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WARTIME REQUIREMENTS FOR AMMUNITION, MATERIEL, AND PERSONNEL (M-ETC(U)

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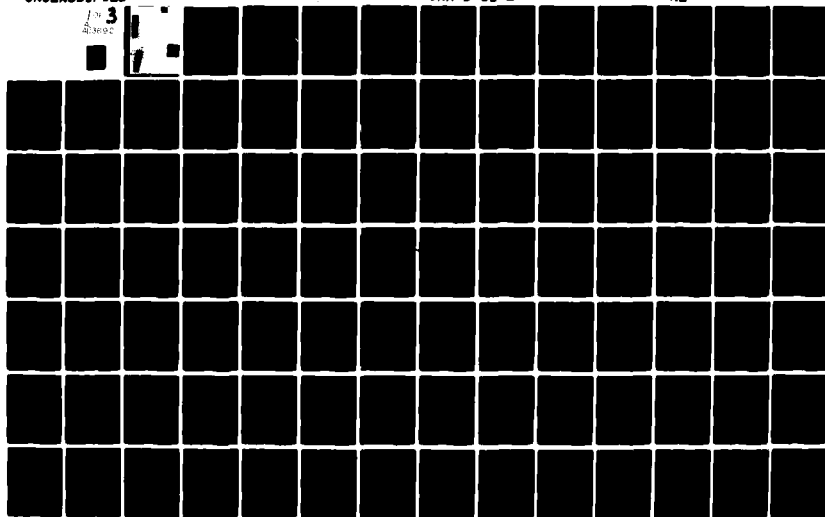
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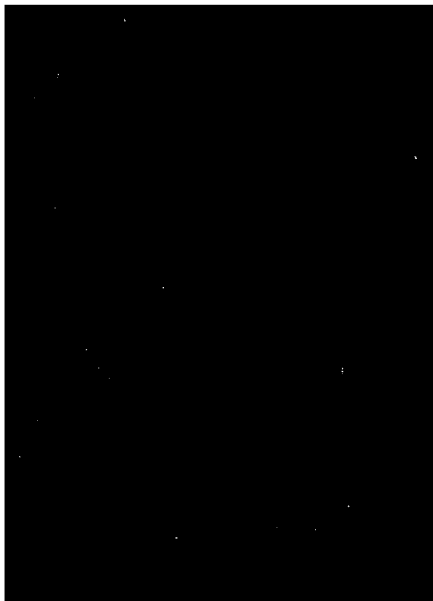
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Commander
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ATTN: CSCA-MCM
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This manual provides information on the programs processing and maintenance of the 3 computer software programs that comprise the Ammunition Postprocessor (APP) of the Wartime Requirements for Ammunition, Materiel and Personnel (WARRAMP) methodology. This manual provides a general overview of the methodology system followed by a programmer level discussion of each program. The discussion includes details on the description of processing, the operating environment and program maintenance procedures. Sample runstreams and program source code listings are included in this manual for the applications		

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20. ABSTRACT

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AMMUNITION, MATERIEL, AND PERSONNEL
(WARRAMP)

VOLUME IV

AMMUNITION POSTPROCESSOR
PROGRAM MAINTENANCE MANUAL

(APP-PMM)

February 1982

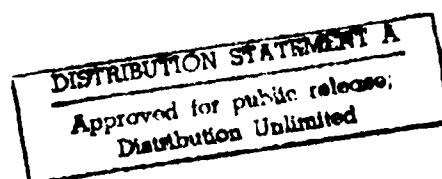
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U.S. ARMY CONCEPTS ANALYSIS AGENCY
8120 WOODMONT AVENUE
BETHESDA, MARYLAND 20014

BY

CACI, INC. - FEDERAL
1815 NORTH FORT MYER DRIVE
ARLINGTON, VIRGINIA 22209

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AMMUNITION POSTPROCESSOR
PROGRAM MAINTENANCE MANUAL

(APP-PMM)

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SECTION I

GENERAL

1. **PURPOSE:** The purpose of this program maintenance manual is to describe the APP system in sufficient level of detail to enable those persons responsible for the APP software, its maintenance and modification, to effectively and efficiently perform these functions. It is also the purpose to be in compliance with Department of the Army and USACAA directives in the documentation of computer software (reference items F, H, I).

Documentation for each of the three APP computer programs includes a description, purpose, and organization of the utility, a logic flow chart, the source code listing, and examples of the input and output data files. Included is a data variable dictionary, a discussion of the environment in which the utility operates and the maintenance procedures to be followed.

2. **STANDARDS:** The three programs that constitute the Ammunition Postprocessor are implemented in two programming languages as follows:

AMMUNITION BUFFER PROGRAM - FORTRAN IV
EQUIVALENT STYLIZED DAY PROGRAM - SIMSCRIPT II.5
REPORT GENERATOR PROGRAM - FORTRAN IV

The UNIVAC Publication, UP4060 provides the reference in the FORTRAN IV implementation. Reference items S, T and U should be referred to for the SIMSCRIPT II.5 implementation.

- 2.1 **OPERATING SYSTEM:** These programs are executed and maintained on the UNIVAC EXECUTIVE - 8 operating system (OS) installed on the UNIVAC 1100/82 computer system at the USA Concepts Analysis Agency.
- 2.2 **PROGRAM COMPILATION:** The operating system library (SYSS\$LIB\$) contains the compilers used to produce the object code. The Executive - 8 commands to call the compilers are as follows:

FORTRAN IV	@FOR, options SI, RO
SIMSCRIPT II.5	@SIM25, options SI, RO

The language references contain the specific compiler options, re-compilation procedures and compiler error diagnostics. In the notation above, SI refers to the source code input file-name, element-name. RO refers to the relocatable object code program elements and file-name.

3. **PROJECT REFERENCES:** project references can be found in Appendix A. This documentation effort was achieved through contractor support to USACAA, by CACI, Inc., under contract MDA903-80-D-0668. The Contracting Officers Technical Representative (COTR) was Mr. Hugh Jones, Models Group, Msethology and Computer Support Directorate, USACAA. This manual is one of a series to document the WARRAMP Methodology's

computer software. Volume I of the series contains the user's portion of the instructions of this software.

4. TERMS and ABBREVIATIONS: Terms and abbreviations are used throughout to facilitate communications of sets of words (acronyms) and analytical expressions common to the methodology and military operations research. A complete listing may be found in Appendix B of this manual. In addition, the full statement of the expression followed by the acronym or term in closed parenthesis is used throughout the manual on the first occurrence of its use.

SECTION II

SYSTEM DESCRIPTION

1. GENERAL DESCRIPTION: The WARRAMP Ammunition Postprocessor is the ammunition portion of the WARRAMP analytical methodology. It exists to merge and organize (buffer) combat equipment loss and ammunition expenditure data from historical sources and the combat simulation modeling sources. Once buffered computations are performed to produce the equivalent stylized day values, this is then followed by the computation of ammunition expenditures in a rate form. The produced expenditure rate supports the US Army's operations and planning functions and the budgeting process. As such, the programs documented herein are unique and have the sole application of supporting the WARRAMP methodology. The relationships of the APP function to WARRAMP are depicted in Figure II.1.1. The APP major components are highlighted with a heavy border.
2. SECURITY and PRIVACY: The individual software components (programs) are cataloged as indicated under the detailed descriptions for each program. In each case, they are cataloged in the public mode for user access. User's are asked not to modify or edit (write) in the program files. In the event that alteration is required for a specific purpose, a potential user should copy the program to a file under his/her user identification, and then edit the file as desired. In event of error detection during use, the user is requested to note the error by program line and forward the proposed correction to the program custodian, so that the record program may be updated. Test (sample) data, either input or output and the programs contained herein are unclassified. User's must apply the appropriate security classifications to their data files and are responsible for the safeguard of printed matter accordingly. User's and programmer personnel are directed to the installation computer user's guide for the appropriate classification levels. Throughout the manual, reference is made to classified data files. The reference is made to the file content, not the classified file qualifier.

The evolution of the WARRAMP methodology has necessitated changes in the APP software. This documentation supports and facilitates such change. It is incumbent on the program custodian to verify and validate changes made to the record versions of the programs and disseminate changes to this manual.
3. SYSTEM APPLICATION: Sections I and II of the APP User's Manual (Volume III of the WARRAMP documentation set) provides a comprehensive description of the Ammunition Postprocessor methodology as it relates to WARRAMP. The relationships of the APP utility programs are presented in Figure II.3.1. The APP processes are interrelated as depicted in the figures; the output of one program becomes the input to another program. The APP data flow is presented in Figure II.3.2 and assists in understanding the APP processes. The specific functions of the APP utility programs are addressed in Section III under individual chapters by utility program.

```

graph TD
    subgraph Inputs
        A["n POSTURES EA.  
WITH 10 REPS ADDING  
CAA & AMSAA DATA"]
        B["DEPLOYMENT  
THREAT  
NON-US NATO"]
        C["VULNERABILITY  
FACTORS"]
        D["HISTORICAL DATA  
EQPT ITEM DATA  
RUN CONTROL"]
    end

    A --> COSAGE["COSAGE  
KILLER-  
VICTIM  
SCORE-  
BOARD"]
    B --> CEM["CEM  
FIREPOWER/  
VULNER-  
ABILITY  
FACTOR"]
    C --> PEP["PERSONNEL  
POST-  
PROCESSOR"]
    D --> ELCON["ELCON"]

    COSAGE --> L1["LOSSES TO ARTY  
(AND AIR)"]
    COSAGE --> L2["NON FIRING SYSTEMS  
ZONES I, II & III"]
    CEM --> L1
    CEM --> L2
    CEM --> WBR["WARF  
BUFFER  
CAM/BAM RAM"]
    CEM --> WIP["WARF  
INTERMEDIATE  
PROCESSOR"]
    WBR --> ELCON
    WIP --> L3["LOSSES TO NON-COMBAT  
SYSTEMS"]

    L1 --> R1["AMMUNITION EXPENDITURES AND EQPT LOSSES (EA. POSTURE)"]
    L1 --> R2["QUANTITY OF RED AND BLUE WEAPONS (EA. POSTURE)"]
    L1 --> R3["DEPLOYMENT/REPLACEMENT  
OF EQUIPMENT  
QTY OF WPNS ENGAGED  
(EA. POSTURE)  
KILLS (EA. POSTURE)"]
    L1 --> R4["DISTRIBUTION OF  
POSTURES  
LOSSES TO COMBAT SYS  
ZONES I, II & III"]
    L2 --> R1
    L2 --> R2
    L2 --> R3
    L2 --> R4
    L2 --> L4["TOTAL CASUALTIES"]
    L3 --> L4

    R1 --> RG["REPORT  
GENERATOR"]
    R2 --> RG
    R3 --> RG
    R4 --> RG
    RG --> AR["AMMUNITION  
REPORT"]
    RG --> Z["ZEROING  
REQMTS.  
etc."]
    Z --> RG
    L4 --> PEP
    PEP --> MR["MATERIEL  
REPORT"]
    PEP --> PR["PERSONNEL  
REPORT"]
    L5["FORCE  
STRUCTURE  
DATA"] --> FASTALS["FASTALS"]
    L6["COMBAT UNIT  
DEPLOYMENT  
SCHEDULE"] --> FASTALS
    FASTALS --> L4
    L4 --> PDE["PERSONNEL  
DENSITY  
EXTRACT"]
    PDE --> MD["MOS DENSITY  
PROFILE"]
    MD --> PR
  
```

The flowchart illustrates the FAIRFAX system's data processing flow. It begins with four primary input sources: 'n POSTURES EA. WITH 10 REPS ADDING CAA & AMSAA DATA', 'DEPLOYMENT THREAT NON-US NATO', 'VULNERABILITY FACTORS', and 'HISTORICAL DATA EQPT ITEM DATA RUN CONTROL'. These inputs feed into various processing blocks: 'COSAGE' (Killer-Victim Score-Board) receives posture data; 'CEM' (Firepower/Vulnerability Factor) receives threat data; 'PERSONNEL POST-PROCESSOR' receives vulnerability factors; and 'ELCON' receives historical data. The 'COSAGE' and 'CEM' blocks output 'LOSSES TO ARTY (AND AIR)' and 'NON FIRING SYSTEMS ZONES I, II & III', which are then aggregated into 'TOTAL CASUALTIES'. The 'CEM' block also outputs 'DISTRIBUTION OF POSTURES LOSSES TO COMBAT SYS ZONES I, II & III' and feeds into 'WARF BUFFER CAM/BAM RAM' and 'WARF INTERMEDIATE PROCESSOR'. The 'WARF' blocks output 'LOSSES TO NON-COMBAT SYSTEMS' and feed into 'ELCON'. The 'ELCON' block outputs 'MATERIEL REPORT' and 'PERSONNEL REPORT'. The 'TOTAL CASUALTIES' block feeds into 'FASTALS', which also receives 'COMBAT UNIT DEPLOYMENT SCHEDULE' and 'FORCE STRUCTURE DATA'. The 'FASTALS' block outputs 'PERSONNEL DENSITY EXTRACT' and 'MOS DENSITY PROFILE'. The 'PERSONNEL DENSITY EXTRACT' and 'MOS DENSITY PROFILE' blocks feed into the 'PERSONNEL REPORT' block. The 'REPORT GENERATOR' block receives 'AMMUNITION EXPENDITURES AND EQPT LOSSES (EA. POSTURE)', 'QUANTITY OF RED AND BLUE WEAPONS (EA. POSTURE)', 'DEPLOYMENT/REPLACEMENT OF EQUIPMENT QTY OF WPNS ENGAGED (EA. POSTURE) KILLS (EA. POSTURE)', and 'DISTRIBUTION OF POSTURES LOSSES TO COMBAT SYS ZONES I, II & III'. The 'REPORT GENERATOR' block outputs 'AMMUNITION REPORT' and 'ZEROING REQMTS. etc.'.

4

AMMUNITION POSTPROCESSOR SYSTEM

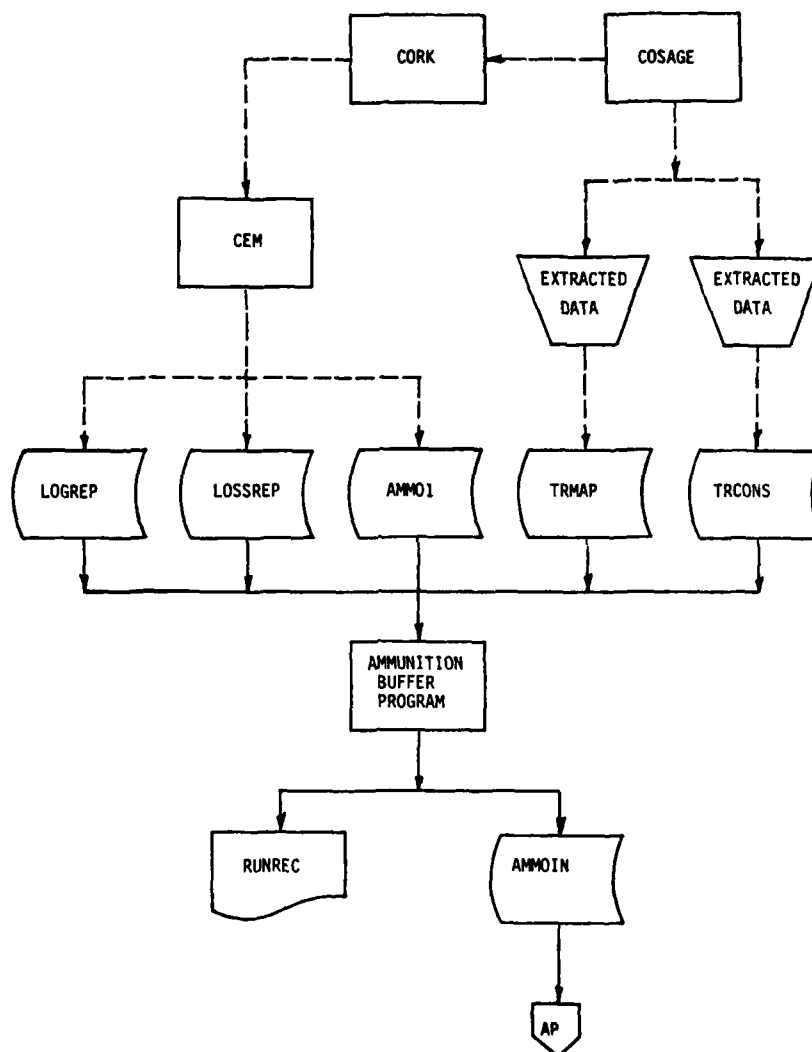


Figure II.3.1

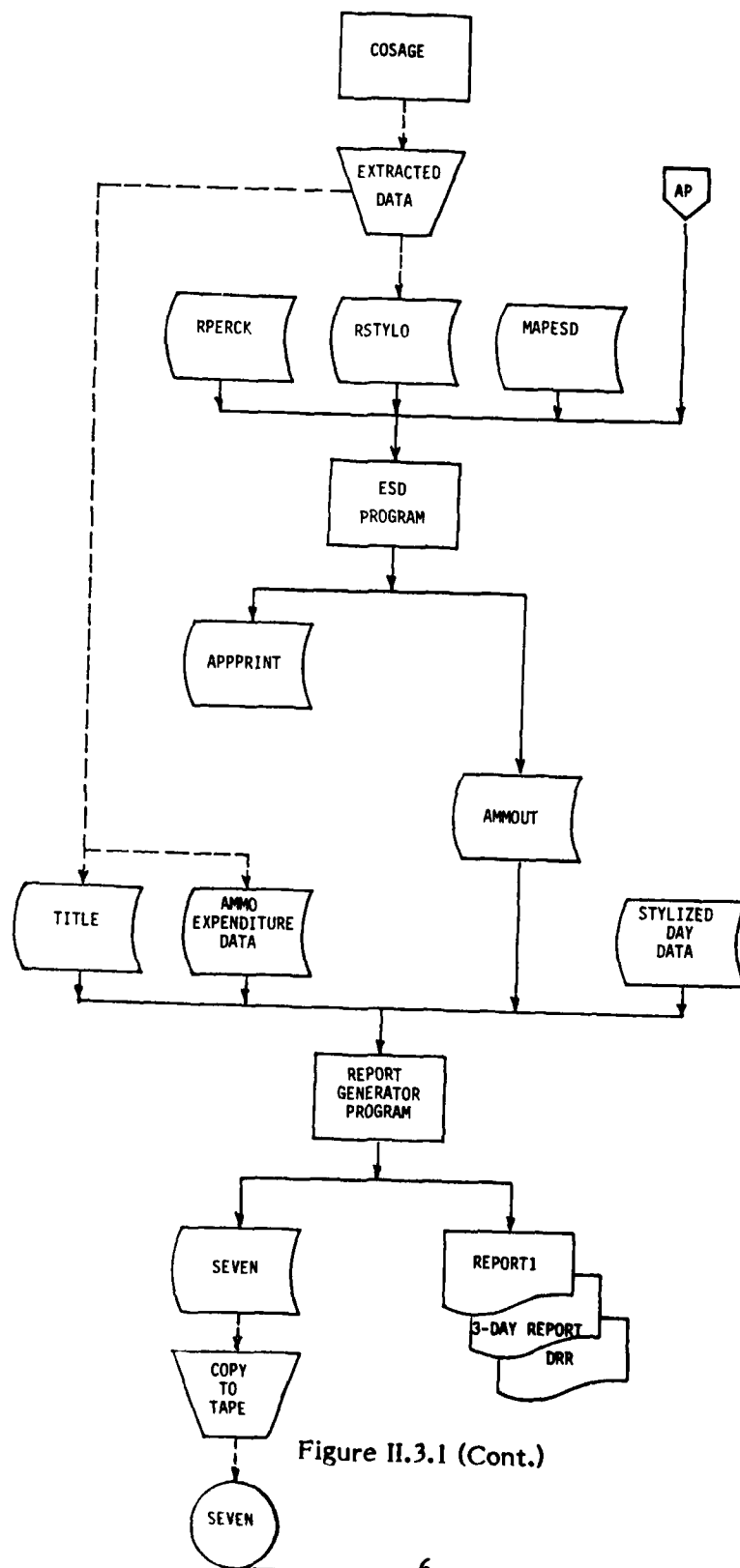


Figure II.3.1 (Cont.)

FILES

*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
L	L	A	T	T	A	M	R	R	A	A	.	.	T	R	D	3	S		
O	O	M	R	R	M	A	P	S	P	M	I	D	I	E	R	D	E		
S	G	M	M	C	M	P	E	T	P	M	S	A	T	P	R	A	V		
S	R	O	A	O	O	E	R	Y	P	O	D	T	L	O		Y	E		
R	E	I	P	N	I	S	C	L	R	U		A	E	R		R	N		
E	P		S	S	N	D	K	O	I	T				T		P			
P										N				I		T			
										T									

PROGRAMS

CEM																		
COSAGE																		
AMMO BUFFER	I	I	I	I	I	O												
ESD					I	I	I	I	O	O								
REPORT											I	I	I	I	O	O	O	O

APP INPUT/OUTPUT SUMMARY

Figure II.3.2

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SECTION III

Chapter I

THE AMMUNITION BUFFER PROGRAM

- 1.1 DESCRIPTION OF PROCESSING: The Ammunition Buffer program consists of two routines. The program driver entitled CEMRDLOG, is labeled as to its function which is to read the theater cycle CEM logistics report. It then calls, within a double DO-LOOP, the subroutine entitled CEMLOS which is labeled as to its function, and reads the daily CEM loss data. The source code files are liberally commented for ease of understanding; the CEMRDLOG routine has approximately 170 lines of executable code and the (CEMRDLOS) CEMLOS subroutine has approximately 180 lines of executable source code. In addition to the read and write functions, numerous computations are performed in both routines to produce the output data.
- 1.1.1 PURPOSE/FUNCTIONS: The Ammunition Buffer (buffer) program is designed to read three data files produced by the Concepts Evaluation Model (CEM) and two manually produced data files. In the course of reading the CEM data files LOGREP and LOSSREP, it searches for selected data by key word identification and location, sequentially. The remaining three files are read sequentially in their entirety. The title alludes to the purpose of the program, that is, to buffer the data coming from the two key combat models. CEM and the Combat Sample Generator (COSAGE). Consequently, it reads data, sums values, equivalences, computes (factors) values and writes the output data for the ensuing programs to utilize.
- 1.1.2 PROGRAM INPUT/OUTPUT STRUCTURE: The program I/O structure is presented in Figure III.1.1. The internal integer value indicates the initial order of input for the input data files. The integer outside the flow chart symbol at the upper left is the logical unit assigned to the input and output data files by the program run (Start file) stream and is expected by the program.
- 1.1.2.A INPUT DATA and DATA BASE: The five input data files are not part of a formal database organization. The files produced by CEM are provided to the user/analyst in the course of the study program progress, and the two manually developed files are maintained by the user analyst and updated in the course of the study program to provide current data. It is incumbent on the user/analyst to properly catalog and maintain the input data files. Likewise the user/analyst must be consulted for the cataloged file name and element name of the current data files. A version name may be appended to the element name to assist in providing a data audit trail and distinguish the current file. The CEM produced data files are lengthy and only a sample of the file is reproduced here in the interest of brevity. The formats of the data read is given in Volume III of this documentation set, Chapter I. Those discussed in that volume are not duplicated here. Below is a summary of the input data files.

- o TRMAPS - The file is maintained on the system in a user designated mass storage device as a file element under a user specified program file. During program execution, it is edited to temporary file labeled logical unit (12), to be used as input to the program. It's name alludes to it's function, that is to provide mapping data to the overall program. It is short, 27 records in length, but the data provided in records 2 and 3 is significant for data reading. This data is alphanumeric characters used by the program in logic tests to determine record location in the program read of the CEM LOGREP and LOSSREP data files. Likewise the data on records 4 - 7 is input as alphanumeric, though presented as integer to enable the program to read, and perform logic tests on the LOGREP and LOSSREP data files. These values are the modeled theater cycles (TC). The sample TRMAPS data file is presented in Figure III.1.2.
- o TRCONS - The file is maintained on the system in a user designated mass storage device as a file element in a user specified program file. During the program execution, it is edited to a temporary file, labeled for the logical unit (11), to be used as input to the program. Its name alludes to the data purpose, which is to provide controlling data for the equivalent stylized day computations in the ESD program. In this (Buffer) program the data is read and then written out to unit 7, the AMMOIN file which is eventually passed to the ESD program. The data values are the stylized quantities of each equipment type (record) played or modeled for each combat sample (column) (4 samples = 1 set) of the set. The example TRCONS file is presented in Figure III.1.3.
- o LOGREP - This file is maintained on the system as a program (print) file by the user/analyst. This file placement is normally the result of the user editing and partitioning the CEM output which is generally on tape at the conclusion of a CEM run. The file resides on a user designated mass storage device. During the program execution the file is referenced to logical unit 10 via the @USE command in the runstream in preparation for input to the program. The file name alludes to the logistics data contained within it. However, not all data is utilized and the file is lengthy. The alphanumeric data input in the file TRMAPS provides logic comparison background data for the program's record by record search.

The initial reading using the sample data in Figure III.1.4 of this file is as follows:

- 1) Records are advanced through DO-loops or go-to's until the "BLUE" and "MARY" from the caption "BLUE FORCE THEATERWIDE LOGISTIC SUMMARY" are found via logic tests of alphanumerics.
- 2) Records are advanced through DO-loops or go-to's until the "PE" from the record caption "PERSNL" is identified via logic tests.

- 3) An advance to the next record is made (for blue) and the values of the record are read beginning with the 1 (for type of personnel (crew member) across the record; twelve real values are read and stored in a temporary array called DATA12(I).
- o LOSSREP - This file is maintained on the system as a program (print) file by the user/analyst. Like the LOGREP, the file placement is normally the result of the user editing and partitioning the CEM output, which is generally on tape at the conclusion of the CEM run. The file resides on a user designated mass storage device. During the program execution this file is referenced to logical unit 15 via the @USE command, in the runstream in preparation for input to the program. The file name alludes to the type of data in it; loss data for each day modeled in the theater campaign. An example of this data is in Figure III.1.5; the report for each day has four sections, a TOTAL section, and PART 1, PART 2 and PART 3 sections. Not all data present in the file is read or used. A record by record search is made until programmed logic tests are satisfied, after which selected data are read and stored in arrays for subsequent computations.

The initial reading of the sample data presented in Figure III.1.5, by the program, would proceed as follows:

- 1) Records are advanced in the CEMLOS routine through a go-to statement until the "LOSSES" in the caption "LOSSES DURING DAY 1" is read and a logic test satisfied.
- 2) The value of "Day", an integer variable is read from the buffer (the record read above is held in the buffer); in this case it is set to the integer 1, or day 1.
- 3) If the value of "Day" is equal to the day counter in the program the next record is read and controlled with go-to statements until it advances two records and reads the "BLUE TOTAL" caption.
- 4) The program then advances records until the "RED CATEGORY CAUSING LOSS" is read, satisfying a logic test.
- 5) The program then advances through the data file records until the "TAN" of the "TANKS (PERM)" caption is read, satisfying a logic test.
- 6) At this position in the file the variable CASTAK is read and set to the real value 169.83, under the "tank" column and the variable TOTTAk is read and set to the value 419.15, under the "Total" column as result of a read of the buffer (again the buffer is holding the contents of the record read in 5 above).
- 7) The program advances a record and reads two selected items of data, setting the variable CSTTAK to 103.96 from the "Tank" column and the variable TTTTAK to 285.25 from the "Total" column.

- o AMMO1 - This file is maintained on the system as a program (PRINTS) file by the user/analyst. Like the other CEM produced files, the file placement is normally the result of the user editing and partitioning the CEM output, which may be on tape at the conclusion of a CEM run. The file resides on a user designated mass storage device. During the program execution, this file is referenced to logical unit 14 via the @USE command in the execution runstream in preparation for input to the program. This file contains ammunition expenditure data (hence the name) in the form of quantities of equipment engaged and hit. This data is used computationally in the program and partitioned into K-kills and M-kills. An example of the AMMO1 data is depicted in Figure III.1.5.

1.1.2.B OUTPUT DATA and DATA FILES: The execution of the Buffer produces two output files for the user in addition to the program execution information from the runstream (TPF\$).

- o AMMOIN - The **AMMOIN data file is the major product of the program execution. It is assigned temporarily in the execution runstream to logical unit 7 with a reserved space of 1000 tracks on a system designated mass storage device. At the conclusion of the runstream execution it is edited into a permanently cataloged user program file. The records and formats of this file is discussed in Volume III, Chapter 1 of this documentation set. A sample of the file is presented in Figure III.1.7.
- o RUNREC - An example of the breakpointed output file RUNREC is depicted in Figure III.1.8. The file is not sent to the printer in the execution runstream, but is retained in a permanent cataloged file for reference as required by the analyst.

1.1.2.C VARIABLE DICTIONARY: The following variables are employed in the program.

<u>Name</u>	<u>Definition</u>
BLCMAM(I)	A one-dimensional integer array employed to map the Blue CEM weapon numbers into the APP format, reserved as 30.
BWPLYD	An integer counter to count the number of Blue weapon types deployed in the force array.
CAT	An integer variable denoting weapon category for program logic tests. The values of the variable may be: 1 = personnel (PERS) 2 = tanks (TANK) 3 = light armored vehicles (APCS)

	4 = helicopters (HELO)
	5 = Anti-tank and Mortor weapons (AT/M)
	6 = artillery weapon systems (ARTY)
DATA12(I)	A one - dimensional real array employed in the programed reading of the logistic report reserved as 12 when twelve values per line are expected.
CASAPC	A real variable used in the program set to the daily "casualty" level or quantity of armored personnel losses.
CASCPE	A real variable, set in the program to the daily "casualty" level or quantity of armored vehicle crew (total) personnel losses.
CASNPE	A real variable, set in the program to the daily "casualty" level or total quantity of personnel (non-crew) losses.
CASTAK	A real variable, set in the program to the daily "casualty level or total quantity of permanent tank losses.
CSTAPC	A real variable, set in the program to the daily "casualty" level or total quantity of temporary armored personnel vehicle losses.
CSTTAK	A real variable, set in the program to the daily "casualty" level or total quantity of temporary tank losses.
DAY	An integer variable, set in the program to the day of combat modeled as read from the loss report.
DC	A common integer variable used as a counter for the day of combat modeled.
DATA15(I)	A one-dimensional real array employed in the programed reading of the logistic report when fifteen values per line are expected; reserved as 15.
DEPLOY (I,J,K,L)	A four-dimensional real array (matrix) used to hold the deployed weapon data by type, category, side and theater cycle; 12 by 6 by 2 by 45.
DEPOLD (I,J)	A two-dimensional real array used to hold the "old" or previous theater cycle deployed weapon data by type and category; 12 by 6.

HYTYPE (I,J)	A two-dimensional integer array used to contain, or is set to the highest "type" by quantity of weapons deployed for each side; 6 by 2.
ISIDE	An integer variable used to denote a forces side, where: 1 = Blue force 2 = Red force
KEH	An integer variable used in the program text for the combat classifications: 1 = Engaged 2 = K, or catastrophic kill (loss) 3 = M, or mobility kill (loss)
LINID	An alphanumeric variable set in the program to read the first four characters of an input record.
LINIF(I)	An alphanumeric, one-dimensional array employed in the program to read a record of data and through logic tests, determine the location of the record pointer in an input file. Reserved as 22.
LOSTPK (I,J,K,L)	A common, four-dimensional, real array employed in the program, denoting the ration of K-kill to total combat losses for each equipment by type, category, side and theater cycle. Reserved 12 by 6 by 2 by 45.
LRCSTK	A real variable set in the program to the ration of daily permanent to total losses of red side tanks.
LRCSIA	A real variable set in the program to the ratio of daily permanent to total losses of red side combat vehicles and armored personnel carriers.
LRCSAR	A real variable set in the program to the ratio of daily permanent to total losses of all red armored vehicles; includes tanks, APC's, ICV's, etc.

LRCSP	A real variable set in the program to the ratio of daily permanent to total losses of red combat personnel.
NCEMWP(I)	A one-dimensional, integer array, set to the number of CEM weapon types for each side.
NGAG	A integer variable used in the program and set to the engagement under evaluation, a value from 1 to 8. Historically the engagement types have been: 1 = Blue attacking Red delay force. 2 = Blue attacking Red prepared defense. 3 = Blue attacking Red hasty defense. 4 = Blue - Red meeting engagement. 5 = Red attacking Blue hasty defense. 6 = Red attacking Blue prepared defense. 7 = Red attacking Blue delay force. 8 = Inactive, Defense light or static.
NODAYS	An integer variable computed to be the value of TRMAX times 4, which is the number of days of combat modeled.
NOS(I)	A one-dimensional integer array that contains the following values: - NOS(1) = total blue weapons modeled - NOS(2) = total number of red weapons modeled. - NOS(3) = total number of combat samples - NOS(4) = total number of equivalent stylized days of combat. - NOS(5) = number of engagements modeled.
NMI(I)	A one-dimensional alphanumeric used to read in characters in groups of 2; reserved as 6 and used in logic tests. Contains the descriptors for each of the 6 weapon categories.

NM2(I)	A one-dimensional alphanumeric array used to read in characters in groups of 6 which contains the descriptors of each of the 6 weapon categories. Used in logic tests and output labels. Reserved as 6.
NM3 (I)	A one-dimensional alphanumeric array used to read in characters in groups of 6, reserved as 44. Within the program values is stored in the array, related to the data for each cycle.
NUMTYP (I, J)	A two-dimensional integer array that holds the number of weapons types in each category by side; 6 by 2.
PLDYSY (I, J, K)	A common, three-dimensional integer array that is set to the status of each weapon type, in each category by side; 12 by 6, by 2. The values used are: 1 = modeled weapon type 0 = weapon type not modeled for category 3 (light armor); on the Red side these values may be found: 1 = Red APC modeled 0 = Weapon type not modeled 9 = Red ICV modeled
RATIOB (I)	A one-dimensional real array that is set to the computed ratio of personnel engaged to the total for the blue side in each combat engagement sample; reserved as 8.
RATIOR(I)	A one-dimensional real array set to the computed ratio of personnel engaged to the total for the red side in each combat engagement sample; reserved as 8.
RDAMCM (I)	A one-dimensional integer array utilized to hold the Red side AMMO weapon numbers and map them into the CEM weapon numbers (merge or equivalence); reserved as 40.
RDCMAM (I)	A one-dimensional integer array utilized to hold the red side CEM weapon numbers and map or equivalence them with the AMMO weapon numbers. Reserved as 40.

REPLEP (I, J, K, L)	A four dimensional real array that is set to the quantity of weapons replacements made from the theater pool for each type weapon, category, side and theater cycle. Reserved as 12 by 6, 2 by 215.
REPLIP (I, J, K, L)	A four dimensional real array that is set to the quantity of weapons replacements made from the General Support maintenance to the theater pool for each weapon type, category, side and theater cycle. Reserved as 12 by 6 by 2 by 45. Not used in the program.
RID (I, J, K, L)	A four dimensional real array that is set to the quantity of weapons (returned) to duty from direct support maintenance, general support maintenance and the theater pool for each weapon, category, side and theater cycle. Reserved as 12 by 6 by 2 by 45.
RWPLYD	An integer variable set to the number of red weapon systems played (modeled).
STYLZD (I)	A one-dimensional integer array set used to read/write the quantities of weapons per stylized sample. Reserved as 9, the normal number of samples is 4.
SUMAPB (I, J, K)	A three dimensional real array that holds the daily sum of blue APC's in each of the three factors groups (engaged, K-kill, M-kill) by the APC type and engagement on CEM sample (8). Reserved as 3 by 12 by 8.
SUMMER (I, J, K)	A three dimensional real array that holds the daily sum of red helicopters in each of the three factor groups (engaged, K-kill, M-kill) by helicopter type and engagement or CEM sample. Reserved as 3 by 5 by 8.
SUMPEB (I, J, K)	A three dimensional real array that holds the daily sum of blue personnel in each of the three factor classes (engaged, K-kill, M-kill) by engagement type (CEM sample), reserved as 3 by 1 by 8.
SUMPER (I, J, K)	A three dimensional real array that holds the daily sum of red personnel in each of the three factor classes (engaged, K-kill, M-kill) by engagement type (CEM sample), reserved as 3 by 1 by 8.

SUMTKB (I, J, K)	A three dimensional real array that holds the daily sum of blue tanks by type in each of the three factor classes (engaged, K-kill, M-kill) by engagement type or CEM sample. Reserved as 3 by 12 by 8.
SUMAPR (I, J, K)	A three dimensional real array that holds the daily sum of red APC's by type in each of the three factor classes (engaged, K-kill, M-kill) by engagement or CEM sample. Reserved as 3 by 12 by 8.
SUMARB (I, J, K)	A three dimensional real array that holds the daily sum of blue artillery by type in each of the three factor classes (engaged, K-kill, M-kill) by engagement or CEM sample. Reserved as 3 by 8 by 8.
SUMARR (I, J, K)	A three dimensional real array that is set to the daily sum of red artillery by type in each of the three factor classes (engaged, K-kill, M-kill) by engagement or CEM sample. Reserved as 3 by 8 by 8.
SUMATB (I, J, K)	A three dimensional real array that is set to the daily sum of blue anti-tank or mortar systems by type in each of the three classes (engaged, K-kill, M-kill) by engagement or CEM sample. Reserved as 3 by 52 by 8.
SUMATR (I, J, K)	A three dimensional real array that is set to the daily sum of red anti-tank or mortar systems by type in each of the three classes (engaged, K-kill, M-kill) by engagement or CEM sample. Reserved as 3 by 52 by 8.
SUMHEB (I, J, K)	A three dimensional real array that is set to the daily sum of blue helicopters by type in each of the three classes (engaged, K-kill, M-kill) by engagement or CEM sample. Reserved as 3 by 5 by 8.
SUMTKR (I, J, K)	A three dimensional real array that is set to the daily sum of red tanks by type in each of the three factor classes (engaged, K-kill, M-kill) by engagement or CEM sample. Reserved as 3 by 5 by 8.
SUMREP (I)	A one-dimensional real array that is set to the sum of red personnel lost to all causes in each engagement or CEM sample. Reserved as 8.

SUMRTN (I)	A one-dimensional real array set to the sum of red tanks of all types lost to all causes in each engagement or CEM sample. Reserved as 8.
SUMRIC (I)	A one dimensional real array set to the sum of red ICV's of all types lost to all causes in each engagement or CEM sample. Reserved as 8.
SUMRAP (I)	A one dimensional real array set to the sum of red APC's of all types, lost to all causes in each engagement type. Reserved as 8.
SUMRIA (I)	A one dimensional real array set to the sum of red ICV/APC's of all types, lost to all causes in each engagement type. Reserved as 8.
SUMRAR (I)	A one dimensional real array set to the sum of red tanks of all types lost to all causes in each engagement type or CEM sample. Reserved as 8.
SURVAS (I, J, K, L)	A four dimensional real array that is set to the quantity of weapons surviving (assets) for each type, category, side and theater cycle. Reserved as 12 by 6 by 2 by 45.
TC	A common integer variable set to the value of the theater cycle, varies from initial value of 1 to 45.
TP	An integer variable set to the value of type weapon as an index in Do-loops.
TRMAX	An integer variable, common, set on input to maximum quantity of theater cycles modeled - usually 45.
THREPL (I, J, K, L)	A four dimensional real array set to quantity of weapons systems, by type replaced in the theater for each side in each theater cycle; reserved as 12 by 6 by 2 by 45.
TOTAPC	A real variable set to the total daily red APC (all types) permanent losses.
TOTCPE	A real variable set to the total daily crew personnel losses.
TOTNPE	A real variable set to the total daily non-crewmember personnel losses.

TOTTAK	A real variable set to the total daily red tank (all types) permanent (K-kill) losses.
TTTTAK	A real variable set to the total daily red tank (all types) temporary (M-kill) losses.
TTTAPC	A real variable set to the total daily red APC (all types) temporary (M-kill) losses.

1.1.3 PROGRAM PROCESSING: The CEMRDLOG routine is the program driver and calls the subroutine CEMRDLOSS for daily data; assuming the normal modeling of a 180 day war, 180 calls will be made to the subroutine. There are 6 common variables and arrays to the program to allow access by both CEMRDLOG and CEMRDLOSS, all other variables are local to the routines. These common variables are:

LOSTPK (12, 6, 2, 45)
 TRMAX
 DC
 TC
 SURVAS (12, 6, 2, 45)
 PLSTAT (12, 6, 2)

The high level program features are depicted in Figure III.1.9.

1.1.3.A PROGRAM RUN DESCRIPTION: The procedure or "START" file to execute the Buffer program is depicted and discussed in Volume III, Chapter 1 of this documentation set. The object program and source code resides in permanently cataloged program file elements under the current user/analyst's user identification number. The execution runstream is designed to be submitted as a batch run to the system. The submission is normally made in the demand mode from a computer terminal. During the program execution, all input data and computations are written out to either the execution runstream (Unit 6) to be captured in the breakpointed file or the output file, AMMOIN (Unit 7). The maintenance programmer or analyst can trace the flow of execution through this medium.

1.1.3.B PROGRAM LOGIC: The program is flow charted in Figures III.1.10 (CEMRDLOG) and Figure III.1.11 (CEMRDLOS). The source (symbolic) code is depicted in Figures III.1.12 (CEMRDLOG) and Figure III.1.13 (CEMRDLOS).

1.1.3.C PROCESSING FEATURES: The Buffer program performs the following instructions:

- o Initializes the program CEMRDLOG
- o Reads/writes the TRMAPS data and counts weapons
- o For each theater cycle reads the LOGREP, part 1, surviving assets data

- o For each theater cycle reads the LOGREP, part 2, deployed, replacement, returned to duty data.
- o Computes the LOSTPK values.
- o Maps CEM weapon system (equipment) numbers to APP system numbers.
- o Reads/writes the TRCONS (stylized quantity) data.
- o Computes daily quantities (cycle quantities divided by 4).
- o Partitions the weapon systems data into direct support and general support quantities.
- o For each day, calls the CEMLOS subroutine to:
 - oo Read the LOSSREP daily data.
 - oo Computes ratios of permanent losses.
 - oo Computes the daily K-kills and M-kills.
 - oo Computes the daily red loss totals.
 - oo Separates close air support losses from other red losses.
 - oo Writes out the computed data.
 - oo Returns control to CEMROLOG.
- o Writes out data for the next call to the subroutine CEMLOS.

1.2 OPERATING ENVIRONMENT: The Buffer program is implemented on the USACAA UNIVAC 1100/82 computer. The program is submitted in a demand mode and is processed in a batch environment for efficient use of resources. It requires approximately 3.5 minutes of CPU time for execution. The program is developed under the UNIVAC architecture (36 bit) and requires approximately 55,000 words (36 - bit) of main core memory for execution.

1.2.1 HARDWARE: The UNIVAC 1100/82 mainframe and peripheral devices supports the program execution. The fixed or removable disk (on-line) storage requirements are as follows:

UNIT 7 - 1000 tracks
 UNIT 8 - 1000 tracks
 UNIT 10 - 1000 tracks

UNIT 11 - default, 128 tracks

UNIT 12 - default, 128 tracks

UNIT 14 - 1000 tracks

UNIT 15 - 1000 tracks

Tape processing is not a part of the program execution. A (user) computer terminal to the system is required. A printer is employed for a hard copy of the output. Normally the operating system executive directs the assignment of the mass storage (disk) devices.

1.2.2 SUPPORT SOFTWARE: The program compilation and execution requires the following system processors:

@FOR - The FORTRAN language processor.

@MAP - The MAP processor or collector to form the executable program from the relocatable object code.

@ED - The system editor processor

1.2.2.A OPERATING SYSTEM: The program was developed and implemented on the UNIVAC 1100/82 operating system. The features of the EXECUTIVE - 8 control language and the standard system library (SYSSLIB and (SYSSRLIB\$) provide the essential support.

1.2.2.B COMPILER: The operating system library contains the FORTRAN IV compiler and is accessed by the EXECUTIVE - 8 command @FOR.

1.2.3 DATA BASE: The data base and files necessary for program execution were discussed in paragraph 1.1.2.A. These files are all FIELDATA and in System Data Format. These files exist as user/analyst cataloged files and elements and are not part of a formal data base structure.

1.3 MAINTENANCE PROCEDURES: The relative size of the Buffer program minimizes the maintenance. The maintenance extends to insuring that a copy of the symbolic code is preserved (on tape or cards), that page by page changes are made to this documentation as changes/maintenance is performed, and that the symobolic code be annotated with comments to insure that future programmers can track the changes. The following information is pertinent to the program maintenance (space provided for notes):

Source (symbolic) code Filename.Elementname:

Absolute (object) code Filename.Element name:

Space Required, source code:

Space Required, absolute code:
Archived tape label, location:

Read/write keys; established by current custodian, name:

1.3.1 PROGRAMMING CONVENTIONS: The program follows standard FORTRAN techniques. High lights are as follows:

- o The program symbolic elements are liberally commented for the functional characteristics.
- o All format statements are declared at the beginning of the program.
- o Implied do-loops are used.
- o Variable definitions are given as commented records at the beginning of the program.

1.3.2 VERIFICATION PROCEDURES: This program is verified by performing test execution runs of the program followed by hand calculation, and comparisons of the results. The sequence of execution is tracked by reviewing the two output files.

1.3.3 ERROR CORRECTION PROCEDURES: The program does not employ any programmed debugging aids or calls to an "error - found" subroutine.

Debugging and error correction is accomplished by an examination of the output. Three types of errors that may occur are:

- o Data (input) errors -- data presented in a mode (integer or real alphanumeric) other than expected by the program may cause an error, which may be presented as a system error.

Data presented in excess of the reserved arrays may induce an error. Debugging of data must be accomplished by a visual examination of the data files (print copy or at the terminal) or tracing the progress via the output files.

- o Program error - program errors are resolved by checking the compilation listing and obtaining and examining a relocatable code listing after the program collection (@MAP) to insure that all references and call addresses are resolved. A post mortum dump may be produced by using the @PMD Executive - 8 command in the runstream and then examining the contents of the instruction (I - BANK) bank and data (D - BANK) bank.
- o System error - the run output file (TPF\$) will list the system diagnosed errors for subsequent tracing and correction. These errors often occur as result of an error in the runstream.

1.3.4 SPECIAL MAINTENANCE PROCEDURES: No special maintenance procedures are developed or required for this program.

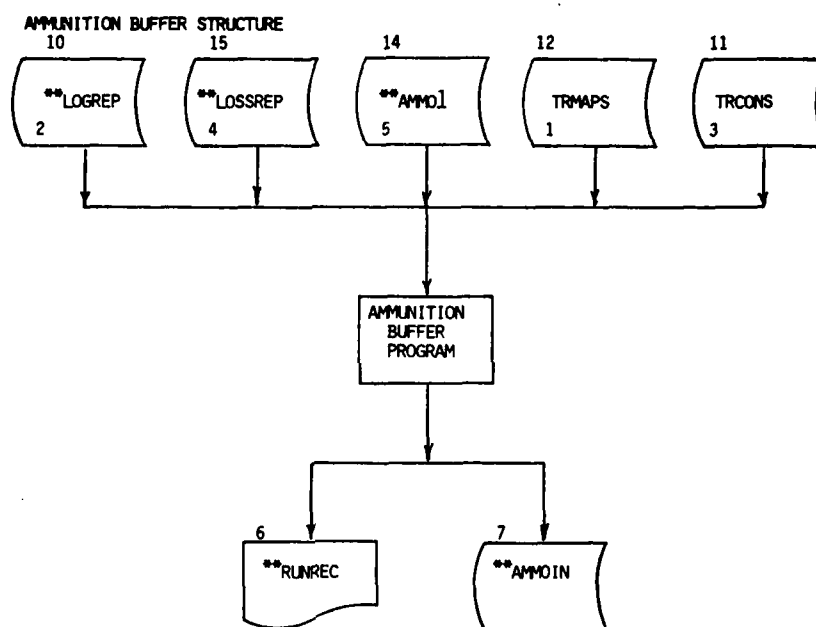


Figure III.1.1

UNCLASSIFIED//37ESDGEN(1),TRHAPS/18JUL80

1	2	3	4	5	6	7	8	9	10	11	12
2	PE	TN	AP	HE	AT	AR					
3	PERS	TANK	APC	HELO	AT/M	ARTY					
4	2	3	4	5	6	7	8	9	10	11	12
5	13	14	15	16	17	18	19	20	21	22	23
6	24	25	26	27	28	29	30	31	32	33	34
7	35	36	37	38	39	40	41	42	43	44	45
8	1	12	12	5	12	8					
9	1	12	12	5	12	8					
10	1										
11	1	1	0	1	1	1	1	1	1	0	
12	1	1	1	1	1	1	1	1	1	1	
13	1	1	1	1	1	1					
14	1	1	1	0	1	1	1	1	1	1	0
15	0	1	1	1	1	1	1				
16	1										
17	1	1	1	1	1	1	0	0	0	0	0
18	1	1	9	9	9	0	1	1	1	1	1
19	1	0	0	0	0	0					
20	1	1	1	1	1	1	0	1	1	1	1
21	1	1	1	1	1	1	1				
22	3	6	4	40	8						
23	1	3	2	2	99	5	29	26	99	14	99
24	37	38	39	99	99	30	99	99	99	99	99
25	1	2	3								
26	4	5	6								
27	1	2	3	4	5	6					

Figure III.1.2

UNCLASSIFIED * 37E50GENTTT-TRCONS/18JUL80				
1	21104	23180	46294	91839
2	58 60	135 286		
3	162 64	142 301		
4	179 184	412 875		
5	9 10	22 45		
6	117 180	273 720		
7	41 41	122 304		
8	46 43	100 212		
9	176 193	446 916		
10	336 370	860 1756		
11	57 63	146 316		
12	6 6 6	10		
13	90 108	216 432		
14	36 44	91 180		
15	14 18	36 72		

Figure III.1.3

BLUE FORCE THEATERIOR LOGISTIC SUMMARY

AT END OF THEATER CYCLE 1

THEATER RESOURCES	COMBAT UNITS	RESOURCES ON HAND			LOSSES TO COMBAT UNITS				GAINS TO THEATER STOCKS			GAINS TO
		THEATER STOCKS	IN REPAIR	TOTAL	COMBAT TEMP	BERM	NONCOMBAT TEMP	PERM	TOTAL	FROM RESUPPLY	FROM REPAIR	
PERSONL	226791.7	5729.0	16385.4	240851.0	15594.0	153571.7	840.5	414.7	120371.0	68246	.0	62622.0
1	17491.6	29.0	1509.1	17029.4	1426.4	13288.0	78.6	38.8	14830.9	346	.0	317.0
2	209250.1	5495.0	14881.3	229826.4	14119.4	140283.7	761.9	375.9	155541.0	68888	.0	62305.0
POL	1063359.8	1448992.7	.0	15552352.5	.0	40275.9	.0	883.3	41159.2	987500	.0	40007.3
1	105952.3	1010775.8	.0	1114728.1	.0	3563.0	.0	101.7	3745.5	51000	.0	3729.2
2	957307.5	1347837.0	.0	14435624.5	.0	36712.1	.0	701.6	37413.7	936580	.0	37103.1
AMMO	130379.7	100972877.0	.0	1010603254.0	.0	8158.5	.0	34.5	8193.0	15200	.0	8130.5
1	10499.5	5100007967.0	.0	1010010464.0	.0	740.6	.0	5.8	746.4	9787	.0	741.0
2	119880.2	449910.5	.0	504790.7	.0	7417.9	.0	28.6	7846.6	5501	.0	7389.5
TKS 5	179.0	2.1	21.9	203.0	11.9	12.5	10.0	2.5	36.9	38	.0	35.9
TKS 6	870.4	.0	215.7	1086.1	145.2	159.1	70.5	11.8	386.6	41	.0	61.0
TKSUN	1049.4	2.1	237.6	1289.1	157.1	171.6	80.5	14.3	823.5	79	.0	96.9
APCS 5	55.0	.0	42.2	97.2	38.0	17.2	3.4	.7	40.0	12	.0	12.0
APCS 6	511.7	.0	197.2	709.0	106.6	54.9	31.6	6.2	158.3	16	.0	16.0
APCS 7	147.4	35.8	57.5	240.7	50.5	40.9	7.1	1.3	99.8	123	.0	87.2
APCSUN	714.1	35.8	297.0	1046.9	254.9	113.0	42.1	8.1	418.1	141	.0	125.2
HELO 3	36.0	.0	16.8	52.8	11.8	24.1	5.1	.9	43.8	.0	.0	.0
HELOUN	36.0	.0	16.8	52.8	11.8	24.1	5.1	.9	43.8	.0	.0	.0
AT/M 5	1629.2	.0	.0	1629.2	.0	552.8	.0	.0	552.8	421	.0	421.0
AT/M 6	1331.3	.0	.0	1331.3	.0	590.8	.0	.0	590.8	.0	.0	.0

Figure III.1.4

BLUE FORCE THEATERWIDE LOGISTIC SUMMARY

AT END OF THEATER CYCLE 1

THEATER RESOURCES	COMBAT UNITS	RESOURCES ON HAND		LOSSES TO COMBAT UNITS				GAINS TO THEATER STOCKS			TO UNIT	
		THEATER STOCKS	IN REPAIR	TOTAL	COMBAT TEMP	PERM	NONCOMBAT TEMP	PERM	TOTAL	FROM RESUPPLY		FROM REPAIR
(CONTINUED FROM PRECEDING PAGE)												
AT/M 7	90.2	4385.5	.0	4475.7	.0	34.3	.0	.0	34.3	4419	.0	33.5
AT/M 8	198.1	.0	.0	198.1	.0	129.9	.0	.0	129.9	32	.0	32.0
AT/M 9	202.0	802.0	.0	1004.0	.0	.0	.0	.0	.0	802	.0	.0
AT/M 10	1995.0	209.0	.0	2204.0	.0	.0	.0	.0	.0	209	.0	.0
AT/M 11	66.0	156.0	.0	222.0	.0	.0	.0	.0	.0	156	.0	.0
AT/M 12	260.0	177.0	.0	437.0	.0	.0	.0	.0	.0	177	.0	.0
ATSUM	771.7	5729.5	.0	11501.2	.0	1307.8	.0	.0	1307.8	6216	.0	486.5
ARTY 4	1232.5	.0	.0	1232.6	.0	.0	.0	43.4	43.4	34	.0	33.9
ARTY 5	988.8	86.1	.0	1074.9	.0	.0	.0	36.1	36.1	121	.0	34.9
ARTY 7	227.7	2.6	.0	230.4	.0	.0	.0	8.6	8.6	11	.0	8.4
ARTY 8	12.0	6.6	.0	18.5	.0	.0	.0	.5	.5	7	.0	.4
ARTSUM	2461.0	95.4	.0	2556.4	.0	.0	.0	88.6	88.6	173	.0	77.6
ART-AM	273956.51147742.0		.0116050498.0	.0	41580.5	.0	.0	.0	41580.5	96029	.0	91287.0
1	67419.2100079402.0		.0100146816.0	.0	12819.2	.0	.0	.0	12819.2	93140	.0	12738.9
2	206542.4 14697348.9		.0 14903883.2	.0	20761.2	.0	.0	.0	20761.2	2889	.0	28548.2

Figure III.1.4 (Cont.)

22KORCA07-RUNSEC/KORCA07-05 AC 06MAY00 UNCLASSIFIED
CEM REPORT GENERATOR

GEN REPORT, GENEXATOR

ARMED FORCE THEATREWIDE LOGISTIC SUMMARY

ARVN FORCE THEATERWIDE LOGISTIC SUMMARY										AT END OF THEATER CYCLE 1				
RESOURCES ON HAND				LOSSES TO COMBAT UNITS				GAINS TO THEATER STOCKS		GAINS				
THEATER RESOURCES	COMBAT UNITS	THEATER STOCKS	IN REPAIR	TOTAL	COMBAT	TEMP	PERM	NONCOMBAT	TEMP	PERM	TOTAL	FROM RESUPPLY	REPAIR	UNIT TO
PERBUL	337717.0	39000.0	9224.0	386043.0	7999.7	49909.3		454.4	1326.4		59389.0	39000		0
POL	58804.3	99974992.0		10100033796.0	0	20623.1		3560.7	0		24103.7	0		24008.2
AMMO	257828.7	13158.6	0	270179.3	0	17428.2		429.5	0		17857.6	30869		17715.9
TNKS 3	1340.6	76.0	86.1	1502.7	19.0	27.9		1.4	66.4		118.4	0		0
TNKS 4	1330.0	100.0	321.8	1751.9	247.4	410.6		1.5	74.5		234.0	0		0
TNKS 5	142.2	2.0	8.2	152.3	1.2	2.5		0.1	7.0		10.0	0		0
TNKS 6	453.6	530.0	30.6	1009.2	0.0	11.3		0.5	22.6		42.4	0		0
TNKSUM	3266.4	698.0	446.8	4411.2	270.4	452.4		3.5	170.4		402.6	0		0
APCS 1	161.3	20.0	106.0	287.3	96.5	20.5		0.2	9.5		126.7	0		0
APCS 2	482.9	40.0	50.7	623.6	26.5	23.9		0.5	24.2		75.1	0		0
APCS 4	775.7	45.0	175.3	1046.1	134.9	26.1		0.8	40.3		162.3	0		0
APCSUM	1419.9	205.0	332.1	1957.0	257.9	70.5		1.5	74.2		204.1	0		0
HELCO 1	0.5	0	0.2	0.7	0.1	0.3		0	0.1		0.5	0		0
HELCSUM	0.5	0	0.2	0.7	0.1	0.3		0	0.1		0.5	0		0
AT/M 1	700.7	0	0	700.7	0	55.3		0	0		55.3	0		0
AT/M 3	10674.2	0	0	10674.2	0	1490.0		0	0		1490.0	0		0
AT/M 4	147.5	0	0	147.5	0	14.5		0	0		14.5	0		0
AT/M 6	62.4	28.0	0	90.4	0	9.6		0	0		9.6	0		0
AT/M 8	70.7	132.0	0	202.7	0	13.3		0	0		13.3	0		0
AT/M 9	530.4	0	0	530.4	0	81.6		0	0		81.6	0		0

73KORZAG1=RUNSEC/KOREA87-05 8C 04MAY80 UNCLASSIFIED

PAGE 10

RED FORCE THEATERWIDE LOGISTIC SUMMARY

AT END OF THEATER CYCLE 1

THEATER RESOURCES	COMBAT UNITS	THEATER STOCKS	IN REPAIR	RESOURCES ON HAND				LOSSES TO COMBAT UNITS				GAINS TO THEATER STOCKS				TO UNIT		
				TOTAL	TEMP	COMBAT PERM	NONCOMBAT TEMP	PERM	TOTAL	FROM RESUPPLY	FROM REPAIR	GAINS						
(CONTINUED FROM PRECEDING PAGE)																		
AT/M10	976.1	1000.0	.0	1976.1	.0	157.9	.0	.0	.0	157.9	0	.0	.0	.0				
AT/M11	2142.0	1018.0	.0	3160.0	.0	.0	.0	.0	.0	.0	0	.0	.0	.0				
AT/M12	3240.0	6000.0	.0	9240.0	.0	.0	.0	.0	.0	.0	0	.0	.0	.0				
ATSUM	18543.9	8178.0	.0	26721.9	.0	1823.1	.0	.0	.0	1823.1	0	.0	.0	.0				
ARTY 1	1282.5	346.2	.0	1628.7	.0	.0	.0	48.3	.0	45.3	0	.0	.0	43.8				
ARTY 2	748.2	.0	.0	748.2	.0	.0	.0	23.8	.0	23.8	0	.0	.0	.0				
ARTY 3	2748.7	92.2	.0	2840.9	.0	.0	.0	97.1	.0	97.1	0	.0	.0	93.8				
ARTY 4	103.9	.0	.0	103.9	.0	.0	.0	4.1	.0	4.1	0	.0	.0	.0				
ARTY 5	1041.2	.0	.0	1041.2	.0	.0	.0	38.8	.0	38.8	0	.0	.0	.0				
ARTY 6	3227.1	499.1	.0	3726.2	.0	.0	.0	118.8	.0	118.8	0	.0	.0	114.9				
ARTY 7	418.4	.1	.0	418.5	.0	.0	.0	13.6	.0	13.6	0	.0	.0	2.5				
ARTY 8	47.9	1.2	.0	49.2	.0	.0	.0	1.8	.0	1.8	0	.0	.0	1.8				
ARTSUM	157.9	53.8	.0	10591.7	.0	.0	.0	343.3	.0	343.3	0	.0	.0	287.2				
ART-AM	809931.9	.0	.0	509931.9	.0	104888.1	.0	.0	.0	104888.1	93039.0	.0	.0	93039.0				

Figure III.1.4 (Cont.)

CEN REPORT GENERATOR
 '23KORCAB2-RUNSEC/KORCAB7-05 SC 06MAY00 UNCLASSIFIED

BLUE

COMBAT UNIT SUMMARY

ALL UNITS AT END OF DIVISION CYCLE 16

THEATER RESOURCES	COMBAT UNIT STATUS AFTER RESUPPLY			COMBAT UNIT SUPPORT BEFORE RESUPPLY			TOTAL UNIT LOSSES		CUMULATIVE COMBAT UNIT LOSSES			
	AUTH- ORIZED	MANO ON	PER- CENT	AVAIL- ABLE	REQUI- RED	PER- CENT	LOSSES	COMBAT TEMP PERM	NONCOMBAT TEMP PERM	COMBAT TEMP PERM	NONCOMBAT TEMP PERM	TOTAL
PERSONNEL	394244.9	241784.2	61.3	8533.3	140845.0	5.3	113209.6	26712.3	288235.9	1763.2	870.0	202581.5
1	38914.5	18919.5	47.4	43.2	21030.9	.2	4830.1	2217.8	19231.1	146.0	72.0	21447.0
2	354230.4	222664.8	62.9	8500.0	139800.9	6.1	106373.6	24494.6	236004.8	1617.2	798.0	241814.6
POL	1136757.0	1136433.0	100.0	0.0	0.0	0.0	43711.4	0.0	83164.5	0.0	1706.0	89870.5
1	110293.0	110269.4	100.0	1056851.7	571.7	999.9	3375.4	0.0	6841.5	0.0	279.5	7120.9
2	1026464.0	1026163.6	100.0	0.0	0.0	999.9	40336.0	0.0	76323.1	0.0	1426.4	37749.6
AMMO	151848.7	151794.0	100.0	0.0	0.0	999.9	10392.1	0.0	18533.6	0.0	51.4	18585.1
1	11975.9	11970.5	100.0	0.0	0.0	999.9	799.2	0.0	6536.2	0.0	9.5	1545.7
2	139892.8	139823.5	100.0	462158.7	1392.4	999.9	9592.9	0.0	16997.4	0.0	42.1	17039.5
TKNS 1	108.0	107.5	99.6	698.9	3.3	999.9	6.4	1.4	.7	4.0	.2	6.9
TKNS 3	9.0	7.7	85.2	0.0	3.3	.0	1.3	1.9	.2	.2	.0	1.3
TKNS 5	180.0	179.0	99.5	36.5	4.8	747.4	29.2	17.0	22.8	21.3	4.9	66.1
TKNS 6	1292.0	930.4	72.0	32.9	391.8	8.4	293.8	220.5	298.7	338.6	23.2	680.0
TKNSUN	1589.0	1284.6	77.1	748.3	400.2	192.0	330.3	239.7	322.5	144.2	27.4	783.8
APCS 1	24.0	23.8	99.3	528.7	.9	999.9	4.2	2.9	.6	.6	.1	4.2
APCS 2	157.0	156.1	99.4	305.7	4.5	999.9	21.8	15.1	1.9	4.2	.6	21.8
APCS 3	42.0	41.8	99.6	211.0	.9	999.9	5.0	2.9	.8	1.1	.2	5.0
APCS 4	31.0	30.9	99.5	139.9	.7	999.9	2.8	1.6	.2	.8	.1	2.8

Figure III.1.4 (Cont.)

BLUE

COMBAT UNIT SUMMARY

ALL UNITS AT END OF DIVISION CYCLE 14

THEATER RESOURCES	COMBAT UNIT STATUS AFTER RESUPPLY			COMBAT UNIT SUPPORT BEFORE RESUPPLY			TOTAL UNIT LOSSES		CUMULATIVE COMBAT UNIT LOSSES			
	AUTH ORIED	HAND	PERCENT	AVAILABLE	REQUIRED	PERCENT	LOSSES	UNIT	COMBAT TEMP	COMBAT PERM	NONCOMBAT TEMP	NONCOMBAT PERM
(CONTINUED FROM PRECEDING PAGE)												
APCS 5	109.0	70.3	67.6	6.0	78.2	16.8	90.0	44.0	28.1	6.7	1.2	100.0
APCS 6	759.0	542.1	71.4	24.9	218.8	11.5	152.1	257.8	81.2	60.2	11.1	410.3
APCS 7	150.0	144.8	96.5	156.2	13.5	99.9	72.9	80.2	75.3	14.5	2.6	172.7
APCSUM	1282.0	1029.8	81.6	1373.1	277.5	99.9	298.8	424.4	186.2	80.2	15.9	716.8
MELO 1	48.0	43.7	91.0	1.6	6.0	27.2	17.3	3.9	10.2	3.0	.3	17.3
MELO 3	54.0	43.8	81.1	2.1	17.4	12.2	54.3	26.5	58.7	11.0	1.9	78.1
MELO 4	74.0	49.8	67.3	.0	24.2	.0	24.2	6.4	13.2	4.1	.5	24.2
MELOSUM	176.0	137.3	78.0	3.8	47.5	7.9	95.8	36.8	82.1	18.1	2.7	139.6
AT/M 1	45.0	45.0	100.0	9999.0	.0	.0	.0	.0	.0	.0	.0	.0
AT/M 3	147.0	145.1	98.7	9985.1	9.4	99.9	23.4	.0	23.4	.0	.0	23.4
AT/M 4	94.0	92.4	98.3	81.7	17.8	45.1	44.1	.0	44.1	.0	.0	44.1
AT/M 5	2277.0	2105.0	92.4	52.6	224.7	23.4	401.2	.0	1014.0	.0	.0	1014.0
AT/M 6	2339.0	1303.5	58.3	.0	938.5	.0	329.7	.0	930.5	.0	.0	930.5
AT/M 7	115.0	114.1	99.2	8782.7	4.6	99.9	23.7	.0	48.0	.0	.0	48.0
AT/M 8	350.0	224.8	64.2	4.0	129.2	3.1	89.2	.0	189.2	.0	.0	189.2
AT/M 9	334.0	334.0	100.0	1404.0	.0	.0	.0	.0	.0	.0	.0	.0
AT/M10	1995.0	1995.0	100.0	418.0	.0	.0	.0	.0	.0	.0	.0	.0
AT/M11	44.0	44.0	100.0	312.0	.0	.0	.0	.0	.0	.0	.0	.0

Figure III.1.4 (Cont.)

CEM REPORT GENERATOR
 23K0R2A20R0NSEC/K0RCA07005 SC 00A0V00 00NCLASS1P1200

BLUE

COMBAT UNIT SUMMARY

ALL UNITS AT END OF DIVISION CYCLE 16

THEATER RESOURCES	COMBAT UNIT STATUS AFTER RESUPPLY				COMBAT UNIT SUPPORT BEFORE RESUPPLY				TOTAL UNIT LOSSES				CUMULATIVE COMBAT UNIT LOSSES			
	AUTH ORIG	ON HAND	PERC CENT	PERC CENT	AVAILABLE REQUIRED	PERC CENT	PERC CENT	PERC CENT	TEMP	PERM	COMBAT	NONCOMBAT	TEMP	PERM	COMBAT	NONCOMBAT
(CONTINUED FROM PRECEDING PAGE)																
ATV/H12	266.0	266.0	100.0	100.0	394.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATSUM	2925.0	6690.9	89.4	89.4	21193.0	1310.2	999.9	999.9	999.9	999.9	3241.1	0.0	0.0	0.0	2201.1	0.0
ARTV 2	59.0	59.0	99.9	99.9	395.3	0.0	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	0.0	0.0
ARTV 3	12.0	12.0	99.9	99.9	193.0	0.0	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	0.0	0.0
ARTV 4	1512.0	1491.1	98.0	98.0	4.9	24.0	12.0	999.9	999.9	999.9	0.0	0.0	0.0	0.0	98.7	98.7
ARTV 5	1080.0	1078.7	99.9	99.9	171.6	4.9	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	76.8	76.8
ARTV 6	9.0	9.0	99.9	99.9	34.9	0.0	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	0.0	0.0
ARTV 7	228.0	227.7	99.9	99.9	6.0	1.9	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	17.4	17.4
ARTV 8	12.0	12.0	99.9	99.9	13.2	0.0	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	0.0	0.0
ARTSUM	2907.0	2874.4	98.9	98.9	719.2	43.0	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	198.2	198.2
A AM 1	318790.0	318429.5	99.9	99.9	0.0	7207.0	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	0.0	0.0
ART AM	318790.0	318429.5	99.9	99.9	0.0	7207.0	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	0.0	0.0
A AM 1	73694.5	73585.5	99.9	99.9	0.0	1979.7	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	0.0	0.0
A AM 2	245095.5	244844.0	99.9	99.9	0.0	8220.1	999.9	999.9	999.9	999.9	0.0	0.0	0.0	0.0	0.0	0.0

Figure III.1.4 (Cont.)

RED

COMBAT UNIT SUMMARY

ALL UNITS AT END OF DIVISION CYCLE 16

THEATER RESOURCES	COMBAT UNIT STATUS AFTER RESUPPLY				COMBAT UNIT SUPPORT BEFORE RESUPPLY				TOTAL UNIT LOSSES		CUMULATIVE COMBAT UNIT LOSSES			
	AUTH- ORIZED	ON HAND	PERC CENT	PERC CENT	AVAILABLE	REQUIRED	CENT	PERC CENT	LOSSES	UNIT	COMBAT TEMP	COMBAT PERM	NONCOMBAT TEMP	NONCOMBAT PERM
PERBUN	396673.0	292919.1	73.8	77097.2	103820.7	79.3	45393.4	13799.6	87209.5	2493.6	1230.4	104733.2		
POL	58923.0	56820.6	96.7	0.0	3245.3	99.9	24751.4	0.0	44247.4	0.0	4687.7	48935.2		
ARM0	257169.3	257026.0	99.9	26354.9	26677.0	919.3	20390.9	0.0	37731.9	0.0	515.6	38248.6		
TNKS 3	1486.0	1388.1	93.4	78.6	267.9	29.3	152.4	56.3	83.1	125.9	2.4	207.9		
TNKS 4	2044.0	1677.2	82.1	116.3	986.0	11.8	252.8	321.2	532.3	130.6	2.7	986.8		
TNKS 5	183.0	127.6	69.7	2.3	25.4	8.9	14.6	3.7	8.1	13.3	0.3	25.4		
TNKS 6	476.0	396.8	83.4	520.9	99.2	525.3	56.8	22.5	33.2	42.6	0.9	99.2		
TNKSUN	9189.0	2789.8	30.4	718.0	1379.2	52.1	476.6	403.8	650.6	312.4	6.4	1379.2		
APCS 1	288.0	91.8	31.9	30.6	196.2	15.6	69.4	153.3	27.2	15.4	0.3	196.2		
APCS 2	568.0	377.4	66.4	95.0	160.6	59.1	85.6	53.3	61.7	44.7	0.9	160.6		
APCS 4	978.0	579.3	59.2	109.4	396.7	27.4	176.5	277.2	48.5	71.6	1.5	396.7		
APCSUN	1824.0	1068.4	58.6	235.0	755.6	31.1	351.5	483.7	137.4	131.8	2.7	755.6		
HELO 1	1.0	0.2	20.0	0.2	0.8	27.3	0.3	0.2	0.4	0.2	0.0	0.8		
HELOSUM	1.0	0.2	20.0	0.2	0.8	27.3	0.3	0.2	0.4	0.2	0.0	0.8		
ATM 1	756.0	657.3	86.9	0.0	98.7	0.0	43.4	0.0	98.7	0.0	0.0	98.7		

Figure III.1.4 (Cont.)

LOSSES DURING DAY 1

BLUE TOTAL

DAILY COMBAT DAMAGED (PERM + TEMP) VS CAUSE TABLE

73EUROPE88, RUN E8865 05DEC81 *UNCLASSIFIED*

BLUE CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE BLUE RED CATEGORY CAUSING LOSS		CAS	TOTAL
			AT/M	MELOS		
TANKS (PERM)	169.83	33.80	9.05	111.00	4.77	419.15
(TEMP)	103.96	21.62	5.11	76.90	34.97	285.25
APC (PERM)	92.89	43.17	3.77	10.08	13.60	231.82
(TEMP)	299.72	158.19	14.45	36.94	78.04	739.37
AT/M	57.20	190.84	7.11	6.11	424.81	705.20
PERSONNEL (INCLUDES AID STATION & R.T.D.):						
CREW	908.58	302.85	44.51	326.73	167.27	2280.42
MELO CREW						47.35
NONCRM	609.62	1362.92	46.70	47.04	4451.01	6720.51
ARTILLERY	.00	.00	.00	.00	.00	.00
MELOS						49.51
RED CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE RED BLUE CATEGORY CAUSING LOSS		CAS	TOTAL
			AT/M	MELOS		
TANKS (PERM)	196.96	104.03	43.23	162.99	14.07	647.45
(TEMP)	99.97	47.97	27.99	83.07	24.86	343.23
APC (PERM)	141.14	196.91	56.21	32.18	8.37	584.49
(TEMP)	182.99	243.58	90.29	41.68	12.48	641.44
AT/M	21.24	50.50	10.51	9.53	325.37	462.51
PERSONNEL (INCLUDES AID STATION & R.T.D.):						
CREW	1002.81	978.65	352.77	519.10	96.66	3609.93
MELO CREW						56.39
NONCRM	106.06	248.00	49.34	38.31	2092.09	2766.46
ARTILLERY	.00	.00	.00	.00	.00	.00
MELOS						70.49

Figure III.1.5

LOSSES DURING DAY 1

BLUE PART 1

DAILY COMBAT DAMAGED (PERM + TEMP) VS CAUSE TABLE

73EUROPE88. RUN F8865 05DEC81 *UNCLASSIFIED*

BLUE CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE RED		BLUE CATEGORY CAUSING LOSS	CAS	TOTAL
			AT/M	HELCS	ARTY		
TANKS (PERM)	5.99	.50	.13	4.01	.24	6.57	17.43
TANKS (TEMP)	23.68	3.69	.72	23.88	2.79	3.39	57.85
APC (PERM)	6.87	5.02	.22	2.76	1.82	4.02	20.70
APC (TEMP)	17.41	12.42	.57	6.48	8.41	8.95	54.28
AT/M	5.06	20.70	1.43	.68	33.40	1.28	62.54
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	73.28	25.83	2.16	55.28	16.90	29.64	203.08
HELO CREW							9.25
NONCRM	35.01	148.65	6.52	6.40	305.77	9.94	512.29
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELCS							11.91
RED CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE BLUE		RED CATEGORY CAUSING LOSS	CAS	TOTAL
			AT/M	HELCS	ARTY		
TANKS (PERM)	30.26	8.27	1.48	38.37	4.87	6.71	89.97
TANKS (TEMP)	15.65	3.63	.91	19.54	8.83	3.16	51.73
APC (PERM)	20.71	9.50	2.00	10.21	2.26	8.76	53.44
APC (TEMP)	30.62	16.12	3.78	15.91	3.48	4.12	74.02
AT/M	2.62	2.16	.26	1.72	49.54	2.52	58.82
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	156.75	60.16	13.23	135.72	31.31	36.59	433.75
HELO CREW							6.20
NONCRM	13.02	14.25	1.42	8.23	275.14	12.93	324.99
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELCS							7.75

Figure III.1.5 (Cont.)

LOSSES DURING DAY 1

BLUE PART 2

DAILY COMBAT DAMAGED (PERM + TEMP) VS CAUSE TABLE

73EUROPE88. RUN F8865 05DEC81 *UNCLASSIFIED*

BLUE CATEGORY LOST	LOSSES OF SIDE BLUE RED CATEGORY CAUSING LOSS						TOTAL
	TANKS	APCS	AT/M	HELOS	ARTV	CAS	
TANKS (PERM)	69.41	15.29	3.38	61.35	2.10	39.53	191.06
(TEMP)	33.77	8.23	1.66	31.54	15.61	18.60	109.42
APC (PERM)	22.09	21.91	1.46	4.90	6.10	27.71	84.17
(TEMP)	115.61	78.35	5.27	19.87	31.63	61.68	312.41
AT/M	27.23	118.19	3.33	3.71	217.48	9.67	379.61
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	298.58	125.92	14.44	190.80	63.17	178.88	871.79
HELO CREW							11.91
NONCRM	144.47	515.47	12.11	17.34	1125.24	51.06	1865.69
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELOS							11.91
RED CATEGORY LOST	LOSSES OF SIDE RED BLUE CATEGORY CAUSING LOSS						TOTAL
	TANKS	APCS	AT/M	HELOS	ARTV	CAS	
TANKS (PERM)	86.46	47.76	11.98	42.92	4.11	47.21	240.45
(TEMP)	44.07	22.55	8.03	22.15	7.14	22.22	126.16
APC (PERM)	63.58	65.05	15.24	8.68	3.07	61.13	216.75
(TEMP)	85.59	91.51	27.45	12.07	4.84	28.77	250.22
AT/M	9.17	19.77	2.96	2.37	137.11	15.96	187.32
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	455.10	372.44	101.73	138.82	30.64	255.31	1354.04
HELO CREW							27.90
NONCRM	47.15	102.44	14.44	11.17	824.78	91.00	1090.98
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELOS							34.87

Figure III.1.5 (Cont.)

LOSSES DURING DAY 1		BLUE PART 3		DAILY COMBAT DAMAGED (PERM + TEMP) VS CAUSE TABLE ***** 73EUROPER88, RUN 18865 05DEC81 *UNCLASSIFIED*			
LOSSES OF SIDE BLUE		RED CATEGORY CAUSING LOSS					
BLUE CATEGORY LOST	TANKS	APCS	AT/M	HELOS	ARTY	CAS	TOTAL
TANKS (PERM)	94.44	18.01	5.54	45.65	2.42	44.60	210.65
(TEMP)	46.51	9.70	2.73	21.48	16.56	20.99	117.97
APC (PERM)	63.94	16.23	2.09	2.43	5.68	36.57	126.95
(TEMP)	166.70	67.41	8.61	10.59	38.00	81.41	372.72
AT/M	24.92	51.96	2.36	1.72	173.93	8.17	263.05
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	536.73	151.10	27.91	140.65	87.21	261.96	1205.55
HELO CREW							26.19
NONCRM	430.15	698.80	28.07	23.30	3020.00	142.22	4342.53
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELOS							26.19
LOSSES OF SIDE RED		BLUE CATEGORY CAUSING LOSS					
RED CATEGORY LOST	TANKS	APCS	AT/M	HELOS	ARTY	CAS	TOTAL
TANKS (PERM)	80.24	48.00	29.76	81.70	5.07	71.90	316.67
(TEMP)	40.25	21.78	19.04	41.38	8.87	33.84	165.15
APC (PERM)	56.85	122.36	38.97	13.30	2.99	79.67	314.14
(TEMP)	66.78	135.95	59.06	13.70	4.09	37.49	317.07
AT/M	9.46	28.57	7.29	5.44	138.73	26.87	216.36
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	390.96	546.06	237.81	244.57	34.49	366.99	1820.89
HELO CREW							22.30
NONCRM	45.88	131.31	33.49	18.90	657.55	120.52	1007.65
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELOS							27.87

Figure III.1.5 (Cont.)

LOSSES DURING DAY 2

BLUE TOTAL

DAILY COMBAT DAMAGED (PERM + TEMP) VS CAUSE TABLE

 73EUROPE88, RUN 08865 05DEC81 *UNCLASSIFIED*

BLUE CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE BLUE RED CATEGORY CAUSING LOSS				CAS	TOTAL
			AT/M	HELOS	ARTV			
TANKS (PERM)	178.29	32.75	10.51	138.40	4.72	100.98		465.65
(TEMP)	166.74	36.40	10.56	118.08	39.44	47.52		418.74
APC (PERM)	78.32	59.56	5.83	9.84	12.39	61.72		227.68
(TEMP)	300.39	194.73	19.36	35.83	66.20	137.38		753.90
AT/M	67.21	283.46	9.22	6.15	523.95	23.34		913.33
PERSONNEL (INCLUDES AID STATION & R.T.D.):								
CREW	973.73	374.31	61.21	497.75	155.73	452.27		2515.02
HELO CREW								107.94
NONCRM	677.31	2229.10	65.32	77.81	4993.95	228.29		8271.78
ARTILLERY	.00	.00	.00	.00	.00	.00		.00
HELOS								119.50
RED CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE RED BLUE CATEGORY CAUSING LOSS				CAS	TOTAL
			AT/M	HELOS	ARTV			
TANKS (PERM)	284.47	135.69	42.98	309.31	31.74	100.45		904.64
(TEMP)	144.58	63.69	28.35	157.39	55.56	47.27		496.85
APC (PERM)	202.59	203.86	55.67	82.03	15.00	123.56		682.70
(TEMP)	286.72	300.38	97.59	118.18	22.83	58.15		883.85
AT/M	44.18	69.70	10.74	24.17	619.68	43.61		812.09
PERSONNEL (INCLUDES AID STATION & R.T.D.):								
CREW	1475.70	1140.58	360.31	1083.20	201.52	526.37		4791.67
HELO CREW								122.01
NONCRM	243.03	406.89	63.18	136.85	3737.24	265.34		4852.53
ARTILLERY	.00	.00	.00	.00	.00	.00		.00
HELOS								152.51

Figure III.1.5 (Cont.)

LOSSES DURING DAY 2		DAILY COMBAT DAMAGED (PERM + TEMP) VS CAUSE TABLE					

		73EUROPE88. RUN F8865 05DEC81 *UNCLASSIFIED*					
		BLUE PART 1					
BLUE CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE BLUE RED CATEGORY CAUSING LOSS			CAS	TOTAL
			AT/M	HELOS	ARTY		
TANKS (PERM)	42.18	5.47	1.53	11.30	1.45	35.22	97.14
(TEMP)	100.14	21.71	6.14	55.36	14.50	16.57	214.42
APC (PERM)	36.85	26.81	2.48	4.19	4.62	20.64	95.60
(TEMP)	112.90	68.04	6.25	11.35	21.65	45.95	266.12
AT/M	24.45	104.88	3.12	1.91	172.73	7.30	314.40
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	396.56	149.93	21.95	124.47	55.61	157.62	906.10
HELD CREW							48.91
NONCRM	222.38	1058.15	22.01	22.44	1773.13	76.43	3174.54
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELOS							60.47
RED CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE RED BLUE CATEGORY CAUSING LOSS			CAS	TOTAL
			AT/M	HELOS	ARTY		
TANKS (PERM)	128.37	64.54	10.44	225.55	25.96	15.55	470.40
(TEMP)	65.49	28.86	6.54	114.54	45.71	7.32	268.46
APC (PERM)	97.17	79.61	13.66	66.46	11.00	20.49	288.38
(TEMP)	121.60	112.97	25.29	93.95	16.71	9.64	380.14
AT/M	23.90	31.63	3.32	18.16	363.19	10.01	450.20
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	678.93	472.95	91.23	816.07	160.64	85.72	2305.54
HELD CREW							22.84
NONCRM	124.60	172.85	18.45	104.89	2038.49	57.26	2516.55
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELOS							28.54

Figure III.1.5 (Cont.)

LOSSES DURING DAY 2		DAILY COMBAT DAMAGED (PERM + TEMP) VS CAUSE TABLE						
-----		*****						
BLUE PART 2		73EUROPE88. RUN F8865 05DEC81 *UNCLASSIFIED*						
BLUE CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE BLUE		RED CATEGORY CAUSING LOSS	ARTY	CAS	TOTAL
			AT/M	HELOS				
TANKS (PERM)	84.37	18.62	5.82	79.66	2.25	47.01		237.73
(TEMP)	41.11	10.03	2.87	40.40	18.00	22.12		134.53
APC (PERM)	21.21	23.50	2.47	3.45	5.22	27.56		83.42
(TEMP)	118.93	87.36	8.95	14.80	28.76	61.34		320.14
AT/M	29.74	143.05	3.64	2.58	265.52	12.06		456.59
PERSONNEL (INCLUDES AID STATION & R.T.D.):								
CREW	332.14	143.44	24.60	221.63	63.37	192.40		977.58
HELO CREW								21.48
NONCRM	205.73	746.26	17.85	15.59	1725.60	79.71		2790.73
ARTILLERY	.00	.00	.00	.00	.00	.00		.00
HELOS								21.48
RED CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE RED		BLUE CATEGORY CAUSING LOSS	ARTY	CAS	TOTAL
			AT/M	HELOS				
TANKS (PERM)	112.00	46.65	14.78	45.55	2.02	35.57		256.58
(TEMP)	57.64	23.31	10.10	23.41	3.61	16.74		134.80
APC (PERM)	76.28	63.63	18.60	11.83	1.64	44.53		216.52
(TEMP)	125.07	107.76	34.77	18.83	2.70	20.96		310.08
AT/M	16.67	25.50	4.42	4.90	159.64	17.38		228.51
PERSONNEL (INCLUDES AID STATION & R.T.D.):								
CREW	589.95	385.87	125.99	160.38	15.63	188.93		1466.76
HELO CREW								57.61
NONCRM	92.22	145.52	23.35	24.65	916.99	95.70		1298.42
ARTILLERY	.00	.00	.00	.00	.00	.00		.00
HELOS								72.01

Figure III.1.5 (Cont.)

LOSSES DURING DAY 2

BLUE PART 3

DAILY COMBAT DAMAGED (PERM + TEMP) VS CAUSE TABLE

 73EUROPE88. RUN F8864 05DEC81 *UNCLASSIFIED*

BLUE CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE RED CATEGORY CAUSING		BLUE LOSS ARTY	CAS	TOTAL
			AT/M	HELOS			
TANKS (PERM)	51.74	8.65	3.16	47.44	1.03	18.76	130.78
(TEMP)	25.48	4.66	1.56	22.32	6.94	6.83	69.79
APC (PERM)	20.26	9.24	.88	2.21	2.55	13.52	48.66
(TEMP)	68.57	39.33	4.16	9.68	15.79	30.10	167.64
AT/M	13.02	35.53	2.46	1.66	85.70	3.97	142.34
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	245.04	80.94	14.66	151.65	36.76	102.26	631.32
HELD CREW							37.55
NONCRW	249.19	424.70	25.47	39.78	1495.23	72.15	2306.52
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELOS							37.55
RED CATEGORY LOST	TANKS	APCS	LOSSES OF SIDE BLUE CATEGORY CAUSING		RED LOSS ARTY	CAS	TOTAL
			AT/M	HELOS			
TANKS (PERM)	44.10	24.49	17.76	38.21	3.76	49.16	177.48
(TEMP)	21.46	11.52	11.71	19.43	6.23	23.14	93.49
APC (PERM)	29.14	60.62	23.41	3.73	2.34	58.50	177.74
(TEMP)	40.05	79.66	37.54	5.40	3.39	27.53	193.58
AT/M	3.61	12.57	3.01	1.11	96.85	16.23	133.38
PERSONNEL (INCLUDES AID STATION & R.T.D.):							
CREW	210.82	281.75	143.09	106.75	25.17	251.26	1018.85
HELD CREW							41.56
NONCRW	26.21	88.53	21.39	7.30	647.72	109.54	900.68
ARTILLERY	.00	.00	.00	.00	.00	.00	.00
HELOS							51.95

Figure III.1.5 (Cont.)

	00	0	00	0	00	0	00	0	00	0	00	0	00	0	0
	00	0	00	0	00	0	00	0	00	0	00	0	00	0	0
	00	0	00	0	00	0	00	0	00	0	00	0	00	0	0
	00	0	00	0	00	0	00	0	00	0	00	0	00	0	0
DAILY ENGAGED AND HIT WEAPONS	00	0	00	0	00	0	00	0	00	0	00	0	00	0	0
	00	00	00	00	00	00	00	00	00	00	00	00	00	00	0
	00	00	00	00	00	00	00	00	00	00	00	00	00	00	0
	00	00	00	00	00	00	00	00	00	00	00	00	00	00	0
	00	00	00	00	00	00	00	00	00	00	00	00	00	00	0
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	0
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	0
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	0
	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000	0
	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	0
AMMO	1:1	21	31	41	51	61	71	81	91	101	111	121	131	141	151
	161	171	181	191	201	211	221	231	241	251	261	271	281	291	301
	311	321	331	341	351	361	371	381	391	401	411	421	431	441	451
	461	471	481	491	501	511	521	531	541	551	561	571			

Figure III.1.6

54:	234.00	4.0000	7.7187	10.175	7.7187	149.40
55:	700.00	34.450	34.4594	59.565	32.894	451.90
56:	1337.0	3.5000	49.514	43.115	49.519	719.30
57:	1176.0	8.5000	58.406	53.625	56.406	610.70
58:	4090.0	16.725	147.01	284.086	147.01	1145.9
59:	4945.0	0.0000	167.74	131.95	164.44	1234.8
60:	1330.0	31.750	59.375	79.250	59.375	833.40
61:						
62:	433.00	2.7500	44.750	2.9400	42.750	213.50
63:	150.00	0.0000	11.875	9.5000-02	11.875	140.30
64:	148.00	0.0000	5.9375	4.7500	5.9375	161.70
65:	40.00	0.0000	0.0000	0.0000	0.0000	17.400
66:	100.00	1.7500	3.5625	1.0350	3.5625	156.80
67:						
68:	495.00	.7500	0.0000	4.7500	0.0000	494.90
69:	560.00	0.0000	0.0000	0.0000	0.0000	559.80
70:	2223.0	3.7500	0.0000	3.7500	0.0000	2222.8
71:	0.0000	13.500	0.0000	13.500	0.0000	0.0000
72:	1948.0	105.25	0.0000	105.25	0.0000	1943.8
73:	2367.0	0.0000	0.0000	0.0000	0.0000	2270.4
74:	576.0	1104.7	0.0000	1104.7	0.0000	5463.1
75:	504.00	8.0000	0.0000	8.0000	0.0000	403.50
76:	420.00	200.50	0.0000	200.50	0.0000	418.90
77:	176.00	52.250	0.0000	52.250	0.0000	175.50
78:	75.000	39.000	0.0000	39.000	0.0000	74.800
79:	556.00	44.250	0.0000	44.250	0.0000	554.10
80:						
81:						
82:	18.000	18.750	0.0000	18.750	0.0000	18.000
83:	816.00	16.500	0.0000	16.500	0.0000	815.40
84:	3241.0	2.2500	0.0000	2.2500	0.0000	323.70
85:	460.00	8.5000	0.0000	8.5000	0.0000	467.50
86:	1197.0	30.250	0.0000	30.250	0.0000	1192.8
87:	150.00	0.0000	0.0000	0.0000	0.0000	149.40
88:	332.00	2.7500	0.0000	2.7500	0.0000	331.70
89:	160.00	1.7500	0.0000	1.7500	0.0000	159.30
90:						
91:						
92:						
93:						
94:						
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107:						
108:						
109:						
110:						

Figure III.1.7 (Cont.)

CENTROB FOR RTD SURVIVING ASSETS READ												
1	2	3	4	5	6	7	8	9	10	11	12	13
1	161961	1	100	27680	0	27680	97340	1798	1762	6224	7986	35
2	172124	1	100	27680	0	27680	69714	2926	1089	4194	5283	39
3	183556	1	100	27680	0	27680	93391	3819	852	3060	3912	40
4	192262	1	100	27680	0	27680	113080	5500	1638	6337	7976	43
5	216550	1	100	27680	1198	29478	134688	5393	1844	6149	7793	47
6	218338	1	100	9740	1128	10868	133595	6832	2523	9441	11963	44
7	241351	1	100	9740	893	10633	133083	8350	2363	8720	11083	48
8	262566	1	100	9740	1682	11422	131751	9330	2609	10073	12681	52
9	284381	1	100	9740	1691	11431	120545	12522	4827	17791	22618	56
10	312394	1	100	9740	2567	12307	107169	15759	5741	19978	25720	63
11	340692	1	100	9740	2411	12151	91458	19499	6081	21556	27637	70
12	354008	1	100	9740	2661	12401	68765	24766	7855	27202	35057	73
13	386350	1	100	9740	4883	14623	47002	28185	8225	28045	36270	77
14	386350	1	100	10259	5804	16063	26039	30960	8500	28457	36957	79
15	387745	1	100	10259	6151	16410	1375	34375	9487	31564	41051	79
16	389605	1	96	10259	7927	18186	1523	34188	7662	25354	33016	78
17	389605	1	91	10259	8302	18561	1553	34360	8400	27824	36224	75
18	389605	1	89	10259	8579	18838	1578	32555	6702	22137	28839	71
19	389606	1	86	10259	9566	19825	1660	30081	7023	23286	30309	69
20	389606	1	84	10259	7740	17999	1507	28415	6007	19865	25872	67
21	389608	1	83	11840	8475	20315	1701	25344	5337	17759	23096	67
22	389608	1	82	11840	6773	18613	1559	23881	5204	17232	22436	66
23	390659	1	83	11840	7092	18932	1586	21025	4210	13916	18126	66
24	390659	1	83	11840	6074	17914	1500	18576	3559	11654	15213	66
25	390659	1	83	11840	5404	17244	1444	17102	3864	12722	16586	67
26	390659	1	84	11840	5271	17111	1433	15323	3425	11124	14549	67
27	390659	1	85	11840	4276	16116	1350	14269	3155	10244	13399	67

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RUNREC

58:	28	390659.	330155.	85.	11040.	3625.	15465.	1295.	13692.	2980.	9574.	12555.	68.	26.	12649.	3
59:	29	390659.	330121.	87.	10570.	3930.	14500.	1214.	12336.	2505.	8022.	10527.	68.	26.	10622.	2
60:	30	390659.	340360.	87.	10570.	3492.	14062.	1178.	11685.	2772.	8998.	11770.	69.	27.	11866.	2
61:	31	390659.	330921.	87.	10570.	3222.	13792.	1155.	12101.	3568.	11596.	15164.	70.	27.	15260.	3
62:	32	390659.	330760.	87.	10570.	3048.	13618.	1141.	12358.	3236.	10468.	13704.	70.	27.	13800.	3
63:	33	390659.	337778.	86.	10570.	2574.	13144.	1101.	13169.	3316.	10761.	14077.	68.	26.	14171.	3
64:	34	390659.	336944.	86.	10570.	2891.	13411.	1123.	13717.	3321.	10812.	14133.	68.	26.	14228.	3
65:	35	390659.	339880.	87.	10570.	3638.	14208.	1190.	12759.	2612.	8502.	11114.	68.	26.	11209.	2
66:	36	390659.	334227.	86.	4060.	3306.	7366.	617.	12700.	3178.	10320.	13499.	69.	26.	13593.	3
67:	37	390659.	331265.	85.	4060.	3384.	7444.	623.	11818.	2434.	7876.	10310.	68.	26.	10404.	2
68:	38	390659.	327761.	84.	4060.	3389.	7449.	624.	11068.	2573.	8295.	10868.	68.	25.	10960.	2
69:	39	390659.	325956.	83.	4060.	2680.	6740.	564.	10480.	2027.	6495.	8522.	65.	25.	8612.	2
70:	40	390659.	322837.	83.	4060.	3247.	7307.	612.	9739.	2439.	7851.	10291.	68.	25.	10382.	2
71:	41	390659.	319976.	82.	4060.	2502.	6562.	550.	9521.	2220.	7181.	9401.	65.	25.	9491.	2
72:	42	390659.	319106.	82.	4060.	2640.	6700.	561.	8733.	1787.	5689.	7475.	64.	25.	7565.	1
73:	43	390659.	318597.	82.	4060.	2092.	6152.	515.	8293.	1587.	5036.	6623.	64.	25.	6712.	1
74:	44	390659.	324623.	83.	13399.	2505.	15904.	1332.	7999.	2147.	6829.	8976.	65.	25.	9066.	2
75:	45	390659.	329101.	84.	13399.	2285.	15684.	1314.	8426.	2645.	8491.	11136.	66.	25.	11228.	2
76:	1	25.	18.	74.	0.	0.	0.	0.	0.	3.	2.	4.	1.	0.	7.	
77:	2	25.	16.	66.	0.	0.	0.	0.	0.	4.	0.	0.	1.	0.	2.	
78:	3	79.	69.	87.	0.	3.	3.	0.	0.	6.	0.	0.	1.	0.	4.	
79:	4	329.	288.	87.	0.	2.	2.	0.	0.	29.	3.	6.	9.	1.	33.	
80:	5	329.	229.	69.	0.	16.	16.	0.	47.	15.	40.	54.	19.	2.	75.	
81:	6	437.	232.	53.	0.	31.	31.	0.	66.	31.	84.	115.	19.	2.	136.	
82:	7	779.	541.	69.	0.	66.	66.	0.	50.	19.	46.	65.	32.	3.	99.	
83:	8	1425.	1142.	80.	113.	50.	163.	0.	108.	36.	93.	129.	71.	7.	208.	
84:	9	1909.	1548.	81.	113.	108.	221.	0.	153.	56.	138.	193.	97.	9.	299.	
85:	10	2355.	1919.	81.	112.	153.	265.	0.	195.	55.	134.	189.	141.	11.	340.	
86:	11	2731.	2133.	78.	112.	195.	307.	0.	242.	85.	211.	296.	157.	16.	469.	

Figure III.1.8 (Cont.)

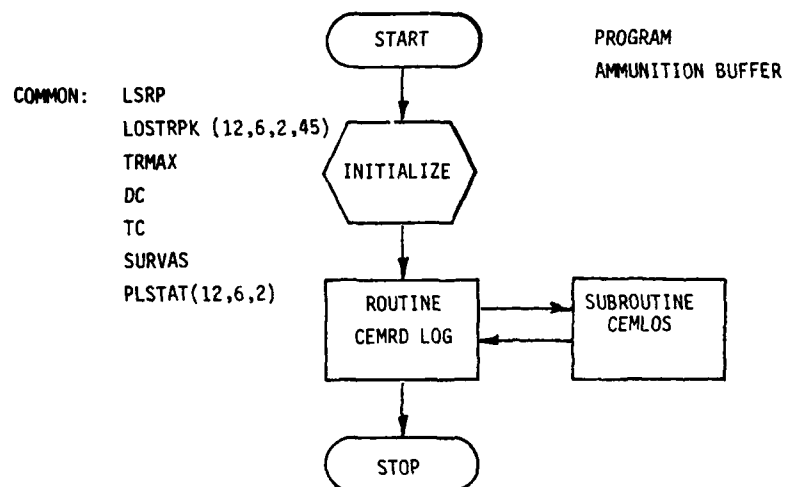


Figure III.1.9

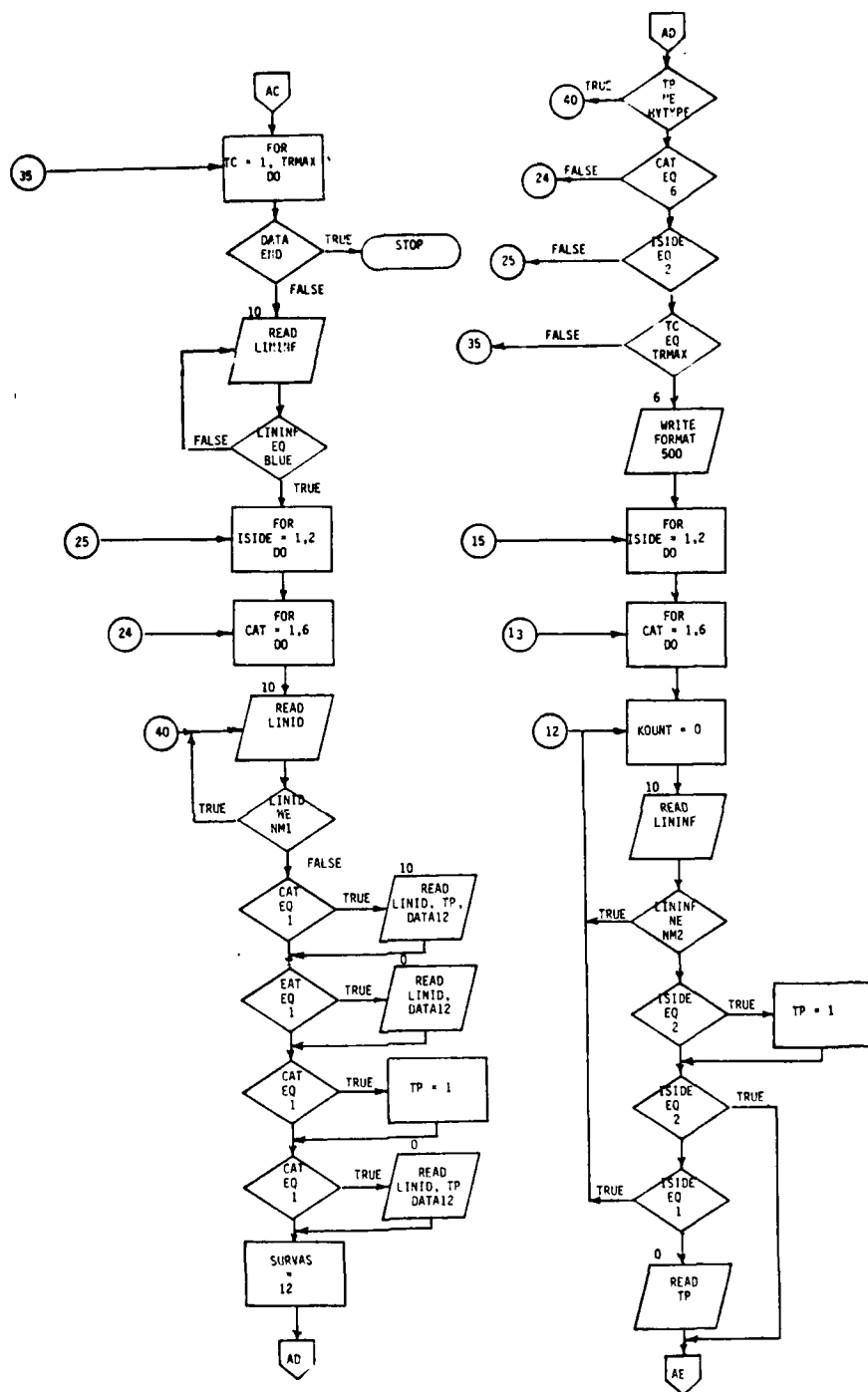


Figure III.1.10 (Cont.)

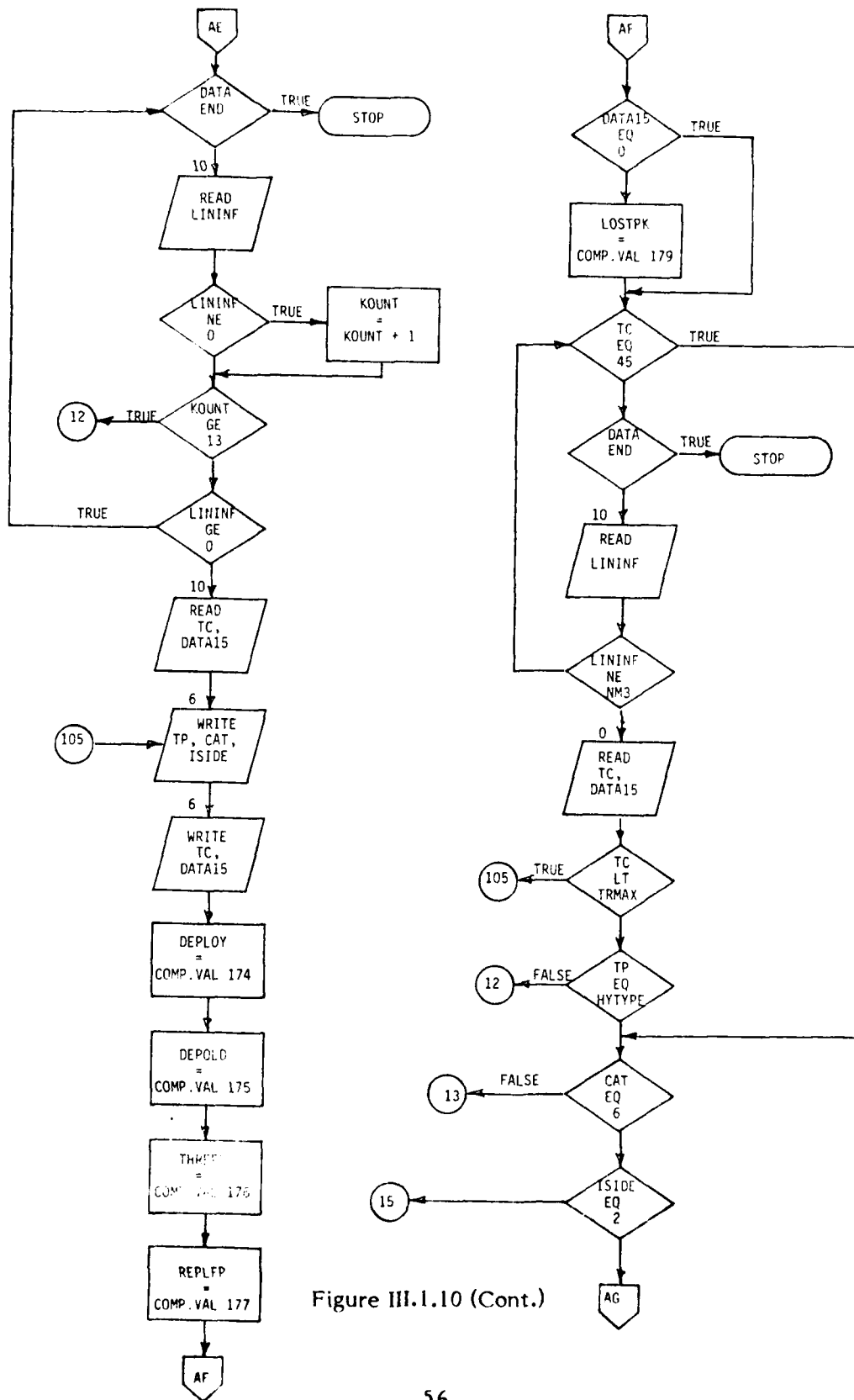


Figure III.1.10 (Cont.)

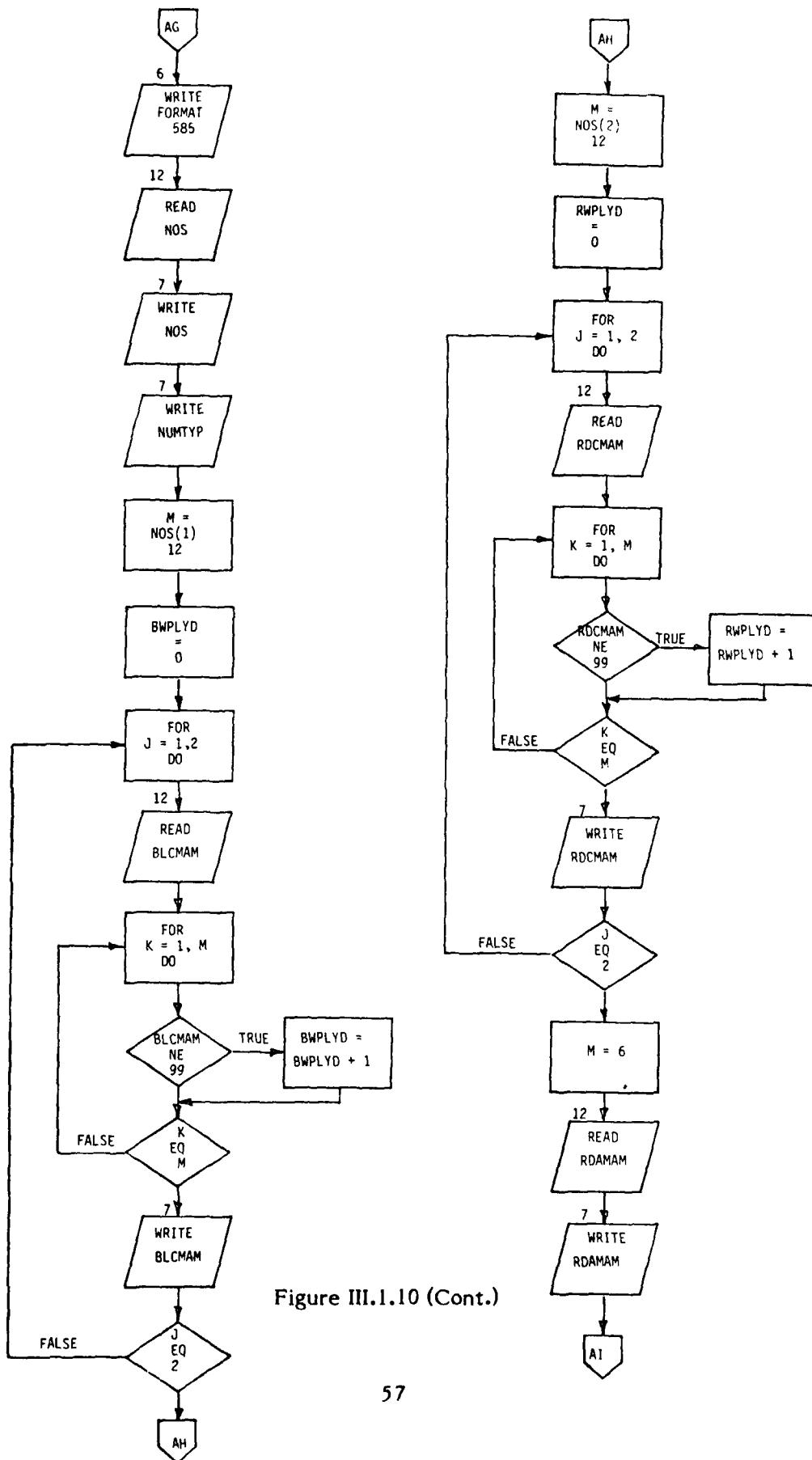


Figure III.1.10 (Cont.)

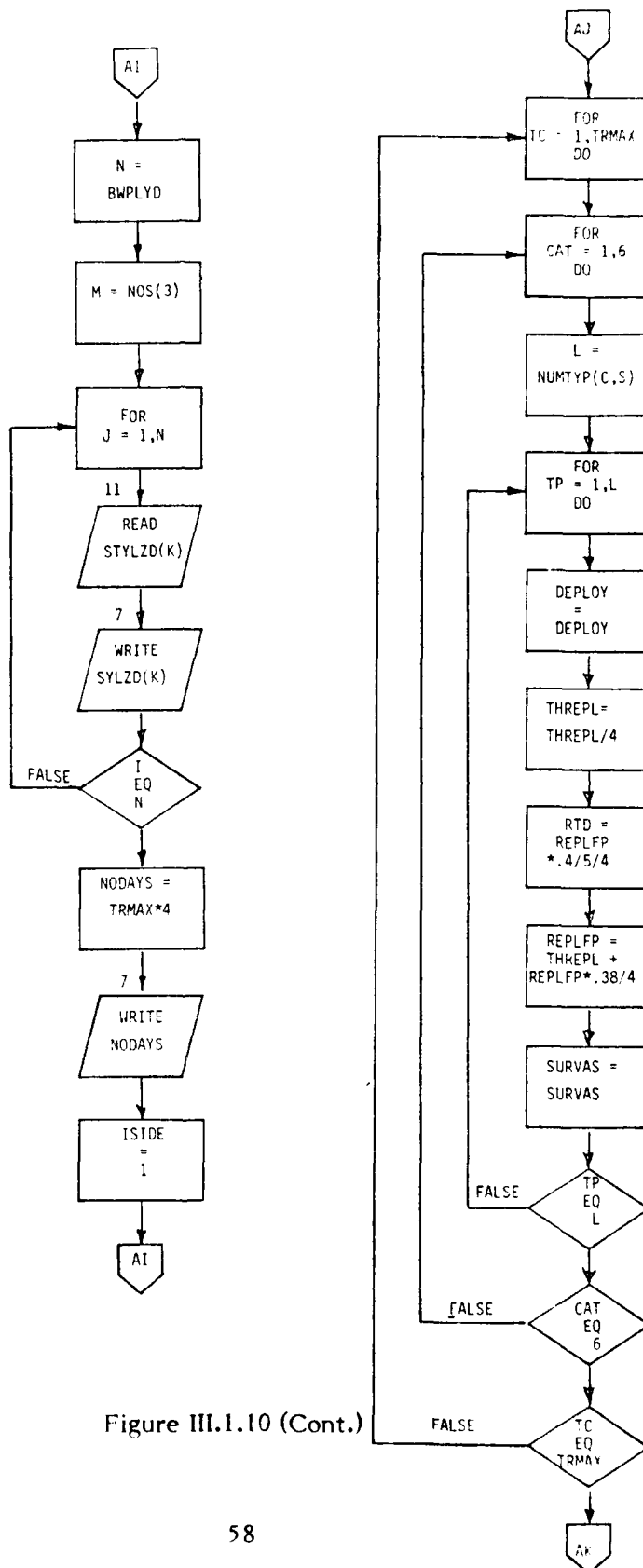


Figure III.1.10 (Cont.)

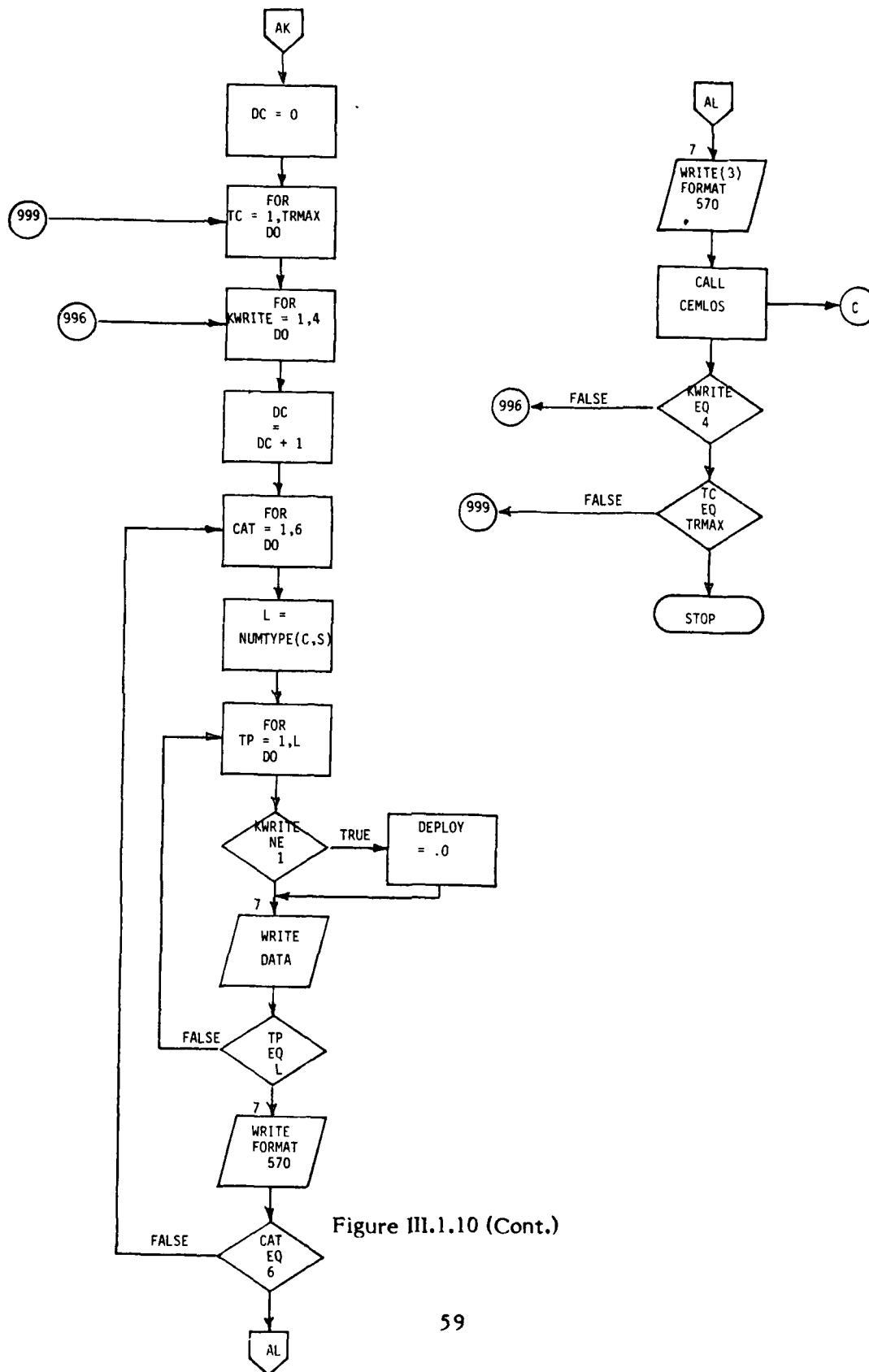


Figure III.1.10 (Cont.)

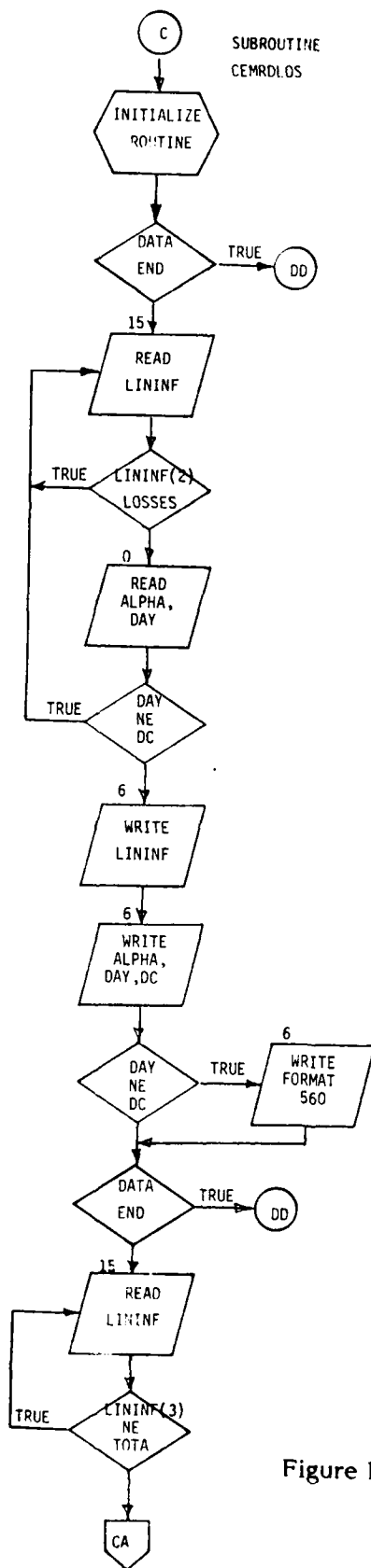
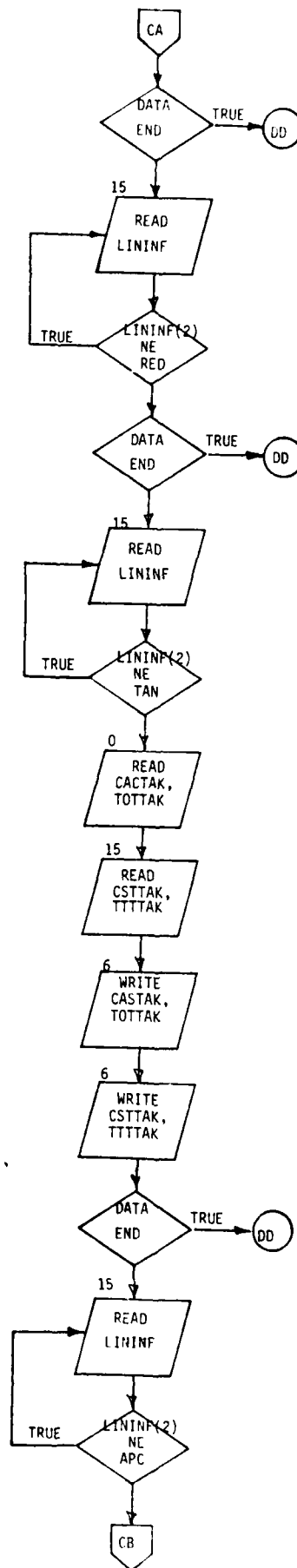


Figure III.1.11



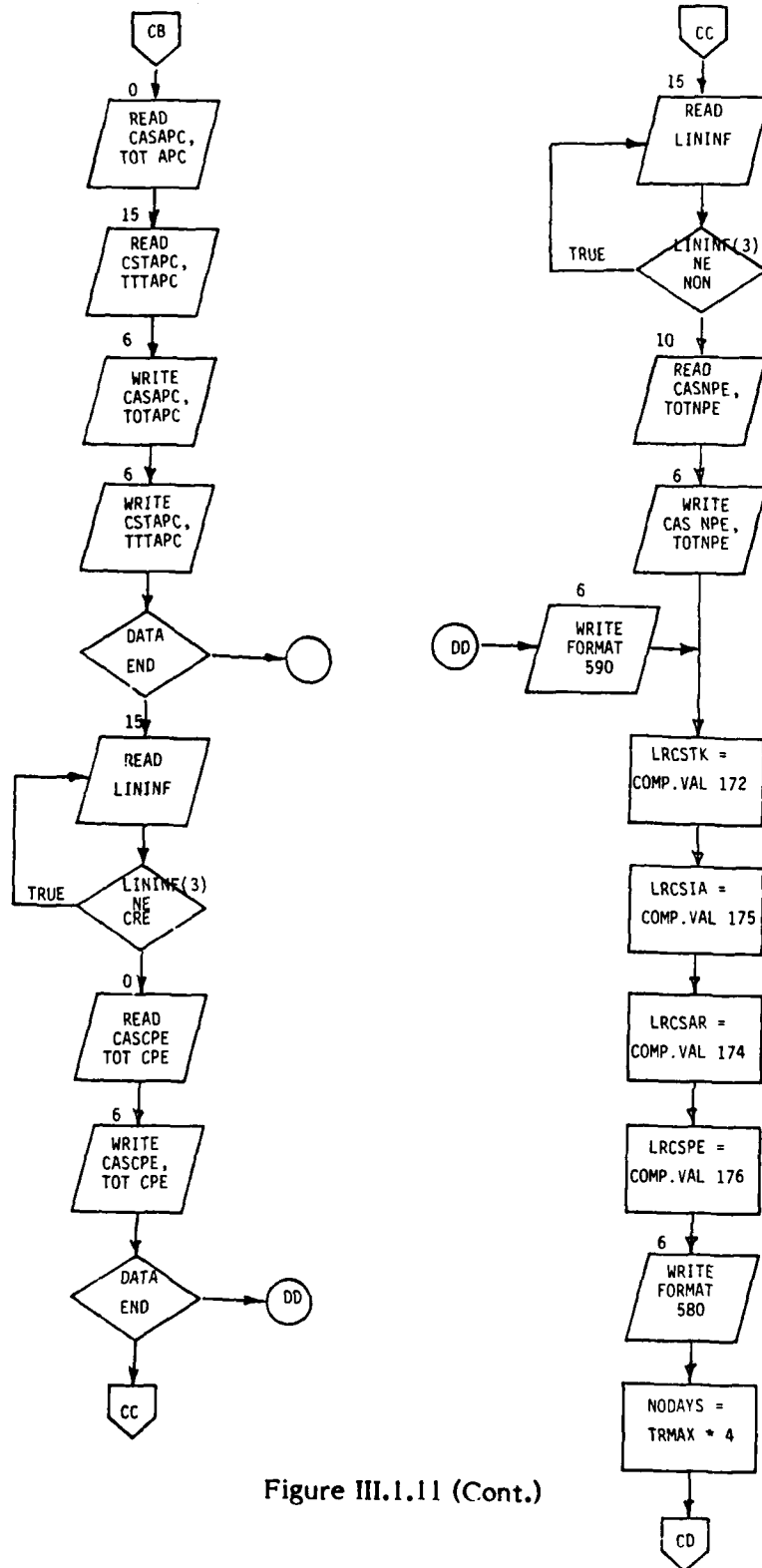


Figure III.1.11 (Cont.)

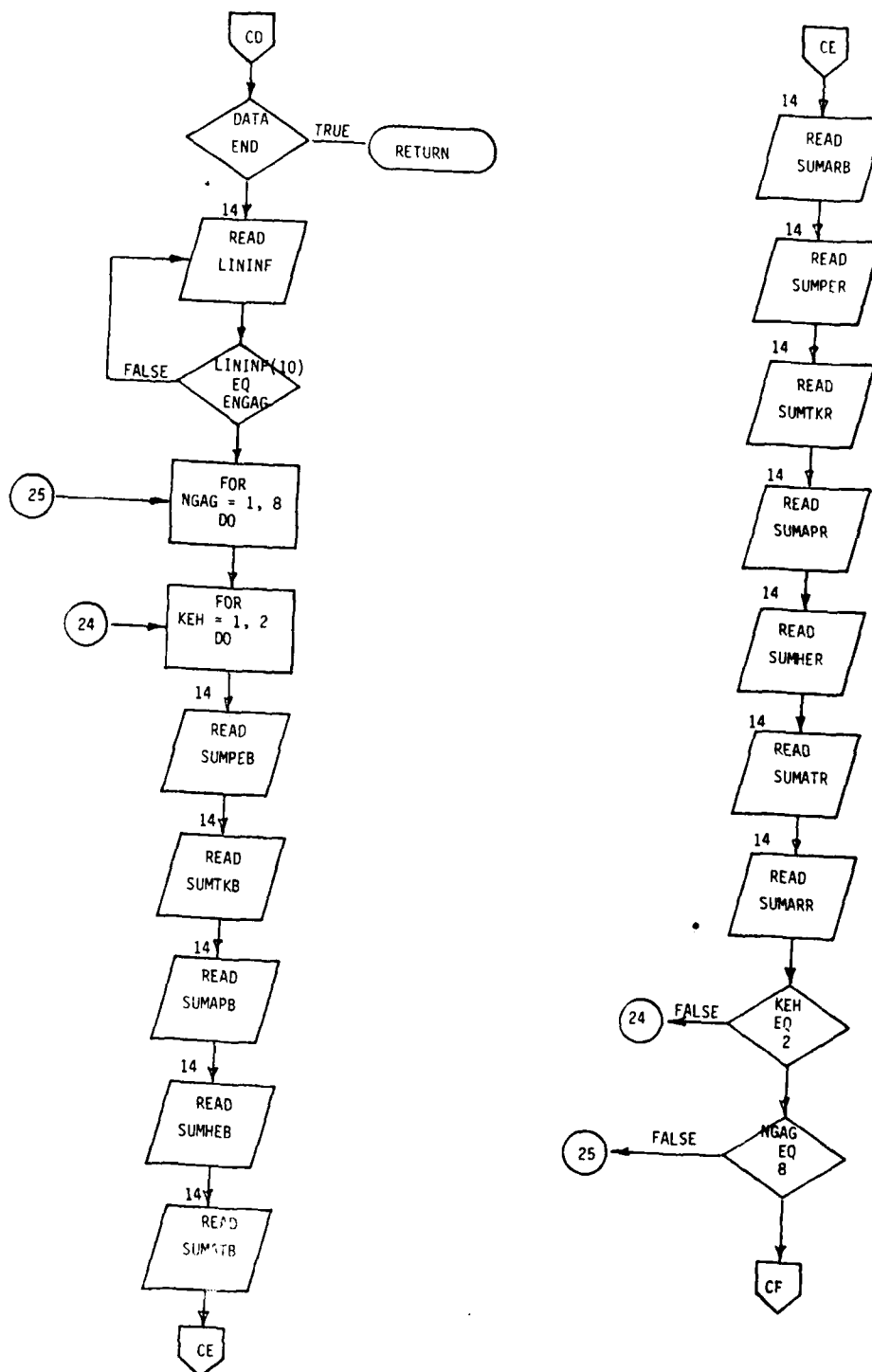


Figure III.1.11 (Cont.)

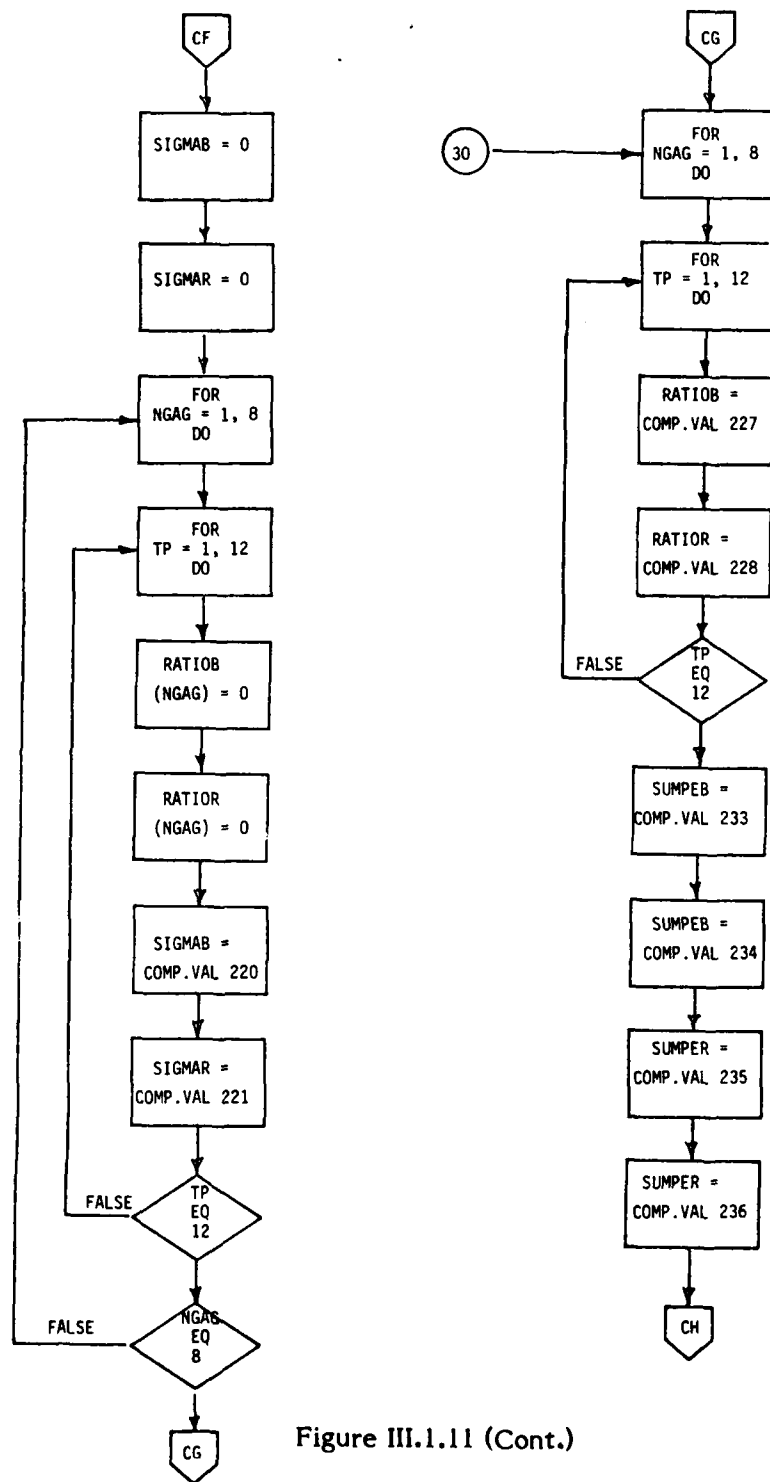


Figure III.1.11 (Cont.)

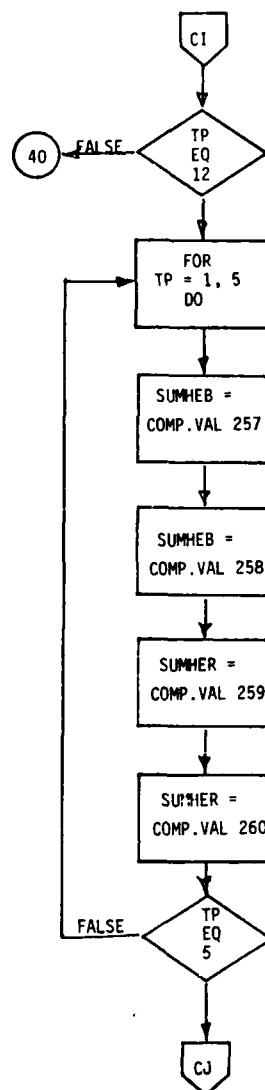
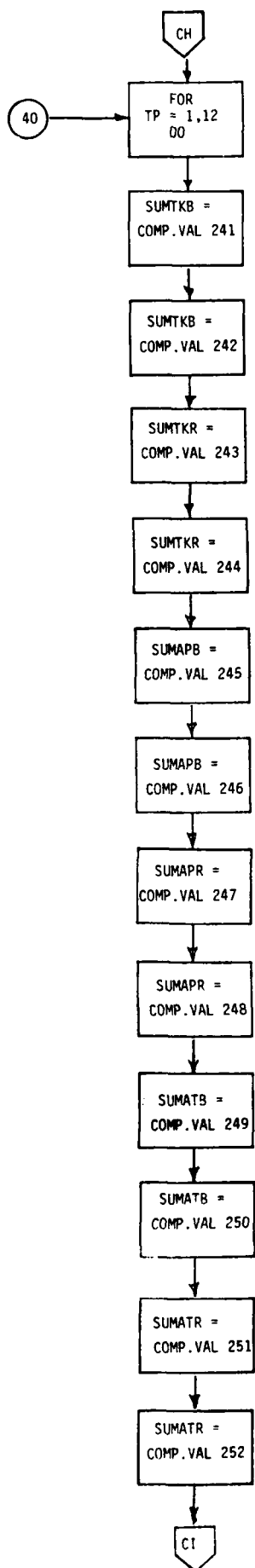


Figure III.1.11 (Cont.)

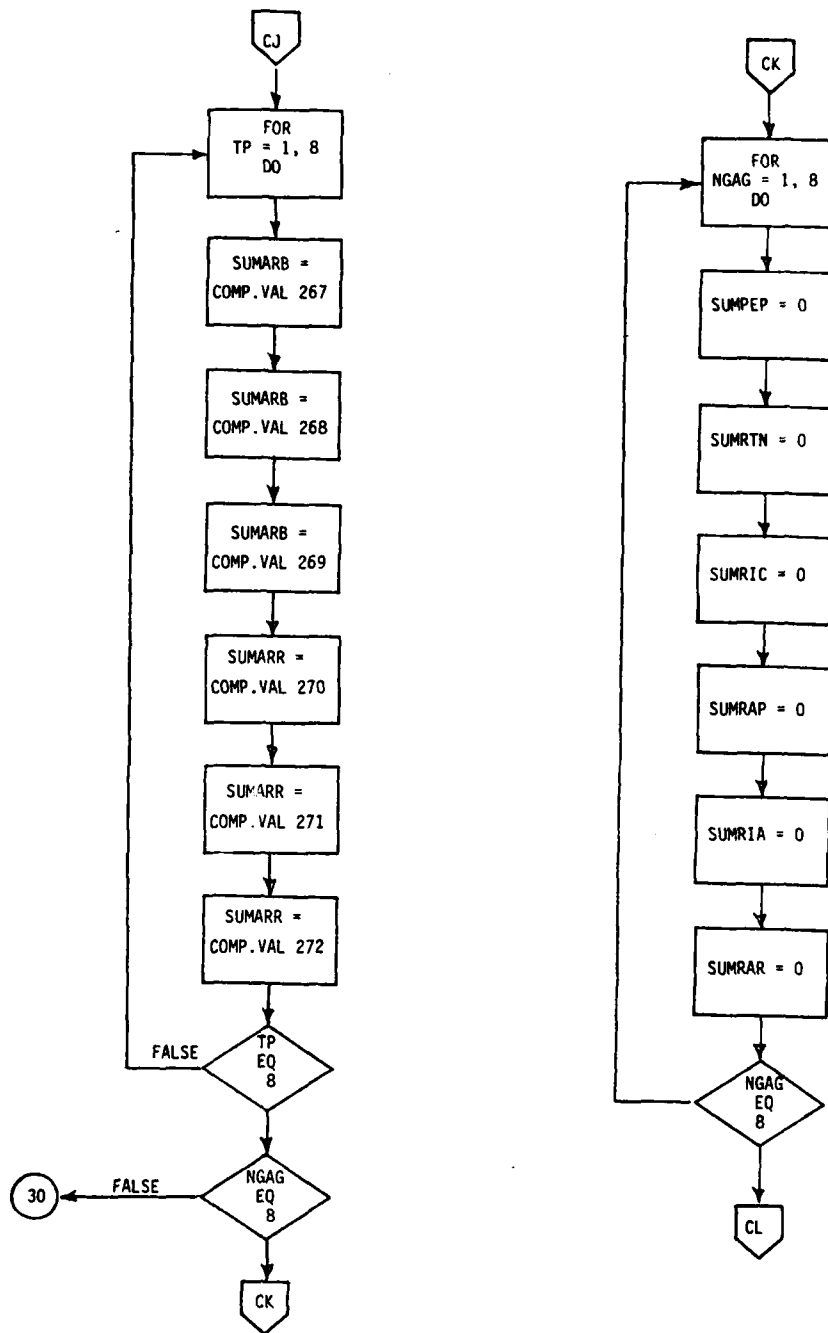


Figure III.1.11 (Cont.)

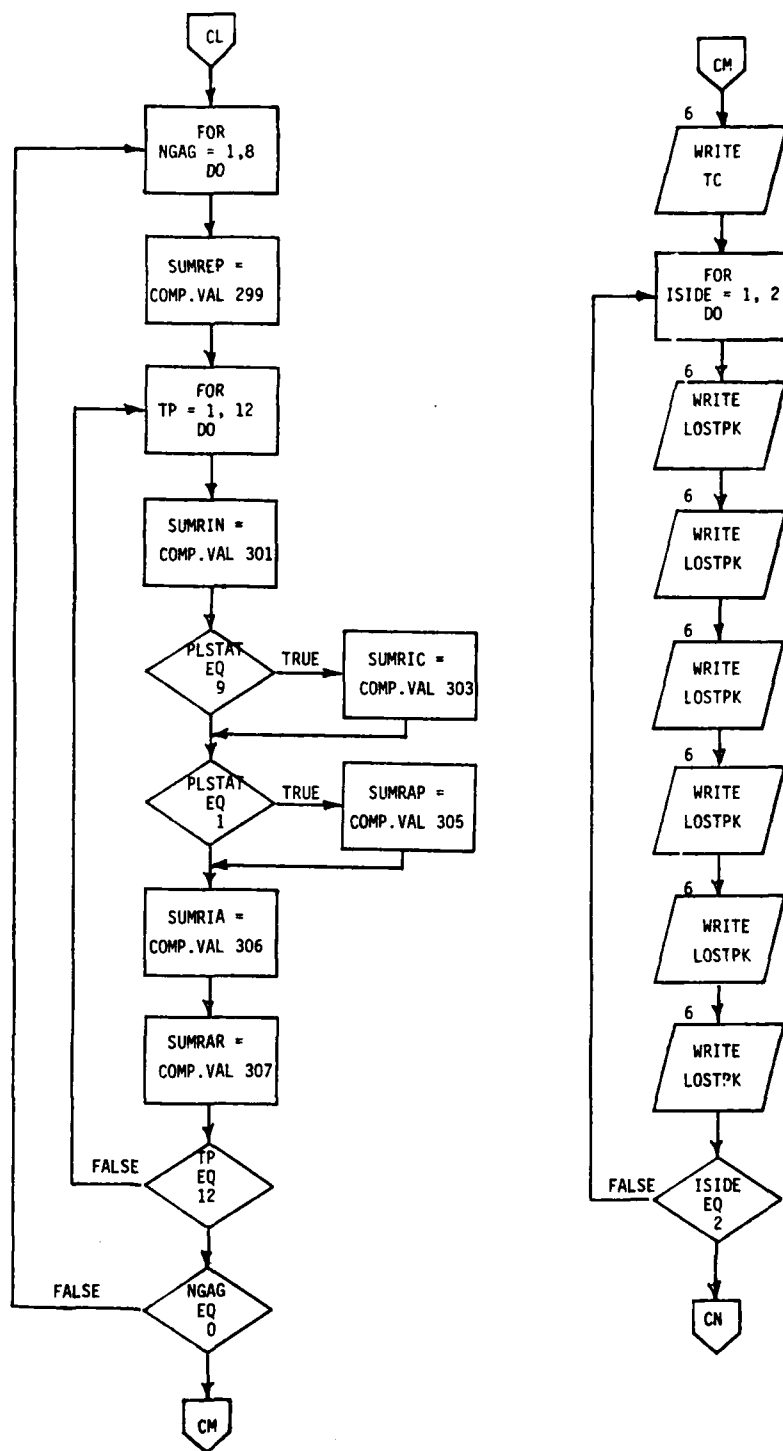


Figure III.1.11(cont.)

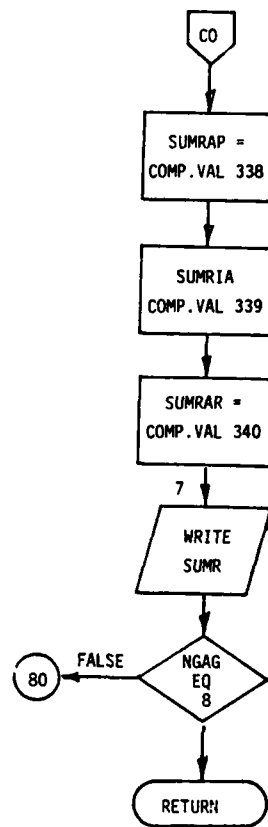
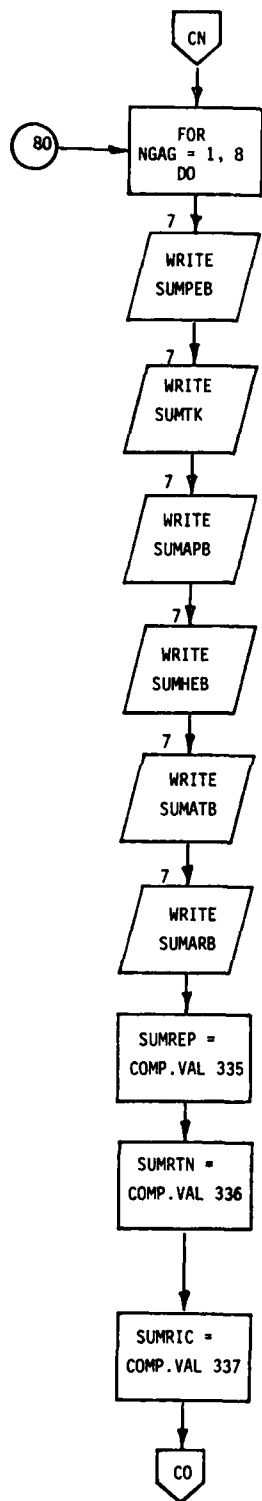


Figure III.1.11(Cont.)

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1 C*** *** *** *** *** *** *** *** ***
2 C AUTHOR ANDREW N. CARRAS
3 C PURPOSE.
4 C THIS PROGRAM ACTS AS A BUFFER BETWEEN CEM/CUSAGE AND THE
5 C WARMAMP AMMUNATES POST PROCESSOR. THE MAIN
6 C ROUTINE CEMKEDLOG READS THE CEM LOGISTICS REPORT AND
7 C STORES ALL REQUIRED VARIABLES TO ELIMINATE REWINDING
8 C BECAUSE OF LOGREP'S FORMATTING. IT ALSO CALLS CEMKULUS
9 C TO READ TWO TWO ADDITIONAL CEM OUTPUT FILES (AMMU &
10 C LUSREP) WRITING OUT THE REQUIRED VARIABLES ONLY.
11 C A) OUTPUT FROM CEM IS IN LOGICAL UNIT 10, AND 37/LUGREP.
12 C B) OUTPUT FROM APP IS IN LOGICAL UNIT 11, AND 37/ESDGEN.TKCONS
13 C C) CEM/APP MAPPING DATA IS IN LOGICAL UNIT 12, AND 37/ESDGEN.TKMAP
14 C D) INPUT TO THE AMMUNATES MODEL IS WRITTEN ON LOGICAL UNIT 7.
15 C E) OUTPUT TO 6 IS FOR CHECK PURPOSES ONLY AND IS SAVED IN A
16 C BREAKPOINT FILE FOR ANALYSIS IF REQUIRED. THIS TECHNIQUE
17 C IS USED THROUGHOUT THE APP.
18 C VARIABLE DEFINITIONS.
19 C BLCMAM MAPPING OF BLUE CEM/APP WPNS
20 C BWPLYD NO OF BLUE WEAPONS PLAYED(APP)
21 C CAT WEAPON CATEGORY
22 C 1 = PERSONNEL
23 C 2 = TANKS
24 C 3 = LIGHT ARMOR
25 C 4 = HELICOPTERS
26 C 5 = A/T MORTARS
27 C 6 = ARTY
28 C DATA12 DATA POINTS OF LOGREP FILE, 12 TO A LINE
29 C DATA15 DATA POINTS OF LOGREP FILE, 15 TO A LINE
30 C DEPLOY DEPLOYED WEAPONS
31 C (TYPE,CATEGORY,SIDE,THEATER CYCLE)
32 C DEPOLD AUTHORIZED WEAPONS IN PREVIOUS THEATER CYCLE
33 C HHTYPE HIGHEST TYPE IN CATEGORY
34 C (CATEGORY,SIDE)
35 C ISIDE 1 = BLUE, 2 = RED
36 C LINID ALPHANUMERIC READ WORD, 4 CHARACTERS
37 C LININF ALPHANUMERIC READ WORD, 6 CHARACTERS
38 C LUSTPK RATIO K-KILL/TOTAL COMBAT LOSSES (BLUE & RED)
39 C (TYPE,CATEGORY,SIDE,THEATER CYCLE)
40 C NCENWP ARRAY, TOTAL TYPES CEM WPNS, EACH SIDE
41 C NDDAYS NUMBER OF DAYS SIMULATED
42 C NOS ARRAY, NO OF WPNS (BGR), SAMPLES, ESUS, ENGAGEMENTS
43 C (NO)
44 C NM1 DATA ARRAY DEFINING CATEGORY ALPHANUMERICS
45 C NM2 DATA ARRAY DEFINING CATEGORY ALPHANUMERICS
46 C NM3 DATA ARRAY DEFINING CYCLE ALPHANUMERICS
47 C NUMTYP ARRAY, NO OF WPNS TYPES IN EACH CATEGORY (CEMH/L)
48 C (CATEGORY,SIDE)
49 C PLSTAT ARRAY, STATUS OF WEAPON
50 C 1 = PLAYED, 0 = NOT PLAYED
51 C Y = RED IGV, 1 = RED APC (FOR CATEGORY 3)
52 C (TYPE,CATEGORY,SIDE)
53 C NLAHCH MAPPING OF RED AMMU/CEMH/L WPNS
54 C NUCHAM MAPPING OF RED CEMH/L/AMMU/WPNS
55 C REPLFP WEAPON REPLACEMENTS FROM US MAINTENANCE POOL
56 C (TYPE,CATEGORY,SIDE,THEATER CYCLE)

```

Figure III.1.12

```

57 C      KEPLTP  WEAPONS TO POOL FROM US MAINTENANCE
58 C      (TYPE,CATEGORY,SIDE,THEATER CYCLE)
59 C      RTD     WEAPONS RETURNED TO DUTY
60 C      (TYPE,CATEGORY,SIDE,THEATER CYCLE)
61 C      NWPLYD  NU OF RED WEAPONS PLAYED(TH)
62 C      STYLZD  NU OF STYLIZED SAMPLES/WEAPON
63 C      SURVAS  WEAPON SURVIVING ASSETS
64 C      (TYPE,CATEGORY,SIDE,THEATER CYCLE)
65 C      TC      THEATER CYCLE COUNTER
66 C      TRMAX   MAXIMUM NUMBER OF THEATER CYCLES
67 C      THREPL  THEATER REPLACEMENT WEAPONS
68 C      (TYPE,CATEGORY,SIDE,THEATER CYCLE)
69 C      TP      TYPE COUNTER
70 C*** ... ..
71 C
72 C      DIMENSION LININF(22),NUMTYP(6,2),NOS(5),NCEMWP(2)
73 C      * BLCMH(10),KDCMH(10),KDAHCH(40),STYLZD(19)
74 C      * DEPLOY(12,6,2,45),THREPL(12,6,2,45),RTD(12,6,2,45)
75 C      * REPLFP(12,6,2,45),SURVAS(12,6,2,45),HYTYPE(6,2)
76 C      * DATA12(12),DATA15(15),DEPOLU(12,6),NM1(6),NM2(6),NM3(44)
77 C      COMMON/LSRP/LOSTPK(12,6,2,45),TRMAX,DC,TC,SURVAS,PLSTAT(12,6,2)
78 C      REAL LININF,LINID,DEPLOY,DEPOLU,THREPL,RTD,REPLFP,SURVAS
79 C      * DATA12,DATA15,NM1,NM2,NM3,LOSTPK
80 C      INTEGER NUMTYP,ISIDE,NOS,NCEMWP,BLCMH,KDCMH,KDAHCH
81 C      * NWPLYD,NWPLYU,STYLZD,TC,TP,CAT,TRMAX,NODAYS,DC,PLSTAT,HYTYPE
82 C
83 C***FORMAT STATEMENTS
84 C
85 C      590 FORMAT(57X,13)
86 C      585 FORMAT(5X,47HWEAPON DATA FOR DEPS, KEPS, TO 6 FROM POOL READ)
87 C      580 FORMAT(5X,41HWEAPON DATA FOR RTD SURVIVING ASSETS READ)
88 C      570 FORMAT(1/132A)
89 C      560 FORMAT(15,2(F10.0),F7.0,12(F8.0))
90 C      550 FORMAT(4A,4A,F14.0,11(F10.0))
91 C      540 FORMAT(6A4)
92 C      530 FORMAT(1)
93 C      520 FORMAT(16,2(F11.0),13(F8.0))
94 C      515 FORMAT(20I3)
95 C      510 FORMAT(4A,2A,14,F14.0,11(F10.0))
96 C      500 FORMAT(22A6)
97 C
98 C***READ ALPHA CONSTANTS, CEM WEAPONS/CATEGORY, WEAPONS PLAYED
99 C***AND HIGHEST TYPE
100 C
101 C      READ(12,515)TRMAX
102 C      READ(12,540)(NM1(J),J = 1,6)
103 C      READ(12,500)(NM2(J),J = 1,6)
104 C      READ(12,500)(NM3(J),J = 1,11)
105 C      READ(12,500)(NM3(J),J = 12,22)
106 C      READ(12,500)(NM3(J),J = 23,33)
107 C      READ(12,500)(NM3(J),J = 34,44)
108 C      READ(12,515)(NUMTYP(J,1),J = 1,6)
109 C      READ(12,515)(NUMTYP(J,2),J = 1,6)
110 C      DO 190 ISIDE = 1,2
111 C      DO 190 J = 1,6
112 C      190 NCEMWP(ISIDE) = NCEMWP(ISIDE)+NUMTYP(J,ISIDE)
113 C      DO 195 ISIDE = 1,2

```

Figure III.1.12 (Cont.)


```

114      DO 195 CAT = 1,6
115      N = NUNTYPE(CAT,ISIDE)
116      READ(12,515) (PLSTAT(J,CAT,ISIDE),J = 1,N)
117      DO 195 J = 1,N
118      IF (PLSTAT(J,CAT,ISIDE).EQ.9) NTYPE(CAT,ISIDE) = J
119      IF (PLSTAT(J,CAT,ISIDE).EQ.1) NTYPE(CAT,ISIDE) = J
120 195 CONTINUE
121 C
122 C***READ IN FROM (10) BLUE AND RED WEAPON DATA
123 DO 35 TC = 1,TKMAX
124 10 READ(10,500,END=99)LININF
125 IF((LININF(1).EQ.'BLUE') .AND. (LININF(7).EQ.'MART '))
126 * .AND. (LININF(21).EQ.'TER CY')) GO TO 20
127 GO TO 10
128 20 CONTINUE
129 C
130 C***READ SURVIVING ASSETS AND RTD FOR PERSONNEL
131 C***TANKS,APCS,HELICOPTERS,ANTI-TANK MORTARS & ARTILLERY
132 C***FOR BOTH SIDES
133 C***SCANNING FIRST PART OF LOGREP
134 C
135 DO 25 ISIDE = 1,2
136 DO 25 CAT = 1,6
137 40 READ(10,510)LINID
138 IF(LINID.NE.NMZ(CAT)) GO TO 40
139 IF((CAT.EQ.1).AND.(ISIDE.EQ.1))
140 * READ(10,510)LINID,TP,DATA12
141 IF((CAT.EQ.1).AND.(ISIDE.EQ.2))
142 * READ(10,550)LINID,DATA12
143 IF((CAT.EQ.1).AND.(ISIDE.EQ.2))
144 * TP = 1
145 IF(CAT.NE.1)READ(10,510)LINID,TP,DATA12
146 SURVWS(TP,CAT,ISIDE,TC) = DATA12(1)
147 IF(TP.NE.NTYPE(CAT,ISIDE))GO TO 40
148 25 CONTINUE
149 35 CONTINUE
150 WRITE(6,580)
151 C
152 C***READ DEPS., REPS., WPNS TO POOL, WPNS FROM POOL FOR PERSONNEL
153 C***TANKS, APCS, AT/MS, HELOS AND ARTY
154 C***FOR BOTH SIDES
155 C***FROM 2ND PART OF LOGREP
156 C
157 DO 15 ISIDE = 1,2
158 DO 15 CAT = 1,6
159 12 KOUNT = 0
160 READ(10,500,END=99)LININF
161 IF(LININF(5).NE.NMZ(CAT)) GO TO 12
162 IF((ISIDE.EQ.2).AND.(LININF(5).EQ.'PERSONL')) TP = 1
163 IF((ISIDE.EQ.2).AND.(LININF(5).EQ.'PERSONL')) GO TO 89
164 IF((ISIDE.EQ.1).AND.(LININF(5).EQ.'PERSONL'))
165 * .AND. (LININF(10).NE.'RY 1')) GO TO 12
166 14 READ(10,590)TP
167 89 READ(10,500,END = 99)LININF
168 IF(LININF(1).NE.' U ')KOUNT = KOUNT + 1
169 IF(KOUNT.GE.13) GO TO 12
170 IF(LININF(1).NE.' U ')GO TO 89

```

Figure III.1.12 (Cont.)

```

171      READ(10,560)TC,DATA15
172      105 WRITE(6,530)TP,CAT,ISIDE
173      WRITE(6,560)TC,DATA15
174      DEPLOY(TP,CAT,ISIDE,TC) = DATA15(1)-DEPOLD(TP,CAT)
175      DEPOLD(TP,CAT) = DATA15(1)
176      THREPL(TP,CAT,ISIDE,TC) = DATA15(4)
177      REPLFP(TP,CAT,ISIDE,TC) = DATA15(9)
178      IF (DATA15(9).EQ.0) GO TO 92
179      LOSTPK(TP,CAT,ISIDE,TC) = DATA15(9)/(DATA15(10)+DATA15(9))
180      92 IF(TC.EQ.45) GO TO 94
181      READ(10,500,END=99)LININF
182      IF(LININF(1).NE.NM3(TC))GO TO 92
183      READ(10,560)TC,DATA15
184      IF(TC.LE.TRMX)GO TO 105
185      94 IF(TP.EQ.HYTYPE(CAT,ISIDE)) GO TO 95
186      GO TO 12
187      95 CONTINUE
188      15 CONTINUE
189      WRITE(6,585)
190      C
191      C***READ IN FROM (12) MAPPING AND WEAPON CONSTANTS AND WRITE ON(7)
192      C
193      C
194      C***MAX WEAPONS,SAMPLES & ESUS PLAYED IN TR
195      READ (12,530)NOS
196      C***PREPARE OUTPUT TAPES
197      C
198      C***NO OF TYPES IN CATEGORY
199      WRITE(7,530)NOS
200      WRITE(7,530)(NUMTYP(J,1),J=1,6)
201      WRITE(7,530)(NUMTYP(J,2),J=1,6)
202      C
203      C***MAP BLUE CEM WEAPONS ON AMMOKATES
204      M = NOS(1)/2
205      BWPLYD = 0
206      DO 210 J = 1,2
207      READ(12,530)(BLCMAM(K),K=1,M)
208      DO 220 K = 1,M
209      220 IF(BLCMAM(K).NE.99)BWPLYD=BWPLYD+1
210      210 WRITE(7,530)(BLCMAM(K),K=1,M)
211      C
212      C***SINCE RED WEAPONS ARE ROLLED INTO SIX
213      C***CATEGORIES MAPPING IS ONE ON ONE
214      C***THE MAP RED CODE THAT FOLLOWS IS IN
215      C***PLACE FOR POSSIBLE FUTURE USE IN CALCULATING
216      C***RED PARAMETERS
217      C***MAP RED CEM WEAPONS ON AMMOKATES
218      M = NOS(2)/2
219      RWPLYD = 0
220      DO 230 J = 1,2
221      READ(12,530)(RDCMAM(K),K=1,M)
222      DO 240 K = 1,M
223      240 IF(RDCMAM(K).NE.99)RWPLYD=RWPLYD+1
224      230 WRITE(7,530)(RDCMAM(K),K=1,M)
225      C
226      C***MAP RED AMMOKATES WEAPONS ON CEM
227      M = 6

```

Figure III.1.12 (Cont.)

```

228      READ(12,530)(RDVACHM(K),K=1,M)
229      250 WRITE(7,530)(RDVACHM(K),K=1,M)
230      C
231      C***HEAD IN (11) STYLIZED QUANTITIES
232      N = BNPLYD
233      M = NUS(1)
234      DO 260 J=1,N
235      READ(11,530)(STYLZD(K),K=1,M)
236      260 WRITE(7,530)(STYLZD(K),K=1,M)
237      C
238      C***NO OF DAYS
239      NDDAYS = TRMAX*4
240      WRITE(7,530)NDDAYS
241      C
242      C***DAILY = CYCLE/4.
243      C***SEPARATE INTO DS & GS MAINTENANCE
244      C***WEAPONS FROM POOL ARE = TO REPLACEMENTS + GS MAINTENANCE
245      C
246      ISIDE = 1
247      DO 897 TC = 1,TRMAX
248      DO 897 CAT = 1,6
249      L = NUMTYP(CAT,ISIDE)
250      DO 897 TP = 1,L
251      DEPLOY(TP,CAT,ISIDE,TC) = DEPLOY(TP,CAT,ISIDE,TC)
252      THREEPL(TP,CAT,ISIDE,TC) = THREEPL(TP,CAT,ISIDE,TC)/4.
253      RTD(TP,CAT,ISIDE,TC) = REPLFP(TP,CAT,ISIDE,TC)*.4/5/4.
254      REPLFP(TP,CAT,ISIDE,TC) = THREEPL(TP,CAT,ISIDE,TC)
255      *REPLFP(TP,CAT,ISIDE,TC)*.36/4.
256      SURVAB(TP,CAT,ISIDE,TC) = SURVAB(TP,CAT,ISIDE,TC)
257      897 CONTINUE
258      C
259      C***WRITE CEM ARRAYS FOR APP ON LOGICAL UNIT 7
260      C***US AND GS MAINTENANCE PLATED IN APP ARE
261      C***ASSUMED TO EACH BE EQUAL ONE HALF OF THE
262      C***MAINTENANCE FACILITY THAT IS SIMULATED IN CEM
263      C***SOME VARIABLES HAVE BEEN REUSED TO CONSERVE STORAGE
264      C***FINAL ORDER OF OUTPUT IS
265      C*** 1. DEPLOYMENT
266      C*** 2. REPLACEMENTS TO POOL
267      C*** 3. RETURN TO DUTY FROM DS MAINTENANCE
268      C*** 4. RETURN TO POOL FROM GS MAINTENANCE
269      C*** 5. REPLACEMENT + GS MAINTENANCE FROM POOL
270      C*** 6. SURVIVING ASSETS
271      C
272      DC = 0
273      DO 999 T = 1,TRMAX
274      DO 999 K=1,TE = 1,4
275      DC = DC+1
276      C
277      WRITE(7,530)DC
278      DO 998 CAT = 1,6
279      L = NUMTYP(CAT,ISIDE)
280      DO 997 TP = 1,L
281      IF (KWRITE.NL.1)DEPLOY(TP,CAT,ISIDE,TC)=0
282      WRITE(7,530)DEPLOY(TP,CAT,ISIDE,TC)
283      THREEPL(TP,CAT,ISIDE,TC)
284      RTD(TP,CAT,ISIDE,TC)
285      REPLFP(TP,CAT,ISIDE,TC)

```

Figure III.1.12 (Cont.)

```

285      •      ,RTD(ITP,CAT,ISIDE,TC)
286      •      ,SURVAS(ITP,CAT,ISIDE,TC)
287      997 CONTINUE
288          WRITE(7,570)
289      998 CONTINUE
290          WRITE(7,570)
291          WRITE(7,570)
292          WRITE(7,570)
293      C
294      C***CALL GEMLOS FOR DAILY ON-LINE, K-KILL
295      C***AND M-KILL DATA, AND FOR CAS RATIOS
296      C
297          CALL GEMLOS
298      996 CONTINUE
299      999 CONTINUE
300      99 STOP
301          END

```

Figure III.1.12 (Cont.)

UNCLASSIFIED*EIFHANK(1).CEMHLOS/10JUL80

```

1      SUBROUTINE CEMLOS
2      C*** *** *** *** *** *** *** *** ***
3      C  AUTHOR   ANDREW N. CAHNAS
4      C  PURPOSE.
5      C          THIS SUBROUTINE READS ON-LINE AND HIT DATA FROM
6      C          A SELECTED CEM PARTITION FILE ( AMMU1 OR
7      C          AMMU2) AND CAS LOSSES FROM THE CEM LOSSREP
8      C          FOR USE IN THE APP
9      C          A) OUTPUT FROM CEM IS IN LOGICAL UNIT 14, AND 3/AMMU1.
10     C          FOR ON-LINE AND ATTRITION VALUES, AND LOGICAL UNIT 15
11     C          AND 3/LOSSREP FOR CAS
12     C          B) INPUT TO THE AMMUNATES MODEL IS WRITTEN ON LOGICAL UNIT 8.
13     C  VARIABLE DEFINITIONS.
14     C      CASAPC  CAS DAILY APC PERMANENT LOSSES
15     C      CASCPK  CAS DAILY CREW PERSONNEL TOTAL LOSSES
16     C      CASNPK  CAS DAILY NONCREW PERSONNEL TOTAL LOSSES
17     C      CASTAK  CAS DAILY TANK PERMANENT LOSSES
18     C      CSTAPC  CAS DAILY APC TEMPORARY LOSSES
19     C      CSTAK   CAS DAILY TANK TEMPORARY LOSSES
20     C      CAT     WEAPON CATEGORY
21     C      1 = PERSONNEL
22     C      2 = TANKS
23     C      3 = LIGHT ARMOR
24     C      4 = HELICOPTERS
25     C      5 = ARTILLERY
26     C      6 = ARTY
27     C      DAY     DAY FROM 37LOSSREP REPORT
28     C      DC      DAY CYCLE COUNTER
29     C      ISIDE   1 = BLUE, 2 = RED
30     C      REH     1 = ENG, 2 = K-KILL, 3 = M-KILL
31     C      LININF  ALPHANUMERIC READ WORD, 6 CHARACTERS
32     C      LOSTPK  RATIO TEMPORARY/PERMANENT KILLS (BLUE AND RED)
33     C              (TYPE, CATEGORY, SIDE, THEATER CYCLE)
34     C      LFCSTR  LOSS RATIO (PERMANENT) TO CAS/TOTAL OF RED TANKS
35     C      LHCSIA  LOSS RATIO (PERMANENT) TO CAS/TOTAL OF RED ICV/APCS
36     C      LHCSAK  LOSS RATIO (PERMANENT) TO CAS/TOTAL OF RED ARMOR
37     C      LHCSPE  LOSS RATIO (PERMANENT) TO CAS/TOTAL OF RED PERSONNEL
38     C      NCEHNP  ARRAY, TOTAL TYPES CEMH/L WPNS, EACH SIDE
39     C      NGAG    ENGAGEMENT SAMPLE
40     C      NUDAYS  NUMBER OF DAYS SIMULATED
41     C      NUNTPP  ARRAY, NO OF WPNS TYPES IN EACH CATEGORY (CEMH/L)
42     C      PLSTAT  ARRAY, STATUS OF WEAPON
43     C              1 = PLAYED, 0 = NOT PLAYED
44     C              1 = RED ICV, 1 = RED APC (IN CATEGORY 3)
45     C      RATIOB  RATIO OF BLUE PERSONNEL ENGAGED FOR EACH SAMPLE
46     C              (NGAG)
47     C      RATIOH  RATIO OF RED PERSONNEL ENGAGED FOR EACH SAMPLE
48     C              (NGAG)
49     C      SUMAPB  APC BLUE DAILY ENGAGED, K-KILL, M-KILL DATA
50     C      SUMHEH  HELD RED DAILY ENGAGED, K-KILL, M-KILL DATA
51     C              (REH, TYPE, NGAG)
52     C      SUMPEB  PERSONNEL BLUE DAILY ENGAGED, K-KILL, M-KILL DATA
53     C              (REH, TYPE, NGAG)
54     C      SUMPER  PERSONNEL RED DAILY ENGAGED, K-KILL, M-KILL DATA
55     C              (REH, TYPE, NGAG)
56     C      SUMTKB  TANKS BLUE DAILY ENGAGED, K-KILL, M-KILL DATA

```

Figure III.1.13


```

114      580 FORMAT(1X,23H••• RED LOSS RATIOS ARE 4F6.5)
115      570 FORMAT(6X,74X,F6.2,6X,F6.2)
116      560 FORMAT(1A,44H••• MISMATCH ON DAY READOUT FROM J/LOSSREP•••)
117      550 FORMAT(6X,A6,14X,213)
118      540 FORMAT(6X,21A6)
119      530 FORMAT(1)
120      510 FORMAT(12F9.1)
121      502 FORMAT(6X,14H RATIO LOSSES FOR TC,13)
122      500 FORMAT(22A6)
123      C
124      C•••READS CAS LOSS/TOTAL RATIOS FOR TANKS
125      C•••APCS ICVS AND PERSONNEL FOR DAY FROM 15
126      C
127      100 READ(15,500,END=160) LININF
128      IF (LININF(2).NE.'LOSSES') GO TO 100
129      READ(15,550) ALPHA, DAY
130      IF (DAY.NE.DC) GO TO 100
131      WRITE(6,500) LININF
132      WRITE(6,550) ALPHA, DAY, DC
133      IF (DAY.NE.DC) WRITE(6,500)
134      105 READ(15,500,END=160) LININF
135      IF ((LININF(3).NE.'TOTAL').AND.(LININF(4).NE.'
136      • GO TO 105
137      C WRITE(6,540) LININF
138      110 READ(15,500,END=160) LININF
139      IF (LININF(2).NE.'RED ') GO TO 110
140      C WRITE(6,540) LININF
141      120 READ(15,500,END=160) LININF
142      IF (LININF(2).NE.'TAN')
143      • GO TO 120
144      C WRITE(6,540) LININF
145      READ(15,570) CAS TANK, TOT TANK
146      READ(15,570) CS ITANK, TTT TANK
147      WRITE(6,570) CAS TANK, TOT TANK
148      WRITE(6,570) CS ITANK, TTT TANK
149      130 READ(15,500,END=160) LININF
150      IF (LININF(2).NE.'APC')
151      • GO TO 130
152      C WRITE(6,540) LININF
153      READ(15,570) CAS APC, TOT APC
154      READ(15,570) CS TAPC, TTT APC
155      WRITE(6,570) CAS APC, TOT APC
156      WRITE(6,570) CS TAPC, TTT APC
157      140 READ(15,500,END=160) LININF
158      IF (LININF(3).NE.'CRE') GO TO 140
159      C WRITE(6,540) LININF
160      READ(15,570) CAS CPE, TOT CPE
161      WRITE(6,570) CAS CPE, TOT CPE
162      150 READ(15,500,END=160) LININF
163      IF (LININF(3).NE.'NON') GO TO 150
164      C WRITE(6,540) LININF
165      READ(15,570) CAS NPE, TOT NPE
166      WRITE(6,570) CAS NPE, TOT NPE
167      GO TO 170
168      160 WRITE(6,590)
169      C
170      C••• WRITE RATIO CAS/TOTAL PERMANENT LOSSES

```

Figure III.1.13 (Cont.)

```

171      C
172      170 LKCSA = (CSTAK+CASAK)/(TOTAK+TTTAK)
173      LKCSIA = (CSTAPC+CASAPC)/(TOTAPC+TTTAPC)
174      LKCSAR = (CSTAK+CSTAPC+CASAK+CASAPC)
175      * / (TOTAK+TOTAPC+TTTAK+TTTAPC)
176      LKCSPE = (CASCP+CASNPE)/(TOTCP+TOTNPE)
177      WRITE(6,580) LKCSA,LKCSIA,LKCSAR,LKCSPE
178
179      C
180      C***READ IN FROM (10) BLUE AND RED WEAPON DATA
181      NGUAYS = THMAX*4
182      10 READ(14,500,END=99)LININF
183      IF((LININF(10).EQ.'ENGAG').AND.(LININF(11).EQ.'ED AND'))
184      *   ) GO TO 20
185      GO TO 10
186      20 CONTINUE
187
188      C
189      C***HEAD NOS ENGAGED AND HIT FOR DAY DC FOR PERSONNEL
190      C***TANKS,APCS,HELICOPTERS,ANTI-TANK MORTARS & ARTILLERY
191      C***FOR BLUE AND RED
192      C
193      DO 25 NGAG = 1,8
194      DO 25 KEH = 1,4
195      READ(14,510)SUMPEB(KEH,1,NGAG)
196      READ(14,510)(SUMTKB(KLH,TP,NGAG),TP=1,12)
197      READ(14,510)(SUMAPB(KEH,TP,NGAG),TP=1,12)
198      READ(14,510)(SUMHEB(KEH,TP,NGAG),TP=1,5)
199      READ(14,510)(SUMATB(KEH,TP,NGAG),TP=1,12)
200      READ(14,510)(SUMARB(KEH,TP,NGAG),TP=1,8)
201      READ(14,510)SUMPER(KEH,1,NGAG)
202      READ(14,510)(SUMTKR(KEH,TP,NGAG),TP=1,12)
203      READ(14,510)(SUMAPR(KEH,TP,NGAG),TP=1,12)
204      READ(14,510)(SUMHER(KEH,TP,NGAG),TP=1,5)
205      READ(14,510)(SUMATR(KEH,TP,NGAG),TP=1,12)
206      READ(14,510)(SUMARR(KEH,TP,NGAG),TP=1,8)
207      25 CONTINUE
208
209      C
210      C***THIS SECTION
211      C***SEPARATE HITS INTO K AND M-KILLS
212      C***FOR EACH BLUE AND RED WEAPON SYSTEM
213      C***AND COMPUTES RED & BLUE ON LINE ARTY TUBES
214      C
215      C***ROLL UP TOTAL BLUE AND RED PERSONNEL FOR DAY
216      C
217      SIGMAB = 0.
218      SIGMAR = 0.
219      DO 29 NGAG = 1,8
220      DO 29 TP = 1, 12
221      NATIUB(NGAG) = 0.
222      NATIUR(NGAG) = 0.
223      SIGMAB = SUMTKB(1,TP,NGAG)+SIGMAB
224      29 SIGMAR = SUMTKR(1,TP,NGAG)+SIGMAR
225
226      C
227      C***COMPUTE RATIO OF ENGAGED TANKS IN EACH SAMPLE
228      C
229      DO 30 NGAG = 1,8
230      DO 30 TP = 1, 12
231      NATIUB(NGAG) = SUMTKB(1,TP,NGAG)/SIGMAB + NATIUB(NGAG)

```

Figure III.1.13 (Cont.)


```

228      RATIOB(NGAG) = SUMTKR(1,TP,NGAG)/SIGMAK * RATIOB(NGAG)
229      31 CONTINUE
230      C
231      C
232      C***SEPARATE K AND M KILLS FOR PERSONNEL
233      SUMPLB(3,1,NGAG) = SUMPLB(2,1,NGAG)*LOSTPK(1,1,1,TC)
234      SUMPLB(2,1,NGAG) = SUMPLB(2,1,NGAG) - SUMPLB(3,1,NGAG)
235      SUMPER(3,1,NGAG) = SUMPER(2,1,NGAG)*LOSTPK(1,1,2,TC)
236      SUMPER(2,1,NGAG) = SUMPER(2,1,NGAG) - SUMPER(3,1,NGAG)
237      C
238      C***SEPARATE K AND M KILLS FOR TANKS, LIGHT ARMOR, A/T MORTARS
239      C
240      DO 40 TP = 1,12
241      SUMTKB(3,TP,NGAG) = SUMTKB(2,TP,NGAG)*LOSTPK(TP,2,1,TC)
242      SUMTKB(2,TP,NGAG) = SUMTKB(2,TP,NGAG) - SUMTKB(3,TP,NGAG)
243      SUMTKR(3,TP,NGAG) = SUMTKR(2,TP,NGAG)*LOSTPK(TP,2,2,TC)
244      SUMTKR(2,TP,NGAG) = SUMTKR(2,TP,NGAG) - SUMTKR(3,TP,NGAG)
245      SUMAPB(3,TP,NGAG) = SUMAPB(2,TP,NGAG)*LOSTPK(TP,3,1,TC)
246      SUMAPB(2,TP,NGAG) = SUMAPB(2,TP,NGAG) - SUMAPB(3,TP,NGAG)
247      SUMAPR(3,TP,NGAG) = SUMAPR(2,TP,NGAG)*LOSTPK(TP,3,2,TC)
248      SUMAPR(2,TP,NGAG) = SUMAPR(2,TP,NGAG) - SUMAPR(3,TP,NGAG)
249      SUMATB(3,TP,NGAG) = SUMATB(2,TP,NGAG)*LOSTPK(TP,5,1,TC)
250      SUMATB(2,TP,NGAG) = SUMATB(2,TP,NGAG) - SUMATB(3,TP,NGAG)
251      SUMATR(3,TP,NGAG) = SUMATR(2,TP,NGAG)*LOSTPK(TP,5,2,TC)
252      40 SUMATR(2,TP,NGAG) = SUMATR(2,TP,NGAG) - SUMATR(3,TP,NGAG)
253      C
254      C***SEPARATE K AND M KILLS FOR HELICOPTERS
255      C
256      DO 50 TP = 1,5
257      SUMHEB(3,TP,NGAG) = SUMHEB(2,TP,NGAG)*LOSTPK(TP,4,1,TC)
258      SUMHEB(2,TP,NGAG) = SUMHEB(2,TP,NGAG) - SUMHEB(3,TP,NGAG)
259      SUMHER(3,TP,NGAG) = SUMHER(2,TP,NGAG)*LOSTPK(TP,4,2,TC)
260      50 SUMHER(2,TP,NGAG) = SUMHER(2,TP,NGAG) - SUMHER(3,TP,NGAG)
261      C
262      C***COMPUTE ON LINE ARTY (RED & BLUE) FOR TWO TWELVE HOUR PERIODS
263      C***USING LOGREP TOTAL OUTPUT AND SEPERATING INTO POSTURES BY PERSONNEL
264      C***RATIO RELATIONSHIP.
265      C
266      DO 70 TP = 1,8
267      SUMARB(1,TP,NGAG) = 2*SUMVAS(TP,6,1,TC)*RATIOB(NGAG)
268      SUMARB(2,TP,NGAG) = 0.02*SUMVAS(TP,6,1,TC)*RATIOB(NGAG)
269      SUMARB(3,TP,NGAG) = 0.02*SUMVAS(TP,6,1,TC)*RATIOB(NGAG)
270      SUMARR(1,TP,NGAG) = 2*SUMVAS(TP,6,2,TC)*RATIOB(NGAG)
271      SUMARR(2,TP,NGAG) = 0.02*SUMVAS(TP,6,2,TC)*RATIOB(NGAG)
272      70 SUMARR(3,TP,NGAG) = 0.02*SUMVAS(TP,6,2,TC)*RATIOB(NGAG)
273      30 CONTINUE
274      C
275      C***SUMMATION OF RED LOSSES INTO 6 CATEGORIES
276      C***THESE CATEGORIES ARE
277      C***RED PERSONNEL - SUMREP
278      C***RED TANKS - SUMRTN
279      C***RED ICVS - SUMRIC
280      C***RED APCS - SUMRAP
281      C***RED JL/APC - SUMRIA
282      C***RED ARTY - SUMRAH
283      C***A - THE PLSTAT ARRAY DENOTES A/T ICV
284      C

```

Figure III.1.13 (Cont.)

```

285 C***END TOTAL RED LOSS ARRAYS
286 DO 600 NGAG = 1,8
287 SUMREP(NGAG) = 0.
288 SUMRTN(NGAG) = 0.
289 SUMRIC(NGAG) = 0.
290 SUMRAP(NGAG) = 0.
291 SUMRIA(NGAG) = 0.
292 SUMRAK(NGAG) = 0.
293 600 CONTINUE
294 C
295 C***COMPUTE TOTAL RED LOSS ARRAYS FOR TOTAL HITS
296 C
297 C
298 DO 610 NGAG = 1,8
299 SUMREP(NGAG) = SUMPER(2,1,NGAG) + SUMPER(3,1,NGAG)
300 DO 610 TP = 1,12
301 SUMRTN(NGAG) = SUMTKR(2,TP,NGAG) + SUMRTN(NGAG) + SUMTKR(3,TP,NGAG)
302 IF (PLSTAT(TP,3,2).EQ.9)
303 * SUMRIC(NGAG) = SUMAPK(2,TP,NGAG) + SUMRIC(NGAG) + SUMAPK(3,TP,NGAG)
304 IF (PLSTAT(TP,3,2).EQ.1)
305 * SUMRAP(NGAG) = SUMAPK(2,TP,NGAG) + SUMRAP(NGAG) + SUMAPK(3,TP,NGAG)
306 SUMRIA(NGAG) = SUMRIC(NGAG) + SUMRAP(NGAG)
307 SUMRAK(NGAG) = SUMRIA(NGAG) + SUMRTN(NGAG)
308 610 CONTINUE
309 WRITE(6,502)TC
310 DO 38 ISIDE = 1,2
311 WRITE(6,510)(LUSTPK(1,1,ISIDE,TC))
312 WRITE(6,510)(LUSTPK(TP,2,ISIDE,TC),TP=1,12)
313 WRITE(6,510)(LUSTPK(TP,3,ISIDE,TC),TP=1,12)
314 WRITE(6,510)(LUSTPK(TP,4,ISIDE,TC),TP=1,5)
315 WRITE(6,510)(LUSTPK(TP,5,ISIDE,TC),TP=1,12)
316 WRITE(6,510)(LUSTPK(TP,6,ISIDE,TC),TP=1,8)
317 36 CONTINUE
318 36 CONTINUE
319 C
320 C***WRITE ENGAGED, K-KILLS & H-KILLS
321 C***FOR BLUE WEAPONS (ALL CATEGORIES &
322 C**TYPES) ONTO APP INPUT FILE (LOGICAL
323 C***UNIT 7)
324 C
325 DO 80 NGAG = 1,8
326 WRITE(7,510)(SUMPEB(KEH,1,NGAG),KEH=1,3)
327 WRITE(7,510)(SUMTKB(KEH,TP,NGAG),KEH = 1,3),TP = 1,12)
328 WRITE(7,510)(SUMAPB(KEH,TP,NGAG),KEH = 1,3),TP = 1,12)
329 WRITE(7,510)(SUMHEB(KEH,TP,NGAG),KEH=1,3),TP = 1,5)
330 WRITE(7,510)(SUMHAB(KEH,TP,NGAG),KEH = 1,3),TP = 1,12)
331 WRITE(7,510)(SUMHAB(KEH,TP,NGAG),KEH = 1,3),TP = 1,8)
332 C
333 C***SEPARATE CAS FROM TOTAL LOSSES FOR 6 RED CATEGORIES
334 C
335 SUMREP(NGAG) = (1-LRCSPE)*SUMREP(NGAG)
336 SUMRTN(NGAG) = (1-LRCSTK)*SUMRTN(NGAG)
337 SUMRIC(NGAG) = (1-LRCSIA)*SUMRIC(NGAG)
338 SUMRAP(NGAG) = (1-LRCSIA)*SUMRAP(NGAG)
339 SUMRIA(NGAG) = (1-LRCSIA)*SUMRIA(NGAG)
340 SUMRAK(NGAG) = (1-LRCSAK)*SUMRAK(NGAG)
341 C
342 C***WRITE LOSSES FOR 6 RED CATEGORIES ONTO UNIT 7
343 C
344 WRITE(7,510)SUMREP(NGAG),SUMRTN(NGAG),SUMRIC(NGAG)
345 * ,SUMRAP(NGAG),SUMRIA(NGAG),SUMRAK(NGAG)
346 80 CONTINUE
347 35 CONTINUE
348 99 RETURN
349 END

```

Figure III.1.13 (Cont.)

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CHAPTER 2

EQUIVALENT STYLIZED DAY PROGRAM

- 2.1 DESCRIPTION OF PROCESSING: The Equivalent Stylized Day (ESD) program is implemented in the SIMSCRIPT II.5 programming language. The syntax of the language with the lengthy variable naming capability has produced an easy reading program though the program does not employ the use of the simulation (timing routines) features. The ESD program is an accounting type program that reads data, computes the ESD values and writes out the results. This is achieved through the Preamble, which declares the data structure; MAIN, which is the driver, and which makes calls to five subroutines called ESD.MAP, RESET.TOTAL1, DAILY.INPUTS, RATIO.COMP and ESD.COMPI.
- 2.1.1 PURPOSE/FUNCTIONS: The ESD program was developed as a component to the APP to compute the equivalent stylized day values that were previously computed by the Theater Rates Model (TRM), a component of the AMMO RATES methodology. Reference item Z in Appendix A provides historical information on the ESD concepts and computations, but is not directly applicable to the current system. The program is designed to read four input data files and produce one primary output file, the AMMOUT file. Of the four input files, AMMOIN is produced by the previously executed Buffer program, and the MAPESD, RPERCK and RSTYLO are manually created by the user/analyst. All input data files are sequential and read in their entirety. The runstream for program execution breakpoints a file cataloged as APPPRINT in addition to the runstream's Temporary Program File (TPF\$).
- 2.1.2 PROGRAM INPUT/OUTPUT STRUCTURE: The program's I/O structure is depicted in Figure III.2.1. The numbers inside the flow chart symbols for the input data files is the sequence that the file is called initially by the program. The number outside the symbol, at the upper left is the logical unit assigned by the runstream and expected by the program during execution for I/O. Through out the documentation, the double asterisk "***" is used in lieu of stating a specific user identification number when discussing program files.
- 2.1.2.A INPUT DATA and DATA BASE: The three input data files are not part of a formal database organization. These files are maintained by the current user/analyst, and in the case of the manually produced files, updated in the course of study program progression. It is incumbent on the user to properly catalog and maintain the data files. A version name may be appended to the file element name to distinguish between like - named files and provide an audit trail by linking the version name to the study in progress. The formats of the data is discussed in Volume III, Chapter 2 of this documentation set, and are not duplicated here. The following is a summary of the input data files.
- o AMMOIN - The **AMMOIN input data file was the product of the

Buffer program. It is assigned as a permanently cataloged program (PRINT) file and the data within it provided to the program via the @ADD - EXECUTIVE-8 command following the program execution (@XQT) statement, thus using logical unit 5 (by default) to introduce data. A sample of this data file is depicted in Figure III.2.2. Though produced in a formatted output, the data is read utilizing free formatted read statements. The data is read sequentially and the full content of the file is read.

- o MAPESD - The data file is manually developed by the user/analyst. It is normally a version of a predecessor file updated to reflect the results of the current study's high-resolution (COSAGE) and theater (CEM) model results. It's length (43 records) and organization permit manual editing and revision. A sample of the data file is depicted in Figure III.2.3. The data is read as free-formatted for input, therefore the organization is for ease of editing and visual verification. The format, by the depicted records, is as follows:

<u>Position</u>	<u>Description</u>	<u>Format</u>
- Record 1 -		
First	AVA - The ESD that relates to the armor versus armor value.	Integer
- Records 2-41 - (One record for each ESD modeled)		
First	ESD sequence number, used for input only, to relate to the input sequence.	Integer
Second	BLUE.WPN.PTR, Blue weapon pointer to one of the modeled blue weapons related to the ESD.	Integer
Third	RED.QPN.PTR, Red weapon pointer to one of the modeled red weapons related to the ESD.	Integer
Fourth	R.QTY.INDEX, the red quantity index or value of the red weapon systems who's quantity relates to this ESD.	Integer
Fifth	B.RATIO.INDEX, the blue ratio index (0 or 1) to switch computational methods for ESD.	Integer

- Records 42, 43 -

Each position (total positions =4 x N.SAMPLE)	COMB.SAMPLE, the coefficient used in combining samples combining samples,used as a percent in computations. In sample data, the values are used computationally as 0.0 or 1.0.	Integer (converted to real)
---	--	-----------------------------------

- o RPERCK - The data file is manually produced by the user/analyst. It is normally a version of a predecessor file updated to reflect the results of the current study's high-resolution model (COSAGE) results. Its length (120 records) and organization permit manual editing and revision. There are four groups of sequential records, each group containing 30 records. The groups denote red (direct fire) equipment (weapon) types 1 through 4; the 30 records denote 30 blue equipment (weapon) types. On each record there is an integer identifying the blue equipment type index followed by the percentage of hits that are K-kills (blue to red) in the stylized set (day). The value 99.9 is programmed and is a key to denote that the particular weapon (equipment) was not modeled or played. A sample of this data file is depicted in Figure III.2.4.
- o RSTYLO - The **RSTYLO data file is manually produced as a program file by the user/analyst. It is normally a version of the predecessor file updated to reflect the results of the current study's high resolution model (COSAGE) results. Its length (approximately 55 records) and organization permit manual editing and revision. There are four groups of sequential records; each group has the number of records that equates to the number of equipment types denoted in the preceeding RPERCK file with a value other than 99.9. On each record there is one (real) data entry for each combat sample (normally four). Each entry defines the ratio of: percent hits that are K-kills to the percent that are M-kills. The data value is the quantity of equipment (weapon) lost in the stylized red force to the blue weapon type. The four groups of data equate to red equipment types 1 through 4. Currently the methodology accounts for 6 red weapons or equipment types; the program provides for the input of red types 1 through 4 followed by the computation of data values for types 5 and 6 (indirect fire systems).

Red equipment 5 is computed as the sum (by blue equipment type) of types 3 and 4. Red equipment 6 is computed as the sum, by blue equipment type, of losses for equipment type 2 and 5. An example of this input data is presented in Figure III.2.5.

- 2.1.2.B OUTPUT DATA and DATA FILES: The program produces the **AMMOUT file as its main function; the **APPPRINT file is produced as a breakpointed file to capture the progress of program execution in addition to the runstream output (TPF\$) file. These files become a product managed by

the current user/analyst and are not a part of a formal database. It is incumbent on the user to properly catalog and maintain these files. This is usually accomplished in the execution runstream; the runstream as well as the data description and formats are discussed in Volume III, Chapter 2 of this documentation set and are not repeated herein. The following is a summary of the output data files.

- o AMMOUT - The **AMMOUT output data file is a cataloged program (print) file assigned in the "start" file element and is assigned to logical unit 9 via the @USE command in the runstream, and is also expected by the program. An example of this output file is presented in Figure III.2.6. The output is without printed labels; there are 38 records of data for each day of the modeled period of war. A 180 - day campaign or war would produce 6840 records of data. The file is assigned default space of 128 tracks on a fixed mass storage device. Note that a detailed description of AMMOUT is given in comment lines 13 to 39 of the report generator code Figure III.3.11.
- o APPPRINT - The **APPPRINT program file is depicted in Figure III.2.7. It is not normally printed out in its entirety due to its size, but is checked for program completion, then retained on a system mass storage device for reference as required. The file sequentially tracks the progress of program execution through print, write or list statements within the program.

2.1.2.C DATA ELEMENT DICTIONARY: The following variables are declared in the program PREAMBLE which provides the data definitions and background.

- o Global variables - The following variables are defined for use throughout the program.

<u>Descriptor Word</u>	<u>Mode</u>	<u>Value</u>	<u>Definition</u>
AVA	Integer	0-40	An armor versus armor variable applied in logic tests to determine if the ESD is an armor on armor value.
COMB.SAMPLE	Real	0-1	An input data array set to a coefficient for combining combat samples; 2 dimensional array, 4 by N.Sample
N.BLUE.WEAPON	Integer	0-N	The quantity of blue weapon systems modeled in the high resolution model.

N.B.CEM.WPN	Integer	0-N	The quantity of blue weapon systems modeled in the theater (CEM) model.
N.ESD	Integer	0-N	The quantity of equivalent stylized days modeled, normally 40.
N.CEM.SAMPLE	Integer	0-N	The quantity of theater samples modeled, normally 8.
N.SAMPLE	Integer	0-N	The quantity of high resolution combat samples modeled, normally 4.
N.RED.WPN	Integer	0-N	The quantity of red weapon systems modeled in the high resolution combat model.
N.R.CEM.WPN	Integer	6	The quantity of red weapon systems modeled in the theater model; set to 6.

- o Data variables - The relationships of the following variables may be established by reviewing the data structure in Figures III.2.8 and III.2.9.

<u>Name</u>	<u>Mode</u>	<u>Definition</u>
ARM.INDIC	Attribute-Integer	A binary flag to indicate that a blue weapon is armor type (1) or is not (0).
BLUE.WPN	Permanent Entity-integer	The index value of a modeled Blue force weapon system, value from 1 to N.BLUE.WPN.
BLUE.WPN.PTR	Attribute-Integer	A pointer to the blue weapon associated with a given ESD, Value is 0 ot N.BLUE.WPN.
BLUE.ID	Attribute - integer	The CEM weapon number associated with a BLUE.WPN, value as input.

B.ARMOR.ACT	Attribute - real	The total quantity of blue armored equipments modeled on simulated/on-line or actual in a sample.
B.ARMOR.STY	Attribute - real	The total quantity of blue armored equipments modeled on the stylized force array for a COSAGE sample.
BFRST	Attribute - real	The ratio of the quantity of actual or on-line blue armored equipments to the quantity of stylized armored equipments in a combat sample.
B.QTY.ON.HAND	Attribute - real of a compound entity	The quantity of a blue weapon by type in a sample that is engaged.
B.RATIO	Attribute - real of a compound entity	The ratio of actual or engaged weapons by type to stylized weapons by type in a sample.
B.RATIO.INDEX	Attribute-Integer	A binary flag to indicate that a given ESD computation will be by the normal (0) method or employ the B.RATIO value (1) in the computations, value 0 or 1.
B.STYLIZED.QTY	Attribute - real of a compound entity	The quantity of blue weapons in the stylized force by sample.
B.CEM.WPN	Permanent entity-integer	The index value of a modeled blue CEM weapon, value from 1 to N.B.CEM.WPN.
CEM.SAMPLE	Permanent entity-integer	The index value of a modeled CEM sample, value from 1 to N.CEM.SAMPLE.

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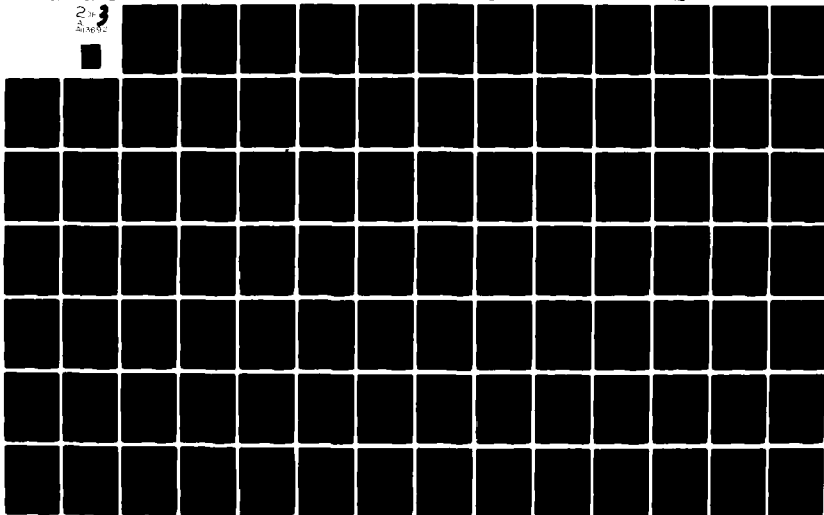
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DEPLOYMENT	Attribute - real	The quantity of a type of blue weapons deployed to the theater of operations in a day. (daily).
EQ	Attribute - real	The computed scalar quantity of a value per ESD and per sample.
ESD	Permanent entity-integer	The index value of a modeled equivalent stylized day, value of 1 to 40.
K.KILL	Attribute - real of a compound entity	The quantity of a blue weapon system accounted as k-kills for a sample, for the day.
M.KILL	Attribute - real of a compound entity	The quantity of a blue weapon system accounted as M-kills for a sample for the day.
PERC.K	Attribute - real of a compound entity	The quantity of blue kills of red systems by type.
POS.LOS.PART	Attribute - real of a compound entity	The quantity of read weapons of a type lost to (killed by) a blue weapon by type in a sample.
POS.TOT.LOS	Attribute - real of a compound entity	The total quantity (possible loss) of a red weapon system type, to blue systems in a sample.
RED.ID	Attribute - Integer	The CEM weapon number of a red weapon system.
RED.STYLIZED. LOS	Attribute - real of a compound entity	The quantity of a red weapon system lost to a blue weapon system in a sample.
RED.WPN	Permanent entity-Integer	The index value of a modeled red force weapon system, value 0 to N.RED.WPN.

RED.WPN.PTR	Attribute-Integer	A pointer to the red weapon associated with a given ESD, value 0 to N.RE.WPN.
RD.WPN.NO	Attribute - real	The CEM weapon number used for mapping CEM to APP numbers.
REPLACEMENT	Attribute - real	The quantity of a blue weapon system replaced to the theater stocks in a given day.
RETURNED.TO. DUTY	Attribute - real	The quantity of a blue weapon system repaired or returned to duty in a given day.
REPP.POOL	Attribute - real	The quantity of a blue weapon system issued from the theater pool in a given day.
RETURN.POOL	Attribute - real	The quantity of a blue weapon system repaired at GS maintenance level and returned to the theater stock pool in a given day.
R.CEM.WPN	Permanent entity-Integer	The index value of a modeled red weapon associated with its CEM weapon identification number. Value from 0 to NR.CEM.WPN which is set to 6.
R.QTY.INDEX	Attribute-real	A value of the Red weapon associated with an ESD used to identify and array location, value from 0 to N.RED.WPN.
R.QTY.LOS.	Attribute - real of a compound entity	The quantity of a red weapon system lost in a sample for a given day.

R.STYLIZED.QTY	Attribute - real of a compound entity	The quantity of a red weapon system in the stylized array sample.
R.RATIO	Attribute - real of a compound entity	The ratio of the actual quantity of red system to the stylized quantity of a red system in a given day.
SAMPLE	Permanent entity-Integer	The index value of a stylized sample results modeled, associated with the COSAGE number of samples. Value from 0 to N.SAMPLE, normally 4.
SURV.ASSET	Attribute - real	The quantity of a blue weapon system surviving in a given day.
TDEPLOYMENT	Attribute - real	The quantity of a blue weapon system deployed to the theater in a given day.
TREPLACEMENT	Attribute - real	The quantity of a blue weapon system replaced in theater stocks in a given day.
TRETURN.TO. DUTY	Attribute - real	The quantity of a blue weapon system returned to units from DS maintenance in a given day.
TREPP.POOL	Attribute - real	The quantity of a blue weapon system issued from the theater replacement pool in a given day.
TRETURN.POOL	Attribute - real	The quantity of a blue weapon system repaired and returned to the theater replacement pool in a given day.

TRB.QTY.ON. HAND	Attribute - real of a compound entity	The quantity of a blue (CEM) weapon in the sample on a given day; for mapping CEM to APF quantities.
TB.QTY.ON. HAND	Attribute - real of a compound entity	The quantity of a blue (CEM) weapon in a CEM sample on a given day.
TK.KILL	Attribute - real of a compound entity	The quantity of a blue (CEM) weapon lost as a K-kill in a CEM sample on a given day.
TM.KILL	Attribute - real of a compound entity	The quantity of a blue CEM weapon lost as an M-kill in a CEM sample in a given day.
TR.QTY.LOSS	Attribute - real of a compound entity	The quantity of a red CEM weapon lost to K-kill and M-kill in a CEM sample on a given day.
TRK.KILL	Attribute - real of a compound entity	The quantity of a blue CEM weapon lost as a K-kill in a combat sample on a given day.
TRM.KILL	Attribute - real of a compound entity	The quantity of a blue CEM weapon lost as an M-kill in a combat sample in a given day.
TRR.QTY.LOSS	Attribute - real of a compound entity	The quantity of a red CEM weapon lost as K-kills and M-kills in a CEM sample on a given day; used to map CEM to APP data.
TSURV.ASSET	Attribute-Real	The input quantity of a blue weapon system (from CEM) that has survived the day's engagements.

2.1.3 PROGRAM PROCESSING: The MAIN2 routine is the program driver and calls ESD.MAP, and then RESET.TOTAL1, DAILY.INPUT3, RATIO.COMP and ESD.COMPI in order for each day of theater combat

modeled. Typically, 180 days of a campaign long war are modeled; thus 180 calls to each routine would be made. The Preamble declares the global data structure including arrays which are known as compound entities in the SIMSCRIPT II.5 programming language. The only argument passed between MAIN and the subroutines is the value of the day modeled. The high level program features are depicted in Figure III.2.10.

2.1.3.A PROGRAM RUN DESCRIPTION: The procedure or "START" file to execute the ESD program is depicted and discussed in Volume III, Chapter 2 of this documentation set. The object program and source code resides in permanently cataloged program file elements under the current APP user/analyst's computer user identification number. The execution runstream is designed to be submitted as a batch run to the system. The submission is normally made in the demand mode from a computer terminal, though a punched card deck could be submitted to the computer operations dispatcher. During the program execution, selected input data and computations are written out to either the execution runstream **APPPRINT file (Unit 6) or the output file, **AMMOUT (Unit 9). The maintenance programmer or analyst can trace the flow of execution through this medium.

2.1.3.B PROGRAM LOGIC: The program is flow charted in Figure III.2.11 (MAIN2), Figure III.2.12 (ESD.MAP) III.2.13 (RESET.TOTAL1), III.2.14 (DAILY.INPUT3), III.2.15 (RATIO.COMP), and III.2.16 (ESD.COMP1). The source code listings are depicted in Figures III.2.17 (PREAMBLE) through III.2.23.

2.1.3.C PROCESSING FEATURES: The ESD program performs the following functions.

MAIN 2

- oo Reads Input data, writes selected data.
- oo Equivalences/maps CEM weapon data to combat sample (COSAGE) data.
- oo Read in stylized quantities.
- oo Computes stylized quantities for red weapons 5 and 6.
- oo Calls ESD.MAP to read and write mapping data.
- oo For each combat day:
 - ooo Calls Reset.Total - performs no function.
 - ooo Calls Daily.Input3, given the day.
 - oooo Reads deployment, replacement data.

oooo Performs mapping adjustments:

Blue weapon 3 quantity divided by 4.
Blue weapon 4 quantity divided by 1.33.

oooo Writes out data

oooo Maps the 8 CEM sample data to 4 combat samples.

oooo Performs correctional computations for mapping:

Blue weapon 3 on hand x .25
Blue weapon 4 on hand x .75
Blue weapon 10 on hand x .50
Blue weapon 14 on hand x .50

ooo Calls Ratio.Comp given the day.

oooo For every blue weapon system, for every sample, computes the ratio of on-hand to stylized quantities.

oooo For blue weapons 2 thru 14 (armor) computes the total armor system quantity.

oooo Computes the ratio of actual armor to stylized armor.

ooo Calls ESD.COMPI given the day.

oooo Computes the total possible loss of each red-weapon against each blue weapon in each sample as the ratio times the stylized loss.

oooo For each sample, for equivalent stylized days 1 through 40 computes the ESD value as the ratio times the quantity lost divided by the possible total loss.

oo Returns to MAIN to index to the next combat day.

2.2 OPERATING ENVIRONMENT: The ESD program is implemented on the USACAA UNIVAC 1100/82 computer. The program is submitted in the demand mode and is processed in a batch environment for efficient use of resources. The program requires approximately 3 minutes of CPU time for execution. The program is developed under the UNIVAC architecture, requiring 201 words (36-bit) of main core memory for execution.

2.2.1 HARDWARE: The UNIVAC 1100/82 mainframe and peripheral devices supports the program maintenance and execution. The execution runstream fixed or removable disk (on-line) storage requirements are as follows:

UNIT 6 - 1600 (breakpoint file) tracks
UNIT 9 - default, 128 tracks

UNIT 16 - default, 128 tracks
 UNIT 17 - default, 128 tracks
 UNIT 40 - default, 128 tracks

Tape processing is not a part of the program execution. A (user) computer terminal to the system is required. A printer is employed for a hard copy of the output. Normally the operating system executive directs the assignment of the mass storage (disk) devices.

The hardware requirements for recompilation are within the capability of the USACAA computer. Refer to item U, Appendix A, for device requirements.

2.2.2 SUPPORT SOFTWARE: The program compilation and execution requires the following system processors:

@SIM25 - The SIMSCRIPT II.5 language processor.
 @MAP - The MAP processor or collector to form the executable program from the relocatable object code.
 @ED - The system editor processor.
 SDDL - The program may be processed through the Software Design and Documentation Language (SDDL) processor.

2.2.2.A OPERATING SYSTEM: The program was developed and implemented on the UNIVAC 1100/82 operating system. The features of the EXECUTIVE-8 control language and the standard system library (SYS\$LIB\$ and SYS\$RLIB\$) provide the essential support.

2.2.2.B COMPILER: The operating system library contains the SIMSCRIPT II.5 compiler and is accessed by the EXECUTIVE-8 command @SIM25. Refer to reference item U, Appendix A for recompilation (full and partial) procedures, sample runstream and compiler diagnostics. The program was developed under the release 6.3 compiler. Release 7.0 was installed in July 1981 and this program is compatible without alteration; i.e., there are no compiler enhancements that are in conflict with the program.

2.2.3 DATA BASE: The data base and files necessary for program execution were discussed in paragraph 2.1.2.A. These files are all FIELD\$DATA and in System Data Format (SDF). These files exist as user/analyst cataloged files and file elements and are not part of a formal data base structure.

2.3 MAINTENANCE PROCEDURES: The relative size of the program minimizes the maintenance. The maintenance extends to insuring that a copy of the symbolic (source) code is preserved (on tape or cards), that page by page changes are made to this documentaion as changes/maintenance is performed, and that the source code file be annotated with comments to insure that future programmers can track the changes. The following

information is pertinent to the program maintenance (space provided for notes):

Source (Symbolic) code Filename.Elementname:

Absolute (object) code Filename.Elementname:

Space Required, source code:

Space Required, absolute code:

Archived tape label, location:

Read/write keys; established by current custodian; names:

- 2.3.1 PROGRAMMING CONVENTIONS: The maintenance programmer should review Appendix A items S, T and U for the SIMSCRIPT II.5 syntax. This program applies the SIMSCRIPT II.5 programming language features such as the IF-ELSE-ALWAYS structured programming capabilities and has no "GO-TO 'LABEL'" commands in the program. The following features highlight the programming conventions:

- o The background mode for all variables declared as follows:

PREAMBLE	-	REAL
MAIN2	-	INTEGER
ESDMAP	-	INTEGER
DAILY.INPUT	-	REAL
ESD.COMP1	-	REAL
RATIO.COMP	-	REAL
RESET.TOTAL1	-	INTEGER

Unless specifically declared otherwise in the program, the variables used are set to, and computed as, the background mode. SIMSCRIPT II.5 provides for mixed-mode expressions and computations.

- o The program structure is highlighted with 5-column indentations of the code reflecting the logic and level of activity.
- o Programming syntactical substitutions are made or declared in the preamble on lines (records) 84 through 102, via "Define to mean" statements.

These substitutions are employed in the program for clarity and understanding and any programming changes made must follow the

declared substitutions. These substitutions enable a programmer to process the source code through the Software Design and Documentation Language (SDDL) as well, using the substitutions as keywords in the SDDL processor.

- o Comments are preceeded by the '' (double apostrophe) characters and any characters following this notation in a record are ignored by the compiler.
- o Because the UNIVAC ASCII printer does not print the quote symbol ("), quotes used to denote alpha literals may not show up on computer print-outs.
- o GO-TO statements are not employed in the program.
- o Programmer developed and formatted PRINT statements are used liberally in the program to verify input data and computations.
- o The define-to-mean LOOP and ENDLOOP syntax are used to highlight do-loops.

2.3.2 VERIFICATION PROCEDURES: Program verification is accomplished by performing test execution runs of the program with sample data followed by a review of the run output files. This is followed by hand calculations with the same data using the coded mathematical expressions and a comparison of the results.

2.3.3 ERROR CORRECTION PROCEDURES: The errors that may be associated with the program are: 1) Input data errors, either in content or format; 2) Program errors or bugs and 3) operating system errors. Debugging and error correction is accomplished by an examination of the output. The program does not employ any programmed debugging aids or calls to an "error-found" subroutine.

- o Data (input) errors — data presented in a mode (integer, real, alphanumeric) other than expected by the program may cause an error which will be noted in the TRACE.

Data presented in excess of reserved arrays (declared entities) will induce an error; the error may manifest itself at the point of error or later in a program read. Debugging of data must be accomplished by a visual examination of the data files (print copy or at the terminal), or tracing the input progress via the output files.

- o Program errors - The SIMSCRIPT II.5 programming language can be employed to use the following capabilities:
 - oo Debug statements: Source code level debugging is best accomplished through the use of coded debug statements, which are accessed through coded logic tests, at the approximate point of a suspected error.

- oo TRACE - The SIMSCRIPT II.5 library contains a tracing routine that traces back all subroutine calls from the error location, and prints a dump, in octal, of the recursive storage for each subroutine. A verification of variable values can quickly be accomplished using the trace information along with the compiler listing.
- oo SNAP.R - The SIMSCRIPT II.5 library contains a snapshot routine. The programmer may develop a substitute routine, by the same name of his/her own design.

Upon error, the routine provides lists of all the Preamble declared entities, events, processes, etc. An examination of these variable values aid in the verification of the program and possible sources of error.

Program errors are resolved by checking the compilation listing, the relocatable element file listing after program collection (@MAP) to insure that all references and call addresses are resolved. A post mortum dump may be produced by using the @PMD Executive-8 command in the execution runstream, and then examining the contents of the instruction (I-BANK) bank and data bank (D-BANK).

- o System error - the run output file (TPF\$) will list the system diagnosed errors for subsequent tracing and correction. These errors often occur as a result of an error in the runstream.

2.3.4 SPECIAL MAINTENANCE PROCEDURES: No special maintenance procedures are developed or required for this program.

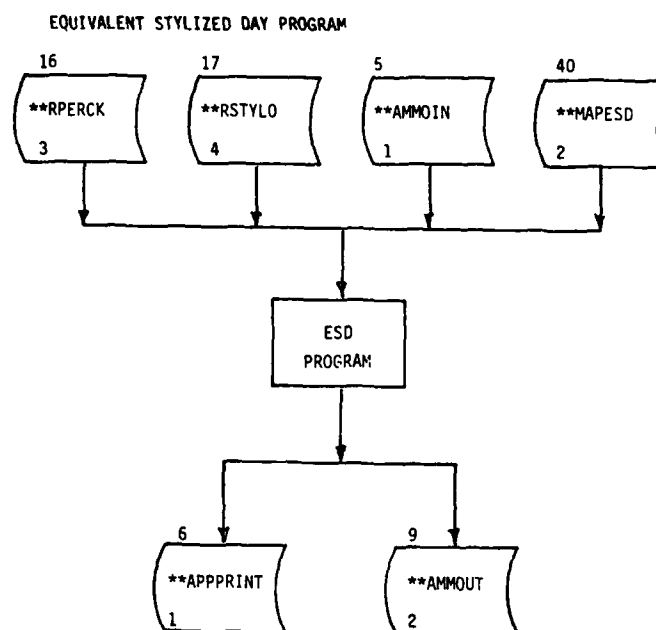


Figure III.2.1

11	30	6	4	40	8	8
12	1	12	12	5	12	8
13	1	12	12	5	12	8
14	1	12	12	5	12	8
15	33	26	30	41	99	16
16	15	14	99	99	99	98
17	41	41	45	99	99	99
18	99	99	99	99	99	99
19	99	99	99	99	99	99
20	1	2	3	4	5	6
21	1	5	6	4	5	6
22	1	4	3	4	5	6
23	11500	11500	11500	11500	11500	11500
24	55	59	59	59	59	59
25	61	59	59	59	59	59
26	189	189	189	189	189	189
27	16	14	12	12	12	12
28	226	226	226	226	226	226
29	27	27	27	27	27	27
30	34	34	34	34	34	34
31	34	34	34	34	34	34
32	132	132	132	132	132	132
33	292	292	292	292	292	292
34	33	33	33	33	33	33
35	6	6	6	6	6	6
36	108	108	108	108	108	108
37	48	48	48	48	48	48
38	47	47	47	47	47	47
39	180	180	180	180	180	180
40	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0
41	1.25286*05	81.937	1265.5	81.937	1.23335*05	1.23335*05
42	1371.0	90.250	95.855	7.0062	1367.1	1367.1
43	1752.0	20.000	27.695	9.6187	1679.9	1679.9
44	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
45	324.00	1.5000	7.5600	7.5600	244.90	244.90
46	402.00	9.5000	9.9750	9.9750	80.600	80.600
47	592.00	15.250	21.995	8.4312	368.80	368.80
48	740.00	21.750	22.035	8.5825	738.40	738.40
49	1462.0	58.250	77.630	24.225	949.40	949.40
50	1658.0	0.00000	11.305	14.131	1151.7	1151.7
51	7551.00	0.00000	46.550	46.550	182.00	182.00
52	660.00	11.000	33.135	27.669	380.00	380.00
53	344.00	12.000	15.610	4.5125	224.10	224.10
54	1229.0	15.000	61.450	60.562	692.00	692.00
55	2498.0	25.500	118.22	115.90	1452.0	1452.0
56	1230.0	16.000	69.580	66.975	521.40	521.40
57	347.00	17.750	29.245	14.369	256.50	256.50
58	36.000	3.0000	4.8050	2.2562	16.800	16.800

Figure III.2.2

52:	232.00	4.00000	7.7187	10.175	7.7187	149.40
53:	700.00	33.450	32.494	59.545	32.494	451.90
54:	1337.0	3.5000	49.519	43.115	49.519	719.30
55:	1176.0	8.5000	56.406	53.625	56.406	610.70
56:	2090.0	167.25	147.01	284.86	147.01	1145.9
57:	4946.0	0.00000	164.94	131.95	164.94	1234.8
58:	1330.0	31.750	59.375	79.250	59.375	833.40
59:						
60:	233.00	2.7500	.23750	2.9400	.23750	213.50
61:	150.00	0.00000	.11875	9.50000-02	.11875	140.30
62:	198.00	0.00000	.59375	.47500	.59375	161.70
63:	20.000	0.00000	0.00000	0.00000	0.00000	17.900
64:	180.00	.75000	.35625	1.0350	.35625	156.60
65:						
66:	495.00	.75000	0.00000	.75000	0.00000	494.90
67:	560.00	0.00000	0.00000	0.00000	0.00000	559.80
68:	2223.0	3.7500	0.00000	3.7500	0.00000	2222.8
69:	0.00000	13.500	0.00000	13.500	0.00000	0.00000
70:	1946.0	105.25	0.00000	105.25	0.00000	1943.8
71:	2367.0	0.00000	0.00000	0.00000	0.00000	2270.4
72:	5476.0	1104.7	0.00000	1104.7	0.00000	5463.1
73:	40400	8.0000	0.00000	8.0000	0.00000	403.50
74:	420.00	200.50	0.00000	200.50	0.00000	418.90
75:	176.00	54.250	0.00000	54.250	0.00000	175.50
76:	75.000	39.000	0.00000	39.000	0.00000	74.600
77:	556.00	44.250	0.00000	44.250	0.00000	554.10
78:						
79:	18.000	18.750	0.00000	18.750	0.00000	18.000
80:	816.00	16.500	0.00000	16.500	0.00000	815.40
81:	324.00	2.2500	0.00000	2.2500	0.00000	323.70
82:	468.00	8.5000	0.00000	8.5000	0.00000	467.50
83:	1194.0	30.250	0.00000	30.250	0.00000	1192.8
84:	150.00	0.00000	0.00000	0.00000	0.00000	149.90
85:	332.00	2.7500	0.00000	2.7500	0.00000	331.70
86:	160.00	1.7500	0.00000	1.7500	0.00000	159.90
87:						
88:						
89:						
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104:						
105:						
106:						
107:						
108:						

Figure III.2.2 (Cont.)

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1:	2			
2:	4	1		
3:	4	1	1	
4:	4	1	1	
5:	4	2		
6:	0	0		
7:	4	4		
8:	4	0		
9:	0	0		
10:	0	4		
11:	4	4		
12:	4	0		
13:	4	4		
14:	0	0		
15:	0	0		
16:	0	4		
17:	0	0		
18:	0	0		
19:	4	4		
20:	4	4		
21:	0	0		
22:	0	0		
23:	0	0		
24:	4	0		
25:	0	0		
26:	0	0		
27:	0	4		
28:	0	4		
29:	1	4		
30:	0	0		
31:	0	0		
32:	0	4		
33:	0	4		
34:	0	4		
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36:	0	4		
37:	0	4		
38:	0	4		
39:	0	4		
40:	0	4		
41:	0	4		
42:	0	4		
43:	0	4		
44:	0	4		
45:	0	4		
46:	0	4		
47:	0	4		
48:	0	4		
49:	0	4		
50:	0	4		
51:	0	4		
52:	0	4		
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57:	0	4		
58:	0	4		
59:	0	4		
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61:	0	4		
62:	0	4		
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65:	0	4		
66:	0	4		
67:	0	4		
68:	0	4		
69:	0	4		
70:	0	4		
71:	0	4		
72:	0	4		
73:	0	4		
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87:	0	4		
88:	0	4		
89:	0	4		
90:	0	4		
91:	0	4		
92:	0	4		
93:	0	4		
94:	0	4		
95:	0	4		
96:	0	4		
97:	0	4		
98:	0	4		
99:	0	4		
100:	0	4		

Figure III.2.3

UNCLASSIFIED//E50GENTTT-RPENCK/18JUL03

1	1 16.5		
2	2 16.5		
3	3 16.5		
4	4 16.5	57	27 99.9
5	5 99.9	58	28 99.9
6	6 16.5	59	29 99.9
7	7 99.9	60	31 99.9
8	8 99.9	61	1 99.9
9	9 99.9	62	2 18.9
10	10 16.5	63	3 18.9
11	11 99.9	64	4 18.9
12	12 16.5	65	5 99.9
13	13 99.9	66	6 18.9
14	14 99.9	67	7 18.9
15	15 99.9	68	8 18.9
16	16 16.5	69	9 18.9
17	17 16.5	70	10 18.9
18	18 16.5	71	11 99.9
19	19 99.9	72	12 18.9
20	20 99.9	73	13 18.9
21	21 16.5	74	14 18.9
22	22 99.9	75	15 99.9
23	23 99.9	76	16 18.9
24	24 99.9	77	17 18.9
25	25 99.9	78	18 18.9
26	26 99.9	79	19 99.9
27	27 99.9	80	20 99.9
28	28 99.9	81	21 18.9
29	29 99.9	82	22 99.9
30	31 99.9	83	23 99.9
31	1 99.9	84	24 99.9
32	2 60.	85	25 99.9
33	3 60.	86	26 99.9
34	4 60.	87	27 99.9
35	5 99.9	88	28 99.9
36	6 60.	89	29 99.9
37	7 47.	90	31 99.9
38	8 48.	91	1 99.9
39	9 48.	92	2 40.
40	10 48.	93	3 40.
41	11 99.9	94	4 40.
42	12 48.	95	5 99.9
43	13 99.9	96	6 40.
44	14 48.	97	7 10.
45	15 99.9	98	8 10.
46	16 99.9	99	9 10.
47	17 14.	100	10 10.
48	18 99.9	101	11 99.9
49	19 99.9	102	12 10.
50	20 99.9	103	13 10.
51	21 99.9	104	14 10.
52	22 99.9	105	15 99.9
53	23 99.9	106	16 9.
54	24 99.9	107	17 9.
55	25 99.9	108	18 9.
56	26 99.9	109	19 99.9
		110	20 99.9
		111	21 9.
		112	22 99.9
		113	23 99.9
		114	24 99.9
		115	25 99.9
		116	26 99.9
		117	27 99.9
		118	28 99.9
		119	29 99.9
		120	31 99.9

Figure III.2.4

UNCLASSIFIED//FOR OFFICIAL USE ONLY

1	838.	1010.	660.	658.
2	13.	141.	0.	66.
3	13.	101.	0.	66.
4	13.	101.	0.	67.
5	2.	170.	0.	27.
6	118.	56.	0.	139.
7	112.	132.	0.	69.
8	0.	0.	0.	32.
9	3141.	3129.	2578.	5758.
10	1564.	1252.	1665.	1512.
11	614.	1228.	161.	1178.
12				
13	13.7	4.7	8.23	1.29
14	13.76	5.66	4.40	.75
15	5.71	26.	.44	17.7
16	4.23	5.71	1.94	.33
17	.31	1.38	.07	.58
18	47.4	47.	11.4	9.6
19	24.7	10.6	8.2	7.8
20	7.55	1.58	6.76	5.25
21	2.92	7.63	6.45	13.9
22	17.8	1.85	1.76	5.05
23	2.2	2.21	.18	9.74
24				
25	4.95	9.22	1.09	.23
26	1.49	7.47	5.25	.85
27	6.91	8.29	.27	2.39
28	.78	3.31	.0	.4
29	.17	6.39	.1	.14
30	13.9	16.3	11.2	2.25
31	12.4	2.6	.0	1.17
32	.46	4.	1.02	.12
33	16.9	1.6	2.07	1.95
34	.1	.6	.17	.01
35	13.9	2.18	.36	2.32
36	.1	.3	.3	.34
37	48.4	59.2	14.9	1.36.
38	6.21	5.85	1.98	2.17
39	2.83	3.2	.0	3.34
40				
41	15.5	23.9	3.14	.2
42	17.2	11.7	8.92	5.37
43	23.4	13.9	2.67	1.76
44	.99	5.13	.73	.2
45	.38	3.34	.1	.1
46	44.4	39.6	5.2	4.1
47	12.7	4.7	4.6	.2
48	5.99	4.96	1.54	.92
49	14.6	13.8	2.62	3.53
50	.31	1.76	.11	.1
51	7.35	7.39	2.75	.95
52	.1	.7	.1	.36
53	69.8	85.5	21.4	153.
54	8.96	8.43	7.18	3.12
55	4.5	4.62	3.50	1.83

Figure III.2.5

APPPRINT

```

1:BXQT 56ES06EN/PTF/FTP.ABS3
2: 30 BLUE WPNS      6 RED WPNS      4 SAMPLES      40 ESD      8 N.CEN.SAMPLE
3: 1 12 12 5 12 8
4: 1 12 12 5 12 8
5:
6:/READ IN THE ESD MAP DATA/
7:ESD = 1 ESD.SEQ.NO = 1 RED.WPN = 1 BLUE.WPN = 1 B.RATIO.INDEX = 0
8:ESD = 2 ESD.SEQ.NO = 2 RED.WPN = 6 BLUE.WPN = 1 B.RATIO.INDEX = 1
9:ESD = 3 ESD.SEQ.NO = 3 RED.WPN = 1 BLUE.WPN = 1 B.RATIO.INDEX = 0
10:ESD = 4 ESD.SEQ.NO = 4 RED.WPN = 2 BLUE.WPN = 2 B.RATIO.INDEX = 0
11:ESD = 5 ESD.SEQ.NO = 5 RED.WPN = 3 BLUE.WPN = 2 B.RATIO.INDEX = 0
12:ESD = 6 ESD.SEQ.NO = 6 RED.WPN = 4 BLUE.WPN = 2 B.RATIO.INDEX = 0
13:ESD = 7 ESD.SEQ.NO = 7 RED.WPN = 2 BLUE.WPN = 3 B.RATIO.INDEX = 0
14:ESD = 8 ESD.SEQ.NO = 8 RED.WPN = 3 BLUE.WPN = 3 B.RATIO.INDEX = 0
15:ESD = 9 ESD.SEQ.NO = 9 RED.WPN = 4 BLUE.WPN = 3 B.RATIO.INDEX = 0
16:ESD = 10 ESD.SEQ.NO = 10 RED.WPN = 2 BLUE.WPN = 4 B.RATIO.INDEX = 0
17:ESD = 11 ESD.SEQ.NO = 11 RED.WPN = 3 BLUE.WPN = 4 B.RATIO.INDEX = 0
18:ESD = 12 ESD.SEQ.NO = 12 RED.WPN = 4 BLUE.WPN = 4 B.RATIO.INDEX = 0
19:ESD = 13 ESD.SEQ.NO = 13 RED.WPN = 2 BLUE.WPN = 5 B.RATIO.INDEX = 0
20:ESD = 14 ESD.SEQ.NO = 14 RED.WPN = 3 BLUE.WPN = 5 B.RATIO.INDEX = 0
21:ESD = 15 ESD.SEQ.NO = 15 RED.WPN = 4 BLUE.WPN = 5 B.RATIO.INDEX = 0
22:ESD = 16 ESD.SEQ.NO = 16 RED.WPN = 2 BLUE.WPN = 6 B.RATIO.INDEX = 0
23:ESD = 17 ESD.SEQ.NO = 17 RED.WPN = 3 BLUE.WPN = 6 B.RATIO.INDEX = 0
24:ESD = 18 ESD.SEQ.NO = 18 RED.WPN = 4 BLUE.WPN = 6 B.RATIO.INDEX = 0
25:ESD = 19 ESD.SEQ.NO = 19 RED.WPN = 1 BLUE.WPN = 7 B.RATIO.INDEX = 0
26:ESD = 20 ESD.SEQ.NO = 20 RED.WPN = 5 BLUE.WPN = 7 B.RATIO.INDEX = 0
27:ESD = 21 ESD.SEQ.NO = 21 RED.WPN = 2 BLUE.WPN = 8 B.RATIO.INDEX = 0
28:ESD = 22 ESD.SEQ.NO = 22 RED.WPN = 3 BLUE.WPN = 8 B.RATIO.INDEX = 0
29:ESD = 23 ESD.SEQ.NO = 23 RED.WPN = 4 BLUE.WPN = 8 B.RATIO.INDEX = 0
30:ESD = 24 ESD.SEQ.NO = 24 RED.WPN = 2 BLUE.WPN = 9 B.RATIO.INDEX = 0
31:ESD = 25 ESD.SEQ.NO = 25 RED.WPN = 3 BLUE.WPN = 9 B.RATIO.INDEX = 0
32:ESD = 26 ESD.SEQ.NO = 26 RED.WPN = 4 BLUE.WPN = 9 B.RATIO.INDEX = 0
33:ESD = 27 ESD.SEQ.NO = 27 RED.WPN = 6 BLUE.WPN = 10 B.RATIO.INDEX = 0
34:ESD = 28 ESD.SEQ.NO = 28 RED.WPN = 6 BLUE.WPN = 11 B.RATIO.INDEX = 0
35:ESD = 29 ESD.SEQ.NO = 29 RED.WPN = 2 BLUE.WPN = 13 B.RATIO.INDEX = 0
36:ESD = 30 ESD.SEQ.NO = 30 RED.WPN = 3 BLUE.WPN = 13 B.RATIO.INDEX = 0
37:ESD = 31 ESD.SEQ.NO = 31 RED.WPN = 4 BLUE.WPN = 13 B.RATIO.INDEX = 0
38:ESD = 32 ESD.SEQ.NO = 32 RED.WPN = 1 BLUE.WPN = 14 B.RATIO.INDEX = 0
39:ESD = 33 ESD.SEQ.NO = 33 RED.WPN = 6 BLUE.WPN = 14 B.RATIO.INDEX = 0
40:ESD = 34 ESD.SEQ.NO = 34 RED.WPN = 1 BLUE.WPN = 15 B.RATIO.INDEX = 0
41:ESD = 35 ESD.SEQ.NO = 35 RED.WPN = 6 BLUE.WPN = 15 B.RATIO.INDEX = 0
42:ESD = 36 ESD.SEQ.NO = 36 RED.WPN = 1 BLUE.WPN = 16 B.RATIO.INDEX = 0
43:ESD = 37 ESD.SEQ.NO = 37 RED.WPN = 6 BLUE.WPN = 16 B.RATIO.INDEX = 0
44:ESD = 38 ESD.SEQ.NO = 38 RED.WPN = 1 BLUE.WPN = 8 B.RATIO.INDEX = 0
45:ESD = 39 ESD.SEQ.NO = 39 RED.WPN = 1 BLUE.WPN = 9 B.RATIO.INDEX = 0
46:ESD = 40 ESD.SEQ.NO = 40 RED.WPN = 1 BLUE.WPN = 1 B.RATIO.INDEX = 1
47:/ESD MAP DATA READ IN/
48:/READ IN ARMOR INDICATORS/
49:/ARMOR INDICATORS READ IN/
50:
51:/READING MAPPING OF SELECTED BLCMAN WEAPONS/
52:LAST VALUE READ BLUE.ID(BLUE.WPN) WAS 99.
53:
54:/READING MAPPING OF SELECTED RDCHAM WEAPONS/
55:LAST VALUE READ RED.ID(RED.WPN) WAS 6.
56:
57:/READING MAPPING OF RDCHAM WPNS/
58:LAST VALUE READ RD.WPN.NO(6) WAS 6.
59:
60:/STYLIZED QUANTITIES READ FOR BLUE WEAPONS AND SAMPLES/
61:LAST VALUE READ B-STYLIZED .QTY(BLUE.WPN,SAMPLE) WAS 0.
62:/NUMBER OF DAYS ARE 180
63:/PERCENT N-KILL FOR RED.WPN 1 TO 4 & BLUE KILLERS READ, LAST WAS 99.9
64: 1. 1. 1. 86.0
65: 1. 1. 1. 86.0
66: 1. 2. 1. 24.4
67: 1. 2. 1. 24.4
68: 1. 3. 1. 0.0
69: 1. 3. 1. 0.0
70: 1. 4. 1. 0.

```

Figure III.2.7

71:	1.	4.	1.	0.
72:	1.	1.	2.	47.1
73:	1.	1.	2.	47.1
74:	1.	2.	2.	31.0
75:	1.	2.	2.	31.0
76:	1.	3.	2.	0.
77:	1.	3.	2.	0.
78:	1.	4.	2.	31.0
79:	1.	4.	2.	31.0
80:	1.	1.	3.	33.0
81:	1.	1.	3.	33.0
82:	1.	2.	3.	25.3
83:	1.	2.	3.	25.3
84:	1.	3.	3.	0.1
85:	1.	3.	3.	0.1
86:	1.	4.	3.	29.6
87:	1.	4.	3.	29.6
88:	1.	1.	4.	25.8
89:	1.	1.	4.	25.8
90:	1.	2.	4.	25.5
91:	1.	2.	4.	25.5
92:	1.	3.	4.	0.1
93:	1.	3.	4.	0.1
94:	1.	4.	4.	12.2
95:	1.	4.	4.	12.2
96:	1.	1.	5.	14.2
97:	1.	1.	5.	14.2
98:	1.	2.	5.	15.0
99:	1.	2.	5.	15.0
100:	1.	3.	5.	0.
101:	1.	3.	5.	0.
102:	1.	4.	5.	19.0
103:	1.	4.	5.	19.0
104:	1.	1.	6.	87.3
105:	1.	1.	6.	87.3
106:	1.	2.	6.	87.9
107:	1.	2.	6.	87.9
108:	1.	3.	6.	1.4
109:	1.	3.	6.	1.4
110:	1.	4.	6.	30.6
111:	1.	4.	6.	30.6
112:	1.	1.	7.	33.0
113:	1.	1.	7.	33.0
114:	1.	2.	7.	79.8
115:	1.	2.	7.	79.8
116:	1.	3.	7.	1.2
117:	1.	3.	7.	1.2
118:	1.	4.	7.	86.5
119:	1.	4.	7.	86.5
120:	1.	1.	8.	46.8
121:	1.	1.	8.	46.8
122:	1.	2.	8.	25.6
123:	1.	2.	8.	25.6
124:	1.	3.	8.	0.0
125:	1.	3.	8.	0.0
126:	1.	4.	8.	13.1
127:	1.	4.	8.	13.1
128:	1.	1.	9.	41.6
129:	1.	1.	9.	41.6
130:	1.	2.	9.	27.6
131:	1.	2.	9.	27.6
132:	1.	3.	9.	0.6
133:	1.	3.	9.	0.6
134:	1.	4.	9.	5.6
135:	1.	4.	9.	5.6
136:	1.	1.	10.	172.0
137:	1.	1.	10.	172.0
138:	1.	2.	10.	15.2
139:	1.	2.	10.	15.2
140:	1.	3.	10.	1.0

Figure III.2.7 (Cont.)

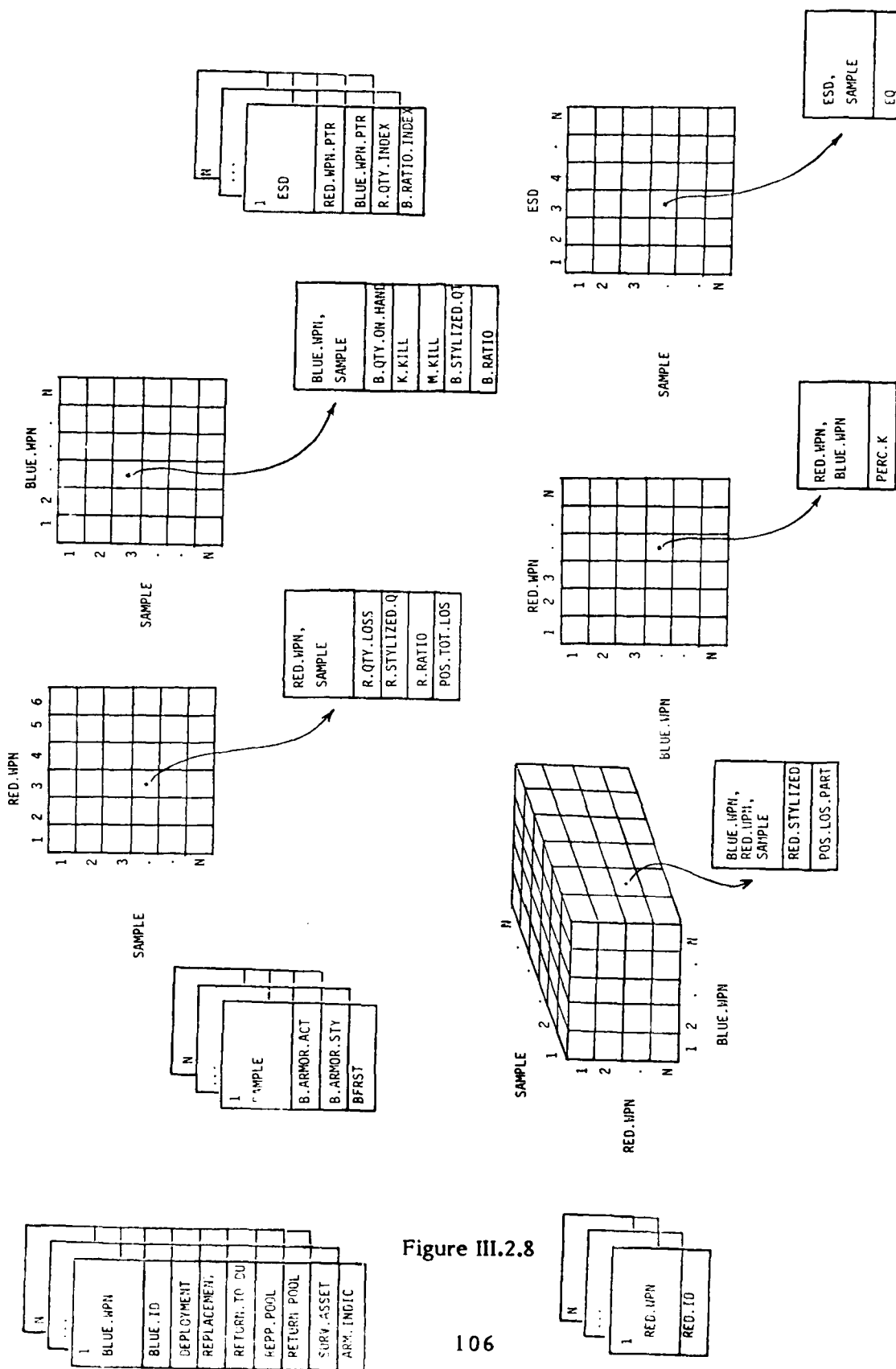


Figure III.2.8

EQUIVALENT STYLIZED DAY
HIGH LEVEL PROGRAM FEATURES

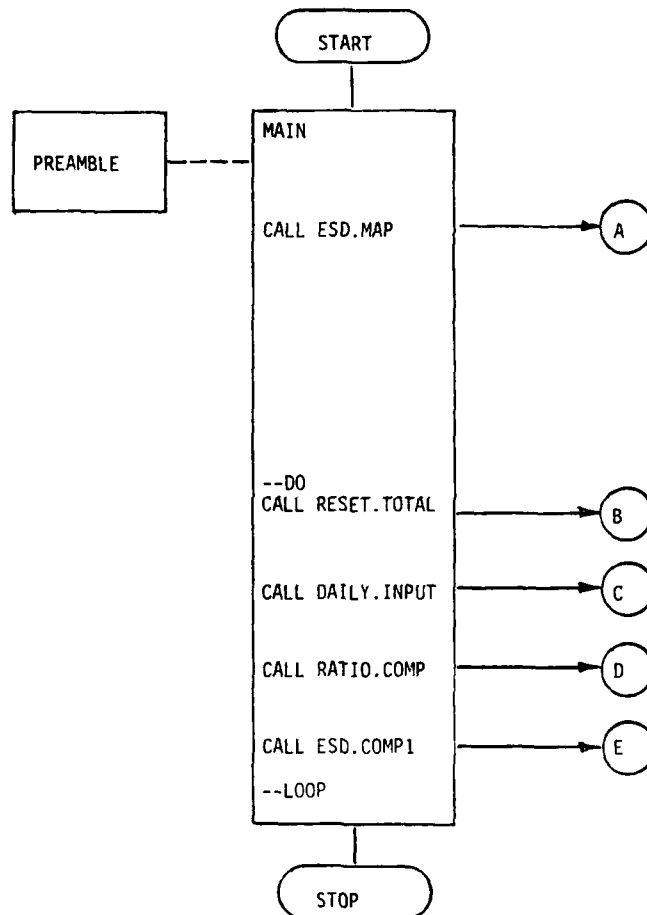


Figure III.2.10

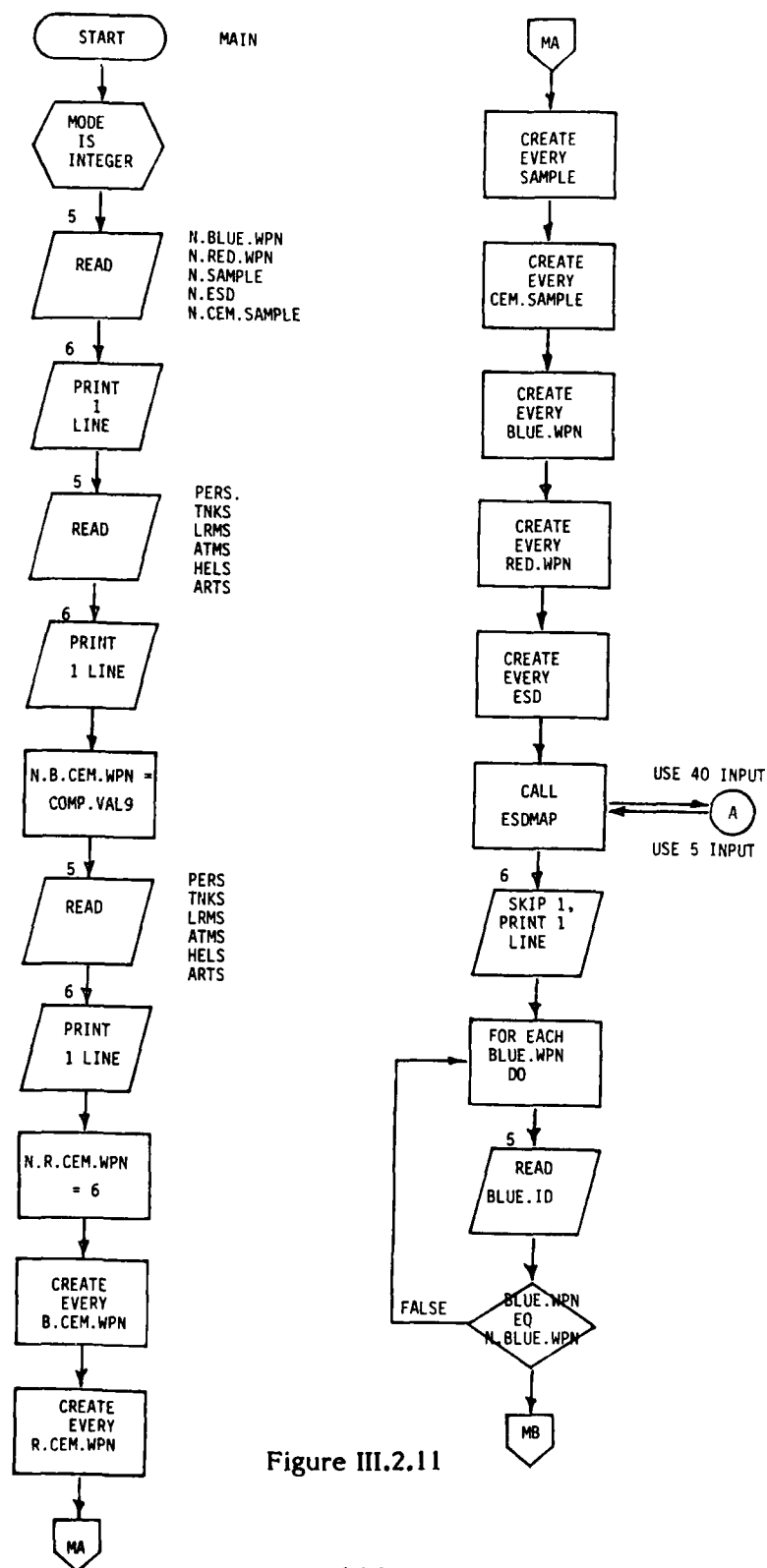


Figure III.2.11

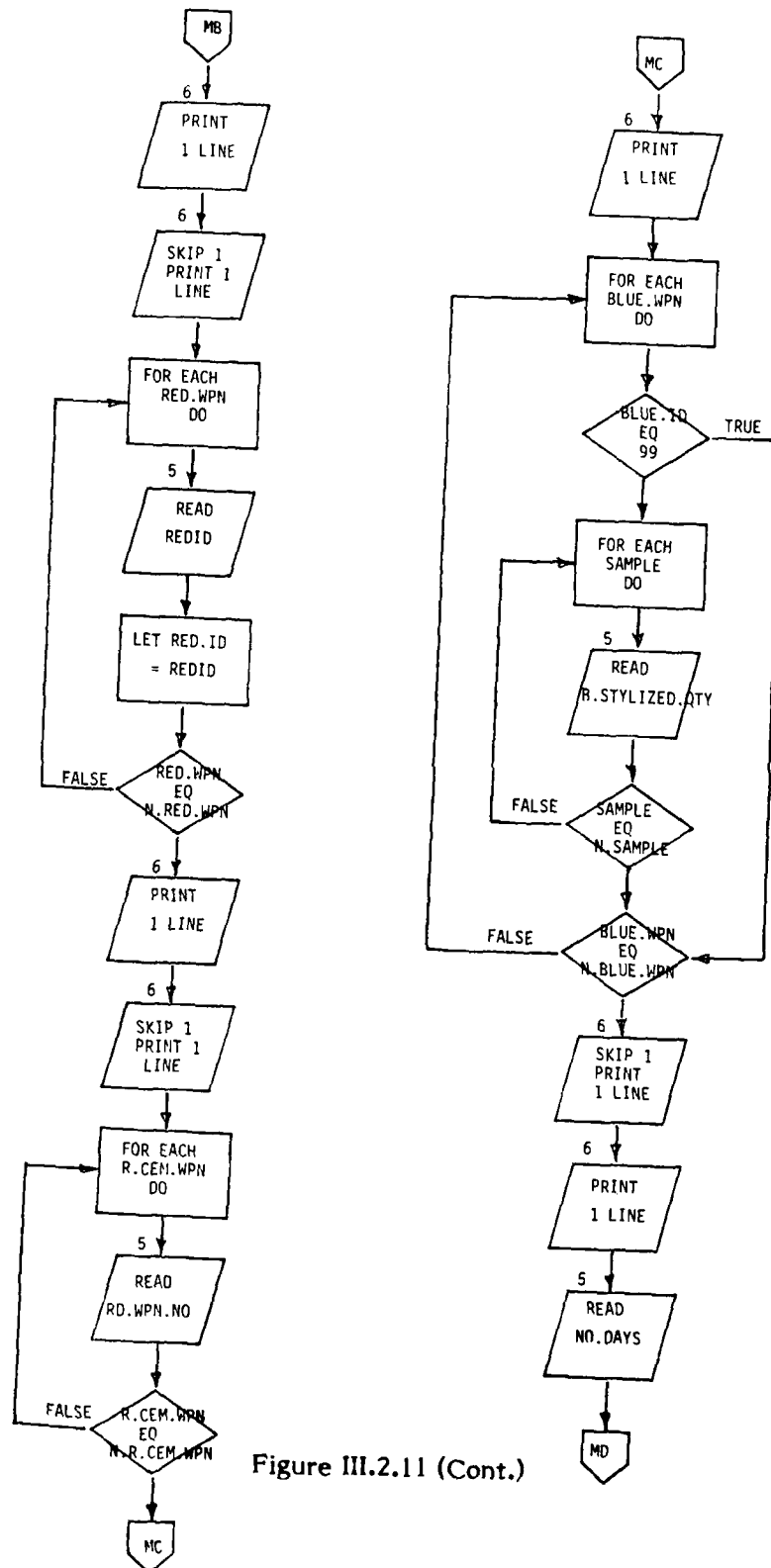


Figure III.2.11 (Cont.)

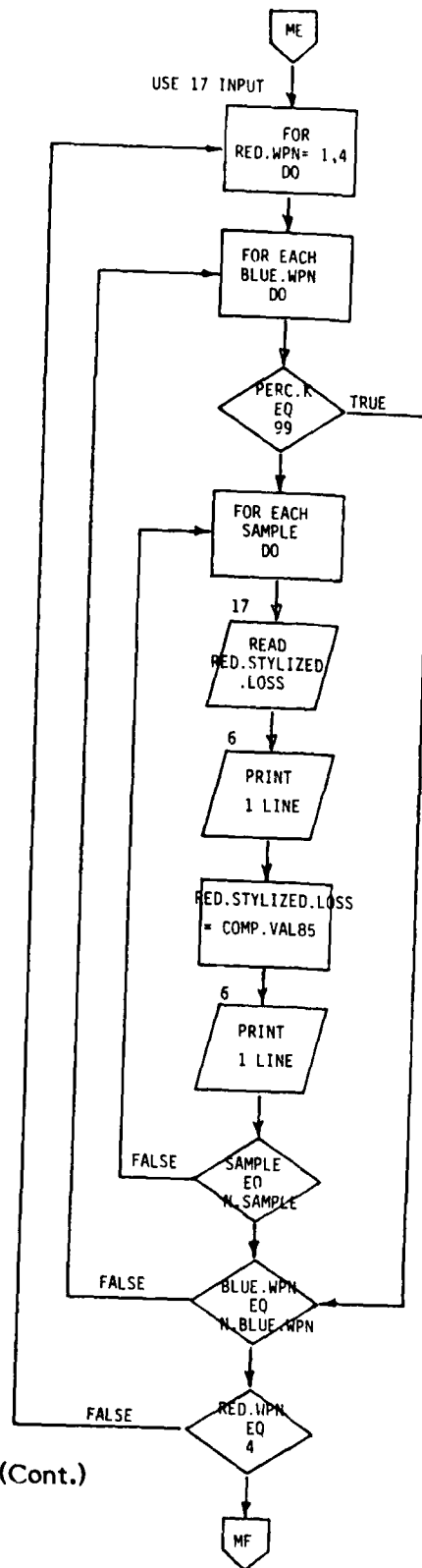
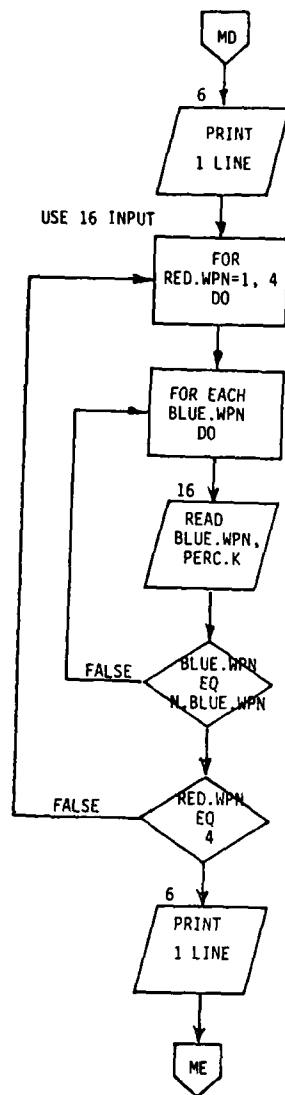


Figure III.2.11 (Cont.)

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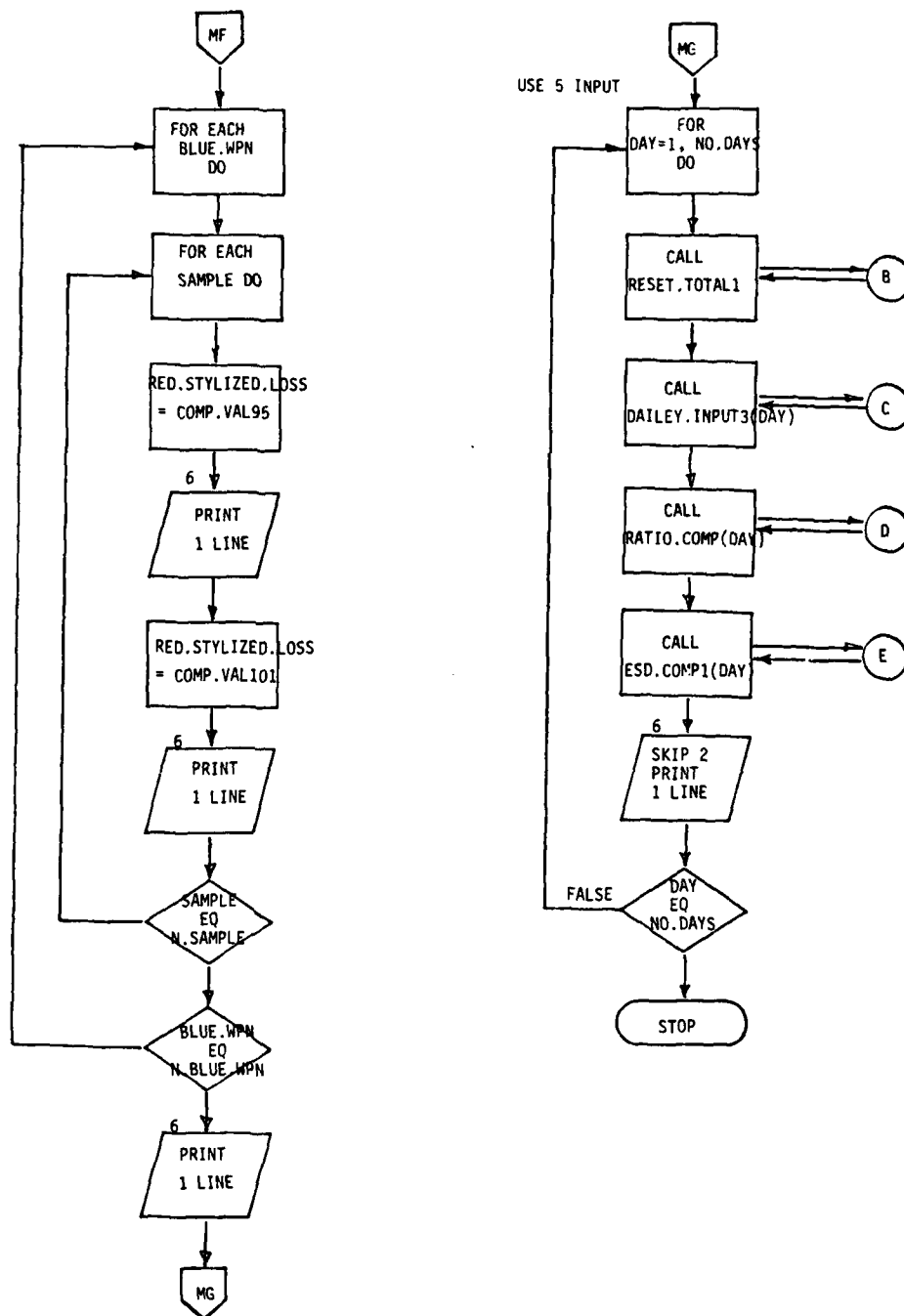


Figure III.2.11 (Cont.)

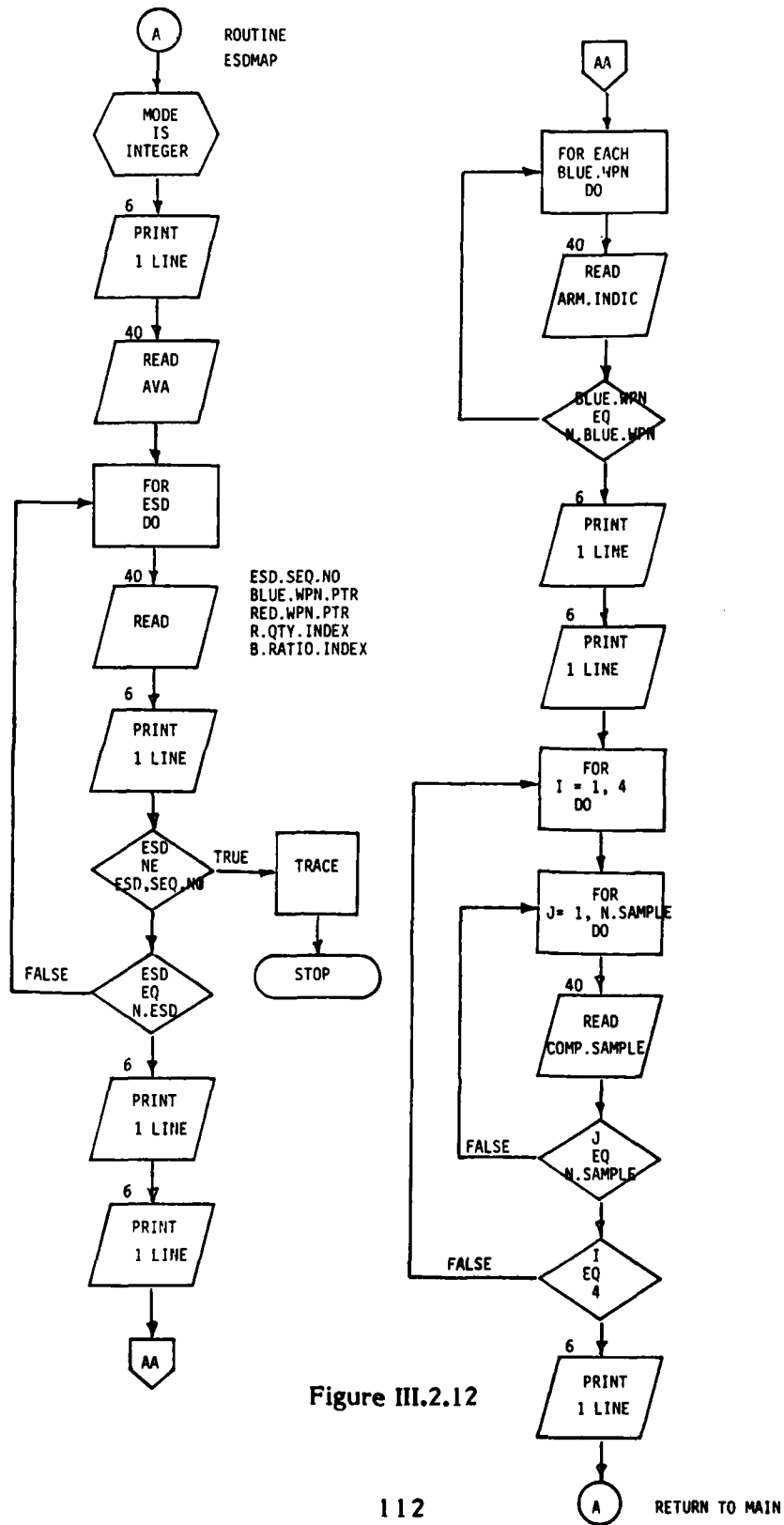


Figure III.2.12

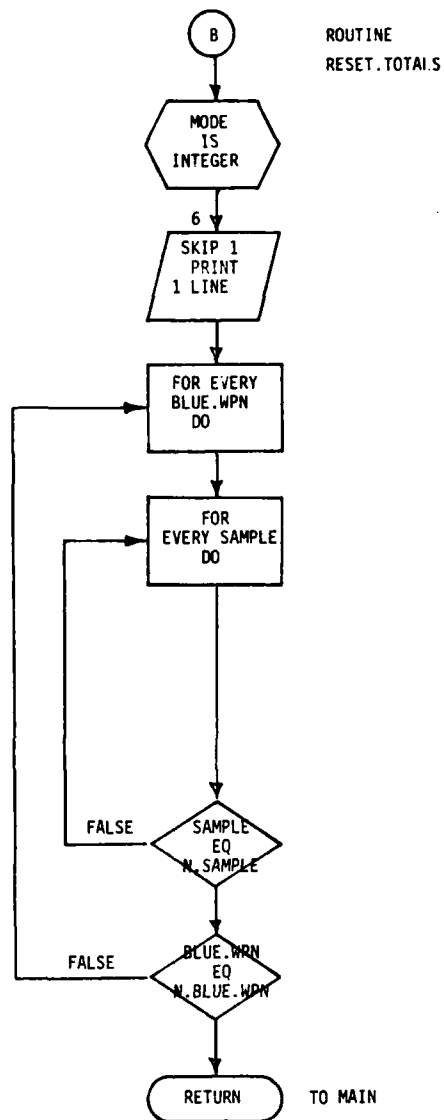


Figure III.2.13

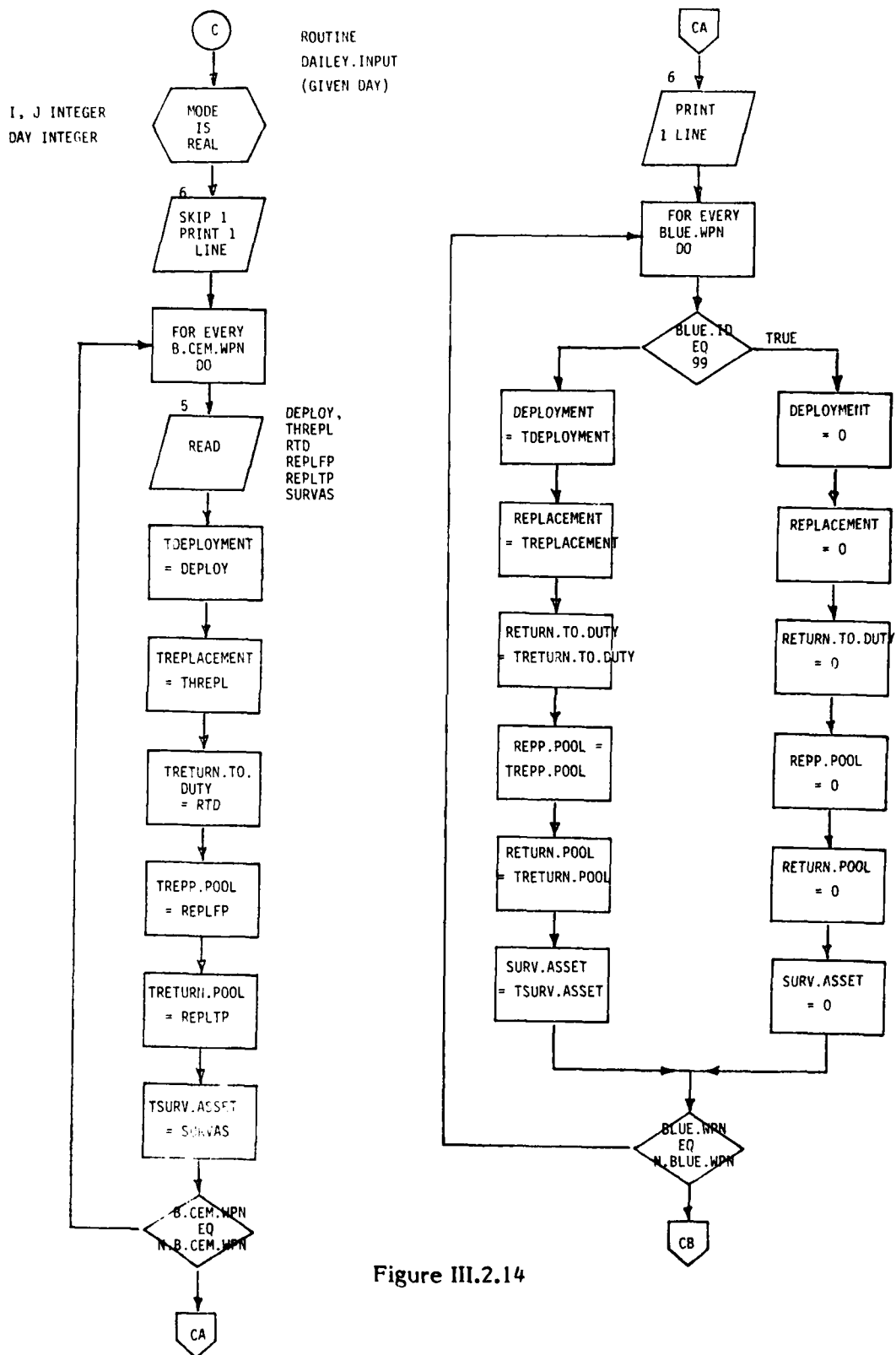


Figure III.2.14

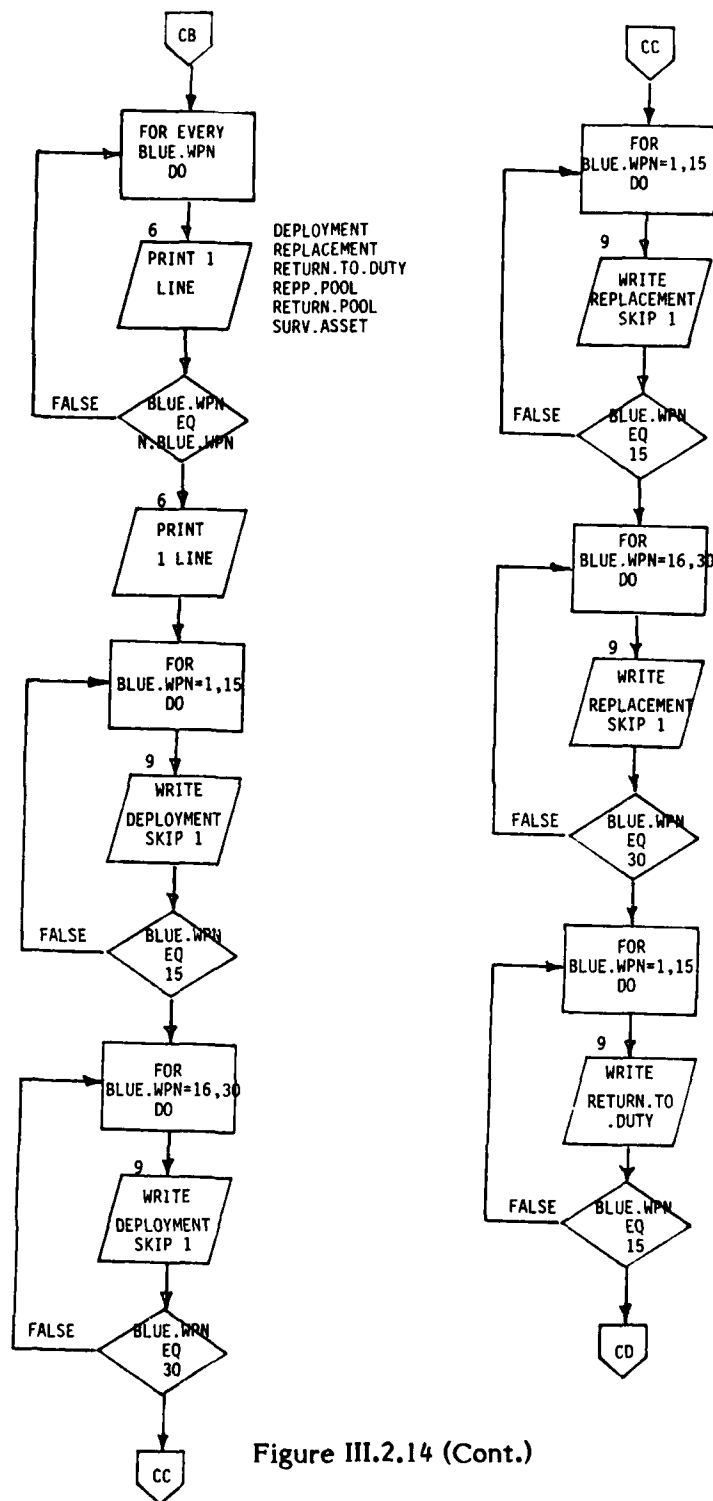


Figure III.2.14 (Cont.)

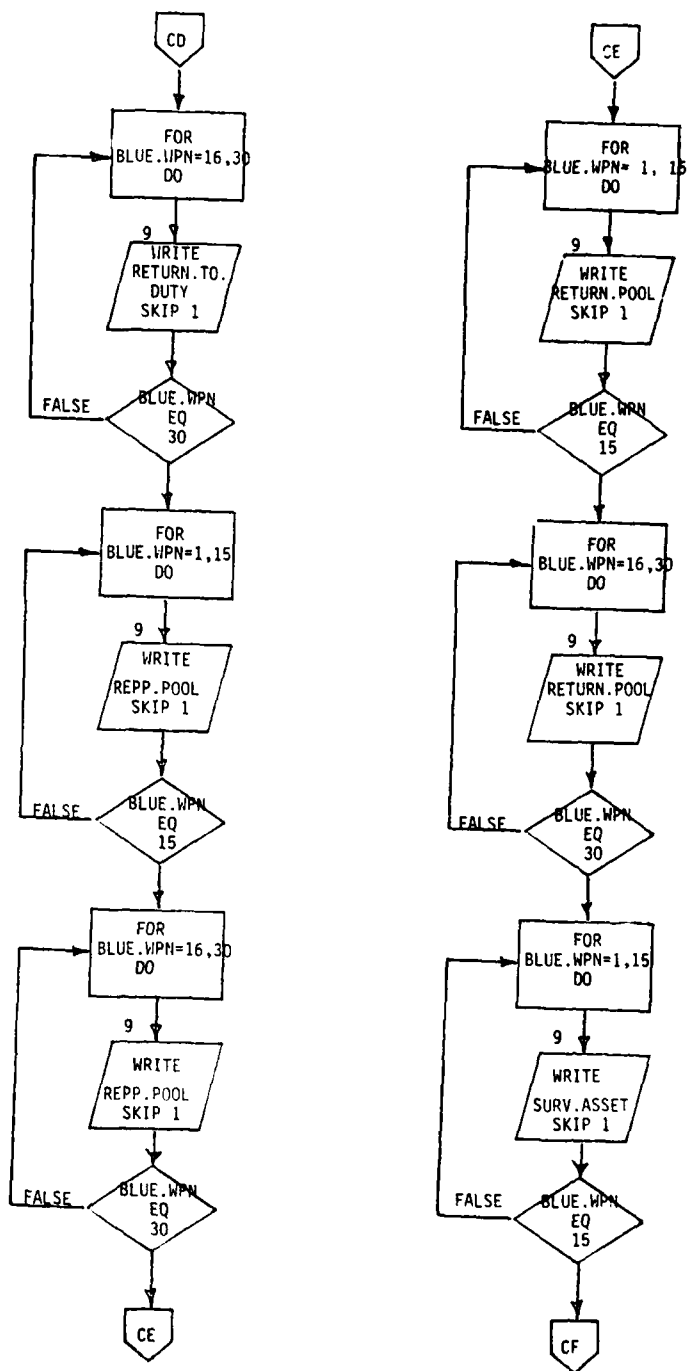


Figure III.2.14 (Cont.)

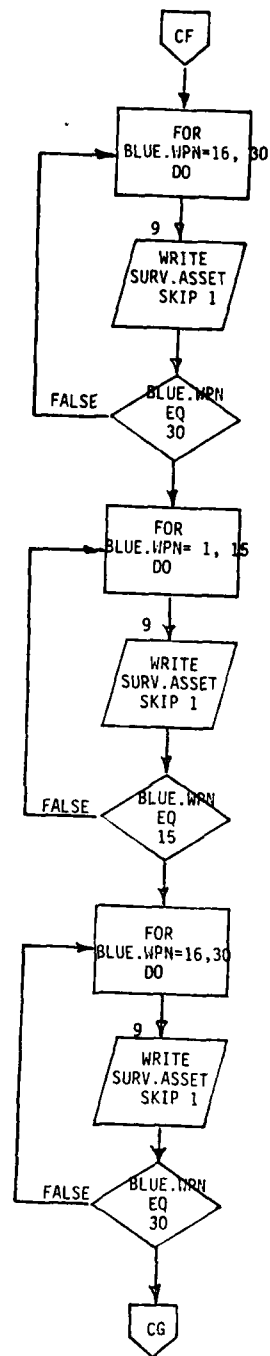


Figure III.2.14 (Cont.)

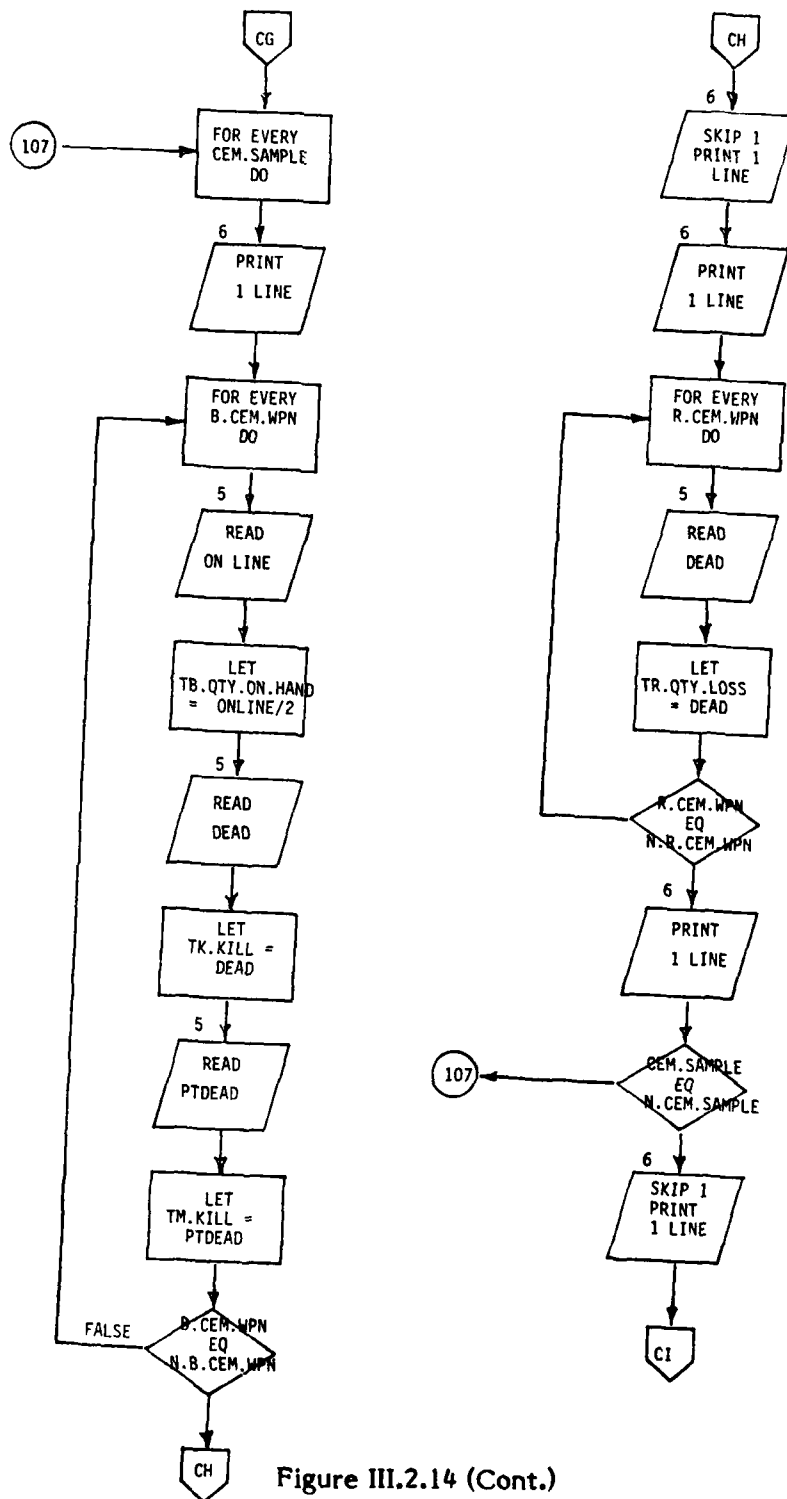


Figure III.2.14 (Cont.)

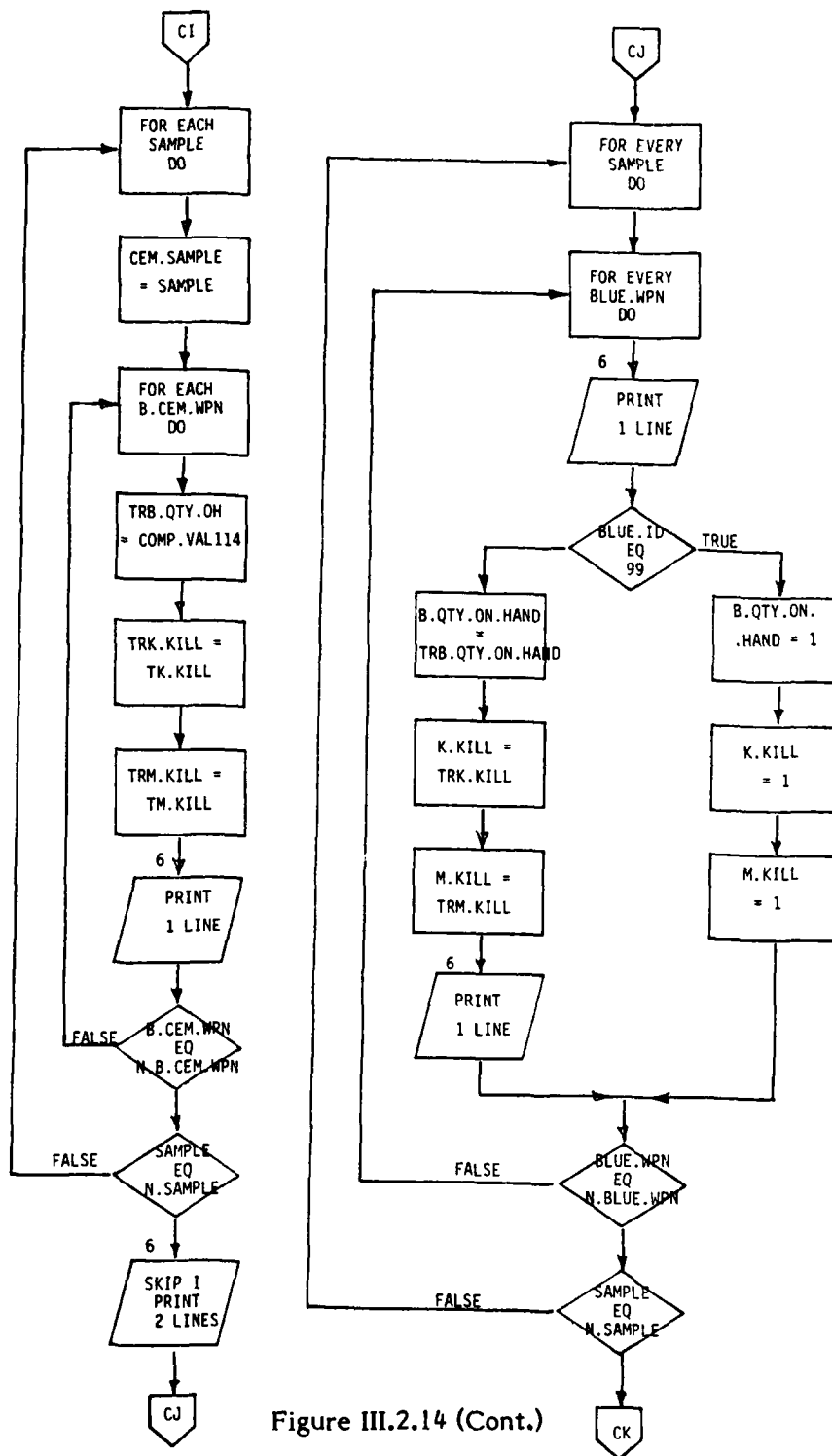


Figure III.2.14 (Cont.)

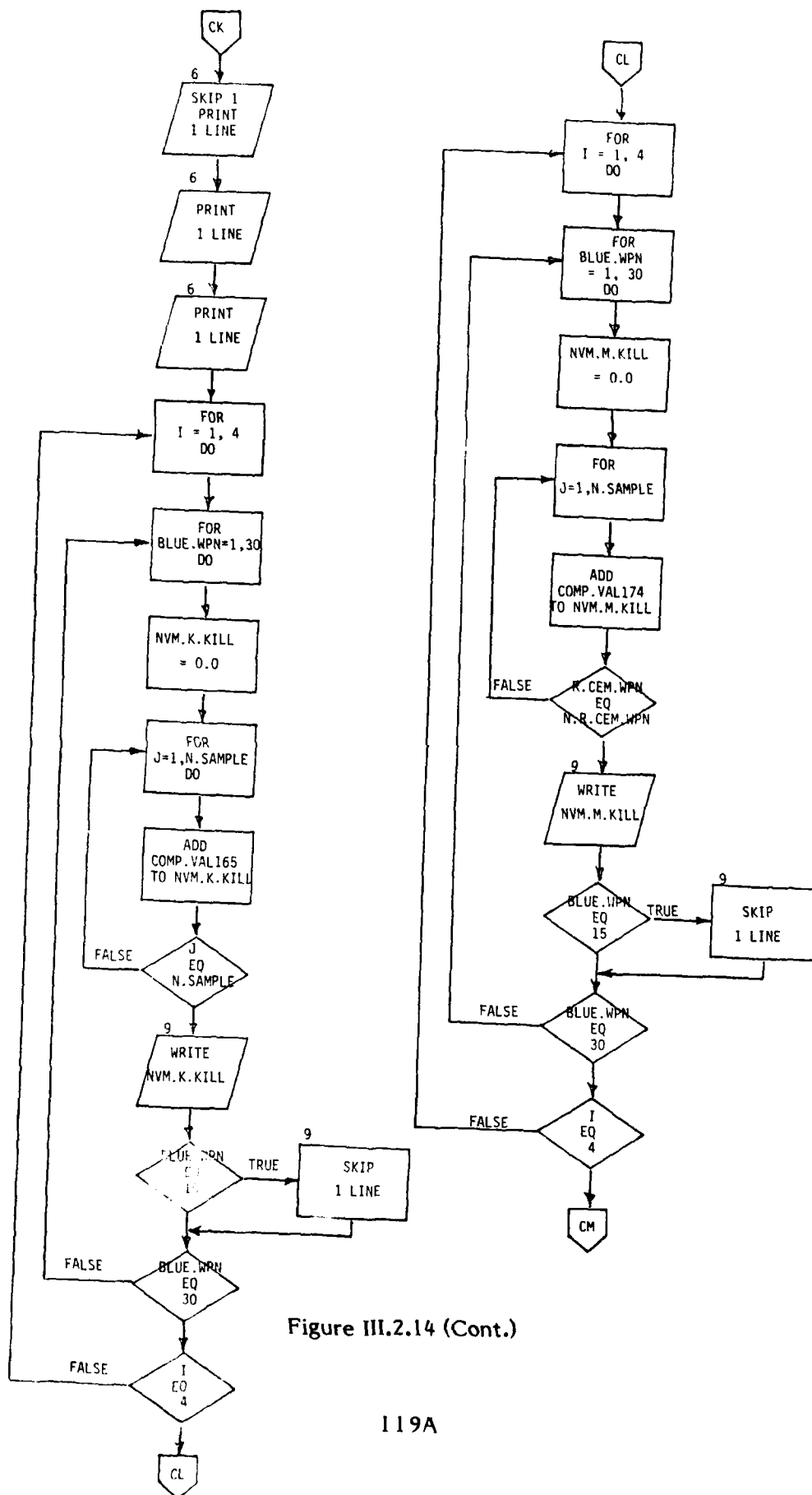


Figure III.2.14 (Cont.)

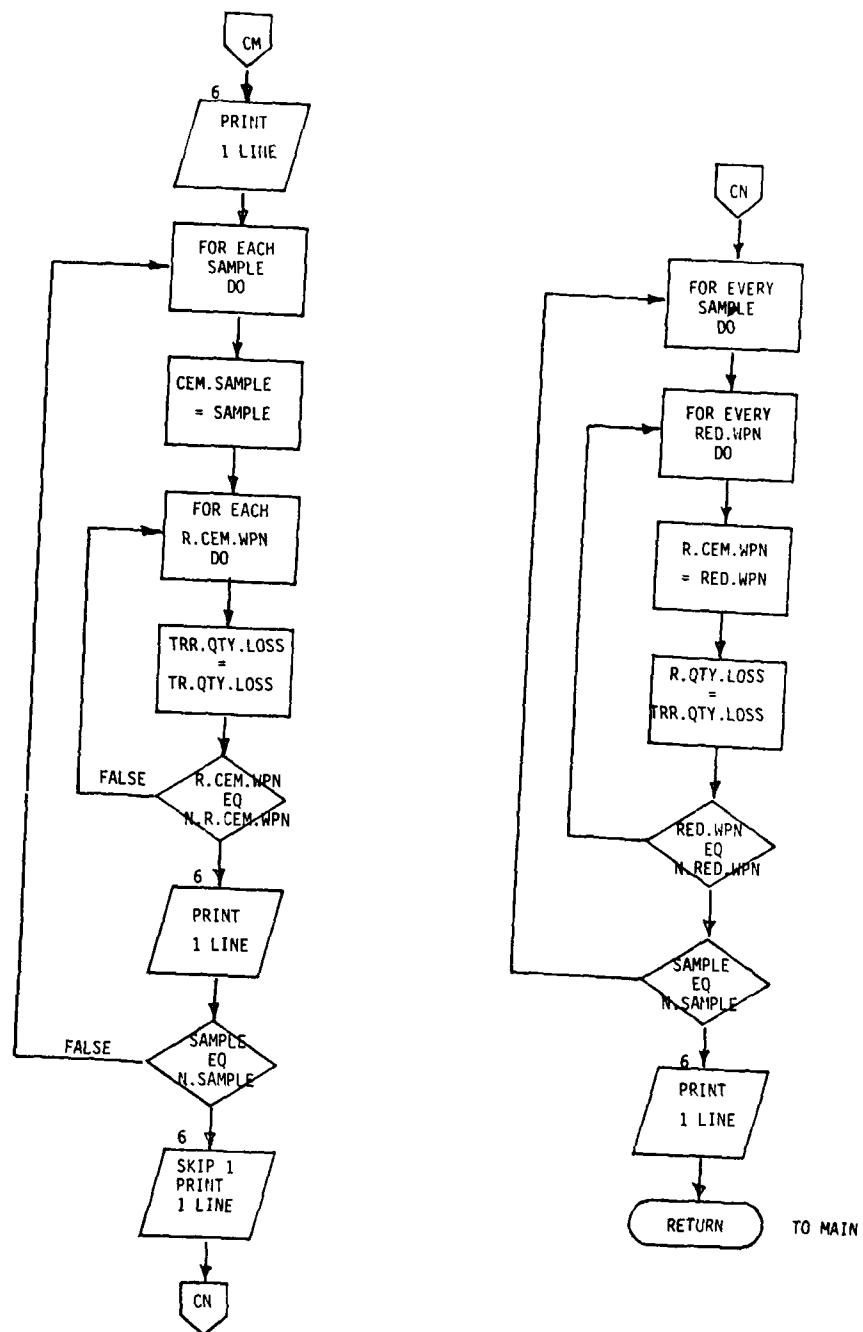


Figure III.2.14 (Cont.)

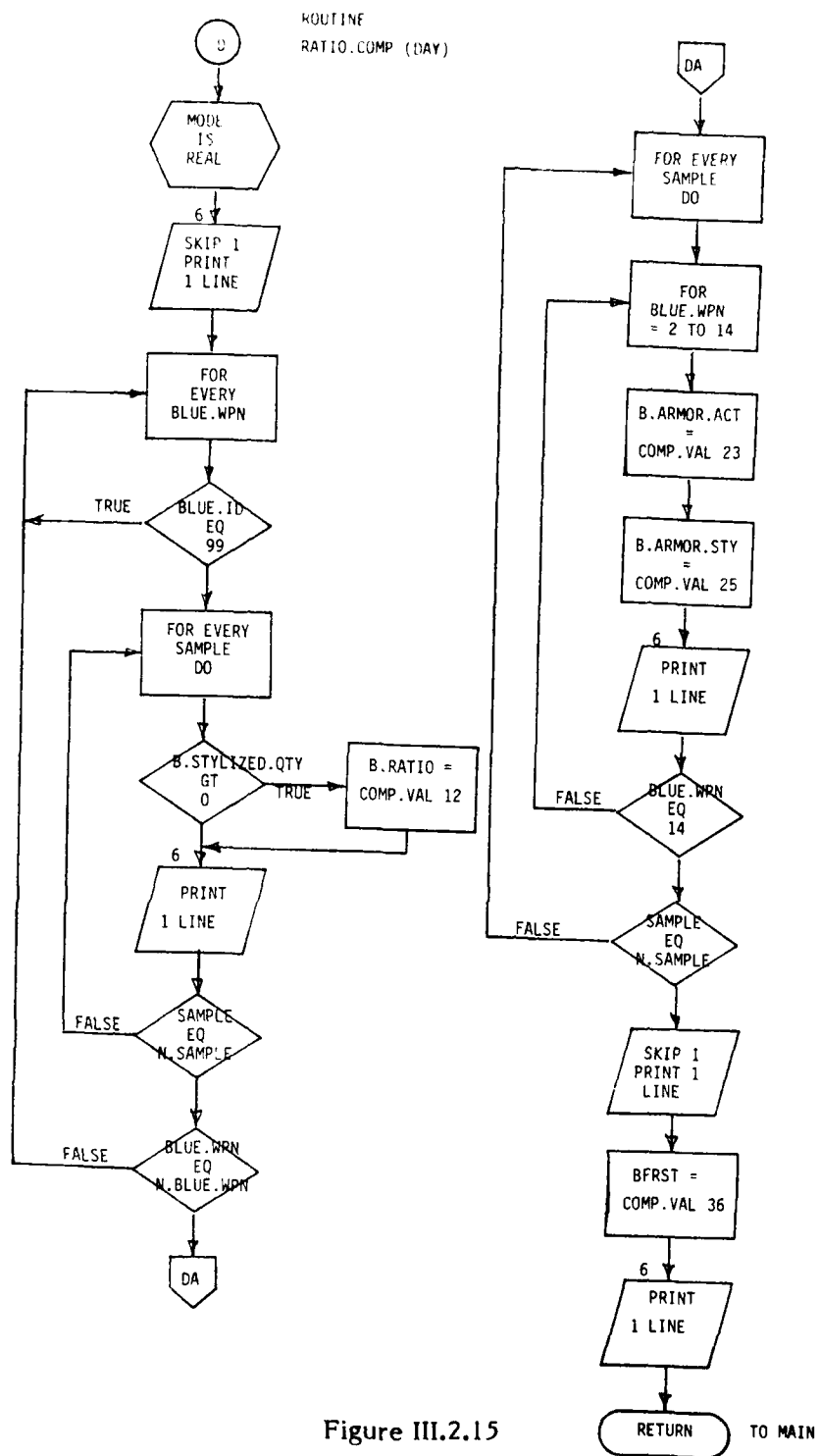


Figure III.2.15

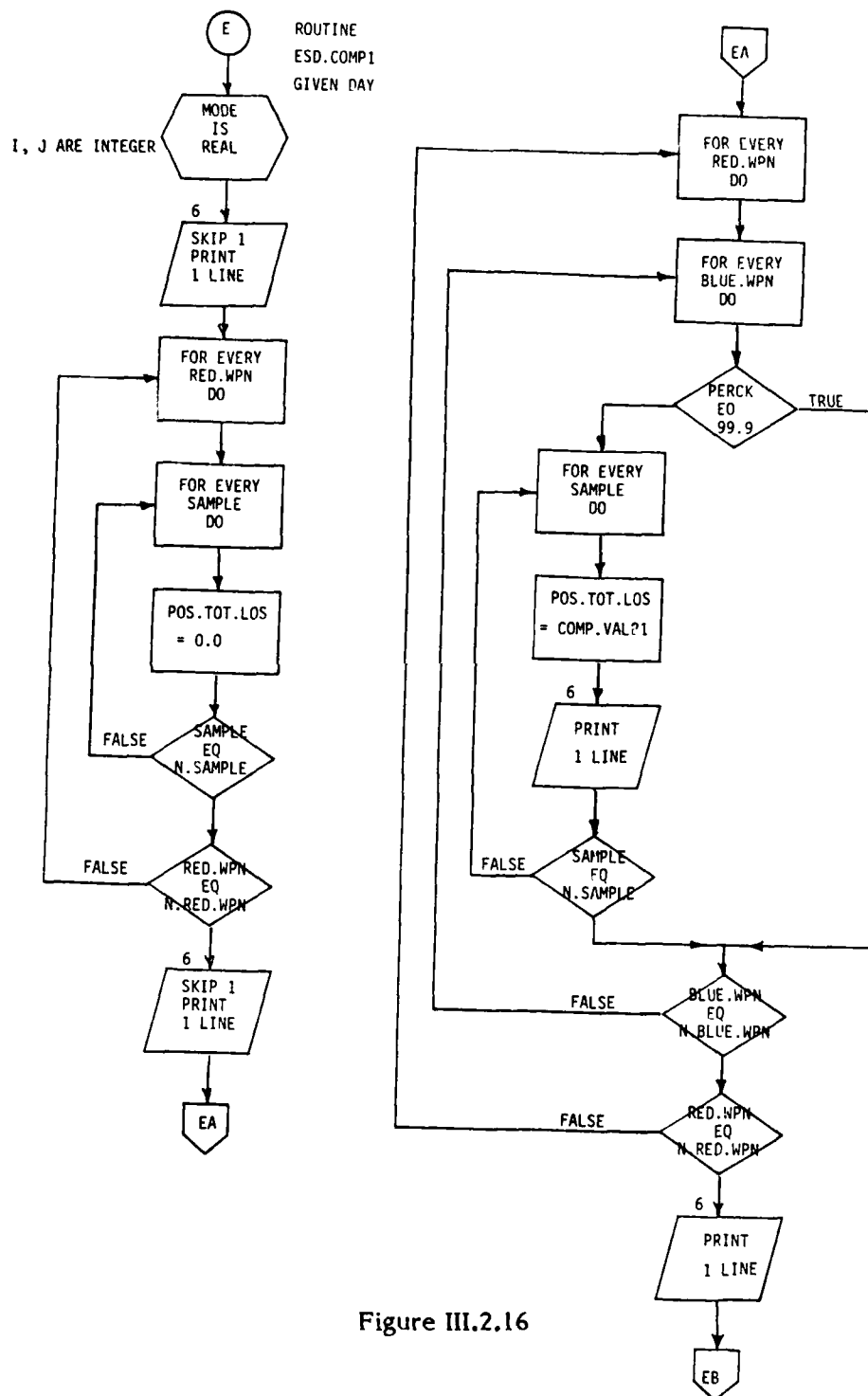


Figure III.2.16

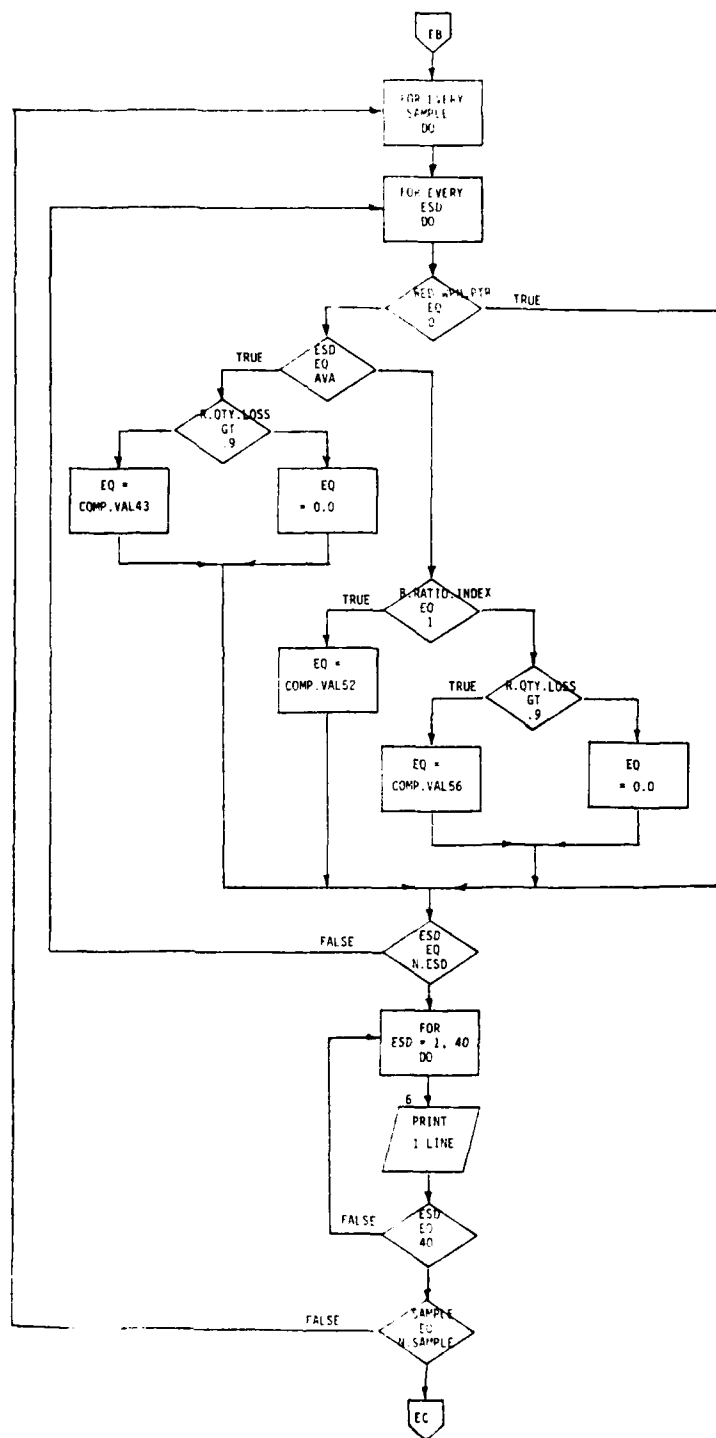


Figure III.2.16 (Cont.)

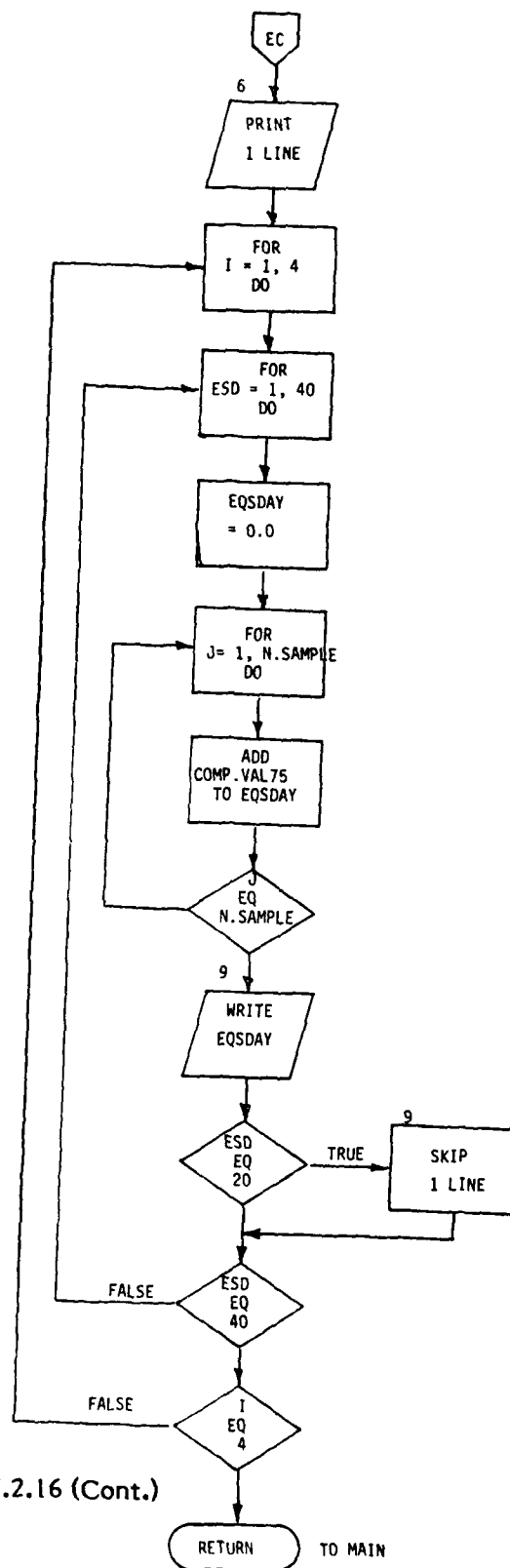


Figure III.2.16 (Cont.)

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

```

1  PREAMBLE
2  NORMALLY MODE IS REAL
3  PERMANENT ENTITIES
4
5  EVERY BLUE.WPN,SAMPLE HAS
6      A B.QTY.ON.HAND,      **REAL-ENGD. EQUIPMENT FOR EACH ASSESSMENT TODAY
7      A K.KILL,             **REAL-K-KILLED TODAY
8      A M.KILL,             **REAL-M-KILLED TODAY
9      A B.STYLIZED.QTY,     **REAL STYLIZED # FROM COSAGE OR HL
10     A B.RATIO             **REAL-BLUE ACTUAL/STYLIZED QUANTITY
11
12  EVERY BLUE.WPN HAS
13     A BLUE.ID,            **INTEGER-CEM #
14     A DEPLOYMENT,         **REAL-DEPLOYED TO THEATER TDY (DEPLOY)
15     A REPLACEMENT,        **REAL-REPLACED TO THEATER TDY (THREPL)
16     A RETURN.TO.DUTY,     **REAL-RTD FROM LL MAINTENANCE TDY (RTD)
17     A REPP.POOL,          **REAL-REPD.G ISSUED FROM POOL TDY (REPLPP)
18     A RETURN.POOL,        **REAL-RTD.TO POOL FROM HL MAINT.TDY (REPLTP)
19     A SURV.ASSET,         **REAL-NUMBER SURVIVING TDY (SURVAS)
20     A ARM.INDIC           **1 FOR ARMOR,0 FOR NOT ARMOR
21
22  EVERY B.CEM.WPN HAS
23     A TDEPLOYMENT,        **REAL-CEM DEPLOYED TO THEATER TDY (DEPLOY)
24     A TREPLACEMENT,       **REAL-CEM REPLACED TO THEATER TDY (THREPL)
25     A TRETURN.TO.DUTY,    **REAL-CEM RTD FROM LL MAINTENANCE TDY (RTD)
26     A TREPP.POOL,         **REAL-CEM REPD.G ISSUED FROM POOL TDY (REPLPP)
27     A TRETURN.POOL,       **REAL-CEM RTD.TO POOL FROM HL MAINT.TDY (REPLTP)
28     A TSURV.ASSET         **REAL-CEM NUMBER SURVIVING TDY (SURVAS)
29
30  EVERY RED.WPN,SAMPLE HAS
31     A R.QTY.LOSS,         **REAL-ENGD.EQUIPMENT EACH ASSESSMENT TODAY
32     A R.STYLIZED.QTY,     **REAL STYLIZED # FROM COSAGE OR HL
33     A R.RATIO,            **REAL-RED ACTUAL/STYLIZED QUANTITY TODAY
34     A POS.TOT.LOS        **REAL-POSSIBLE TOTAL RED LOSS BY ALL BLUE
35
36  EVERY RED.WPN HAS
37     A RED.ID              **INTEGER-CEM #
38
39  EVERY RED.WPN,BLUE.WPN HAS
40     A PERC.K              **REAL-PERCENT K-KILL
41
42  EVERY RED.WPN,BLUE.WPN,SAMPLE HAS
43     A RED.STYLIZED.LOS,   **REAL-STYLIZED QUANTITY-COSAGE
44     A POS.LOS.PART        **REAL-RED LOSS TO PARTICULAR BLUE
45
46  EVERY B.CEM.WPN,CEM.SAMPLE HAS
47     A TB.QTY.ON.HAND,     **REAL-CEM INPUT TDY
48     A TK.KILL,            **REAL-CEM INPUT TDY
49     A TM.KILL             **REAL-CEM INPUT TDY
50
51  EVERY B.CEM.WPN,SAMPLE HAS
52     A TRP.QTY.ON.HAND,    **REAL-CEM MAP ON TR SAMPLE TDY

```

Figure III.2.17

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

```

53      A TRM.KILL,          **REAL-CEM MAP ON TR SAMPLE TDY
54      A TRM.KILL          **REAL-CEM MAP ON TR SAMPLE TDY
55
56      EVERY R.CEM.WPN,CEM.SAMPLE HAS
57      A TR.QTY.LOSS        **REAL CEM INPUT TDY
58
59      EVERY R.CEM.WPN,CEM.SAMPLE HAS
60      A TRR.QTY.LOSS       **REAL-CEM MAP ON TR SAMPLE TDY
61
62      EVERY R.CEM.WPN HAS
63      A PD.WPN.NO          **MAPPING COEFFICIENT
64
65      EVERY SAMPLE HAS
66      A B.ARMOR.ACT,       **REAL- SUMMATION ACTUAL BLUE ARMOR
67      A B.ARMOR.STY,       **REAL- SUMMATION STYLIZED BLUE ARMOR
68      A BFRST              **REAL-BLUE ARMOR RATIO
69
70      EVERY ESD HAS
71      A RED.WPN.PTR,       **INTEGER-RED WPN IN THE ESD
72      A BLUE.WPN.PTR,      **INTEGER-BLUE WPN IN THE ESD
73      A P.QTY.INDEX,       **INTEGER
74      A B.RATIO.INDEX      **INTER (0,1) WHERE 0 = NORMAL COMPUTATION
75                          **                      1 = B.RATIO FOR ESD VALUE
76
77      EVERY ESD,SAMPLE HAS
78      A EQ                  **REAL EQUIV. STY. DAY
79
80      TEMPORARY ENTITIES
81
82
83      DEFINE ASSESS AS A REAL FUNCTION WITH 3 ARGUMENTS
84
85      DEFINE **INTEGER VARIABLES
86      BLUE.ID,
87      RED.ID,
88      RED.WPN.PTR,
89      BLUE.WPN.PTR,
90      AVA,
91      P.RATIO.INDEX,
92      ARM.INDIC
93      AS INTEGER VARIABLES
94
95      DEFINE COMB.SAMPLE AS A 2-DIMENSIONAL ARRAY
96
97      **SDDL SUBSTITUTIONS
98      DEFINE ENDPREAMBLE1 TO MEAN END
99      DEFINE ENDMAIN TO MEAN END
100     DEFINE EXITMAIN TO MEAN STOP
101     DEFINE ENDRROUTINE TO MEAN END
102     DEFINE EXITROUTINE TO MEAN RETURN
103     DEFINE ENDFUNCTION TO MEAN END
104     DEFINE EXITFUNCTION TO MEAN RETURN
105     DEFINE LEFTROUTINE TO MEAN LEFT ROUTINE
106     DEFINE ENDOLEFTROUTINE TO MEAN END
107     DEFINE EXITLEFTROUTINE TO MEAN RETURN
108     DEFINE ENDEVENT TO MEAN END
109     DEFINE EXITEVENT TO MEAN RETURN
110     DEFINE ENDPROCESS TO MEAN END
111     DEFINE EXITPROCESS TO MEAN RETURN
112     DEFINE ELSEIF TO MEAN ELSE IF
113     DEFINE ENDOIF TO MEAN ALWAYS
114     DEFINE ENDOLOOP TO MEAN REPEAT
115     DEFINE EXITLOOP TO MEAN LEAVE
116     DEFINE LOOP TO MEAN RESUME SUBSTITUTION
117
118     ENDPREAMBLE1

```

Figure III.2.17 (Cont.)

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

```

1  MAIN
2  NOMPALLY MODE IS INTEGER
3  READ N.BLUE.WPN,N.RED.WPN,N.SAMPLE,N.ESD,N.CEM.SAMPLE
4  PRINT 1 LINE WITH N.BLUE.WPN,N.RED.WPN,N.SAMPLE,N.ESD,N.CEM.SAMPLE THUS
*** BLUE WPNS *** RED WPNS ** SAMPLES *** ESD ** N.CEM.SAMPLE
6  READ PERS,TNKS,LRMS,ATMS,HELs,ARTS
7  PRINT 1 LINE WITH PERS,TNKS,LRMS,ATMS,HELs,ARTS THUS
*** *** *** *** ***
9  LET N.R.CEM.WPN=PERS+TNKS+LRMS+ATMS+HELs+ARTS
10 READ PERS,TNKS,LRMS,ATMS,HELs,ARTS
11 PRINT 1 LINE WITH PERS,TNKS,LRMS,ATMS,HELs,ARTS THUS
*** *** *** *** ***
13 LET N.R.CEM.WPN=6
14 CREATE EVERY B.CEM.WPN
15 CREATE EVERY R.CEM.WPN
16 CFFATE LVERY SAMPLE
17 CREATE EVERY CEM.SAMPLE
18 CHEATE EVERY BLUE.WPN
19 CRFATE EVERY RED.WPN
20 CREATE EVERY ESD
21 SKIP 1 LINE
22 USE 40 FOR INPUT
23 CALL ESDMAP
24 USE 5 FOR INPUT
25 SKIP 1 LINE
26 PRINT 1 LINE THUS
/READING MAPPING OF SELECTED RLCMAM WEAPONS/
28 LOOP FOR EACH BLUE.WPN DO
29     READ BLUE.ID(BLUE.WPN)
30     ENDLOOP
31 PRINT 1 LINE WITH BLUE.ID(30)THUS
LAST VALUE READ BLUE.ID(BLUE.WPN) WAS ****.*
33 SKIP 1 LINE
34 PRINT 1 LINE THUS
/READING MAPPING OF SELECTED RDCMAM WEAPONS/
36 LOOP FOR EACH RED.WPN DO
37     READ REDID
38     LET RED.ID(RED.WPN) = REDID
39     ENDLOOP
40 PRINT 1 LINE WITH RED.ID(6)THUS
LAST VALUE READ RED.ID(RED.WPN) WAS ****.*
42 SKIP 1 LINE
43 PRINT 1 LINE THUS
/READING MAPPING OF RDCMCH WPNS/
45 LOOP FOR EVERY R.CEM.WPN DO
46     READ RD.WPN.NO(N.CEM.WPN)
47     ENDLOOP
48 PRINT 1 LINE WITH RD.WPN.NO(6) THUS
LAST VALUE READ RD.WPN.NO(6) WAS ****.*
50 LOOP FOR EACH BLUE.WPN DO
51     IF BLUE.ID(BLUE.WPN) = 99
52     CYCLE

```

Figure III.2.18


```

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

53     FNDIF
54     LOOP FOR EACH SAMPLE DO
55         READ B.STYLIZED.QTY(BLUE.WPN,SAMPLE)
56     ENDOLOOP
57 ENDOLOOP
58 SKIP 1 LINE
59 PRINT 1 LINE THUS
/STYLIZED QUANTITIES READ FOR BLUE WEAPONS AND SAMPLES/
61 PRINT 1 LINE WITH R.STYLIZED.QTY(30,4) THUS
LAST VALUE READ B.STYLIZED.QTY(BLUE.WPN,SAMPLE) WAS ****.*
63 READ NO.DAYS
64 PRINT 1 LINE WITH NO.DAYS THUS
/NUMBER OF DAYS ARE ****
66 USE 16 FOR INPUT
67 LOOP FOR RED.WPN = 1 TO 4 DO
68     LOOP FOR EACH BLUE.WPN DO
69         READ BLUE.WPN,PERC.K(RED.WPN,BLUE.WPN)
70     ENDOLOOP
71 ENDOLOOP
72 PRINT 1 LINE WITH PERC.K (4,30) THUS
/PERCENT K-KILL FOR RED.WPN 1 TO 4 & BLUE KILLERS READ, LAST WAS****.*
74 USE 17 FOR INPUT
75 LOOP FOR RED.WPN = 1 TO 4 DO
76     LOOP FOR EACH BLUE.WPN DO
77         IF PERC.K(RED.WPN,BLUE.WPN) = 99.9
78             CYCLE
79     ENDIF
80     LOOP FOR EACH SAMPLE DO
81         READ RED.STYLIZED.LOS(RED.WPN,BLUE.WPN,SAMPLE)
82         PRINT 1 LINE WITH RED.WPN,SAMPLE,BLUE.WPN
83         ,RED.STYLIZED.LOS(RED.WPN,BLUE.WPN,SAMPLE) THUS
****.* ****.* ****.*
85         LET RED.STYLIZED.LOS(RED.WPN,BLUE.WPN,SAMPLE)
86         = RED.STYLIZED.LOS(RED.WPN,BLUE.WPN,SAMPLE)
87         PRINT 1 LINE WITH RED.WPN,SAMPLE,BLUE.WPN
88         ,RED.STYLIZED.LOS(RED.WPN,BLUE.WPN,SAMPLE) THUS
****.* ****.* ****.*
90     ENDOLOOP
91 ENDOLOOP
92 ENDOLOOP
93 LOOP FOR EACH BLUE.WPN DO
94     LOOP FOR EACH SAMPLE DO
95         LET RED.STYLIZED.LOS(5,BLUE.WPN,SAMPLE)
96         = RED.STYLIZED.LOS(3,BLUE.WPN,SAMPLE)
97         +RED.STYLIZED.LOS(4,BLUE.WPN,SAMPLE)
98         PRINT 1 LINE WITH BLUE.WPN,SAMPLE
99         ,RED.STYLIZED.LOS(5,BLUE.WPN,SAMPLE) THUS
****.* ****.* ****.*
101        LET RED.STYLIZED.LOS(6,BLUE.WPN,SAMPLE)
102        = RED.STYLIZED.LOS(2,BLUE.WPN,SAMPLE)
103        +RED.STYLIZED.LOS(5,BLUE.WPN,SAMPLE)
104        PRINT 1 LINE WITH BLUE.WPN,SAMPLE

```

Figure III.2.18 (Cont.)

```

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

105      ,RED.STYLIZED.LOS(6,BLUE.WPN,SAMPLE) THUS
      ****.* ****.* ****.*
107      ENDLOOP
108      ENDLOOP
109      PRINT 1 LINE THUS
/LAST VALUE RED.STYLIZED.LOS COMPUTED
111      USE F FOR INPUT
112      LOOP FOR DAY=1 TO NU.DAYS DO
113          CALL RESET.TOTAL1
114          CALL DAILY.INPUT3(DAY)
115          CALL RATIO.COMP(DAY)
116          CALL ESD.COMP1(DAY)
117          SKIP 2 LINES
118          PRINT 1 LINE WITH DAY THUS
      INPUT READ AND ORDERED, RATIOS AND ESDS CALC. FOR DAY ***
120      ENDLOOP
121      ENDMAN

```

Figure III.2.18 (Cont.)

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

```

1 ROUTINE ESDMAP
2 **
3 **
4 **THIS ROUTINE READS A DATA FILE THAT DEFINES THE WPN EQUIPMENT
5 **COMBINATIONS THAT DEFINE THE ESD'S
6 **
7 **
8 NORMALLY MODE IS INTEGER
9 PRINT 1 LINE THUS
/READ IN THE ESD MAP DATA/
11 READ AVA
12 FOR EACH ESD, DO
13   READ ESD.SEG.NO, BLUE.WPN.PTR(ESD), RED.WPN.PTR(ESD), R.QTY.INDEX(ESD),
14   B.RATIO.INDEX(ESD)
15   PRINT 1 LINE WITH ESD, ESD.SEG.NO, RED.WPN.PTR(ESD),
16   BLUE.WPN.PTR(ESD), B.RATIO.INDEX(ESD) THUS
ESD = *** ESD.SEG.NO = *** RED.WPN = *** BLUE.WPN = *** B.RATIO.INDEX = *
18   IF ESD NE ESD.SEG.NO
19     TRACE
20     STOP
21   OTHERWISE
22   ENDOLOOP
23 PRINT 1 LINE THUS
/ESD MAP DATA READ IN/
25 PRINT 1 LINE THUS
/READ IN ARMOR INDICATORS/
27 FOR EACH BLUE.WPN
28   READ ARM.INDIC(BLUE.WPN)
29 PRINT 1 LINE THUS
/ARMOR INDICATORS READ IN/
31 PRINT 1 LINE THUS
/READ IN COEFFICIENTS FOR COMBINING SAMPLES/
33 FOR I = 1 TO 4, FOR J = 1 TO N.SAMPLE
34   READ COMB.SAMPLE(I,J)
35 PRINT 1 LINE THUS
/COEFFICIENTS FOR COMBINING SAMPLES READ IN/
37 ENDRoutine

```

Figure III.2.19

```

LINE  CACI SIMSCRIPT II.5  1100 SERIES  RELEASE 6.3

1  ROUTINE  RESET.TOTALS
2  NORMALLY MODE IS INTEGER
3  SKIP 1 LINE
4  PRINT 1 LINE THUS
////ENTERING RESET.TOTAL1////
6  LOOP FOR EVERY BLUE.WPN DO
7  LOOP FOR EVERY SAMPLE DO
8  ENDLOOP
9  ENDLOOP
10 RETURN
11 ENDRoutine

```

Figure III.2.20

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

```

1 ROUTINE DAILY.INPUT(DAY)
2 NORMALLY MODE IS REAL
3 DEFINE I AND J AS INTEGER VARIABLES
4 DEFINE DAY AS INTEGER VARIABLE
5 SKIP 1 LINE
6 PRINT 1 LINE THUS
////ENTERING DAILY$INPUT3////
8 SKIP 1 LINE
9 LOOP FOR EVERY B.CEM.WPN DO
10 READ DEPLOY,
11 THREPL,
12 RTD,
13 REPLFP,
14 REPLTP,
15 SURVAS
16 LET TDEPLOYMENT(B.CEM.WPN) = DEPLOY
17 LET TREPLACEMENT(B.CEM.WPN) = THREPL
18 LET TRETURN.TO.DUTY(B.CEM.WPN) = RTD
19 LET TREPP.POOL(B.CEM.WPN) = REPLFP
20 LET TRETURN.POOL(B.CEM.WPN) = REPLTP
21 LET TSURV.ASSET(B.CEM.WPN) = SURVAS
22 ENDLOOP
23 PRINT 1 LINE WITH SURVAS THUS
/CEM WEAPON DATA READ LAST VALUE WAS *****
25 LOOP FOR EVERY BLUE.WPN DO
26 IF BLUE.ID(BLUE.WPN) = 99
27 LET DEPLOYMENT(BLUE.WPN) = 0
28 LET REPLACEMENT(BLUE.WPN) = 0
29 LET RETURN.TO.DUTY(BLUE.WPN) = 0
30 LET REPP.POOL(BLUE.WPN) = 0
31 LET RETURN.POOL(BLUE.WPN) = 0
32 LET SURV.ASSET(BLUE.WPN) = 0
33 CYCLE
34 ENDIF
35 LET DEPLOYMENT(BLUE.WPN) = TDEPLOYMENT(BLUE.ID(BLUE.WPN))
36 LET REPLACEMENT(BLUE.WPN) = TREPLACEMENT(BLUE.ID(BLUE.WPN))
37 LET RETURN.TO.DUTY(BLUE.WPN) = TRETURN.TO.DUTY(BLUE.ID(BLUE.WPN))
38 LET REPP.POOL(BLUE.WPN) = TREPP.POOL(BLUE.ID(BLUE.WPN))
39 LET RETURN.POOL(BLUE.WPN) = TRETURN.POOL(BLUE.ID(BLUE.WPN))
40 LET SURV.ASSET(BLUE.WPN) = TSURV.ASSET(BLUE.ID(BLUE.WPN))
41 ENDLOOP
42 LOOP FOR EVERY BLUE.WPN DO
43 PRINT 1 LINE WITH DEPLOYMENT(BLUE.WPN),
44 REPLACEMENT(BLUE.WPN),
45 RETURN.TO.DUTY(BLUE.WPN),
46 REPP.POOL(BLUE.WPN),
47 RETURN.POOL(BLUE.WPN),
48 SURV.ASSET(BLUE.WPN)
49 THUS
*****
51 ENDLOOP
52 SKIP 1 LINE

```

Figure III.2.21

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

```

53 PRINT 1 LINE WITH DAY THUS
/ORDERED CEM TO AMMO ZEROING DATA COMPLETED FOR DAY ***
55 USE 9 FOR OUTPUT
56 FOR BLUE.WPN=1 TO 15, WRITE DEPLOYMENT(BLUE.WPN)
57 AS D(8,1) SKIP 1 LINE
58 FOR BLUE.WPN=16 TO 30, WRITE DEPLOYMENT(BLUE.WPN)
59 AS D(8,1) SKIP 1 LINE
60 FOR BLUE.WPN=1 TO 15, WRITE REPLACEMENT(BLUE.WPN)
61 AS D(8,1) SKIP 1 LINE
62 FOR BLUE.WPN=16 TO 30, WRITE REPLACEMENT(BLUE.WPN)
63 AS D(8,1) SKIP 1 LINE
64 FOR BLUE.WPN=1 TO 15, WRITE RETURN.TO.DUTY(BLUE.WPN)
65 AS D(8,1) SKIP 1 LINE
66 FOR BLUE.WPN=16 TO 30, WRITE RETURN.TO.DUTY(BLUE.WPN)
67 AS D(8,1) SKIP 1 LINE
68 FOR BLUE.WPN=1 TO 15, WRITE REPP.POOL(BLUE.WPN)
69 AS D(8,1) SKIP 1 LINE
70 FOR BLUE.WPN=16 TO 30, WRITE REPP.POOL(BLUE.WPN)
71 AS D(8,1) SKIP 1 LINE
72 FOR BLUE.WPN=1 TO 15, WRITE RETURN.POOL(BLUE.WPN)
73 AS D(8,1) SKIP 1 LINE
74 FOR BLUE.WPN=16 TO 30, WRITE RETURN.POOL(BLUE.WPN)
75 AS D(8,1) SKIP 1 LINE
76 FOR BLUE.WPN=1 TO 15, WRITE SURV.ASSET(BLUE.WPN)
77 AS D(8,1) SKIP 1 LINE
78 FOR BLUE.WPN=16 TO 30, WRITE SURV.ASSET(BLUE.WPN)
79 AS D(8,1) SKIP 1 LINE
80 FOR BLUE.WPN=1 TO 15, WRITE SURV.ASSET(BLUE.WPN)
81 AS D(8,1) SKIP 1 LINE
82 FOR BLUE.WPN=16 TO 30, WRITE SURV.ASSET(BLUE.WPN)
83 AS D(8,1) SKIP 1 LINE
84 USE 6 FOR OUTPUT
85 LOOP FOR EVERY CEM.SAMPLE DO
86 PRINT 1 LINE THUS
/READING BLUE QTY. ENGD., K & M KILL
88 LOOP FOR EVERY B.CEM.WPN DO
89 READ ONLINE
90 LET TB.QTY.ON.HAND(B.CEM.WPN,CEM.SAMPLE)=ONLINE/2
91 READ DEAD
92 LET TK.KILL(B.CEM.WPN,CEM.SAMPLE)=DEAD
93 READ PTDEAD
94 LET TM.KILL(B.CEM.WPN,CEM.SAMPLE)=PTDEAD
95 ENDOLOOP
96 SKIP 1 LINE
97 PRINT 1 LINE WITH PTDEAD AND CEM.SAMPLE THUS
LAST BLUE VALUE READ WAS ***** FOR NGAG **
99 PRINT 1 LINE THUS
/READING RED QTY LOST
101 LOOP FOR EVERY R.CEM.WPN DO
102 READ DEAD
103 LET TR.TY.LOSS(R.CEM.WPN,CEM.SAMPLE) = DEAD
104 ENDOLOOP

```

Figure III.2.21 (Cont.)

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

```

105 PRINT 1 LINE WITH DEAD AND CEM.SAMPLE THUS
LAST PED VALUE READ WAS ***** FOR NGAG **
107 ENDOLOOP
108 SKIP 1 LINE
109 PRINT 1 LINE THUS
/START 8 CEM TO 4 TR SAMPLES FOR BLUE WPNs
111 FOR EACH SAMPLE, DO
112 LET CEM.SAMPLE = SAMPLE
113 FOR EACH B.CEM.WPN, DO
114 LET TRB.QTY.ON.HAND(B.CEM.WPN,SAMPLE) =
115 TB.QTY.ON.HAND(B.CEM.WPN,CEM.SAMPLE)
116 LET TRK.KILL(B.CEM.WPN,SAMPLE) = TK.KILL(B.CEM.WPN,CEM.SAMPLE)
117 LET TRM.KILL(B.CEM.WPN,SAMPLE) = TM.KILL(B.CEM.WPN,CEM.SAMPLE)
118 PRINT 1 LINE WITH SAMPLE,CEM.SAMPLE, B.CEM.WPN,
119 TRB.QTY.ON.HAND(B.CEM.WPN,SAMPLE),
120 TRK.KILL(B.CEM.WPN,SAMPLE),
121 TRM.KILL(B.CEM.WPN,SAMPLE)
122 THUS
FOR SAMPLE = ** NGAG = ** B.CEM.WPN = ** ***** *****
124 ENDOLOOP
125 ENDOLOOP
126 SKIP 1 LINE
127 PRINT 2 LINES THUS
/8 CEM TO 4 TR SAMPLES FOR BLUE COMPLETED
/START MAP BLUE DATA FROM CEM TO AMMO IDS
130 LOOP FOR EVERY SAMPLE DO
131 LOOP FOR EVERY BLUE.WPN DO
132 PRINT 1 LINE WITH SAMPLE,BLUE.WPN AND BLUE.ID(BLUE.WPN) THUS
SAMPLE ** BLUE WPN ** BLUE.ID(BLUE.WPN) **
134 IF BLUE.ID(BLUE.WPN) = 99
135 LET B.QTY.ON.HAND(BLUE.WPN,SAMPLE) = 1
136 LET K.KILL(BLUE.WPN,SAMPLE) = 1
137 LET M.KILL(BLUE.WPN,SAMPLE) = 1
138 GO TO LOOPPOS
139 REGARDLESS
140 LET B.QTY.ON.HAND(BLUE.WPN,SAMPLE)
141 =TRB.QTY.ON.HAND(BLUE.ID(BLUE.WPN),SAMPLE)
142 LET K.KILL(BLUE.WPN,SAMPLE)
143 =TRK.KILL(BLUE.ID(BLUE.WPN),SAMPLE)
144 LET M.KILL(BLUE.WPN,SAMPLE)
145 =TRM.KILL(BLUE.ID(BLUE.WPN),SAMPLE)
146 PRINT 1 LINE WITH B.QTY.ON.HAND(BLUE.WPN,SAMPLE),
147 K.KILL(BLUE.WPN,SAMPLE)
148 AND M.KILL(BLUE.WPN,SAMPLE)
149 THUS
***** *****
151 *LOOPPOS* ENDOLOOP
152 ENDOLOOP
153 SKIP 1 LINE
154 PRINT 1 LINES THUS
/MAP BLUE DATA FROM CEM TO AMMO ID COMPLETED
156 PRINT 1 LINE THUS

```

Figure III.2.21 (Cont.)

```

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

/ADDITIONAL CEM/AMMO MAPPING CORRECTIONS STARTED
158 PRINT 1 LINE WITH DAY THUS
RECORDING K & M KILLS FOR DAY ***
160 USE 9 FOR OUTPUT
161 FOR I = 1 TO 4, DO
162   FOR BLUE.WPN = 1 TO 30, DO
163     LET NUM.K.KILL = 0.0
164     FOR J = 1 TO N.SAMPLE
165       ADD (COMB.SAMPLE(I,J)*K.KILL(BLUE.WPN,J)) TO NUM.K.KILL
166     WRITE NUM.K.KILL AS D(8,1)
167     IF BLUE.WPN = 15 SKIP 1 LINE ALWAYS
168   ENDCLOOP
169 ENDCLOOP
170 FOR I = 1 TO 4, DO
171   FOR BLUE.WPN = 1 TO 30, DO
172     LET NUM.M.KILL = 0.0
173     FOR J = 1 TO N.SAMPLE
174       ADD (COMB.SAMPLE(I,J)*M.KILL(BLUE.WPN,J)) TO NUM.M.KILL
175     WRITE NUM.M.KILL AS D(8,1)
176     IF BLUE.WPN = 15 SKIP 1 LINE ALWAYS
177   ENDCLOOP
178 ENDCLOOP
179 USE 6 FOR OUTPUT
180 PRINT 1 LINES THUS
/START 8 CEM TO 4 TR SAMPLES FOR RED WEAPONS
182 FOR EACH SAMPLE, DO
183   LET CEM.SAMPLE = SAMPLE
184   FOR EACH R.CEM.WPN, DO
185     LET TRR.QTY.LOSS(R.CEM.WPN,SAMPLE) =
186       TR.QTY.LOSS(R.CEM.WPN,CEM.SAMPLE)
187   ENDCLOOP
188 PRINT 1 LINE WITH SAMPLE,CEM.SAMPLE AND R.CEM.WPN AND
189   TRR.QTY.LOSS(R.CEM.WPN,SAMPLE) THUS
FOR SAMPLE = ** NGAG = ** R.CEM.WPN = ** TRR.QTY = *****
191 ENDCLOOP
192 SKIP 1 LINE
193 PRINT 1 LINES THUS
/8 CEM TO 4 TR SAMPLES FOR RED COMPLETED
195 LOOP FOR EVERY SAMPLE DO
196 LOOP FOR EVERY RED.WPN DO
197 LET P.CEM.WPN = RED.WPN
198 LET R.QTY.LOSS(RED.WPN,SAMPLE) = TRR.QTY.LOSS(R.CEM.WPN,SAMPLE)
199 ENDCLOOP
200 ENDCLOOP
201 SKIP 1 LINE
202 PRINT 1 LINE THUS
/ORDERED CEM ON RED AMMO COMPLETED/
204 RETURN
205 ENDROUT

```

Figure III.2.21 (Cont.)

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

```

1 ROUTINE RATIO.COMP(JAY)
2 NORMALLY MODE IS REAL
3 SKIP 1 LINE
4 PRINT 1 LINE THUS
////ENTERING RATIO$COMP////
5 LOOP FOR EVERY BLUE.WPN DO
6 IF BLUE.ID(BLUE.WPN) = 99
7 CYCLE
8 ENDIF
9 LOOP FOR EVERY SAMPLE DO
10 IF B.STYLIZED.QTY(BLUE.WPN,SAMPLE) > 0
11 LET B.RATIO(BLUE.WPN,SAMPLE) = B.QTY.ON.HAND(BLUE.WPN,SAMPLE)
12 /B.STYLIZED.QTY(BLUE.WPN,SAMPLE)
13 ENDIF
14 PRINT 1 LINE WITH BLUE.WPN,SAMPLE,
15 B.RATIO(BLUE.WPN,SAMPLE)
16 THUS
BLUE.WPN *** SAMPLE * B.RATIO ****
17 ENDOLOOP
18 ENDOLOOP
19 LOOP FOR EVERY SAMPLE DO
20 FOR BLUE.WPN = 2 TO 14,00
21 LET R.ARMOR.ACT(SAMPLE) = B.ARMOR.ACT(SAMPLE)
22 *B.QTY.ON.HAND(BLUE.WPN,SAMPLE)
23 LET R.ARMOR.STY(SAMPLE) = B.ARMOR.STY(SAMPLE)
24 *B.STYLIZED.QTY(BLUE.WPN,SAMPLE)
25 PRINT 1 LINE WITH BLUE.WPN,SAMPLE,
26 B.ARMOR.ACT(SAMPLE),B.ARMOR.STY(SAMPLE)
27 THUS
BLUE.WPN *** SAMPLE * B.ARM.ACT ***** B.ARMOR.STY *****
28 ENDOLOOP
29 ENDOLOOP
30 SKIP 1 LINE
31 PRINT 1 LINE THUS
/TOTALS BLUE ARMOR AND ICVAPC SUMMATION COMPLETED/
32 LET RFRST(SAMPLE) = B.ARMOR.ACT(SAMPLE)/B.ARMOR.STY(SAMPLE)
33 PRINT 1 LINE WITH SAMPLE, BFRST(SAMPLE) THUS
/SAMPLE * RFRST(SAMPLE) ****,***
34 ENDOURTIME

```

Figure III.2.22

LINE CACI SIMSCRIPT II.5 1100 SERIES RELEASE 6.3

```

1 ROUTINE ESD.COMPI(DAY)
2 NORMALLY MODE IS REAL
3 DEFINE I AND J AS INTEGER VARIABLES
4 SKIP 1 LINE
5 PRINT 1 LINE THUS
////ENTERING ESD.COMPI////
7 LOOP FOR EVERY RED.WPN DO
8   LOOP FOR EVERY SAMPLE DO
9     LET POS.TOT.LOS(RED.WPN,SAMPLE) = 0.
10    ENDOLOOP
11  ENDOLOOP
12  SKIP 1 LINE
13  PRINT 1 LINE THUS
/ZEROED POSSIBLE TOTAL RED WEAPON LOSS ARRAY FOR DAY
15 LOOP FOR EVERY RED.WPN DO
16   LOOP FOR EVERY BLUE.WPN DO
17     IF PERC.K(RED.WPN,BLUE.WPN) = 99.9
18       CYCLE
19     ENDF
20     LOOP FOR EVERY SAMPLE DO
21       LET POS.TOT.LOS(RED.WPN,SAMPLE)
22       =POS.TOT.LOS(RED.WPN,SAMPLE)
23       +B.RATIO(BLUE.WPN,SAMPLE)
24       *RED.STYLIZED.LOS(RED.WPN,BLUE.WPN,SAMPLE)
25   PRINT 1 LINE WITH PLO.WPN,BLUE.WPN,SAMPLE,B.RATIO(BLUE.WPN,SAMPLE)
26   ,RED.STYLIZED.LOS (RED.WPN,BLUE.WPN,SAMPLE)
27   ,POS.TOT.LOS(RED.WPN,SAMPLE)
28   ,R.QTY.LOSS(RED.WPN,SAMPLE) THUS
** ** ** *** ** *** ** *** **
30   ENDOLOOP
31   ENDOLOOP
32   ENDOLOOP
33   SKIP 1 LINE
34   PRINT 1 LINE THUS
/COMPUTED POSSIBLE TOTAL RED LOSS ARRAY FOR DAY
36 LOOP FOR EVERY SAMPLE, DO
37   LOOP FOR EVERY ESD, DO
38     IF RED.WPN.PTR(ESD) = 0
39       CYCLE
40     OTHERWISE
41       IF ESD = AVA **ARMOR VS. ARMOR
42         IF R.QTY.LOSS(R.QTY.INDEX(ESD),SAMPLE) GT .9
43           LET EQ(ESD,SAMPLE) = BFRST(SAMPLE)
44           * R.QTY.LOSS(RED.WPN.PTR(ESD),SAMPLE)/
45           POS.TOT.LOS(RED.WPN.PTR(ESD),SAMPLE)
46         CYCLE
47       ELSE
48         LET EQ(ESD,SAMPLE) = 0.0
49       CYCLE
50   ENDF
51   F B.RATIO.INDEX(ESD) = 1 **BLUE RATIO
52   LET (ESD,SAMPLE) = B.RATIO(BLUE.WPN.PTR(ESD),SAMPLE)

```

Figure III.2.23

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```
53         CYCLE
54     OTHERWISE
55         IF R.QTY.LOSS(R.QTY.INDEX(ESD),SAMPLE) GT .9
56             LET EQ(ESD,SAMPLE) = B.RATIO(BLUE.WPN.PTR(ESD),SAMPLE)
57             * R.QTY.LOSS(RED.WPN.PTR(ESD),SAMPLE) /
58             POS.TOT.LOS(RED.WPN.PTR(ESD),SAMPLE)
59         ELSE
60             LET EQ(ESD,SAMPLE) = 0.
61         ENDIF
62     ENDOLOOP
63     FOR ESD = 1 TO 40 , DO
64     PRINT 1 LINE WITH ESD,SAMPLE,EQ(ESD,SAMPLE)THUS
ESD ** SAMPLE ** EQ.STY.DAY **.*
66     ENDOLOOP
67     ENDOLOOP
68     PRINT 1 LINE WITH DAY THUS
/RECORDING ESDS FOR DAY ***
70     USE 9 FOR OUTPUT
71     FOR I = 1 TO 4, DO
72         FOR ESD = 1 TO 40, DO
73             LET EQSDAY = 0.0
74             FOR J = 1 TO N.SAMPLE
75                 ADD (COMB.SAMPLE(I,J)*EQ(ESD,J)) TO EQSDAY
76                 WRITE EQSDAY AS D15,2)
77             IF ESD = 20 SKIP 1 LINE ALWAYS
78         ENDOLOOP
79     ENDOLOOP
80     USE 6 FOR OUTPUT
81     RETURN
82     ENROUTINE
```

Figure III.2.23 (Cont.)

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CHAPTER 3

REPORT GENERATOR PROGRAM

3.1 DESCRIPTION OF PROCESSING: The Report Generator program consists of one large program; the total listing has 914 records with 47% of the records being programmer comments or 482 records of executable FORTRAN code. The program was developed as a post-processor to the Theater Rates Model, a major component of the predecessor Ammo-Rates Methodology. It has subsequently been retained for use and application in the WARRAMP methodology.

3.1.1 PURPOSE/FUNCTIONS: The Report Generator program is designed to read four input data files, one produced by the previously discussed ESD program, the remaining three manually developed by the user/analyst. The program then computes ammunition requirements for four main consumption categories, and produces two output files. The primary output file contains three reports for the user. The secondary output file is prepared for an eventual mass storage to tape copy; the tape is subsequently furnished to the Army staff (ODCSLOG). The three reports (primary output file) are produced separately during program execution, but merged into the one output file by the program, not the runstream.

3.1.2 PROGRAM INPUT/OUTPUT STRUCTURE: The program I/O structure is presented in Figure III.3.1. The internal integer value indicates the initial order of input for the input data files. The integer outside the flow chart symbol at the upper corner is the logical unit assigned to the input and output data files by the program run (start file) stream and is expected by the program.

3.1.2.A INPUT DATA and DATA BASE: The four input data files are not part of a formal data base organization. The files are developed or updated in the course of the application of the preceding APP programs or manually updated in the course of the study program progress to provide current data, drawing data from the COSAGE or CEM models. It is incumbent on the user/analyst to properly catalog and maintain the input data files. It follows that the user/analyst must be consulted for the cataloged file name and element name of the current data files. A version name may be appended to the element name to assist in providing a data audit trail and to distinguish the current file. The formats of the data is given in Volume III, Chapter 3 of this documentation set. Those discussed in that volume are not duplicated herein. Below is a summary of the input data files.

The maintenance programmer should note that records 355 through 362 of the program are programmed input data values that contain integer data for the time periods and label data for output.

- o AMMOUT - This file is produced by the ESD program and maintained on the system as a program (PRINT) file by the user/analyst. The file resides on a fixed mass storage device, is expected to have a classified

file qualifier and read/write keys. During the start file execution the file is referenced to logical unit 10 via the @USE command in the runstream in preparation for input to the program. The file is lengthy, and normally contains 6840 records of data; a block of 38 records contains data for each day of combat modeled in the campaign or war. All data values are real (decimal) with two formats used; the first is 15 data points per record. All the data file is read sequentially and all data values are read by the program. The data file is read early in the program without switching logical input units. Figure III.3.2 presents a sample of the data.

- o PF.ISD (Input Stylized Day) - this file element is created and maintained by the user/analyst on a user designated mass storage device. The program file can be expected to have a classified file qualifier and read/write keys. The data is @ADD'd to the program runstream and thus uses logical unit 5 for input to the program. The file is short with one record for each day of war modeled, and each record has one integer data value. The data file is read sequentially and all data values are read by the program. The data presented to the program is the stylized day sample number to be used in the program computation; however the code does not employ this value in the computations. An example of this data file is depicted in Figure III.3.3.
- o PF.DATA - this file is manually created and maintained by the user/analyst. The description of the file composition is a carry-over from the early practice of employing a punched card check for data. The file is composed of groups of records that define a weapon (firing) system that may be a component of an end item of equipment. A weapon system is defined through a group of six (6) card types. Therefore the total quantity of cards (records) necessary to provide data definition to a weapon system and the types of munitions available to it will vary. The program file resides on a fixed mass storage device is expected to have a classified file qualifier and read/write keys. The file exists as an element to the program file. The data is @ADD'd to the program runstream following the @XQT Executive-8 command as it uses logical Unit 5 for input to the program. The data file is read sequentially and all data values are read by the program.

Figure III.3.4 presents a sample of the data file. Note that a "99" in columns 1 - 2 of a record denote the end of a block of data pertinent to a munition of a weapon system.

- o PF.TITLE - this file is manually created and maintained by the user/analysts. The program file resides on a fixed mass storage device and can be expected to have a classified qualifier and read/write keys. The file exists as an element of the program file. This file is small, containing approximately 9 lines of integer and alphanumeric data. An example of the file is depicted in Figure III.3.5. The file provides user input terms for the output report headings with

classification as well as historical sea loss data, and report pagination data. The file element is @ADD'd to the execution runstream following the @XQT Executive - 8 command and this uses logical unit 5 for input to the program. The data file is read sequentially and all data values are read by the program.

3.1.2.B OUTPUT DATA and DATA FILES: The program produces the three reports in one cataloged print file as its main function. Additionally, the special file **SEVEN is produced in a special format for transportation to the Army Staff when copied to tape. The temporary program file (TPF\$) generated by the system is also produced, but not discussed in this manual. These files are a product managed by the user/analyst and are not a part of a formal database. It is incumbent upon the user to properly catalog and maintain these files. The execution runstream normally handles these functions. The runstream as well as the necessary data formats are discussed in Volume III, Chapter 3 of this documentation set. The following is a summary of the output data files.

- o **REPORT1** - This file is referred to as the "Main Report" of the program and employs the default output logical unit 6 for data placement. The file is labeled for analyst reading and interpretation. The report details for each weapon system/munitions combination, the quantities deployed and consumed for each analytical time period. An example of this output data file is depicted in Figure III.3.6. There are typically 2200 lines of output or approximately 40 pages of printed copy produced. Approximately 300 tracks of mass storage space is allocated for this report.
- o **THREE - DAY PILE REPORT** - This report is produced by the program in temporary file cataloged to logical unit 2 for program reference with 200 tracks of mass storage space reserved. The file is labeled for analyst reading and interpretation and contains computed output for weapon system and munition requirements, in quantities and tonnage, in 3 day increments or piles. The file typically contains 900 lines (records) or approximately 16 print pages of printed output. An example of this report is presented in Figure III.3.7. At the conclusion of computations in the program and the writing onto Unit 2, the contents of Unit 2 are edited onto Unit 6, so this report is printed out as the second part of the total report print file.
- o **DISTRIBUTION OF REQUIREMENTS REPORT** - This report is produced by the program and written out to a temporary file cataloged and referenced to Unit 3 for program reference with 500 tracks of mass storage space reserved. The file is labeled for analyst reading and interpretation. It contains computed output that details for each weapon/munition combination, and time period, the quantity of munitions consumed in the different consumption categories. The file typically contains 3700 lines (records) or approximately 66 pages of printed output. At the conclusion of computations and output writing in the program, the (file) contents of Unit 3 are edited onto Unit 6, so this report is printed as the third part of the total report print file. An

example of this file is depicted in Figure III.3.8.

- o SEVEN - This file is produced by the program for the specific purpose of providing logistic data to the Army staff. The file is reference via an @USE command to logical unit 7 for output (hence the name) to a permanently cataloged file of the same name. It exists as a program or print file which does not have a classified file qualifier. The file is labeled with titling data input as well as programmed label instructions. The values output are the computed logistic rates of consumption per each of the average deployment levels per each of the twelve analytical time periods for a given weapon system and munition. An example of this output file is depicted in Figure III.3.9.

3.1.2.C DATA ELEMENT DICTIONARY: The following variable names are employed in the program.

<u>Name</u>	<u>Definition</u>
ADEP(I)	A one-dimensional real array that is set to the average deployment of a weapon system (a computed value) in each of the following analytical periods when: I = 1; days 1 - 15 I = 2; days 16 - 30 I = 3; days 1 - 30 I = 4; days 31 - 60 I = 5; days 61 - 90 I = 6; days 31 - 90 I = 7; days 1 - 90 I = 8; days 91 - 120 I = 9; days 121 - 150 I = 10; days 151 - 180 I = 11; days 91 - 180 I = 12; days 1 - 180
AMUN(I)	A one-dimensional real array set to the name of a munition used (fired) by a weapon system; reserved as 5, a system may have up to 5 types of munitions.
ATITLE(I)	A one-dimensional real (alpha) array set to the title or heading for the expenditure report; reserved as 17 to hold 102 characters of heading data (read) presented on 2 records (72 and 30, respectively).
BTITLE(I)	A one-dimensional real (alpha) array set to the title or heading for the 3-day ammunition pile report; reserved as 17 to hold 102 characters of heading data (read) presented on 2 records (72 and 30, respectively).

CONC(I) A one-dimensional real (alpha) array set in a DATA statement in the program to "CONTINUED"; reserved as 2.

CTITLE A one-dimensional real (alpha) array set to the title or output report heading for the distribution of requirements (DOR) report; reserved as 17 to hold 107 characters of heading data (read) presented on 2 records (72 and 30, respectively).

DAYS(I) A one-dimensional real array set in a DATA program statement to the values as follows; reserved as 12 for the number of days of modeled combat in each period:

I =	1,2	:	15 days
I =	3,4,5	:	30 days
I =	6	:	60 days
I =	7	:	90 days
I =	8,9,10	:	30 days
I =	11	:	90 days
I =	12	:	180 days

DEP(I) A one-dimensional real array set to the input data, or quantities of each weapon system deployed in each of the following time periods; reserved as 8:

I = 1	:	D-day
I = 7	:	days 1 - 15
I = 3	:	days 16 - 30
I = 4	:	days 31 - 60
I = 5	:	days 61 - 90
I = 6	:	days 91 - 120
I = 7	:	days 121 - 150
I = 8	:	days 151 - 180

DOR(I,J) A two-dimensional real array set to the computed ammunition requirement in rounds of a munition of a weapon system in the ith period and jth type of requirement. Reserved as 7 by 17 with i and j defined as follows:

I :	1	=	days 1 - 15
	2	=	days 16 - 30
	3	=	days 31 - 60
	4	=	days 61 - 90
	5	=	days 91 - 120
	6	=	days 121 - 150
	7	=	days 151 - 180

- J :
- 1 = Computed value from the factors input, based upon total expenditures in the time period.
 - 2 = Combat losses in delay.
 - 3 = Combat losses in defense intense.
 - 4 = Combat losses in defense light.
 - 5 = Combat losses in attack.
 - 6 = Weapon system zeroing in deployment.
 - 7 = Weapon system zeroing on return to duty.
 - 8 = Weapon system zeroing on replacement to unit.
 - 9 = Weapon system zeroing on return to replacement pool.
 - 10 = Firing in delay mission.
 - 11 = Firing in defense intense mission.
 - 12 = Firing in defense light mission.
 - 13 = Firing in attack mission.

ESD(I,J,K)

A three-dimensional real array set to the equivalent stylized day value from input data for a weapon system on the *i*th day, *j*th ESD number and *k*th posture or mission. Reserved as 180 (days) by 40 (ESD numbers) by 4 (missions). The values and definition of K are:

- 1 = Delay mission (posture).
- 2 = Defense Intense mission (posture).

	3 =	Defense Light mission (posture).
	4 =	Attack mission (posture).
ESL(I,J,K)		A three-dimensional real array set to the quantity of computed stylized losses for each blue equipment (weapon system) for each three-day period by posture. Reserved as 60 (3-day periods) by 30 (maximum blue weapon systems) by 4 (postures or missions).
FAC(I)		A one-dimensional real array set, on data input, to the expenditure factors for a given weapon system for the ith period. Depending upon the computational method designed, the factor may be for the 3-day pile (normal) method or a rate factor for the rates computation method. Reserved as 9, the ith value is defined as follows:
	1 =	Logistic loss factor
	2 =	H & I firing factor
	3 =	Days 1 - 15 firing factor
	4 =	Days 16 - 30 firing factor
	5 =	Days 31 - 60 firing factor
	6 =	Days 61 - 90 firing factor
	7 =	Days 91 - 120 firing factor
	8 =	Days 121 - 150 firing factor
	9 =	Days 151 - 180 firing factor
IA		An integer variable, set as a counter to the number of lines (records) that have been printed on a page in the main report.
IAA		An integer variable, set during data input to the number of lines (records) desired in the main report.
IAAA		An integer variable set during data input to the total number of pages desired in the main report.
IAP		An integer variable, set as a counter, to the number of pages in the main report.

IB	An integer variable, set as a counter, to the number of lines that have been printed on a page in the second (3 - Day Pile) report.
IBB	An integer variable, set on data input, to the number of lines (records) desired on a page of the 3 - Day Pile report.
IBP	An integer variable, set as a counter, to the number of pages in the 3 - Day pile report.
IBUS	An integer variable used as an indicator or flag, set on data input, to denote that a munition of a weapon system is a business round. Values used are: 1 = Business round. 0 = Non-business round.
IC	An integer variable, set on data input, to the card type being read by the program. Types are: 1 - Weapons System name card 2 - Deployment data card. 3 - Munitions data card. 4 - Expenditure factor card. 5 - Stylized losses card. 6 - Stylized expenditures card. Note the value of 99 in the column 1 -2 position in lieu of the 6 denotes the last card (record) in the block of data defining a munition of a weapon system.
ICC	An integer variable, set on data input, to the desired number of lines (records) on a page of the third (Distribution of Requirements) report.
ICCC	An integer variable, set on data input, to the desired number of pages in the Distribution of Requirements report.
ICP	An integer variable, set as a counter, to the page of the Distribution of Requirements report.

IE	An integer variable, set as a counter, to the number of lines records in the Distribution of Requirements Report.																																			
ID(I)	A one-dimensional integer array set on programmed data input (line 356) to the periods for report headings as follows; reserved as 7: <table><tr><td>I</td><td>=</td><td>1</td><td>;</td><td>15</td></tr><tr><td></td><td></td><td>2</td><td>;</td><td>30</td></tr><tr><td></td><td></td><td>3</td><td>;</td><td>60</td></tr><tr><td></td><td></td><td>4</td><td>;</td><td>90</td></tr><tr><td></td><td></td><td>5</td><td>;</td><td>120</td></tr><tr><td></td><td></td><td>6</td><td>;</td><td>150</td></tr><tr><td></td><td></td><td>7</td><td>;</td><td>180</td></tr></table>	I	=	1	;	15			2	;	30			3	;	60			4	;	90			5	;	120			6	;	150			7	;	180
I	=	1	;	15																																
		2	;	30																																
		3	;	60																																
		4	;	90																																
		5	;	120																																
		6	;	150																																
		7	;	180																																
II(I)	A one-dimensional integer array set to computed values (constants) for the 3-Day Pile Report. Reserved as 60.																																			
IM	An integer variable set on data input on Card type 3 for a type of munition of a weapon systems to the computation method to be used for the munition. Values used are: <table><tr><td>0</td><td>=</td><td>3-day pile method.</td></tr><tr><td>1</td><td>=</td><td>Rates method.</td></tr></table>	0	=	3-day pile method.	1	=	Rates method.																													
0	=	3-day pile method.																																		
1	=	Rates method.																																		
ISD(I)	An integer one-dimensional array set in data input to the sample number to apply to computations on the ith day. Reserved as 180.																																			
ISVEC(I)	An integer, one-dimensional array, set to the value of ISAM, which is always 999. Reserved as 50.																																			
IESD	An integer variable, set on data input to the ESD number for the munition expenditures of a weapon system from card type 6.																																			
IT	An integer variable, set on data input to the equipment type or system number on card type 5.																																			
ITOT	An integer variable, set as a counter and used as a flag in logic tests for output printing.																																			
JEVEC(I)	A one-dimensional integer array set to the value of IESD, reserved as 50. The array serves as a vector to the ESD numbers for a munition of a weapon system.																																			

IPRT

An integer variable set on data input, on Card type 2, for each weapon system as an output print flag. Values used are:

0 = Print weapon deployment levels.

1 = Do not print weapon deployment levels.

ISCALE

An integer variable set on data input, on Card type 4, for each weapon system to the exponential factor (ten to the ISCALE power) for calculations.

IS(I)

An integer one-dimensional array used for logic tests to determine output printing intervals, set on programmed data input (line 358). Reserved as 7 the set values are:

I	=	1	:	1
		2	:	16
		3	:	31
		4	:	61
		5	:	91
		6	:	121
		7	:	151

ISAM

An integer variable set on data input to the value of the sample number for the stylized expenditure on Card type 6. Set to 999, always.

ISC

An integer variable used as a counter in reading munitions card 6, expenditure data.

RATE(I)

A one-dimensional real array set to the computed expenditure rate of munitions for the *i*th period. Reserved as 12, the value of *i* correlates to the following periods:

1	:	days 1 - 15
2	:	days 16 - 30
3	:	days 1 - 30
4	:	days 31 - 60
5	:	days 61 - 90
6	:	days 31 - 90
7	:	days 1 - 90
8	:	days 91 - 120
9	:	days 121 - 150
10	:	days 151 - 180
11	:	days 91 - 180
12	:	days 1 - 180

ROUND(I)

A one-dimensional real array set to the computed number of rounds expended of a munitions in the ith period. The value of i correlates as described above for RATE(I). Reserved as 12.

SE(I)

A one-dimensional real array set to the stylized expenditure of munitions by a weapon system in a given posture. Reserved as 4; the values of i correlate as follows:

- 1 : Delay posture (mission)
- 2 : Defense intense posture
- 3 : Defense light posture
- 4 : Attack posture

SEALOSS(I)

A one-dimensional real array set to the data input shipping loss factor of a munition of a weapon system for the ith period, where i represents:

- 1 : days 1 - 15
- 2 : days 16 - 30
- 3 : days 31 - 60
- 4 : days 61 - 90
- 5 : days 91 - 120
- 6 : days 121 - 150
- 7 : days 151 - 180

SEVEC(J,I)

A two-dimensional real array (utilized as a vector) set to the stylized expenditures of a single munition of a weapon system in the jth posture and the ith set to SE(I). Reserved as 4 (postures) by 50 (up to 50 cards).

SFAC(I)

A one-dimensional real array set to the sum of the munition expenditure factors 2 through 9 for business round computations. Reserved as 8.

SLPS(I)

A one-dimensional real array set on data input to the stylized losses per (weapon) system by posture. Reserved as 4 (postures), the ith value correlates as follows:

- I = 1 : Delay posture (mission)
- 2 : Defense Intense posture
- 3 : Defense Light posture
- 4 : Attack posture

SRound (I)	A one-dimensional real array set to the computed sum of the ROUND(I) array or the total number of rounds expended of a munition by a weapon system. Reserved as 12 for the 12 analytical time periods referred to in the ADEP(I) definition of the ith value.
STOP(I)	A one-dimensional real array set to the computed sum of the TDP(I) or three-day pile array for a munition of a weapon system; reserved as 30, the ith value correlates to a 3 day increment where: I = 1 : days 1 - 3 2 : days 4 - 6 3 : days 7 - 9, etc
STONS(I)	A one-dimensional real array set to the computed weight, in tons (2000 pounds), of a three day pile of the munitions of a weapon system. Reserved as 30 (up to 90 days), the ith value correlates to a 3-day increment as described above.
STIM(J)	A one-dimensional real array set to alphanumerics programmed (lines 360 - 362) and used as labels for the output report. Reserved as 17, the ith value or label correlates to stimulus definitions as described for variable DOR (I, J).
IDEP(I)	A one-dimensional real array set to the computed total deployment of a weapon system for the ith period. Reserved as 12, the I correlates to the analytical periods defined under ADEP(I)
TDP(I)	A one-dimensional real array set to the data input quantity of munitions expended by a weapon system in three day piles. Reserved as 30, I correlates to the 3 - day period, up to 90 days, as defined in STDP(I).
TONS(I)	A one-dimensional real array set to the computed weight of a three-day pile of munitions of a weapon system, in tons (2000 lbs). Reserved as 12, the ith value correlates to the analytical period as defined under ADEP(I).
TOTAL(I)	A one-dimensional real array used to hold the programmed alphanumeric input (line 359) used for output report labeling; reserved as 2 and set to "WEAPONTOTAL".

TSTONS(I)	A one-dimensional real array set to the computed total tons of all munitions expended by a weapon system in a period. Reserved as 12, the ith analytical period correlates to the periods defined under ADEP(I).																																																												
WPN(I)	A one-dimensional real array set to the data input alphanumeric name of the weapon of analytical interest. Reserved as 10 to hold up to 40 characters of information.																																																												
WEIGHT	A real variable set on data input to the pounds per round, in decimal fraction, of a munition of a weapon system.																																																												
ZE(I,J)	A two-dimensional real array set to the computed zeroing requirements. Reserved as 60 by 30 for the breakout of 180 day to 60 3-day periods and the 30 3-day pile data for each blue equipment.																																																												
ZZE(I,J,K)	A three-dimensional real array set to computed zeroing requirements for each analytical period (I), for each zeroing stimulus (J) and each equipment type (K). Reserved as 7 by 4 by 30, the index values correlate as follows: <table><tr><td>I</td><td>=</td><td>1</td><td>:</td><td>days 1 - 15</td></tr><tr><td></td><td></td><td>2</td><td>:</td><td>days 16 - 30</td></tr><tr><td></td><td></td><td>3</td><td>:</td><td>days 31 - 60</td></tr><tr><td></td><td></td><td>4</td><td>:</td><td>days 61 - 90</td></tr><tr><td></td><td></td><td>5</td><td>:</td><td>days 91 - 120</td></tr><tr><td></td><td></td><td>6</td><td>:</td><td>days 121 - 150</td></tr><tr><td></td><td></td><td>7</td><td>:</td><td>days 151 - 180</td></tr></table> <table><tr><td>J</td><td>=</td><td>1</td><td>:</td><td>Initial Deployment</td></tr><tr><td></td><td></td><td>2</td><td>:</td><td>Return to Duty to Unit</td></tr><tr><td></td><td></td><td>3</td><td>:</td><td>Replacement to Unit</td></tr><tr><td></td><td></td><td>4</td><td>:</td><td>Return to Replacement Pool</td></tr></table> <table><tr><td>K</td><td>=</td><td colspan="3">Weapon System (Equipment) type as input, value 1 - 30.</td></tr></table>	I	=	1	:	days 1 - 15			2	:	days 16 - 30			3	:	days 31 - 60			4	:	days 61 - 90			5	:	days 91 - 120			6	:	days 121 - 150			7	:	days 151 - 180	J	=	1	:	Initial Deployment			2	:	Return to Duty to Unit			3	:	Replacement to Unit			4	:	Return to Replacement Pool	K	=	Weapon System (Equipment) type as input, value 1 - 30.		
I	=	1	:	days 1 - 15																																																									
		2	:	days 16 - 30																																																									
		3	:	days 31 - 60																																																									
		4	:	days 61 - 90																																																									
		5	:	days 91 - 120																																																									
		6	:	days 121 - 150																																																									
		7	:	days 151 - 180																																																									
J	=	1	:	Initial Deployment																																																									
		2	:	Return to Duty to Unit																																																									
		3	:	Replacement to Unit																																																									
		4	:	Return to Replacement Pool																																																									
K	=	Weapon System (Equipment) type as input, value 1 - 30.																																																											
ZERO	A real variable set on data input to the quantity of rounds required to zero the weapon system.																																																												

3.1.3 PROGRAM PROCESSING: The program has no subroutines; hence the program is self contained and executes sequentially.

3.1.3.A PROGRAM RUN DESCRIPTION - The procedure or "START" file to

execute the Report Generator Program is depicted and discussed in Volume III, Chapter 3 of this documentation set. The start file as well as the object program and source code resides in permanently cataloged program file elements under the current APP user/analysts' computer user identification number. The start file or execution runstream is designed to be submitted as a batch run to the system. The submission is normally made in the demand mode from a computer terminal. The program requires approximately 25K words (36 - bit) of main memory for execution and approximately 3 minutes of CPU time. It runs on the system in under 18 minutes of clock time.

3.1.3 PROGRAM LOGIC - The program logic is depicted and flow charted in Figure III.3.10. The program source code is provided in Figure III.3.11.

3.1.3.C PROCESSING FEATURES - The Report Generator performs the following functions:

- o Initializes the program by:
 - oo computing values for the II (I) array
 - oo Reading the AMMOUT data, computing selected array values and storing data in arrays.
 - oo Reads the titling data
- o Titles the output reports
- o Reads the Data file containing munitions and weapons data cards 1 through 6.
- o Based upon the input computation method, computes either
 - 1) The normal or pile methods followed by rates computations, or
 - 2) The rates method.
- oo If the pile method is used writes out the report on Unit 2.
- o Write out the results for the ODCSLOG report on unit 7.
- o Writes out the main report on Unit 6
- o Writes out the distribution of requirements report on unit 3.
- o Edits the 3 - Day pile report onto Unit 6.
- o Edits the DOR onto unit 6.

3.2 OPERATING ENVIRONMENT - The Report Generator program is

implemented on the USACAA UNIVAC 1100/82 computer. The program is submitted to the system in the demand mode and is processed in a batch environment for efficient use of resources. The program was developed under the UNIVAC architecture with 36 - bit computer words (6 - byte).

- 3.2.1 HARDWARE - The UNIVAC 1100/82 mainframe and peripheral devices support the program maintenance and application. The program execution runstream fixed or removable disk (on-line) storage requirements are as follows:

- Unit 2 - 200 tracks
- Unit 3 - 500 tracks
- Unit 6 - 1000 (breakpointed file) tracks
- Unit 7 - default, 128 tracks

Tape processing is not a part of the program execution; the **SEVEN file mass storage to tape copy must be performed by the use at a computer terminal. A printer is employed for a hard copy of the output files. Normally the operating system directs the assignment of the mass storage (disk) devices.

- 3.2.2 SUPPORT SOFTWARE - The program compilation and application (execution) requires the following system processors:

- @FOR -- The FORTRAN IV language processor or compiler.
- @MAP -- The processor or collector to form the executable program from the from the compiler produced relocatable object code.
- @ED -- The editor processor.

- 3.2.2.A OPERATING SYSTEM - The UNIVAC EXECUTIVE - 8 operating system provides the necessary support for the program. The supporting software is contained in the system library (SYS\$LIB\$ and SYS\$RLIB\$).

- 3.2.2.B COMPILER - The operating system library contains the FORTRAN IV compiler and is accessed by the EXECUTIVE - 8 command @FOR. Refer to UNIVAC Publication (UP) 4060 for runstream requirements and features for compilation.

- 3.2.3 DATABASE - The data base and files necessary for program execution were discussed in paragraph III.3.2.A. These files are all FIELD\$DATA in System Data Format. These files exist as user cataloged files and elements and are not part of a formal database structure.

- 3.3 MAINTENANCE PROCEDURES - The relative size of the program and its containment within one program minimizes the maintenance. The maintenance extends to insuring that a copy of the symbolic (source) code is preserved (on tape or punched cards), that page by page changes are made to the documentation as changes/maintenance is accomplished, and that the

symbolic code be annotated with comments by the programmer personnel can track the changes. The following information is pertinent to the program maintenance (space provided for notes):

Source (symbolic) code Filename.Element name:

Absolute (object) code Filename.Element name:

Space Required, source code:

Space Required, absolute code:

Archived tape label and Locations:

Read/Write keys - established by current custodian, name:

3.3.1 PROGRAMMING CONVENTIONS - The program follows standard FORTRAN programming techniques. Highlights are as follows:

- o The data variables are defined in commented records at the beginning of the programs symbolic code.
- o All read and write format statements are declared at the beginning of the program.
- o Implied Do-loops are used.
- o The source code is liberally commented and highlighted.
- o Computed Go-to statements are employed.
- o The source code contains programmed data in records 355 - 362.
- o The integer to real "FLOAT" conversion is used.
- o Programmed edit statements are used at the end of the program to copy file contents.

3.3.2 VERIFICATION PROCEDURES - The program is verified by performing execution runs of the program with test data, which must be followed by hand calculations of the same data utilizing the source code algorithms and, then comparing results. The sequence of the execution can be tracked with the output files.

3.3.3 ERROR CORRECTION PROCEDURES - The program does not employ any programmed debugging aids or calls to an "error-found" subroutine. One program stop may be made on line 856, otherwise completion is expected and any error will result in an abnormal termination. Debugging and error correction is accomplished by an examination of the output. Three types of errors that may occur are:

- o Data (input) errors -- data presented in a mode (integer or real alphanumeric) other than expected by the program may cause an error, which will be presented as a system error.

Data presented in excess of the reserved arrays may induce an error. Debugging of data must be accomplished by a visual examination of the data files (print copy or at the terminal) or tracing the progress via the output files.

- o Program error - program errors are resolved by checking the compilation listing and obtaining and examining a relocatable code listing after the program collection (@MAP) to insure that all references and call addresses are resolved. A post mortum dump may be produced by using the @PMD Executive - 8 command in the runstream and then examining the contents of the instruction (I - BANK) bank and data (D - BANK) bank.
- o System error - the run output file (TPF\$) will list the system diagnosed errors for subsequent tracing and correction. These errors often occur as result of an error in the runstream.

3.3.4 SPECIAL MAINTENANCE PROCEDURES - No special maintenance procedures are developed or required for this program.

REPORT GENERATOR STRUCTURE

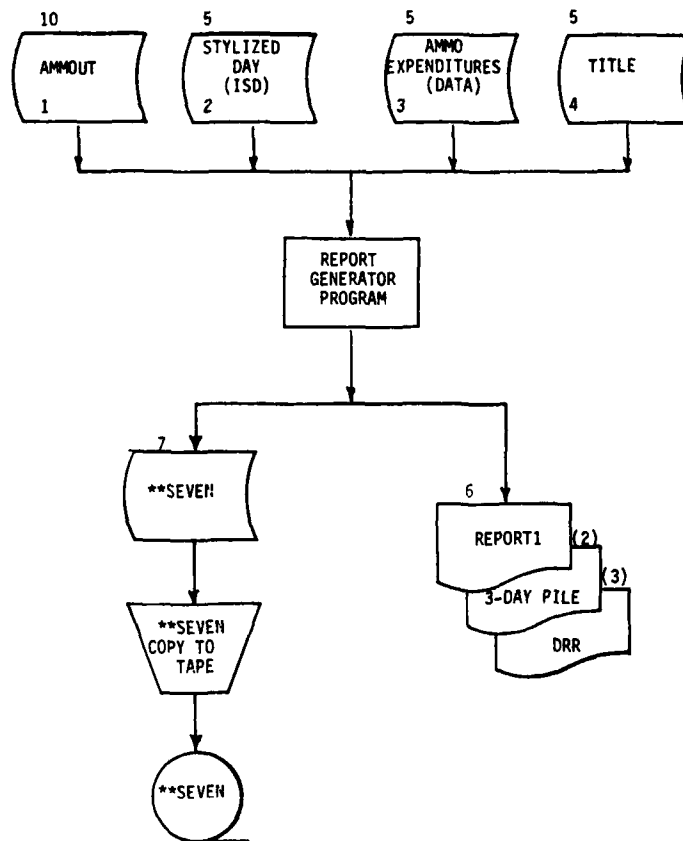


Figure III.3.1

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1	1				
2	1				
3	1				
4	2				
5	1	57	2		
6	1	58	1		
7	1	59	1		
8	1	60	1		
9	2	61	1	114	1
10	1	62	1	115	2
11	1	63	2	116	2
12	1	64	1	117	1
13	2	65	2	118	1
14	1	66	1	119	1
15	1	67	2	120	2
16	1	68	1	121	1
17	1	69	1	122	2
18	1	70	2	123	2
19	1	71	2	124	2
20	1	72	1	125	1
21	1	73	2	126	1
22	1	74	2	127	1
23	1	75	1	128	2
24	1	76	2	129	1
25	1	77	2	130	2
26	2	78	1	131	2
27	1	79	2	132	1
28	1	80	1	133	1
29	2	81	1	134	1
30	1	82	1	135	1
31	2	83	1	136	2
32	2	84	1	137	1
33	2	85	1	138	1
34	1	86	2	139	1
35	1	87	2	140	1
36	2	88	1	141	1
37	2	89	2	142	1
38	2	90	2	143	1
39	1	91	1	144	2
40	1	92	1	145	1
41	1	93	2	146	1
42	2	94	1	147	1
43	2	95	1	148	1
44	1	96	2	149	2
45	2	97	1	150	1
46	1	98	1	151	2
47	1	99	2	152	2
48	1	100	2	153	1
49	1	101	1	154	1
50	2	102	1	155	2
51	1	103	2	156	2
52	1	104	2	157	2
53	2	105	1	158	1
54	2	106	1	159	1
55	1	107	2	160	1
56	2	108	1	161	1
		109	1	162	1
		110	2	163	1
		111	1	164	1
		112	2	165	1
		113	2	166	1
				167	1
				168	1
				169	1
				170	1

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DATA

```

1: 1RTFLE,M16A1 5.56MM
2: 2 422921 13301C 170688 214863 18280 9986 5118 2026
3: 3BALL 10 .04
4:E00701 R94967 R94977
5: 4 .14 84E6 61E6 43E6 4E6 2E6 1E6
6: 5 1 0 0 0 0 0 17.
7:99999 3 0 7.4 235.9 44.5
8: 3TRACER 10 .04
9:E00702 R94967 R94977
10: 4 .14
11:99999 3 0 1.85 58.98 11.13
12: 1SQUAD AUTOMATIC WPM (SAW) 5.56 MM
13: 2 6598 2075 2663 3352 285 156 80
14: 3BALL 10 .04
15:E04601 Z40270
16: 4 .14 4F6 1.6E6 1.5E6 3.6E6 763690 77440 103680
17: 5 1 0 0 0 0 0 .0389
18:99999 3 52763 110791 13920 231784
19: 3TRACER 10 .04
20:E04602 Z40270
21: 4 .14
22: 5 1 0 0 0 0 2.58
23:99999 3 13191 27698 3480 57946
24: 1REVOLVER,CAL .38
25: 2 1E20 1E20 1E20 1E20 1E20 1E20 1E201
26: 3BALL 01 .04
27:E05000 R91107 R91244
28: 4 0 0 .89 .89 .89 .89 .89 .89
29:99999
30: 1PISTOL,CAL .45
31: 2 1E20 1E20 1E20 1E20 1E20 1E20 1E201
32: 3BALL 01 .06
33:E05700 N96741
34: 4 0 0 .30 .30 .30 .30 .30 .30
35:99999
36: 1SUBMACHINEGUN,CAL .45
37: 2 1E20 1E20 1E20 1E20 1E20 1E20 1E201
38: 3BALL 01 .06
39:E05700 U56346
40: 4 0 0 .61 .61 .61 .61 .61 .61
41:99999
42: 1SHOTGUN,12 GAUGE
43: 2 1E20 1E20 1E20 1E20 1E20 1E20 1E201
44: 3"00" BUCKSHOT 01 .19
45:E00200 T39223
46: 4 0 0 5.04 5.04 5.04 5.04 5.04 5.04
47:99999
48: 1MACHINEGUN,7.62 (GROUND MOUNT)
49: 2 16266 3522 4115 9488 2100 140 188 130
50: 3BALL/TRACER 10 .10
51:E02002 Z13388 L92386
52: 4 .14 12.5E6 3.25E6 3.38E6 7.5E6 1.75E6 129800 150400
53: 5 1 0 0 0 0 0 .98
54:99999 3 28448 83558 12861 38448
55: 1MACHINEGUN, 7.62 (IFV & CFV MOUNT)
56: 2 1229 228 211 384 138
57: 3BALL-TRACER (4 TO 1) 10 .10

```

DATA

Figure III.3.4

DATA

```

58:EO2002 Z40038
59: 4 .14 1F7 487600
60: 5 14 7600.00 7600.00 7600.00 7600.00 50.
61: 5 10 4400.00 4400.00 4400.00 4400.00 50.
62:99999 3 0 0 0 0
63: 1MACHINEGUN, 7.62 (TANK MOUNTED)
64: 2 3447 306 1066 2331 0
65: 3BALL-TRACER (4 TO 1) 10 .10
66:EO2002 L92352 Z39970
67: 4 .14
68: 5 2 11400.00 11400.00 11400.00 11400.00 50.
69: 5 3 5960.00 5960.00 5960.00 5960.00 50.
70: 5 4 5960.00 5960.00 5960.00 5960.00 50.
71: 5 6 11400.00 11400.00 11400.00 11400.00 50.
72:99999 17 1019.00 2535.00 544.00 240.00
73: 1MACHINEGUN,M2HB,CAL .50 (GROUND MOUNT)
74: 2 2610 425 992 2156 352
75: 3API-API-T 10 .44
76:EO6900 L91838 L92975 L91427
77: 4 .14
78: 5 1 0 0 0 0 2.96
79:99999 3 30576 51556 2340 5880
80: 1MACHINEGUN,M2HB,CAL .50 (APC MOUNT)
81: 2 2496 134 832 2074 0
82: 3API-API-T 10 .44
83:EO6900 L91701
84: 4 .14 1E6 242600 727800 1E6 525200
85: 5 13 600.00 600.00 600.00 600.00 40.
86: 5 12 600.00 600.00 600.00 600.00 40.
87: 6999 40 28.00 16.00 262.00 113.00
88: 6999 40 2.8 1.60 26.20 11.30
89:99999 38 000.00 000.00 000.00 000.00
90: 1MACHINEGUN,CAL .50 (TANK MOUNTED) M85
91: 2 3447 306 1066 2331 0
92: 3API-API-T 10 .44
93:EO8400 L92112
94: 4 .06
95: 5 2 1000.00 1000.00 1000.00 1000.00 40.
96: 5 3 900.00 900.00 900.00 900.00 40.
97: 5 4 900.00 900.00 900.00 900.00 40.
98: 5 6 1000.00 1000.00 1000.00 1000.00 40.
99: 6999 14 000.00 0000.00 000.00 000.00
100: 6999 17 000.00 0000.00 000.00 000.00
101: 6999 16 0000.00 0000.00 000.00 000.00
102: 6999 15 000.00 000.00 00.00 00.00
103: 6999 4 00.00 000.00 0.00 0.00
104: 6999 5 00.00 000.00 0.00 0.00
105: 6999 6 000.00 000.00 0.00 0.00
106: 6999 7 0.00 00.00 0.00 0.00
107: 6999 9 00.00 00.00 0.00 0.00
108: 6999 10 00.00 00.00 0.00 0.00
109: 6999 11 00.00 00.00 0.00 00.00
110:99999 12 0.00 0.00 0.00 0.00
111: 150 MACHINE GUN 5.56MM (PORT FIRING)
112: 2 3906 726 672 2076 0
113: 1BALL 10 .04
114: 1 241940

```

Figure III.3.4 (Cont.)

DATA

```

115: 4 .14
116: 5 10 3360.00 3360.00 3360.00 3360.00 144.
117:99999
118: 3TRACER 10 .04
119:E04602 Z41940
120: 4 .14
121: 5 10 840.00 840.00 840.00 840.00 36.
122:99999
123: 1GUN, 25MM, BUSHMASTER (IFV C CFV MTD)
124: 2 1229 228 211 522 0
125: 3HEIT 10 1.32
126:E08201 Z41940 Z42003
127: 4 .14
128: 5 14 536.00 687.00 1047.00 668.00 4.
129: 5 10 236.00 274.00 781.00 285.00 4.
130: 6999 3 2020.0 452.0 9.0 210.0
131: 6999 33 .00 .00 .00 .00
132: 6999 34 000.00 000.00 217.16 000.00
133: 6999 35 .00 .00 .00 .00
134: 6999 36 000.00 0000.00 00.00 000.00
135: 6999 34 000.00 00.00 43.43 000.00
136:99999 36 000.00 000.00 0.00 000.00
137: 3APDS-T 10 1.20
138:E08202 Z41940 Z42003
139: 4 .14
140: 5 14 717.00 579.00 440.00 798.00 1.
141: 5 10 298.00 570.00 110.00 586.00 1.
142: 6999 33 000.00 000.00 0.00 000.00
143: 6999 34 000.00 000.00 54.84 00.00
144: 6999 35 000.00 000.00 0.00 000.00
145: 6999 36 000.00 000.00 000.00 000.00
146: 6999 34 000.00 000.00 0.00 000.00
147:99999 36 000.00 000.00 00.00 000.00
148: 1GRENADE LAUNCHER, 40MM (M79/M203)
149: 2 23356 5536 6750 15114 2831 114 144 100
150: 3M433 HE-OP 10 .78
151:E12600 L44575 L44595
152: 4 .14 0 28892. 6750. 15114. 2831. 114. 144. 100.
153:99999 3 5728 10729 3246 1950
154: 3M583 SIG STAR PARA (WHITE) 01 1.04
155:E12000 L44575 L44595
156: 4 C 0 .02 .02 .02 .02 .02 .02 .02
157:99999
158: 3 M662 SIG STAR PARA (RED) 01 1.04
159:E12400 L44575 L44595
160: 4 0 0 .02 .02 .02 .02 .02 .02 .02
161:99999
162: 3 M661 SIG STAR PARA (GREEN) 01 1.04
163:E13300 L44575 L44595
164: 4 0 0 .02 .02 .02 .02 .02 .02 .02
165:99999
166: 3M713 SIG SMOKE (RED) 01 1.71
167:E11300 L44575 L44595
168: 4 C 0 .07 .07 .07 .07 .07 .07 .07
169:99999
170: 3M715 SIG SMOKE (GREEN) 01 1.71
171:E11400 L44575 L44595

```

Figure III.3.4 (Cont.)

UNCLASSIFIED#56ESDGEN11).TITLE88/ANDY

1	(U) RATES AND REQ. FOR CONV. MUNITIONS FOR WARRAMP V15 AUG 81)	
2		
3	(U) THREE DAY INCREMENTAL REQUIREMENT FOR CONVENTIONAL MUNITIONS FOR EU	
4	HOPE PER WARRAMP ANDY TEST	
5	EUROPE-P88 WARRAMP ANDY TEST	DISTRIBUTION OF REQUIREME
6	NY	
7	0.0 0.0 .031 .027 0.00 0.00 0.00	
8	505040	
9	401866	

Figure III.3.5

(U) RATES AND REQ. FOR CONV. MUNITIONS FOR WARRAMP V (1 OF 40)

RIFLE M16A1 5.56MM	PERIODS (DAYS):	1- 15	16- 30	1- 30	31- 60	61- 90	1- 60
	TOTAL DEPLOYMENT:	55931.	72619.	72619.	941482.	959762.	941482.
	AVERAGE DEPLOYMENT:	489426.	641275.	585350.	834050.	950622.	699760.
	0-DAY	422921.					
BALL	PERIOD (DAYS):	1- 15	16- 30	1- 30	31- 60	61- 90	1- 60
	QUANTITY:	99698166.	71741649.	171439814.	54569655.	5914246.	226009488.
	TONNAGE:	1993.96	1434.83	3428.80	1091.39	116.28	4520.19
	RATE:	13.58	7.46	10.11	2.18	.21	5.38
TRACER	PERIOD (DAYS):	1- 15	16- 30	1- 30	31- 60	61- 90	1- 60
	QUANTITY:	231923712.	4204953.	4672030.	1991101.	10868085.	242791796.
	TONNAGE:	4638.47	84.10	93.44	39.82	217.36	4855.84
	RATE:	3.29	.15	.16	.07	.12	1.54
WEAPON TOTALS	PERIOD (DAYS):	1- 15	16- 30	1- 30	31- 60	61- 90	1- 60
	QUANTITY:	936.	15231237.	15232173.	39400719.	28382530.	54632892.
	TONNAGE:	.02	304.62	304.64	789.01	567.65	1092.66
	RATE:	.000	1.583	.898	1.575	.995	1.301
SQUAD AUTOMATIC MPN (SAW) 5.56 MM	PERIOD (DAYS):	1- 15	16- 30	1- 30	31- 60	61- 90	1- 60
	QUANTITY:	83015422.	5747225.	43504966.	44691748.	93943939.	176959340.
	TONNAGE:	1660.31	114.94	870.10	893.83	1878.88	3539.19
	RATE:	1.178	.199	1.491	1.527	1.075	1.121
SQUAD AUTOMATIC MPN (SAW) 5.56 MM	PERIOD (DAYS):	1- 15	16- 30	1- 30	31- 60	61- 90	1- 60
	QUANTITY:	99699101.	86972886.	186671986.	93970374.	34298776.	280642360.
	TONNAGE:	1993.98	1739.46	3733.44	1879.41	685.94	5612.85
	RATE:	13.58	9.04	11.01	3.76	1.20	6.68
SQUAD AUTOMATIC MPN (SAW) 5.56 MM	PERIOD (DAYS):	1- 15	16- 30	1- 30	31- 60	61- 90	1- 60
	QUANTITY:	314939132.	9952178.	48176996.	46682849.	104812023.	419751156.
	TONNAGE:	6298.78	199.04	963.54	933.66	2096.24	8395.02
	RATE:	4.47	.34	1.65	1.59	1.20	2.66
SQUAD AUTOMATIC MPN (SAW) 5.56 MM	PERIOD (DAYS):	1- 15	16- 30	1- 30	31- 60	61- 90	1- 60
	QUANTITY:	8673.	11336.	11336.	14688.	14973.	14688.
	TONNAGE:	7635.	10004.	8820.	13012.	14830.	10916.
	RATE:						
SQUAD AUTOMATIC MPN (SAW) 5.56 MM	PERIOD (DAYS):	1- 15	16- 30	1- 30	31- 60	61- 90	1- 60
	QUANTITY:	14973.	15129.	15129.	15129.	15129.	15129.
	TONNAGE:	12221.	15051.	15169.	15209.	15143.	15143.
	RATE:						

Figure III.3.6

(U) RATES AND REQ. FOR CONV. MUNITIONS FOR WARRAMP V

(38 OF 40)

POLK ALLOTMENT ITEMS (UNIT/1000 MEN/DAY)
(CONTINUED)

SMOKE POT, FLOATING, MTA1

PERIOD (DAYS):
QUANTITY:
TONNAGE:
RATE:

1- 15 16- 30 31- 60 61- 90 1- 60
3206 8656 26322 19824 38184
70.91 191.48 582.24 438.50 844.63
.42 .95 .71 .71 .95
1- 90 91-120 121-150 151-180 1-180
58008 9529 23542 60096 118103
1283.13 210.78 520.75 1329.32 2612.45
.65 .33 .61 .69 .76

STARTER, FIRE, M2

PERIOD (DAYS):
QUANTITY:
TONNAGE:
RATE:

1- 15 16- 30 31- 60 61- 90 1- 60
1406 1406 2812 2888 5711
.06 .06 .12 .12 .23
.18 .15 .12 .10 .14
1- 90 91-120 121-150 151-180 1-180
8599 2812 2812 8436 17034
.34 .11 .11 .34 .60
.13 .10 .10 .10 .11

MOPMS

PERIOD (DAYS):
QUANTITY:
TONNAGE:
RATE:

1- 15 16- 30 31- 60 61- 90 1- 60
3188 3040 11315 8120 17542
.00 .00 .00 .00 .00
.41 .33 .48 .29 .44
1- 90 91-120 121-150 151-180 1-180
25662 6779 6135 21301 46963
.00 .00 .00 .00 .00
.38 .24 .21 .25 .30

WEAPON TOTALS

PERIOD (DAYS):
QUANTITY:
TONNAGE:
RATE:

1- 15 16- 30 31- 60 61- 90 1- 60
1938219 1899195 6320119 5395077 10157533
3056.71 2975.33 8803.94 6640.64 14835.98
252.18 208.27 228.35 193.27 252.22
1- 90 91-120 121-150 151-180 1-180
15552611 5037616 6166091 7546019 34302335
21876.62 5307.52 8007.66 11052.95 45844.75
228.09 175.12 213.39 260.45 221.56

SUMMARY OF TONNAGE FOR ALL MUNITIONS

1- 15 16- 30 31- 60 61- 90 1- 60
494935.69 399806.87 894742.55 1076973.75 876946.25 1971716.48
1- 90 91-120 121-150 151-180 1-180
2848662.41 662111.39 445934.79 329941.19 1437987.36 4286449.19

Figure III.3.6 (Cont.)

(U) THREE DAY INCREMENTAL REQUIREMENT FOR CONVENTIONAL MUNITIONS FOR

WARRAMP TEST

(1 OF 18)

PIFLE M16A1 5.56MM									
BALL									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	2521003.	317525.	334153.	237533.	527884.	558187.	514869.	154195.	160231.
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	432143.	215873.	630688.	694667.	529130.	339371.	317519.	531464.	113288.
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	618208.	80864.	72160.	57908.	54129.	50960.	55740.	68453.	67774.
PIFLE M16A1 5.56MM									
TRACER									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	101.	203.	184.	207.	237.	240.	2189009.	6475335.	3374524.
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	5472184.	5198712.	5472297.	4104344.	2553958.	2280371.	3009959.	3374717.	3648339.
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	4651509.	3648343.	4742711.	3739496.	2097914.	2827452.	2280235.	912260.	1277038.
SQUAD AUTOMATIC MPN (SAW) 5.56 MM									
BALL									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	229516.	362352.	408359.	382309.	245421.	270442.	298401.	403181.	347336.
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	640117.	763489.	762856.	598644.	627721.	560224.	538890.	427973.	508543.
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	460654.	404127.	444121.	453910.	352301.	351217.	272402.	257710.	223504.
SQUAD AUTOMATIC MPN (SAW) 5.56 MM									
TRACER									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	438407.	138473.	152498.	131366.	141024.	151859.	152318.	124027.	110960.
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	225256.	223323.	285891.	254482.	236715.	191143.	182500.	187156.	164060.
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	208445.	113051.	121753.	122054.	96070.	95357.	76386.	74620.	65979.
MACHINEGUN 7.62 (GROUND MOUNT)									
BALL/TRACER									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	316957.	298267.	332115.	304608.	215194.	243341.	219476.	206090.	215703.
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	389738.	487735.	524780.	419415.	464563.	409151.	385711.	300803.	382268.
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	314629.	258139.	264330.	280782.	231947.	216542.	162873.	179296.	149489.
MACHINEGUN 7.62 (IFV & CFV MOUNT)									
BALL/TRACER (4 TO 1)									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	395204.	352317.	499733.	563696.	453857.	546881.	551999.	721039.	692131.
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	945505.	944050.	929782.	710779.	668042.	772297.	778209.	717345.	792403.
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	764723.	749849.	721107.	758795.	586496.	533354.	447997.	374148.	352739.

Figure III.3.7

MACHINEGUN, 7.62 (TANK MOUNTED)									
BALL-TRACER (4 TO 1)									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	1332824	1626936	2368628	1536453	1008622	1102271	1047475	1895396	1670011
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	2715310	3398711	3374836	2406274	2371694	2276729	2034546	1910102	2146914
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	2081217	1836970	1789799	2100614	1354696	1550988	1471229	1086614	1085729
MACHINEGUN, 7.62 (GROUND MOUNT)									
API-APIT									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	536677	209902	235902	207395	193553	206314	188367	123605	139329
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	307067	317693	376448	330440	331139	268917	243150	229674	233654
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	240850	133058	140446	150888	131774	125575	99466	109156	88347
MACHINEGUN, 7.62 (TANK MOUNTED) M85									
API-APIT									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	287112	174231	215222	148296	103282	130022	150144	233093	231335
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	307452	331549	354276	287454	251538	243261	246517	255428	260449
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	295241	238346	236057	243558	179237	198296	165988	129814	145546
MACHINEGUN, 7.62 (TANK MOUNTED) M85									
API-APIT									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	262028	218408	295261	170461	104282	108642	119270	221531	198126
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	307926	393051	402959	316067	308733	266584	253655	237945	256288
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	275218	219344	216004	246057	163981	189871	162036	131925	133240
SUBMACHINE GUN 5.56MM (PORT FIRING)									
BALL									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	288533	146004	158869	177944	144619	172751	182661	228352	221649
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	304188	303543	297994	236111	230645	244000	253824	235570	249572
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	257638	234191	225594	236544	182190	165763	139558	116980	109637
SUBMACHINE GUN 5.56MM (PORT FIRING)									
IRACER									
PERIOD (DAYS):	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27
QUANTITY:	72133	36501	39717	44886	36155	43188	45655	57088	55812
PERIOD (DAYS):	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57
QUANTITY:	76047	75886	74499	59028	57661	61010	63456	58892	62393
PERIOD (DAYS):	61-63	64-66	67-69	70-72	73-75	76-78	79-81	82-84	85-87
QUANTITY:	64410	58548	56399	59136	45588	41481	34889	29245	27409

Figure III.3.7 (Cont.)

WARRAMP

TEST

DISTRIBUTION OF REQUIREMENT

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(1 OF 66)

RIFLE,M16A1 5.56MM BALL

PERIOD (DAYS):

FAC-INS:

LOS-DE:

LOS-DI:

LOS-OL:

LOS-AT:

ZE-DEP:

ZE-RTD:

ZE-REP:

ZE-RTI:

EXP-DE:

EXP-DI:

EXP-OL:

EXP-AT:

MI :

LOG :

SEA :

TOTAL :

1- 15

16- 30

31- 60

61- 90

91-120

121-150

151-180

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Figure III.3.8

WARRAMP		TEST	DISTRIBUTION OF REQUIREMENTS										(2 OF 66)	
SQUAD AUTOMATIC WPN (SAWI) 5.56 MM BALL			PERIOD	1- 15	16- 30	31- 60	61- 90	91-120	121-150	151-180				
			(DAYS):	4000000.	1600000.	1500000.	3600000.	763680.	77440.	103680.				
			FAC-IN:	0.	0.	0.	0.	0.	0.	0.				
			LOS-OL:	0.	0.	0.	0.	0.	0.	0.				
			LOS-OL:	0.	0.	0.	0.	0.	0.	0.				
			LOS-OL:	0.	0.	0.	0.	0.	0.	0.				
			LOS-AT:	0.	0.	0.	0.	0.	0.	0.				
			ZE-DEP:	6000.	2042.	3715.	1073.	0.	0.	0.				
			ZE-RTO:	147.	183.	497.	289.	184.	181.	198.				
			ZE-REP:	1751.	2188.	3607.	1022.	3666.	6888.	3769.				
			ZE-RTR:	0.	0.	0.	0.	0.	0.	0.				
			EXP-OL:	70702.	144043.	529213.	392557.	906996.	94973.	0.				
			EXP-OL:	1159982.	979284.	309932.	1426988.	537336.	1103478.	1485707.				
			EXP-OL:	189451.	165509.	645610.	556939.	333106.	515736.	759336.				
			EXP-AT:	0.	387079.	971175.	702305.	146024.	1105610.	1135742.				
			HI :	0.	0.	0.	0.	0.	0.	0.				
			LOG :	759924.	459106.	945525.	935364.	376739.	406603.	488380.				
			SEA :	0.	0.	238677.	205646.	0.	0.	0.				
			TOTAL :	6187957.	3738434.	7937951.	7822184.	3067731.	3310909.	3976811.				
SQUAD AUTOMATIC WPN (SAWI) 5.56 MM TRACER			PERIOD	1- 15	16- 30	31- 60	61- 90	91-120	121-150	151-180				
			(DAYS):	0.	0.	0.	0.	0.	0.	0.				
			FAC-IN:	0.	0.	0.	0.	0.	0.	0.				
			LOS-OL:	0.	0.	0.	0.	0.	0.	0.				
			LOS-OL:	0.	0.	0.	0.	0.	0.	0.				
			LOS-OL:	0.	0.	0.	0.	0.	0.	0.				
			LOS-AT:	0.	0.	0.	0.	0.	0.	0.				
			ZE-DEP:	397929.	135406.	246424.	71159.	0.	0.	0.				
			ZE-RTO:	9718.	12113.	32995.	19177.	12222.	11977.	13100.				
			ZE-REP:	116131.	145134.	239237.	67784.	243174.	456861.	249968.				
			ZE-RTR:	0.	0.	0.	0.	0.	0.	0.				
			EXP-OL:	17676.	36011.	132306.	94144.	226753.	23744.	0.				
			EXP-OL:	289998.	244573.	774990.	356750.	134335.	275872.	371430.				
			EXP-OL:	47363.	41377.	161402.	139235.	83276.	128934.	189834.				
			EXP-AT:	0.	96770.	242794.	175576.	36506.	276402.	283935.				
			HI :	0.	0.	0.	0.	0.	0.	0.				
			LOG :	123034.	99594.	256221.	129895.	103077.	164331.	155157.				
			SEA :	0.	0.	64677.	28558.	0.	0.	0.				
			TOTAL :	1001849.	810978.	2151046.	1086276.	839345.	1338122.	1763425.				

Figure III.3.8 (Cont.)

SEVEN

115:			
116:			
117:SSN	EQ 2	MACHINEGUN, 7.62	(GROUND MOUNT)
118:		BALL/TRACER	
119:			
120:			
121: CAA FACTORS		L 8	
122:EUROPE- 1		57.712	
123:EUROPE- 2		17.957	
124:EUROPE- 3		26.279	
125:EUROPE- 4		26.279	
126:EUROPE- 5		29.403	
127:EUROPE- 6		29.403	
128:EUROPE- 7		17.211	
129:EUROPE- 8		17.211	
130:EUROPE- 9		19.426	
131:EUROPE-10		19.426	
132:EUROPE-11		17.015	
133:EUROPE-12		17.015	
134:			
135:			
136:SSN	EQ 2	MACHINEGUN, 7.62	(IFV & CFV MOUNT)
137:		BALL-TRACER (4 TO 1)	
138:			
139:			
140: CAA FACTORS		C 5	J D
141:EUROPE- 1		723.471	723.471
142:EUROPE- 2		143.715	143.715
143:EUROPE- 3		145.672	145.672
144:EUROPE- 4		145.672	145.672
145:EUROPE- 5		72.732	72.732
146:EUROPE- 6		72.732	72.732
147:EUROPE- 7		27.894	27.894
148:EUROPE- 8		27.894	27.894
149:EUROPE- 9		13.722	13.722
150:EUROPE-10		13.722	13.722
151:EUROPE-11		7.748	7.748
152:EUROPE-12		7.748	7.748
153:			
154:			
155:SSN	EQ 2	MACHINEGUN, 7.62	(TANK MOUNTED)
156:		BALL-TRACER (4 TO 1)	
157:			
158:			
159: CAA FACTORS		L 2	Z 0
160:EUROPE- 1		162.206	162.206
161:EUROPE- 2		214.559	214.559
162:EUROPE- 3		217.154	217.154
163:EUROPE- 4		217.154	217.154
164:EUROPE- 5		124.432	124.432
165:EUROPE- 6		124.432	124.432
166:EUROPE- 7		62.194	62.194
167:EUROPE- 8		62.194	62.194
168:EUROPE- 9		61.627	61.627
169:EUROPE-10		61.627	61.627
170:EUROPE-11		35.660	35.660
171:EUROPE-12		35.660	35.660

SEVEN

Figure III.3.9

PROGRAM
REPORT WRITER

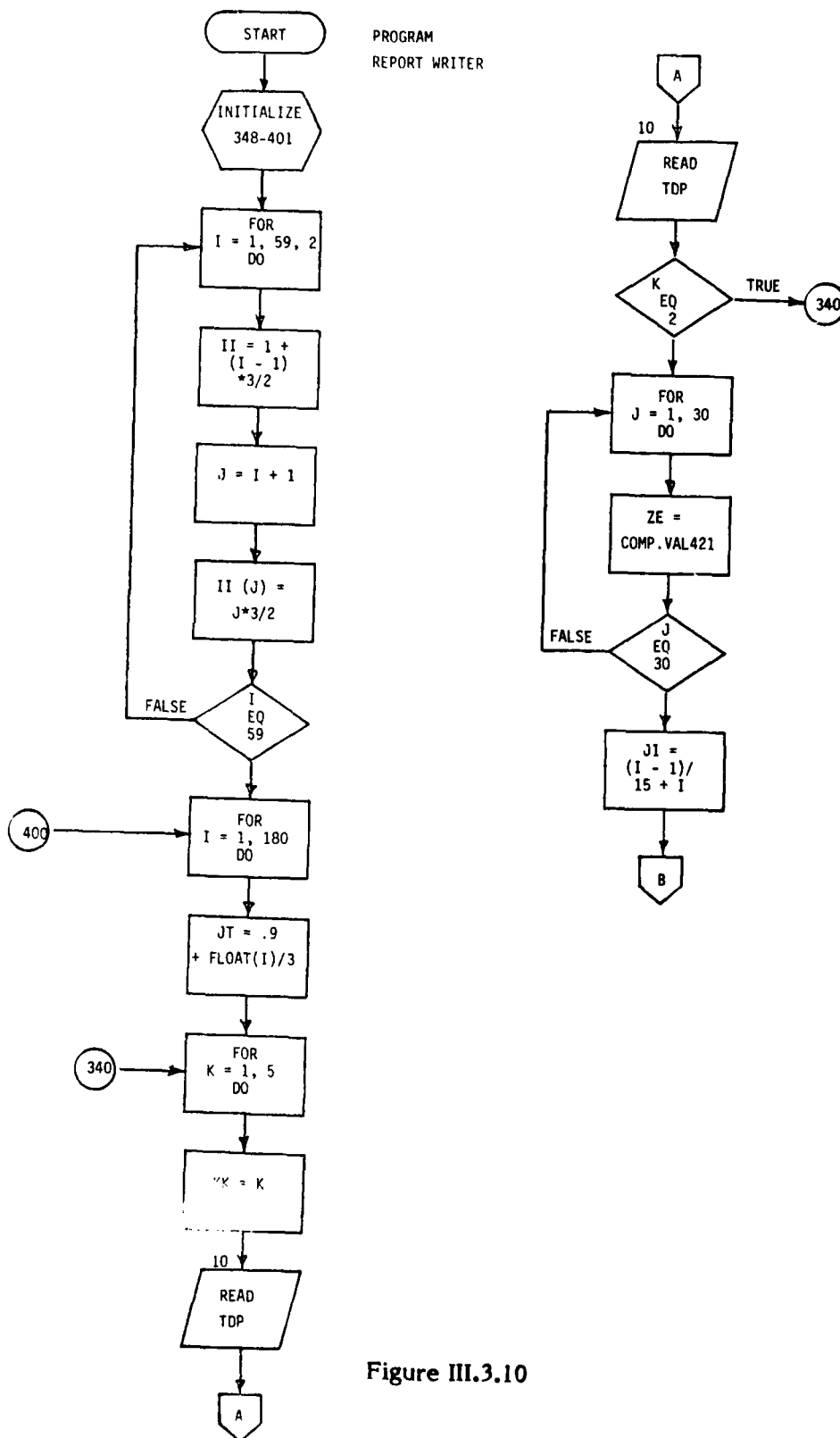


Figure III.3.10

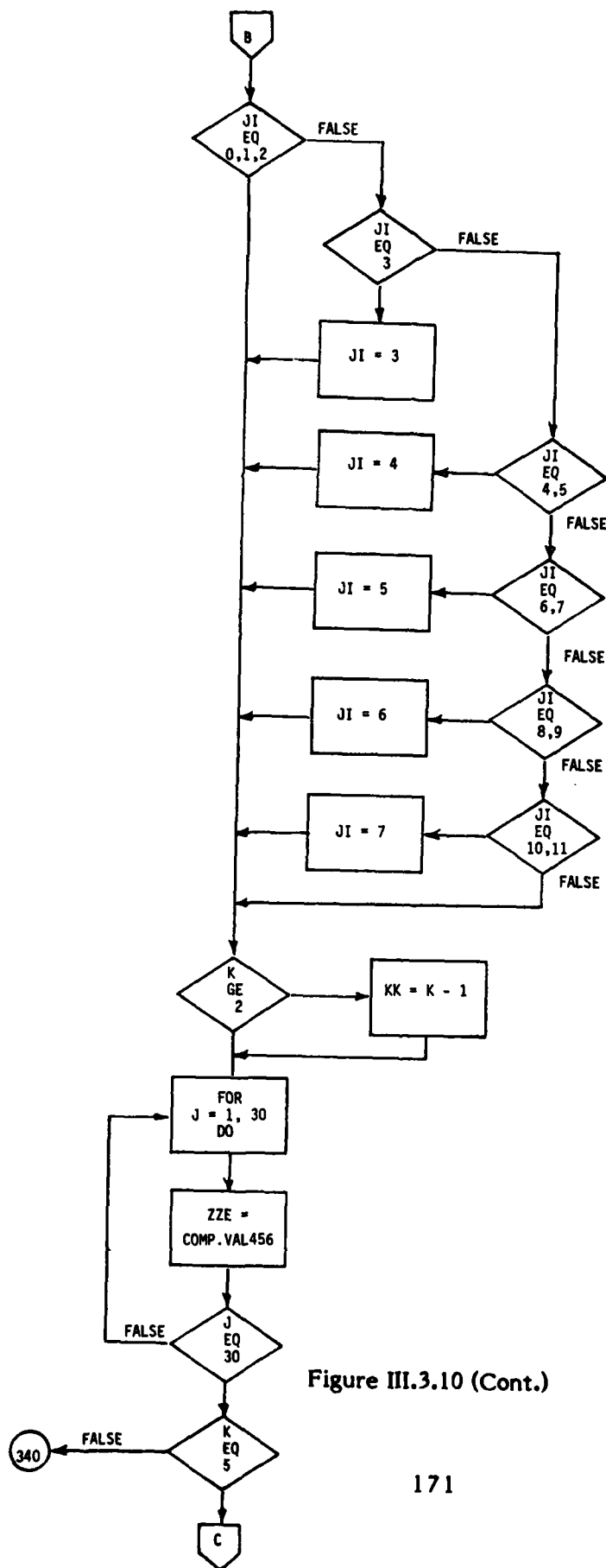


Figure III.3.10 (Cont.)

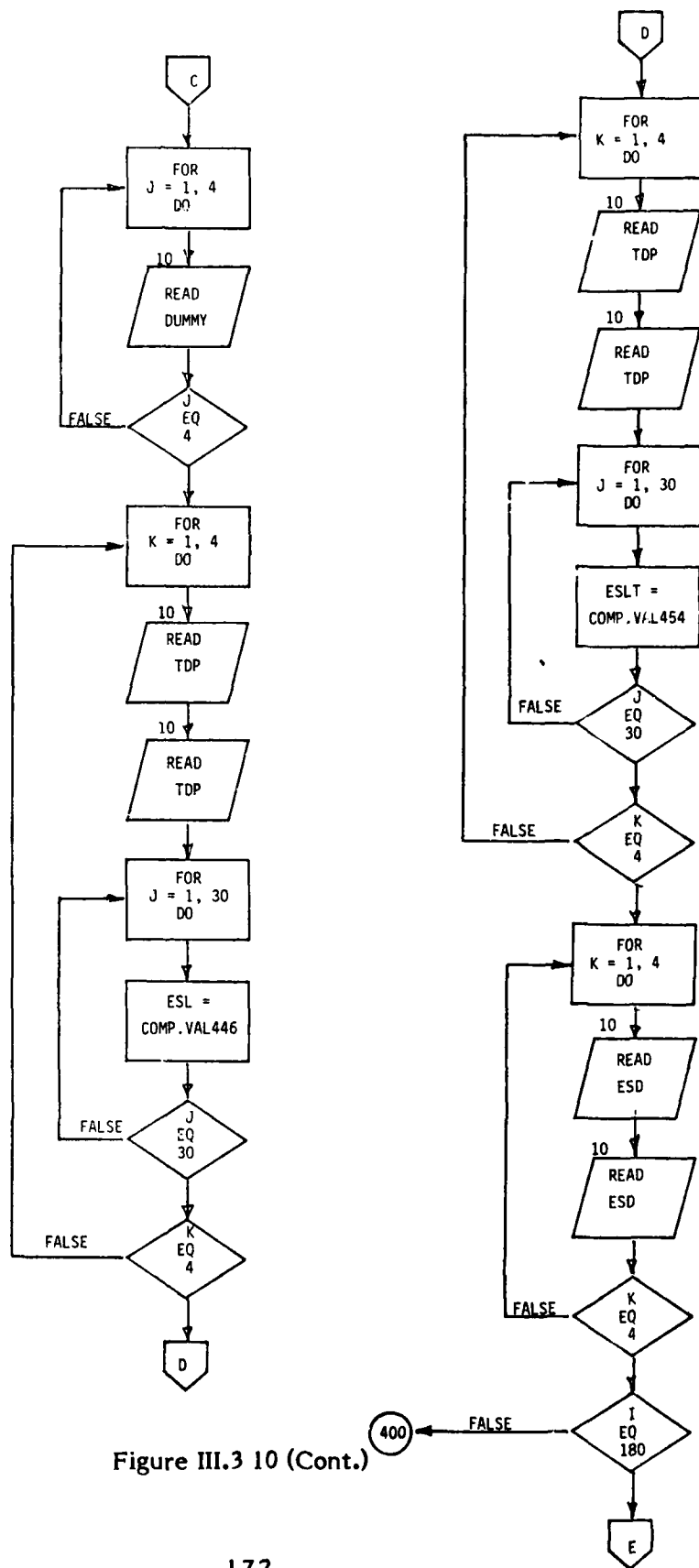


Figure III.3 10 (Cont.)

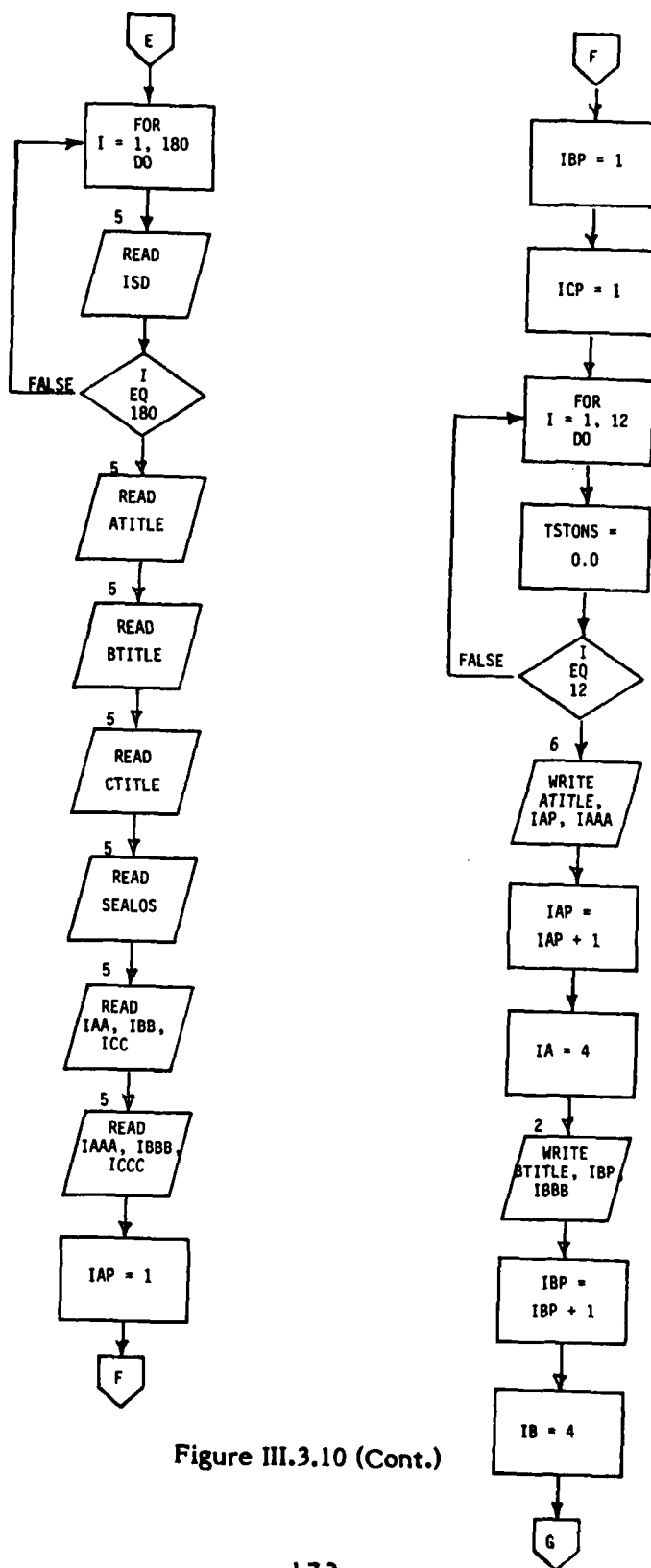


Figure III.3.10 (Cont.)

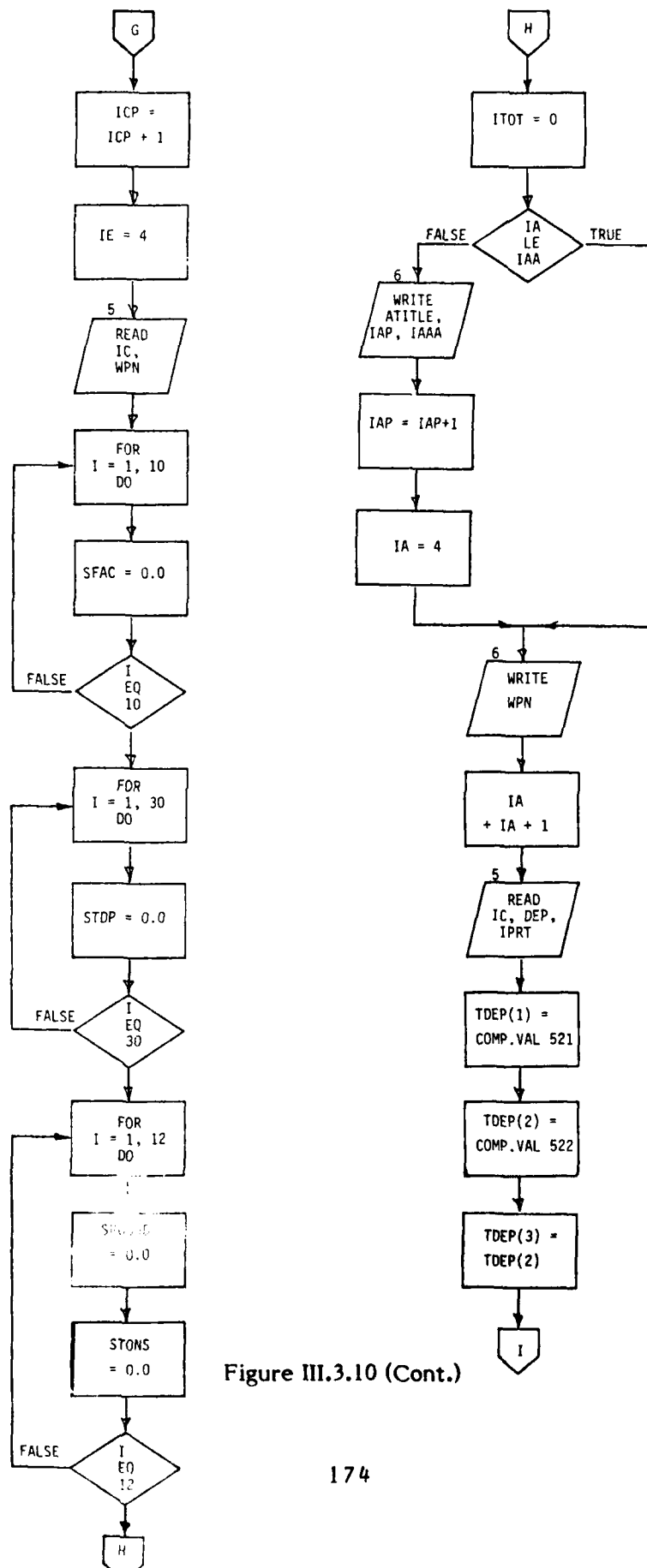


Figure III.3.10 (Cont.)

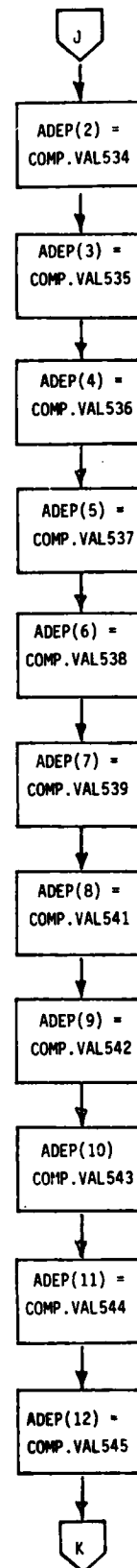
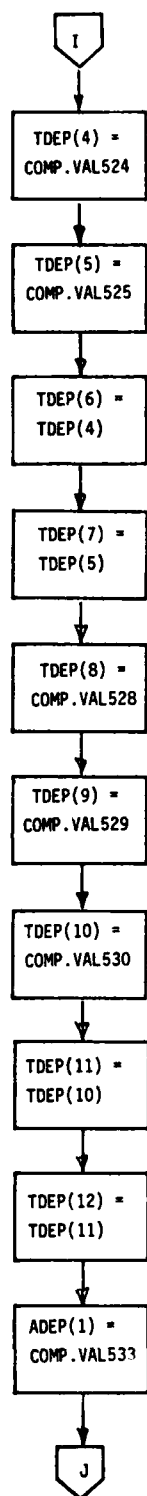


Figure III.3.10 (Cont.)

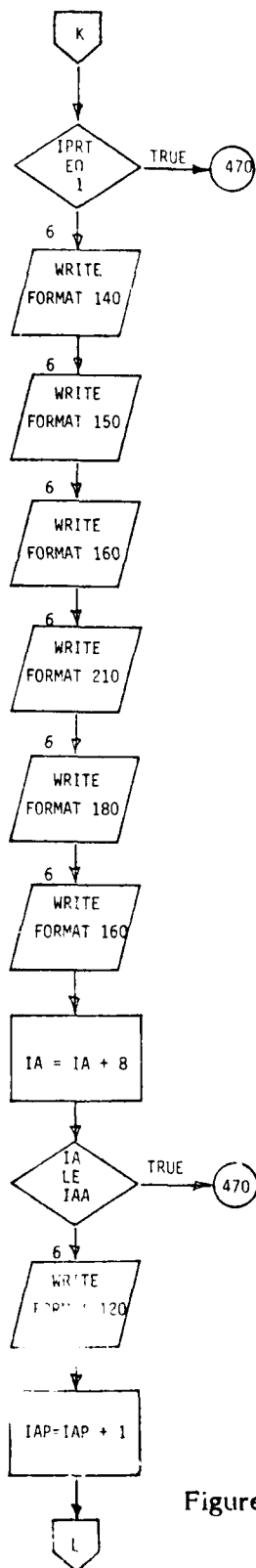
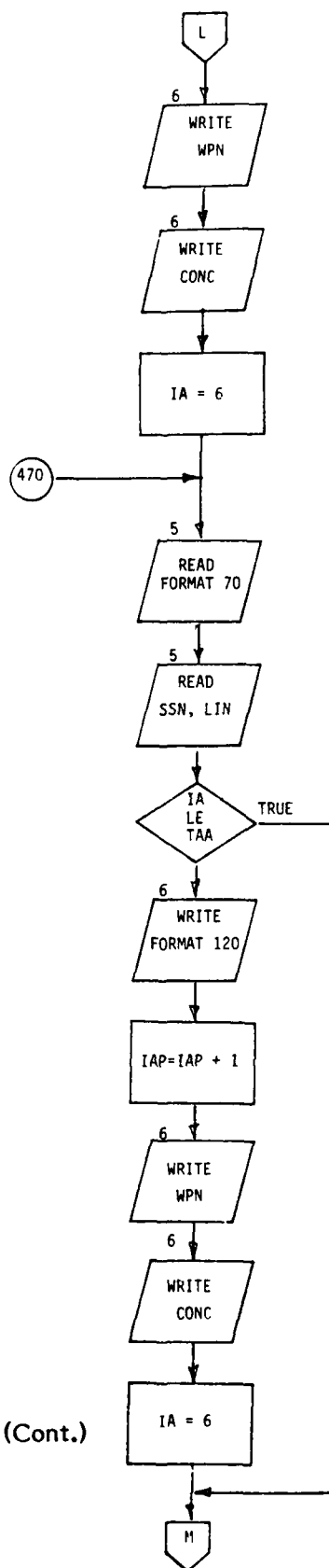


Figure III.3.10 (Cont.)



AD-A113 692

CACI INC-FEDERAL ARLINGTON VA

F/G 15/7

WARTIME REQUIREMENTS FOR AMMUNITION, MATERIEL, AND PERSONNEL (W--ETC(U))

FEB 82 R G RHOADES

MDA903-80-D-0668

UNCLASSIFIED

CAA-D-81-2

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3



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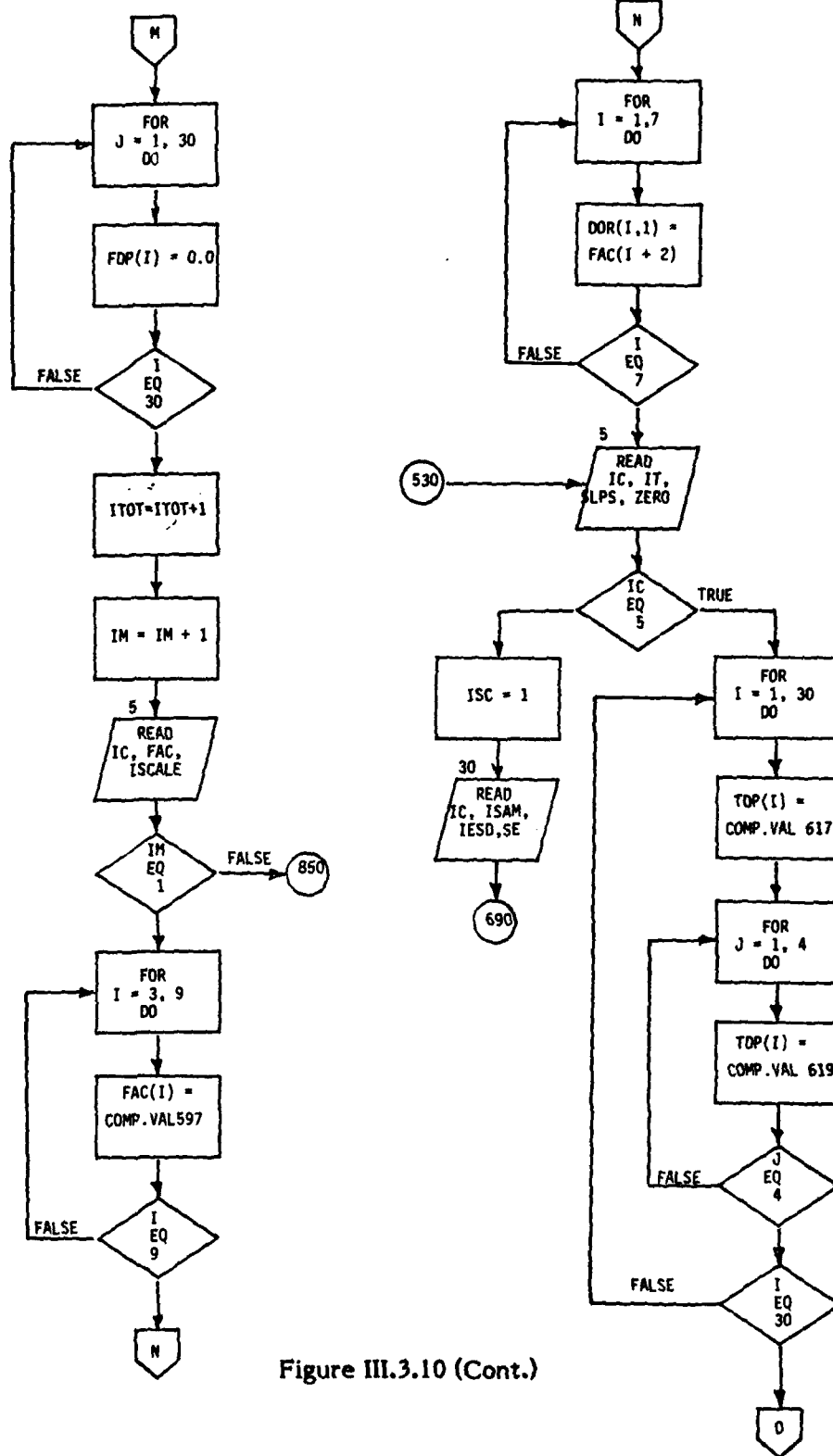


Figure III.3.10 (Cont.)

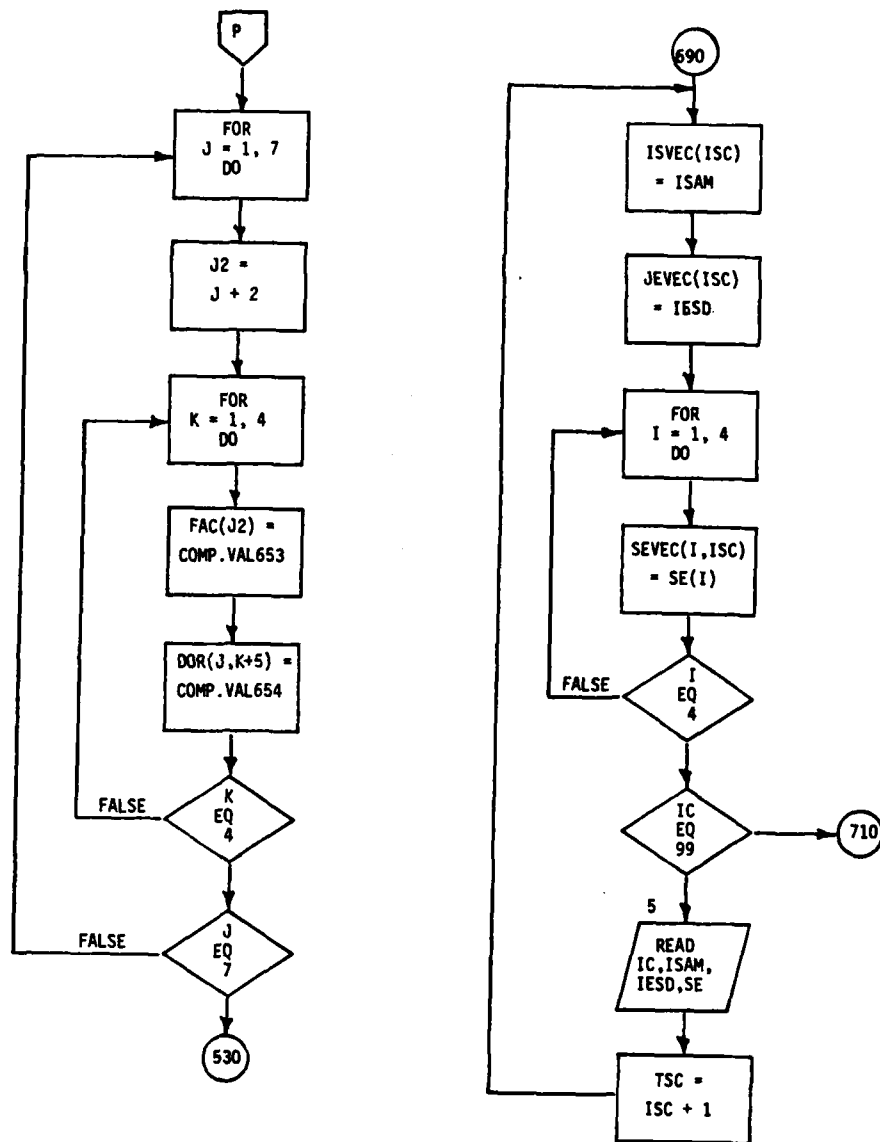


Figure III.3.10 (Cont.)

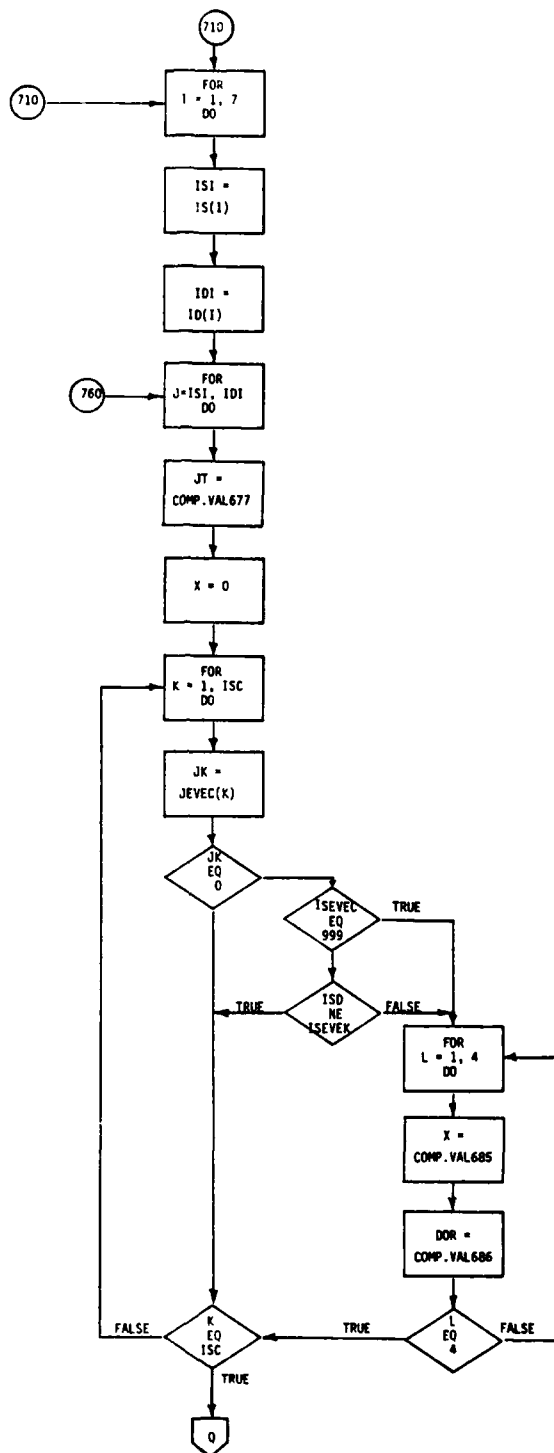


Figure III.3.10 (Cont.)

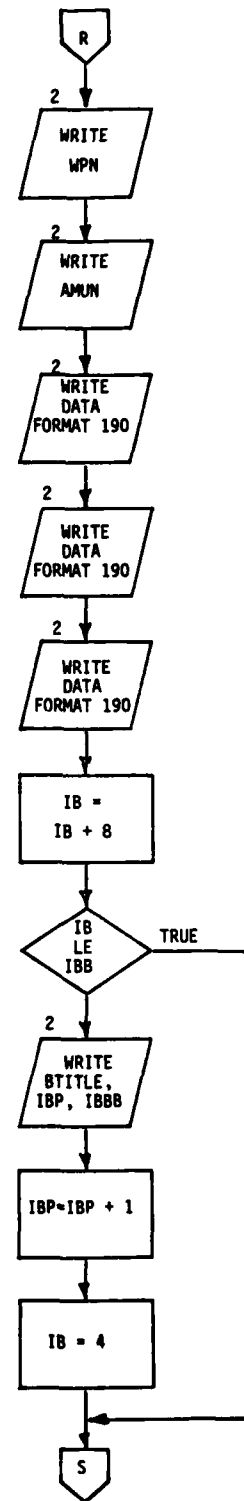
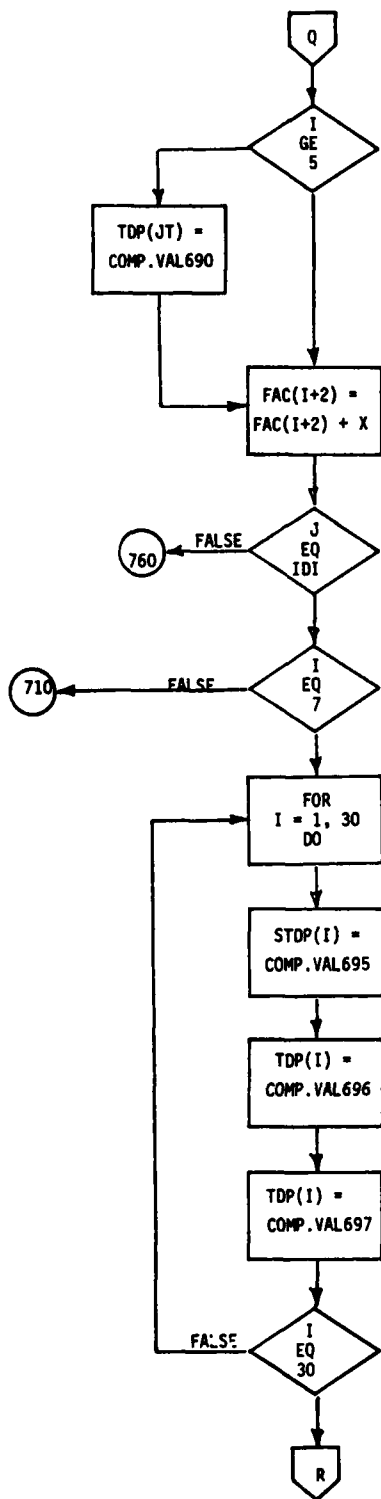


Figure III.3.10 (Cont.)

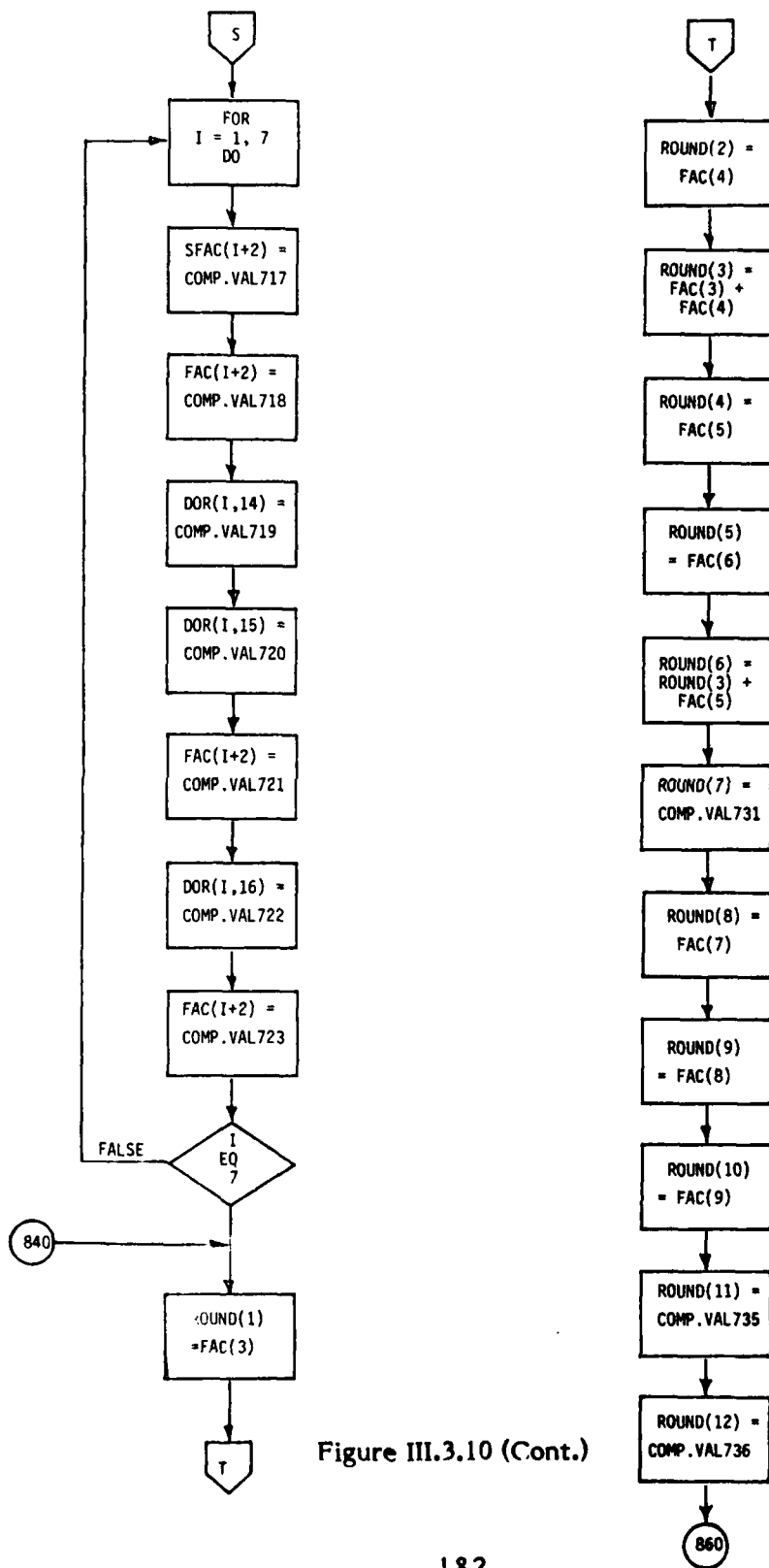


Figure III.3.10 (Cont.)

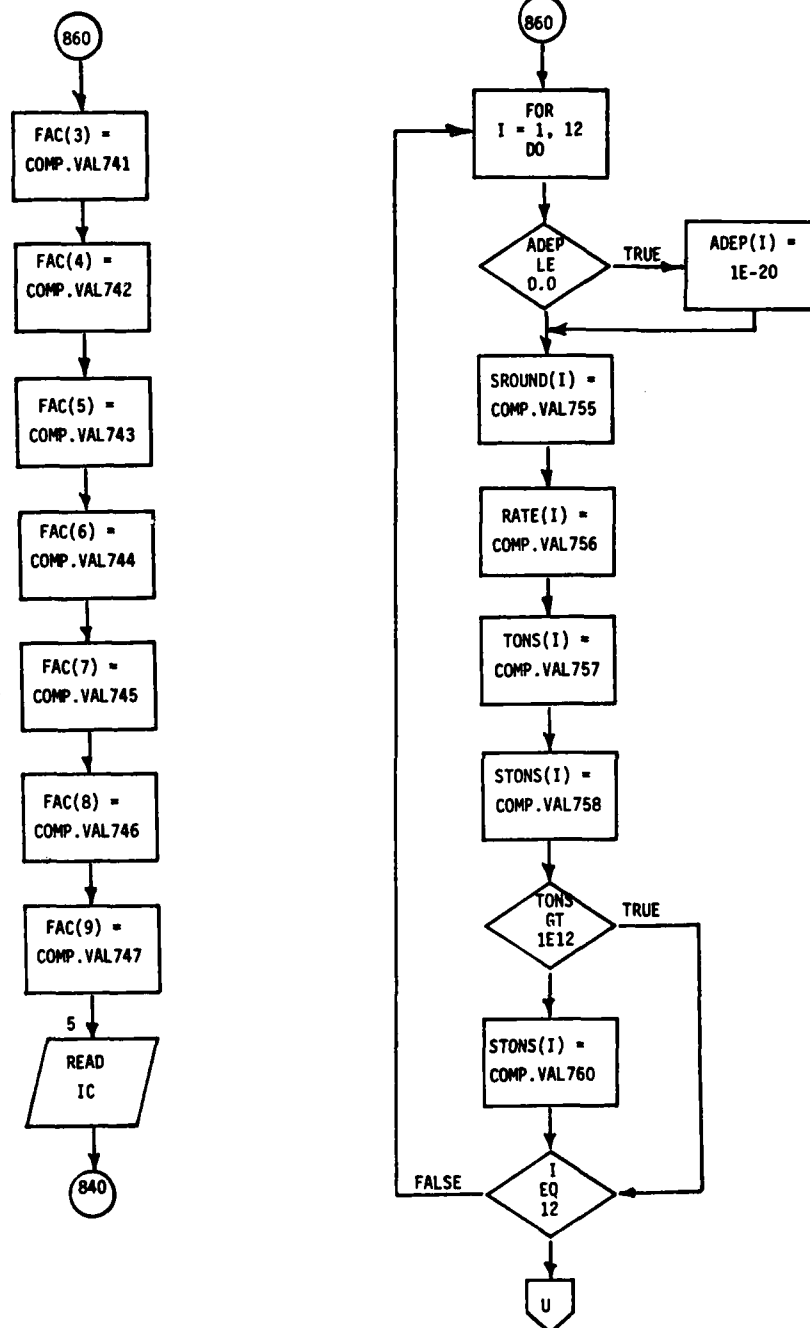


Figure III.3.10 (Cont.)

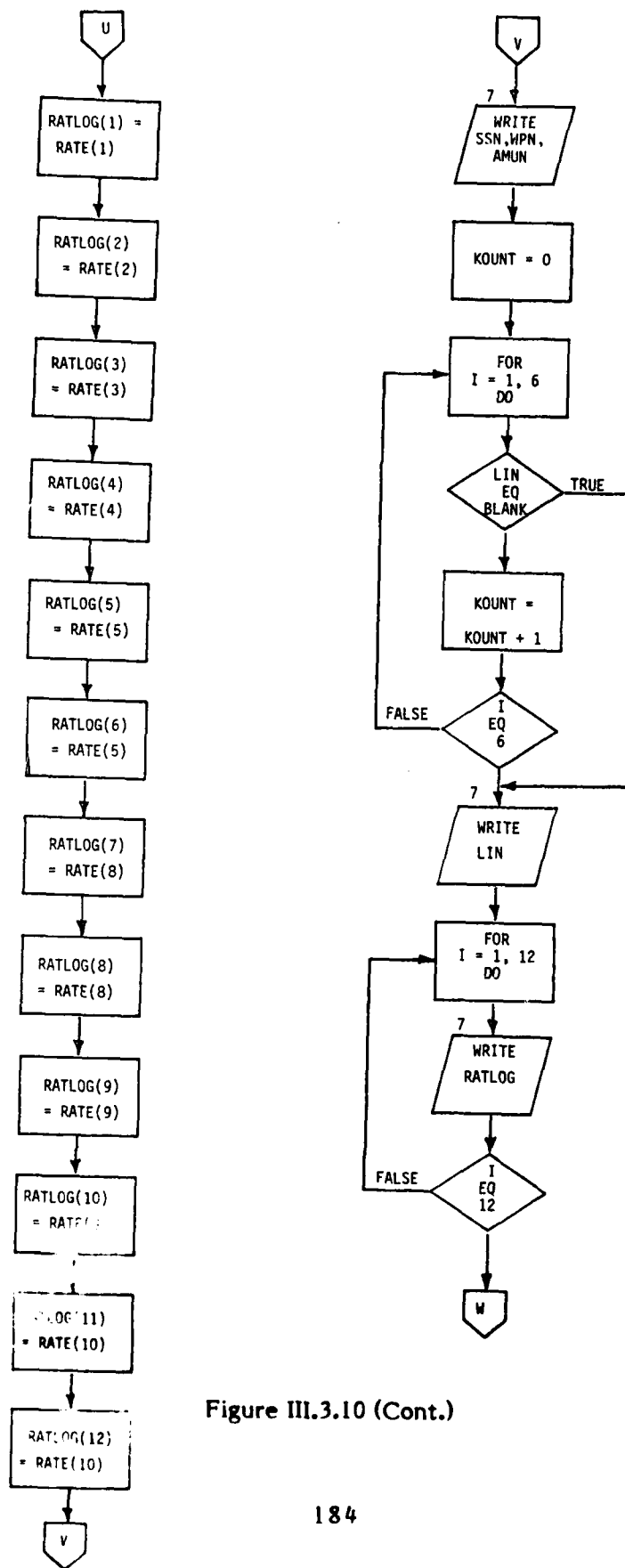


Figure III.3.10 (Cont.)

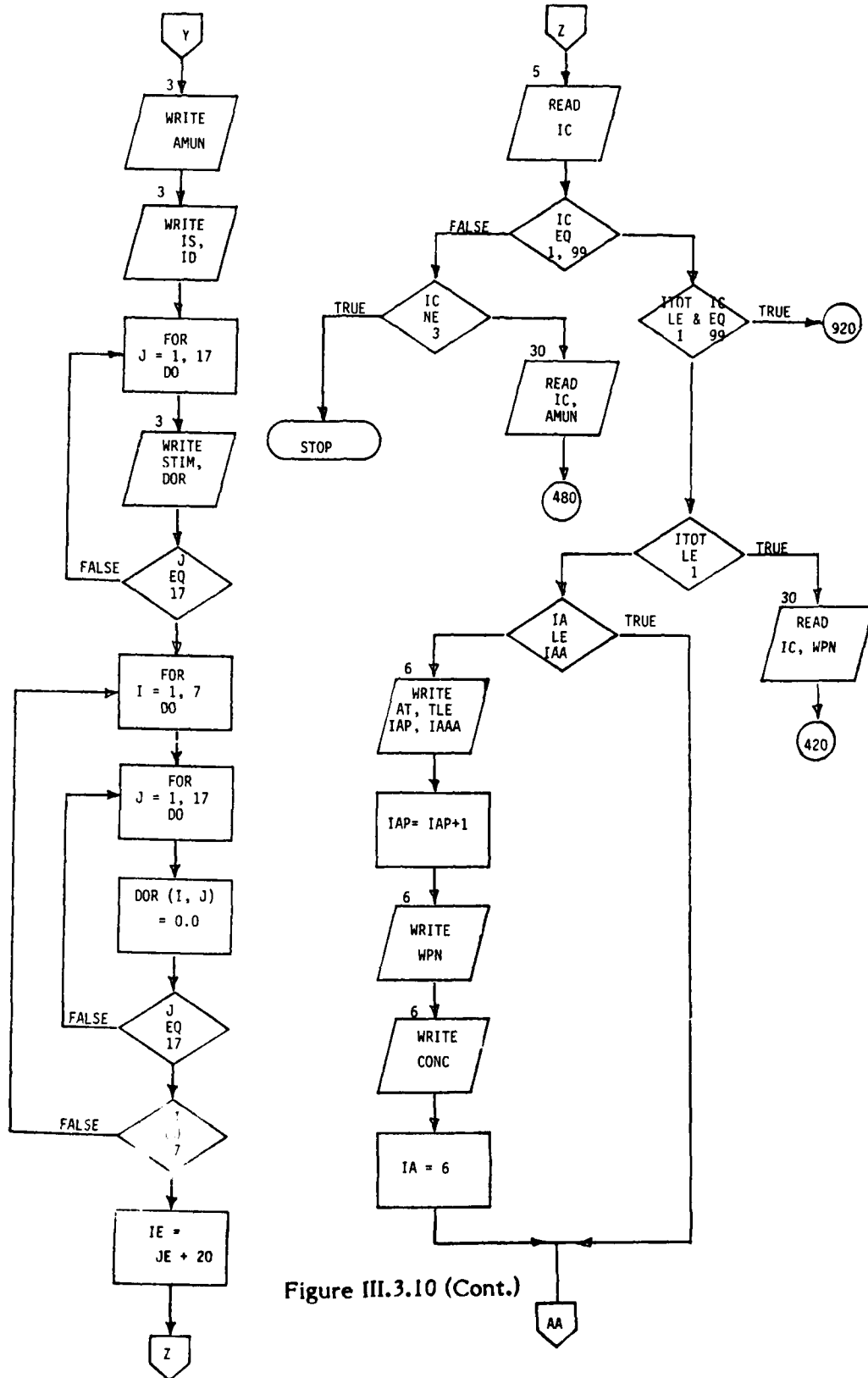


Figure III.3.10 (Cont.)

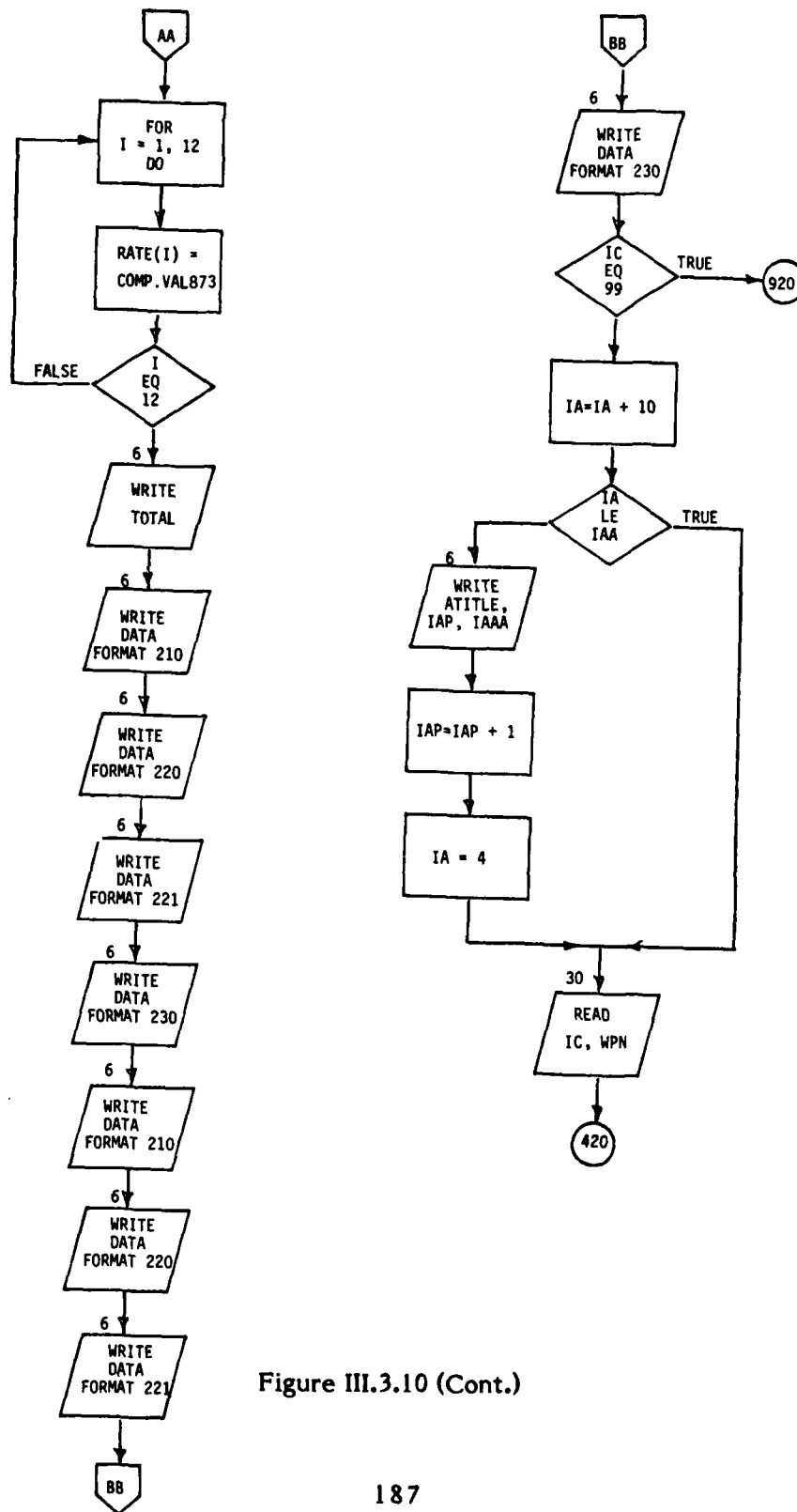


Figure III.3.10 (Cont.)

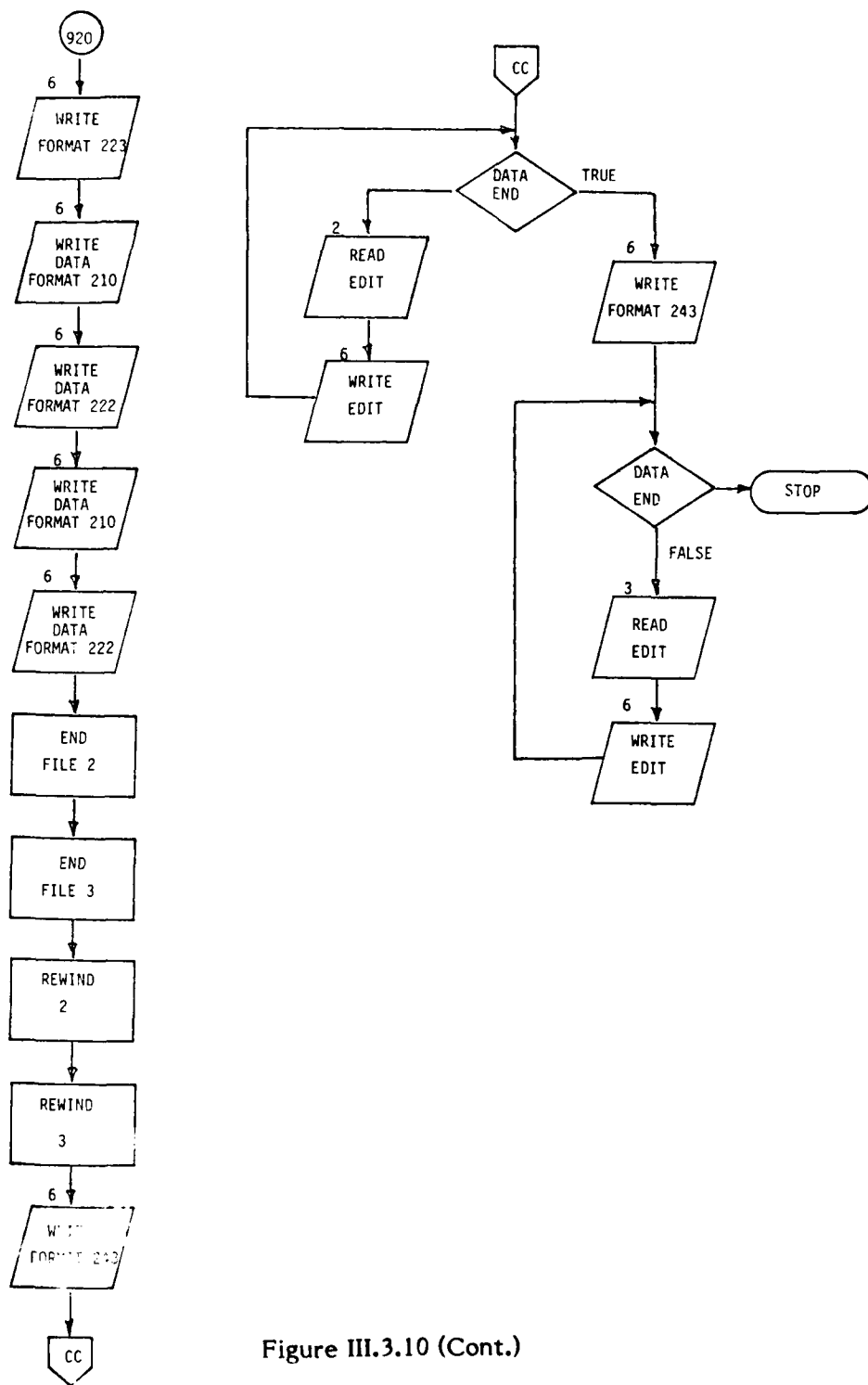


Figure III.3.10 (Cont.)

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1 C ..... 1
2 C ..... 2
3 C ..... 3
4 C REPORT WRITER
5 C ASSESSES BASIC LOAD LOSSES AGAINST
6 C 30 PERCENT OF M AND F KILLS
7 C ..... 4
8 C ..... 5
9 C ..... 6
10 C 1. THIS PROGRAM IS USED TO DEVELOP AMMO REQUIREMENTS AND RATES
11 C GIVEN STYLIZED EXPENDITURES PLUS THE OUTPUT OF THE THEATER
12 C RATES MODEL (TRM).
13 C 2. THE PROGRAM READS THE FOLLOWING FILES (IN ORDER):
14 C A. TRM OUTPUT. THIS FILE IS READ ON UNIT 10 (IE PRIOR TO
15 C WXT THERE MUST BE A "WUSE 10,TRM OUTPUT FILE" CONTROL
16 C STATEMENT). THIS FILE SHOULD HAVE 6840 LINES FOR A 180 DAY
17 C WAR ON 36 LINES PER DAY. THE 36 LINES CONTAIN THE FOLLOWING
18 C DATA: (THE VARIABLES LISTED ARE FROM TRM)
19 C (1) IN THE FIRST 30 LINES, 15 SETS OF DATA ARE LISTED IN TWO
20 C LINE PAIRS. THE FIRST LINE IS FOR BLUE EQUIPMENT TYPES 1
21 C THRU 15 AND THE SECOND LINE IS BLUE EQUIPMENT TYPES 16 THRU 30.
22 C (2) LINES 1 & 2 BLUDP - BLUE DEPLOYMENTS TO THE THEATER TODAY
23 C (3) LINES 3 & 4 BREPA - BLUE REPLACEMENTS TO THE THEATER TODAY
24 C (4) LINES 5 & 6 BRDU - BLUE RETURNS TO DUTY (FROM LOWER LEVEL MAINT-
25 C ENANCE) TODAY
26 C (5) LINES 7 & 8 BREPU - BLUE REPLACEMENTS (FROM REPLACEMENT POOL)
27 C ISSUED TODAY
28 C (6) LINES 9 & 10 BRTR - BLUE RETURNS TO REPLACEMENT POOL TODAY FROM
29 C HIGHER LEVEL MAINTENANCE
30 C (7) LINES 11 & 12 BASS - BLUE SURVIVING ASSETS TODAY
31 C (8) LINES 13 & 14 BLUON - BLUE ON LINE EQUIPMENT (COMMITTED) TODAY
32 C (9) LINES 15 THRU 22 BATT - NUMBER OF BLUE EQUIPMENT "K" KILLED TODAY
33 C (NON-REPAIRABLE) BY POSTURE - 2 LINES FOR EACH POSTURE (DELAY,
34 C DEFENSE INTENSE, DEFENSE LIGHT, AND ATTACK)
35 C (10) LINES 23 THRU 30 BMT - NUMBER OF BLUE EQUIPMENT "M" KILLED
36 C (REPAIRABLE) TODAY BY POSTURE - 2 LINES FOR EACH POSTURE (DELAY,
37 C DEFENSE INTENSE, DEFENSE LIGHT, AND ATTACK)
38 C (11) LINES 31 THRU 38 ESDAY - DAILY ESD'S BY POSTURE AS IN 10 ABOVE
39 C THE FIRST LINE HAS ESD'S 1 THRU 20 AND THE SECOND LINE HAS
40 C ESD'S 21 THRU 40.
41 C B. SAMPLE DAY INPUT. THIS IS A 180 LINE FILE CONTAINING
42 C THE SAMPLE NUMBER USED FOR EACH DAY OF A 180 DAY WAR. THE
43 C FORMAT IS 12 (COLUMNS 1 & 2). THIS FILE IS ADDED (WADD)
44 C FOLLOWING THE WXT STATEMENT.
45 C C. TITLE INPUT. THIS FILE CONTAINS THE FOLLOWING INFO WHICH IS
46 C ADDED (WADD) FOLLOWING THE SAMPLE DAY INPUT:
47 C (1) THE THREE TITLES FOR THE THREE REPORTS GENERATED BY
48 C MODEL. TWO LINES EACH (IN FORMAT 12A6/5A6) FOR TOTAL
49 C OF 6 LINES.
50 C (2) SEA LOSS DATA. SEE VARIABLE LISTINGS-FORMAT 7F5.0
51 C (3) NUMBER OF LINES PER PAGE FOR EACH REPORT. FORMAT 312
52 C (4) TOTAL NUMBER OF PAGES IN EACH REPORT. FORMAT 312
53 C D. AMMO EXPENDITURES INPUT. THIS FILE IS MADE UP OF A
54 C SET OF DATA LINES (3 OR MORE) FOR EACH WEAPON SYSTEM AND
55 C MUNITION. THE DATA AND FORMATS ARE AS FOLLOWS (IT IS
56 C ADDED (WADD) FOLLOWING THE TITLE INPUT):
57 C CARD TYPE 1 - WEAPON CARD - ONE REQUIRED

```

Figure III.3.11

57	C	CC	FORMAT	DATA	10
58	C	1-2	12	1 (IC)	11
59	C	3-42	10A4	WEAPON NAME (WPN)	12
60	C				13
61	C	CARD TYPE 2 - DEPLOYMENT CARD - ONE REQUIRED			14
62	C	CC	FORMAT	DATA	15
63	C	1-2	12	2 (IC)	16
64	C	3-10	F8.0	0-DAY (DEP(1))	17
65	C	11-18	F8.0	1-15 (DEP(2))	18
66	C	19-26	F8.0	16-30 (DEP(3))	19
67	C	27-34	F8.0	31-60 (DEP(4))	20
68	C	35-42	F8.0	61-90 (DEP(5))	21
69	C	43-50	F8.0	91-120 (DEP(6))	22
70	C	51-58	F8.0	121-150 (DEP(7))	23
71	C	59-66	F8.0	151-180 (DEP(8))	24
72	C	67	11	PRINT INDICATOR (IPRT)	25
73	C			1 = DO NOT PRINT DEPLOYMENT	26
74	C			0 = PRINT DEPLOYMENT	27
75	C				28
76	C	CARD TYPE 3 - MUNITIONS CARD - ONE REQUIRED			29
77	C	CC	FORMAT	DATA	30
78	C	1-2	12	3 (IC)	31
79	C	3-32	5A0	MUNITION NAME (AMUN)	32
80	C	33	11	BUSINESS ROUND INDICATOR (IBUS)	33
81	C			1 = BUSINESS ROUND	34
82	C			0 = NONBUSINESS ROUND	35
83	C	34	11	COMPUTATION METHOD (IM)	36
84	C			U = NORMAL METHOD	37
85	C			1 = USE THE RATES FROM THE FACTORS CARD	38
86	C	41-50	F10.0	HEIGHT OF MUNITION IN POUNDS	39
87	C				39
88	C	C.....			
89	C	C IMMEDIATELY FOLLOWING EACH TYPE 3 CARD, THERE MUST BE A CARD			
90	C	C CONTAINING THE SSN(SPECIAL STUDY NUMBER) AND ALL LINES (LINE			
91	C	C ITEM NUMBERS) FOR THE MUNITION IDENTIFIED ON THE TYPE 3 CARD.			
92	C	C.....			
93	C				
94	C	CARD TYPE 4 - FACTORS CARD - ONE REQUIRED			40
95	C	CC	FORMAT	DATA	41
96	C	1-2	12	4 (IC)	42
97	C	3-7	F5.0	LOG LOSS FACTOR (FAC(1))	43
98	C	8-12	F5.0	HEI FACTOR (FAC(2))	44
99	C	13	1X		45
100	C	14-19	F6.0	FAC(3) DAYS 1-15	46
101	C	20	1X		47
102	C	21-26	F6.0	FAC(4) DAYS 16-30	48
103	C	27	1X		49
104	C	28-33	F6.0	FAC(5) DAYS 31-60	50
105	C	34	1X		51
106	C	35-40	F6.0	FAC(6) DAYS 61-90	52
107	C	41	1X		53
108	C	42-47	F6.0	FAC(7) DAYS 91-120	54
109	C	48	1X		55
110	C	49-54	F6.0	FAC(8) DAYS 121-150	56
111	C	55	1X		57
112	C	56-60	F6.0	FAC(9) DAYS 151-180	58
113	C	61	1X		59

Figure III.3.11 (Cont.)

114	C	63-67	15	SCALE FACTOR = 10**ISCALE	60
115	C				61
116	C	CARD TYPE 5 - STYLIZED LOSSES CARD - ZERO OR MORE REQUIRED			62
117	C	CC	FORMAT	DATA	63
118	C	1-2	12	5 (IC)	64
119	C	3-5	3X		65
120	C	6-10	15	SYSTEM NUMBER (IT)	66
121	C	11-20	F10.0	STYLIZED LOSSES PER SYSTEM - DE (SLPS(1))	67
122	C	21-30	F10.0	STYLIZED LOSSES PER SYSTEM - D1 (SLPS(2))	68
123	C	31-40	F10.0	STYLIZED LOSSES PER SYSTEM - D2 (SLPS(3))	69
124	C	41-50	F10.0	STYLIZED LOSSES PER SYSTEM - AT (SLPS(4))	70
125	C	51-60	F10.0	ZERO - THE NUMBER OF ROUNDS TO ZERO	71
126	C				72
127	C	CARD TYPE 6 - STYLIZED EXPENDITURE CARD - ONE TO FIFTY REQUIRED			73
128	C	CC	FORMAT	DATA	74
129	C	1-2	12	6 OR 99 (IC) 99 = LAST CARD TYPE 6	75
130	C	3-5	13	SAMPLE NUMBER (ISAM) 999 = FOR ALL SAMPLES	76
131	C	6-10	15	ESD NUMBER (IESD)	77
132	C	11-20	F10.0	STYLIZED EXPENDITURE - DE (SE(1))	78
133	C	21-30	F10.0	STYLIZED EXPENDITURE - D1 (SE(2))	79
134	C	31-40	F10.0	STYLIZED EXPENDITURE - D2 (SE(3))	80
135	C	41-50	F10.0	STYLIZED EXPENDITURE - AT (SE(4))	81
136	C				82
137	C				83
138	C				84
139	C	VARIABLES			85
140	C				86
141	C	ADEP(1)		AVERAGE DEPLOYMENT FOR I WHERE	87
142	C			1 = 1-15	88
143	C			2 = 16-30	89
144	C			3 = 1-30	90
145	C			4 = 31-60	91
146	C			5 = 61-90	92
147	C			6 = 31-90	93
148	C			7 = 1-90	94
149	C			8 = 91-120	95
150	C			9 = 121-150	96
151	C			10 = 151-180	97
152	C			11 = 91-180	98
153	C			12 = 1-180	99
154	C				100
155	C	AMUN(1)		THE ARRAY OF THE MUNITION NAME	101
156	C				102
157	C	ATITLE(1)		THE TITLE FOR THE MAIN REPORT	103
158	C				104
159	C	BTITLE(1)		THE TITLE FOR THE THREE-DAY PILE REPORT	105
160	C				106
161	C	CONC(1)		HOLLERITH CONSTANT 'CONTINUED'	107
162	C				108
163	C	CTITLE(1)		THE TITLE FOR THE DISTRIBUTION OF REQUIREMENTS	110
164	C				111
165	C	DAYS(1)		NO OF DAYS IN PERIOD I WHERE I IS SAME AS FOR ADEP(1)	112
166	C				113
167	C	DEP(1)		DEPLOYMENT FOR EACH PERIOD	114
168	C			INPUT ON CARD TYPE 4	
169	C				
170	C	DIST(1,J)		DISTRIBUTION OF REQUIREMENTS FOR TIME PERIOD J	

Figure III.3.11 (Cont.)

171	C	1 = 1-15	
172	C	2 = 16-30	
173	C	3 = 31-60	
174	C	4 = 61-90	
175	C	5 = 91-120	
176	C	6 = 121-150	
177	C	7 = 151-180	
178	C	AND WHERE J IS THE SOURCE OF THE REQUIREMENT	
179	C	1 = THE AMOUNT INPUT ON THE FACTORS CARD	
180	C	2 = COMBAT LOSSES FOR DE	
181	C	3 = COMBAT LOSSES FOR DI	
182	C	4 = COMBAT LOSSES FOR DL	
183	C	5 = COMBAT LOSSES FOR AT	
184	C	6 = ZEROING BY DEPLOYMENTS	
185	C	7 = ZEROING BY RETURN TO DUTY	
186	C	8 = ZEROING BY REPLACEMENTS	
187	C	9 = ZEROING BY RETURN TO THE REPLACEMENT POOL	
188	C	10 = FIRING IN DE	
189	C	11 = FIRING IN DI	
190	C	12 = FIRING IN DL	
191	C	13 = FIRING IN AT	
192	C	14 = H&I FIRING	
193	C	15 = LOG LOSSES	
194	C	16 = SEA LOSSES	
195	C	17 = TOTAL	
196	C		115
197	C	ESU(I,J,K) ESU FOR DAY = I	116
198	C	ESU NUMBER = J	117
199	C	POSTURE = K	118
200	C	WHERE 1 = DE, 2 = DI, 3 = DL, 4 = AT	119
201	C		120
202	C	ESL(I,J,K) EQUIPMENT STYLIZED LOSSES WHERE	121
203	C	3-DAY INCREMENT = I	122
204	C	EQUIPMENT NUMBER = J	123
205	C	POSTURE = K	124
206	C	WHERE 1 = DE, 2 = DI, 3 = DL, 4 = AT	125
207	C		126
208	C	FAC(I)	127
209	C	THE ARRAY IS USED TO COMPUTE THE PILE FOR THE	128
210	C	PERIODS. FAC(I) = -FAC(Y) IS EITHER A PILE OR A	129
211	C	RATE FOR THE PERIOD. THE COMPUTATIONAL METHOD	130
212	C	FROM CARD TYPE 3 DETERMINES WHICH.	131
213	C	IM = 0 MEANS PILE, IM = 1 MEANS RATE	132
214	C		133
215	C	IA	134
216	C	COUNTER FOR THE NUMBER OF LINES THAT HAVE BEEN	135
217	C	PRINTED ON A PAGE IN THE MAIN REPORT.	136
218	C	IAA	137
219	C	INPUT VALUE FOR THE NUMBER OF LINES ON A PAGE IN THE	138
220	C	MAIN REPORT	
221	C	IAAA	
222	C	TOTAL NUMBER OF PAGES IN MAIN REPORT	
223	C	IAP	
224	C	PAGE COUNTER FOR THE MAIN REPORT	
225	C		139
226	C	IH	140
227	C	COUNTER FOR THE NUMBER OF LINES THAT HAVE BEEN	141
		PRINTED ON A PAGE IN THE THREE-DAY PILE REPORT.	142

Figure III.3.11 (Cont.)

228	C	188	INPUT VALUE FOR THE NUMBER OF LINES ON A PAGE IN THE	143
229	C		THREE-DAY PILE REPORT	144
230	C			
231	C	1880	TOTAL NUMBER OF PAGES IN THE 3-DAY PILE REPORT	
232	C			
233	C	18P	PAGE COUNTER FOR THE 3-DAY PILE REPORT	
234	C			145
235	C	18US	INDICATOR THAT THE MUNITION IS A BUSINESS ROUND	146
236	C		INPUT ON CARD TYPE 3	147
237	C			148
238	C	1C	THE CARD TYPE FOR THE INPUT DATA	149
239	C			
240	C	1CC	INPUT VALUE FOR THE NUMBER OF LINES ON A PAGE IN THE	
241	C		DISTRIBUTION OF REQUIREMENTS REPORT	
242	C			
243	C	1CCC	TOTAL NUMBER OF PAGES IN THE DOR REPORT	
244	C			
245	C	1CP	PAGE COUNTER FOR THE DOR REPORT	
246	C			
247	C	1E	COUNTER FOR THE NUMBER OF LINES IN THE DOR REPORT	
248	C			150
249	C	1D(1)	A CONSTANT ARRAY USED TO PRINT OUT THE DAY HEADINGS	151
250	C			152
251	C	1I(1)	AN ARRAY TO PRINT THE HEADINGS FOR THE 3-DAY PILES.	153
252	C			154
253	C	1M	INDICATOR FOR THE COMPUTATION METHOD TO BE USED	155
254	C		INPUT ON CARD TYPE 3	156
255	C			157
256	C	1PRT	PRINT INDICATOR FOR DEPLOYMENT	158
257	C		1 = DO NOT PRINT DEPLOYMENT	159
258	C		0 = PRINT DEPLOYMENT	160
259	C			161
260	C	1SCALE	THE SCALE FACTOR FROM CARD TYPE 4	162
261	C			163
262	C	1S(1)	A CONSTANT ARRAY USED TO PRINT OUT THE DAY HEADINGS	164
263	C			165
264	C	1SD(1)	THE SAMPLE TO APPLY FOR DAY 1	166
265	C			167
266	C	1SVEC(1)	A VECTOR OF SAMPLE NUMBERS FOR A SINGLE MUNITION	168
267	C			169
268	C	1T	THE EQUIPMENT TYPE ON CARD TYPE 5	170
269	C			171
270	C	1TOT	INDICATOR TO DETERMINE WHETHER TO PRINT WEAPON TOTALS	172
271	C			173
272	C	1JVEC(1)	A VECTOR OF ESD NUMBERS FOR A SINGLE MUNITION	174
273	C			175
274	C	1RATE(1)	THE RATE FOR THE PERIOD 1 WHERE	176
275	C		1 IS THE SAME AS FOR ADEP(1)	177
276	C			178
277	C	1ROUND(1)	THE NUMBER OF ROUNDS FOR THE PERIOD 1 WHERE	179
278	C		1 IS THE SAME AS FOR ADEP(1)	180
279	C			181
280	C	1SE(1)	STYLIZED EXPENDITURES BY POSTURE FROM CARD TYPE 6	182
281	C			183
282	C	1SEALUSS(1)	THE FACTOR APPLIED FOR SHIPPING LOSSES FOR PERIOD	184
283	C		1 WHERE	185
284	C		1 = 1-15	186

Figure III.3.11 (Cont.)

285	C	2 = 16-30	187
286	C	3 = 31-60	188
287	C	4 = 61-90	189
288	C	5 = 91-120	190
289	C	6 = 121-150	191
290	C	7 = 151-180	192
291	C		193
292	C	SEVEC(I,J) A VECTOR OF STYLIZED EXPENDITURES FOR A SINGLE	194
293	C	MUNITION BY POSTURE J.	195
294	C		196
295	C	SFAC(I) THE SUM OF THE FAC ARRAY. IT IS USED TO COMPUTE THE	197
296	C	SUM OF THE BUSINESS ROUNDS FOR THE H&I FACTOR.	198
297	C		199
298	C	SLPS(I) STYLIZED LOSSES PER SYSTEM BY POSTURE ON CARD TYPE 3	200
299	C		201
300	C	SROUND(I) THE SUM OF THE ROUND(I) ARRAY.	202
301	C		203
302	C	STOP(I) THE SUM OF THE TOP ARRAY. IT IS USED TO COMPUTE THE	204
303	C	SUM OF THE BUSINESS ROUNDS FOR THE H&I FACTOR.	205
304	C		
305	C	STONS(I) WEIGHT OF THE PILE FOR A SYSTEM BY PERIOD IN TONS	21
306	C		
307	C	STIM(J) THE SOURCE OF THE REQUIREMENT LABELS.	
308	C	J IS THE SAME AS FOR UOR(I,J)	
309	C		206
310	C	TDEP(I) TOTAL DEPLOYMENT FOR PERIOD I WHERE	207
311	C	I IS THE SAME AS FOR ADEP(I)	208
312	C		209
313	C	TOP(I) THREE-DAY PILES FOR PERIOD I WHEN	210
314	C	1 = 1-3, 2 = 4-6, 3 = 7-9, ETC.	211
315	C		212
316	C	TONS(I) WEIGHT OF THE PILE BY PERIOD IN TONS	21
317	C		213
318	C	TOTAL(I) HOLLERITH CONSTANT = *WEAPONTOTAL*	214
319	C		2
320	C	TSTONS(I) THE TOTAL TONNAGE FOR ALL MUNITIONS BY PERIOD	21
321	C		215
322	C	WPN(I) THE ARRAY OF THE WEAPON NAME	216
323	C		21
324	C	WEIGHT WEIGHT OF THE MUNITION IN POUNDS/ROUND	217
325	C		218
326	C	ZE(I,J) ZEROING REQUIREMENTS FOR	219
327	C	3-DAY INCREMENT = I	220
328	C	EQUIPMENT NUMBER = J	221
329	C		222
330	C	ZERO THE NUMBER OF ROUNDS REQUIRED TO ZERO THE WPN*	223
331	C		224
332	C	ZZE(I,J,K) THE ZEROING REQUIREMENT WHEN I IS THE PERIOD	225
333	C	1 = 1-3	226
334	C	2 = 4-6	227
335	C	3 = 7-9	228
336	C	4 = 10-12	229
337	C	5 = 13-15	230
338	C	6 = 16-18	231
339	C	7 = 19-21	232
340	C	AND J IS THE STIMULUS	
341	C	I = DEPLOYMENT	

Figure III.3.11 (Cont.)

342	C	2 = RETURN TO DUTY	233
343	C	3 = REPLACEMENT	234
344	C	4 = RETURN TO REPLACEMENT POOL	235
345	C	AND K IS THE EQUIPMENT TYPE.	236
346	C		237
347	C		238
348		DIMENSION ESD(160,40,4),ESL(60,30,4),ZE(60,30),ZZE(1,4,30),	239
349		IATITLE(1,1),OTITLE(1,1),SEALUS(1),CONC(2),WPH(10),DEP(6),	
350		ZADEP(12),TOLP(12),ID(1),IS(1),AHUN(5),FAC(9),ROUN(12),SFAC(8),	241
351		JSLEPS(4),TOP(30),ISVEC(50),JVEEC(50),SEVEC(4,50),RATE(12),STOP(30),	242
352		4ISU(160),SE(4),II(60),DAYS(12),SHROUND(12),TOTAL(2),DOUR(1,1),	24
353		5STIM(17),CTITLE(1,1),EDIT(22),TUNS(12),STONS(12),ISTONS(12)	
354		DIMENSION ESLT(60,30,4),LIN(6),MATLUG(12)	
355		DATA CONC/6H(CONC1,6HNUED) /	244
356		DATA ID/15,30,60,90,120,150,180/	246
357		DATA DAYS/2*15,3*30,6*60,9*90,3*30,9*90,180/	247
358		DATA IS/1,16,31,61,91,121,151/	248
359		DATA TOTAL/6HCONC,6HTOTALS/	249
360		DATA STIM/6HFAC-IN,6HLOS-DE,6HLOS-DI,6HLOS-DL,6HLOS-AT,6HZE-DEP,	249
361	1	6HZE-MTD,6HZE-MEP,6HZE-MTM,6HXP-DE,6HXP-DI,6HXP-DL,	249
362	2	6HXP-AT,6HMI 6HLOG 6HSLA 6HTOTAL /	
363	C		250
364	C	INPUT FORMATS	251
365	C		252
366	10	FORMAT (20F5.2)	253
367	20	FORMAT (15F6.1)	254
368	30	FORMAT (12A6/5A6)	255
369	40	FORMAT (7F5.0)	256
370	50	FORMAT (12,10A4)	257
371	60	FORMAT (12,8F8.0,11)	258
372	70	FORMAT (12,5A6,21,6X,F10.0)	2
373	80	FORMAT (12,2F5.0,7(1X,F6.0),1X,15)	
374	90	FORMAT (12,3X,15,5F10.0)	26
375	100	FORMAT (12,13,15,4F10.0)	262
376	110	FORMAT (312)	26
377	C		264
378	C	OUTPUT FORMATS	265
379	C		266
380	120	FORMAT (1H,17A6,5X,'(',12,' OF ',12,' 1'//)	
381	130	FORMAT (1H,10A4)	268
382	140	FORMAT (26X,'PERIOD (DAYS):',14X,6(4X,13,'-',13))	26
383	150	FORMAT (24X,'TOTAL DEPLOYMENT:',14X,7(F10.0,1X))	
384	160	FORMAT (22X,'AVERAGE DEPLOYMENT:',14X,6(1X,F10.0)/)	
385	170	FORMAT (1H,5A6)	
386	180	FORMAT (24X,'TOTAL DEPLOYMENT:',14X,6(1X,F10.0))	
387	190	FORMAT (1H,'PERIOD (DAYS):',10(5X,12,'-',12),/ QUANTITY:',	274
388		11X,10F10.0)	
389	200	FORMAT (1H,5X,5A6)	276
390	210	FORMAT (27X,'PERIOD (DAYS):',14X,6(4X,13,'-',13))	
391	220	FORMAT (32X,'QUANTITY:',14X,6(1X,F10.0))	
392	221	FORMAT (32X,' TONNAGE:',14X,6(1X,F10.2))	
393	222	FORMAT (27X,'TOTAL TONNAGE:',14X,6(1X,F10.2)/)	
394	223	FORMAT (48X,'SUMMARY OF TONNAGE FOR ALL HUNITS:')	
395	230	FORMAT (36X,'RATE:',14X,6(1X,F10.2)/)	
396	235	FORMAT (36X,'RATE:',14X,6(1X,F10.3)/)	
397	240	FORMAT (1H,5A6,6,2A,46)	280
398	241	FORMAT (1H,34(6A6,' ',1A,7F10.0)	

Figure III.3.11 (Cont.)

399	242	FORMAT(2BX,'PERIOD (DAYS):',4X,7(3X,13,'-',1,13))	
400	243	FORMAT(1H1)	
401	244	FORMAT(22A6)	
402	C		281
403	C	COMPUTE THE VALUES FOR II	282
404	C		283
405		DO 250 I=1,59,4	284
406		II(I)=1+(1-1)*3/2	285
407		J=1+1	286
408		II(J)=J*3/2	287
409	250	CONTINUE	288
410	C		289
411	C	READ TRM INPUT	290
412	C		291
413		DO 400 I=1,180	292
414		JT=.9+FLOAT(I)/3.	
415		DO 340 K=1,5	29
416		KK=K	
417		READ (10,20) (TOP(J),J=1,15)	295
418		READ (10,20) (TOP(J),J=16,30)	296
419		IF(K.EQ.2)GO TO 340	
420		DO 260 J=1,30	297
421		ZE(JT,J)=ZE(JT,J)+TOP(J)	298
422	260	CONTINUE	299
423		J1=(1-1)/15+1	300
424		GO TO (320,320,320,270,280,280,290,290,300,300,310,310), J1	301
425	270	J1=J	302
426		GO TO 320	303
427	280	J1=4	304
428		GO TO 320	305
429	290	J1=5	306
430		GO TO 320	307
431	300	J1=6	308
432		GO TO 320	309
433	310	J1=7	310
434	320	IF(K.GE.2)KK=K-1	
435		DO 330 J=1,30	31
436		ZZE(J1,KK,J)=ZZE(J1,KK,J)+TOP(J)	
437	330	CONTINUE	313
438	340	CONTINUE	314
439		DO 350 J=1,4	315
440		READ (10,20) DUMMY	316
441	350	CONTINUE	317
442		DO 370 K=1,4	318
443		READ (10,20) (TOP(J),J=1,15)	319
444		READ (10,20) (TOP(J),J=16,30)	320
445		DO 360 J=1,30	321
446		ESL(JT,J,K)=ESL(JT,J,K)+TOP(J)	322
447	360	CONTINUE	323
448	370	CONTINUE	324
449	C	READ LINES 23 TO 30 N AND P KILLS	32
450		DO 375 K=1,4	31
451		READ (10,20) (TOP(J),J=1,15)	319
452		READ (10,20) (TOP(J),J=16,30)	320
453		DO 376 J=1,30	32
454	376	ESLT(JT,J,K)=ESLT(JT,J,K)+TOP(J)	
455	375	CONTINUE	32

Figure III.3.11 (Cont.)

456		DO 390 K=1,4	340
457		READ (10,10) (ESD(I,J,K),J=1,20)	341
458		READ (10,10) (ESD(I,J,K),J=21,40)	342
459	390	CONTINUE	343
460	400	CONTINUE	344
461		DO 410 I=1,100	345
462		READ (5,50) ISD(I)	346
463	410	CONTINUE	347
464	C		348
465	C	READ TITLE AND SEALOSSES	349
466	C		350
467		READ (5,30) ATITLE	351
468		READ (5,30) BTITLE	352
469		READ (5,30) CTITLE	353
470		READ (5,40) SEALOS	354
471		READ (5,110) IAAA,IBBB,ICCC	355
472		READ (5,110) IAAA,IBBB,ICCC	356
473		IAP=1	357
474		IBP=1	358
475		ICP=1	359
476		DO 412 I=1,12	360
477	412	TSTONS(I)=0.0	361
478	C		362
479	C	THE MODEL IS NOW INITIALIZED	363
480	C		364
481	C	WRITE TITLES	365
482	C		366
483		WRITE (6,120) ATITLE,IAP,IAAA	367
484		IAP=IAP+1	368
485		IA=4	369
486		WRITE (2,120) BTITLE,IBP,IBBB	370
487		IBP=IBP+1	371
488		IB=4	372
489		WRITE (3,120) CTITLE,ICP,ICCC	373
490		ICP=ICP+1	374
491		IE=4	375
492	C		376
493	C	READ CARD TYPE 1	377
494	C		378
495		READ (5,50) IC*MPN	379
496	440	DO 430 I=1,10	380
497		SFAC(I)=0.0	381
498	430	CONTINUE	382
499		DO 440 I=1,30	383
500		STDP(I)=0.0	384
501	440	CONTINUE	385
502		DO 450 I=1,12	386
503		SHOUNDI(I)=0.0	387
504		STONS(I)=0.0	388
505	450	CONTINUE	389
506		ITOT=0	390
507		IF (IA*LE*IAA) GO TO 460	391
508		WRITE (6,120) ATITLE,IAP,IAAA	392
509		IAP=IAP+1	393
510		IA=4	394
511	460	CONTINUE	395
512		WRITE (5,130) MPN	396

Figure III.3.11 (Cont.)

513		IA=1.-1	372
514	C		374
515	C	READ CARD TYPE 2	375
516	C		376
517		READ (5,60) IC,UEP,IPNT	377
518	C		378
519	C	COMPUTE DEPLOYMENTS	379
520	C		380
521		TDEP(1)=UEP(1)+UEP(2)	381
522		TDEP(2)=TDEP(1)+UEP(3)	382
523		TDEP(3)=TDEP(2)	383
524		TDEP(4)=TDEP(3)+UEP(4)	384
525		TDEP(5)=TDEP(4)+UEP(5)	385
526		TDEP(6)=TDEP(5)	386
527		TDEP(7)=TDEP(6)	387
528		TDEP(8)=TDEP(7)+UEP(6)	388
529		TDEP(9)=TDEP(8)+UEP(7)	389
530		TDEP(10)=TDEP(9)+UEP(8)	390
531		TDEP(11)=TDEP(10)	391
532		TDEP(12)=TDEP(11)	392
533		AUEP(1)=UEP(1)+0.5*UEP(2)	393
534		AUEP(2)=TDEP(1)+0.5*UEP(3)	394
535		AUEP(3)=UEP(1)+0.75*UEP(2)+0.25*UEP(3)	395
536		AUEP(4)=TDEP(3)+0.5*UEP(4)	396
537		AUEP(5)=TDEP(4)+0.5*UEP(5)	397
538		AUEP(6)=UEP(1)+0.875*UEP(2)+0.625*UEP(3)+0.25*UEP(4)	398
539		AUEP(7)=UEP(1)*(11./12.)*UEP(2)+0.75*UEP(3)+0.5*UEP(4)+	399
540		111./6.)*UEP(5)	400
541		AUEP(8)=TDEP(7)+0.5*UEP(6)	401
542		AUEP(9)=TDEP(8)+0.5*UEP(7)	402
543		AUEP(10)=TDEP(9)+0.5*UEP(8)	403
544		AUEP(11)=TDEP(11)+(5./6.)*UEP(6)+0.5*UEP(7)+(1./6.)*UEP(8)	404
545		AUEP(12)=UEP(1)+(23./24.)*UEP(2)+(7./8.)*UEP(3)+0.75*UEP(4)+(7./	405
546		12.)*UEP(5)+(5./12.)*UEP(6)+0.25*UEP(7)+(1./12.)*UEP(8)	406
547	C		407
548	C	CHECK TO PRINT DEPLOYMENTS	408
549	C		409
550		IF (IPNT.EQ.1) GO TO 470	410
551		WRITE (6,140) IS(1),ID(1),IS(2),ID(2),IS(3),ID(3),IS(4),	411
552		ID(4),IS(5),ID(5)	412
553		WRITE (6,150) UEP(1),(TDEP(1),I=1,6)	413
554		WRITE (6,160) (AUEP(1),I=1,6)	414
555		WRITE (6,210) IS(1),ID(4),IS(5),ID(5),IS(6),ID(6),IS(7),ID(7),	415
556		IS(8),ID(8),IS(9),ID(9)	416
557		WRITE (6,180) (TDEP(1),I=7,12)	417
558		WRITE (6,160) (AUEP(1),I=7,12)	418
559		IA=IA+8	419
560		IF (IA.LE.1AA) GO TO 470	420
561		WRITE (6,120) TITLE,IAP,IAAA	421
562		IAP=IAP+1	422
563		WRITE (6,130) WPN	423
564		WRITE (6,170) CUNC	424
565		IA=0	425
566	470	CONTINUE	426
567	C		427
568	C	READ POSITION CARD - CARD TYPE 3	428
569	C		429

Figure III.3.11 (Cont.)

570	READ (5,70) IC,MMUN,IBUS,IM,WEIGHT	44
571	C.....	
572	C THE FOLLOWING STATEMENT READS DATA NECESSARY TO WRITE A TAPE	
573	C (FILE 7) FOR DCSLOG	
574	C.....	
575	440 CONTINUE	449
576	READ(5,75)SSH,LIN	
577	75 FORMAT(7(A6,1X))	
578	IF (IA*LE*IAA) GO TO 490	430
579	WRITE (6,120) ATITLE,IAP,IAAA	
580	IAP=IAP+1	
581	WRITE (6,130) WPH	432
582	WRITE (6,170) CONC	433
583	IA=6	434
584	490 CONTINUE	435
585	DO 500 I=1,30	436
586	TOP(I)=0.0	437
587	500 CONTINUE	438
588	ITOT=ITOT+1	439
589	IM=IM+1	440
590	C	441
591	C THIS IS THE START OF THE NORMAL METHOD	442
592	C READ CARD TYPE 4	443
593	C	444
594	READ (5,80) IC,FAC,ISCALE	445
595	GO TO (510,550), IM	446
596	510 DO 520 I=1,9	447
597	FAC(I)=FAC(I)*10.**ISCALE	448
598	520 CONTINUE	449
599	DO 521 I=1,7	
600	DOR(I,1)=FAC(I+2)	
601	521 CONTINUE	
602	C	450
603	C READ STYLIZED LOSSES CARD TYPE 5	451
604	C	452
605	530 READ (5,90) IC,IT,SLPS,ZERO	453
606	IF (IC*EQ*5) GO TO 540	454
607	C	455
608	C IT IS THE FIRST CARD TYPE 6	456
609	C	457
610	ISC=1	458
611	C	459
612	C REREAD IN THE CORRECT FORMAT	460
613	C	461
614	READ (30,100) IC,ISAM,IESD,SE	462
615	GO TO 690	463
616	540 DO 560 I=1,30	464
617	TOP(I)=TOP(I)+ZERO*ZE(I,IT)	465
618	DO 550 J=1,4	466
619	TOP(I)=TOP(I)+SLPS(I)*IESL(I,IT,J)+0.3*ESLT(I,IT,J)	
620	550 CONTINUE	468
621	560 CONTINUE	469
622	DO 600 I=1,60	470
623	J=(I-1)/5+1	471
624	DO 570 J=1,4	472
625	A=(ESL(I,IT,J)*0.3*ESLT(I,IT,J)+SLPS(I)	
626	GO TO (580,590,600,610,620,630,640,650,660,670,680,690), J	476

Figure III.3.11 (Cont.)

627	580	FAC(3)=FAC(3)+A	477
628		DOR(1,J+1)=DOR(1,J+1)+X	
629		GO TO 650	478
630	590	FAC(4)=FAC(4)+A	479
631		DOR(2,J+1)=DOR(2,J+1)+X	
632		GO TO 650	480
633	600	FAC(5)=FAC(5)+A	481
634		DOR(3,J+1)=DOR(3,J+1)+X	
635		GO TO 650	482
636	610	FAC(6)=FAC(6)+A	483
637		DOR(4,J+1)=DOR(4,J+1)+X	
638		GO TO 650	484
639	620	FAC(7)=FAC(7)+A	485
640		DOR(5,J+1)=DOR(5,J+1)+X	
641		GO TO 650	486
642	630	FAC(8)=FAC(8)+A	487
643		DOR(6,J+1)=DOR(6,J+1)+X	
644		GO TO 650	488
645	640	FAC(9)=FAC(9)+A	489
646		DOR(7,J+1)=DOR(7,J+1)+X	
647	650	CONTINUE	
648	570	CONTINUE	
649	600	CONTINUE	496
650		DO 670 J=1,7	49
651		J2=J+2	491
652		DO 660 K=1,4	492
653		FAC(J2)=FAC(J2)+ZXE(J,K,IT)*ZERU	493
654		DOR(J,K+5)=DOR(J,K+5)+ZXE(J,K,IT)*ZERU	
655	660	CONTINUE	494
656	670	CONTINUE	495
657		GO TO 530	497
658	690	ISVEC(ISC)=ISAM	498
659		JEVEC(ISC)=IESU	499
660		DO 700 I=1,4	500
661		SEVEC(I,ISC)=SE(I)	501
662	700	CONTINUE	502
663	C		503
664	C	IF IC IS 99 - GO COMPUTE	504
665	C		505
666		IF (IC.EQ.99) GO TO 710	506
667		READ (5,100) IC,ISAM,IESU,SE	507
668		ISC=ISC+1	508
669		GO TO 690	509
670	C		510
671	C	COMPUTE HERE	511
672	C		512
673	710	DO 770 I=1,7	513
674		ISI=ISI+1	514
675		ID1=ID(1)	515
676		DO 760 J=ISI,101	516
677		JT=.4+FLUAT(J)/J.	
678		X=U.	518
679		DO 740 K=1,ISC	519
680		JK=JEVEC(K)	520
681		IF (JK.EQ.0) GO TO 740	
682		IF (ISI.LT(K).EQ.999) GO TO 720	521
683		IF (ISI.JT+.4.EJJEVEC(K)) GO TO 740	522

Figure III.3.11 (Cont.)

684	740	DO 730 L=1,4	523
685		X=X+SEVEC(L,K)*ESD(J,JK,L)	524
686		UOR(I,L+Y)=UOR(I,L+Y)+SEVEC(L,K)*ESD(J,JK,L)	
687	750	CONTINUE	525
688	740	CONTINUE	526
689		IF (I.LE.5) GO TO 750	527
690		TDP(JT)=TDP(JT)+X	528
691	750	FAC(I+2)=FAC(I+2)+X	529
692	760	CONTINUE	530
693	770	CONTINUE	531
694		DO 810 I=1,30	532
695	800	STDP(I)=STDP(I)+(TDP(I)*IDUS)	533
696		TDP(I)=TDP(I)+(STDP(I)*FAC(2))	534
697		TDP(I)=TDP(I)*(1.+FAC(1))	535
698	810	CONTINUE	536
699	C		537
700	C	WRITE OUT THE THREE-DAY PILES	538
701	C		539
702		WRITE (2,130) WPN	540
703		WRITE (2,170) AMUN	541
704		WRITE (2,190) ((I(1),I=1,20),(TDP(I),I=1,10)	542
705		WRITE (2,190) ((I(1),I=21,40),(TDP(I),I=11,20)	543
706		WRITE (2,190) ((I(1),I=41,60),(TDP(I),I=21,30)	544
707		IB=IB+8	545
708		IF (IB.LE.168) GO TO 820	546
709		WRITE (2,120) UTITLE,IBP,IBOB	547
710		IBP=IBP+1	548
711		IB=4	549
712	840	CONTINUE	550
713	C		551
714	C	ADD ON SEA LOSSES	552
715	C		553
716		DO 830 I=1,7	554
717		SFAC(I+2)=SFAC(I+2)+(FAC(I+2)*IDUS)	555
718		FAC(I+2)=FAC(I+2)+(SFAC(I+2)*FAC(2))	556
719		DOR(I,14)=DOR(I,14)+(SFAC(I+2)*FAC(2))	557
720		UOR(I,15)=UOR(I,15)+FAC(I+2)*FAC(1)	558
721		FAC(I+2)=FAC(I+2)*(1.+FAC(1))	559
722		DOR(I,16)=DOR(I,16)+FAC(I+2)*SLALUS(1)	
723		FAC(I+2)=FAC(I+2)*(1.+SLALUS(1))	
724	830	CONTINUE	560
725	840	ROUND(1)=FAC(3)	561
726		ROUND(2)=FAC(4)	562
727		ROUND(3)=FAC(3)+FAC(4)	563
728		ROUND(4)=FAC(5)	564
729		ROUND(5)=FAC(6)	565
730		ROUND(6)=ROUND(3)+FAC(5)	566
731		ROUND(7)=ROUND(3)+FAC(5)+FAC(6)	567
732		ROUND(8)=FAC(7)	568
733		ROUND(9)=FAC(8)	569
734		ROUND(10)=FAC(9)	570
735		ROUND(11)=FAC(7)+FAC(8)+FAC(9)	571
736		ROUND(12)=ROUND(7)+ROUND(11)	572
737		GO TO 860	573
738	C		574
739	C	START THE SECOND METHOD	575
740	C		576

Figure III.3.11 (Cont.)

741	850	FAC(3)=FAC(3)*ADEP(1)*DAYS(1)	576
742		FAC(4)=FAC(4)*ADEP(2)*DAYS(2)	577
743		FAC(5)=FAC(5)*ADEP(4)*DAYS(4)	580
744		FAC(6)=FAC(6)*ADEP(5)*DAYS(5)	581
745		FAC(7)=FAC(7)*ADEP(6)*DAYS(6)	582
746		FAC(8)=FAC(8)*ADEP(9)*DAYS(9)	583
747		FAC(9)=FAC(9)*ADEP(10)*DAYS(10)	584
748		READ(5,100)IC	
749		GO TO 840	585
750	C		586
751	C	COMPUTE THE RATES	587
752	C		588
753	860	DO 870 I=1,12	589
754		IF(ADEP(I).LE.0.0)ADEP(I)=1E-20	
755		SROUND(I)=SROUND(I)+ROUND(I)	590
756		RATE(I)=ROUND(I)/(ADEP(I)*DAYS(I))	591
757		TONS(I)=ROUND(I)*WEIGHT/2000.0	
758		STONS(I)=STONS(I)+TONS(I)	
759		IF(TONS(I).GT.1E12)GO TO 870	
760		TSTONS(I)=TSTONS(I)+TONS(I)	
761	870	CONTINUE	592
762	C		593
763	C	PRINT THE RESULTS	594
764	C		595
765	C		
766	C	THE FOLLOWING STATEMENTS HAVE BEEN INSERTED TO WRITE A	
767	C	TAPE (FILE 7) FOR DCSLOG.	
768	C		
769		RATLOG(1)=RATE(1)	
770		RATLOG(2)=RATE(2)	
771		RATLOG(3)=RATE(4)	
772		RATLOG(4)=RATE(4)	
773		RATLOG(5)=RATE(5)	
774		RATLOG(6)=RATE(5)	
775		RATLOG(7)=RATE(6)	
776		RATLOG(8)=RATE(8)	
777		RATLOG(9)=RATE(9)	
778		RATLOG(10)=RATE(9)	
779		RATLOG(11)=RATE(10)	
780		RATLOG(12)=RATE(10)	
781		WRITE(7,71)SSN,HPN,AMON	
782	71	FORMAT(//SSN',A6.6A,11UA4/17A.5A6//)	
783		KOUNT=0	
784		DO 8720 I=1,6	
785		IF(LIN(I).EQ.100)GO TO 8721	
786		KOUNT=KOUNT+1	
787	8720	CONTINUE	
788	8721	CONTINUE	
789		WRITE(7,72)(LIN(I),I=1,KOUNT)	
790	72	FORMAT(' CAA FACTORS',6(5X,A6),/)	
791		DO 8722 I=1,12	
792		WRITE(7,73)I,(RATLOG(I),J=1,KOUNT)	
793	73	FORMAT('E,ROPE',12,7X,6(F6.3,JA))	
794	8722	CONTINUE	
795	C		
796	C		
797	C		

Figure III.3.11 (Cont.)

798	C		
799	C		
800		DO 871 I=1,12	
801		IF(RATE(I).LT..01.AND.ROUND(I).GT.0.0)GO TO 872	
802	871	CONTINUE	
803		WRITE (6,200) AMUN	596
804		WRITE (6,210) IS(1),ID(1),IS(2),ID(2),IS(3),ID(3),	597
805		IS(4),ID(4),IS(5),ID(5)	598
806		WRITE (6,220) (ROUND(I),I=1,6)	599
807		WRITE (6,221) (TUNS(I),I=1,6)	59
808		WRITE (6,230) (RATE(I),I=1,6)	600
809		WRITE (6,210) IS(1),ID(4),IS(5),ID(5),IS(6),ID(6),IS(7),ID(7),	601
810		IS(5),ID(7),IS(1),ID(7)	602
811		WRITE (6,220) (ROUND(I),I=7,12)	603
812		WRITE (6,221) (TUNS(I),I=7,12)	60
813		WRITE (6,230) (RATE(I),I=7,12)	604
814		IA=IA+12	60
815		GO TO 873	
816	872	WRITE (6,200) AMUN	59
817		WRITE (6,210) IS(1),ID(1),IS(2),ID(2),IS(3),ID(3),	597
818		IS(4),ID(4),IS(5),ID(5)	598
819		WRITE (6,220) (ROUND(I),I=1,6)	599
820		WRITE (6,221) (TUNS(I),I=1,6)	59
821		WRITE (6,235) (RATE(I),I=1,6)	60
822		WRITE (6,210) IS(1),ID(4),IS(5),ID(5),IS(6),ID(6),IS(7),ID(7),	601
823		IS(5),ID(7),IS(1),ID(7)	602
824		WRITE (6,220) (ROUND(I),I=7,12)	603
825		WRITE (6,221) (TUNS(I),I=7,12)	60
826		WRITE (6,235) (RATE(I),I=7,12)	60
827		IA=IA+12	60
828	C		606
829	C	SUM AND PRINT DOR	
830	C		
831	873	IF(IE.LE.ICC)GO TO 879	
832		WRITE (3,120)CTITLE,ICP,ICCC	
833		ICP=ICP+1	
834		IE=4	
835	879	DO 875 I=1,7	
836		DO 874 J=1,16	
837		DOR(I,17)=DOR(I,17)+DOR(I,J)	
838	874	CONTINUE	
839	875	CONTINUE	
840		WRITE (3,130)WPN	
841		WRITE (3,200)AMUN	
842		WRITE (3,292) (IS(1),ID(1),I=1,7)	
843		DO 876 J=1,17	
844		WRITE (3,291) STIR(J),DOR(I,J),I=1,7)	
845	876	CONTINUE	
846		DO 878 I=1,7	
847		DO 877 J=1,17	
848		DOR(I,J)=0.0	
849	877	CONTINUE	
850	878	CONTINUE	
851		IE=IE+20	
852	C	READ THE NEXT CARD TO SEE IF IT IS A WEAPON CARD	607
853	C		608
854		READ (5,50) IC	

Figure III.3.11 (Cont.)

855		IF (IC.EQ.1.OR.IC.EQ.99) GO TO 880	
856		IF (IC.NE.3) STOP	612
857	C		613
858	C	IT IS A MUNITIONS CARD	614
859	C		615
860		READ (30,70) IC,AMUN,IBUS,IM,WEIGHT	61
861		GO TO 980	617
862	880	IF (ITOT.LE.1.AND.IC.EQ.99) GO TO 920	
863		IF (ITOT.LE.1) GO TO 910	
864	C	PRINT THE TOTALS	619
865		IF (IA.LE.1AA) GO TO 890	620
866		WRITE (6,120) ATITLE,IAP,IAAA	
867		IAP=IAP+1	
868		WRITE (6,130) WPN	622
869		WRITE (6,170) CUNC	62
870		IA=6	624
871	890	CONTINUE	625
872		DO 900 I=1,12	626
873		RATE(I)=SROUND(I)/(ADEP(I)*DAY5(I))	627
874	900	CONTINUE	628
875		WRITE (6,240) TOTAL	629
876		WRITE (6,210) IS(1),ID(1),IS(2),ID(2),IS(3),ID(3),	630
877		IS(4),ID(4),IS(5),ID(5)	631
878		WRITE (6,220) (SROUND(I),I=1,6)	632
879		WRITE (6,221) (STONS(I),I=1,6)	63
880		WRITE (6,230) (RATE(I),I=1,6)	633
881		WRITE (6,210) IS(1),ID(4),IS(5),ID(5),IS(6),ID(6),IS(7),ID(7),	634
882		IS(5),ID(7),IS(1),ID(7)	635
883		WRITE (6,220) (SROUND(I),I=7,12)	636
884		WRITE (6,221) (STONS(I),I=7,12)	63
885		WRITE (6,230) (RATE(I),I=7,12)	637
886		IF (IC.EQ.99) GO TO 920	
887		IA=IA+10	63
888		IF (IA.LE.1AA) GO TO 910	63
889		WRITE (6,120) ATITLE,IAP,IAAA	
890		IAP=IAP+1	
891		IA=4	641
892	910	READ (30,50) IC,WPN	
893		GO TO 920	642
894	920	WRITE (6,223)	
895		WRITE (6,210) IS(1),ID(1),IS(2),ID(2),IS(3),ID(3),	63
896		IS(4),ID(4),IS(5),ID(5)	631
897		WRITE (6,224) (ISTONS(I),I=1,6)	63
898		WRITE (6,210) IS(1),ID(4),IS(5),ID(5),IS(6),ID(6),IS(7),ID(7),	634
899		IS(5),ID(7),IS(1),ID(7)	635
900		WRITE (6,224) (ISTONS(I),I=7,12)	63
901		END FILE 2	
902		END FILE 3	
903		REWIND 2	
904		REWIND 3	
905		WRITE (6,243)	
906	930	READ (2,244) END=Y40JEDIT	
907		WRITE (6,244) EDIT	
908		GO TO 930	
909	940	WRITE (6,243)	
910	950	READ (3,244) C40=Y60JEDIT	
911		WRITE (6,244) EDIT	
912		GO TO 950	
913	960	STOP	
914		END	

Figure III.3.11 (Cont.)

Appendix A

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Appendix B

Terms and Abbreviations

APP	Ammunition Post Processor - A related group of computer software programs that is a part of the WARRAMP methodology; used to compute the expected consumption of ammunition of selected calibres of a force in a conflict.
CEM	Concepts Evaluation Model - A low resolution theater combat model that simulates the combat between two opponent forces over a specific period of time producing force results.
COSAGE	Combat Sample Generator, a high resolution model that simulates tactical combat between a red and blue force; a production model that produces force on force results.
ELCON	Equipment Loss Consolidator.
ESD	Equivalent Stylized Day of (Wartime) combat between a postured blue and red force; used to provide an activity comparison between forces.
HMS	Heavy Materiel Supply Units (Companies).
ITMID	Item Identification File.
K-KILL	A catastrophic kill of the item (target) rendering it incapable of returning fire or movement and is non-repairable.
LA	Lethal area of indirect fire (area type) weapon systems.
LEA	Logistics Evaluation Agency.
LIN	Line Item Number (Code) - LINCODE.
LOC	Lines of Communications.
MIE	Major items of equipment.
M-KILL	A hit on an item (target) that renders it immobile, but repairable and capable of returning fire.
ODCSOPS	Office of the Deputy Chief of Staff (Army) for Operations.
PK	Probability of Kill.
RAM	Red Artillery Model.
RTD	Returned To Duty; personnel or repaired equipment.

SSPK	Single Shot Probability of Kill.
SRC	Standard Requirements Code.
TAM	Target Acquisition Model.
TOE	Table of Organization and Equipment.
TRCONS	Theater Rate Consolidation data file.
TRMAP	Theater Rate Mapping data file.
TRM	Theater Rates Model, used to simulate a theater conflict, generating stylized combat periods; used to compute ammunition consumption rates for several weapon - munition combinations.
WARF	Wartime Replacement Factors, also known as Wartime Active Replacement Factors. Rates of loss or specified periods or time increments for selected combat materiel items.
WIMP	WARF Intermediate Materiel Processor.

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