION	142	4
143	OMN	OTHER ILS	143	4
144	OMN	CONTRACTOR - TRAINING	144	2
145	OMN	GOVERNMENT - TRAINING	145	2
146	OMN	CONTRACTOR - OTHER	146	2
147	OMN	GOVERNMENT - OTHER	147	2
148		TOTAL	148	1

FIRST RADAR IS OPERATED ON SHIP CLASSES															
FFX	DD-963	ACE	ZIPGUN	BOOPER											
THROUGHPUT															
INDEX	1	2	3	4	5	6	7	8	9						
1- 10									10						
11- 20		4.	20.	5.	20.		10.	3.4	1.5						
21- 30	3.8	15.5			11.	1.	1.	1.	.75						
31- 40			3.	1.	3.65	1.35	2.6		1.2						
41- 50	10.		2.	10.	1.5	1.	5.								
51- 60	1.	3.	1.	4.	2.				1.						
61- 70	3.2	.1			1.	.1	.8	.1	10.						
71- 80		5.6	12.3	2.5	1.	1.		4.2	3.3						
81- 90		2.4	.86	1.	1.		1.5	1.2	2.						
91- 100				1.	2.	2.4	1.6	5.2	1.						
101- 110			1.	2.	1.05	.7	20.8	1.							
111- 120			5.			10.	3.		10.						
121- 130		1.5	1.3	1.	10.	1.	1.4	1.	4.						
131- 140		7.2	6.		3.2	1.	3.	3.6	10.						
141- 150	1.	1.5	1.		4.6	1.5	1.5		2.3						
GER INPUT															

F C	CBS	GER	CBS	PARAMETER # 1		PARAMETER # 2		PARAMETER # 3		PARAMETER # 4		PARAMETER # 5		PARAMETER # 6	
	ROW	NO.	REF	(F = FACTOR)		(F = FACTOR)		(F = FACTOR)		(F = FACTOR)		(F = FACTOR)		(F = FACTOR)	
C	6	0	18	0	0	11.2000	1.0000	5.00101	0.	0.	0.	0.	0.	0.	0.
C	14	0	18	0	0	11.2000	1.0000	12.0100	0.	0.	0.	0.	0.	0.	0.
C	23	0	18	0	0	10.0000	1.0000	40.0100	0.	0.	0.	0.	0.	0.	0.
C	24	0	12	0	0	40.0000	1.0000	1.00000	0.	0.	0.	0.	0.	0.	0.
C	31	0	16	0	0	10.0000	1.0000	20.0100	0.	0.	0.	0.	0.	0.	0.
C	32	0	12	0	0	20.0000	1.0000	1.00000	0.	0.	0.	0.	0.	0.	0.
C	40	0	12	0	0	5.000000E-02	1.0000	1.00000	0.	0.	0.	0.	0.	0.	0.
C	42	0	12	0	0	1.50000	1.0000	1.00000	0.	0.	0.	0.	0.	0.	0.
C	49	0	12	0	0	50.0800	1.0000	1.00000	0.	0.	0.	0.	0.	0.	0.
C	58	0	1	0	0	1.40000	0.	0.	0.	0.	0.	0.	0.	0.	0.
C	64	0	1	0	0	.600000	0.	0.	0.	0.	0.	0.	0.	0.	0.
C	77	0	10	0	0	9.800000E-03	1.14000	2.10000	.440000	0.	0.	0.	0.	0.	0.
C	86	0	10	0	0	4.200000E-03	1.14000	2.10000	.440000	0.	0.	0.	0.	0.	0.
C	92	0	4	0	0	1.400000	.848000	0.	0.	0.	0.	0.	0.	0.	0.
C	93	0	8	92	0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
C	101	0	4	0	0	150.000	.848000	0.	0.	0.	0.	0.	0.	0.	0.
C	102	0	8	101	0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
C	112	0	8	92	0	.120000	0.	0.	0.	0.	0.	0.	0.	0.	0.
C	115	0	12	0	0	10.0000	3.000000E-02	150.100	0.	0.	0.	0.	0.	0.	0.
C	118	0	8	101	0	.120000	0.	0.	0.	0.	0.	0.	0.	0.	0.

SECOND RADAR IS OPERATED ON SHIP CLASSES HOC FFX CO-963 ACE ZIPGUN

THROUGHPUT

INDEX	1	2	3	4	5	6	7	8	9	10
1- 10		3.2	16.	.8	16.	.8	.8	2.72	1.2	.6
11- 20		12.4			8.8	1.08	.8	.8	.96	5.6
21- 30	3.04		2.4	.8	1.2	.8	4.			.8
31- 40			1.6	3.2	1.6	.8	.64			.08
41- 50	8.	2.4	.8		.8	.8				3.2
51- 60	.8	.08	9.84	2.	.8	.8	1.2			1.6
61- 70	2.56	4.48	.69	.8	1.6	1.92	16.64			.8
71- 80		1.92	.8	1.6	.84	.8	2.4			.8
81- 90			4.	.8	8.	.8	1.12			3.2
91- 100			1.04	.8	2.56	1.2	2.4			1.84
101- 110		1.2	4.8	.8	3.68		1.2			
111- 120		5.76	.8							
121- 130		1.2	.8							
131- 140		1.2	.8							
141- 150	.8									

GER INPUT

F C ROW	GER	CBS	NO.	XREF	PARAMETER # 1 (F = FACTOR)	PARAMETER # 2 (F = FACTOR)	PARAMETER # 3 (F = FACTOR)	PARAMETER # 4 (F = FACTOR)	PARAMETER # 5 (F = FACTOR)	PARAMETER # 6 (F = FACTOR)
C 6 0	10	0	0		5.00000E-02	0.	0.	0.	0.	0.
C 14 0	10	0	0		5.00000E-02	11.2000	.800000	12.0000	0.	0.
C 23 0	10	0	0		2.50000E-02	10.0000	.800000	4.0000	0.	0.
C 24 0	12	0	0		4.00000E-02	40.0000	1.000000	1.0000	0.	0.
C 31 0	10	0	0		2.50000E-02	10.0000	.800000	20.0000	0.	0.
C 32 0	12	0	0		4.00000E-02	20.0000	1.000000	1.000000	0.	0.
C 40 0	12	0	0		80.0000	5.00000E-02	1.000000	1.000000	0.	0.
C 42 0	12	0	0		1.500000	1.600000	10.0000	1.000000	0.	0.
C 49 0	12	0	0		40.0000	5.00000E-02	1.000000	1.000000	0.	0.
C 54 0	1	0	0		1.120000	.840000	0.	0.	0.	0.
C 64 0	1	0	0		.800000	.840000	0.	0.	0.	0.
C 77 0	10	0	0		9.80000E-03	.747000	1.140000	2.107000	.440000	0.
C 86 0	10	0	0		4.20000E-03	.747000	1.140000	2.100000	.440000	0.
C 92 0	4	0	0		1.120000	150.0000	.848000	0.	0.	0.
C 93 0	8	92	0		5.00000E-02	0.	0.	0.	0.	0.
C 101 0	4	0	0		.400000	157.0000	.848000	0.	0.	0.
C 102 0	6	101	0		5.00000E-02	0.	0.	0.	0.	0.
C 112 0	6	92	0		.120000	0.	0.	0.	0.	0.
C 115 0	12	0	0		10.0000	1.000000	3.00000E-02	150.0000	0.	0.
C 116 0	8	101	0		.120000	0.	0.	0.	0.	0.

MISSILE IS OPERATED ON SHIP CLASSES

THROUGHPUT		INDEX		1		2		3		4		5		6		7		8		9		10	

1-	10																						
11-	20																						
21-	30	.8		4.		1.														.3		1.5	
31-	40	3.1																		.2			
41-	50			.6		.2														.24		1.4	
51-	60			.4		.2																	
61-	70	.6		.2		.8																	
71-	80	.02																		.2		2.	
81-	90	1.12		2.46		.5									.02		.16					.02	
91-	100	.48		.17		.2									.2					.66		.8	
101-	110					.2									.24		.3			.4			
111-	120			.2		.4									1.04		7.3			.2			
121-	130			1.											.2		4.16						
131-	140	.3		.26		.2									3.1		1.5			2.		.8	
141-	150	1.44		.2		.2									.2		.28						
		.3		.2											.2		.6			2.		.46	
				.2											.72		.3						

CER INPLY

00/01/79
00.07.10.

TOTAL

TOTAL

SLCCM
TESTCASE DATA

08/01/79
00.07.10.

EQUIPMENT ELEMENTS PER SHIP			
SHIP CLASS	EQUIPMENT ELEMENT	OPERATIONAL QUANTITY	INVESTMENT QUANTITY
HOC	FIRST	1	1.00
	SECOND	2	1.00
	MISSIL	20	20.00
FFX	FIRST	1	1.00
	SECOND	2	0.00
	MISSIL	20	20.00
DD-963	FIRST	1	1.00
	SECOND	2	1.00
	MISSIL	20	0.00
AOE	FIRST	1	1.00
	SECOND	1	1.00
	MISSIL	20	10.00
ZIPGUN	FIRST	1	1.00
	SECOND	5	0.00
BCOMER	FIRST	1	1.00
	MISSIL	40	10.00

SLCOM
TESTCASE DATA

LISTING OF THE 11 COST ELEMENTS INCLUDED IN FLYAWAY COSTS

72	73	74	77	80	92	94	95	96	97	99
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00/01/79
00.07.10.

SILCOM TESTCASE DATA			EVALUATION OF CERS AND FACTORS FOR FIRST RADAR														00/01/79 00.07.10.	
ROW	CER	TEMP	P 1	P 2	P 3	P 4	P 5	P 6	SUBEL1	SUBEL2	SUBEL3	SUBEL4	SUBEL5	SUBEL6	SUBEL7	SUBEL8	FACTOR	
C 6010	56.250	5.00E-02	11.	1.0	1.0	5.0	1.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.3	0.0	
C 1401A	135.000	5.00E-02	11.	1.0	1.0	12.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	135.0	0.0	
C 23010	401.000	2.50E-02	10.	1.0	1.0	40.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	401.0	0.0	
C 24012	2.000	5.00E-02	40.	1.0	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	
C 31010	200.500	2.50E-02	10.	1.0	1.0	20.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	200.5	0.0	
C 32012	1.000	5.00E-02	20.	1.0	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	
C 40012	5.000	100	5.00E-02	1.0	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	
C 42012	30.000	1.5	2.0	10.	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	
C 49012	2.500	50.	5.00E-02	1.0	1.0	1.0	0.	0.	1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	
C 500 1	9.066	1.4	.05	.05	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.09	0.0	
C 640 1	4.226	.60	.05	.05	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	
C 77010	.013	9.00E-03	.93	1.1	1.1	2.1	.44	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	0.0	
C 80010	.005	4.20E-03	.93	1.1	1.1	2.1	.44	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	0.0	
C 920 4	5.516	1.4	1.50E+02	.05	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	0.0	
C 930 8	.276	5.00E-02	0.	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	
C1010 4	2.364	.60	1.50E+02	.05	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	
C1020 8	.110	5.00E-02	0.	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	
C1120 8	.662	.12	0.	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.1	0.0	
C115012	45.000	10.	1.0	3.00E-02	1.50E+02	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.0	0.0	
C1100 8	.284	.12	0.	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.3	0.0	

SLCCM TESTCASE DATA			EVALUATION OF CEKS AND FACTORS FOR SECOND RADAR														08/01/79 00.07.10.	
ROW	CEK	TEMP	P 1	P 2	P 3	P 4	F 5	P 6	SUBEL1	SUBEL2	SUBEL3	SUBEL4	SUBEL5	SUBEL6	SUBEL7	SUBEL8	FACTOR	
C 6010	0.000	5.00E-02	0.	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 14010	100.120	5.00E-02	11.	0.0	0.0	12.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1	0.0	
C 23010	321.000	2.50E-02	10.	0.0	0.0	40.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	321.0	0.0	
C 24012	1.000	4.00E-02	40.	1.0	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	
C 31010	160.500	2.50E-02	10.	0.0	0.0	20.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.5	0.0	
C 32012	0.000	4.00E-02	20.	1.0	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 40012	4.300	80.	5.00E-02	1.0	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	
C 42012	24.000	1.5	1.6	10.	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	
C 49012	2.000	40.	5.00E-02	1.0	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	
C 500 1	7.093	1.1	.85	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	0.0	
C 640 1	3.383	.48	.85	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	
C 77010	0.010	9.80E-03	.75	1.1	1.1	2.1	.44	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 86010	0.004	4.20E-03	.75	1.1	1.1	2.1	.44	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 920 4	4.413	1.1	1.50E+02	.85	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	
C 930 0	.221	5.00E-02	0.	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C1010 4	1.891	.48	1.50E+02	.85	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	
C1020 0	.095	5.00E-02	0.	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C1120 0	.530	.12	0.	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C115012	45.000	10.	1.0	3.00E-02	1.50E+02	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.0	0.0	
C1160 0	.277	.12	0.	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

SLOCM
TESTCASE DATA

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TESTCASE DATA				EVALUATION OF CERS AND FACTORS FOR										MISSILE				06.07.10	
ROW	CEF	TEMP		P 1	P 2	P 3	P 4	P 5	P 6	SUBEL1	SUBEL2	SUBEL3	SUBEL4	SUBEL5	SUBEL6	SUBEL7	SUBEL8	FACTOR	
F 1010		.047		7.30E-05	9.0	.97	70.	1.0	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	
F 20 3		.200		4.67E-02	1.0	.77	5.00E+02	-.23	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	
F 3010		35.529		6.60E-02	3.00E+04	.61	1.0	1.0	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.5	
F 40 3		101.528		36.	1.0	.05	1.00E+03	-.15	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	101.5	
F 5010		.040		.20	1.00E+03	-.23	1.0	1.0	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	
C 6010		20.250		5.00E-02	11.	.50	5.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 14010		67.000		5.00E-02	11.	.50	12.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 23110		4.833		9.00E-02	9.9	3.97E-02	10.	0.	0.	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 23210		1047.925		4.00E-02	5.2	36.	10.	0.	0.	4.8	1047.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 24012		1.000		2.50E-02	40.	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 31010		100.500		2.50E-02	10.	.50	20.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 32012		.500		2.50E-02	20.	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 40012		2.500		50.	5.00E-02	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 42012		15.000		1.5	1.0	10.	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 49012		1.256		25.	5.00E-02	1.0	1.0	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 500 1		34.761		.70	.05	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 640 1		14.898		.30	.05	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 77010		.006		9.00E-03	.47	1.1	2.1	.44	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 86010		.002		4.20E-03	.47	1.1	2.1	.44	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 921 4		4.448		.20	1.50E+02	.77	0.	0.	0.	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 922 4		3536.273		1.02E+02	3.00E+02	.05	0.	0.	0.	4.4	3536.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C 93010		3236.790		91.	3.97E-02	36.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C1010 4		11.391		.30	1.50E+02	.05	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C1020 8		.570		5.00E-02	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C1120 8		424.007		.12	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C115012		90.000		10.	2.0	3.00E-02	1.50E+02	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C1180 8		1.367		.12	0.	0.	0.	0.	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C1391 8		1.112		.25	0.	0.	0.	0.	0.	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C1392 8		1760.137		.50	0.	0.	0.	0.	0.	1.1	1760.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

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EQUIPMENT ELEMENT QUANTITIES - 17 SHIP FLEET SUMMARY			
EQUIPMENT ELEMENT	OPERATIONAL QUANTITY	INVESTMENT QUANTITY	
FIRST RADAR	10	10.00	
SECOND RADAR	20	10.00	
MISSILE	200	100.00	

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EQUIPMENT ELEMENT LIFE CYCLE COSTS
10 SHIP FLEET SUMMARY
R O T I E
P H A S E
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	1	ROUTE PHASE	915.00	684.22	2076.05	3675.27
	2	VALIDATION	269.90	167.84	113.13	550.87
	3	CONTRACTOR	96.50	29.32	37.73	163.95
RD/OM	4	SYSTEM/PROGRAM MGT	5.00	.80	1.00	6.80
ROUTE	5	SYSTEMS ENGINEERING	20.00	16.00	4.00	40.00
ROUTE	6	TEST HARDWARE FAB	56.25	3.00	28.25	84.50
ROUTE	7	DEVELOPMENT T&E	10.00	8.00	2.00	20.00
RD/MC	8	INDUSTRIAL FACILITIES	3.40	2.72	.68	6.80
ROUTE	9	DATA	1.50	1.28	.30	3.08
ROUTE	10	OTHER	.75	.60	.15	2.85
	11	GOVERNMENT	172.00	138.52	75.40	386.92
RD/OM	12	SYSTEM/PROGRAM MGT	4.00	3.20	.80	8.00
ROUTE	13	SYSTEMS ENGINEERING	20.00	16.00	4.00	40.00
ROUTE	14	TEST HARDWARE FAB	135.00	108.12	67.80	310.92
ROUTE	15	DEVELOPMENT T&E	11.00	8.80	2.20	22.00
RD/MC	16	INDUSTRIAL FACILITIES	1.00	.80	.20	2.00
ROUTE	17	DATA	1.00	.80	.20	2.00
ROUTE	18	OTHER	1.00	.80	.20	2.00
	19	FULL SCALE DEVELOPMENT	645.10	516.38	1962.92	3124.40
	20	CONTRACTOR	429.90	344.12	1159.18	2633.20
RD/OM	21	SYS/PROG/LOG SLPT MGT	3.80	3.04	.76	7.60
ROUTE	22	SYSTEMS ENGINEERING	15.50	12.40	3.10	31.00
ROUTE	23	TEST HARDWARE FAB	401.00	321.00	1052.76	2574.76
ROUTE	24	PROTOTYPE TESTS	2.00	1.60	1.00	4.60
RD/MC	25	TOOLING AND IND FAC	3.65	2.92	.73	7.30
ROUTE	26	DATA	1.35	1.08	.27	2.70
ROUTE	27	OTHER	2.60	2.08	.56	5.24
	28	GOVERNMENT	215.20	172.26	103.74	491.20
RD/OM	29	SYS/PROG/LOG SUPT MGT	1.20	.96	.24	2.40
ROUTE	30	SYSTEMS ENGINEERING	7.00	5.60	1.40	14.00
ROUTE	31	TEST HARDWARE FAB	200.50	160.50	100.50	461.50
ROUTE	32	PROTOTYPE TESTS	1.50	.80	.50	2.80
RD/MC	33	TOOLING AND IND FAC	2.00	2.40	.60	5.00
ROUTE	34	DATA	1.00	.80	.20	2.00
ROUTE	35	OTHER	1.50	1.28	.30	3.08

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EQUIPMENT ELEMENT LIFE CYCLE COSTS
10 SHIP FLEET SUMMARY
PILOT PRODUCTION PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	36	INVESTMENT PHASE	200.90	163.72	6511.04	7272.65
	37	PILOT/LIMITED PRODUCTION	168.39	87.20	79.89	276.03
	38	NONRECURRING	88.50	7.80	28.95	108.25
	39	CONTRACTOR	65.00	52.00	23.50	140.50
PR/CM	40	SYSTEM/PROGRAM MGT	5.00	4.00	2.50	11.50
PR/CM	41	ADV PRODUCTION ENG	10.00	8.00	2.00	20.00
PR/CM	42	SYSTEM TIE	30.00	24.00	15.00	69.00
PR/CM	43	LOGISTIC SUPPORT	2.00	1.60	.40	4.00
PR/CM	44	TCOLING AND IND FAC	14.00	6.00	2.00	20.00
PR/CM	45	DATA	2.00	1.60	.40	4.00
PR/CM	46	INITIAL TRAINING	1.00	.80	.20	2.00
PR/CM	47	OTHER	5.00	4.00	1.00	10.00
PR/CM	48	GOVERNMENT	23.50	16.80	5.45	47.75
PR/CM	49	SYSTEM/PROGRAM MGT	2.50	2.00	1.25	5.75
PR/CM	50	SYSTEM TIE	10.00	8.00	2.00	20.00
PR/CM	51	LOGISTIC SUPPORT	1.00	.80	.20	2.00
PR/CM	52	TCOLING AND IND FAC	3.00	2.40	.60	6.00
PR/CM	53	DATA	1.00	.80	.20	2.00
PR/CM	54	INITIAL TRAINING	4.00	3.20	.80	8.00
PR/CM	55	OTHER	2.00	1.60	.40	4.00
PR/CM	56	RECURRING	20.49	16.40	51.94	87.83
PR/CM	57	CONTRACTOR	14.27	11.41	35.64	61.32
PR/CM	58	MISSION HARDWARE PROD	9.87	7.69	34.76	52.32
PR/CM	59	ECF/ECO	1.00	.80	.20	2.00
PR/CM	60	1ST DEST TRANS/PKG	.10	.08	.02	.20
PR/CM	61	RIP-OUT, INSTALL, INTEG	3.20	2.56	.64	6.40
PR/CM	62	OTHER	.10	.08	.02	.20
PR/CM	63	GOVERNMENT	6.23	4.98	15.30	26.51
PR/CM	64	MISSION HARDWARE PROD	4.23	3.38	14.90	22.51
PR/CM	65	ECF/ECO	1.00	.80	.20	2.00
PR/CM	66	1ST DEST TRANS/PKG	.10	.08	.02	.20
PR/CM	67	RIP-OUT, INSTALL, INTEG	.30	.24	.06	.60
PR/CM	68	OTHER	.10	.08	.02	.20
		UNIT FLYAWAY COST	3.79	3.03	35.65	42.47

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EQUIPMENT ELEMENT LIFE CYCLE COSTS
10 SHIP FLEET SUPMARY
FULL PRODUCTION PHASE
(FY79 \$M)

APPRO	POM	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	69	FULL PRODUCTION	91.90	73.52	6131.15	6996.57
	70	NONRECURRING	43.86	35.10	87.76	87.76
	71	CONTRACTOR	33.91	27.13	67.93	67.93
PR/OM	72	SYSTEM/PROGRAM MGT	5.60	4.46	1.12	11.20
PROC	73	PRODUCTION ENGINEERING	12.30	9.84	2.46	24.60
PR/OM	74	SYSTEM T&E	2.50	2.08	.50	5.06
PROC	75	LOGISTICS SUPPORT	1.36	.80	.20	2.08
PR/MC	76	OPERATIONAL SITE ACT	1.70	.80	.20	2.00
PR/MC	77	TCOLING AND INC FAC	.01	.01	.01	.03
PR/OM	78	DATA	4.20	3.36	.84	8.40
PR/OM	79	INITIAL TRAINING	3.30	2.64	.66	6.60
PROC	80	OTHER	4.30	3.20	.80	8.00
	81	GOVERNMENT	9.97	7.57	1.93	19.43
PR/OM	82	SYSTEM/PROGRAM MGT	2.40	1.92	.48	4.80
PR/OM	83	SYSTEM T&E	.86	.69	.17	1.72
PROC	84	LOGISTICS SUPPORT	1.10	.80	.20	2.00
PR/MC	85	OPERATIONAL SITE ACT	1.10	.80	.20	2.00
PR/MC	86	TCOLING AND INC FAC	.01	.00	.00	.01
PR/OM	87	DATA	1.50	1.20	.30	3.00
PR/OM	88	INITIAL TRAINING	1.20	.96	.24	2.40
PROC	89	OTHER	2.10	1.60	.40	4.00
	90	RECURRING	48.32	38.42	6822.37	6909.11
	91	CONTRACTOR	18.99	15.19	6797.65	6831.84
PROC	92	MISSION HARDWARE PROD	5.52	4.41	3540.72	3558.65
PR/OM	93	INITIAL SPARES	.28	.22	3237.29	3237.29
PROC	94	SUSTAINING ENGINEERING	1.00	.80	.20	2.00
PROC	95	ECF/ECO	2.10	1.60	.40	4.00
PR/OM	96	1ST DEST TRANS/PKG	2.40	1.92	.40	4.72
PROC	97	SUST TCOL, TEST EQUIP	1.60	1.28	.32	3.20
PROC	98	RIP-OUT, INSTALL, INTEG	5.20	4.16	1.04	10.40
PROC	99	OTHER	1.10	.80	.20	2.00
	100	GOVERNMENT	29.03	23.23	24.72	76.98
PROC	101	MISSION HARDWARE PROD	2.36	1.89	11.39	15.55
PR/OM	102	INITIAL SPARES	.12	.09	.57	.78
PROC	103	SUSTAINING ENGINEERING	1.10	.80	.20	2.00
PROC	104	ECF/ECO	2.10	1.60	.40	4.00
PR/OM	105	1ST DEST TRANS/PKG	1.35	.84	.40	2.59
PROC	106	SUST TOOL, TEST EQUIP	.70	.56	.14	1.40
PROC	107	RIP-OUT, INSTALL, INTEG	20.80	16.64	4.16	41.60
PROC	108	OTHER	1.10	.80	.20	2.00

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EQUIPMENT ELEMENT LIFE CYCLE COSTS
10 SHIP FLEET SUMMARY
OPERATION & SUPPORT PHASE
(FY79 \$M)

APPRO ROW	COST ELEMENT	FIRST RADAR	SECOND RACAR	MISSILE	TOTAL
109	OPERATIONS AND SUPPORT PHASE	141.55	115.04	2305.52	2562.10
110	OPERATIONS	73.95	60.96	522.75	657.66
111	CONTRACTOR	5.66	4.53	425.69	435.88
112	CONSUMABLES	.66	.53	424.69	426.00
113	OTHER	5.00	4.00	1.00	10.00
114	GOVERNMENT	68.28	56.43	96.87	221.58
115	ORGANIZATIONAL PERSONNEL	45.00	45.00	93.00	180.00
116	EQUIPMENT LEASEHOLD	10.00	6.00	2.00	20.00
117	OPERATIONAL FACILITIES	3.00	2.40	1.50	6.90
118	CONSUMABLES	.28	.23	1.37	1.88
119	OTHER	10.10	.80	2.00	12.90
120	LOGISTIC SUPPORT	60.00	44.00	1781.25	1885.25
121	CONTRACTOR	16.20	12.96	3.24	32.40
122	SYSTEM ILS MANAGEMENT	1.50	1.20	.30	3.00
123	SYS ENG. FIELD SERVICE	1.30	1.04	.26	2.60
124	SUPPLY	11.00	8.80	2.20	22.00
125	SPARE PARTS, REPAIR MAT	14.00	8.00	2.00	24.00
126	TRANS AND PACKAGING	1.00	.80	.20	2.00
127	DATA AND DOCUMENTATION	1.40	1.12	.28	2.80
128	OTHER ILS	1.00	.80	.20	2.00
129	GOVERNMENT	43.80	35.04	1778.01	1856.85
130	SYSTEM ILS MANAGEMENT	4.00	3.20	.80	8.00
131	MAINTENANCE	14.20	11.36	2.84	28.40
132	MAINTENANCE FACILITIES	7.20	5.76	1.44	14.40
133	MAINTENANCE PERSONNEL	6.00	4.80	1.20	12.00
134	SUPPORT EQUIP MAINT	1.00	.80	.20	2.00
135	SYS ENG. FIELD SERVICE	3.20	2.56	.64	6.40
136	SUPPLY	19.90	15.92	1773.23	1809.05
137	SUPPLY PERSONNEL	3.00	2.40	.60	6.00
138	SUPPLY FACILITIES	3.60	2.88	.72	7.20
139	SPARE PARTS, REPAIR MAT	10.00	8.00	1771.25	1789.25
140	INVENTORY ADJIN	2.00	1.84	.16	4.00
141	TRANS AND PACKAGING	1.00	.80	.20	2.00
142	DATA AND DOCUMENTATION	1.50	1.20	.30	3.00
143	OTHER ILS	1.00	.80	.20	2.00
144	CONTRACTOR - TRAINING	0.00	0.00	0.00	0.00
145	GOVERNMENT - TRAINING	4.60	3.68	.92	9.20
146	CONTRACTOR - OTHER	1.50	1.20	.30	3.00
147	GOVERNMENT - OTHER	1.50	1.20	.30	3.00
148	TOTAL	1257.44	959.97	11292.61	13510.03

FOOTNOTE 1

FOOTNOTE 2

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HOC SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
R D T A E PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	1	ROTE PHASE	91.50	66.42	415.21	575.13
	2	VALIDATION	26.39	16.78	22.63	66.40
	3	CONTRACTOR	9.69	2.93	7.55	20.17
RD/OM	4	SYSTEM/PROGRAM MGT	.50	.08	.20	.78
ROTE	5	SYSTEMS ENGINEERING	2.10	1.60	.80	4.40
ROTE	6	TEST HARDWARE FAB	5.63	0.00	5.65	11.28
ROTE	7	DEVELOPMENT TIE	1.30	.60	.40	2.20
RD/MC	8	INDUSTRIAL FACILITIES	.34	.27	.14	.75
ROTE	9	DATA	.15	.12	.06	.33
ROTE	10	OTHER	.08	.06	.30	.44
	11	GOVERNMENT	17.30	13.65	15.08	46.23
RD/OM	12	SYSTEM/PROGRAM MGT	.40	.32	.16	.88
ROTE	13	SYSTEMS ENGINEERING	2.70	1.60	.80	4.48
ROTE	14	TEST HARDWARE FAB	13.50	10.81	13.56	37.87
ROTE	15	DEVELOPMENT TIE	1.10	.88	.44	2.42
RD/IC	16	INDUSTRIAL FACILITIES	.10	.08	.04	.22
ROTE	17	DATA	.10	.08	.04	.22
ROTE	18	OTHER	.10	.08	.04	.22
	19	FULL SCALE DEVELOPMENT	66.51	51.64	392.58	508.73
	20	CONTRACTOR	42.39	34.41	371.84	449.24
RD/OM	21	SYS/PROG/LOG SUPT MGT	.38	.30	.15	.84
ROTE	22	SYSTEMS ENGINEERING	1.55	1.24	.62	3.41
ROTE	23	TEST HARDWARE FAB	40.10	32.10	373.55	442.75
ROTE	24	PROTOTYPE TESTS	.20	.16	.20	.56
RD/MC	25	TOOLING AND IND FAC	.37	.29	.15	.80
ROTE	26	DATA	.14	.11	.05	.30
ROTE	27	OTHER	.26	.21	.11	.58
	28	GOVERNMENT	21.52	17.23	20.75	59.49
RD/OM	29	SYS/PROG/LOG SUPT MGT	.12	.10	.05	.26
ROTE	30	SYSTEMS ENGINEERING	.70	.56	.28	1.54
ROTE	31	TEST HARDWARE FAB	20.05	16.35	20.10	56.20
ROTE	32	PROTOTYPE TESTS	.10	.08	.10	.28
RD/MC	33	TOOLING AND IND FAC	.30	.24	.12	.66
ROTE	34	DATA	.10	.08	.04	.22
ROTE	35	OTHER	.15	.12	.06	.33

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TESTCASE DATA

08/01/79
08.07.10.

HCC SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
PILOT PRODUCTION PHASE
(FY79 \$P)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	36	INVESTMENT PHASE	20.79	16.37	1302.21	1418.37
	37	PILOT/LIMITED PRODUCTION	10.90	8.72	15.98	35.60
	38	NONRECURRING	8.85	7.38	5.79	21.72
	39	CONTRACTOR	6.50	5.20	4.70	16.40
PR/OM	40	SYSTEM/PROGRAM MGT	.50	.40	.50	1.40
PROC	41	ADV PRODUCTION ENG	1.00	.80	.40	2.20
PR/OM	42	SYSTEM TIE	3.00	2.40	3.00	8.40
PROC	43	LOGISTIC SUPPORT	.20	.16	.08	.44
PR/MC	44	TCOLING AND IND FAC	1.70	.80	.40	2.90
PR/OM	45	DATA	.20	.16	.08	.44
PR/OM	46	INITIAL TRAINING	.10	.08	.04	.22
PROC	47	OTHER	.50	.40	.20	1.10
	48	GOVERNMENT	2.35	1.88	1.05	5.32
PR/OM	49	SYSTEM/PROGRAM MGT	.25	.20	.25	.70
PR/OM	50	SYSTEM TIE	1.0	.80	.40	2.20
PROC	51	LOGISTIC SUPPORT	.10	.08	.04	.22
PR/MC	52	TCOLING AND IND FAC	.30	.24	.12	.66
PR/OM	53	DATA	.12	.08	.04	.22
PR/OM	54	INITIAL TRAINING	.40	.32	.16	.88
PROC	55	OTHER	.20	.16	.08	.44
	56	RECURRING	2.05	1.64	13.19	16.88
	57	CONTRACTOR	1.43	1.14	7.13	9.70
PROC	58	MISSION HARDWARE PROD	.99	.79	6.95	8.73
PROC	59	ECP/ECO	.10	.08	.04	.22
PR/OM	60	1ST DEST TRANS/PKG	.11	.01	.00	.02
PROC	61	RIP-OUT,INSTALL,INTEG	.32	.26	.13	.71
PROC	62	OTHER	.31	.01	.00	.32
	63	GOVERNMENT	.62	.53	3.06	4.19
PROC	64	MISSION HARDWARE PROD	.42	.34	2.98	3.74
PROC	65	ECP/ECO	.10	.08	.04	.22
PR/OM	66	1ST DEST TRANS/PKG	.01	.01	.00	.02
PROC	67	RIP-OUT,INSTALL,INTEG	.38	.36	.03	.77
PROC	68	OTHER	.01	.01	.00	.02
		SHIP FLYAWAY COST	3.79	3.03	712.94	719.77

SLCCM
TESTCASE DATA

08/01/79
00.07.10.

HOC SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
FULL PRODUCTION PHASE
(FY79 \$M)

APPRO	ROM	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	65	FULL PRODUCTION	9.19	7.35	1366.23	1382.77
	70	NONRECURRING	4.39	3.51	1.76	9.65
	71	CONTRACTOR	3.39	2.71	1.36	7.46
PR/OM	72	SYSTEM/PROGRAM MGT	.56	.45	.22	1.23
PROC	73	PRODUCTION ENGINEERING	1.23	.98	.49	2.71
PR/OM	74	SYSTEM TIE	.25	.20	.10	.55
PROC	75	LOGISTICS SUPPORT	.10	.08	.04	.22
PR/MC	76	OPERATIONAL SITE ACT	.10	.08	.04	.22
PR/MC	77	TCOLING ANC INC FAC	.00	.00	.00	.00
PR/OM	78	DATA	.42	.34	.17	.92
PR/OM	79	INITIAL TRAINING	.33	.26	.13	.73
PROC	80	OTHER	.40	.32	.16	.88
	81	GOVERNMENT	1.10	.80	.40	2.19
PR/OM	82	SYSTEM/PROGRAM MGT	.24	.19	.10	.53
PR/OM	83	SYSTEM TIE	.19	.07	.03	.19
PROC	84	LOGISTICS SUPPORT	.10	.08	.04	.22
PR/MC	85	OPERATIONAL SITE ACT	.10	.08	.04	.22
PR/MC	86	TCOLING ANC INC FAC	.10	.08	.04	.22
PR/CH	87	DATA	.15	.12	.06	.33
PR/OM	88	INITIAL TRAINING	.12	.10	.05	.26
PROC	89	OTHER	.20	.16	.08	.44
	90	RECURRING	4.80	3.84	1364.47	1373.12
	91	CONTRACTOR	1.90	1.52	1359.53	1362.95
PROC	92	MISSION HARDWARE PROC	.55	.44	708.14	709.14
PR/OM	93	INITIAL SPARES	.13	.02	.02	.17
PROC	94	SUSTAINING ENGINEERING	.10	.08	.04	.22
PROC	95	EC/ECO	.20	.16	.08	.44
PR/CH	96	1ST DEST TRANS/PKG	.24	.19	.220	2.63
PROC	97	SUST TOOL, TEST EQUIP	.16	.13	1.46	1.75
PROC	98	RIP-OUT, INSTALL, INTEG	.52	.42	.21	1.14
PROC	99	OTHER	.10	.08	.04	.22
	100	GOVERNMENT	2.90	2.32	4.94	10.17
PROC	101	MISSION HARDWARE PROC	.24	.19	2.20	2.78
PR/OM	102	INITIAL SPARES	.01	.01	.11	.14
PROC	103	SUSTAINING ENGINEERING	.10	.08	.04	.22
PROC	104	EC/ECO	.20	.16	.08	.44
PR/OM	105	1ST DEST TRANS/PKG	.11	.09	.04	1.13
PROC	106	SUST TOOL, TEST EQUIP	.07	.06	.62	.75
PROC	107	RIP-OUT, INSTALL, INTEG	.08	1.66	.83	4.58
PROC	108	OTHER	.10	.08	.04	.22

SLCCM
TESTCASE DATA

08/01/79
00.87.10.

HOC SHIP CLASS - UNIT SHIF COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIF FLEET
OPERATION & SUPPORT PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	109	OPERATIONS AND SUPPORT PHASE	14.15	11.50	230.55	256.21
	110	OPERATIONS	7.39	6.10	52.26	65.77
	111	CONTRACTOR	.57	.45	43.61	44.63
OMN	112	CONSUMABLES	.37	.05	42.49	42.91
OMN	113	OTHER	.50	.40	.10	1.00
	114	GOVERNMENT	6.83	5.64	9.69	22.16
OM/MP	115	ORGANIZATIONAL PERSONNEL	4.50	4.50	9.00	18.00
OMN	116	EQUIPMENT LEASEHOLD	1.00	.80	.20	2.00
OM/HC	117	OPERATIONAL FACILITIES	.30	.24	.15	.69
OMN	118	CONSUMABLES	.03	.02	.14	.19
OMN	119	OTHER	1.30	.08	.20	1.58
	120	LOGISTIC SUPPORT	6.00	4.80	176.12	186.92
	121	CONTRACTOR	1.62	1.20	.32	3.14
	122	SYSTEM ILS MANAGEMENT	.15	.12	.03	.30
OMN	123	SYS ENG, FIELD SERVICE	.13	.10	.03	.26
OMN	124	SUPPLY	1.10	.80	.22	2.12
	125	SPARE PARTS REPAIR MAT	1.20	.88	.20	2.28
PR/OM	126	TRANS AND PACKAGING	.10	.08	.02	.20
OMN	127	DATA AND DOCUMENTATION	.14	.11	.23	.48
OMN	128	OTHER ILS	.10	.08	.02	.20
OMN	129	GOVERNMENT	4.38	3.50	177.80	185.68
	130	SYSTEM ILS MANAGEMENT	.40	.32	.08	.80
OMN	131	MAINTENANCE	1.42	1.14	.28	2.84
OM/HC	132	MAINTENANCE FACILITIES	.72	.58	.14	1.44
OM/MP	133	MAINTENANCE PERSONNEL	.60	.48	.12	1.20
OMN	134	SUPPORT EDUIF PAINT	.10	.08	.02	.20
OMN	135	SYS ENG, FIELD SERVICE	.32	.26	.06	.64
	136	SUPPLY	1.99	1.59	177.32	180.90
	137	SUPPLY PERSONNEL	.30	.24	.06	.60
OM/MP	138	SUPPLY FACILITIES	.36	.29	.07	.72
PR/OM	139	SPARE PARTS REPAIR MAT	1.00	.80	177.12	178.92
OMN	140	INVENTORY ADMIN	.23	.18	.05	.46
OMN	141	TRANS AND PACKAGING	.10	.08	.02	.20
OMN	142	DATA AND DOCUMENTATION	.15	.12	.03	.30
OMN	143	OTHER ILS	.10	.08	.02	.20
OMN	144	CONTRACTOR - TRAINING	0.30	.24	.06	.60
OMN	145	GOVERNMENT - TRAINING	.46	.37	.09	.92
OMN	146	CONTRACTOR - OTHER	.15	.12	.03	.30
OMN	147	GOVERNMENT - OTHER	.15	.12	.03	.30
	148	TOTAL	125.74	96.00	2027.97	2249.71

FCCNOTE 1

FCCNOTE 2

SLOCM
TESTCASE DATA

08/01/79
00.07.10.

FFX SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
R O T & E PHASE
(FY79 \$M)

APPRO	ROM	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
		1 RDT&E PHASE	91.50	C.00	415.21	506.71
		2 VALIDATION	26.59	0.00	22.63	49.62
		3 CONTRACTOR	9.69	0.00	7.55	17.24
		4 SYSTEM/PROGRAM MGT	.50	0.00	.20	.70
RD/OM		5 SYSTEMS ENGINEERING	24.10	0.00	.80	24.90
RD/TE		6 TEST HARDWARE FAB	5.63	0.00	5.65	11.28
RD/TE		7 DEVELOPMENT T&E	1.30	0.00	.40	1.70
RD/MC		8 INDUSTRIAL FACILITIES	.34	0.00	.14	.48
RD/TE		9 DATA	.15	0.00	.06	.21
RD/TE		10 OTHER	.08	0.00	.30	.38
		11 GOVERNMENT	17.30	0.00	15.08	32.38
RD/OM		12 SYSTEM/PROGRAM MGT	.40	0.00	.16	.56
RD/TE		13 SYSTEMS ENGINEERING	2.00	0.00	.80	2.80
RD/TE		14 TEST HARDWARE FAB	13.50	0.00	13.56	27.06
RD/TE		15 DEVELOPMENT T&E	1.10	0.00	.44	1.54
RD/MC		16 INDUSTRIAL FACILITIES	.10	0.00	.04	.14
RD/TE		17 DATA	.10	0.00	.04	.14
RD/TE		18 OTHER	.10	0.00	.04	.14
		19 FULL SCALE DEVELOPMENT	64.51	0.00	392.58	457.09
		20 CONTRACTOR	42.99	0.00	371.84	414.83
RD/OM		21 SYS/PROG/LCG SUPT MGT	.38	0.00	.15	.53
RD/TE		22 SYSTEMS ENGINEERING	1.55	0.00	.62	2.17
RD/TE		23 TEST HARDWARE FAB	40.10	0.00	370.55	410.65
RD/TE		24 PROTOTYPE TESTS	.20	0.00	.20	.40
RD/MC		25 TOOLING AND IND FAC	.37	0.00	.15	.51
RD/TE		26 DATA	.14	0.00	.05	.19
RD/TE		27 OTHER	.26	0.00	.11	.37
		28 GOVERNMENT	21.52	0.00	20.75	42.27
RD/OM		29 SYS/PROG/LOG SUPT MGT	.12	0.00	.05	.17
RD/TE		30 SYSTEMS ENGINEERING	.70	0.00	.28	.98
RD/TE		31 TEST HARDWARE FAB	20.05	0.00	23.10	43.15
RD/TE		32 PROTOTYPE TESTS	.10	0.00	.10	.20
RD/MC		33 TOOLING AND IND FAC	.30	0.00	.12	.42
RD/TE		34 DATA	.10	0.00	.04	.14
RD/TE		35 OTHER	.15	0.00	.06	.21

SLCCM
TESTCASE DATA

08/01/79
00.07.10.

FFX SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
PILOT PRODUCTION PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	36	INVESTMENT PHASE	26.19	1.00	1282.21	1402.30
	37	PILOT/LIMITED PRODUCTION	10.90	0.00	15.98	26.88
	38	NONRECURRING	6.85	0.00	5.75	12.60
	39	CONTRACTOR	6.50	0.00	4.70	11.20
	40	SYSTEM/PROGRAM MGT	1.00	0.00	.50	1.50
	41	ADV PRODUCTION ENG	1.00	0.00	.40	1.40
	42	SYSTEM TIE	3.00	0.00	3.00	6.00
	43	LOGISTIC SUPPORT	.20	0.00	.00	.20
	44	TCOLING AND IND FAC	1.10	0.00	.46	1.56
	45	DATA	.20	0.00	.00	.20
	46	INITIAL TRAINING	.10	0.00	.04	.14
	47	OTHER	.50	0.00	.20	.70
	48	GOVERNMENT	2.35	1.00	1.09	3.44
	49	SYSTEM/PROGRAM MGT	.25	0.00	.25	.50
	50	SYSTEM TIE	1.00	0.00	.60	1.60
	51	LOGISTIC SUPPORT	.10	0.00	.04	.14
	52	TCOLING AND IND FAC	.30	0.00	.12	.42
	53	DATA	.10	0.00	.04	.14
	54	INITIAL TRAINING	.40	0.00	.16	.56
	55	OTHER	.20	0.00	.08	.28
	56	RECURRING	2.05	0.00	10.19	12.24
	57	CONTRACTOR	1.43	0.00	7.13	8.56
	58	MISSION FAOFMAKE PROD	.39	0.00	6.95	7.34
	59	ECF/ECO	.10	0.00	.04	.14
	60	1ST DEST TRANS/PKG	.01	0.00	.00	.01
	61	RIF-OUT,INSTALL,INTEG	.32	0.00	.13	.45
	62	OTHER	.01	0.00	.00	.01
	63	GOVERNMENT	.62	0.00	3.06	3.68
	64	MISSION HARDWARE PROD	.42	0.00	2.98	3.40
	65	ECF/ECO	.10	0.00	.04	.14
	66	1ST DEST TRANS/PKG	.01	0.00	.00	.01
	67	RIP-OUT,INSTALL,INTEG	.08	0.00	.03	.11
	68	OTHER	.01	0.00	.00	.01
		SHIP FLYAWAY COST	3.79	0.00	712.94	716.73

SLCCM
TESTCASE DATA

08/01/79
00.07.10.

FFX SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 19 SHIP FLEET
FULL PRODUCTION PHASE
(FY79 \$M)

APPRO FOM	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
69	FULL PRODUCTION	9.19	0.00	1366.23	1375.42
70	NONRECURRING	4.39	0.00	1.76	6.14
71	CONTRACTOR	3.39	0.00	1.36	4.75
72	SYSTEM/PROGRAM MGT	.56	0.00	.22	.78
73	PRODUCTION ENGINEERING	1.23	1.00	.49	1.72
74	SYSTEM T&E	.25	1.00	.10	.35
75	LOGISTICS SUPPORT	.10	0.00	.04	.14
76	OPERATIONAL SITE ACT	.10	0.00	.04	.14
77	TCOLLING AND IND FAC	.00	0.00	.00	.00
78	DATA	.42	0.00	.17	.59
79	INITIAL TRAINING	.33	0.00	.13	.46
80	OTHER	.40	0.00	.16	.56
81	GOVERNMENT	1.00	0.00	.40	1.40
82	SYSTEM/PROGRAM MGT	.24	0.00	.10	.34
83	SYSTEM T&E	.09	0.00	.03	.12
84	LOGISTICS SUPPORT	.10	0.00	.04	.14
85	OPERATIONAL SITE ACT	.10	0.00	.04	.14
86	TCOLLING AND IND FAC	.00	0.00	.00	.00
87	DATA	.15	0.00	.06	.21
88	INITIAL TRAINING	.12	0.00	.05	.17
89	OTHER	.20	0.00	.08	.28
90	RECURRING	4.80	0.00	1364.47	1369.27
91	CONTRACTOR	1.90	0.00	1359.53	1361.43
92	MISSION HARDWARE PROG	.55	0.00	788.14	788.69
93	INITIAL SPARES	.03	0.00	.14	.17
94	SUSTAINING ENGINEERING	.10	0.00	.04	.14
95	ECPI/ECO	.20	0.00	.08	.28
96	1ST DEST TRANS/PKG	.24	0.00	2.00	2.24
97	SUST TOOL, TEST EQUIP	.16	0.00	1.46	1.62
98	RIP-OUT, INSTALL, INTEG	.52	0.00	.21	.73
99	OTHER	.10	0.00	.04	.14
100	GOVERNMENT	2.90	0.00	4.94	7.84
101	MISSION HARDWARE PROG	.24	0.00	2.28	2.52
102	INITIAL SPARES	.01	0.00	.11	.12
103	SUSTAINING ENGINEERING	.10	0.00	.04	.14
104	ECPI/ECO	.20	0.00	.08	.28
105	1ST DEST TRANS/PKG	.11	0.00	.94	1.05
106	SUST TOOL, TEST EQUIP	.07	0.00	.62	.69
107	RIP-OUT, INSTALL, INTEG	2.06	0.00	.83	2.91
108	OTHER	.10	0.00	.04	.14

SLC-M
TESTCASE DATA

08/01/79
00.07.10.

FFX SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
OPERATION & SUPPORT PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	109	OPERATIONS AND SUPPORT PHASE				
	110	OPERATIONS	14.15	11.50	230.55	256.21
	111	CONTRACTOR	7.39	6.10	52.28	65.77
OMN	112	CONSUMABLES	.57	.45	42.59	43.61
OMN	113	OTHER	.07	.05	42.49	42.61
	114	GOVERNMENT	.50	.40	1.00	1.00
OM/HP	115	ORGANIZATIONAL PERSONNEL	6.83	5.64	9.65	22.16
OMN	116	EQUIPMENT LEASEHOLD	4.50	4.50	9.00	18.00
OM/HC	117	OPERATIONAL FACILITIES	1.00	.80	.20	2.00
OMN	118	CONSUMABLES	.30	.24	.15	.69
OMN	119	OTHER	.03	.02	.14	.19
	120	LOGISTIC SUPPORT	1.00	.08	.20	1.28
	121	CONTRACTOR	6.70	4.80	178.12	189.62
OMN	122	SYSTEM ILS MANAGEMENT	1.62	1.30	.32	3.24
OMN	123	SYS ENG, FIELD SERVICE	.15	.12	.03	.30
OMN	124	SUPPLY	.13	.10	.03	.26
PR/CH	125	SPARE PARTS, REPAIR MAT	1.10	.88	.22	2.20
OMN	126	TRANS AND PACKAGING	1.00	.80	.20	2.00
OMN	127	DATA AND DOCUMENTATION	.10	.08	.02	.20
OMN	128	OTHER ILS	.14	.11	.03	.28
	129	GOVERNMENT	.10	.08	.02	.20
OMN	130	SYSTEM ILS MANAGEMENT	4.38	3.50	177.68	185.68
	131	MAINTENANCE	.40	.32	.08	.80
OM/HC	132	MAINTENANCE FACILITIES	1.42	1.14	.28	2.84
OM/HP	133	MAINTENANCE PERSONNEL	.72	.58	.14	1.44
OMN	134	SUPPORT EQUIP MAINT	.60	.48	.12	1.20
OMN	135	SYS ENG, FIELD SERVICE	.10	.08	.02	.20
	136	SUPPLY	.32	.26	.06	.64
OM/HP	137	SUPPLY PERSONNEL	1.99	1.59	177.32	180.90
OM/HC	138	SUPPLY FACILITIES	.30	.24	.06	.60
PR/CH	139	SPARE PARTS, REPAIR MAT	.36	.29	.07	.72
OMN	140	INVENTORY ADMIN	1.00	.80	177.12	178.92
OMN	141	TRANS AND PACKAGING	.23	.18	.05	.46
OMN	142	DATA AND DOCUMENTATION	.10	.08	.02	.20
OMN	143	OTHER ILS	.15	.12	.03	.30
OMN	144	CONTRACTOR - TRAINING	.10	.08	.02	.20
OMN	145	GOVERNMENT - TRAINING	6.10	0.00	0.00	6.10
OMN	146	CONTRACTOR - OTHER	.46	.37	.09	.92
OMN	147	GOVERNMENT - OTHER	.15	.12	.03	.30
	148	TOTAL	125.74	11.50	2027.97	2165.22

FCCTNOTE 1

FCCTNOTE 2

SLOCM
TESTCASE DATA

08/01/79
00.07.10.

UD-963 SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
R C T & E PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	1	RCR PHASE				
	2	VALIDATION	91.50	68.42	0.00	159.92
	3	CONTRACTOR	26.59	16.76	0.00	43.35
	4	SYSTEM/PROGRAM MGT	9.69	2.93	0.00	12.62
RD/OM	5	SYSTEMS ENGINEERING	.50	.08	0.00	.58
ROTE	6	TEST HARDWARE FAB	2.00	1.60	0.00	3.60
ROTE	7	DEVELOPMENT T&E	5.63	0.00	0.00	5.63
RD/MC	8	INDUSTRIAL FACILITIES	1.00	.80	0.00	1.80
ROTE	9	DATA	.34	.27	0.00	.61
ROTE	10	OTHER	.15	.12	0.00	.27
	11	GOVERNMENT	.08	.06	0.00	.14
	12	SYSTEM/PROGRAM MGT	17.30	13.85	0.00	31.15
RD/OM	13	SYSTEMS ENGINEERING	.40	.32	0.00	.72
ROTE	14	TEST HARDWARE FAB	6.00	1.60	0.00	7.60
ROTE	15	DEVELOPMENT T&E	13.50	10.81	0.00	24.31
RD/MC	16	INDUSTRIAL FACILITIES	1.10	.88	0.00	1.98
ROTE	17	DATA	.10	.08	0.00	.18
ROTE	18	OTHER	.10	.08	0.00	.18
	19	FULL SCALE DEVELOPMENT	.10	.08	0.00	.18
	20	CONTRACTOR	64.51	51.64	0.00	116.15
RD/OM	21	SYS/PRCG/LOG SUPT MGT	42.99	34.41	0.00	77.40
ROTE	22	SYSTEMS ENGINEERING	.38	.30	0.00	.68
ROTE	23	TEST HARDWARE FAB	1.55	1.24	0.00	2.79
ROTE	24	PROTOTYPE TESTS	46.10	32.10	0.00	78.20
RD/MC	25	TOOLING AND IND FAC	.20	.16	0.00	.36
ROTE	26	DATA	.37	.29	0.00	.66
ROTE	27	OTHER	.14	.11	0.00	.25
	28	GOVERNMENT	.26	.21	0.00	.47
RD/OM	29	SYS/PRCG/LOG SUPT MGT	21.52	17.23	0.00	38.75
ROTE	30	SYSTEMS ENGINEERING	.12	.10	0.00	.22
ROTE	31	TEST HARDWARE FAB	.70	.56	0.00	1.26
ROTE	32	PROTOTYPE TESTS	20.45	16.35	0.00	36.80
RD/MC	33	TOOLING AND IND FAC	.10	.08	0.00	.18
ROTE	34	DATA	.30	.24	0.00	.54
ROTE	35	OTHER	.10	.08	0.00	.18
			.15	.12	0.00	.27

SLCCM
TESTCASE DATA

08/01/79
00.87.18.

OD-963 SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
PILOT PRODUCTION PHASE
(FY79 \$M)

APPRO ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
36	INVESTMENT PHASE	20.19	16.07	0.00	36.16
37	PILOT/LIMITED PRODUCTION	10.90	6.72	0.00	17.62
38	NONRECURRING	8.85	7.38	0.00	16.23
39	CONTRACTOR	6.50	5.20	0.00	11.70
40	SYSTEM/PROGRAM MGT	.50	.40	0.00	.90
41	ADV PRODUCTION ENG	1.00	.80	0.00	1.80
42	SYSTEM TIE	3.00	2.40	0.00	5.40
43	LOGISTIC SUPPORT	.20	.16	0.00	.36
44	LOGIC AND IND FAC	1.16	.80	0.00	1.96
45	DATA	.20	.16	0.00	.36
46	INITIAL TRAINING	.10	.08	0.00	.18
47	OTHER	.50	.40	0.00	.90
48	GOVERNMENT	2.35	1.68	0.00	4.03
49	SYSTEM/PROGRAM MGT	.25	.20	0.00	.45
50	SYSTEM TIE	1.10	.80	0.00	1.90
51	LOGISTIC SUPPORT	.10	.08	0.00	.18
52	LOGIC AND IND FAC	.30	.24	0.00	.54
53	DATA	.10	.08	0.00	.18
54	INITIAL TRAINING	.45	.32	0.00	.77
55	OTHER	.20	.16	0.00	.36
56	RECURRING	2.05	1.64	0.00	3.69
57	CONTRACTOR	1.43	1.14	0.00	2.57
58	MISSION SOFTWARE PROG	.99	.79	0.00	1.78
59	ECF/ECO	.10	.08	0.00	.18
60	1ST DEST TRANS/PKG	.31	.21	0.00	.52
61	RIF-OUT, INSTALL, INTEG	.32	.26	0.00	.58
62	OTHER	.01	.01	0.00	.02
63	GOVERNMENT	.62	.50	0.00	1.12
64	MISSION SOFTWARE PROG	.42	.34	0.00	.76
65	ECF/ECO	.10	.08	0.00	.18
66	1ST DEST TRANS/PKG	.01	.01	0.00	.02
67	RIF-OUT, INSTALL, INTEG	.08	.06	0.00	.14
68	OTHER	.01	.01	0.00	.02
	SHIP FLYAWAY COST	3.79	3.03	0.00	6.83

SLCCM
TESTCASE DATA

08/01/79
00.07.10.

DD-963 SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLLEET
FULL PRODUCTION PHASE
(FY79 \$M)

APPRO FOM	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
69	FULL PRODUCTION	9.19	7.35	0.00	16.54
70	NONRECLIPPING	4.39	3.51	0.00	7.90
71	CONTRACTOR	3.79	2.71	0.00	6.50
72	SYSTEM/PROGRAM MGT	.56	.45	0.00	1.01
73	PRODUCTION ENGINEERING	1.23	.98	0.00	2.21
74	SYSTEM T&E	.25	.20	0.00	.45
75	LOGISTICS SUPPORT	.10	.08	0.00	.18
76	OPERATIONAL SITE ACT	.10	.08	0.00	.18
77	ICOLING AND INC FAC	.00	.00	0.00	.00
78	DATA	.42	.34	0.00	.76
79	INITIAL TRAINING	.33	.26	0.00	.59
80	OTHER	.40	.32	0.00	.72
81	GOVERNMENT	1.00	.80	0.00	1.80
82	SYSTEM/PROGRAM MGT	.24	.19	0.00	.43
83	SYSTEM T&E	.09	.07	0.00	.16
84	LOGISTICS SUPPORT	.10	.08	0.00	.18
85	OPERATIONAL SITE ACT	.10	.08	0.00	.18
86	ICOLING AND INC FAC	.00	.00	0.00	.00
87	DATA	.15	.12	0.00	.27
88	INITIAL TRAINING	.12	.10	0.00	.22
89	OTHER	.20	.16	0.00	.36
90	RECURRING	4.80	3.84	0.00	8.64
91	CONTRACTOR	1.96	1.52	0.00	3.42
92	MISSION HARDWARE PROO	.55	.44	0.00	.99
93	INITIAL SPARES	.03	.02	0.00	.05
94	SUSTAINING ENGINEERING	.10	.08	0.00	.18
95	ECF/ECO	.20	.16	0.00	.36
96	1ST DEST TRANS/PKG	.24	.19	0.00	.43
97	SUST TOOL, TEST EQUIP	.16	.13	0.00	.29
98	RIP-OUT, INSTALL, INTEG	.52	.42	0.00	.94
99	OTHER	.10	.08	0.00	.18
100	GOVERNMENT	2.90	2.32	0.00	5.22
101	MISSION HARDWARE PROO	.24	.19	0.00	.43
102	INITIAL SPARES	.03	.02	0.00	.05
103	SUSTAINING ENGINEERING	.10	.08	0.00	.18
104	ECF/ECO	.20	.16	0.00	.36
105	1ST DEST TRANS/PKG	.11	.08	0.00	.19
106	SUST TOOL, TEST EQUIP	.07	.06	0.00	.13
107	RIP-OUT, INSTALL, INTEG	2.00	1.66	0.00	3.66
108	OTHER	.10	.08	0.00	.18

SLECCM
TESTCASE DATA

00/01/79
00.07.10.

DD-963 SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
OPERATION & SUPPORT PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	109	OPERATIONS AND SUPPORT PHASE	14.15	11.50	230.55	256.21
	110	OPERATIONS	7.39	6.10	52.28	65.77
	111	CONTRACTOR	.57	.45	42.59	43.61
OHN	112	CONSUMABLES	.07	.05	.10	1.00
OHN	113	OTHER	.50	.40	.10	1.00
	114	GOVERNMENT	6.83	5.64	9.69	22.16
OH/MP	115	ORGANIZATIONAL PERSONNEL	4.50	4.50	9.00	18.00
OH/MP	116	EQUIPMENT LEASEHOLD	1.00	.80	.20	2.00
OH/HC	117	OPERATIONAL FACILITIES	.30	.24	.15	.69
OHN	118	CONSUMABLES	.03	.02	.14	.19
OHN	119	OTHER	1.00	.08	.20	1.28
	120	LOGISTIC SUPPORT	6.00	4.80	179.12	189.92
	121	CONTRACTOR	1.62	1.30	.32	3.24
	122	SYSTEM ILS MANAGEMENT	.15	.12	.03	.30
OHN	123	SYS ENG, FIELD SERVICE	.13	.10	.03	.26
OHN	124	SUPPLY	1.10	.88	.22	2.20
PR/CH	125	SPARE PARTS-REPAIR MAT	1.00	.80	.20	2.00
OHN	126	TRANS AND PACKAGING	.14	.11	.03	.28
OHN	127	DATA AND DOCUMENTATION	.14	.11	.03	.28
OHN	128	OTHER ILS	.10	.08	.02	.20
	129	GOVERNMENT	4.38	3.50	177.80	195.68
OHN	130	SYSTEM ILS MANAGEMENT	.40	.32	.08	.80
	131	MAINTENANCE	1.42	1.14	.28	2.84
OH/HC	132	MAINTENANCE FACILITIES	.72	.58	.14	1.44
OH/MP	133	MAINTENANCE PERSONNEL	.60	.48	.12	1.20
OHN	134	SUPPORT EQUIP MAINT	.10	.08	.02	.20
OHN	135	SYS ENG, FIELD SERVICE	.32	.26	.06	.64
OHN	136	SUPPLY	1.99	1.59	177.32	180.90
OH/MP	137	SUPPLY PERSONNEL	.30	.24	.06	.60
OH/HC	138	SUPPLY FACILITIES	.36	.29	.07	.72
PR/CH	139	SPARE PARTS-REPAIR MAT	1.00	.80	177.12	178.92
OHN	140	INVENTORY ADMIN	.23	.18	.05	.46
OHN	141	TRANS AND PACKAGING	.10	.08	.02	.20
OHN	142	DATA AND DOCUMENTATION	.15	.12	.03	.30
OHN	143	OTHER ILS	.10	.08	.02	.20
OHN	144	CONTRACTOR - TRAINING	0.00	0.00	0.00	0.00
OHN	145	GOVERNMENT - TRAINING	.46	.37	.09	.92
OHN	146	CONTRACTOR - OTHER	.15	.12	.03	.30
OHN	147	GOVERNMENT - OTHER	.15	.12	.03	.30
	148	TOTAL	125.74	96.00	230.55	452.29

FOOTNOTE 1

FOOTNOTE 2

SLOCM
TESTCASE DATA

06/01/79
00.07.10.

AOE SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
F O T A E PHASE
(FY70 \$M)

APPNO	JA	COST ELEMENT	FIRST RADA	SECOND RADA	MISSILE	TOTAL
1	RDZOM	VALIDATION	51.50	5.42	207.61	367.53
2	RDZOM	CONTRACTOR	26.50	16.78	11.31	55.09
3	RDZOM	SYSTEMS/PROGRAM MGT	9.89	2.93	3.77	16.40
4	RDZOM	SYSTEMS ENGINEERING	.50	.00	.11	.61
5	RDZOM	TEST HARDWARE FAB	2.00	1.60	.40	4.00
6	RDZOM	DEVELOPMENT TLE	5.63	0.00	2.83	8.45
7	RDZOM	INDUSTRIAL FACILITIES	1.00	.60	.20	2.00
8	RDZOM	DATA	.14	.27	.07	.68
9	RDZOM	OTHER	.15	.12	.03	.30
10	RDZOM	GOVERNMENT	.16	.16	.15	.29
11	RDZOM	SYSTEM/PROGRAM MGT	17.50	13.85	7.54	38.89
12	RDZOM	SYSTEMS ENGINEERING	.40	.32	.00	.80
13	RDZOM	TEST HARDWARE FAB	2.00	1.60	.40	4.00
14	RDZOM	DEVELOPMENT TLE	13.50	10.81	6.70	31.09
15	RDZOM	INDUSTRIAL FACILITIES	1.10	.88	.22	2.20
16	RDZOM	DATA	.10	.08	.02	.20
17	RDZOM	OTHER	.10	.08	.02	.20
18	RDZOM	FULL SCALE DEVELOPMENT	.10	.08	.02	.20
19	RDZOM	CONTRACTOR	64.51	51.64	196.29	312.44
20	RDZOM	SYS/PROG/LOG SUPT MGT	42.99	34.41	105.92	263.32
21	RDZOM	SYSTEMS ENGINEERING	.38	.30	.00	.76
22	RDZOM	TEST HARDWARE FAB	1.55	1.24	.31	3.10
23	RDZOM	PROTOTYPE TESTS	40.10	32.10	105.26	257.46
24	RDZOM	TOOLING AND IND FAC	.20	.16	.10	.46
25	RDZOM	DATA	.14	.11	.03	.27
26	RDZOM	OTHER	.26	.21	.06	.52
27	RDZOM	GOVERNMENT	21.52	17.23	10.37	49.12
28	RDZOM	SYS/PROG/LOG SUPT MGT	.12	.10	.02	.24
29	RDZOM	SYSTEMS ENGINEERING	.76	.56	.14	1.46
30	RDZOM	TEST HARDWARE FAB	20.05	16.05	13.05	49.15
31	RDZOM	PROTOTYPE TESTS	.10	.08	.05	.23
32	RDZOM	TOOLING AND IND FAC	.30	.24	.06	.60
33	RDZOM	DATA	.10	.08	.02	.20
34	RDZOM	OTHER	.15	.12	.03	.30

SLCM
TESTCASE DATA

08/01/79
00.07.10.

AOE SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
PILOT PRODUCTION PHASE
(FY79 \$M)

APPRO ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
36	INVESTMENT PHASE	20.09	16.07	691.10	727.27
37	PILOT/LIMITED PRODUCTION	10.90	8.72	7.99	27.61
38	NONRECURRING	8.85	7.08	2.96	18.89
39	CONTRACTOR	6.50	5.28	2.35	14.13
40	SYSTEM/PROGRAM MGT	.50	.40	.25	1.15
41	ADV PRODUCTION ENG	1.30	.80	.20	2.30
42	SYSTEM T&E	3.00	2.40	1.50	6.90
43	LOGISTIC SUPPORT	.20	.16	.04	.40
44	TOOLING AND IND FAC	1.00	.80	.20	2.00
45	DATA	.20	.16	.04	.40
46	INITIAL TRAINING	.10	.08	.02	.20
47	OTHER	.50	.40	.10	1.00
48	GOVERNMENT	2.35	1.88	.55	4.78
49	SYSTEM/PROGRAM MGT	.25	.20	.13	.58
50	SYSTEM T&E	1.00	.80	.20	2.00
51	LOGISTIC SUPPORT	.10	.08	.02	.20
52	TOOLING AND IND FAC	.30	.24	.06	.60
53	DATA	.10	.08	.02	.20
54	INITIAL TRAINING	.40	.32	.08	.80
55	OTHER	.20	.16	.04	.40
56	RECURRING	2.05	1.64	5.09	8.78
57	CONTRACTOR	1.43	1.14	3.56	6.13
58	MISSION HARDWARE PROD	.99	.79	3.68	5.25
59	ECF/ECO	.10	.08	.02	.20
60	1ST DEST TRANS/PKG	.41	.01	.00	.42
61	RIP-OUT, INSTALL, INTEG	.32	.26	.06	.64
62	OTHER	.01	.01	.00	.02
63	GOVERNMENT	.62	.50	1.53	2.65
64	MISSION HARDWARE PROD	.42	.34	1.49	2.25
65	ECF/ECO	.10	.08	.02	.20
66	1ST DEST TRANS/PKG	.01	.01	.00	.02
67	RIP-OUT, INSTALL, INTEG	.08	.06	.02	.16
68	OTHER	.01	.01	.00	.02
	SHIP FLYAWAY COST	3.79	3.03	356.47	363.30

SILCM
TESTCASE DATA

88/81/79
00.07.10.

AOE SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
FULL PRODUCTION PHASE
FULL (FY79 \$M)

APPRO ROM	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
69	FULL PRODUCTION	9.19	7.35	683.12	695.66
70	NONRECURRING	4.39	3.51	.88	8.78
71	CONTRACTOR	3.39	2.71	.68	6.78
72	SYSTEM/PROGRAM MGT	.56	.45	.11	1.12
73	PRODUCTION ENGINEERING	1.23	.98	.25	2.46
74	SYSTEM TLE	.25	.20	.05	.50
75	LOGISTICS SUPPORT	.10	.08	.02	.28
76	OPERATIONAL SITE ACT	.10	.08	.02	.28
77	TOOLING AND IND FAC	.80	.80	.00	.80
78	DATA	.42	.34	.08	.84
79	INITIAL TRAINING	.33	.26	.07	.66
80	OTHER	.40	.32	.08	.80
81	GOVERNMENT	1.00	.80	.20	1.99
82	SYSTEM/PROGRAM MGT	.24	.19	.05	.48
83	SYSTEM TLE	.09	.07	.02	.17
84	LOGISTICS SUPPORT	.10	.08	.02	.20
85	OPERATIONAL SITE ACT	.10	.08	.02	.20
86	TOOLING AND IND FAC	.30	.30	.00	.60
87	DATA	.15	.12	.03	.30
88	INITIAL TRAINING	.12	.10	.02	.24
89	OTHER	.20	.16	.04	.40
90	RECURRING	4.80	3.64	682.24	690.68
91	CONTRACTOR	1.90	1.52	679.77	683.18
92	MISSION HARDWARE PROD	.55	.44	354.07	395.86
93	INITIAL SPARES	.03	.02	323.68	323.73
94	SUSTAINING ENGINEERING	.10	.08	.02	.20
95	ECI/ECO	.20	.16	.04	.40
96	1ST DEST TRANS/PKG	.24	.19	1.18	1.53
97	SUST TOOL, TEST EQUIP	.16	.13	.73	1.02
98	RIP-OUT, INSTALL, INTEG	.52	.42	.10	1.04
99	OTHER	.10	.08	.02	.20
100	GOVERNMENT	2.90	2.32	2.47	7.70
101	MISSION HARDWARE PROD	.24	.19	1.14	1.56
102	INITIAL SPARES	.01	.01	.06	.08
103	SUSTAINING ENGINEERING	.10	.08	.02	.20
104	ECI/ECO	.20	.16	.04	.40
105	1ST DEST TRANS/PKG	.11	.08	.47	.66
106	SUST TOOL, TEST EQUIP	.07	.06	.31	.44
107	RIP-OUT, INSTALL, INTEG	2.08	1.66	.42	4.16
108	OTHER	.10	.08	.02	.20

SLCCM
TESTCASE DATA

06/01/79
00.07.10.

AOE SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
OPERATION & SUPPORT PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	MISSILE	TOTAL
	109	OPERATIONS AND SUPPORT PHASE	14.15	5.75	230.55	250.46
	110	OPERATIONS	7.39	3.05	52.28	62.72
	111	CONTRACTOR	.57	.23	42.59	43.39
OMN	112	CONSUMABLES	.07	.03	42.49	42.59
OMN	113	OTHER	.50	.20	.10	.80
	114	GOVERNMENT	6.83	2.82	3.69	19.34
OM/MP	115	ORGANIZATIONAL PERSONNEL	4.50	2.25	3.00	15.75
OMN	116	EQUIPMENT LEASEHOLD	1.00	.40	.20	1.60
OM/HC	117	OPERATIONAL FACILITIES	1.30	.12	.15	.57
OMN	118	CONSUMABLES	.03	.01	.14	.18
OMN	119	OTHER	1.00	.04	.20	1.24
	120	LOGISTIC SUPPORT	6.20	2.40	178.12	186.52
	121	CONTRACTOR	1.62	.65	.32	2.59
OMN	122	SYSTEM ILS MANAGEMENT	.15	.06	.03	.24
OMN	123	SYS ENG, FIELD SERVICE	.13	.05	.03	.21
	124	SUPPLY	1.10	.44	.22	1.76
PR/CM	125	SPARE PARTS-REPAIR MAT	1.20	.40	.20	1.80
OMN	126	TRANS AND PACKAGING	.10	.04	.02	.16
OMN	127	DATA AND DOCUMENTATION	.14	.06	.03	.23
OMN	128	OTHER ILS	.10	.04	.02	.16
	129	GOVERNMENT	4.38	1.75	177.80	183.93
OMN	130	SYSTEM ILS MANAGEMENT	.40	.16	.08	.64
	131	MAINTENANCE	1.42	.57	.28	2.27
OM/HC	132	MAINTENANCE FACILITIES	.72	.29	.14	1.15
OM/MP	133	MAINTENANCE PERSONNEL	.64	.24	.12	.96
OMN	134	SUPPORT EQUIP MAINT	.10	.04	.02	.16
OMN	135	SYS ENG, FIELD SERVICE	.32	.13	.06	.51
	136	SUPPLY	1.99	.80	177.32	180.11
OM/MP	137	SUPPLY PERSONNEL	.30	.12	.06	.48
OM/HC	138	SUPPLY FACILITIES	.36	.14	.07	.57
PR/CM	139	SPARE PARTS-REPAIR MAT	1.00	.40	177.12	178.52
OMN	140	INVENTORY ADMIN	.23	.09	.05	.37
OMN	141	TRANS AND PACKAGING	.10	.04	.02	.16
OMN	142	DATA AND DOCUMENTATION	.15	.06	.03	.24
OMN	143	OTHER ILS	.10	.04	.02	.16
OMN	144	CONTRACTOR - TRAINING	0.00	0.00	0.00	0.00
OMN	145	GOVERNMENT - TRAINING	.46	.18	.09	.74
OMN	146	CONTRACTOR - OTHER	.15	.06	.03	.24
OMN	147	GOVERNMENT - OTHER	.15	.06	.03	.24
	148	TOTAL	125.74	90.25	1129.26	1345.25

FOOTNOTE 1

FOOTNOTE 2

SLOCM
TESTCASE DATA

00/01/79
00.07.10.

ZIPGUN SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
R O T & E PHASE
(FY79 \$M)

APPRO	ROM	COST ELEMENT	FIRST RADAR	SECOND RADAR	TOTAL
1	RO/OM	ROT&E PHASE	91.50	205.27	296.77
2	RO/OM	VALIDATION	26.99	50.35	77.34
3	RO/OM	CONTRACTOR	9.69	8.80	18.49
4	RO/OM	SYSTEM/PROGRAM MGT	.50	.24	.74
5	RO/OM	SYSTEMS ENGINEERING	2.00	4.80	6.80
6	RO/OM	TEST HARDWARE FAB	5.63	0.00	5.63
7	RO/OM	DEVELOPMENT T&E	1.10	2.40	3.50
8	RO/OM	INDUSTRIAL FACILITIES	.34	.82	1.16
9	RO/OM	DATA	.15	.36	.51
10	RO/OM	OTHER	.08	.18	.26
11	RO/OM	GOVERNMENT	17.30	41.56	58.86
12	RO/OM	SYSTEM/PROGRAM MGT	.40	.96	1.36
13	RO/OM	SYSTEMS ENGINEERING	2.00	4.80	6.80
14	RO/OM	TEST HARDWARE FAB	13.50	32.44	45.94
15	RO/OM	DEVELOPMENT T&E	1.10	2.64	3.74
16	RO/OM	INDUSTRIAL FACILITIES	.10	.24	.34
17	RO/OM	DATA	.10	.24	.34
18	RO/OM	OTHER	.10	.24	.34
19	RO/OM	FULL SCALE DEVELOPMENT	64.91	154.91	219.82
20	RO/OM	CONTRACTOR	42.99	103.24	146.23
21	RO/OM	SYS/PROG/LOG SUPT MGT	.38	.91	1.29
22	RO/OM	SYSTEMS ENGINEERING	1.55	3.72	5.27
23	RO/OM	TEST HARDWARE FAB	40.10	96.30	136.40
24	RO/OM	PROTOTYPE TESTS	.20	.48	.68
25	RO/OM	TOOLING AND IND FAC	.37	.88	1.24
26	RO/OM	DATA	.14	.32	.46
27	RO/OM	OTHER	.26	.62	.88
28	RO/OM	GOVERNMENT	21.52	51.68	73.20
29	RO/OM	SYS/PROG/LOG SUPT MGT	.12	.29	.41
30	RO/OM	SYSTEMS ENGINEERING	.70	1.68	2.38
31	RO/OM	TEST HARDWARE FAB	20.05	45.15	65.20
32	RO/OM	PROTOTYPE TESTS	.10	.24	.34
33	RO/OM	TOOLING AND IND FAC	.10	.72	1.02
34	RO/OM	DATA	.10	.24	.34
35	RO/OM	OTHER	.15	.36	.51

SLCCM
TESTCASE DATA

00/01/79
00.07.10.

ZIPGUN SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
PILOT PRODUCTION PHASE
(FY79 \$M)

APPRO ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	TOTAL
36	INVESTMENT PHASE			
37	PILOT/LIMITED PRODUCTION	20.09	48.22	68.30
38	NONRECURRING	10.90	26.16	37.06
39	CONTRACTOR	8.45	21.24	30.09
40	SYSTEM/PROGRAM MGT	6.50	15.60	22.10
41	ADV PRODUCTION ENG	.50	1.20	1.70
42	SYSTEM T&E	1.30	2.40	3.40
43	LOGISTIC SLFPORT	3.60	7.20	10.20
44	TCOLING AND IND FAC	.20	.48	.68
45	DATA	1.00	2.40	3.40
46	INITIAL TRAINING	.20	.48	.68
47	OTHER	.10	.24	.34
48	GOVERNMENT	.50	1.20	1.70
49	SYSTEM/PROGRAM MGT	2.35	5.64	7.99
50	SYSTEM T&E	.25	.60	.85
51	LOGISTIC SLFPORT	1.00	2.40	3.40
52	TCOLING AND IND FAC	.10	.24	.34
53	DATA	.30	.72	1.02
54	INITIAL TRAINING	.10	.24	.34
55	OTHER	.40	.96	1.36
56	RECURRING	.20	.48	.68
57	CONTRACTOR	2.05	4.92	6.97
58	MISSION HARDWARE PROD	1.43	3.42	4.85
59	ECF/ECO	.39	2.37	3.35
60	1ST DEST TRANS/PKG	.10	.24	.34
61	RIP-OUT,INSTALL,INTEG	.31	.77	1.08
62	OTHER	.32	.77	1.09
63	GOVERNMENT	.61	.02	.03
64	MISSION HARDWARE PROD	.62	1.49	2.12
65	ECF/ECO	.42	1.01	1.44
66	1ST DEST TRANS/PKG	.10	.24	.34
67	RIP-OUT,INSTALL,INTEG	.01	.02	.03
68	OTHER	.08	.19	.27
	SHIP FLYAWAY COST	.01	.02	.03
		3.79	9.10	12.90

SLCC
TESTCASE DATA

08/01/79
00-07-10

ZIPGUN SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
FULL PRODUCTION PHASE
(FY79 \$M)

APPRO	COM	COST ELEMENT	FIRST RADAR	SECOND RADAR	TOTAL
70	PR/OM	FULL PRODUCTION	9.19	22.06	31.25
71	PR/OM	NONRECURRING	4.39	10.53	14.92
72	PR/OM	CONTRACTOR	3.39	8.14	11.53
73	PR/OM	SYSTEM/PROGRAM MGT	.56	1.34	1.90
74	PR/OM	PRODUCTION ENGINEERING	1.23	2.95	4.18
75	PR/OM	SYSTEM TIE	.25	.60	.85
76	PR/OM	LOGISTICS SUPPORT	.10	.24	.34
77	PR/OM	OPERATIONAL SITE ACT	.10	.24	.34
78	PR/OM	TOOLING AND IND FAC	.10	.24	.34
79	PR/OM	DATA	.10	.24	.34
80	PR/OM	INITIAL TRAINING	.10	.24	.34
81	PR/OM	OTHER	.10	.24	.34
82	PR/OM	GOVERNMENT	.10	.24	.34
83	PR/OM	SYSTEM/PROGRAM MGT	.10	.24	.34
84	PR/OM	SYSTEM TIE	.10	.24	.34
85	PR/OM	LOGISTICS SUPPORT	.10	.24	.34
86	PR/OM	OPERATIONAL SITE ACT	.10	.24	.34
87	PR/OM	TOOLING AND IND FAC	.10	.24	.34
88	PR/OM	DATA	.10	.24	.34
89	PR/OM	INITIAL TRAINING	.10	.24	.34
90	PR/OM	OTHER	.10	.24	.34
91	PR/OM	RECURRING	.10	.24	.34
92	PR/OM	CONTRACTOR	.10	.24	.34
93	PR/OM	MISSION HARDWARE PROD	.10	.24	.34
94	PR/OM	INITIAL SPARES	.10	.24	.34
95	PR/OM	SUSTAINING ENGINEERING	.10	.24	.34
96	PR/OM	ECF/ECO	.10	.24	.34
97	PR/OM	1ST DEPT TRANS/PKG	.10	.24	.34
98	PR/OM	SUST TOOL, TEST EQUIP	.10	.24	.34
99	PR/OM	RIF-OUT, INSTALL, INTEG	.10	.24	.34
100	PR/OM	OTHER	.10	.24	.34
101	PR/OM	GOVERNMENT	.10	.24	.34
102	PR/OM	MISSION HARDWARE PROD	.10	.24	.34
103	PR/OM	INITIAL SPARES	.10	.24	.34
104	PR/OM	SUSTAINING ENGINEERING	.10	.24	.34
105	PR/OM	ECF/ECO	.10	.24	.34
106	PR/OM	1ST DEPT TRANS/PKG	.10	.24	.34
107	PR/OM	SUST TOOL, TEST EQUIP	.10	.24	.34
108	PR/OM	RIF-OUT, INSTALL, INTEG	.10	.24	.34
109	PR/OM	OTHER	.10	.24	.34
110	PR/OM	GOVERNMENT	.10	.24	.34
111	PR/OM	MISSION HARDWARE PROD	.10	.24	.34
112	PR/OM	INITIAL SPARES	.10	.24	.34
113	PR/OM	SUSTAINING ENGINEERING	.10	.24	.34
114	PR/OM	ECF/ECO	.10	.24	.34
115	PR/OM	1ST DEPT TRANS/PKG	.10	.24	.34
116	PR/OM	SUST TOOL, TEST EQUIP	.10	.24	.34
117	PR/OM	RIF-OUT, INSTALL, INTEG	.10	.24	.34
118	PR/OM	OTHER	.10	.24	.34

SLCCM
TESTCASE DATA

88/81/79
00.07.10.

ZIPGUN SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
OPERATION & SUPPORT PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	SECOND RADAR	TOTAL
	109	OPERATIONS AND SUPPORT PHASE	14.15	28.76	42.91
	110	OPERATIONS	7.39	15.24	22.63
	111	CONTRACTOR	.57	1.13	1.70
OMN	112	CONSUMABLES	.07	.13	.20
OMN	113	OTHER	.50	1.00	1.50
	114	GOVERNMENT	6.83	14.11	20.94
OM/MP	115	ORGANIZATIONAL PERSONNEL	4.50	11.25	15.75
OMN	116	EQUIPMENT LIFESHOLD	1.00	2.00	3.00
OM/MP	117	OPERATIONAL FACILITIES	.30	.60	.90
OMN	118	CONSUMABLES	.33	.06	.09
OMN	119	OTHER	1.00	1.20	2.20
	120	LOGISTIC SUPPORT	6.00	12.00	18.00
	121	CONTRACTOR	1.62	3.24	4.86
	122	SYSTEM ILS MANAGEMENT	.15	.30	.45
OMN	123	SYS ENG, FIELD SERVICE	.13	.26	.39
OMN	124	SUPPLY	1.10	2.20	3.30
PR/OM	125	SPARE PARTS, REPAIR MAT	1.00	2.00	3.00
OMN	126	TRANS AND PACKAGING	.10	.20	.30
OMN	127	DATA AND DOCUMENTATION	.14	.28	.42
OMN	128	OTHER ILS	.10	.20	.30
	129	GOVERNMENT	4.38	8.76	13.14
OMN	130	SYSTEM ILS MANAGEMENT	.40	.80	1.20
	131	MAINTENANCE	1.42	2.84	4.26
OM/MP	132	MAINTENANCE FACILITIES	.72	1.44	2.16
OM/MP	133	MAINTENANCE PERSONNEL	.60	1.20	1.80
OMN	134	SUPPORT EDIP MAINT	.10	.20	.30
OMN	135	SYS ENG, FIELD SERVICE	.32	.64	.96
	136	SUPPLY	1.99	3.98	5.97
OM/MP	137	SUPPLY PERSONNEL	.30	.60	.90
OM/MP	138	SUPPLY FACILITIES	.36	.72	1.08
PR/OM	139	SPARE PARTS, REPAIR MAT	1.00	2.00	3.00
OMN	140	INVENTORY ADMIN	.23	.46	.69
OMN	141	TRANS AND PACKAGING	.10	.20	.30
OMN	142	DATA AND DOCUMENTATION	.15	.30	.45
	143	OTHER ILS	.10	.20	.30
OMN	144	CONTRACTOR - TRAINING	0.00	0.00	0.00
OMN	145	GOVERNMENT - TRAINING	.46	.92	1.38
OMN	146	CONTRACTOR - OTHER	.15	.30	.45
OMN	147	GOVERNMENT - OTHER	.15	.30	.45
	148	TOTAL	125.74	282.24	407.98

FOOTNOTE 1

FOOTNOTE 2

SILCM
TESTCASE DATA

08/01/79
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BOOMER SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
P O I & E PHASE
(FY79 \$M)

APPRO FCM	COST ELEMENT	FIRST RADAR	MISSILE	TOTAL
1	ROTE PHASE	91.50	207.61	299.11
2	VALIDATION	26.99	11.31	38.30
3	CONTRACTOR	9.69	3.77	13.46
4	SYSTEM/PROGRAM MGT	.50	.10	.60
5	SYSTEMS ENGINEERING	2.00	.40	2.40
6	TEST HARDWARE FAB	5.63	2.83	8.45
7	DEVELOPMENT T&E	1.00	.20	1.20
8	INDUSTRIAL FACILITIES	.34	.07	.41
9	DATA	.15	.03	.18
10	OTHER	.08	.15	.23
11	GOVERNMENT	17.30	7.54	24.84
12	SYSTEM/PROGRAM MGT	.40	.08	.48
13	SYSTEMS ENGINEERING	2.00	.40	2.40
14	TEST HARDWARE FAB	13.50	6.78	20.28
15	DEVELOPMENT T&E	1.10	.22	1.32
16	INDUSTRIAL FACILITIES	.10	.02	.12
17	DATA	.10	.02	.12
18	OTHER	.10	.02	.12
19	FULL SCALE DEVELOPMENT	64.51	196.29	260.80
20	CONTRACTOR	42.99	185.92	228.91
21	SYSTEM/PROG/LOG SUPT MGT	.38	.08	.46
22	SYSTEMS ENGINEERING	1.55	.31	1.86
23	TEST HARDWARE FAB	40.10	185.26	225.36
24	PROTOTYPE TESTS	.20	.10	.30
25	TOOLING AND IND FAC	.37	.07	.44
26	DATA	.14	.03	.16
27	OTHER	.26	.06	.32
28	GOVERNMENT	21.52	10.37	31.89
29	SYSTEM/PROG/LOG SUPT MGT	.12	.02	.14
30	SYSTEMS ENGINEERING	.70	.14	.84
31	TEST HARDWARE FAB	20.05	10.05	30.10
32	PROTOTYPE TESTS	.10	.05	.15
33	TOOLING AND IND FAC	.30	.06	.36
34	DATA	.10	.02	.12
35	OTHER	.15	.03	.18

SLCM
TESTCASE DATA

08/01/79
00.07.10.

BOOMER SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
PILOT PRODUCTION PHASE
(FY79 \$M)

APPRO	ROM	COST ELEMENT	FIRST PADAR	MISSILE	TOTAL
36		INVESTMENT PHASE	20.09		711.19
37		PILOT/LIMITED PRODUCTION	10.90	691.10	10.89
38		NONRECURRING	8.85	7.99	11.75
39		CONTRACTOR	6.50	2.80	8.85
40		SYSTEM/PROGRAM MGT	.50	2.35	.75
41	PR/CM	ADV PRODUCTION ENG	1.00	.25	1.20
42	PR/CM	SYSTEM TIE	3.00	1.50	4.50
43	PR/CM	LOGISTIC SUPPORT	.20	.04	.24
44	PR/CM	TECLING AND INC FAC	1.00	.20	1.20
45	PR/CM	DATA	.20	.04	.24
46	PR/CM	INITIAL TRAINING	.10	.02	.12
47	PR/CM	OTHER	.50	.10	.60
48	PR/CM	GOVERNMENT	2.35	.55	2.90
49	PR/CM	SYSTEM/PROGRAM MGT	.25	.13	.38
50	PR/CM	SYSTEM TIE	1.00	.20	1.20
51	PR/CM	LOGISTIC SUPPORT	.10	.02	.12
52	PR/CM	TECLING AND INC FAC	.30	.06	.36
53	PR/CM	DATA	.10	.02	.12
54	PR/CM	INITIAL TRAINING	.40	.08	.48
55	PR/CM	OTHER	.20	.04	.24
56	PR/CM	RECURRING	2.05	5.09	7.14
57	PR/CM	CONTRACTOR	1.43	3.56	4.99
58	PR/CM	MISSION MAKEWARE PROG	.99	3.48	4.46
59	PR/CM	EC/ECO	.10	.02	.12
60	PR/CM	1ST DEST TRANS/PKG	.01	.00	.01
61	PR/CM	RIF-OUT, INSTALL, INTEG	.32	.06	.38
62	PR/CM	OTHER	.01	.01	.02
63	PR/CM	GOVERNMENT	.62	1.53	2.15
64	PR/CM	MISSION MAKEWARE PROG	.42	1.49	1.91
65	PR/CM	EC/ECO	.10	.02	.12
66	PR/CM	1ST DEST TRANS/PKG	.01	.00	.01
67	PR/CM	RIF-OUT, INSTALL, INTEG	.08	.02	.10
68	PR/CM	OTHER	.01	.00	.01
		SHIP FLYAWAY COST	3.79	356.47	360.26

SLCCM
TESTCASE DATA

08/01/79
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BOOMER SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
FULL PRODUCTION PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST PADAR	MISSILE	TOTAL
	69	FULL PRODUCTION			
	70	NONRECURRING	9.19	683.12	692.31
	71	CONTRACTOR	4.39	.88	5.27
	72	SYSTEM/PROGRAM MGT	3.39	.68	4.07
	73	PRODUCTION ENGINEERING	.56	.11	.67
	74	SYSTEM TIE	1.23	.25	1.48
	75	LOGISTICS SUPPORT	.25	.05	.30
	76	OPERATIONAL SITE ACT	.10	.02	.12
	77	TOOLING AND INC FAC	.10	.02	.12
	78	DATA	.00	.00	.00
	79	INITIAL TRAINING	.42	.08	.50
	80	OTHER	.33	.07	.40
	81	GOVERNMENT	.40	.08	.48
	82	SYSTEM/PROGRAM MGT	1.00	.20	1.20
	83	SYSTEM TIE	.24	.05	.29
	84	LOGISTICS SUPPORT	.09	.02	.10
	85	OPERATIONAL SITE ACT	.10	.02	.12
	86	TOOLING AND INC FAC	.10	.02	.12
	87	DATA	.00	.00	.00
	88	INITIAL TRAINING	.15	.03	.18
	89	OTHER	.12	.02	.14
	90	RECURRING	.20	.04	.24
	91	CONTRACTOR	4.80	.24	5.04
	92	MISSION HARDWARE PROC	1.90	.67	2.57
	93	INITIAL SPARES	.55	.77	1.32
	94	SUSTAINING ENGINEERING	.13	.07	.20
	95	ECF/ECO	.10	.02	.12
	96	1ST DEST TRANS/PKG	.20	.04	.24
	97	SUST TOOL, TEST EQUIP	.24	.10	.34
	98	RIP-OUT, INSTALL, INTEG	.16	.73	.89
	99	OTHER	.52	.10	.62
	100	GOVERNMENT	.10	.02	.12
	101	MISSION HARDWARE PROC	2.90	.12	3.02
	102	INITIAL SPARES	.24	2.47	2.71
	103	SUSTAINING ENGINEERING	.01	1.14	1.15
	104	ECF/ECO	.10	.06	.16
	105	1ST DEST TRANS/PKG	.20	.02	.22
	106	SUST TOOL, TEST EQUIP	.11	.04	.15
	107	RIP-OUT, INSTALL, INTEG	.07	.47	.54
	108	OTHER	2.08	.31	2.39
	109		.10	.42	.52
	110			.02	.02

SLOCM
TESTCASE DATA

08/01/79
00.07.10.

BOOMER SHIP CLASS - UNIT SHIP COSTS BY EQUIPMENT ELEMENT
LIFE CYCLE COSTS - 10 SHIP FLEET
OPERATION & SUPPORT PHASE
(FY79 \$M)

APPRO	ROW	COST ELEMENT	FIRST RADAR	MISSILE	TOTAL
	109	OPERATIONS AND SUPPORT PHASE	14.15	461.10	475.26
	110	CONTRACTOR	7.39	104.55	111.95
OMN	111	CONSUMABLES	.57	85.18	85.74
OMN	112	OTHER	.07	84.98	85.04
OMN	113	GOVERNMENT	.50	.20	.70
OM/MP	114	ORGANIZATIONAL PERSONNEL	6.37	19.37	26.20
OMN	115	EQUIPMENT LEASEHOLD	4.50	18.00	22.50
OM/HC	116	OPERATIONAL FACILITIES	1.00	.40	1.40
OMN	117	CONSUMABLES	.30	.30	.60
OMN	118	OTHER	.23	.27	.30
OMN	119	LOGISTIC SUPPORT	1.71	.40	1.40
120	120	CONTRACTOR	6.00	356.25	362.25
OMN	121	SYSTEM ILS MANAGEMENT	1.62	.65	2.27
OMN	122	SYS ENG, FIELD SERVICE	.15	.06	.21
OMN	123	SUPPLY	.13	.05	.18
124	124	SCARE PARTS, REPAIR MAT	1.10	.44	1.54
PR/OM	125	TRANS AND PACKAGING	1.07	.40	1.40
OMN	126	DATA AND OCCUPATION	.10	.04	.14
OMN	127	OTHER ILS	.14	.06	.20
OMN	128	GOVERNMENT	.10	.04	.14
129	129	SYSTEM ILS MANAGEMENT	4.34	355.60	359.98
OMN	130	MAINTENANCE	.40	.16	.56
131	131	MAINTENANCE FACILITIES	1.42	.57	1.99
OM/HC	132	MAINTENANCE PERSONNEL	.72	.29	1.01
OM/MP	133	SUPPORT EQUIP MAINT	.60	.24	.84
OMN	134	SYS ENG, FIELD SERVICE	.10	.04	.14
OMN	135	SUPPLY	.32	.13	.45
136	136	SUPPLY PERSONNEL	1.99	354.65	356.64
OM/MP	137	SUPPLY FACILITIES	.30	.12	.42
OM/HC	138	SCARE PARTS, REPAIR MAT	.36	.14	.50
PR/CM	139	INVENTORY PDPIN	1.00	354.25	355.25
OMN	140	TRANS AND PACKAGING	.23	.09	.32
OMN	141	DATA AND OCCUPATION	.10	.14	.24
OMN	142	OTHER ILS	.15	.06	.21
OMN	143	CONTRACTOR - TRAINING	.10	.04	.14
OMN	144	GOVERNMENT - TRAINING	0.00	0.00	0.00
OMN	145	CONTRACTOR - OTHER	.46	.18	.64
OMN	146	GOVERNMENT - OTHER	.15	.06	.21
OMN	147	CONTRACTOR - OTHER	.15	.06	.21
148	148	TOTAL	125.74	1359.81	1485.56

FOOTNOTE 1

FOOTNOTE 2

SUCCM
TESTCASE DATA

08/01/79
00.07.10.

SHIP CLASS COST SUMMARY
LIFE CYCLE COSTS - 10 SHIP FLEET
F O T E P H A S E
(FY79 \$M)

APPRO	PCN	COST ELEMENT	MCC	FFX	DO-983	ACE	ZIRGUN	ECOMER	TOTAL
1	PC/OM	1	575.12	1013.42	159.92	735.05	593.53	598.21	3675.27
2	ROTE	2	66.40	93.23	43.77	110.17	154.68	76.61	550.87
3	ROTE	3	21.17	34.47	12.62	32.75	36.97	26.93	163.95
4	ROTE	4	2.78	1.42	.58	1.76	1.48	1.20	6.00
5	ROTE	5	4.46	5.60	3.60	6.00	13.60	4.80	40.00
6	ROTE	6	11.28	22.55	5.83	16.90	11.25	16.90	84.50
7	ROTE	7	2.20	2.80	1.80	4.00	6.80	2.40	20.10
8	ROTE	8	.75	.95	.61	1.36	2.31	.82	6.80
9	ROTE	9	.33	.42	.27	.60	1.32	.36	3.00
10	ROTE	10	.44	.75	.14	.57	.51	.45	2.85
11	ROTE	11	46.23	64.76	31.15	77.38	117.71	49.62	386.92
12	ROTE	12	.88	1.12	.72	1.60	2.72	.96	8.60
13	ROTE	13	4.40	5.60	3.60	6.00	13.60	4.80	40.00
14	ROTE	14	37.87	54.12	24.31	62.18	91.87	46.56	310.92
15	ROTE	15	2.42	3.08	1.98	4.40	7.48	2.64	22.00
16	ROTE	16	.22	.28	.18	.40	.68	.24	2.00
17	ROTE	17	.22	.28	.18	.40	.68	.24	2.00
18	ROTE	18	.22	.28	.18	.40	.68	.24	2.00
19	ROTE	19	508.73	914.19	116.15	624.88	436.85	521.60	3124.40
20	ROTE	20	409.24	624.65	77.40	566.84	292.45	451.82	2833.20
21	ROTE	21	.84	1.06	.68	1.52	2.58	.91	7.60
22	ROTE	22	3.41	4.34	2.79	6.20	10.54	3.72	31.00
23	ROTE	23	442.75	621.31	72.20	514.95	272.80	450.75	2574.76
24	ROTE	24	.56	.70	.36	.92	1.36	.60	4.60
25	ROTE	25	.40	1.02	.56	1.46	2.48	.88	7.30
26	ROTE	26	.30	.38	.24	.54	.92	.32	2.70
27	ROTE	27	.58	.74	.47	1.05	1.77	.63	5.24
28	ROTE	28	59.49	84.54	38.77	56.24	148.40	63.79	491.20
29	ROTE	29	.26	.34	.22	.46	.82	.29	2.48
30	ROTE	30	1.34	1.96	1.26	2.80	4.76	1.68	14.00
31	ROTE	31	56.20	83.30	36.10	52.30	136.40	60.20	461.50
32	ROTE	32	.28	.40	.18	.46	.68	.30	2.30
33	ROTE	33	.66	.84	.54	1.20	2.04	.72	6.00
34	ROTE	34	.22	.28	.18	.40	.68	.24	2.00
35	ROTE	35	.33	.42	.27	.60	1.02	.36	3.00

AD-A087 930

NAVAL SURFACE WEAPONS CENTER DAHLGREN VA F/G 14/1
SYSTEM AND FORCE STRUCTURE COST ANALYSIS MODEL (SAFSCAM) USER'S--ETC(U)
SEP 79 C P NELSON
NSWC/TR-79-250

UNCLASSIFIED

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TESTCASE DATA

08/01/79
00.07.10.

SHIP CLASS COST SUMMARY
LIFE CYCLE COSTS - 10 SHIP FLEET
PILOT PRODUCTION PHASE
(FY79 \$M)

APPRO ROW	COST ELEMENT	HOC	FFX	DD-963	AGE	ZIPGUN	BOOKER	TOTAL
36	INVESTMENT PHASE PRODUCTION	1418.37	2604.59	36.16	1454.53	136.61	1422.39	7272.65
37	PILOT/LIMITED PRODUCTION	35.50	53.75	19.62	55.22	74.12	37.78	276.00
38	NONRECURRING	21.72	23.28	11.72	37.65	60.18	23.49	108.25
39	CONTRACTOR	16.40	22.40	11.70	28.10	44.28	17.70	140.58
40	SYSTEM/PROGRAM MGT	1.40	2.00	.90	2.30	3.40	1.50	11.50
41	ADV PRODUCTION ENG	2.20	2.80	1.80	4.10	6.80	2.40	28.00
42	SYSTEM T&E	6.40	12.00	5.40	13.80	20.40	9.00	69.00
43	LOGISTIC SUPPORT	.44	.56	.36	.80	1.36	.48	4.00
44	TOOLING ANC IND FAC	2.20	2.80	1.80	4.00	6.80	2.40	20.00
45	DATA	.44	.56	.36	.80	1.36	.48	4.00
46	INITIAL TRAINING	.22	.28	.18	.40	.68	.24	2.00
47	OTHER	1.10	1.40	.90	2.00	3.40	1.20	10.00
48	GOVERNMENT	5.32	6.88	4.23	9.55	15.98	5.75	47.75
49	SYSTEM/PROGRAM MGT	.70	1.00	.45	1.15	1.70	.75	5.75
50	SYSTEM T&E	2.20	2.80	1.80	4.00	6.80	2.40	20.00
51	LOGISTIC SUPPORT	.22	.28	.18	.40	.68	.24	2.00
52	ICOLING ANC IND FAC	.66	.84	.54	1.20	2.04	.72	6.00
53	DATA	.22	.28	.18	.40	.68	.24	2.00
54	INITIAL TRAINING	.08	1.12	.72	1.60	2.72	.96	8.00
55	OTHER	.44	.56	.36	.80	1.36	.48	4.00
56	RECURRING	13.08	24.47	3.69	17.57	13.94	14.29	87.43
57	CONTRACTOR	9.70	17.11	2.57	12.26	9.70	9.98	61.32
58	MISSION MAINTENANCE PROD	8.73	15.88	1.78	10.50	6.71	6.93	52.52
59	ECF/ECO	.22	.28	.18	.40	.68	.24	2.00
60	1ST DEST TRANS/PKG	.02	.03	.02	.04	.07	.02	.20
61	RIF-OUT, INSTALL, INTEG	.78	.90	.58	1.20	2.18	.77	6.48
62	OTHER	.12	.03	.02	.34	.07	.02	.20
63	GOVERNMENT	4.16	7.36	1.12	5.30	4.24	4.31	28.51
64	MISSION MAINTENANCE PROD	3.74	6.80	.76	4.50	2.88	3.03	22.51
65	ECF/ECO	.22	.28	.18	.40	.68	.24	2.00
66	1ST DEST TRANS/PKG	.02	.03	.02	.04	.07	.02	.20
67	RIF-OUT, INSTALL, INTEG	.18	.22	.14	.32	.54	.19	1.60
68	OTHER	.02	.03	.02	.04	.07	.02	.20
SHIP FLYAWAY COST		719.77	1433.47	6.83	726.60	25.79	720.53	3632.98

SLCCM
TESTCASE DATA

00/01/79
00.07.10.

SHIP CLASS COST SUMMARY
LIFE CYCLE COSTS - 10 SHIP FLEET
FULL PRODUCTION PHASE
FULL (FY79 \$M)

APPRO	ROW	COST ELEMENT	HOC	FFX	DD-963	AOE	ZIPGUN	ECCMER	TOTAL
	69	FULL PRODUCTION	1382.77	2750.84	15.54	1399.31	52.49	1384.51	6996.57
	70	NONRECURRING	9.65	12.29	7.98	17.55	29.84	10.53	87.76
PR/OM	71	CONTRACTOR	7.46	9.50	6.10	13.57	23.06	8.14	67.83
PROC	72	SYSTEM/PROGRAM MGT	1.23	1.57	1.01	2.24	3.81	1.34	11.20
PR/OM	73	PRODUCTION ENGINEERING	2.71	3.44	2.21	4.92	8.36	2.95	24.68
PROC	74	SYSTEM TLE	.55	.70	.45	1.00	1.78	.60	5.08
PR/OM	75	LOGISTICS SUPPORT	.22	.28	.18	.40	.68	.24	2.00
PROC	76	OPERATIONAL SITE ACT	.22	.28	.18	.40	.68	.24	2.00
PR/OM	77	TCOLING AND IND FAC	.00	.00	.00	.01	.01	.00	.03
PR/OM	78	DATA	.92	1.10	.76	1.68	2.86	1.01	8.40
PR/OM	79	INITIAL TRAINING	.73	.92	.59	1.32	2.24	.79	6.68
PROC	80	OTHER	.88	1.12	.72	1.68	2.72	.96	8.00
	81	GOVERNMENT	2.19	2.79	1.79	3.99	6.78	2.39	19.93
PR/OM	82	SYSTEM/PROGRAM MGT	.53	.67	.43	.96	1.63	.58	4.80
PR/OM	83	SYSTEM TLE	.19	.24	.16	.34	.59	.21	1.72
PROC	84	LOGISTICS SUPPORT	.22	.28	.18	.40	.68	.24	2.00
PR/OM	85	OPERATIONAL SITE ACT	.22	.28	.18	.40	.68	.24	2.00
PR/OM	86	TCOLING AND IND FAC	.00	.00	.00	.00	.00	.00	.01
PR/OM	87	DATA	.33	.42	.27	.68	1.02	.36	3.00
PR/OM	88	INITIAL TRAINING	.26	.34	.22	.48	.82	.29	2.40
PROC	89	OTHER	.44	.56	.36	.80	1.36	.48	4.00
	90	RECURRING	1373.12	2738.55	8.64	1381.76	32.66	1374.00	6988.81
	91	CONTRACTOR	1362.95	2722.86	3.42	1366.37	12.91	1363.33	6251.84
PR/OM	92	MISSION HARDWARE PROC	789.14	1417.39	.99	710.13	3.75	789.25	3958.65
PR/OM	93	INITIAL SPARES	647.41	1294.77	.05	647.46	.19	647.41	3237.29
PROC	94	SUSTAINING ENGINEERING	.22	.28	.18	.40	.68	.24	2.00
PR/OM	95	ECF/ECO	.44	.56	.36	.80	1.36	.48	4.00
PR/OM	96	1ST DEST TRANS/PKG	2.63	4.88	.43	3.66	1.63	2.68	15.32
PR/OM	97	SUST TOOL, TEST EQUIP	1.75	3.24	.29	2.04	1.09	1.78	18.18
PR/OM	98	RIP-OUT, INSTALL, INTEG	1.14	1.46	.94	2.08	3.54	1.25	10.40
PR/OM	99	OTHER	.22	.28	.18	.40	.68	.24	2.00
	100	GOVERNMENT	10.17	15.69	5.23	15.40	19.74	10.75	76.98
PR/OM	101	MISSION HARDWARE PROC	2.70	5.03	.43	3.13	1.61	2.75	15.85
PR/OM	102	INITIAL SPARES	.14	.25	.08	.16	.08	.14	.78
PR/OM	103	SUSTAINING ENGINEERING	.22	.28	.18	.40	.68	.24	2.00
PR/OM	104	ECF/ECO	.44	.56	.36	.80	1.36	.48	4.00
PR/OM	105	1ST DEST TRANS/PKG	1.13	2.09	.19	1.32	.71	1.15	6.59
PR/OM	106	SUST TOOL, TEST EQUIP	.75	1.38	.13	.87	.68	.76	4.36
PR/OM	107	RIP-OUT, INSTALL, INTEG	4.58	5.82	3.74	8.32	14.14	4.99	41.80
PR/OM	108	OTHER	.22	.28	.18	.40	.68	.24	2.00

SICLW
TESTCASE DATA

08/91/79
00.87.18.

SHIP CLASS COST SUPPLY
LIFE CYCLE COSTS - 10 SHIP FLEET
OPERATION & SUPPORT PHASE
(FY79 \$M)

APPRO	PCN	CCST ELEMENT	MCC	FFX	00-963	AOE	ZIPGUN	BOOMER	TOTAL
119		OPERATIONS AND SUPPORT PHASE	256.21	512.42	256.21	500.32	85.83	950.52	2662.10
111		OPERATIONS	65.77	131.53	65.77	122.44	45.27	223.05	657.66
111	OWN	CONTRACTOR	43.61	87.22	43.61	86.76	3.48	171.49	436.08
112	OWN	CONSUMABLES	42.61	85.22	42.61	85.18	.40	173.89	426.08
112	OWN	OTHER	1.00	2.03	1.00	1.60	3.00	1.40	10.00
114		GOVERNMENT	22.16	44.32	22.16	36.67	41.87	52.40	221.58
114	OWN/MP	ORGANIZATIONAL PERSONNEL	18.00	36.00	18.00	31.50	31.50	45.00	180.00
116	OWN	EQUIPMENT LEASEHOLD	2.00	.00	2.00	3.20	6.00	2.00	28.00
117	OWN/MC	OPERATIONAL FACILITIES	.69	1.38	.69	1.14	1.00	1.20	6.90
118	OWN	CONSUMABLES	.19	.38	.19	.35	.17	.60	1.00
119	OWN	OTHER	1.20	2.56	1.20	2.40	2.40	2.40	12.00
120		LOGISTIC SUPPORT	186.92	377.85	186.92	373.15	36.00	724.50	1869.25
121		CONTRACTOR	3.24	6.48	3.24	5.16	9.72	4.54	32.40
122	OWN	SYSTEM ILS MANAGEMENT	.30	.60	.30	.48	.90	.42	3.00
122	OWN	SYS FNG, FIELD SERVICE	.26	.52	.26	.42	.78	.36	2.60
124		SUPPLY	2.20	4.40	2.20	3.52	6.60	3.00	22.00
125	PR/CM	SPARE PARTS-REPAIR MAT	2.00	4.00	2.00	3.20	6.00	2.80	20.00
126	OWN	TRANS AND PACKAGING	.20	.40	.20	.32	.60	.28	2.00
127	OWN	DATA AND DOCUMENTATION	.20	.56	.20	.45	.84	.39	2.80
128	OWN	OTHER ILS	.20	.40	.20	.32	.60	.28	2.00
129		GOVERNMENT	185.68	371.37	185.68	367.87	26.28	719.96	1856.85
130	OWN	SYSTEM ILS MANAGEMENT	.80	1.60	.80	1.28	2.40	1.12	8.00
131		MAINTENANCE	2.14	5.68	2.14	4.54	5.52	3.96	26.40
132	OWN/MC	MAINTENANCE FACILITIES	1.64	2.88	1.64	2.30	4.32	2.02	14.40
133	OWN/MP	MAINTENANCE PERSONNEL	1.20	2.40	1.20	1.92	3.60	1.66	12.00
134	OWN	SUPPORT EQUIP MAINT	.20	.40	.20	.32	.60	.28	2.00
135	OWN	SYS ENG, FIELD SERVICE	.64	1.28	.64	1.12	1.92	.90	6.40
136		SUPPLY	180.90	361.81	180.90	361.82	11.94	713.27	1809.85
137	OWN/MP	SUPPLY PERSONNEL	.60	1.20	.60	.96	1.80	.84	6.00
137	OWN/MC	SUPPLY FACILITIES	.72	1.44	.72	1.15	2.16	1.01	7.20
139	PR/OM	SPARE PARTS-REPAIR MAT	176.92	357.85	176.92	357.15	6.00	710.50	1769.25
140	OWN	INVENTORY ADMIN	.46	.92	.46	.74	1.38	.64	4.60
141	OWN	TRANS AND PACKAGING	.20	.40	.20	.32	.60	.28	2.00
142	OWN	DATA AND DOCUMENTATION	.30	.60	.30	.48	.90	.42	3.00
143	OWN	OTHER ILS	.20	.40	.20	.32	.60	.28	2.00
144	OWN	CONTRACTOR - TRAINING	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	OWN	GOVERNMENT - TRAINING	.92	1.84	.92	1.47	2.76	1.29	9.20
146	OWN	CONTRACTOR - OTHER	.30	.60	.30	.48	.90	.42	3.00
147	OWN	GOVERNMENT - OTHER	.60	.60	.60	.96	.90	.42	3.00
148		TOTAL	2249.71	4333.44	452.25	2690.50	815.97	2971.12	13519.32

FOOTNOTE 1

FOOTNOTE 2

SLOCM
TESTCASE DATA

88/81/79
88.87.10.

LIFE CYCLE COSTS BY BUDGET APPROPRIATION
BY EQUIPMENT ELEMENT WITHIN SHIP CLASS
10 SHIP FLEET
(FY79 \$M)

NOC	ROTE	SCN	MPN	OFN	MCN	KFN	CHN	SYS TOT
FIRST RADAR								
CONTRACTOR	52.600	14.217	0.000	0.000	0.000	0.000	1.336	68.233
GOVERNMENT	30.820	7.873	0.000	0.000	0.000	0.000	10.818	57.511
TOTAL (C+G)	91.500	22.090	0.000	0.000	0.000	0.000	12.155	125.744
SECOND RADAR								
CONTRACTOR	37.344	11.374	0.000	0.000	0.000	0.000	1.069	49.787
GOVERNMENT	31.078	6.294	0.000	0.000	0.000	0.000	8.835	46.211
TOTAL (C+G)	68.422	17.672	0.000	0.000	0.000	0.000	9.904	95.997
MISSILE								
CONTRACTOR	379.382	1372.916	0.000	0.000	0.000	0.000	42.743	1795.041
GOVERNMENT	35.828	186.617	0.000	0.000	0.000	0.000	10.405	232.930
TOTAL (C+G)	415.210	1559.533	0.000	0.000	0.000	0.000	53.227	2027.970
SHIP CLASS TOTAL								
CONTRACTOR	469.406	1398.506	0.000	0.000	0.000	0.000	45.148	1913.060
GOVERNMENT	185.726	288.788	0.000	0.000	0.000	0.000	30.138	336.652
TOTAL (C+G)	575.132	1599.294	0.000	0.000	0.000	0.000	75.286	2249.712

SLCCH
TESTCASE DATA

LIFE CYCLE COSTS BY BUDGET APPROPRIATION
BY EQUIPMENT ELEMENT WITHIN SHIP CLASS
16 SHIP FLEET
(FY79 \$M)

08/01/79
08.07.10.

PFX	RDTE	SCN	MPN	OPN	MCN	MPN	OMN	SYS TOT

FIRST RADAR								
CONTRACTOR	105.360	0.000	28.634	0.000	0.000	0.000	2.672	136.466
GOVERNMENT	77.640	0.000	35.745	0.000	0.000	0.000	21.637	115.022
TOTAL (C+G)	183.000	0.000	64.379	0.000	0.000	0.000	24.309	251.488
SECOND RADAR								
CONTRACTOR	0.000	0.000	0.000	1.600	0.000	0.000	2.138	3.738
GOVERNMENT	0.000	0.000	0.000	1.600	0.000	0.000	17.669	19.269
TOTAL (C+G)	0.000	0.000	0.000	3.200	0.000	0.000	19.807	23.007
MISSILE								
CONTRACTOR	755.765	0.000	2745.831	0.000	0.000	0.000	85.405	3590.001
GOVERNMENT	71.656	0.000	373.234	0.000	0.000	0.000	20.969	465.859
TOTAL (C+G)	830.421	0.000	3119.066	0.000	0.000	0.000	106.455	4055.941
SHIP CLASS TOTAL								
CONTRACTOR	864.125	0.000	2774.265	1.600	0.000	0.000	90.296	3738.286
GOVERNMENT	149.296	0.000	388.979	1.600	0.000	0.000	60.276	600.151
TOTAL (C+G)	1013.421	0.000	3163.245	3.200	0.000	0.000	150.571	4338.436

SLCCM
TESTCASE DATA

LIFE CYCLE COSTS BY BUDGET APPROPRIATION
BY EQUIPMENT ELEMENT WITHIN SHIP CLASS
10 SHIP FLEET
(FY79 \$M)

00/01/79
00.07.10.

	ROTE	SCN	WPN	OPN	MCN	MPN	OMN	SYS TOT
00-963								
FIRST RADAR								
CONTRACTOR	52.660	0.000	14.217	0.000	0.000	0.000	1.336	66.233
GOVERNMENT	38.023	0.000	7.873	0.000	0.000	0.000	10.818	57.511
TOTAL (C+G)	91.580	0.000	22.090	0.000	0.000	0.000	12.155	125.744
SECOND RADAR								
CONTRACTOR	37.344	0.000	0.000	11.374	0.000	0.000	1.069	49.787
GOVERNMENT	31.078	0.000	0.000	6.298	0.000	0.000	8.635	46.211
TOTAL (C+G)	68.422	0.000	0.000	17.672	0.000	0.000	9.704	95.997
MISSILE								
CONTRACTOR	0.000	0.000	0.000	0.000	0.000	0.000	42.743	42.943
GOVERNMENT	0.000	0.000	177.125	0.000	0.000	0.000	10.485	187.610
TOTAL (C+G)	0.000	0.000	177.125	0.000	0.000	0.000	53.227	230.552
SHIP CLASS TOTAL								
CONTRACTOR	90.024	0.000	14.417	11.374	0.000	0.000	45.148	160.962
GOVERNMENT	69.898	0.000	184.997	6.298	0.000	0.000	30.138	291.331
TOTAL (C+G)	159.922	0.000	199.414	17.672	0.000	0.000	75.286	452.294

SLCCN
TESTCASE DATA

LIFE CYCLE COSTS BY BUDGET APPROPRIATION
BY EQUIPMENT ELEMENT WITHIN SHIP CLASS
10 SHIP FLEET
(FY79 \$M)

00/01/79
00.07.10.

AOE	RDLE	SCN	MPN	QFN	MCN	PFN	CMN	SYS TOT
FIRST RADAR								
CONTRACTOR	185.360	20.434	0.300	0.300	0.000	0.000	2.272	136.466
GOVERNMENT	77.608	15.745	0.300	0.300	0.000	0.000	21.637	115.022
TOTAL (C+G)	183.000	44.179	0.300	0.300	0.000	0.000	24.389	251.488
SECOND RADAR								
CONTRACTOR	74.608	21.947	0.300	0.300	0.000	0.000	1.069	97.704
GOVERNMENT	62.156	11.796	0.300	0.300	0.000	0.000	6.835	81.707
TOTAL (C+G)	136.664	33.744	0.300	0.300	0.000	0.000	9.994	189.491
MISSILE								
CONTRACTOR	379.302	1373.116	0.300	0.300	0.000	0.000	85.485	1637.983
GOVERNMENT	35.828	363.742	0.300	0.300	0.000	0.000	20.969	420.539
TOTAL (C+G)	415.210	1736.858	0.300	0.300	0.000	0.000	106.455	2258.523
SHIP CLASS TOTAL								
CONTRACTOR	559.430	1423.497	0.300	0.300	0.000	0.000	89.227	2072.154
GOVERNMENT	175.624	391.284	0.300	0.300	0.000	0.000	51.441	618.348
TOTAL (C+G)	735.054	1814.780	0.300	0.300	0.000	0.000	140.667	2690.502

SLOCM
TESTCAS- DATA

00/01/79
00.07.10.

LIFE CYCLE COSTS BY BUDGET APPROPRIATION
BY EQUIPMENT ELEMENT WITHIN SHIP CLASS
10 SHIP FLEET
(FY79 3M)

ZIPGUN	NOTE	SCN	MPN	OFN	MCN	MPN	CMN	SYS TOT
FIRST RADAR								
CONTRACTOR	105.364	0.000	0.000	28.434	0.000	0.000	2.672	132.466
GOVERNMENT	77.640	0.000	0.000	15.745	0.000	0.000	21.637	115.022
TOTAL (C+G)	183.004	0.000	0.000	44.179	0.000	0.000	24.309	251.488
SECOND RADAR								
CONTRACTOR	224.064	0.000	67.441	0.000	0.000	0.000	5.345	296.850
GOVERNMENT	186.468	0.000	36.989	0.000	0.000	0.000	44.173	267.631
TOTAL (C+G)	410.532	0.000	104.431	0.000	0.000	0.000	49.518	564.481
SHIP CLASS TOTAL								
CONTRACTOR	329.424	0.000	67.441	28.434	0.000	0.000	8.017	433.316
GOVERNMENT	264.108	0.000	36.989	15.745	0.000	0.000	65.810	382.653
TOTAL (C+G)	593.532	0.000	104.431	44.179	0.000	0.000	73.827	815.969

SLOCM
TESTCASE DATA

LIFE CYCLE COSTS BY BUDGET APPROPRIATION
BY EQUIPMENT ELEMENT WITHIN SHIP CLASS
1C SHIP FLEET
(FY79 \$M)

00/01/79
00.07.10.

BOOMER	RDTE	SCN	MPN	OPN	MCN	MFN	CMN	SYS TOT
FIRST RADAR								
CONTRACTOR	105.360	0.000	20.434	0.000	0.000	0.000	2.672	136.466
GOVERNMENT	77.640	0.000	15.745	0.000	0.000	0.000	21.637	115.022
TOTAL (C+G)	183.000	0.000	44.179	0.000	0.000	0.000	24.309	251.488
MISSILE								
CONTRACTOR	379.362	1373.516	0.000	0.000	0.000	0.000	170.971	1923.869
GOVERNMENT	35.628	717.992	0.000	0.000	0.000	0.000	41.939	795.758
TOTAL (C+G)	415.210	2091.507	0.000	0.000	0.000	0.000	212.909	2719.627
SHIP CLASS TOTAL								
CONTRACTOR	484.742	1373.516	28.434	0.000	0.000	0.000	173.643	2080.335
GOVERNMENT	113.468	717.992	15.745	0.000	0.000	0.000	63.576	910.780
TOTAL (C+G)	598.210	2091.507	44.179	0.000	0.000	0.000	237.219	2971.115
1C SHIP FLEET TOTAL								
CONTRACTOR	2797.451	4195.519	2664.550	41.408	0.000	0.000	451.478	10370.113
GOVERNMENT	876.120	1310.063	626.711	23.643	0.000	0.000	301.378	3139.915
TOTAL (C+G)	3673.571	5505.582	3511.269	65.051	0.000	0.000	752.855	13510.029

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