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COMPUTER SYSTEM MANUAL
CSM PSM 9A-67
VOLUME III, PART B
29 FEBRUARY 1972

THE NMCSSC QUICK-REACTING GENERAL WAR GAMING SYSTEM (QUICK)

SIMULATION OUTPUT SUBSYSTEMS

VOL III - PT A
AD 742790

PROGRAMMING SPECIFICATIONS MANUAL

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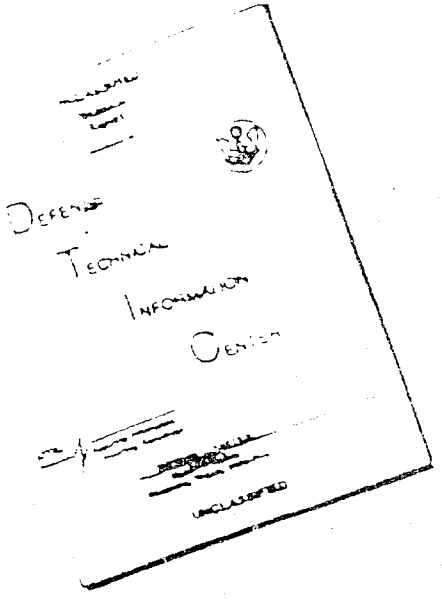

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13. ABSTRACT

~~This~~ is one of three volumes describing computer programs of the QUICK-Reacting General War Gaming System (QUICK). These volumes complement other NMCSSC Computer System Manuals on QUICK by discussing the programs from a computer programming point of view. This volume, in two parts, concentrates on the Simulation (Output) Subsystem of QUICK. Other volumes are available for the Input Subsystem and Plan Generation Subsystem. Collectively, these manuals provide a basis for maintenance activity on the QUICK System.

Based upon a suitable data base, and user control parameters, QUICK will generate individual bomber and missile plans suitable for war gaming. The generated plans are of a form suitable for independent review and revision. Subsequently, execution of the planned events can be simulated. Various statistical summaries can be produced to reflect the results of the war game. A variety of force postures and strategies can be accommodated.

QUICK is documented extensively in a set of Computer System Manuals (series 9-67) published by the National Military Command System Support Center (NMCSSC), Defense Communications Agency (DCA), The Pentagon, Washington, DC 20301.

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THE NMCSSC QUICK-REACTING GENERAL WAR GAMING SYSTEM (QUICK)

Programming Specifications Manual

Volume III - Simulation (Output) Subsystems

Part B

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ABSTRACT

The computerized Quick-Reacting General War Gaming System (QUICK) will accept input data, automatically generate global strategic nuclear war plans, simulate the planned events, and provide statistical output summaries. QUICK has been programmed in FORTRAN for use on the NMCSSC CDC 3800 computer system.

The QUICK Programming Specifications Manual (PSM) consists of three volumes: Volume I, Data Input Subsystem; Volume II, Plan Generation Subsystem; Volume III, Simulation and Data Output Subsystems. The Programming Specifications Manual complements the other QUICK Computer System Manuals to facilitate maintenance of the war gaming system. This volume, Volume III, provides the programmer/analyst with a technical description of the purpose, functions, general procedures, and programming techniques applicable to the programs of the Simulation and Data Output subsystems. This volume consists of two parts: Part A provides a description of the programs/subroutines which make up the two subsystems; Part B contains the associated rpogram listings. Companion documents are:

1. GENERAL DESCRIPTION
   Computer System Manual CSM GD 9A-67
   A nontechnical description for senior management personnel

2. ANALYTICAL MANUAL
   Computer System Manual CSM AM 9A-67 (three volumes)
   Provides a description of the system methodology for the nonprogrammer analysts

3. USER'S MANUAL
   Computer System Manual CSM UM 9-67
   Provides detailed instructions for applications of the system

4. OPERATOR'S MANUAL
   Computer System Manual CSM OM 9A-67
   Provides instructions and procedures for the computer operators

```
      PROGRAM SIMULATE
CSUBR     SIMULATE  29SEPT71  ***********************************************
C     INITIALIZES OR CALLS FOR INITIALIZATION OF ARRAYS, READS IN BASIC
C     DATA, PRINTS EVENT DATA AND PLANTS INITIAL EVENT FOR EACH VEHICLE,
C     PLANTS THE FIRST ZONE STATUS EVENT, PLANTS ENDGAME, AND CALLS
C     DOMEXT TO START THE SIMULATION
C     THE FOLLOWING TAPES ARE ASSIGNED--
C         1 - 4  EVENT SPILL
C           5    HISTORY OUTPUT
C           6    EVENT LIST FROM PLAN GENERATOR
C           7    LIBRARY DATA
C
C     ***************************************************************
C
CUSE      AGZSUM    28APR71  ***********************************************
      COMMON/AGZSUM/NAGZ(2,80),TYD(2,80)
CEND      AGZSUM    ***********************************************************
C     NAGZ     = NUMBER OF WARHEADS FOR TYPE OF WEAPON(DELIVERED)
C     TYD      = NUMBER OF MEGATONS FOR TYPE OF WEAPON(DELIVERED)
C
C     ***************************************************************
C
      COMMON/AREADAT/AINT(2,3),NLRR(2,3),IOVERLAP(2,3),KRAD
C     AINT     = NUMBER OF AREA INTERCEPTORS
C     NLRR     = NUMBER OF LONG RANGE RADARS PER ZONE
C     IOVERLAP= PACKED DATA ARRAY
C     KRAD     = ZONE INDEX NUMBER
C
C     ***************************************************************
C
CUSE      BOMBER    28APR71  ***********************************************
      COMMON/BOMBER/PLABT(80),TMDEL(80),ABRATE(80),PRABT(80),CEPB(80),
     1     TLINTB(80),IFUNCB(80)
CEND      BOMBER    ***********************************************************
C     PLABT    = LAUNCH ABORT PROBABILITIES
C     TMDEL    = DELAY TIMES AFTER LAUNCH ABORT
C     ABRATE   = ABORT RATES
C     PRABT    = REFUELING ABORT PROBABILITIES
C     CEPB     = CIRCULAR ERRORS OF PROBABILITY
C     TLINTB   = TIMES BETWEEN SUCCESSIVE BOMBER LAUNCHES
C     IFUNCB   = BOMBER FUNCTION
C
C     ***************************************************************
C
CUSE      BRKPNT    28APR71  ***********************************************
      COMMON/BRKPNT/ATYPECUM(15),NBLUETYP(15),INDBEGCL(15),INDBEGTY(250)
CEND      BRKPNT    ***********************************************************
C     ATYPECUM= CUMULATIVE NUMBER OF TYPES THROUGH END OF A CLASS
C     NBLUETYP= NUMBER OF BLUE TYPES IN A CLASS
C     INDBEGCL= BEGINNING INDEX OF A CLASS
C     INDBEGTY= BEGINNING INDEX OF A TYPE
C
C     ***************************************************************
C
      COMMON/DATTA/ISIZE
      DATA(ISIZE = 3140)
```

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```
C
C     ***************************************************************
C
C
CUSE        EDATAB     4JAN71     ***************************************
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DMCBC,ITYPC,
     1ICLASSC,IREGC,IALENTC,IMZONC,NDHIC,NDLCC,IALTC,NCMC,PKNAVCSPC(2),
     2IMTC,JMTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),
     3 IMTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(32 7,SIDE,
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMCB,ITYPE,ICLASS,IREG,IALENT,
     5INZONE,NDHI,NDLC,IALT,NCM,PKNAV,SPARE(2),IMT,JMT,EXTRA(2),NALT,
     6TABORT,TINC(80),INDP(80),INDE(80),IMTYP(12),XDGZ(12),YDGZ(12),
     7ZDGZ(12),INDATA(320)
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))
      EQUIVALENCE(NPLAN,NALT) ,(MMT,IMT), (MMT,JMT)
      TYPE INTEGER DGX,DGY,DMCB,XDGZ,YDGZ,ZDGZ
      TYPE INTEGER DGXC,DGYC,DMCBC,XDGZC,YDGZC,ZDGZC
      TYPE INTEGER OUTDATA,SIDE,SIDEC
CEND        EDATAB     ***************************************************
      EQUIVALENCE(NWPNS,INDATA(13)),(NTARG,INDATA(14))
     1      (WPNLIST,INDATA(15)),(LAUNLIST,INDATA(33))
     2      (MLIST,INDATA(51)),(TMLAUN,INDATA(4))
      TYPE INTEGER WPNLIST
      DIMENSION WPNLIST(18),LAUNLIST(18),MLIST(270)
C
C     ***************************************************************
      COMMON/ESTOR/SCALET,SCALETI,TMAX,NWORDS,NDIMDATA,NEXTEVNT,
     1 MERGSW,INDATAP(320),OUTDATAP(320),SVDATAP(320),MEMTIME,
     2  TAPETIME(10),SVTIME(10),WTOSC(10)
C
C     ***************************************************************
C
      COMMON/EVENT/INDEV,INDF
C     INDEV = EVENT NUMBER
C     INDF = FORMAT NUMBER
C
C     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
C
      COMMON/FORMAT/JFORMAT(10)
      DATA(JFORMAT=I...,I500228,I60*168,2600148,2501209,I00J168)
C
C     ***************************************************************
C
      COMMON/FUTPRINT/IFUT
C     IFUT    = OPTION FLAG FOR PRINTING FUTIME
C
C     ***************************************************************
C
CUSE        FILABEL    28APR71    ***************************************
      COMMON/FILAREL/INIDENT,INRUNNO,INDATE,
     1    INFORM,INSECK,INTIME,INLNGTH,INCUMM(5)
CEND        FILABEL    ***************************************************
      DATA(JDATE = 8H JUNE 71)
      COMMON/HISTOUT/HHISTOUT(200)
      COMMON/IPRINT/IPRINT(60,
      TYPE LOGICAL IPRINT
      COMMON/IPS#ICH/IPS#1,IPS#2,IPS#3,IPS#4,IPS#5,IPS#6
```

```
     1,IPS47                                                            94000
      COMMON/ITP/ITP                                                    95000
      COMMON/KEYWORDS/KEYARRAY(20)                                      96000
      EQUIVALENCE (KEYARRAY(1),TSTAT),(KEYARRAY(2),TCOL),               97000
     1(KEYARRAY(3),TARDEFLO),(KEYARRAY(4),TARDEFHI),                    98000
     1(KEYARRAY(5),MIYDEF),                                             99000
     1(KEYARRAY(6),TVULN),(KEYARRAY(7),ZONE),(KEYARRAY(8),KEYTIN),      100000
     1(KEYARRAY(9),KEYNTA),(KEYARRAY(10),KEYOX),                        101000
     1(KEYARRAY(11),KEYOY),(KEYARRAY(12),IATTACK),                      102000
     1(KEYARRAY(13),IAREA),(KEYARRAY(14),ITERM),                        103000
     1(KEYARRAY(15),KDEFZON),(KEYARRAY(16),KDEFCMP)                     104000
     1            ,(KEYARRAY(17),IKEEP)                                 105000
      EQUIVALENCE (NAVOBL,KEYARRAY(18))                                 106000
      COMMON/KEYWRDS/KTAR,KZON(3)                                       107000
      TYPE INTEGER TSTAT,TCOL,TARDEFLO,TARDEFHI,TVULN,ZONE              108000
      COMMON/MYIDENT/MYIDENT                                            109000
      COMMON/MYLABEL/MYFORM,MYSECR,MYLNGTH,MYCOMM(5)                    109100
CUSE      NAMES     28APR71   ******************************************110000
      COMMON/NAMES/NAMESIDE(2),NAMCLS(15),NAMETYPE(250)                 1100
CEND      NAMES     ******************************************************110000
      DATA(NAMESIDE=4HBLUE,3HRED)                                       111000
      COMMON/NCOL/NCOL,MAXIND                                           112000
      COMMON/NOPRINT/NOPRINT                                            113000
      COMMON/NWORDOUT/NWORDOUT                                          114000
      DATA(NWORDOUT=0)                                                  115000
CUSE      PLANTS    28APR71   ******************************************116000
      COMMON/PLANTS/MLFIA(10),BLFIA(10),CLFIA(10),TBFIA(10),            1000
     1     BDFIA(10),ABFIA(10),NAFIA(10),SSFIA(10)                      2000
CEND      PLANTS    ******************************************************116000
      DATA(BDFIA=01000000000000008)                                     122000
      DATA(MLFIA=2101010202010202B,0101010101010103B,03047777777777778)  123000
      DATA(BLFIA=4101010102020202B,0201010101010101B,0101010101010102B,  124000
     1 02010106060605058,05057777777777778)                              125000
      DATA(CLFIA=1601010102010201B,0101010101070777B)                    126000
      DATA(TBFIA=1701010101010101B,0101010101010101B)                    127000
      DATA(ABFIA=1701010101010101B,0101010101010101B)                    128000
      DATA(NAFIA=1401010101010101B,0101010101017777778,8(0))             129000
      DATA(SSFIA = 01010000000000008)                                   130000
      COMMON/HEAD/HHOUR,NET,DELAY(2)                                    136000
CUSE      RECOV     28APR71   ******************************************137000
      COMMON/RECOV/IRECOV(50,4,2),TOFREC(50,4,2),NMORE(50,4,2),         1000
     1        NRES(50,4,2),LSHIFT                                       2000
CEND      RECOV     ******************************************************137000
      COMMON/REFUEL/NFTANK(100),NETANK(100)                             138000
CUSE      TANKER    28APR71   ******************************************139000
      COMMON/TANKER/TPLABT(40),TTMDEL(40),                              1000
     1     TAHRATE(40),ILINTT(40),IFUNCT(40)                            2000
CEND      TANKER    ******************************************************139000
      COMMON/TIME/TIME,FUTIME                                           140000
      COMMON/TWORD/ITWORD                                               141000
      COMMON/ZONES/AREA(63),ZDEFPOT(63),ZCCPOT(63),NPENZ(63),KILLZ(63),142000
     1 MAXZONE(2)                                                       143000
CUSE      NRCELL    22JUN71   ******************************************144000
      COMMON/19501/NRCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NRCELL    ******************************************************144000
      DATA(NXCELL = 12000),(NYCELL = 4000)                              145000
```

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```
      DIMENSION ITAPES(10)
      DATA(ITAPES = 1,2,3,4,7,8,9,10,0)
      DATA (SIDE = 1), (SIDEC = 1)

      NRCELL = 7010
      CALL PAGESKP
C     INITIALIZE ARRAYS
      DO 1 I=1,32
    1 INDATA(I)=OUTDATA(I)=0.
      DO 2  I = 1, NRCELL
    2 STATUS(I)=0.
      DO 3  I = 1, NYCELL
    3 COLAR(I)=0.
      DO 4 I=1,63
      NPENZ(I) = 0
    4 KILLZ(I) = 0
      DO 5 I = 1,160
      NAGZ(I) = 0
    5 TYD(I) = 0.
      DO 6 I=1,100
    6 NETANK(I) = NETANK(I) = 0
      DO 7 I=1,200
    7 NHISTOUT(I)=0
      DO 8 I = 1,1600
    8 IRECOV(I)=0
C     CALL FOR INITIALIZATION OF TAPE HANDLING PACKAGE
      MYIDENT = 8HSIMULATE
      NOPRINT = 1
      CALL INITAPE
C     SET UP LIST OF TAPES AVAILABLE FOR SPILLING AND INITIALIZE ESTOR
      CALL INITEV(ITAPES)
C     CALL FOR INITIALIZATION OF LIST MEMORY
      CALL INITLIST
C     CALL FOR MAKING OF PACKED ARRAY PACKING SPECIFICATION #CARDS
      ISTAT     = KEYMAKE(2,0,1)
      IKEEP     = KEYMAKE(2,2,1)
      ICOL      = KEYMAKE(2,3,1)
      NAVDBL    = KEYMAKE(2,5,1)
      TARDEFLC  = KEYMAKE(2,6,3)
      TARDEFNI  = KEYMAKE(2,9,3)
      IATTACK   = KEYMAKE(2,12,1)
      TVULN     = KEYMAKE(2,15,6)
      IAREA     = KEYMAKE(2,21,1)
      ITERM     = KEYMAKE(2,24,9)
      KDEFZON   = KEYMAKE(2,33,6)
      KDEFCMP   = KEYMAKE(2,39,3)
      ZONE      = KEYMAKE(2,42,6)
      KEYTIN    = KEYMAKE(2,34,14)
      KEYNTA    = KEYMAKE(2,22,12)
      KEYDA     = KEYMAKE(1,11,11)
      KEYDY     = KEYMAKE(1,0,11)
      KTAR      = KEYMAKE(2,0,15)
      KZON(1)   = KEYMAKE(2,15,6)
      KZON(2)   = KEYMAKE(2,21,6)
      KZON(3)   = KEYMAKE(2,27,6)
      CALL RDCARDS
```

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```
      IFUTX=IFUT
      IFUT=0
      CLAUNR = .04
C     SET ITP FOR LIBRARY TAPE AND CALL FOR READ IN OF THIS DATA
      ITP=7
      MYIDENT = 8H SIMTAPE
      CALL READIN
      CALL PAGESKP
C     CALL FOR BALLISTIC MISSILE STATUS SUMMARY
      CALL BMOSTAT
      CALL PAGESKP
C     ADD LISTOR. UNUSED PORTIONS OF STATUS AND COLAR TO LIST MEMORY
      IMAX = MAXIND + 1
      INDX=NMCELL+IMAX
      NMAX=NXCELL-(IMAX+5)
      CALL ADDMEM(INDX,NMAX,LINKM)
      IMAX=NCOL+1
      INDY=NMCELL+NXCELL+IMAX
      NMAX=NYCELL-(IMAX+5)
      CALL ADDMEM(INDY,NMAX,LINKM)
C     SET CURRENT TAPE TO CURRENT EVENT TAPE
      KPASS=1
   19 ITP = 6
      NOPRINT=1
      MYIDENT = 8HEVENTAPE
      CALL SETREAD
      NOPRINT=0
      MYIDENT = 8HSCRATCH
      IF(INFORM.EQ.JDATE)20,920
  920 PRINT 9020,INFORM,JDATE
 9020 FORMAT(//,22H EVENT TAPE FORMAT IS ,A8,11H SHOULD BE ,A8)
      STOP
   20 ITP = 6
C     READ INDATA BLOCKS
      CALL RDWCRD
      LEV=ITWCRD
      IF(ITWCRD .EQ. 0) 32,21
   21 CALL RDARRAY(INDATA,LEV)
C     TEST VEHICLE CLASS FOR PROPER PRINT AND PLANT SECTION
      IF(INDATA(7) .EQ. 5HNAVAL) 27,22
C     NAVY DBL EVENT
   27 FUTIME=DELAY(SIDE)+HHCUR
      IF(IPS-7) 17,18
   17 PRINT 29,(INDATA(I),I = 1,LEV)
   29 FORMAT(/7H INDATA,6I1,,2X,A8,3I10/2I10)
   18 CALL PLANTS(2*,LEV)
      GO TO 20
   22 IJK = ICLASS + 1
      GO TO (23,24,26,28,23),IJK
   23 PRINT 9023, ICLASS
 9023 FORMAT (//1 ,(2H *),24H TERMINATED ON ICLASS = ,O16,1X(2H *)//)
      CALL ABORT
      GO TO 32
C     CLASS 1 CONSISTS OF MISSILES - PRINT INDATA AND PLANT LAUNCHES
   24 FUTIME = DELAY(SIDE) + TMLAUN + HHCUR
      CALL RDARRAY(WPNLIST,NWPNS)
```

```
      CALL RDARRAY(LAUNLIST,NWPNS)
      CALL RDARRAY(MLIST,NTARG)
      LEV = 50 + NTARG
      CALL PLANTS(1,LEV)
      IF(IPSW1) 25,20
   25 CALL MSINPHIN
      GO TO 20
C     CLASS 2 CONSISTS OF BOMBERS  - PRINT INDATA AND PLANT LAUNCHES
   26 TLINT=TLINTH(ITYPE)
C     TRANSFER PKNAV TO NEW LOCATION
      INDATA(18)=INDATA(6)
      INDATA(6)=0
      CALL RDARRAY(TINC,IHT)
      CALL RDARRAY(INDP,IHT)
      CALL RDARRAY(INDE,IHT)
      CALL RDARRAY(IWTYP,JWT)
      CALL RDARRAY(XDGZ,JWT)
      CALL RDARRAY(YDGZ,JWT)
      CALL RDARRAY(ZDGZ,JWT)
      GO TO 30
C     CLASS 3 CONSISTS OF TANKERS  - PRINT INDATA AND PLANT LAUNCHES
   28 TLINT=TLINTT(ITYPE)
      CALL RDARRAY(TINC,IHT)
      CALL RDARRAY(INDP,IHT)
      CALL RDARRAY(INDE,IHT)
C      CLAUNR IS DELAY FOR COMPLETE LAUNCH OF BOMBER SEE THEO CLAUN
    3 FUTIME = TINC(1) + DELAY(SIDE) + TLINT*INDV + CLAUNR + HHOUR
      TINC(2) = TINC(2) - CLAUNR
      IF(TINC(2) .LT. 0.)301,309
  301 JE = 2
      DO 302 I = 3,NPLAN
      TINC(I) = TINC(I) + TINC(JE)
      TINC(JE) = 0.0
      JE = JE + 1
      IF(TINC(JE) .LT. 0.)302,309
  302 CONTINUE
  309 CONTINUE
      NALT=IHT-NPLAN
C     INVERT HISTORY AND WEAPON TABLES
      DO 35 I=1,IHT
      TINCO(I)=TINC(IHT-I+1)
      INDPO(I)=INDP(IHT-I+1)
      INDEO(I)=INDE(IHT-I+1)
   35 CONTINUE
      DO 36 J=1,JWT
      IWTYPO(J)=IWTYP(JWT-J+1)
      XDGZO(J)=XDGZ(JWT-J+1)
      YDGZO(J)=YDGZ(JWT-J+1)
      ZDGZO(J)=ZDGZ(JWT-J+1)
   36 CONTINUE
      CALL PLANTS(2,20)
      IF(ICLASS .EQ. 2 .AND. IPSW2 .EQ. 1) 31,40
   40 IF(ICLASS .EQ. 3 .AND. IPSW3 .EQ. 1) 31,20
   31 CALL RTINPHIN
      GO TO 2
   32 IS = SIDEO
```

```
      NR = 5
      NRX = 4 *NR
      CALL RDARRAY(IRECOV(1,1,IS),NRX)
      CALL RDARRAY(NRES(1,1,IS),NRX)
      CALL RDARRAY(TOFREC(1,1,IS),NRX)
      DO 321 IR = 1,NR
      DO 321 JR = 1,4
      NMORE(IR,JR,IS) = NRES(IR,JR,IS)
  321 CONTINUE
  320 CONTINUE
      CALL TERMTAPE
      IF(IPRINT(46)) 38,39
   38 PRINT 3001,NAMESIDE(IS),(I,I,I,I = 1, 4)
 3001 FORMAT(///2X,A8/9X,4(3X,6HIRECOV,4X,5HNMORE,3X,6HTOFREC)/9X,12I9)
      DO 37 K = 1, NR
      IF(IRECOV(K,1,IS)) 42,39
   42 PRINT 3002,K,(IRECOV(K,I,IS),NMORE(K,I,IS),
     1          TOFREC(K,I,IS), I = 1, 4)
 3002 FORMAT(I9,4(2I9,F9.4))
   37 CONTINUE
   39 CONTINUE
      IF(KPASS .EQ. NET) 34,33
   33 WRITE(44,9033)
 9033 FORMAT(45H REMOVE LTN 6 REPLACE WITH SECOND EVENT TAPE  )
      PAUSE
      KPASS = KPASS + 1
      GO TO 19
   34 CONTINUE
      PRINT 3291
 3291 FORMAT(18H END OF EVENT LIST)
C     RESET IFUT
      IFUT=IFUTX
C     PUT HISTORY TAPE IN WRITE STATUS
      LTP=5
      MYIDENT = 8H HISTAPE
      MYFORM = 8H JUNE 71
      CALL SETWRITE
      NOPRINT = 0
      MYIDENT = 8HSCRATCH
C     PLANT SECTOR STATUS
      FUTIME = 0
      CALL PLANTS(6,0)
C     PLANT END GAME
      FUTIME = TMAX - 0.01
      INDEV = 22
      INDF = 8
      PRINT 3292
      CALL PLANT
 3292 FORMAT(12H CALL DONEXT)
      CALL PAGESKP
C     CALL DONEXT TO START THE SIMULATION - CONTROL REMAINS IN DONEXT
      CALL DONEXT
      STOP
      END
```

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```
                                        IDENT     SIMULATE
PROGRAM LENGTH                  01531
ENTRY POINTS     SIMULATE       00160
BLOCK NAMES
                 AGZSUM         00500
                 AREADAT        00145
                 BCMREM         01060
                 BRKPNT         00447
                 DATTA          00001
                 EDATA          01200
                 ESTOR          01746
                 EVENT          00002
                 FORMAT         00012
                 FUTPRINT       00001
                 FILABEL        00014
                 HISTOUT        00310
                 IPRINT         00002
                 IPSWITCH       00007
                 ITP            00001
                 KEYWORDS       00024
                 KEYWRDS        00004
                 MYIDENT        00001
                 MYLABEL        00010
                 NAMES          00413
                 NCOL           00002
                 NOPRINT        00001
                 NWORDOUT       00001
                 PLANTS         00120
                 READ           00004
                 RECOV          03101
                 REFUEL         00310
                 TANKER         00310
                 TIME           00002
                 TWORD          00001
                 ZONES          00475
                 19501          54731
EXTERNAL SYMBOLS
                 Q9QENTRY
                 THEND.
                 Q8QSTOPS
                 Q1Q04100
                 Q3Q00040
                 Q8QPAUSE
                 Q9QDICT.
                 PAGESKP
                 INITAPE
                 INITEV
                 INITLIST
                 KEYMAKE
                 RDCARDS
                 READIN
                 BMDSTAT
                 ADDMEM
                 SETREAD
                 RDWORD
                 RDARRAY
```

```
PLANTS
ABORT
MSINPRIN
BTINPRIN
TERMTAPE
SETWRITE
PLANT
DONEXT
STM.
Q-VSINGL.
```

```
C00062  ABFIA      00016
X00025  ABORT      00652
C00240  ABRATE
X00020  ADDMEM     00505  00522
C00000  AINT
C00000  AREA
C00472  B
C00050  BDFIA      00016
C00012  BLFIA      00016
X00017  BMDSTAT    00471
X00027  BTINPRIN   01124
C00500  CEPR
P01504  CLAUNB     00460  00764  00770
C00024  CLFIA      00016
P01352  CNVRTI.    00552  00554  00621  00647  01202  01207  01210  01211  01233  01240  01241
                   01242
C45071  COLAR      00217  00220
P01505  COUNT.     00204  00205  00215  00216  01027  01030  01057  01060
P00020  CRFMT.     00557  00630  00652  01217  01250  01265  01301  01342
C00002  DELAY      00602  00602  00656  00656  00762  00763
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCB
C00007  DHCBC
P00001  DICT.      00162  00164  00170  00273  00275  00300  00302  00307  00314  00321  00326
                   00333  00340  00345  00352  00357  00364  00371  00378  00403  00410  00415
                   00422  00427  00434  00441  00446  00453  00466  00470  00472  00474  00506
                   00523  00535  00547  00556  00561  00565  00574  00611  00627  00631  00644
                   00651  00653  00663  00666  00671  00677  00704  00715  00720  00723  00726
                   00731  00734  00737  00746  00751  00754  01111  01125  01137  01143  01147
                   01170  01176  01216  01230  01247  01261  01264  01267  01275  01300  01312
                   01322  01334  01337  01341  01343  01345  01350
X00033  DONEXT     01344
P01450  ENDING.    00561  01350
P00000  EXIT.      01450
C00526  EXTRA
P00020  FORMAT.    00200  00463  00532  00540  00576  01305  01307  01315
C00001  FUTIME     00603  00604  00661  00661  00765  00766  01317  01320  01326  01326
P00557  GGUJ000.   00545
P00630  GGUU001.   00607
P00652  GGUU002.   00642
P01217  GGUU003.   01174
P01250  GGUU004.   01226
P01265  GGUU005.   01257
P01301  GGUU006.   01273
P01340  GGUU007.   01332
C00000  HHOUR      00603  00660  00660  00764  00765
P01506  I          00172  00174  00201  00205  00212  00216  00223  00225  00233  00235  00243
                   00245  00252  00254  00260  00262  00614  00617  00622  00776  01001  01014
                   01023  01030  01032  01037  01044  01052  01204  01206  01210  01211  01212
                   01234  01243  01365
C00513  IALERT
```

```
C00013  IALERTC
C00517  IALT
C00017  IALTC
C00014  IAREA     00355
C00013  IATTACK   00343
C00001  IBASE
C00511  ICLASS    00634  00634  00646  00646  01113  01113  01120  01120
C00011  ICLASSC
P01115  IF00001.
P01122  IF00002.
C00740  IFUNCH
C00240  IFUNCT
C00000  IFUT      00454  00454  00456  00457  01302  01302
P01507  IFUTX     00455  01301
P01510  IGOTO.    00636
C00524  IHT       00716  00721  00724  00747  00752  00755  01020  01020  01025  01025  01031
                  01031  01036  01043
C00024  IHTC
P01511  IJK       00636
C00020  IKEEP     00312
P01512  IMAX      00477  00501  00502  00513  00515  00516
P01353  IN00006.  01134  01443
P01354  IN00007.  01157  01373  01403  01405  01417  01444
P01355  IN00011.  01223  01421  01433  01445
P01356  IN00012.  01236  01357  01371  01421  01432  01446
C00501  INBASE
C00007  INCOMM
C00500  INDATA    00176  00575  00576  00576  00620  00620  00711  00711  00712  00713
C00007  INDATAP
C00002  INDATE
C00036  INDREGCL
C00055  INDREGTY
C00772  INDE      00724  00755  01047  01047
C00272  INDEC     01450
C00000  INDEV     01327  01330
C00001  INDF      01331
C00002  INDM
C00652  INDP      00721  00752  01042  01042
C00152  INDPC     01043
C00502  INDV      00760  00760
P01513  INDX      00501  00507
P01514  INDY      00516  00524
C00003  INFORM    00542  00542  00551  00551
C00000  INIDENT
X00011  INITAPE   00272
X00012  INITEV    00274
X00013  INITLIST  00277
C00006  INLNGTH
C00001  INRUNNO
C00004  INSECR
C00503  INTAR
C00005  INTIME
C00514  INZONE
C00014  INZONC
```

```
C00120  ICVERLAP
C00000  IPRINT   01172
C00000  IPSW1    00701   00701
C00001  IPSW2    01115   01115
C00002  IPSW3    01122   01122
C00003  IPSW4
C00004  IPSW5
C00005  IPSW6
C00006  IPSW7    00605   00605
P01515  IR       01151   01163   01400
C00000  IRECOV   00263   00264   01135   01140   01224   01224   01237   01237
C00512  IREG
C00012  IREGS
P01516  IS       01130   01200   01437
C00000  ISIZE    00015
P00003  ITAPES   00420   00276
C00015  ITERM    00362
C00000  ITP      00461   00462   00527   00530   00562   00563   01303   01304
C00000  ITWORD   00566   00566   00570   00570
C00510  ITYPE    00706   00706   00742   00742
C00010  ITYPC
C01112  INTYP    00727   01065   01065
C00412  INTYPC   01080
P00175  .1
P00607  .17      00605
P00630  .18      00606
P00527  .19      01272
P00206  .2
P00562  .20      00544   00633   00702   00705   01121   01123   01126
P00573  .21      00571
P00634  .22      00600
P00642  .23      00637
P00655  .24      00640
P00703  .25      00702
P00706  .26      00641
P00601  .27
P00742  .28      00541
P00217  .3
P00756  .30      00741
P00774  .301
P01014  .302
P01020  .309     00772   00773   01013   01013
P01124  .31      01117
P01127  .32      00572   00654
P01163  .320
P01162  .321
P01257  .33      01256
P01273  .34      01256
P01051  .35
P01106  .36
P01250  .37
P01174  .38      01173
P01254  .39      01173   01225
P00230  .4
```

```
P01120  .40        01114  01116
P01226  .42        01225
P00240  .5
P00246  .6
P00255  .7
P00263  .8
P00545  .92)       00544
P01452  .ERASER.   00503  00504  00517  00520
P00020  ..100000   00266
P00021  ..100001   00463
P00022  ..100002   00532
P00023  ..100003   00540
P00040  ..100004   00577
P00150  ..100005   01305
P00151  ..100006   01307
P00152  ..100007   01315
P00041  ..29       00612
P00075  ..3001     01177
P00122  ..3002     01231
P00142  ..3291     01276
P00153  ..3292     01335
P00024  ..9020     00550
P00054  ..9023     00645
P00131  ..9033     01262
P01451  .NSTIFF.   01034  01034  01041  01041  01046  01046  01064  01064  01071  01071  01076
                   01076  01103  01103
P01140  .Z00001.   01135
P01144  .Z00002.   01141
P01150  .Z00003.   01145
P01517  J          01054  01057  01062  01067  01074  01101  01107
P00015  JDATE      00543  00553
P01520  JE         00775  01003  01007  01010  01010
C00000  JFORMAT    00015
C00003  JNTAR
P01521  JR         01155  .1413
C00525  JWT        00727  00732  00735  00740  01054  01055  01061  01061  01066  01073  01100
C00025  JWTC
P01522  K          01220  01232  01250  01427
C00017  KDEFCMP    00374
C00016  KDEFZCN    00367
C00000  KEYARRAY
C00011  KEYDX      00420
C00012  KEYDY      00425
X00014  KEYMAKE    00301  00306  00313  00320  00325  00332  00337  00344  00351  00356  00363
                   00370  00375  00402  00407  00414  00421  00426  00433  00440  00445
C00010  KEYNTA     00413
C00007  KEYTIN     00406
C00374  KILLZ      00230  00231
P01523  KPASS      00526  01254  01270  01271
C00144  KRAD
C00000  KTAR       00432  .00432
C00001  KZCN       00437  00444  00451
C00540  LAUNLIST   00667
P01524  LEV        00567  00575  00624  00632  00675  00700
```

C00001	LINKM	00510	00525									
C03100	LSHIFT											
C00001	MAXIND	00475	00475									
C00473	MAXZONE											
C01707	MEMTIME											
C00006	MERGSW											
C00524	MHT											
C00004	MISDEF											
C00000	MLFIA	00016										
C00562	MLIST	00672										
X00026	MSINPRIN	00703										
C00525	MWT											
C00003	MYCOMM											
C00000	MYFORM	01310	01310									
C00000	MYIDENT	00267	00267	00464	00464	00533	00533	00541	00541	01306	01306	01316
		01316										
C00002	MYLNGTH											
C00001	MYSECR											
C00074	NAFIA	00016										
C00000	NAGZ	00236	00237									
C00530	NALT	01021										
C00030	NALTC											
C00002	NAMCLS											
C00000	NAMESIDE	00016	01201	01201								
C00021	NAMETYPE											
C00021	NAVOBL	00324										
C00000	NBCELL	00165	00166	00477	00500	00513	00514					
C00017	NBLUETYP											
C00520	NCM											
C00020	NCMC											
C00000	NCOL	00511	00511									
C00515	NDHI											
C00015	NDHIC											
C00004	NDIMDATA											
C00516	NDLC											
C00016	NDLCC											
C00001	NET	01255	01255									
C00144	NETANK	00246	00247									
C00005	NEXTEVNT											
C00000	NFTANK	00247										
C00000	NH1STOUT	00255	00256									
C00074	NLRR											
P01525	NMAX	00504	00507	00521	00524							
C01440	NMORE	01161	01241									
C00000	NOPRINT	00270	00271	00531	00531	00536	00537	01313	01314			
C00275	NPENZ	00226	00227									
C00530	NPLAN	01016	01016	01021								
P01526	NR	01132	01133	01165	01252							
C02260	NRES	01141	01144	01160	01160							
P01527	NRX	01134	01140	01144	01150							
C00515	NTARG	00672	00673	00674								
C00000	NTYPECUM											
C00000	NWORDOUT	00016										
C00003	NWORDS											

```
C00514  NWPNS      00664  00667
C00504  NWTYP
C00004  NWTYPC
P00016  NXCELL     00203  00503  00515
P00017  NYCELL     00214  00520
C00000  OUTDATA    00175  00176
C00507  OUTDATAP
P01357  P00000.U   01362
P01373  P00002.U   01375
P01405  P00003.U   01410
P01421  P00004.U   01424
X00010  PAGESKP    00167  00467  00473  01342
C00521  PKNAV
C00021  PKNAVC
C00000  PLART
X00032  PLANT      01340
X00024  PLANTS     00630  00676  01110  01321
C00360  PRABT
X00004  Q1W04100   00757
X00005  Q3U00040   01171
X00007  Q8UDICT.   00000  00161
X00001  Q8UENTRY   00163
X00006  Q8UPAUSE   00266
X00003  Q8USTOPS   00350  01347
X00035  QNSINGL.   01351
X00023  RDARWAY    00573  00662  00665  00670  00714  00717  00722  00725  00730  00733  00736
                   00745  00750  00753  01136  01142  01146
X00015  RDCARDS    00452
X00022  RDWORD     00564
X00016  READIN     00465
C00000  SCALET
C00001  SCALETI
X00021  SETREAD    00534
X00031  SETWRITE   01311
C00500  SIDE       00620  00601  00601  00655  00655  00762
C00000  SIDEC      C00501 01127  01127
P00160  SIMULATE   00160
C00522  SPARE
C00022  SPC
C00106  SSFIA      00016
C15531  STATUS     00206  00207
X00034  STM.       00546  00610  00643  01175  01227  01260  01274  01333
C01207  SVDATAP
C01722  SVTIME
C00531  TABCHT
C00031  TABCHTC
C00120  TABRATE
C01710  TAPETIME
C00003  TANDEFHI   00336
C00002  TANDEFLO   00331
C00036  TBFIA      00016
C00001  TCOL       00317
X00030  TERMTAPE   01167
X00002  THEND.     00555  00626  00650  01215  01246  01263  01277  01336
```

```
C00000  TIME
C00532  TINC      00716  00747  00761  00761  00766  00767  00770  00771  01002  01002  01004
                  01004  01005  01006  01011  01011  01035  01035
C00032  TINCC     01036
P01530  TLINT     00710  00744  00756
C00620  TLINTB    00707  00707
C00170  TLINTT    00743  00743
C00002  TMAX      01324  01324
C00120  TMOEL
C00503  TMLAUN    00657  00657
C00620  TOFREC    01145  01150  01242
C00000  TPLART
P00211  TS00002.  00204
P00222  TS00003.  00215
P00624  TS00011.  00616
P01016  TS00012.  01000
P01053  TS00013.  01026
P01110  TS00014.  01056
P01195  TS00015.  01153
P01252  TS00020.  01222
C00000  TSTAT     00305  00305
C00050  TT40EL
C00005  TVOLU     00350
C00240  TYU       00240  00241
P01364  UP00003.  00173  00202  00213  00224  00234  00244  00253  00261  00615  00623  00777
                  01015  01024  01205  01213  01235  01244  01360  01365  01366  01367  01371
                  01372
P01377  UP00002.  01152  01164  01373  01400  01401  01402  01404  01404
P01412  UP00003.  01156  01406  01413  01414  01415  01417  01420
P01426  UP00004.  01221  01251  01422  01427  01430  01431  01434  01434
P01436  UP00005.  01131  01437  01440  01441  01447  01447
C00516  =PNLIST   01004
P00175  =S00001.  00177
P00206  =S00002.  00211
P00217  =S00003.  00221
P00226  =S00004.  00232
P00236  =S00005.  00242
P00246  =S00006.  00250
P00255  =S00007.  00257
P00263  =S00010.  00265
P00617  =S00011.  00625  00625
P01001  =S00012.  01017  01017
P01031  =S00013.  01052
P01061  =S00014.  01107
P01154  =S00015.  01166  01166
P01160  =S00016.  01192
P01206  =S00017.  01214
P01223  =S00020.  01253  01253
P01236  =S00021.  01245
C01734  =TCCC
C01126  XDOZ      00732  01072  01072
C00426  XDOZC     01073
C00026  XX
C01142  YDOZ      00735  01077  01077
```

```
C00442  YDGZC     01100
C00176  ZCCPCT
C00077  ZDEFPCT
C01156  ZDGZ      00740   01104   01104
C00456  ZDGZC     01105
C00006  ZCNE      00401
   00555 SYMBOLS
```

```
      SUBROUTINE AATTRIT                                                1000
CSUBR     AATTRIT   26AUG70  ****************************************  1300
C     RECORDS KILL BY AREA ATTRITION                                    2000
CUSE      EDATAB    4JAN71   ****************************************  3000
      COMMON/EDATA/SIDEC,IBASE,INOM,JNTAR,NWTYPC,DGXC,DGYC,DHCBC,ITYPC,  1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),  2000
     2IHTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),       3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(320),SIDE,  5000
     4 INBASE,INOV,INTAR,NWTYP,DGX,DGY,DHCB,ITYPE,ICLASS,IREG,IALERT,    6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,    7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),     8000
     7ZDGZ(12),INDATA(320)                                               9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                  11000
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)                     12000
      TYPE INTEGER DGX,DGY,DHCB,XDGZ,YDGZ,ZDGZ                          13000
      TYPE INTEGER DGXC,DGYC,DHCBC,XDGZC,YDGZC,ZDGZC                    14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                   15000
CEND      EDATAB    ****************************************            3000
      COMMON/ZONES/AREA(63),ZDEFPCT(63),ZCCPCT(63),NPENZ(63),KILLZ(63),  4000
     1 MAXZONE(2)                                                        5000
                                                                         6000
    1 CONTINUE                                                           7000
C     RECORD CALL TO AATTRIT                                             8000
      CALL HIST(7,1)                                                     9000
C     RECORD BOMBER KILL BY AREA DEFENSES                               10000
      CALL HIST(7,2)                                                    11000
C     DECREASE NUMBER OF PENETRATORS IN CURRENT ZONE                    12000
    7 NPENZ(INZONE)=NPENZ(INZONE) - 1 - NDHI - NDLO                     13000
C     INCREASE NUMBER KILLED IN CURRENT ZONE                            14000
      KILLZ(INZONE) = KILLZ(INZONE) + 1                                 15000
      END                                                               16000
```

```
                                        IDENT     AATTRIT
PROGRAM LENGTH                  00031
ENTRY POINTS     AATTRIT        00003
BLOCK NAMES
                 EDATA          01200
                 ZONES          00475
EXTERNAL SYMBOLS
                 DADDICT.
                 HIST
```

```
P00003  AATTRIT     00003
C00000  AREA
C00472  B
P00024  BEGIN.      00024
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCH
C00007  DHCHC
P00001  DICT.       00005   00010   00013
P00025  ENDING.     00006   00023
P00000  EXIT.       00025
C00526  EXTRA
X00002  HIST        00007   00012
C00513  IALERT
C00013  IALERTC
C00517  IALT
C00017  IALTC
C00001  IBASE
C00511  ICLASS
C00011  ICLASSC
C00524  IHT
C00024  IHTC
C00501  INBASE
C00500  INDATA
C00772  INDE
C00272  INDEC
C00002  INDM
C00652  INDP
C00152  INDPC
C00502  INDV
P00024  INITIAL.    00006
C00503  INTAR
C00514  INZONE      00015   00015
C00014  INZONC
C00512  IREG
C00012  IREGC
C00510  ITYPE
C00010  ITYPC
C01112  IWTYP
C00412  IWTYPC
P00007  .1
P00015  .7
C00003  JNTAR
C00525  JWT
C00025  JWTC
C00374  KILLZ       00022   00023
C00473  MAXZONE
C00524  MHT
C00525  MWT
C00530  NALT
C00030  NALTC
C00520  NCH
```

```
C00020  NCMC
C00515  NDMI        00017   00020
C00015  NDMIC
C00516  NDLC        00020
C00016  NDLCC
C00275  NPENZ       00016   00016   00021   00021
C00530  NPLAN
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PKNAV
C00021  PKNAVC
X00001  QBWDICT.    00000   00004
C00500  SIDE
C00000  SIDEC
C00522  SPARE
C00022  SPC
C00531  TARGRT
C00031  TARGRTC
C00532  TINC
C00032  TINCC
C01126  XDGZ
C00426  XDGZC
C00026  XK
C01142  YDGZ
C00442  YDGZC
C00176  ZCCPOT
C00077  ZDEFPOT
C01156  ZDGZ
C00456  ZDGZC
   00124 SYMBOLS
```

```
      SUBROUTINE ADDMEM(IND,NWDS,IARR)
CSUBR     ADDMEM     11JUN71   ******************************************
C     ADD NWDS OF ARRAY IARR TO LIST MEMORY.
C     IND = STARTING INDEX
      COMMON/LISTMEM/IAVAIL
      DIMENSION IARR(1)
      NC=0   ; I=IND
      IF (NWDS - 5) 4, 1, 1
    1 IARR(I)=I+5
      NC=NC+1
      IF(NC-NWDS)2,3,3
    2 I=I+5
      GO TO 1
    3 IARR(I) = IAVAIL
      IAVAIL=IND
    4 RETURN
      END
```

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```
                                        IDENT     ADDMEM

PROGRAM LENGTH                  00111
ENTRY POINTS     ADDMEM         00003
BLOCK NAMES
                 LISTMEM        00001
EXTERNAL SYMBOLS
                 QBQDICT.
```

```
P00003  ADDMEM     00003
P00037  BEGIN.     00071  00077  00103
P00001  DICT.      00005  00042  00043
P00072  ENDING.    00006  00036  00037  00040  00040  00041  00041
P00030  EXIT.      00075
P00011  FP00001.   00051  00052
P00013  FP00002.   00057  00060
P00020  FP00003.   00065  00066
P00023  FP00004.   00061  00062
P00033  FP00005.   00067  00070
P00034  FP00006.   00053  00054
P00106  GETPL.     00044  00055
P00076  GETPU.     00047  00063  00102
P00107  I          00012  00016  00017  00026  00027  00032
P00003  IAHR       00020  00033
C00000  IAVAIL     00031  00031  00035  00035
P00003  IN7        00011  00034
P00037  INITIAL.   00076
P00016  .1         00014  00030
P00026  .2         00024
P00031  .3         00024  00025
P00036  .4         00015
P00003  NRADS      00013  00023
P00110  NC         00016  00021  00022
P00055  PF00002.   00050
P00063  PF00003.   00055
P00071  PF00004.   00064
X00001  QBADICT.   00000  00004
   00034 SYMBOLS
```

```
      SUBROUTINE AGZSUM                                                 1000
CSUBR     AGZSUM    28APR71   ******************************************  34000
      DATA(NAMTOT=5HTOTAL)                                              2000
CUSE      AGZSUM    28APR71   ******************************************  3000
      COMMON/AGZSUM/NAGZ(2,80),TYD(2,80)                                1000
CEND      AGZSUM    ******************************************************  3000
CUSE      HRKPNT    28APR71   ******************************************  5000
      COMMON/HRKPNT/NTYPECUM(15),NBLUETYP(15),INDBEGCL(15),INDBEGTY(250)  1000
CEND      HRKPNT    ******************************************************  5000
CUSE      NAMES     28APR71   ******************************************  5100
      COMMON/NAMES/NAMESIDE(2),NAMCLS(15),NAMETYPE(250)                 1000
CEND      NAMES     ******************************************************  5100
                                                                        6000
      PRINT 100                                                         7000
      K = 1                                                             8000
      N=0 $ Y=0.                                                        9000
      IAM = 1 $ IEM = NBLUETYP(1)                                       10000
      IRH = 1 $ IEH = NBLUETYP(2)                                       11000
      NMT = NTYPECUM(1)                                                 12000
   10 NTM=NTH=NF=0 $ YTM=YTH=YT=0.                                      13000
C     MISSILES                                                          14000
      PRINT 101                                                         15000
      PRINT 102                                                         16000
      DO 1 I = IAM,IEM                                                  17000
      PRINT 103,NAMETYPE(I),NAGZ(1,I),TYD(1,I)                          18000
      NTM = NTM + NAGZ(1,I)                                             19000
    1 YTM = YTM + TYD(1,I)                                              20000
      PRINT 104, NAMTOT,NTM,YTM                                         21000
      PRINT 105                                                         22000
C     BOMBERS                                                           23000
      DO 2 I = IRH,IEH                                                  24000
      IJCC =I + NMT                                                     25000
      PRINT 103, NAMETYPE(IJCC ),NAGZ(2,I),TYD(2,I)                     26000
      NTH = NTH + NAGZ(2,I)                                             27000
    2 YTH = YTH + TYD(2,I)                                              28000
      PRINT 104, NAMTOT,NTH,YTH                                         29000
      NT = NTM + NTH                                                    30000
      YT = YTM + YTH                                                    31000
      PRINT 104, NAMTOT,NT,YT                                           32000
      N = N + NT                                                        33000
      Y = Y + YT                                                        34000
      IF(K.EQ.1) 3,6                                                    35000
C     STILL NED TO DO                                                   36000
    3 K = 2                                                             37000
      IRM=IEM+1 $ IEM=NMT                                               38000
      IRH=IEH+1 $ IEH=NTYPECUM(2)-NMT                                   39000
      PRINT 106                                                         40000
      GO TO 10                                                          41000
C     BOTH SIDES DONE                                                   42000
    6 PRINT 107                                                         43000
      PRINT 104, NAMTOT,N,Y                                             44000
  100 FORMAT(1H1,20X,25H DELIVERED WEAPON SUMMARY,//,10X,               45000
     1 13H BLUE WEAPONS)                                                46000
  101 FORMAT(//,25X,5H TYPE,8X,9H WARHEADS,10X,9H MEGATONS)             47000
  102 FORMAT(//,15X,9H MISSILES)                                        48000
  103 FORMAT(25X,A8,5X,I6,12X,F8.1)                                     49000
```

```
104 FORMAT (39X,6(1H=),12X,8(1H=),/,25X,A6,6X,I6,12X,F8.1)          50000
105 FORMAT (//,15X,8H BOMBERS)                                      51000
106 FORMAT(5(/),10X,12H RED WEAPONS)                                52000
107 FORMAT(5(/),10X,14H TOTAL IN GAME)                              53000
    END                                                             54000
```

```
                                        IDENT     AGZSUM
PROGRAM LENGTH                  00447
ENTRY POINTS      AGZSUM        00133
BLOCK NAMES
                  AGZSUM        00500
                  BRKPNT        00447
                  NAMES         00413
EXTERNAL SYMBOLS
                  THEN.
                  QHQDIFT.
                  STH.
                  UNSIGNL.
```

P00133	AGZSUM	00133										
P00423	BEGIN.	00424										
P00406	CHVRTI.	00214	00217	00220	00242	00243	00244	00270	00273	00274	00316	00317
		00320	00333	00334	00335	00377	00400	00401				
P00004	CREMT.	00404	00404	00404	00404	00404	00404	00404	00404			
P00001	DICT.	00135	00141	00144	00170	00173	00176	00201	00210	00222	00240	00246
		00251	00254	00265	00276	00314	00322	00331	00337	00357	00362	00366
		00371	00374	00403								
P00425	ENDING.	00136	00404	00423								
P00000	EXIT.	00426										
P00004	FORMAT.											
P00145	GGG0000.	00137										
P00174	GGG0001.	00166										
P00202	GGG0002.	00174										
P00223	GGG0003.	00206										
P00247	GGG0004.	00236										
P00255	GGG0005.	00247										
P00277	GGG0006.	00263										
P00323	GGG0007.	00312										
P00340	GGG0010.	00327										
P00363	GGG0011.	00355										
P00372	GGG0012.	00364										
P00404	GGG0013.	00372										
P00427	I	00203	00212	00232	00256	00261	00306	00416				
P00430	IBM	00154	00255	00352								
P00431	IBM	00151	00202	00347								
P00432	IBM	00155	00310	00351	00354							
P00433	IBM	00153	00234	00346	00350							
P00434	IJCC	00252	00267									
P00407	INO0002.	00215	00224	00230	00271	00300	00304	00410	00421			
C00036	INOHEGCL											
C00055	INOHEGTY											
P00423	INITIAL.	00135										
P00161	.10	00363										
P00227	.1											
P00303	.2											
P00345	.3											
P00364	.6	00344										
P00004	..100	00142										
P00023	..101	00171										
P00041	..102	00177										
P00050	..103	00211	00266									
P00060	..104	00241	00315	00332	00375							
P00103	..105	00252										
P00111	..106	00360										
P00122	..107	00367										
P00435	N	00146	00343	00346								
P00436	N	00147	00340	00341	00400							
C00000	NAGZ	00216	00216	00224	00225	00272	00272	00300	00301			
C00002	NAMCLS											
C00000	NAMESIDE											
C00021	NAMETYPE	00213	00213	00267	00270							
P00003	NAMTOT	00242	00316	00323	00376							
C00017	NBLUETYP	00151	00152	00154	00155							

```
P00437  NMT        00160  00262  00350  00354
P00440  NT         00162  00324  00334  00341
P00441  NTH        00162  00277  00302  00317  00324
P00442  NT4        00163  00223  00226  00243  00323
C00000  NTYPECUM   00156  00157  00352  00353
P00410  P00000.0   00413
X00002  QBADICT.   00000  00134
X00004  QNSINGL.   00405
X00003  STM.       00140  00167  00175  00207  00237  00250  00264  00313  00330  00356  00365
                   00373
X00001  THENO.     00143  00172  00200  00221  00245  00253  00275  00321  00336  00361  00370
                   00402
P00234  TS00001.   00205
P00310  TS00002.   00205
C00240  TYO        00220  00230  00231  00274  00304  00305
P00415  UPC0000.   00204  00233  00257  00307  00411  00416  00417  00420  00422  00422
P00206  WS00001.   00235  00235
P00261  WS00002.   00311  00311
P00443  Y          00150  00342  00343  00401
P00444  YT         00164  00326  00335  00342
P00445  YT6        00164  00303  00306  00320  00325
P00446  YT4        00165  00227  00232  00244  00320
   00107 SYMBOLS
```

```
      SUBROUTINE ALAUN                                                  1000
CSUBR     ALAUN     2HAPR71   ***********************************      14000
C     TESTS FOR SUCCESSFUL BOMBER LAUNCH OF AN AIR-TO-SURFACE MISSILE    2000
CUSE      ASMS      2HAPR71   ***********************************       3000
      COMMON/ASMS/PLAHORT(20),CEPA(20)                                  1000
CEND      ASMS      ***********************************                3000
CUSE      EDATAH    6JAN71    ***********************************       4000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHDHC,ITYPC,  1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),  2000
     2IHTC,JATC,XX(2),WALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),       3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(320),SIDE,  5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHDB,ITYPE,ICLASS,IREG,IALERT,    6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,    7000
     5TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),     8000
     7ZDGZ(12),INDATA(320)                                              9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                 11000
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)                    12000
      TYPE INTEGER DGX,DGY,DHDB,XDGZ,YDGZ,ZDGZ                         13000
      TYPE INTEGER DGXC,DGYC,DHDBC,XDGZC,YDGZC,ZDGZC                   14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                  15000
CEND      EDATAH    ***********************************                4000
      COMMON/TIME/TIME,FUTIME                                           5000
                                                                        6000
    1 CONTINUE                                                          7000
      CALL HIST(1,1)                                                    8000
C     GET ASM TYPE FROM BOMBER HISTORY TABLE, TEST FOR ASM LAUNCH ABORT  9000
      JTYPE = INDP(IHT)                                                10000
    2 IF (PLAHORT(JTYPE) .LE. RANF(-1)) 4,3                            11000
C     RECORD ASM LAUNCH ABORT                                          12000
    3 CALL HIST(1,2)                                                   13000
      GO TO 95                                                         14000
C     MOVE ASM INDATA TO OUTDATA PRIOR TO PLANTING ASM LOCAL ATTRITION 15000
    4 IHTC = JWTC = 1                                                  16000
      SIDEC = SIDE                                                     17000
      IBASE = INBASE                                                   18000
      INDM = INDV                                                      19000
      ITYPC = ITYPE                                                    20000
      ICLASSC = 4                                                      21000
      NCMC = JTYPE                                                     22000
      IALTC = 1                                                        23000
      IREGC = IREG                                                     24000
      IALERTC = IALERT                                                 25000
      NDHIC = 0                                                        26000
      NDLOC = 1                                                        27000
      PKNAVC=PKNAV                                                     28000
      INDPC(1) = INDP(IHT-1)                                           29000
      INDEC(1) = 4                                                     30000
      IWTYPC(1)= IWTYP(JWT)                                            31000
      XDGZC(1) = XDGZ(JWT)                                             32000
      YDGZC(1) = YDGZ(JWT)                                             33000
      ZDGZC(1) = ZDGZ(JWT)                                             34000
      FUTIME = TIME + TINC(IHT-1)                                      35000
C     PLANT LOCAL ATTRITION EVENT FOR ASM, RECORD SUCCESSFUL ASM LAUNCH 35000
      CALL HIST(1,3)                                                   37000
    5 CALL PLANTSEN(0)                                                 38000
C     GET HISTORY, WEAPON TABLE POINTERS FOR NEXT BOMBER EVENT         39000
```

```
55 IWT = IWT - 1                                  40000
   JWT = JWT - 1                                  41000
59 CALL NEXTEVNT                                  42000
   RETURN                                         43000
   END                                            44000
```

```
                                IDENT    ALAUN
PROGRAM LENGTH                  00112
ENTRY POINTS     ALAUN          00003
BLOCK NAMES
                 ASMS           00050
                 EDATA          01200
                 TIME           00002
EXTERNAL SYMBOLS
                 QHODICT.
                 HIST
                 PLANTS
                 NEXTEVNT
                 RANF
```

P00003	ALADN	00003						
C00472	B							
P00076	BEGIN.	00177						
C00024	CEPA							
C00505	DGA							
C00005	DGAC							
C00506	DGT							
C00006	DGTC							
C00507	DHGR							
C00007	DHGRC							
P00001	DICT.	00005	00019	00020	00025	00062	00065	00074
P00100	ENDING.	00006	00075	00076				
P00000	EXIT.	00101						
C00526	EXTRA							
C00001	FUTIME	00060	00060					
X00002	HIST	00007	00024	00061				
C00513	IALERT	00043						
C00013	IALERTC	00043						
C00517	IALT							
C00017	IALTC	00041						
C00001	IBASE	00033						
C00511	ICLASS							
C00011	ICLASSC	00036						
C00524	IHT	00012	00012	00047	00067	00067	00070	
C00024	IHTC	00031						
C00501	INBASE	00033						
C00500	INDATA							
C00772	INDE							
C00272	INDEC	00051						
C00002	INDM	00034						
C00652	INDP	00013	00047					
C00152	INDPC	00050						
C00502	INDV	00034						
P00076	INITIAL.	00100						
C00503	INTAR							
C00514	INZONE							
C00014	INZONC							
C00512	IREG	00042						
C00012	IREGC	00042						
C00510	ITYPE	00035						
C00010	ITYPC	00035						
C01112	IWTYP	00052						
C00412	IWTYPC	00052						
P00007	.1							
P00015	.2							
P00024	.3	00023						
P00030	.4	00022	00023					
P00064	.5							
P00067	.55	00027						
P00073	.59							
P00075	.80							
P00102	.ERASER.	00016						
C00003	JNTAR							
P00111	JTYPE	00014	00021	00037				

```
C00525  JWT        00051   00071   00072
C00025  JWTC       00030   00031
C00524  MHT
C00525  MWT
C00530  NALT
C00030  NALTC
C00520  NCM
C00020  NCMC       00040   00040
C00515  NDHI
C00015  NDHIC      00044
C00516  NDLC
C00016  NDLCC      00045
X00004  NEXTEVNT   00073
C00530  NPLAN
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PKNAV      00046
C00021  PKNAVC     00046
C00000  PLABORT    00021   00022
X00003  PLANTS     00064
X00001  QBODICT.   00000   00004
X00005  RANF       00017
C00500  SIDE       00032
C00000  SIDEC      00032
C00522  SPARE
C00022  SPC
C00531  TABORT
C00031  TABORTC
C00000  TIME       00056   00056
C00532  TINC       00057   00057
C00032  TINCC
C01126  XDGZ       00053
C00426  XDGZC      00053
C00026  XX
C01142  YDGZ       00054
C00442  YDGZC      00054
C01156  ZDGZ       00055
C00456  ZDGZC      00055
   00135 SYMBOLS
```

```
      SUBROUTINE AREABMD                                                1000
CSUBR     AREABMD    11JUN71   ******************************************15000
C     TESTS FOR SURVIVAL OF MISSILES AGAINST AN AREA DEFENSE SYSTEM      2000
      COMMON/ABMDATA/IABDEF(2),PSEL(2),PAK(2),PREM(2),PAKD(2)            3000
      COMMON/AREADAT/AINT(20,3),NLRR(20),ICVERLAP(20),KRAD               4000
      TYPE INTEGER AINT,AINTZ                                            5000
      COMMON/DEFZONE/DEFZONE                                             6000
      TYPE INTEGER DEFZONE,Z                                             7000
CUSE      EDATAM     26AUG70   ******************************************8000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHCBC,        1000
     1             ITYPC,ICLASSC,IREGC,IALERTC,NWPNSC,NTARGC,            2000
     1             MWPNLIST(18),MLAUNLIS(18),MLISTC(270),OUTDATA(320),   3000
     1             SIDE,INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHCB,            4000
     1             ITYPE,ICLASS,IREG,IALERT,NWPNS,NTARG,                 5000
     1             WPNLIST(18),LAUNLIST(18),MLIST(270),INDATA(320)       6000
      TYPE INTEGER OUTDATA,SIDE,OSIDE,AAIM,TAIM,WPNLIST                  7000
      TYPE INTEGER DGX,DGY,DHCB,DGXC,DGYC,DHCBC                          8000
      TYPE INTEGER TAIMC,AAIMC                                           9000
      EQUIVALENCE (SIDEC,OUTDATA(1)),(SIDE,INDATA(1))                   10000
      EQUIVALENCE (IPAYLOAD,INDATA(4)),(NMIRV,INDATA(8))                11000
      EQUIVALENCE (INITVULC,OUTDATA(7)),(INITVULN,INDATA(7))            12000
      EQUIVALENCE (TOFC,OUTDATA(27)),(TOF,INDATA(27))                   13000
      DIMENSION MDATA(14),MDATAC(14),TOF(14),TOFC(14)                   14000
      EQUIVALENCE (MDATAC,OUTDATA(13)),(MDATA,INDATA(13))               15000
      EQUIVALENCE (NWHDS,INDATA(13)),(TAIM,INDATA(14))                  16000
      EQUIVALENCE (AAIM,INDATA(15))                                     17000
      EQUIVALENCE (TAIMC,OUTDATA(14)),(AAIMC,OUTDATA(15))               18000
      EQUIVALENCE (NWHDSC,OUTDATA(13))                                  19000
      DIMENSION FMLIST(270)                                             20000
      EQUIVALENCE (MLIST,FMLIST)                                        21000
CEND      EDATAM     ******************************************************8000
      EQUIVALENCE (ALL,INDATA(16))                                       9000
      COMMON/HISTABM/IAREAX,NAL,NWHDSX,NDET, NAREA, NTERM               10000
      COMMON/INDEX/INDEX(30)                                            11000
      COMMON/KEYWORDS/KEYARRAY(20)                                      12000
      EQUIVALENCE (IATTACK,KEYARRAY(12)),(IAREA,KEYARRAY(13)),          13000
     1 (TCOL,KEYARRAY(2)),(KEYNTA,KEYARRAY(9)),(KEYTIN,KEYARRAY(8))     14000
      EQUIVALENCE(KDEFZCN,KEYARRAY(15)),(KDEFCMP,KEYARRAY(16))          15000
      EQUIVALENCE (KEYARRAY(13),IAREA)                                  16000
      DIMENSION AINTZ(3),ICND(3)                                        17000
      DIMENSION ICAT(30)                                                18000
      EQUIVALENCE(ICAT,OUTDATA(50))                                     18100
CUSE      NBCELL     22JUN71   ******************************************19000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)          1000
CEND      NBCELL     ******************************************************19000
                                                                         20000
    1 CONTINUE                                                           22000
C     SIDE IS ATTACKING SIDE, OSIDE IS DEFENDING SIDE                    23000
      OSIDE = 3 - SIDE                                                   24000
C     STORE NO. WHDS. ENTERING                                           25000
      NAREA = NWHDS                                                      26000
C     TEST IF TARGET IS DEFENDED BY AREA DEFENSE                         27000
C     IF UNDEFENDED, SKIP AREABMD EVENT AND CALL TERMBMD                 28000
      IA = IGET(IAREA,INTAR,STATUS)                                      29000
  101 IF(IA.LE.0) 22,102                                                 30000
  102 L = 1                                                              31000
```

```
      DEFZONE = IGET(KDEFZON,INTAR,STATUS)
      Z = DEFZONE
C     IF NO RADAR COVERAGE, SKIP AREABMD
  200 IF(NLRR(DEFZONE).GE.1)201,22
  201 NINTR = AINT(Z,1) + AINT(Z,2) + AINT(Z,3)
C     IF NO INTERCEPTORS, SKIP AREABMD
      IF(NINTR .LE.0) 22,2
C     RECORD CALL TO AREABMD
    2 CALL HIST(18,1)
C     INITIALIZE COUNTERS, FILL ITEMS USED BY SUBROUTINE HIST
      NPEN=NDEC=NAL=KCOL=0
      IAREAX = IA
      NWHDSX = NWHDS
C     TEST FOR PREFERENTIAL DEFENSE
    3 IF (IARDEF(OSIDE) .EQ. 2) 28,4
C     PREFERENTIAL--TEST IF TARGET PREVIOUSLY ATTACKED
    4 IAT=IGET(IATTACK,INTAR,STATUS)
    5 IF(IAT.EQ.0)6,51
C     PREVIOUSLY ATTACKED
   51 CALL HIST(18,2)
      GO TO 9
C     TEST IF TARGET SELECTED FOR DEFENSE
    6 IF(PSEL(OSIDE).GE.RANF(-1))62,61
C     NOT SELECTED
   61 ISEL = 0
      CALL HIST(18,3)
      GO TO 63
C     SELECTED
   62 ISEL = 1
      CALL HIST(18,4)
   63 IX = INTAR
C     TURN ON PREFERENTIAL AREA BMD FLAG, SET AREA DEFENSE FLAG
    7 CALL IPUT(IATTACK,IX,1,STATUS)
      CALL IPUT(IAREA,IX,ISEL,STATUS)
C     TEST IF CURRENT TARGET IS PRIMARY TARGET OF WEAPON
      IF(KCOL) 73,71
C     PRIMARY--TEST IF TARGET IS COLOCATED
   71 KOLOC=IGET(TCOL,INTAR,STATUS)
      IF(KOLOC)72,8
C     COLOCATED--SAVE INDEX OF PRIMARY TARGET, TURN ON COLOCATION FLAG
   72 INTC = INTAR
      KCOL = 1
C     GET LOCATION IN COLAR OF THIS TARGET
      KIND = IFIND(INTAR)
C     GET NUMBER OF TARGETS IN COLOCATED GROUP
   73 NTA=IGET(KEYNTA,KIND,COLAR)
C     IF 0, TARGET FOLLOWS.  IF NOT GO BACK NTA TARGETS FOR NEXT
      IF(NTA)74,75
   74 KIND = KIND-NTA
   75 KIND = KIND+1
C     GET NEXT TARGET INDEX--SEE IF IT IS PRIMARY TARGET OF GROUP
      IX=IGET(KEYTIN,KIND,COLAR)
      IF(IX.NE.INTC)7,6
C     TEST IF TARGET IS SELECTED FOR DEFENSE
    8 IF(ISEL)9,21
C     TEST IF THERE ARE ENOUGH INTERCEPTORS FOR ALL OBJECTS
```

```
    9 IF(NINTR .GE.AAIM)114,32
C     ENOUGH---NUMBER ALLOCATED=NUMBER OF AREA AIM POINTS
  114 NAL=AAIM
C     REDUCE INTERCEPTOR SUPPLY OF BASE WITH MOST MISSILES FIRST
      NINTR = NINTR - AAIM
C     ORDER INTERCEPTOR BASES BY NUMBER OF MISSILES
  115 DO 116 I = 1,3
      ICRD(I) = 3
  116 AINTZ(I) = AINT(Z,I)
      DO 113 I = 1,2
      K = I+1
      DO 113 J = K,3
      IF(AINTZ(I) .LT. AINTZ(J)) 112,111
  111 ICRD(I) = ICRD(I) - 1
      GO TO 113
  112 ICRD(J) = ICRD(J) - 1
  113 CONTINUE
      ICRD1 = ICRD(1)
      ICRD2 = ICRD(2)
      ICRD3 = ICRD(3)
      IF(AINT(Z,ICRD1).GE.AAIM)117,118
  117 AINT(Z,ICRD1)=AINT(Z,ICRD1)-AAIM
      GO TO(12,35),L
  118 IF(AINT(Z,ICRD1)+AINT(Z,ICRD2).GE.AAIM)119,120
  119 AINT(Z,ICRD2)=AINT(Z,ICRD1)+AINT(Z,ICRD2)-AAIM
      AINT(Z,ICRD1)=0
      GO TO(12,35),L
  120 AINT(Z,ICRD3) = NINTR
      AINT(Z,ICRD1)=0
      AINT(Z,ICRD2)=
      IF(AINT(Z,ICRD3).EQ.0)121,122
  121 CALL HIST(18,6)
  122 GO TO(12,35),L
C     CHECK FOR LEAKAGE
   12 DO 17 I = 1,NWHDS
   13 IF(PAK(OSIDE).GE.RANF(-1))15,14
C     WARHEAD LEAKS THROUGH--INCREASE NUMBER OF PENETRATORS
   14 NPEN = NPEN+1
      GO TO 17
C     WARHEAD KILLED--TEST FOR REMOVAL
   15 IF(PREM(OSIDE).GE.RANF(-1))17,16
C     KILLED WARHEAD NOT REMOVED
   16 NDEC = NDEC+1
   17 CONTINUE
      ND = TAIM-NWHDS
C     CHECK FOR TERMINAL DECOY LEAKAGE
      DO 20 I = 1,ND
   18 IF(PAKD(OSIDE).GE.RANF(-1))20,19
C     TERMINAL DECOY LEAKS THROUGH
   19 NDEC = NDEC+1
   20 CONTINUE
      NWHDSX = NWHDS = NPEN
      TAIM = NPEN+NDEC
C     RECORD RESULTS
   21 CALL HIST(18,5)
C     CALL FOR WRITING OUT OF BLOCK FOR AREAWHD EVENT
```

```
      CALL HISTWRIT
C     CALL FOR TERMINAL BALLISTIC MISSILE DEFENSE EVENT
   22 CALL TERMRMO
      RETURN
C     RANDOM AREA DEFENSE--DETERMINE NUMBER OF INTERCEPTORS TO USE
   28 CALL HIST(18,7)
      DO 30 I=1,AAIM
      IF (PSEL(OSIDE) .LT. RANF(-1)) 30,29
   29 NAL = NAL + 1
   30 CONTINUE
C     TEST IF AREA INTERCEPTORS AVAILABLE LESS THAN NUMBER ALLOCATED
   31 IF(NINTR.GE.NAL)33,32
C     IF SO, SET NUMBER ALLOCATED TO NUMBER AVAILABLE
   32 NAL = NINTR
      DO 34 I=1,3
   34 AINT(2,I)=0
      NINTR = 0
C     ALL INTERCEPTORS GONE
      CALL HIST(18,6)
      GO TO 41
C     REDUCE NUMBER OF INTERCEPTORS BY NUMBER ALLOCATED
   33 L=2
      GO TO 115
   35 NINTR = NINTR - NAL
C     COMPUTE NUMBER OF OBJECTS NOT ATTACKED
   40 NREM = AAIM-NAL
      N1 = NWHDS+1
      N2 = TAIM+1
      DO 41 I=1,NWHDS
   41 ICAT(I)=1
      DO 42 I=N1,TAIM
   42 ICAT(I)=2
      DO 43 I=N2,AAIM
   43 ICAT(I)=
C     CALL REORDER TO RANDOMLY REARRANGE ICAT
      CALLRANORDER(AAIM)
C     DETERMINE IF EACH UNATTACKED OBJECT IS A TERMINAL DECOY OR WARHEAD
      DO 46 I=1,NREM
      IF(ICAT(INDEX(I))-1)46,45,44
C     INCREASE NUMBER OF DECOYS
   44 NDEC = NDEC+1
      GO TO 46
C     INCREASE NUMBER OF PENETRATORS
   45 NPEN = NPEN+1
   46 CONTINUE
C     COMPUTE NUMBER OF WARHEADS AND TERMINAL AIM POINTS REMAINING
      NWHDS = NWHDS-NPEN
      TAIM = TAIM-NDEC-NPEN
      GO TO 12
      END
```

```
                                        IDENT     AREABMD
PROGRAM LENGTH                  00742
ENTRY POINTS     AREABMD        00011
BLOCK NAMES
                 ABMDATA        00012
                 AREADAT        00145
                 DEFZONE        00001
                 EDATA          01200
                 HISTABM        00006
                 INDEX          00036
                 KEYWORDS       00024
                 195Q1          54731
EXTERNAL SYMBOLS
                 QBQDICT.
                 IGET
                 HIST
                 IPUT
                 IFIND
                 HISTWRIT
                 TERMABD
                 RANCHUER
                 RANF
```

C00516	AAIM	00210	00210	00212	00212	00215	00215	00266	00267	00273	00273	00304
		00304	00312	00312	00440	00440	00505	00505	00543	00543	00554	
C00016	AAIMC											
C00000	AINT	00050	00050	00051	00051	00226	00226	00265	00266	00272	00272	00274
		00274	00301	00301	00303	00303	00307	00307	00311	00311	00313	00313
		00314	00321	00322	00324	00324	00326	00327	00327	00470	00471	
P00003	AINTZ	00227	00243	00244								
C00517	ALL											
P00011	AREABMD	00011										
P00672	BEGIN.	00673										
C45071	COLAR	00170	00202									
P00711	COUNT.	00240	00242	00344	00345	00400	00401	00442	00443	00521	00522	00533
		00534	00545	00546	00561	00562						
C00000	DEFZONE	00040	00040	00043	00043							
C00505	DGX											
C00005	DGXC											
C00506	DGY											
C00006	DGYC											
C00507	DHOB											
C00007	DHOBC											
P00001	DICT.	00013	00023	00035	00057	00076	00106	00114	00124	00132	00137	00143
		00151	00162	00166	00200	00332	00351	00363	00405	00423	00426	00430
		00433	00447	00475	00553							
P00674	ENDING.	00014	00431	00672	00673							
P00000	EXIT.	00675										
C00562	FMLIST											
X00003	HIST	00056	00105	00123	00131	00331	00422	00432	00474			
X00006	HIST#RIT	00425										
P00712	I	00220	00222	00232	00234	00241	00254	00340	00375	00436	00465	00515
		00522	00527	00534	00541	00546	00556	00562	00622			
P00713	IA	00026	00027	00065								
C00513	IALERT											
C00013	IALERTC											
C00000	IANDEF	00072	00072									
C00014	IAREA	00024	00144									
C00000	IAREAX	00065	00066									
P00714	IAT	00101	00102									
C00013	IATTACK	00077	00140									
C00001	IBASE											
C00001	ICAT	00523	00524	00535	00536	00547	00550	00566	00566			
C00511	ICLASS											
C00011	ICLASSC											
X00005	IFIND	00161										
X00002	IGET	00022	00034	00075	00150	00165	00177					
P00715	IGOTO.	00276	00316	00335								
P00610	IN00005.	00222	00467	00614	00626	00635						
P00611	IN00007.	00265	00271	00300	00306	00323	00636	00650				
P00612	IN00010.	00302	00310	00326	00640	00660						
P00613	IN00011.	00321	00637	00670								
C00501	INBASE											
C00500	INDATA											
C00000	INDEX	00563	00563									
C00002	INDM											
C00502	INDV											

P00672	INITIAL.	00014								
C00506	INITVULN									
C00006	INITVULC									
C00503	INTAR	00024	00036	00077	00134	00134	00152	00156	00156	00183
P00716	INTC	00157	00203							
P00006	ICKO	00225	00246	00247	00251	00252	00257	00261	00263	
P00717	ICKO1	00257	00644							
P00720	ICKO2	00261	00654							
P00721	ICKO3	00263	00664							
C00120	ICVERLAP									
C00504	IPAYLOAD									
X00004	IPUT	00135	00142							
C00512	IREG									
C00012	IREGC									
P00722	ISEL	00122	00130	00145	00205					
C00510	ITYPE									
C00010	ITYPC									
P00723	IX	00135	00140	00144	00203					
P00015	.1									
P00027	.101									
P00032	.102	00031								
P00246	.111	00244	00245							
P00251	.112	00245								
P00253	.113	00250								
P00212	.114	00211								
P00217	.115	00501								
P00226	.116									
P00271	.117	00267								
P00300	.118	00270								
P00306	.119	00305								
P00320	.120	00305								
P00337	.12	00277	00317	00336	00605					
P00331	.121									
P00334	.122	00330								
P00346	.13									
P00355	.14	00354								
P00360	.15	00353	00354							
P00367	.16	00305								
P00371	.17	00357	00365	00366						
P00402	.18									
P00411	.19	00410								
P00043	.200									
P00056	.2	00054								
P00413	.20	00407	00410							
P00047	.201	00045								
P00422	.21	00206								
P00427	.22	00030	00031	00046	00054	00055				
P00432	.23	00074								
P00453	.24	00451	00452							
P00071	.3									
P00455	.30	00452								
P00456	.31									
P00462	.32	00211	00460							
P00500	.33	00460	00461							

P00470	.34											
P00502	.35	00277	00317	00336								
P00075	.4	00073										
P00505	.40	00477										
P00523	.41											
P00535	.42											
P00547	.43											
P00571	.44											
P00574	.45	00567										
P00576	.46	00570	00573									
P00102	.5											
P00105	.51	00103										
P00111	.6	00104										
P00121	.61	00117										
P00127	.62	00117	00120									
P00134	.63	00126										
P00136	.7	00204										
P00150	.71											
P00156	.72	00155										
P00165	.73	00147										
P00173	.74	00172										
P00175	.75	00172										
P00205	.8	00155	00204									
P00207	.9	00110	00206									
P00677	.ERASER.	00112	00347	00361	00403	00445						
P00676	.NSTIFF.	00565	00565									
P00724	J	00236	00241									
C00003	JNTAR											
P00725	K	00235	00236	00237								
P00726	KCOL	00062	00146	00150								
C00017	KDEFCMP											
C00016	KDEFZON	00036										
C00003	KETARRAY											
C00010	KETNTA	00167										
C00007	KETTIM	00201										
P00727	KINP	00164	00157	00173	00174	00175	00177	00201				
P00730	KOLOC	00154										
C00144	KRAD											
P00731	L	00033	00275	00315	00334	00351						
C00543	LAUNLIST											
C00001	LINK4											
C00514	MDATA											
C00014	MDATAC											
C00543	MLAUNLIS											
C00562	MLIST											
C00562	MLISTC											
C00015	MNPNLIST											
P00732	N1	00512	00526	00532								
P00733	N2	00514	00540	00544								
C00001	NAL	00062	00063	00213	00213	00453	00453	00454	00457	00457	00463	00463
		00503	00503	00506	00506							
C00004	NAREA	00020	00021									
C00000	NHCELL											
P00734	ND	00374	00377									

P00735	NDEC	00364	00367	00370	00411	00412	00420	00571	00572	00603		
C00003	NDET											
P00735	NINTR	00052	00053	00207	00214	00216	00320	00456	00462	00473	00502	00504
C00074	NLKR	00044	00044									
C00507	NMIRV											
P00737	NPEN	00064	00355	00356	00414	00417	00574	00575	00600	00603		
P00740	NREM	00507	00560									
P00741	NTA	00171	00174									
C00515	NTARG											
C00015	NTARGC											
C00005	NTERM											
C00514	NWHDS	00017	00020	00066	00067	00342	00342	00373	00415	00415	00510	00510
		00517	00517	00577	00577	00601	00601					
C00014	NWHDSC											
C00002	NWHDSX	00067	00070	00416	00416							
C00514	NWPNS											
C00014	NWPNSC											
C00514	NWTYP											
C00004	NWTYPC											
P00606	OSIDE	00017	00071	00115	00345	00401	00443					
C00000	OUTDATA											
P00614	P00000.0	00517										
C00004	PAK	00352	00353									
C00010	PAKD	00406	00407									
C00005	PREM	00364	00365									
C00002	PSEL	00116	00116	00450	00451							
X00001	QBADICT.	00000	00012									
X00011	RANF	00113	00350	00362	00404	00446						
X00010	RANORDER	00552										
C00500	SIDE	00015	00016									
C00000	SIDEC											
C15531	STATUS	00025	00037	00100	00141	00145	00153					
C00515	TAIM	00372	00372	00420	00421	00512	00513	00531	00531	00602	00604	00604
C00015	TAIMC											
C00001	TCOL	00152										
X00007	TERMHMD	00427										
C00532	TOF											
C00032	TOFC											
P00254	TS00003.	00240										
P00372	TS00004.	00343										
P00414	TS00005.	00400										
P00456	TS00006.	00441										
P00526	TS00010.	00520										
P00540	TS00011.	00533										
P00552	TS00012.	00545										
P00577	TS00013.	00561										
P00621	UP00000.	00221	00233	00255	00341	00376	00437	00466	00516	00540	00542	00557
		00615	00622	00623	00624	00626	00627					
P00631	UP00004.	00042	00632	00633	00634	00641	00641					
P00643	UP00005.	00260	00644	00645	00646	00650	00651					
P00653	UP00006.	00262	00654	00655	00656	00660	00661					
P00663	UP00007.	00264	00664	00665	00666	00670	00671					
C00516	WPNLIST											
P00224	WS00001.	00231										

```
P00234  #S00002.   00256
P00243  #S00003.   00253
P00346  #S00004.   00371
P00402  #S00005.   00413
P00444  #S00006.   00455
P00470  #S00007.   00472
P00523  #S00010.   00525
P00535  #S00011.   00537
P00547  #S00012.   00551
P00563  #S00013.   00576
P00607  Z          00041   00047   00632
   00331 SYMBOLS
```

```
      SUBROUTINE BABORT                                                 1000
CSUBR     BABORT    26AUG70   ***********************************       1000
C     DECREASES PENETRATORS WHEN A BOMBER ABORTS IN AN ENEMY ZONE       2000
      COMMON/TIME/TIME,FUTIME                                           3000
CUSE      EDATAB    4JAN71    ***********************************       4000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DMCBC,ITYPC,  1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),  2000
     2IMTC,JMTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),        3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(320),SIDE,   5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMCB,ITYPE,ICLASS,IREG,IALERT,     5000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IMT,JMT,EXTRA(2),NALT,     7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),      8000
     7ZDGZ(12),INDATA(320)                                                9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                   11000
      EQUIVALENCE(NPLAN,NALT) ,(MMT,IMT), (MMT,JMT)                      12000
      TYPE INTEGER DGX,DGY,DMCB,XDGZ,YDGZ,ZDGZ                           13000
      TYPE INTEGER DGXC,DGYC,DMCBC,XDGZC,YDGZC,ZDGZC                     14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                    15000
CEND      EDATAB    ***********************************                 4000
      COMMON/ZONES/AREA(63),ZDEFPCT(63),ZCCPCT(63),NPENZ(63),KILLZ(63),  5000
     1 MAXZONE(2)                                                        6000
                                                                         7000
    1 CONTINUE                                                           8000
C     TEST IF BOMBER HAS LEFT ITS LAUNCH ZONE                            9000
    2 IF(INZONE .LE. 2 .OR. ICLASS .NE. 2) 4,3                          10000
C     DECREASE NUMBER OF PENETRATORS IN CURRENT ZONE                    11000
    3 NPENZ(INZONE) = NPENZ(INZONE) - 1 - NDHI - NDLO                   12000
C     RECORD CALL TO BOMBER ABORT EVENT AND RECORD PLACE OF ABORT       13000
    4 CALL HIST(13,1)                                                   14000
    5 IF(INDE(IMT) .EQ. 13)6,7                                          15000
C     RECORD SCHEDULED SPLASH                                           16000
    6 CALL HIST(13,2)                                                   17000
      RETURN                                                            18000
C     RECORD RANDOM ABORT                                               19000
    7 CALL HIST(13,3)                                                   20000
      END                                                               21000
```

```
                    IDENT     BABORT
PROGRAM LENGTH              00046
ENTRY POINTS     BABORT     00003
BLOCK NAMES
                 TIME       00002
                 EDATA      01200
                 ZONE       00475
EXTERNAL SYMBOLS
                 BBODICT.
                 HIST
```

C00000	AREA				
C00472	B				
P00003	BABCHT	00003			
P00040	BEGIN.	00040			
C00505	DGX				
C00005	DGXC				
C00506	DGY				
C00006	DGYC				
C00507	DHDR				
C00007	DHDRC				
P00001	DICT.	00005	00023	00031	00035
P00041	ENDING.	00006	00033	00037	
P00000	EXIT.	00041			
C00526	EXTRA				
C00001	FUTIME				
X00002	HIST	00022	00030	00034	
C00513	IALERT				
C00013	IALERTC				
C00517	IALT				
C00017	IALTC				
C00001	IBASE				
C00511	ICLASS	00012	00012		
C00011	ICLASSC				
P00012	IF00001.				
C00524	IHT	00025	00025		
C00024	IHTC				
C00501	INBASE				
C00500	INDATA				
C00772	INDE	00[illegible]			
C00272	INDEC				
C00002	INDM				
C00652	INDP				
C00152	INDPC				
C00502	INDV				
P00040	INITIAL.	00009			
C00503	INTAR				
C00514	INZONE	00007	00007	00015	00015
C00014	INZONC				
C00512	IREG				
C00012	IREGC				
C00510	ITYPE				
C00010	ITYPC				
C01112	IWTYP				
C00412	IWTYPC				
P00007	.1				
P00007	.2				
P00015	.3	00013			
P00022	.4	00010	00011	00014	
P00025	.5				
P00030	.6				
P00034	.7	00007			
C00003	JNTAR				
C00525	JWT				
C00025	JWTC				

```
C00374  KILLZ
C00473  MAXZONE
C00524  MHT
C00525  MWT
C00530  NALT
C00030  NALTC
C00520  NCM
C00020  NCMC
C00515  NDMI        00017   00020
C00015  NDMIC
C00516  NDLC        00020
C00016  NDLCC
C00275  NPENZ       00016   00016   00021   00021
C00530  NPLAN
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PKNAV
C00021  PKNAVC
X00001  QRUDICT.    00000   00004
C00500  SIDE
C00000  SIDEC
C00522  SPARE
C00022  SPC
C00531  TABORT
C00031  TABORTC
C00000  TIME
C00532  TINC
C00032  TINCC
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C00176  ZCCPCT
C00077  ZDEFPCT
C01156  ZDGZ
C00456  ZDGZC
   00134 SYMBOLS
```

```
      SUBROUTINE BDAMAGE                                                1000
CSUBR     BDAMAGE    29SEP71   ******************************************  6500
C     CALCULATES BURST DAMAGE TO A TARGET OR A COLOCATED TARGET GROUP    2000
CUSE      AGZSUM     28APR71   ******************************************  3000
      COMMON/AGZSUM/NAGZ(2,80),TYD(2,80)                                 1000
CEND      AGZSUM     ******************************************************  3000
      COMMON/AREADAT/AINT(20,3),NLHR(20),ICVERLAP(20),KRAD               4000
      TYPE INTEGER DEFZONE,DEFCMP,AINT                                   5000
CUSE      ASMS       28APR71   ******************************************  6000
      COMMON/ASMS/PLABORT(20),CEPA(20)                                   1000
CEND      ASMS       ******************************************************  6000
CUSE      BOMBER     28APR71   ******************************************  7000
      COMMON/BOMBER/PLABT(80),TMDEL(80),ABRATE(80),PRABT(80),CEPB(80),   1000
     1     TLINTB(80),IFUNCB(80)                                         2000
CEND      BOMBER     ******************************************************  7000
CUSE      BRKPNT     28APR71   ******************************************  9000
      COMMON/BRKPNT/NTYPECUM(15),NDLUETYP(15),INDBEGCL(15),INDBEGTY(250) 1000
CEND      BRKPNT     ******************************************************  9000
      COMMON/CAPACITY/DEFPOT(40),CCPOT(40)                               11000
CUSE      DAMAGE     28APR71   ******************************************  12000
      COMMON/DAMAGE/WTR2IMT,VULN(63)                                     1000
CEND      DAMAGE     ******************************************************  12000
      TYPE INTEGER VULN                                                  13000
CUSE      EDATAB     4JAN71    ******************************************  14000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHCBC,ITYPC,  1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),  2000
     2IHTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),       3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(32 ),SIDE,  5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHCB,ITYPE,ICLASS,IREG,IALERT,    6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,    7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),     8000
     7ZDGZ(12),INDATA(32 )                                               9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                   11000
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)                      12000
      TYPE INTEGER DGX,DGY,DHCB,XDGZ,YDGZ,ZDGZ                           13000
      TYPE INTEGER DGXC,DGYC,DHCBC,XDGZC,YDGZC,ZDGZC                     14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                    15000
CEND      EDATAB     ******************************************************  14000
      DIMENSION IZCN(3)                                                  15000
      COMMON/KEYWRDS/KTAR,KZON(3)                                        16000
      COMMON/GROUND/IAGX,IAGY                                            17000
      COMMON/IPRINT/IPRINT(60)                                           18000
      TYPE LOGICAL IPRINT                                                19000
      COMMON/KEYWORDS/KEYARRAY(20)                                       20000
      EQUIVALENCE (KEYARRAY( 1),TSTMT),   (KEYARRAY( 2),TCOL),           21000
     1            (KEYARRAY( 3),TARDEFLO),(KEYARRAY( 4),TARDEFHI),       22000
     2            (KEYARRAY( 5),MISDEF),  (KEYARRAY( 6),TVULN),          23000
     3            (KEYARRAY( 7),ZONE)                                    24000
      EQUIVALENCE (KEYARRAY( 8),KEYTIN),  (KEYARRAY( 9),KEYNTA),         25000
     1            (KEYARRAY(10),KEYDX),   (KEYARRAY(11),KEYDY)           26000
     2            (KEYARRAY(15),KDEFZON),(KEYARRAY(16),KDEFCMP)          27000
     1          ,(KEYARRAY(17),IKEEP)                                    28000
     1,(KEYARRAY(18),NAVOBL)                                             29000
CUSE      MISSLE     28APR71   ******************************************  30000
      COMMON/MISSLE/PINC(80),PABORT(80),PDES(80),PFPF(80),TPOWER(80),    1000
     1     TEST(80),IR(80),CEPM(80),PKMIS(80),TLINTM(80),IFUNCM(80)      2000
```

```
CEND      MISSLE    ***************************************************
CUSE      NAMES     28APR71   ***************************************
      COMMON/NAMES/NAMESIDE(2),NAMCLS(15),NAMETYPE(250)
CEND      NAMES     ***************************************************
      COMMON/NWORDOUT/NWORDOUT
CUSE      WARHEAD   28APR71   ***************************************
      COMMON/WARHEAD/YIELD(50),PDOD(50),CEPW(50)
CEND      WARHEAD   ***************************************************
      COMMON/ZONES/AREA(63),ZDEFPCT(63),ZCCPCT(63),NPENZ(63),KILLZ(63),
     1 MAXZONE(2)
CUSE      NBCELL    22JUN71   ***************************************
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)
CEND      NBCELL    ***************************************************
      TYPE INTEGER OSIDE

C     WRITE HISTORY TAPE BLOCK FOR EVENT CALLING BURST DAMAGE
    1 CALL HISTWRIT
C     RECORD CALL TO BURST DAMAGE
      CALL HIST(10,1)
      IC = ICLASS
      IF(IC.GT.2)2,21
    2 IC = 2
   21 NAGZ(IC,ITYPE) = NAGZ(IC,ITYPE) + 1
      TYD(IC,ITYPE) = TYD(IC,ITYPE) + YIELD(NWTYP)
C     INITIALIZE COLOCATION FLAG
    3 KCOL = 0
C      TEST IF KILLED BY NAVAL ATTACK WEAPON
   31 IF(PKNAV .GT. 0) 25,32
C     COMPUTE YIELD
   32 Y23=YIELD(NWTYP)**(2./3.)
      HOB = DHOB
C     COMPUTE COORDINATES FROM WEAPON TO TARGET
    4 IWTX = -IAGX
      IWTY = -IAGY
C     TEST IF TARGET IS DYNAMIC
    5 IK=IGET(IKEEP,INTAR,STATUS)
      IF(IK) 6,51
C     TEST IF TARGET IS DEAD
    6 ISTAT=IGET(TSTAT,INTAR,STATUS)
      IF (ISTAT . EQ. 0) 61,7
C     COMPUTE WEAPON TARGET RADIUS SQUARED (IN NAUTICAL MILES)
    7 WTR2 = (IWTX*IWTX + IWTY*IWTY) * .0004
C     TEST LETHAL RADIUS OF WEAPON VS. WEAPON-TARGET RADIUS
    8 IF (WTR2*MT*Y23 .LT. WTR2) 81,9
C     CALL HIST TO RECORD NO DAMAGE CALCULATION
   51 CALL HIST(10,3)
      GO TO 12
C     RECORD TARGET ALREADY DEAD
   61 CALL HIST(10,5)
      GO TO 12
C     RECORD TARGET TOO DISTANT
   81 CALL HIST(10,6)
      GO TO 12
C     GET TARGET VULNERABILITY
    9 IVULN=IGET(TVULN,INTAR,STATUS)
      NVN = VULN(IVULN)
```

```
C     GET WEAPON RADIUS AGAINST THIS TARGET
      WR = VLRAD(YIELD(NWTYP),NVN,HOB,FN)
C     GET SURVIVAL PROBABILITY AND SEE IF TARGET SURVIVES
      SK = FN * WTR2 / (WR*WR)
      EK=EXPF(-SK)
      SK2=SK*SK
      SUM=1.+SK+SK2/2.
      IF (FN .LT. 4.) 93,94
   94 SUM = SUM+.16667*SK*(SK2+.25*SK*(SK2+.20*SK*SK2))
   93 SSKP=EK*SUM
   10 IF (SSKP .GT. RANF(-1)) 11,121
C     RECORD TARGET SURVIVAL
  121 CALL HIST(10,4)
      GO TO 12
C     RECORD TARGET KILL AND SET STATUS TO DEAD
   11 CALL IPUT(TSTAT,INTAR,0,STATUS)
      CALL HIST(10,2)
C     GET DEFENSE ZONE AND DEFENSE COMPONENT
      DEFZONE=IGET(KDEFZON,INTAR,STATUS)
      DEFCMP=IGET(KDEFCMP,INTAR,STATUS)
C     FIND TARGET CLASS--SEE IF KILLED TARGET IS A DEFENSE INSTALLATION
      IF (INTAR .LT. INDBEGCL(4)) 12,110
  110 IF(INTAR.GE.INDBEGCL(6))41,111
  111 IF (INTAR .GE. INDBEGCL(5)) 113,112
   41 IF(INTAR.LT.INDBEGCL(14))12,42
   42 IF (INTAR.LT.INDBEGCL(15))118,12
C     TARGET IS COMMAND/CONTROL SITE
  112 IC = 4
      GO TO 114
C     TARGET IS FIGHTER BASE
  113 IC = 5
C     FIND TARGET TYPE
  114 JJ = NTYPECUM(IC-1) + 2
      KK = NTYPECUM(IC) + 1
      IT = 1
      DO 116 II = JJ,KK
      IF (INTAR .GE. INDBEGTY(II))116,115
  115 ITARTYPE = IT
      GO TO 117
  116 IT = IT + 1
C     IF DO IS COMPLETED, ERROR IN BREAKPOINT TABLE
      PRINT 9116,IT,INTAR,JJ,KK
 9116 FORMAT(17H BRKPT ERROR, IT=,I5,7H INTAR=,I5,4H JJ=,I5,4H KK=,I5)
      ITARTYPE = IT
C     GET ZONE FOR THIS TARGET
  117 IZONE=IGET(ZONE,INTAR,STATUS)
      IF (IZONE.LE.0)1171,1172
 1171 NTARTYP=ITARTYPE+JJ-2
      PRINT 9117,NAMETYPE(NTARTYP),INTAR,IC
 9117 FORMAT(1H ,A8,13H TARGET NUMBER ,I6,6H CLASS,I2,14H IS IN ZONE ZER
     1O)
      CALL ZABORT
 1172 CONTINUE
      IF (IC .EQ.4)120,160
C     TARGET IS AN AREA ABM BASE
  118 IC = 14
```

```
      IF(DEFCMP .LE. 0)12,119
  119 IF (DEFCMP .LE.3)140,150
C     TARGET IS A MISSILE INTERCEPTOR BASE
   14 IF(AINT(DEFZONE,DEFCMP).EQ.0)12,1400
 1400 AINT(DEFZONE,DEFCMP)    =0
      DO 141 I=1,3
      IF(AINT(DEFZONE,I).EQ.0)141,12
  141 CONTINUE
      OSIDE=4-SIDE
      PRINT 142,NAMESIDE(OSIDE),DEFZONE
  142 FORMAT(5H ALL ,A4,37H AREA INTERCEPTORS GONE IN AREA ZONE ,I2)
      GO TO 12
C     TARGET IS A BOMBER INTERCEPTOR BASE
  160 ZDEFPOT(IZONE)=ZDEFPOT (IZONE)-DEFPOT(ITARTYPE)
      PRINT 9160,IZONE,ZDEFPOT(IZONE),ITARTYPE,DEFPOT(ITARTYPE)
 9160 FORMAT(7HIZONE= ,I5,17H ZDEFPOT(IZONE)= ,F10.4,I6,F10.4)
      GO TO 12
C     TARGET IS COMMAND/CONTROL SITE
  120 ZCCPOT(IZONE)=ZCCPOT(IZONE)-CCPOT(ITARTYPE)
      PRINT 9119,IZONE,ZCCPOT(IZONE),ITARTYPE,CCPOT(ITARTYPE)
 9119 FORMAT(7H IZONE=,I5,15H ZCCPOT(IZONE)=,F11.4,I6,F10.4)
      GO TO 12
C     TARGET IS A LONG RANGE RADAR---FIND DEFENSE ZONES AFFECTED BY
C     LOSS OF LONG RANGE RADAR
  150 DO 155 I=1,20
      ITAR=IGET(KTAR,I,IOVERLAP)
      IF(ITAR.EQ.INTAR) 151,155
  151 IZON(1)=IGET(KZON(1),I,IOVERLAP)
      IZON(2)=IGET(KZON(2),I,IOVERLAP)
      IZON(3)=IGET(KZON(3),I,IOVERLAP)
      DO 154 J=1,3
      IF(IZON(J).EQ. 0) 154,152
  152 KRAD=IZON(J)
      IF(NLRR(KRAD).GT.0)153,154
C     REDUCE NUMBER OF LONGRANGE RADARS IN ZONE
  153 NLRR(KRAD)=NLRR(KRAD)-1
      IF(NLRR(KRAD).EQ.0)156,154
  156 PRINT 9156,KRAD
 9156 FORMAT(35H NO MORE RADARS COVERING AREA ZONE ,I2)
  154 CONTINUE
      GO TO 12
  155 CONTINUE
C     TEST IF TARGET IS DEFENDED
   12 KDEF=IGET(TARDEFHI,INTAR,STATUS)
      LDEF=IGET(TARDEFLO,INTAR,STATUS)
C     REDUCE DEFENSIVE EFFECTIVENESS, SET STATUSES TO NEW VALUES
      IF(KDEF .GT. 0) 13,135
   13 KDEF=KDEF-1
      CALL IPUT(TARDEFHI,INTAR,KDEF,STATUS)
  135 IF (LDEF .GT. 0) 136,80
  136 LDEF = LDEF - 1
      CALL IPUT(TARDEFLO,INTAR,LDEF,STATUS)
C     TEST IF CURRENT TARGET IS PRIMARY TARGET OF WEAPON
   80 IF(KCOL .EQ. 0) 14,17
C     TEST IF THIS PRIMARY TARGET IS COLOCATED
   14 KOLOC=IGET(TCOL,INTAR,STATUS)
```

```
      IF(KCLOC) 15,88
C     COLOCATED. STORE INDEX OF PRIMARY TARGET, TURN ON COLOCATION FLAG
   15 INTC = INTAR
      KCOL = 1
C     GET LOCATION IN ARRAY COLAR OF THIS TARGET
   16 KIND = IFIND(INTAR)
C     TEST IF PRIMARY TARGET FOUND IN COLAR
      IF (KIND .EQ. 0) 87,17
C     GET THE NUMBER OF TARGETS IN THE COLOCATED GROUP
   17 NTA=IGET(KEYNTA,KIND,COLAR)
C     IF 0, NEXT TARGET FOLLOWS. IF NOT, GO BACK NTA TARGETS FOR NEXT
      IF (NTA) 174,173
  174 KIND = KIND - NTA
C     WORDS OF HISTOUT IN USE = 19 + NO. OF TARGETS IN COLOCATED GROUP
      NWORDOUT = 19 + NTA
  173 KIND = KIND + 1
C     GET NEXT TARGET INDEX, SEE IF IT IS THE PRIMARY TARGET OF GROUP
      INTAR=IGET(KEYTIN,KIND,COLAR)
   18 IF (INTAR .EQ. INTC) 88,19
   19 IF(PKNAV .GT. 0) 25,20
C     IF NOT, GET DISTANCE FROM THIS TARGET TO NEXT ONE
   20 IDX=IGET(KEYDX,KIND,COLAR)
      IDY=IGET(KEYDY,KIND,COLAR)
C     COMPUTE COORDINATES OF NEXT TARGET
      IWTX=IWTX + IDX
      IWTY=IWTY + IDY
      IF(IPRINT(27)) 191,5
  191 PRINT 9019, IWTX,IWTY
 9019 FORMAT (2I10)
      GO TO 5
C     RECORD TARGET NOT IN COLAR
   87 CALL HIST(1 ,7)
   88 RETURN
C     KILLED BY NAVAL ATTACK WEAPON
   25 ISTAT=IGET(ISTAT,INTAR,STATUS)
      IF(ISTAT) 26,27
C     TARGET KILLED
   26 CALL IPUT(ISTAT,INTAR,0,STATUS)
      CALL HIST(1 ,2)
      GO TO 67
C     TARGET ALREADY DEAD
   27 CALL HIST(1 ,5)
      GO TO 88
      END
```

```
                                        IDENT     BDAMAGE
        PROGRAM LENGTH                  01275
        ENTRY POINTS     BDAMAGE        00124
        BLOCK NAMES
                         AGZSUM         00500
                         AREADAT        00145
                         ASMS           00050
                         BOMBER         01060
                         BRKPNT         00447
                         CAPACITY       00120
                         DAMAGE         00100
                         EDATA          01200
                         KEYWRDS        00004
                         GROUND         00002
                         IPRINT         00002
                         KEYWORDS       00024
                         MISSLE         01560
                         NAMES          00413
                         NWORDOUT       00001
                         WARHEAD        00226
                         ZONES          00475
                         I9501          54731
        EXTERNAL SYMBOLS
                         Q2007111
                         THEND.
                         Q3000040
                         QHUDICT.
                         HISTWRIT
                         HIST
                         IGET
                         VLRAD
                         IPUT
                         ZABORT
                         IFIND
                         RANF
                         EXPF
                         STH.
                         QNSINGL.
```

```
C00240  ABRATE
C00000  AINT     00525  00525  00531  00532  00536  00536
C00000  AREA
C00472  B
P00124  BDAMAGE  00124
P01175  BEGIN.   01177
C00050  CCPCT    00610  00610  00624  00624
C00024  CEPA
C00500  CEPB
C01060  CEPM
C00144  CEPW
P01113  CNVRTI.  00445  00447  00451  00452  00476  00500  00502  00553  00555  00573  00575
                 00577  00601  00617  00621  00623  00625  00704  01050  01051
C45071  COLAR    00776  01012  01026  01033
P00006  CRFMT.   00455  00505  00560  00604  00630  00707  01054
P01110  DEFCMP   00357  00516  00521  01147
C00000  DEFPCT   00564  00564  00600  00600
P01111  DEFZONE  00351  00554  01157
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCH     00174  00174
C00007  DHCHC
P00001  DICT.    00126  00131  00134  00170  00206  00214  00237  00244  00251  00256  00270
                 00301  00324  00330  00335  00342  00346  00354  00443  00454  00460  00473
                 00504  00506  00550  00557  00570  00603  00614  00627  00635  00644  00651
                 00656  00701  00706  00716  00723  00734  00746  00755  00766  00774  01010
                 01024  01031  01045  01053  01056  01063  01071  01076  01103
P01231  EK       00302  00317
P01200  ENDING.  00127  01061  01176
P00000  EXIT.    01201
X00015  EXPF     00300
C00526  EXTRA
P01232  FN       00272  00274  00306
P00006  FORMAT.
P00455  GGG0000. 00441
P00505  GGG0001. 00471
P00560  GGG0002. 00546
P00604  GGG0003. 00566
P00630  GGG0004. 00612
P00707  GGG0005. 00677
P01054  GGG0006. 01043
X00006  HIST     00133  00236  00243  00250  00327  00341  01055  01075  01102
X00065  HISTWRIT 00130
P01233  HOB      00200  00272
P01234  I        00533  00540  00632  00636  00645  00552  00657  00712  01130
C00000  IAGX     00201  00201
C00001  IAGY     00203  00203
C00513  IALERT
C00013  IALERTC
C00517  IALT
C00017  IALTC
C00001  IBASE
```

P01235	IC	00140	00142	00145	00406	00412	00414	00501	00513	00514	01140	
C00511	ICLASS	00137	00137									
C00011	ICLASSC											
P01236	IDX	01027	01035									
P01237	IDY	01034	01036									
X00013	IFIND	00765										
C00740	IFUNCR											
C01440	IFUNCM											
X00007	IGET	00205	00213	00255	00345	00353	00457	00634	00643	00650	00655	00715
		00722	00754	00773	01007	01023	01030	01062				
C00524	IHT											
C00024	IHTC											
P01240	II	00423	00426	00436								
P01241	IK	00211										
C00020	IKEEP	00207										
P01114	INC0001.	00147	01143	01173								
P01115	INC0007.	00524	00531	01153	01162							
P01116	INC0010.	00535	01122	01134	01163							
C00501	INBASE											
C00500	INDATA											
C00036	INDREGCL	00362	00362	00366	00366	00372	00372	00376	00376	00402	00402	
C00055	INDREGTY	00427	00427									
C00772	INDE											
C00272	INDEC											
C00002	INDM											
C00652	INDP											
C00152	INDPC											
C00502	INDV											
P01176	INITIAL.	00127										
C00503	INTAR	00207	00215	00257	00336	00347	00355	00361	00361	00365	00365	00371
		00371	00375	00375	00401	00401	00425	00425	00446	00446	00461	00477
		00477	00641	00641	00717	00724	00735	00747	00756	00762	00762	00767
		01013	01013	01014	01014	01064	01072					
P01242	INTC	00763	01015									
C00514	INZONE											
C00014	INZONC											
C00120	IOVERLAP	00637	00646	00653	00660							
C00000	IPRINT	01141										
X00011	IPUT	00334	00733	00745	01070							
C00740	IR											
C00512	IREG											
C00012	IREGC											
P01243	ISTAT	00217	01066									
P01244	IT	00422	00432	00434	00435	00445	00455					
P01245	ITAR	00640										
P01246	ITARTYPE	00433	00456	00466	00563	00576	00637	00622				
C00510	ITYPE	01167	01167									
C00010	ITYPC											
P01247	IVOLN	00261	00262									
P01250	IWTX	00202	00222	00223	01034	01035	01047					
P01251	IWTY	00204	00224	00224	01036	01037	01051					
C01112	IWTYP											
C00412	IWTYPC											
P00003	IZCN	00647	00654	00661	00664	00667						

P01252	IZONE	00463	00464	00561	00572	00605	00616					
P00130	.1											
P00321	.10											
P00334	.11	00326										
P00365	.110	00363	00363									
P00371	.111	00367										
P00405	.112	00373										
P00411	.113	00373	00374									
P00414	.114	00410										
P00432	.115	00430										
P00434	.116	00430	00431									
P00457	.117	00433										
P00465	.1171	00465										
P00510	.1172	00465										
P00513	.118	00404										
P00521	.119	00517										
P00605	.120	00512										
P00715	.12	00242	00247	00254	00333	00364	00400	00403	00403	00517	00520	00527
		00537	00560	00604	00630	00711						
P00327	.121	00325	00326									
P00731	.13											
P00740	.135	00727	00730									
P00743	.136											
P00524	.140	00522										
P00530	.140	00526										
P00754	.14											
P00540	.141											
P00631	.150	00623										
P00742	.15	00751										
P00443	.151											
P00666	.152	00665										
P00673	.153											
P00707	.154	00665	00672	00672	00676							
P00712	.155	00642										
P00677	.156											
P00561	.160	00511										
P00765	.16											
P00773	.17	00753	00771									
P01035	.173	01000										
P01041	.174	01000										
P01014	.18											
P01017	.19	01016										
P01043	.191	01042										
P00144	.2											
P01023	.20	01021	01021									
P00147	.21	00143	00143									
P01062	.25	00163	01022									
P01070	.26	01067										
P01112	.27	01067										
P00156	.3											
P00167	.31											
P00164	.32	00162	00162									
P00201	.4											
P00375	.41	00367	00370									

P00401	.42	00377	00377							
P00235	.5	01042	01054							
P00236	.51	00212								
P00213	.6	00212								
P00243	.61	00221								
P00222	.7	00220								
P00232	.8									
P00752	.8.	00741	00742	01101	01106					
P00250	.81	00235								
P01055	.87	00772								
P01061	.88	00761	01016							
P00255	.9	00234	00235							
P00317	.93	00310								
P00311	.94	00307	00307							
P01202	.ERASER.	00165	00172	00223	00225	00230	00274	00275	00277	00322
P00045	..142	00551								
P00121	..9019	01040								
P00006	..9116	00444								
P00025	..9117	00474								
P00075	..9119	00615								
P00110	..9156	00702								
P00061	..9160	00571								
P00271	.ZOOOOO1.	00255								
P01253	J	00662	00663	00666	00707					
P01254	JJ	00417	00423	00450	00467					
C00003	JNTAR									
C00525	JWT									
C00025	JWTC									
P01255	KCOL	00157	00752	00764						
P01256	KDEF	00721	00726	00731	00732	00736				
C00017	KDEFCMP	00355								
C00015	KDEFZON	00347								
C00000	KEYARRAY									
C00011	KEYDX	01025								
C00012	KEYDY	01032								
C00010	KEYNTA	00775								
C00007	KEYTIM	01011								
C00374	KILLZ									
P01257	KIND	00770	00775	01001	01002	01005	01006	01011	01025	01032
P01260	KK	00421	00437	00452						
P01261	KOLCC	00760								
C00144	KRAD	00667	00670	00670	00673	00673	00703	00703		
C00001	KTAR	00030								
C00001	KZON	00645	00652	00657						
P01262	LDEF	00726	00740	00743	00744	00750				
C00001	LINKS									
C00473	MAXZONE									
C00524	MHT									
C00004	MISDEF									
C00525	MWT									
C00030	NASZ	00150	00150	00151						
C00530	NALT									
C00030	NALTC									
C00002	NAMCLS									

C00000	NAMESIDE	00552	00553									
C00021	NAMETYPE	00475	00476									
C00021	NAVDEL											
C00000	NBCELL											
C00017	NBLOETYP											
C00520	NCM											
C00020	NCMC											
C00515	NDMI											
C00015	NDMIC											
C00516	NDLC											
C00016	NDLCC											
C00074	NLHR	00671	00674	00675								
C00275	NPEN2											
C00530	NPLAN											
P01263	NTA	00777	01002	01003								
P01264	NTARTYP	00470	00475									
C00000	NTYPECOM	00415	00415	00417	00420							
P01265	NVN	00264	00271									
C00000	NWGRIDOUT	01004	01004									
C00504	NWTYP	00152	00153	00166	00166	00264	00265					
C00004	NWTYPC											
P01107	OSIDE	00545	00552									
C00000	OUTDATA											
P01122	P00001.0	01125										
C00120	PABORT											
C00240	PDES											
C00062	PDUD											
C00360	PERF											
C00000	PINC											
C01200	PKMIS											
C00521	PKNAV	00160	00160	01017	01017							
C00021	PKNAVC											
C00000	PLABORT											
C00500	PLABT											
C00360	PRABT											
X00001	02037111	00167										
X00003	03000040	01040										
X00004	QBODICT.	00000	00125									
X00017	QNSINGL.	01112										
X00014	RANF	00323										
P01120	RELCON..	00132	00136	00241	00246	00253	00332	00340	00344	00507	00737	00751
		01050	01074	01100	01105	01175						
C00500	SIDE	00543	00544									
C00000	SIDEC											
P01266	SK	00276	00276	00302	00303	00305	00312	00314	00315			
P01267	SK2	00303	00312	00313	00314							
C00522	SPARE											
C00022	SPC											
P01270	SSKP	00320	00325									
C15531	STATUS	00210	00216	00260	00337	00350	00356	00462	00720	00725	00736	00750
		00757	01065	01073								
X00016	STH.	00442	00472	00547	00567	00613	00700	01044				
P01271	SUM	00305	00316	00316	00320							
C00531	TABORT											

```
C00031  TABORTC
C00003  TABDEFR1   00717  00735
C00002  TABDEFLS   00724  00747
C00001  TCOL       00756
X00002  TBENO.     00453  00503  00556  00602  00626  00705  01052
C00532  TINC
C00032  TINCC
C00620  TLINTR
C01320  TLINTM
C00120  TNOEL
C00500  TPOWER
C00620  TRET
P00437  TS00001.   00424
C00000  TSTAT      00215  00336  01064  01072
C00005  TVULN      00257
C00240  TYD        00152  00154  00155
P01127  UP00001.   00534  00541  00633  00713  01123  01130  01131  01132  01134  01135
P01137  UP00004.   00141  00146  00407  00413  00515  01140  01141  01142  01144  01144
P01146  UP00006.   00360  01147  01150  01151  01153  01154
P01156  UP00007.   00352  01157  01160  01161  01164  01164
P01165  UP00010.   01117  01170  01171  01172  01174  01174
X00010  VLRAD      00267
C00001  VULN       00262  00263
P01272  WR         00273  00273
P00425  WS00001.   00440  00440
P00535  WS00002.   00542
P00634  WS00003.   00714
P00663  WS00004.   00715
P01273  WTR2       00231  00234  00275
C00000  WTR21MT    00232  00232
C01126  XDGZ
C00426  XDGZC
C00026  XX
P01274  Y23        00173  00233
C01142  YDGZ
C00442  YDGZC
C00000  YIELD      00153  00154  00171  00171  00255  00271
X00012  ZABORT     00505
C00176  ZCCPCT     00606  00606  00611  00611  00620  00620
C00077  ZDEFPCT    00562  00562  00565  00565  00574  00574
C01156  ZDGZ
C00456  ZDGZC
C00006  ZONE       00461
   00455 SYMBOLS
```

```
      SUBROUTINE BLAUN
CSUBR     BLAUN     27SEPT71  ******************************************
C     TESTS FOR A SUCCESSFUL BOMBER OR TANKER LAUNCH
CUSE      BOMBER    28APR71   ******************************************
      COMMON/BOMBER/PLABT(80),TMDEL(80),ABRATE(80),PRABT(80),CEPB(80),
     1      TLINTH(80),IFUNCB(80)
CEND      BOMBER    ******************************************************
      COMMON/DATTA/ISIZE
CUSE      EDATAB    4JAN71    ******************************************
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DMCBC,ITYPC,
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),
     2IHTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(32),SIDE,
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMCB,ITYPE,ICLASS,IREG,IALERT,
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),
     7ZDGZ(12),INDATA(32)
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)
      TYPE INTEGER DGX,DGY,DMCB,XDGZ,YDGZ,ZDGZ
      TYPE INTEGER DGXC,DGYC,DMCBC,XDGZC,YDGZC,ZDGZC
      TYPE INTEGER OUTDATA,SIDE,SIDEC
CEND      EDATAB    ******************************************************
      COMMON/KEYWORDS/KEYARRAY(20)
      EQUIVALENCE (KEYARRAY(1),ISTAT)
CUSE      TANKER    28APR71   ******************************************
      COMMON/TANKER/TPLABT(40),TTMDEL(40),
     1      TABRATE(40),TLINIT(40),IFUNCT(40)
CEND      TANKER    ******************************************************
      COMMON/TIME/TIME,FUTIME
CUSE      NBCELL    22JUN71   ******************************************
      COMMON/195N1/NBCELL,LINKM(7000),STATUS(12000),CGLAR(4000)
CEND      NBCELL    ******************************************************

    1 CONTINUE
C     GET LAUNCH BASE INDEX FROM BOMBER/TANKER HISTORY TABLE
    2 INBASE = INDP(IHT)
      IALT = 1
C     RECORD CALL TO BLAUN--INBASE MUST BE FILLED IN FIRST
      CALL HIST(2,1)
C     GET STATUS OF LAUNCH BASE AND TEST IF IT IS DEAD
      ISTAT=IGET(ISTAT,INBASE,STATUS)
      IF(ISTAT .EQ. 0) 80,3
C     TEST VEHICLE CLASS, GET CHARACTERISTICS
    3 IF (ICLASS .EQ. 3) 32,31
C     CLASS 2 CONSISTS OF BOMBERS
   31 PLA = PLABT(ITYPE)
      TM = TMDEL(ITYPE)
      ABR = ABRATE(ITYPE)
      GO TO 35
C     CLASS 3 CONSISTS OF TANKERS
   32 PLA = TPLABT(ITYPE)
      TM = TTMDEL(ITYPE)
      ABR =TABRATE(ITYPE)
C     TEST FOR VEHICLE LAUNCH ABORT
   35 IF (PLA .LE. RANF(-1)) 6,4
```

```
C     COMPUTE DELAYED LAUNCH TIME
    4 FUTIME = TIME - LOGF(RANF(-1))*TM
C     RECORD TAKE-OFF ABORT(DELAY)
      CALL HIST(2,2)
C     PLANT NEW LAUNCH FOR BOMBER/TANKER
    5 CALL PLANTS(INDR(IHT),ISIZE)
      RETURN
C     COMPUTE BOMBER/TANKER IN-FLIGHT ABORT TIME
    6 IF (ABR.LE.0)7,8
    7 TABORT = 1000.
      GO TO 9
    8 TABORT = TIME-LOGF(RANF(-1))/ABR
    9 CONTINUE
C     RECORD SUCCESSFUL BOMBER/TANKER LAUNCH
      CALL HIST(2,4)
C     PLANT NEXT BOMBER/TANKER EVENT
      CALL NEXTEVNT
      RETURN
C     RECORD UNSUCCESSFUL LAUNCH -DEAD BASE
   50 CALL HIST(2,3)
      END
```

```
                                        IDENT     BLAUN
PROGRAM LENGTH                  00147
ENTRY POINTS     BLAUN          00003
BLOCK NAMES
                 BOMBER         01060
                 DATTA          00001
                 EDATA          01200
                 KEYWORDS       00024
                 TANKER         00310
                 TIME           00002
                 195..1         54731
EXTERNAL SYMBOLS
                 QUODICT.
                 HIST
                 IGET
                 PLANTS
                 NEXTEVNT
                 RANF
                 LOGF
```

```
P00143  ABR        00035  00045  00100  00115
C00240  ABRATE     00034  00034
C00472  B
P00132  BEGIN.     00132
P00003  BLAUN      00003
C00500  CEPB
C45071  COLAR
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCB
C00007  DHCBC
P00001  DICT.      00005  00013  00016  00051  00057  00062  00067  00075  00111  00114  00121
                   00124  00127
P00133  ENDING.    00006  00077  00125  00131
P00000  EXIT.      00133
C00525  EXTRA
C00001  FUTIME     00065
X00002  HIST       00012  00066  00120  00126
C00513  IALERT
C00013  IALERTC
C00517  IALT       00011
C00017  IALTC
C00001  IBASE
C00511  ICLASS     00024  00024
C00011  ICLASSC
C00740  IFUNCB
C00240  IFUNCT
X00003  IGET       00015
C00524  IHT        00007  00007  00071  00071
C00024  IHTC
C00501  INBASE     00010  00017
C00500  INDATA
C00772  INDE       00072  00076
C00272  INDEC
C00002  INDM
C00652  INDP       00010
C00152  INDPC
C00502  INDV
P00132  INITIAL.   00005
C00503  INTAR
C00514  INZONE
C00014  INZONC
C00512  IREG
C00012  IREGC
C00000  ISIZE      00076
P00144  ISTAT      00021
C00510  ITYPE      00027  00027  00037  00037
C00010  ITYPC
C01112  IWTYP
C00412  IWTYPC
P00007  .1
P00007  .2
```

P00024	.3	00022				
P00027	.31	00025				
P00037	.32	00026				
P00046	.33	00038				
P00054	.4	00053				
P00071	.5					
P00100	.6	00052	00053			
P00103	.7	00101				
P00106	.8	00102				
P00126	.8C	00123				
P00129	.9	00105				
P00134	.ERASER.	00047	00055	00060	00107	00112
P00076	.ZCOOCI.	00073				
C00003	JNTAR					
C00525	JWT					
C00025	JWTC					
C00000	KEYARRAY					
C00001	LINKM					
X00007	LOGF	00061	00113			
C00524	MHT					
C00525	MWT					
C00530	NALT					
C00030	NALTC					
C00000	NBCELL					
C00520	NC4					
C00020	NC4C					
C00515	NDHI					
C00015	NDHIC					
C00516	NDLO					
C00016	NDLOC					
X00005	NEXTEVNT	00123				
C00530	NPLAN					
C00504	NWTYP					
C00004	NWTYPC					
C00000	OUTDATA					
C00521	PKNAV					
C00021	PKNAVC					
P00145	PLA	00031	00041	00052		
C00000	PLART	00030	00030			
X00004	PLANTS	00074				
C00360	PRART					
X00001	OBJDICT.	00000	00004			
X00006	RANF	00050	00056	00110		
C00500	SIDE					
C00000	SIDEC					
C00522	SPARE					
C00022	SPC					
C15531	STATUS	00020				
C00531	TABORT	00104	00104	00117	00117	
C00031	TABORTC					
C00120	TABRATE	00044	00044			
C00000	TIME	00064	00064	00116	00116	
C00532	TINC					
C00032	TINCC					

```
C00620  TLINTR
C00170  TLINTT
P00146  TM        00033   00043   00063
C00120  TMUEL     00032   00032
C00000  TPLANT    00040   00040
C00000  TSTAT     00017
C00050  TTMDEL    00042   00042
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C01156  ZDGZ
C00456  ZDGZC
   00171 SYMBOLS
```

```
      SUBROUTINE BMDSTAT
CSUBR     BMDSTAT   29SEP71  ******************************************
      COMMON/ABMDATA/IABDEF(2),PSEL(2),PAK(2),PREM(2),PAKD(2)
      COMMON/AREADAT/AINT(20,3),NLRN(20),ICVERLAP(20),KRAD
      TYPE INTEGER AINT
CUSE      BRKPNT    28APR71  ******************************************
      COMMON/BRKPNT/NTYPECUM(15),NBLUETYP(15),INDBEGCL(15),INDBEGTY(250)
CEND      BRKPNT    ******************************************************
      COMMON/KEYWORDS/KEYARRAY(20)
      EQUIVALENCE (ITERM,KEYARRAY(1))
CUSE      NAMES     28APR71  ******************************************
      COMMON/NAMES/NAMESIDE(2),NAMCLS(15),NAMETYPE(250)
CEND      NAMES     ******************************************************
CUSE      TBMDATA   28APR71  ******************************************
      COMMON/TBMDATA/PTR(2),NTINT(500)
CEND      TBMDATA   ******************************************************
      TYPE INTEGER BEGZON,ENDZON
CUSE      WBCELL    22JUN71  ******************************************
      COMMON/195B1/WBCELL,LINKM(7000),STATUS(12000),COLAR(4000)
CEND      WBCELL    ******************************************************
      DO 7 K=1,2
      INTOTS=0
      BEGZON=1+10*(K-1)
      ENDZON=10+10*(K-1)
      PRINT 101,NAMESIDE(K)
      DO 3 J=BEGZON,ENDZON
      INTOT=0
      DO 4 I=1,3
    4 INTOT=INTOT+AINT(J,I)
      IF(INTOT) 6,3
    6 PRINT 104,J,INTOT
      INTOTS=INTOTS+INTOT
    3 CONTINUE
      PRINT 106,INTOTS
  106 FORMAT(14X,5HTOTAL,5X,I20)
    7 CONTINUE
  104 FORMAT( 14X,I10,I20)
  101 FORMAT(/10X,A4,6X,4HZONE,3X,1/HAREA INTERCEPTORS)
      IBEG = INDBEGCL(13)
      IEND = INDBEGTY(NTYPECUM(13)+1) - 1
      PRINT 102
  102 FORMAT(//,4X,6HTARGET,3X,7HDEFENSE,5X,12HINTERCEPTORS)
      DO 5 I=IBEG,IEND
      IT=ISET(ITERM,I,STATUS)
      IF (IT .EQ. 0) 5,2
    2 PRINT 103,I,IT,NTINT(IT)
  103 FORMAT(3I10)
    5 CONTINUE
      END
```

```
                                        IDENT     BMDSTAT
PROGRAM LENGTH                  00275
ENTRY POINTS     BMDSTAT        00054
BLOCK NAMES
                 ABMDATA        00012
                 AREADAT        00145
                 BRKPNT         00447
                 KEYWORDS       00024
                 NAMES          00413
                 TBMDATA        00766
                 195 1          54731
EXTERNAL SYMBOLS
                 THEN.
                 PRODICT.
                 IGET
                 STH.
                 UNSINGL.
```

```
C00000  AINT        00115  00115
P00256  BEGIN.      00257
P00224  BEGZON      00066  00103
P00054  BMDSTAT     00054
P00226  CNVRTI.     00100  00127  00130  00145  00210  00211  00213
C45071  COLAR
P00003  CREMT.      00150  00152  00152  00170  00216
P00001  DICT.       00056  00075  00102  00124  00132  00143  00147  00164  00167  00175  00205
                    00215
P00260  ENDING.     00057  00222  00256
P00223  ENDZON      00072  00137
P00000  EXIT.       00261
P00003  FORMAT.
P00103  GGGGGGG.    00073
P00133  GGGGGGG1.   00122
P00150  GGGGGGG2.   00141
P00170  GGGGGGG3.   00162
P00216  GGGGGGG4.   00203
P00265  I           00111  00171  00176  00207  00218  00256
C00000  IARDEF
P00266  IBEG        00153  00170
P00267  IEND        00161  00220
P00003  IGET        00174
P00227  INDDDD2.    00113  00230  00240  00242  00244
C00036  INDBEGCL    00152  00152
C00055  INDBEGTY    00157  00160
P00256  INITIAL.    00057
P00270  INTOT       00110  00114  00116  00120  00130  00134
P00271  INTOTS      00063  00133  00134  00145
C00120  IOVERLAP
P00272  IT          00200  00211  00212
C00015  ITERM       00176
P00203  .2          00201
P00135  .3          00121
P00114  .4
P00216  .5          00202
P00122  .6          00120
P00150  .7
P00263  .ERASER.    00064  00065  00070  00071
P00017  ..101       00076
P00034  ..102       00165
P00051  ..103       00206
P00012  ..104       00125
P00003  ..105       00144
P00262  .NSTIFF.    00156  00157
P00273  J           00104  00128  00135  00235
P00274  K           00061  00063  00067  00077  00150
C00000  KEYARRAY
C00144  KRAD
C00001  LINKM
C00002  NAMCLS
C00000  NAMESIDE    00077  00100
C00021  NAMETYPE
C00000  NACELL
```

```
C00017  NBLUETYP
C00074  NLHR
C00002  NTINT     00212   00213
C00000  NTYPECOM  00154   00154
P00230  P00001.0  00232
P00242  P00002.0  00245
C00004  PAK
C00010  PARO
C00006  PREM
C00002  PSEL
C00000  PTK
X00002  [illegible]  00000   00055
X00[illegible]  [illegible]  [illegible]
C15[illegible]  [illegible]  00177
X00[illegible]  STM.     00074   00123   00142   00163   00214
X00001  THENO.   00101   00131   00146   00166   00214
P00137  TS00002.  00106
P00220  TS00004.  00173
P00234  UP00001.  00105   00136   00230   00235   00237   00237   00241   00241
P00247  UP00002.  00112   00172   00217   00243   00250   00251   00252   00254   00255
P00062  *S00001.  00151
P00107  *S00002.  00140   00140
P00114  *S00003.  00117
P00174  *S00004.  00221   00221
  00115 STM-OLS
```

```
      SUBROUTINE HOMBF                                                  1000
CSUBR     HOMBF     26AUG70   ***********************************      3000
C     MOVES UNUSED HISTORY TABLE LINES,  WEAPON TYPES OF KILLED VEHICLE  2000
C     INTO HISTOUT BLOCK FOR WRITING ONTO HISTORY TAPE                  3000
CUSE      EDATAB    4JAN71    ***********************************      4000
      COMMON/EDATA/SIDEC,IBASE,INOM,JNTAR,NWTYPC,DGXC,DGYC,DHOBC,ITYPC-  1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLCC,IALTC,NCMC,PKNAVC,SPC(2),  2000
     2I=TC,J=TC,XX(2),NALTC,TABORTC:TIMCC(80),INDPC(80),INDEC(80),        3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),SC(8),OUTDATA(320),SIDE,  5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHOB,ITYPE,ICLASS,IREG,IALERT,     6000
     5INZONE,NDHI,NDLC,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,     7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),      8000
     7ZDGZ(12),INDATA(320)                                                9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                   11000
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)                      12000
      TYPE INTEGER DGX,DGY,DHOB,XDGZ,YDGZ,ZDGZ                           13000
      TYPE INTEGER DGXC,DGYC,DHOBC,XDGZC,YDGZC,ZDGZC                     14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                    15000
CEND      EDATAB    ***********************************                  4000
      COMMON/HISTOUT/NSIDE,NINBASE,NINDV,NINTAR,NNWTYP,NTIME,NEVENT,     5000
     1 NPLACE,NITYPE,NICLASS,NIREG,NIALERT,NUUU,NINZONE,NWDECOYS,NIALT,  6000
     2 NACM,NASMTYPE,NMCODE,DUMMY(5),NMHT,NDELAY,TINCN(40),INDPN(40),    7000
     3 INDEN(40),NWTYPEN(6),NMISTOUT(200)                                8000
      EQUIVALENCE (NSIDE,NMISTOUT(1))                                    9000
      COMMON/INHOMBF/INHOMBF                                            10000
      COMMON/NWORDOUT/NWORDOUT                                          11000
                                                                        12000
C     SEE IF HOMBF WANTED                                               13000
    1 IF (INHOMBF .EQ. 0)GO TO 2                                        14000
C     COMPUTE NUMBER OF LINES REMAINING IN HISTORY TABLE                15000
    2 NMHT = MHT - NALT                                                 16000
C     FILL IN UNEXECUTED HISTORY TABLE LINES OF KILLED VEHICLE          17000
      DO 3 I=1,NMHT                                                     18000
      TINCN(I) = TINC(MHT-I+1)                                          19000
      INDPN(I) = INDP(MHT-I+1)                                          20000
    3 INDEN(I) = INDE(MHT-I+1)                                          21000
C     FILL IN A MAXIMUM OF SIX UNUSED WEAPONS OF THE KILLED VEHICLE     22000
      J = MINOF(6,MWT)                                                  23000
      DO 4 I=1,J                                                        24000
    4 NWTYPEN(I) = IWTYP(JWT-I+1)                                       25000
      NWORDOUT = 152                                                    26000
      RETURN                                                            27000
    5 NMHT =                                                            28000
      NWORDOUT = 25                                                     29000
      END                                                               30000
```

```
                                        IDENT     RCMBF
PROGRAM LENGTH                  00107
ENTRY POINTS     RCMBF          00003
BLOCK NAMES
                 EDATA          01200
                 HISTOUT        00319
                 INBCMF         00001
                 MCDRIOUT       00001
EXTERNAL SYMBOLS
                 01010100
                 BHUBICD.
                 MINUS
```

C00472	H										
P00076	HEGIN.	00077									
P00003	HCMHF	00003									
P00104	COUNT.	00020	00021	00056	00057						
C00505	DGX										
C00005	DGAC										
C00506	DGY										
C00006	DGYC										
C00507	DHCM										
C00007	DHCMC										
P00001	DICT.	00005	00047								
C00023	DUMMY										
P00100	ENDING.	00006	00071	00075	00076	00077					
P00000	EXIT.	00101									
C00526	EXTRA										
C00031	HDELAY										
C00005	HTIME										
P00105	I	00015	00021	00023	00031	00037	00045	00054	00056	00061	00067
C00513	IALERT										
C00013	IALERTC										
C00517	IALT										
C00017	IALTC										
C00001	IBASE										
C00511	ICLASS										
C00011	ICLASSC										
C00524	IHF										
C00024	IHTC										
C00501	INBASE										
C00000	INHCMHF	00007	00007								
C00500	INDATA										
C00772	INDE	00042	00042								
C00152	INDEN	00043	00043								
C00272	INDEC										
C00002	INDM										
C00652	INDP	00034	00034								
C00102	INDPN	00035	00035								
C00152	INDPC										
C00502	INDV										
P00076	INITIAL.	00005									
C00503	INTAR										
C00514	INZONE										
C00014	INZONC										
C00512	IREG										
C00012	IREGC										
C00510	ITYPE										
C00010	ITYPC										
C01112	IWTYP	00064	00064								
C00412	IWTYPC										
P00007	.1										
P00012	.2	00010									
P00036	.3										
P00060	.4										
P00072	.5	00011									
P00152	.NSTIFF.	00025	00025	00033	00033	00041	00041	00063	00063		

F00106	J	00052	00054						
C00003	JNTAR								
C00525	JWT	00060	00060						
C00025	JWTC								
C00524	MHT	00012	00012	00022	00022	00030	00030	00036	00036
X00003	MINOF	00046							
C00525	MWT	00030							
C00530	NALT	00013							
C00030	NALTC								
C00021	NASMTYPE								
C00022	NBCODE								
C00529	NCM								
C00920	NCMC								
C00515	NDHI								
C00015	NDHIC								
C00516	NDLC								
C00016	NDLCC								
C00014	NDUD								
C00006	NEVENT								
C00000	NHISTOUT								
C00013	NIALERT								
C00017	NIALT								
C00011	NICLASS								
C00001	NINHASE								
C00002	NINDV								
C00003	NINTAR								
C00015	NINZONE								
C00012	NIREG								
C00010	NITYPE								
C00030	NMHT	00013	00014	00016	00016	00072	00073		
C00020	NNCM								
C00016	NNDECOYS								
C00004	NNATYP								
C00007	NPLACE								
C00530	NPLAN								
C00000	NSIDE								
C00000	NWGROUOUT	00070	00071	00074	00074				
C00504	NWTYP								
C00222	NWTYPEN	00065	00065						
C00004	NWTYPC								
C00000	OUTDATA								
C00521	PKNAV								
C00021	PKNAVC								
X00001	QIUTOIOO	00051							
X00002	QBUDICT.	00000	00004						
C00500	SIDE								
C00000	SIDEC								
C00522	SPARE								
C00022	SPC								
C00531	TABCHT								
C00031	TABCHTC								
C00532	TINC	00026	00026						
C00032	TINCN	00027	00027						
C00032	TINCC								

```
P00046  TS00001.   00017
P00070  TS00002.   00055
P00022  WS00001.   00045
P00060  WS00002.   00067
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C01156  ZDGZ
C00456  ZDGZC
   00167 SYMBOLS
```

```
      SUBROUTINE BTINPRIN                                               1000
CSUBR     BTINPRIN  28APRT1   ****************************************  11000
CUSE      EDATAB    4JAN71    ****************************************   2000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAN,NWTYPC,DGXC,DGYC,DHCBC,ITYPC,  1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),  2000
     2IHTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),       3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(320),SIDE,  5000
     4 INBASE,INDV,INTAN,NWTYP,DGX,DGY,DHCB,ITYPE,ICLASS,IREG,IALERT,    6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,    7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),     8000
     7ZDGZ(12),INDATA(320)                                               9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                  11000
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)                     12000
      TYPE INTEGER DGX,DGY,DHCB,XDGZ,YDGZ,ZDGZ                          13000
      TYPE INTEGER DGXC,DGYC,DHCBC,XDGZC,YDGZC,ZDGZC                    14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                   15000
CEND      EDATAB    ****************************************************  2000
      COMMON/IPSWICH/IPSW1,IPSW2,IPSW3,IPSW4,IPSW5,IPSW6                 3000
     1,IPSW7                                                             4000
   31 PRINT 601,(INDATA(II),II=1,26)                                     5000
      N = 1                                                              6000
      PRINT 609                                                          7000
      NHT = MHT                                                          8000
      IF (NHT .LE. 10) 62,61                                             9000
   61 NHT = N + 9                                                       10000
   62 IF (NHT .LT. MHT) 64,63                                           11000
   63 NHT = MHT                                                         12000
   64 PRINT 602,(TINC(II),II=N,NHT)                                     13000
      PRINT 603,(INDP(II),II=N,NHT)                                     14000
      PRINT 604,(INDE(II),II=N,NHT)                                     15000
      PRINT 609                                                         16000
      IF (NHT .GE. MHT) 66,65                                           19000
   65 N = NHT + 1                                                       20000
      GO TO 61                                                          21000
   66 IF(IPSW6.EQ.0.OR.ICLASS.NE.2) 20,35                               22000
   35 N = 1                                                             23000
      NWT = MWT                                                         23000
      IF (NWT .LE. 10) 68,67                                            24000
   67 NWT = N + 9                                                       25000
   68 IF (NWT .LT. MWT) 70,69                                           26000
   69 NWT = MWT                                                         27000
   70 CONTINUE                                                          28000
   72 PRINT 605,(IWTYP(JJ),JJ=N,NWT)                                    29000
      PRINT 606,(XDGZ(JJ),JJ=N,NWT)                                     30000
      PRINT 606,(YDGZ(JJ),JJ=N,NWT)                                     31000
      PRINT 606,(ZDGZ(JJ),JJ=N,NWT)                                     32000
      PRINT 609                                                         33000
   73 IF(NWT .GE. MWT) 20,71                                            34000
   71 N = NWT + 1                                                       35000
      GO TO 67                                                          36000
   20 RETURN                                                            37000
  601 FORMAT(7H INDATA,10I10/7X,10I10/7X,6I10)                          38000
  602 FORMAT(7H TINC  ,10F10.4)                                         39000
  603 FORMAT(7H INDP  ,10I10)                                           40000
  604 FORMAT(7H INDE  ,10I10)                                           41000
  605 FORMAT(7H IWTYP ,10I10)                                           42000
```

```
606 FORMAT(7X,10I10)                                    43000
609 FORMAT(1H )                                         44000
    END                                                 45000
```

```
                                        IDENT     HTINPRIN
PROGRAM LENGTH                  00352
ENTRY POINTS     HTINPRIN       00053
BLOCK NAMES
                 EDATA          01200
                 IPSWICH        00007
EXTERNAL SYMBOLS
                 THEND.
                 QRQDICT.
                 STH.
                 QNSINGL.
```

C00472	B											
P00343	BEGIN.	00343										
P00053	BTINPRIN	00053										
P00342	CNVRTI.	00067	00131	00147	00165	00243	00261	00277	00315			
P00003	CRFMT.	00341	00341	00341	00341	00341	00341	00341				
C00505	DGA											
C00005	DGAC											
C00506	DGY											
C00006	DGYC											
C00507	DHCA											
C00007	DHCAC											
P00001	DICT.	00055	00061	00073	00100	00103	00123	00136	00141	00154	00157	00172
		00175	00200	00235	00250	00253	00266	00271	00304	00307	00322	00325
		00330										
P00344	ENDING.	00056	00340									
P00000	EXIT.	00344										
C00526	EXTRA											
P00003	FORMAT.											
P00074	GGOOOOO.	00057										
P00104	GGOOOO1.	00076										
P00137	GGOOOO2.	00121										
P00155	GGOOOO3.	00137										
P00173	GGOOOO4.	00155										
P00201	GGOOOO5.	00173										
P00251	GGOOOO6.	00233										
P00267	GGOOOO7.	00251										
P00305	GGOOOI0.	00267										
P00323	GGOOOI1.	00305										
P00331	GGOOOI2.	00323										
C00513	IALERT											
C00013	IALERTC											
C00517	IALT											
C00017	IALTC											
C00001	IBASE											
C00511	ICLASS	00212	00212									
C00011	ICLASSC											
P00212	IF00001.											
C00524	IHT											
C00024	IHTC											
P00345	II	00064	00065	00070	00126	00127	00132	00144	00145	00150	00162	00163
		00166										
C00501	INBASE											
C00500	INDATA	00066	00066									
C00772	INDE	00164	00164									
C00272	INDEC											
C00002	INDM											
C00652	INDP	00146	00146									
C00152	INDPC											
C00502	INDV											
P00343	INITIAL.	00056										
C00503	INTAR											
C00514	INZONE											
C00014	INZONC											
C00000	IPSW1											

C00001	IPSW2											
C00002	IPSW3											
C00003	IPSW4											
C00004	IPSW5											
C00005	IPSW6	00210	00210									
C00006	IPSW7											
C00512	IREG											
C00012	IREGC											
C00510	ITYPE											
C00010	ITYPC											
C01112	IWTYP	00242	00242									
C00412	IWTYPC											
P00340	.20	00211	00214	00333	00334							
P00057	.31											
P00215	.35	00213										
P00111	.61	00107	00207									
P00113	.62	00107	00110									
P00117	.63	00115	00115									
P00121	.64	00116										
P00205	.65	00203										
P00210	.66	00203	00204									
P00223	.67	00222	00337									
P00225	.68	00221	00222									
P00231	.69	00227	00227									
P00233	.70	00230										
P00335	.71	00333										
P00233	.72											
P00331	.73											
P00003	..601	00062										
P00017	..602	00124										
P00024	..603	00142										
P00031	..604	00166										
P00036	..605	00236										
P00043	..606	00254	00272	00310								
P00047	..609	00101	00176	00326								
P00346	JJ	00240	00241	00244	00256	00257	00262	00274	00275	00300	00312	00313
		00316										
C00003	JNIAN											
C00525	JWT											
C00025	JWTC											
C00524	MHT	00104	00104	00114	00114	00117	00117	00202	00202			
C00525	MHT	00216	00217	00226	00226	00231	00231	00332	00332			
P00347	N	00075	00111	00125	00143	00161	00206	00216	00223	00237	00255	00273
		00311	00336									
C00530	NALT											
C00030	NALTC											
C00520	NCM											
C00020	NCMC											
C00515	NDHI											
C00015	NDHIC											
C00516	NDLC											
C00016	NDLCC											
P00350	NHT	00105	00106	00112	00113	00120	00133	00151	00167	00201	00205	
C00530	NPLAN											

```
P00351  NWT        00220  00220  00224  00225  00232  00245  00263  00301  00317  00331  00335
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PKNAV
C00021  PKNAVC
X00002  QBWDICT.   00000  00054
X00004  UNSINGL.   00341
C00500  SIDE
C00000  SIDEC
C00522  SPARE
C00022  SPC
X00003  STH.       00060  00077  00122  00140  00156  00174  00234  00252  00270  00306  00324
C00531  TABORT
C00031  TABORTC
X00001  THEND.     00072  00102  00135  00153  00171  00177  00247  00265  00303  00321  00327
C00532  TINC       00130  00130
C00032  TINCC
P00133  TS00002.   00126
P00151  TS00003.   00145
P00167  TS00004.   00162
P00245  TS00005.   00240
P00263  TS00006.   00256
P00301  TS00007.   00274
P00317  TS00010.   00312
P00065  WS00001.   00071
P00127  WS00002.   00134  00134
P00145  WS00003.   00152  00152
P00163  WS00004.   00170  00170
P00241  WS00005.   00246  00246
P00257  WS00006.   00264  00264
P00275  WS00007.   00302  00302
P00313  WS00010.   00320  00320
C01126  XDGZ       00260  00260
C00426  XDGZC
C00026  XX
C01142  YDGZ       00276  00276
C00442  YDGZC
C01156  ZDGZ       00314  00314
C00456  ZDGZC
   00217 SYMBOLS
```

```
      SUBROUTINE CHANGALT                                               1000
CSUBR     CHANGALT  28APR71   ****************************************  1800
C     CHANGES THE ALTITUDE INDEX OF A BOMBER                            2000
CUSE      EDATAR    4JAN71    ****************************************  3000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHCBC,ITYPC,  1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),  2000
     2IHTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),      3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(320),SIDE,  5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHCB,ITYPE,ICLASS,IREG,IALERT,   6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,   7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),    8000
     7ZDGZ(12),INDATA(320)                                              9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                 11000
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)                    12000
      TYPE INTEGER DGX,DGY,DHCB,XDGZ,YDGZ,ZDGZ                         13000
      TYPE INTEGER DGXC,DGYC,DHCBC,XDGZC,YDGZC,ZDGZC                   14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                  15000
CEND      EDATAR    ****************************************************  3000
                                                                        4000
C     RECORD CALL TO CHANGA                                             5000
      CALL HIST(17,1)                                                   6000
C     CHANGE ALTITUDE INDEX                                             7000
      IALT = INDP(IHT)                                                  8000
C     PLANT NEXT EVENT FOR THE BOMBER                                   9000
    8 CALL NEXTEVNT                                                    10000
      END                                                              11000
```

```
                                IDENT     CHANGALT
PROGRAM LENGTH              00023
ENTRY POINTS     CHANGALT   00003
BLOCK NAMES
                 EDATA      01200
EXTERNAL SYMBOLS
                 QBQDICT.
                 HIST
                 NEXTEVNT
```

```
C00472  B
P00017  BEGIN.      00017
P00003  CHANGALT    00003
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCB
C00007  DHCBC
P00001  DICT.       00005   00010   00015
P00020  ENDING.     00006   00016
P00000  EXIT.       00020
C00526  EXTRA
X00002  HIST        00007
C00513  IALERT
C00013  IALERTC
C00517  IALT        00013
C00017  IALTC
C00001  IBASE
C00511  ICLASS
C00011  ICLASSC
C00524  IHT         00012   00012
C00024  IHTC
C00501  INBASE
C00500  INDATA
C00772  INDE
C00272  INDEC
C00002  INDM
C00652  INDP        00013
C00152  INDPC
C00502  INDV
P00017  INITIAL.    00006
C00503  INTAR
C00514  INZONE
C00014  INZONC
C00512  IREG
C00012  IREGC
C00510  ITYPE
C00010  ITYPC
C01112  IWTYP
C00412  IWTYPC
P00014  .B
C00003  JNTAR
C00525  JWT
C00025  JWTC
C00524  MHT
C00525  MWT
C00530  NALT
C00030  NALTC
C00520  NCM
C00020  NCMC
C00515  NDHI
C00015  NDHIC
C00516  NDLC
```

```
C00016  NDLCC
X00003  NEATEVNT   00014
C00530  NPLAN
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PKNAV
C00021  PKNAVC
X00001  QBWDICT.   00000   00004
C00500  SIDE
C00000  SIDEC
C00522  SPARE
C00022  SPC
C00531  TABCRT
C00031  TABCRTC
C00532  TINC
C00032  TINCC
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C01156  ZDGZ
C00456  ZDGZC
   00116 SYMBOLS
```

```
      SUBROUTINE CLAUN                                                  1000
CSUBR     CLAUN     22JUN71   ***********************************      19000
C     TESTS IF A LAUNCHED MISSILE COMPLETES POWERED FLIGHT              2000
CUSE      EDATAM    26AUG70   ***********************************       5000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAM,NWTYPC,DGXC,DGYC,DMCBC,       1000
     1             ITYPC,ICLASSC,IREGC,IALERTC,NWPNSC,NTARGC,           2000
     1             MWPNLIST(18),MLAUNLIS(18),MLISTC(270),OUTDATA(320),  3000
     1             SIDE,INBASE,INDV,INTAM,NWTYP,DGX,DGY,DMCB,           4000
     1             ITYPE,ICLASS,IRE,IALERT,NWPNS,NTARG,                 5000
     1             WPNLIST(18),LAUNLIST(18),MLIST(270),INDATA(320)      6000
      TYPE INTEGER OUTDATA,SIDE,CSIDE,AAIM,TAIM,MPNLIST                 7000
      TYPE INTEGER DGX,DGY,DMCB,DGXC,DGYC,DMCBC                         8000
      TYPE INTEGER TAIMC,AAIMC                                          9000
      EQUIVALENCE (SIDEC,OUTDATA(1)),(SIDE,INDATA(1))                  10000
      EQUIVALENCE (IPAYLOAD,INDATA(5)),(NMIRV,INDATA(8))               11000
      EQUIVALENCE (INITVULC,OUTDATA(7)),(INITVULN,INDATA(7))           12000
      EQUIVALENCE (TOFC,OUTDATA(27)),(TOF,INDATA(27))                  13000
      DIMENSION MDATA(14),MDATAC(14),TOF(14),TOFC(14)                  14000
      EQUIVALENCE (MDATAC,OUTDATA(13)),(MDATA,INDATA(13))              15000
      EQUIVALENCE (NWMDS,INDATA(13)),(TAIM,INDATA(14))                 16000
      EQUIVALENCE (AAIM,INDATA(15))                                    17000
      EQUIVALENCE (TAIMC,OUTDATA(14)),(AAIMC,OUTDATA(15))              18000
      EQUIVALENCE (NWMDSC,OUTDATA(13))                                 19000
      DIMENSION FMLIST(270)                                            20000
      EQUIVALENCE (MLIST,FMLIST)                                       21000
CEND      EDATAM    ***********************************               5000
      COMMON/KEYWORDS/KEYARRAY(20)                                      6000
      EQUIVALENCE (KEYARRAY(1),TSTAT),     (KEYARRAY(6),TVULN)          7000
CUSE      MISSLE    28APR71   ***********************************       7100
      COMMON/MISSLE/PINC(80),PABORT(80),PDES(80),PFPF(80),IPOWER(80),   1000
     1     THET(80),IN(80),CEPM(80),PKMIS(80),TLINTM(80),IFUNCM(80)     2000
CEND      MISSLE    ***********************************               7100
      COMMON/PAYLOAD/MIRV(40,2),IWTYP(40,2),WBOMB(40,2),NTREC(40,2),    8000
     1 NADEC(40,2)                                                      9000
      COMMON/TIME/TIME,FUTIME                                          10000
CUSE      WBCELL    22JUN71   ***********************************      11000
      COMMON/19501/WBCELL,LINKM(70000),STATUS(12000),COLAR(8000)        1000
CEND      WBCELL    ***********************************              11000
                                                                       12000
    1 CONTINUE                                                         13000
C     RESTORE LAUNCH BASE TO INITIAL HARDNESS                          15000
      NSMIRV=NMIRV                                                     16000
    2 CALL IPUT(TVULN,INBASE,INITVULN,STATUS)                          17000
C     GET STATUS OF LAUNCH BASE                                        18000
    3 ISTAT=IGET(TSTAT,INBASE,STATUS)                                  19000
C     IF(BASE DEAD) MISSILE ASSUMED KILLED                             20000
    4 IF(ISTAT .EQ. 0) GO TO 5                                         21000
C     SAVE PAYLOAD INDEX AND FIND WARHEAD TYPE                         22000
    5 IP=IPAYLOAD                                                      23000
      IS = SIDE                                                        23100
      NWTYP = IWTYP(IP,IS)                                             24000
      NWMDSC = WBOMB(IP,IS)                                            25000
C     IF MIRV, RECORD SUCCESS                                          26000
      IF(NMIRV .GT. 1) GO TO 6                                         27000
   55 CALL HIST(3,1)                                                   28000
      CALL HIST(3,2)                                                   29000
```

```
C     GET DATA FOR PLANTING BMD EVENTS
    6 DO 11 I=1,NSMIRV
C     PLANT AREA BALLISTIC MISSILE DEFENSE EVENT
      TMORE = TOF(I) - TPOWER(ITYPE)
      IF(TMORE .LE.0) 61,62
   61 TMORE = .00001
   62 FUTIME = TIME + TMORE
C     FILL TGT INDEX,DOZ AND DECOY DATA
    7 CALL MUNPK(MDATA(I))
C     IF NOT MIRVED, PUT IN CORRECT DECOY DATA
    8 IF(NSMIRV .GT. 1) 10,9
    9 TAIMC = NWHDSC + NTDEC(IP,IS)
      BAIMC = TAIMC + NADEC(IP,IS)
      GO TO 11
C     LIST MIRV TARGETS
   10 CALL HIST(3,3)
C     PLANT AREA BMD EVENT
   11 CALL PLANTS(18,12)
      RETURN
C     RECORD MISSILE DESTRUCTION IN LAUNCH PHASE
   70 CALL HIST(3,1)
      CALL HIST(3,4)
      DO 80 I=1,NSMIRV
      CALL MUNPK(MDATA(I))
   80 CALL HIST(3,3)
      END
```

```
                                        IDENT     CLAUN
PROGRAM LENGTH                  00206
ENTRY POINTS     CLAUN          00003
BLOCK NAMES
                 EDATA          01200
                 KEYWORDS       00024
                 MISSLE         01560
                 PAYLOAD        00620
                 TIME           00002
                 195.1          54731
EXTERNAL SYMBOLS
                 UBODICT.
                 IPUT
                 IGET
                 HIST
                 MUNPA
                 PLANTS
```

C00516	AAIM											
C00018	AAIMC	00103	00103									
P00163	BEGIN.	00164										
C01060	CEPM											
P00003	CLAUN	00003										
C45071	COLAW											
C00505	DGX											
C00005	DGXC											
C00506	DGY											
C00006	DGYC											
C00507	DHCR											
C00007	DHCRC											
P00001	DICT.	00005	00012	00016	00043	00046	00071	00106	00111	00120	00123	00132
		00135										
P00165	ENDING.	00006	00116	00142	00163							
P00000	EXIT.	00166										
C00562	FMLIST											
C00001	FUTIME	00065	00065									
X00004	HIST	00042	00045	00105	00117	00122	00134					
P00200	I	00051	00052	00066	00113	00126	00127	00137				
C00513	IALERT											
C00013	IALERTC											
C00001	IBASE											
C00511	ICLASS											
C00011	ICLASSC											
C01440	IFUNCM											
X00003	IGET	00015										
P00143	INGOOGL.	00033	00077	00152	00161							
C00501	INBASE	00013	00017									
C00500	INDATA											
C00002	INOM											
C00502	INOV											
P00163	INITIAL.	00006										
C00506	INITVULN	00014										
C00006	INITVULC											
C00503	INTAR											
P00201	IP	00026	00156									
C00504	IPAYLOAD	00025	00025									
X00002	IPUT	00011										
C00740	IR											
C00512	IREG											
C00012	IREGC											
P00202	IS	00031	00146									
P00203	ISTAT	00021	00022									
C00510	ITYPE	00054										
C00010	ITYPC											
C00120	IWTYP	00033	00034									
P00007	.1											
P00105	.10	00075										
P00110	.11	00104										
P00011	.2											
P00015	.3											
P00022	.4											
P00025	.5	00023										

P00042	.55				
P00050	.6	00040	00041		
P00061	.61	00057			
P00063	.62	00060			
P00066	.7				
P00117	.70	00024			
P00073	.8				
P00134	.80				
P00076	.9	00074	00075		
P00072	.Z00001.	00067			
P00133	.Z00002.	00130			
C00003	JNTAR				
C00000	KEYARRAY				
C00540	LAUNLIST				
C00001	LINKM				
C00514	MDATA	00067	00072	00130	00133
C00014	MDATAC				
C00000	MIRV				
C00040	MLAUNLIS				
C00562	MLIST				
C00062	MLISTC				
X00005	MUNPK	00070	00131		
C00016	MWPNLIST				
C00500	NADEC	00102	00102		
C00000	NBCELL				
C00240	NBOMB	00035	00036		
C00507	NMIRV	00007	00007	00037	
P00204	NSMIRV	00010	00073	00114	00140
C00515	NTARG				
C00015	NTARGC				
C00360	NTDEC	00100	00100		
C00514	NWMDS				
C00014	NWMDSC	00036	00037	00076	00076
C00514	NWPNS				
C00014	NWPNSC				
C00504	NWTYP	00034	00035		
C00004	NWTYPC				
C00000	OUTDATA				
C00120	PABORT				
C00240	PDES				
C00360	PFPF				
C00000	PINC				
C01200	PKMIS				
X00006	PLANTS	00110			
X00001	QBUDICT.	00000	00004		
C00500	SIDE	00030	00030		
C00000	SIDEC				
C15531	STATUS	00014	00020		
C00515	TAIM				
C00015	TAIMC	00101	00101		
C00000	TIME	00063	00063		
C01320	TLINTM				
P00205	TMORE	00056	00056	00062	00064
C00532	TOF	00053	00053		

```
C00032  TSFC
C00500  TPOWER     00054   00055
C00620  TRET
P00114  TS00001.   00051
P00140  TS00002.   00126
C00000  TSTAT      00017
C00005  TVOLN      00013
P00145  UP00001.   00032   00146   00147   00150   00152   00153
P00155  UP00002.   00027   00156   00157   00160   00162   00162
C00516  WPNLIST
P00052  WS00001.   00115   00115
P00127  WS00002.   00141   00141
   00167 SYMBOLS
```

```
      SUBROUTINE DLAUN
CSUBR     DLAUN     21DEC70   ****************************************
C     TESTS FOR SUCCESSFUL BOMBER LAUNCH OF A DECOY
CUSE      EDATAR    4JAN71    ****************************************
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHCBC,ITYPC,
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),
     2IHTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(32 ),SIDE,
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHCB,ITYPE,ICLASS,IREG,IALERT,
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),
     7ZDGZ(12),INDATA(320)
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)
      TYPE INTEGER DGX,DGY,DHCB,XDGZ,YDGZ,ZDGZ
      TYPE INTEGER DGXC,DGYC,DHCBC,XDGZC,YDGZC,ZDGZC
      TYPE INTEGER OUTDATA,SIDE,SIDEC
CEND      EDATAR    ****************************************************
      COMMON/TIME/TIME,FUTIME
      COMMON/ZONES/AREA(63),ZDEFPCT(63),ZCCPCT(63),NPENZ(63),KILLZ(63),
     1 MAXZONE(2)

    1 CONTINUE
C     RECORD CALL TO DLAUN
      CALL HIST(15,1)
C     CHANGE PENETRATORS
      ND=INDP(IHT)
    2 NPENZ(INZONE)=NPENZ(INZONE)+ND
C     ND NEGATIVE MEANS TERMINATION OF HIGH ALTITUDE DECOYS
    3 IF(ND)6,6,4
    4 IF(IALT)5,5,6
C     LOW ALTITUDE DECOY
    5 NDLO=NDLO+ND
      GO TO 7
C     HIGH ALTITUDE DECOY
    6 NDHI=NDHI+ND
C     PLANT NEXT EVENT FOR BOMBER
    7 CONTINUE
    8 CALL NEXTEVAT
      END
```

```
                                IDENT     DLAUN
PROGRAM LENGTH              00045
ENTRY POINTS     DLAUN      00003
BLOCK NAMES
                 EDATA      01200
                 TIME       00002
                 ZONES      00475
EXTERNAL SYMBOLS
                 QBQDICT.
                 HIST
                 NEXTEVNT
```

```
C00030  AREA
C00472  H
P00040  BEGIN.     00040
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHOR
C00007  DHORC
P00001  DICT.      00005   00010   00036
P00003  DLAUN      00003
P00041  ENDING.    00096   00037
P00000  EXIT.      00041
C00526  EXTRA
C00001  FUTIME
X00002  HIST       00007
C00513  IALERT
C00013  IALERTC
C00517  IALT       00023   00023
C00017  IALTC
C00001  IBASE
C00511  ICLASS
C00011  ICLASSC
C00524  IHT        00012   00012
C00024  IHTC
C00501  INBASE
C00500  INDATA
C00772  INDE
C00272  INDEC
C00002  INDM
C00652  INDP       00013
C00152  INDPC
C00502  INDV
P00040  INITIAL.   00005
C00503  INTAR
C00514  INZONE     00015   00015
C00014  INZONC
C00512  IREG
C00012  IREGC
C00510  ITYPE
C00010  ITYPC
C01112  IWTYP
C00412  IWTYPC
P00007  .1
P00015  .2
P00021  .3
P00023  .4
P00026  .5         00024   00024
P00032  .6         00022   00022   00025
P00035  .7         00031
P00035  .8
C00003  JNTAR
C00525  JWT
C00025  JWTC
```

```
C00374  KILLZ
C00473  MAXZONE
C00524  MHT
C00525  MWT
C00530  NALT
C00030  NALTC
C00520  NCM
C00020  NCMC
P00044  ND          00014   00017   00021   00027   00033
C00515  NDHI        00032   00032   00034   00034
C00015  NDHIC
C00516  NDLC        00026   00026   00030   00030
C00016  NDLCC
X00003  NEXTEVNT    00035
C00275  NPENZ       00016   00016   00020   00020
C00530  NPLAN
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PKNAV
C00021  PKNAVC
X00001  QBWDICT.    00000   00004
C00500  SIDE
C00000  SIDEC
C00522  SPARE
C00022  SPC
C00531  TABORT
C00031  TABORTC
C00000  TIME
C00532  TINC
C00032  TINCC
C01126  XDGZ
C00426  XDGZC
C00026  XK
C01142  YDGZ
C00442  YDGZC
C00176  ZCCPCT
C00077  ZDEFPCT
C01156  ZDGZ
C00456  ZDGZC
   00136 SYMBOLS
```

```
      SUBROUTINE DONEXT                                                 1000
CSUBR     DONEXT    22JUN71   ******************************************  4600
C     DETERMINE SOURCE OF NEXT EVENT BY SEARCHING TAPE                  2000
C     TIMES AND MEMTIM.                                                 3000
      COMMON/ESTOR/SCALEF,SCALETI,TMAX,NWORDS,NDIMD,NEXTEV,MERUS#,      4000
     1  INDATP(320),IOUTDP(320),ISVDAT(320),MEMTIM,TAPET(10),SVTIME(10) 5000
     2  ,ITOD(10)                                                       6000
      COMMON/ITP/ITP                                                    7000
      COMMON/TWORD/TWORD                                                8000
      EQUIVALENCE(ITWORD,TWORD)                                         9000
      COMMON/EVENT/INDEV,INDF                                          10000
      COMMON/MONDAT/MONSW                                              12000
CUSE      MYIDENT   28APR71   ******************************************12100
      COMMON/MYIDENT/MYIDENT                                            1000
CEND      MYIDENT   ******************************************************12100
      COMMON/TIME/TIME,FUTIME                                          13000
      EQUIVALENCE(ITIME,TIME)                                          14000
      DIMENSION TIMEX(11),ITIMEX(11)                                   15000
      EQUIVALENCE(MEMTIM,TIMEX),(MEMTIM,ITIMEX)                        16000
CUSE      NBCELL    22JUN71   ******************************************17000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NBCELL    ******************************************************17000
      COMMON/EVINDX/NBIND,EVTIME(10),INDEVB(10)                        21000
      DATA(ILSH=100000)                                                22000
      COMMON/CONST/LARGE,FTMAX                                         23000
      COMMON/NEVTOT/NBEVTOT,NCTR                                       24000
      DATA(NCOUNT = 0)                                                 24100
                                                                       24200
 1000 CONTINUE                                                         25000
      J=1                                                              26000
      DO 2 I=2,11                                                      27000
      IF(TIMEX(I)-TIMEX(J))1,2,2                                       28000
    1 J=I                                                              29000
    2 CONTINUE                                                         30000
      IF(TIMEX(J).EQ.FTMAX)50,3                                        31000
    3 IF(J.EQ.1)4,20                                                   32000
C     EARLIEST TIME IN MEMORY                                          33000
    4 IF(NEXTEV.EQ.0)5,7                                               34000
    5 CALL UPDIR                                                       35000
      NEXTEV=INDEVB(1)                                                 36000
      IF(NEXTEV.EQ.0)6,7                                               37000
    6 CALL ZAHCNT                                                      38000
C     GET EARLIEST EVENT IN LIST MEMORY.                               39000
    7 CONTINUE                                                         40000
      CALL SQUEEZE                                                     41000
      CALL RETLM                                                       42000
      NBEVTOT=NBEVTOT-1                                                43000
      NEXTEV=INDEVB(1)                                                 44000
C     TRANSFER OF NEXT EVENT TO INDATP COMPLETED.                      45000
C     RESET MEMTIM TO TIME OF NEXT INTERNAL                            46000
C     OR FTMAX IF NONE.                                                47000
      IF(NEXTEV.EQ.0)8,10                                              48000
    8 CALL UPDIR                                                       49000
      NEXTEV=INDEVB(1)                                                 50000
      IF(NEXTEV.EQ.0)9,10                                              51000
    9 TIMEX(1)=FTMAX                                                   52000
```

```
      GO TO 11
   1 MEMTIM=LINKM(NEXTEV)
   11 IF(NERGS*)12,13,15
C     HERE MERGING, WRITE ON OUTPUT UNIT
   12 CONTINUE
      ITP=MGOUT     $  ITCRD=INDATP(2).AND.7777B
      ITCGO(ITP)=ITCGO(ITP)+ITCRD
   13 CALL WRARRAY(INDATP(1),ITCRD)
      GO TO 1000
C     HERE EXECUTE EVENT IN INDATP
   15 CONTINUE
      ITIME = INDATP(1)
      IX = INDATP(2)/ILSH
      INDEV = IX.AND.777B
      INDF = IX/ILSH
      CALL EVONPR
      IS = INDEV
      JSX=(IS-1)/10+1
      ISX=IS-(JSX-1)*10
      GO TO (200,201,202),JSX
  200 GO TO (100,101,102,103,104,105,106,107,108,109),ISX
  100 CALL ALAUN   $ GO TO 199
  101 CALL BLAUN  $ GO TO 199
  102 CALL CLAUN    $  GO TO 199
  103 CALL REFUEL   $ GO TO 199
  104 CALL ESEC    $ GO TO 199
  105 CALL SSTAT   $ GO TO 199
  106 CALL AATTRIT    $  GO TO 199
  107 CALL LATTRIT   $ GO TO 199
  108 CALL TERMRMD   $ GO TO 199
  109 CALL RDAMAGE   $ GO TO 199
  201 GO TO (110,111,112,1121,113,114,115,116,117,118),ISX
  110 CALL EXAREA    $  GO TO 199
  111 CALL LXAREA    $  GO TO 199
  112 CALL ABORT   $ GO TO 199
 1121 CALL ALAUN   $  GO TO 199
  113 CALL DLAUN      $ GO TO 199
  114 CALL RECOVERY    $  GO TO 199
  115 CALL CHANGALT   $  GO TO 199
  116 CALL AREARMD     $  GO TO 199
  117 CALL RECHEK   $ GO TO 199
  118 CALL NAVCAL   $  GO TO 199
  202 GO TO(120,121,122),ISX
  120 CALL NAVATR  $  GO TO 199
  121 CALL ENDGAME   $   GO TO 199
  122 CALL MONPRIN   $   GO TO 199
  199 CONTINUE
      CALL HISTWRIT
      GO TO 1000
C     EARLIEST TIME ON TAPE.
   20 CONTINUE
      ITP=J-1
      INDATP(1)=ITIMEX(J)
      CALL RDWORD
      INDATP(2)=ITWORD
      ITCRD=ITWORD.AND.7777B
```

```
      IF(ITCRD .GT. NOIMD)60,62                                         113000
   60 PRINT 61                                                          114000
   61 FORMAT( 38H SUBR DONEAT HAS INCORRECT WORD COUNT    )              115000
      CALL ZABORT                                                       116000
   62 CONTINUE                                                          117000
C     DECREMENT WORDS TOGO TAPE ITP                                     118000
      ITOGO(ITP)=ITOGO(ITP)-ITCRD                                       119000
C     READ INTO INDATP                                                  120000
      ITCRD = ITCRD - 2                                                 123000
   21 CALL RDARRAY(INDATP(3),ITCRD)                                     124000
C     UPDATE TIME FOR THIS TAPE.                                        125000
      CALL RDWORD                                                       126000
      TAPET(ITP)=TWORD                                                  127000
C     CHECK IF LAST TERMINATES                                          128000
      IF(TWORD .EQ. FTMAX)22,11                                         129000
   22 CALL TERMTAPE                                                     130000
C     SET WORDS TOGO FOR THIS TAPE=0                                    132000
      ITOGO(ITP)=0                                                      133000
      GO TO 11                                                          134000
                                                                        134100
      ENTRY FVSPILL                                                     135000
C     HERE TO MERGE MEMORY TO TAPE AND CLEAR EVENTS                     136000
C     OUT OF LIST MEMORY.                                               137000
C     SCAN TAPES FOR EMPTY UNITS. TRANSFER TAPET TO                     138000
C     SVTIME AND RESET TO TMAX, PUT MIN WORDS TOGO                      139000
C     TAPE INDEX IN IMIN                                                140000
C     SET MIN TOGO TO VERY LARGE.                                       141000
      MINGO=LARGE                                                       142000
      IEMPTY=0                                                          143000
      I=0                                                               144000
C     SCANTAPE                                                          145000
   30 I=I+1                                                             146000
      SVTIME(I)=TAPET(I)                                                147000
      TAPET(I)=FTMAX                                                    148000
      IF(SVTIME(I)-FTMAX)35,31,35                                       149000
C     SEE IF EMPTY(ITOGO=0)                                             150000
   31 IF(ITOGO(I))37,32,37                                              151000
   32 IF(IEMPTY)33,34,34                                                152000
C     HERE EMPTY UNIT AFTER FIRST                                       153000
   33 MINGO=-LARGE                                                      154000
      IMIN=I                                                            155000
      GO TO 37                                                          156000
C     FIRSTEMP-HERE FIRST EMPTY FOUND                                   157000
   34 CONTINUE                                                          158000
      MSOUT=I                                                           159000
      IEMPTY=-I                                                         160000
      GO TO 37                                                          161000
C     NOTMAX-HERE TAPE IS NONEMPTY                                      162000
   35 IF(ITOGO(I)-MINGO)36,37,37                                        163000
C     HERE CURRENT TAPE IS MINIMUM                                      164000
   36 IMIN=I                                                            165000
      MINGO=ITOGO(I)                                                    166000
C     CONTSCAN-LOOP UNTIL ALL TAPES SCANNED                             167000
   37 IF(I-10)30,38,38                                                  168000
C     RE-ACTIVATE TAPE OF MINIMUM WORDS TOGO FOR MERGE.                 169000
   38 I=IMIN                                                            170000
```

```
      TAPET(I)=SVTIME(I)
      SVTIME(I)=FTMAX
      MERGSW=-1
      ITP=MGOUT
      NCOUNT = NCOUNT + 1
      PRINT 938,NCOUNT,IMIN,ITP
  938 FORMAT(/12H EVSPILL NO.,I5,10H FROM FILE,I3,8H TO FILE,I3)
C     WRITE STATUS
      MYIDENT = 7HSCRATCH
      CALL SETWRITE
C     COPY INDATP TO ISVDAT TO SAVE WHILE MERGE.
      DO 40 I=1,NDIMD
   40 ISVDAT(I)=INDATP(I)
      GO TO 1000
C     CONTROL RETURNS HERE(IN EVSPILL) WHEN MERGE
C     IS COMPLETED. RESTORE TAPETIMES
   50 CONTINUE
      NREVTOT=NCTR=0
      IF(MERGSW)52,51,51
   51 CALL ZAHORT
C     COPY SAVED TIMES TO RESTORE
   52 CONTINUE
      DO 53 I=1,10
   53 TAPET(I)=SVTIME(I)
C     RESTORE INDATP TO STATE BEFORE SPILL.
      DO 54 I=1,NDIMD
   54 INDATP(I)=ISVDAT(I)
C     TERMINATE OUTPUT TAPE AND PUT IN READ STATUS.
      ITP=MGOUT
      TWORD=FTMAX
      CALL WRWORD
      CALL TERMTAPE
C     PUT IN READ STATUS
      MYIDENT = 7HSCRATCH
      CALL SETREAD
      CALL RDWORD
      TAPET(ITP)=TWORD
      MERGSW=0
      RETURN
      END
```

```
                                        IDENT     DONEXT
PROGRAM LENGTH                  00615
ENTRY POINTS      DONEXT        00035
                  EVSPILL       00403
BLOCK NAMES
                  ESTOR         01746
                  ITP           00001
                  TWORD         00001
                  EVENT         00002
                  MONDAT        00001
                  MYIDENT       00001
                  TIME          00002
                  19501         54731
                  EVINDX        00025
                  CONST         00002
                  NEVTOT        00002
EXTERNAL SYMBOLS
                  THENO.
                  OBQDICT.
                  UPDIR
                  ZABORT
                  SQUEEZE
                  RETLM
                  WRARRAY
                  EVUNPK
                  MLAUN
                  BLAUN
                  CLAUN
                  REFUEL
                  ESEC
                  SSTAT
                  AATTRIT
                  LATTRIT
                  TERMSMU
                  SDAMAGE
                  ERAREA
                  LRAREA
                  HABORT
                  ALAUN
                  OLAUN
                  RECOVERY
                  CHANGALT
                  AREASMU
                  RECHEK
                  NAVCAL
                  NAVAIR
                  ENDGAME
                  MONPRIN
                  HISTWRIT
                  RDWORD
                  RDARRAY
                  TERMTAPE
                  SETWRITE
                  WRWORD
                  SETREAD
                  STH.
```

ANSI-UL.

X00017	AATTRIT	00224										
X00026	ALAUN	00262										
X00032	AREAGMD	00276										
X00025	BAMORT	00257										
X00022	BDAMAGE	00235										
P00572	BEGIN.	00573										
X00012	BLAUN	00205										
X00031	CHANGEALT	00273										
X00013	CLAUN	00210										
P00571	CNVRTI.	00475	00476	00500								
C45071	COLAR											
P00600	COUNT.	00513	00514	00540	00541							
P00005	CRFMT.	00353	00503									
P00001	DICT.	00037	00067	00074	00076	00100	00107	00136	00155	00203	00206	00211
		00214	00217	00222	00225	00230	00233	00236	00252	00255	00260	00263
		00266	00271	00274	00277	00302	00305	00314	00317	00322	00324	00334
		00347	00352	00354	00364	00367	00377	00405	00473	00502	00506	00526
		00552	00554	00560	00562							
X00027	DLAUN	00265										
P00035	DONEAT	00335										
X00036	ENDGAME	00316										
P00574	ENDING.	00540	00406	00567	00572	00573						
X00023	ERAREA	00251										
X00015	ESEC	00215										
P00403	EVSPILL	00403										
C00001	EVTIME											
X00010	EVUNPK	00154										
P00000	EXIT.	00575										
P00005	FORMAT.	00503	00555									
C00001	FTMAX	00107	00080	00113	00113	00374	00374	00417	00417	00421	00422	00461
		00462	00547	00547								
C00001	FUTIME											
P00353	GGOOOOO.	00345										
P00503	GGOOOO1.	00471										
X00040	HISTWRIT	00323										
P00601	I	00043	00043	00052	00055	00412	00413	00414	00415	00424	00435	00437
		00442	00447	00450	00453	00457	00457	00510	00513	00530	00530	00535
		00541										
P00602	IEMPTY	00411	00430	00441								
P00603	IGOTO.	00166	00172	00241	00310							
P00008	ILSR	00145	00152									
P00604	IMIN	00435	00450	00456	00476							
C00007	INDATP	00126	00126	00137	00141	00141	00143	00143	00332	00336	00336	00365
		00515	00515	00543								
C00000	INDEV	00147	00150	00156								
C00013	INDEVX	00070	00070	00103	00103	00110	00110					
C00001	INDF	00153	00153									
P00572	INITIAL.	00340	00406									
C00007	IOUTOP											
P00605	IS	00157	00165									
C01207	ISVDAT	00516	00542	00542								
P00606	ISX	00165	00171	00240	00307							
C00000	ITIME	00142	00142									
C01707	ITIMEX	00331	00332									

C01734	ITOGO	00132	00132	00134	00134	00356	00356	00360	00360	00401	00402	00425
		00425	00443	00443	00451	00451						
P00607	ITORG	00130	00133	00137	00341	00342	00357	00361	00362	00365		
C00000	ITP	00125	00125	00131	00131	00327	00330	00355	00355	00371	00371	00400
		00401	00465	00466	00477	00477	00546	00545	00564	00564		
C00000	ITSCRD	00335	00335	00337	00337							
P00610	IX	00146	00151									
P00116	.10	00105	00112									
P00052	.1	00050										
P00041	.100	00140	00325	00520								
P00202	.100	00173										
P00205	.101	00173										
P00210	.102	00174										
P00213	.103	00175										
P00216	.104	00176										
P00221	.105	00179										
P00224	.106	00177										
P00227	.107	00200										
P00232	.108	00201										
P00235	.109	00201										
P00121	.11	00115	00375	00402								
P00251	.110	00242										
P00254	.111	00242										
P00257	.112	00243										
P00262	.1121	00244										
P00265	.113	00245										
P00270	.114	00245										
P00273	.115	00246										
P00276	.116	00247										
P00301	.117	00250										
P00304	.118	00250										
P00124	.12	00122										
P00313	.120	00311										
P00316	.121	00311										
P00321	.122	00312										
P00135	.13											
P00141	.15	00122	00123									
P00323	.199	00204	00207	00212	00215	00220	00223	00226	00231	00234	00237	00253
		00256	00261	00264	00267	00272	00275	00300	00303	00306	00315	00320
P00171	.200	00167										
P00326	.20	00163										
P00054	.2	00050	00051									
P00240	.201	00170										
P00307	.202	00173										
P00363	.21											
P00376	.22											
P00413	.30	00455										
P00062	.3	00060										
P00424	.31	00422										
P00430	.32	00426										
P00433	.33	00431										
P00437	.34	00431	00432									
P00442	.35	00423	00423									
P00447	.36	00445										

```
P00453  .37        00426  00427  00436  00441  00445  00446
P00456  .38        00454
P00519  .40
P00064  .4
P00521  .50        00001
P00066  .5
P00529  .51        00524
P00527  .52        00524
P00532  .53
P00542  .54
P00345  .60
P00073  .6
P00355  .62        00343  00344
P00075  .7         00065  00072
P00106  .8
P00113  .9
P00576  .ERASER.   00160  00163  00164
P00033  ..100000   00503
P00034  ..100001   00505
P00005  ..61       00350
P00015  ..936      00474
P00611  J          00042  00046  00053  00056  00062  00326  00331
P00612  JSA        00162  00166
C00000  LARGE      00407  00407  00433  00433
X00020  LATTHIT    00227
C00001  LINK4      00117  00117
X00024  LNAREA     00254
C01707  MEMTIM     00120  00120
C00006  MERGSW     00121  00121  00464  00523  00523  00566
P00613  MGOUT      00124  00440  00465  00545
P00614  MINGO      00410  00434  00444  00452
X00011  MLAUN      00202
X00037  MONPRIN    00321
C00000  MONSW
C00000  MYIDENT    00504  00504  00556  00556
X00035  NAVATR     00313
X00034  NAVCAL     00304
C00000  NBCELL
C00000  NBEVTCT    00101  00101  00102  00522
C00000  NBIND
P00004  NCOUNT     00467  00470  00475
C00001  NCTR       00521  00522
C00004  NDIMD      00342  00343  00510  00511  00536  00536
C00005  NEXTEV     00064  00064  00071  00071  00104  00104  00111  00111  00116  00116
C00003  NWORDS
X00002  OBWDICT.   00000  00036  00404
X00050  ONSINGL.   00570
X00042  RDARRAY    00363
X00041  RDWORD     00333  00366  00561
X00033  RECHEK     00301
X00030  RECOVERY   00270
X00014  REFUEL     00213
X00006  RETLM      00077
C00000  SCALET
```

```
C00001  SCALETI
X00046  SETREAD   00557
X00044  SETWRITE  00505
X00005  SQUEEZE   00075
X00016  SSTAT     00221
C15521  STATUS
X00047  STR.      00346  00472
C01722  SWTIME    00416  00421  00460  00460  00462  00463  00532  00532
C01710  TAPET     00372  00372  00415  00416  00420  00420  00461  00533  00565  00565
X00021  TERMHMU   00232
X00043  TERMTAPE  00376  00553
X00001  THENU.    00351  00561
C00000  TIME
C01707  TIMEX     00045  00045  00047  00047  00056  00057  00114  00114
C00002  TMAX
P00520  TS00002.  00512
P00545  TS00004.  00537
C00000  TWORU     00370  00370  00373  00373  00550  00550  00563  00563
X00003  UPDIR     00066  00106
X00007  WRARRAY   00135
X00045  WRWORD    00551
P00045  WS00001.  00055
P00515  WS00002.  00517
P00532  WS00003.  00534
P00542  WS00004.  00544
X00004  ZABORT    00073  00353  00525
   00261 SYMBOLS
```

```
      SUBROUTINE ENDGAME                                                1000
CSUBR     ENDGAME   21SEPT71  ****************************************  37000
C     PRINTS MAXIMUM GAME TIME, CALLS FOR TERMINATION OF HISTORY TAPE,  2000
C     CALLS FOR PRINTING OF SUMMARIES, AND STOPS                        3000
      COMMON/ITP/ITP                                                    4000
      COMMON/MYIDENT/MYIDENT                                            4500
CUSE      RECOV     28APR71   ****************************************  5000
      COMMON/RECOV/IRECOV(5,4,2),TOFREC(50,4,2),NMORE(50,4,2),          1000
     1        NRES(50,4,2),LSHIFT                                       2000
CEND      RECOV     ****************************************************  5000
CUSE      NAMES     28APR71   ****************************************  6000
      COMMON/NAMES/NAMESIDE(2),NAMCLS(15),NAMETYPE(250)                 1000
CEND      NAMES     ****************************************************  6000
      COMMON/TIME/TIME,FUTIME                                           7000
      COMMON/TWORD/ITWORD                                               8000
CUSE      #ARHEAD   28APR71   ****************************************  9000
      COMMON/WARHEAD/YIELD(50),PDOD(50),CEPW(50)                        1000
CEND      #ARHEAD   ****************************************************  9000
CUSE      BRKPNT    28APR71   ****************************************  10000
      COMMON/BRKPNT/NTYPECUM(15),NBLUETYP(15),INDBEGCL(15),INDBEGTY(250) 1000
CEND      BRKPNT    ****************************************************  10000
                                                                        11000
C     CURRENT GAME TIME IS NOW MAXIMUM GAME TIME                        12000
      MTIME = TIME - 24.                                                12100
      PRINT 100,MTIME                                                   13000
  100 FORMAT(F9.4,10H GAME ENDS)                                        14000
      CALL SSTA;                                                        15000
C     CALL FOR SUMMARY OF STATUS ARRAY                                  16000
    3 CALL STATSUM                                                      17000
C     CALL FOR BALLISTIC MISSILE STATUS SUMMARY                         18000
      CALL BMDSTAT                                                      19000
      CALL AGZSUM                                                       20000
      CALL PAGESKP                                                      21000
C     CALL FOR TERMINATION OF HISTORY TAPE                              22000
      ITP=5                                                             23000
      ITWORD=6HLAST                                                     24000
      CALL WRWORD                                                       25000
      CALL #WARRAY(IRECOV,400)                                          26000
      CALL TERMTAPE                                                     27000
      MYIDENT = 8H HISTAPE                                              28000
      CALL SETREAD                                                      29000
      CALL SKIPFILE(ITP)                                                30000
   30 BUFFER OUT(ITP,1)(NTYPECUM(1),INDBEGTY(250))                      31000
   31 IF(UNIT,ITP) 31,32,33,33                                          32000
   33 PRINT 34                                                          33000
   34 FORMAT(30H ERROR IN WRITING HISTP ARRAYS)                         34000
   32 CONTINUE                                                          35000
      BUFFER OUT(ITP,1)(NAMESIDE(1),NAMETYPE(250))                      35001
   41 IF(UNIT,ITP)41,42,43,43                                           35002
   43 PRINT 34                                                          35003
   42 CONTINUE                                                          35004
      BUFFER OUT(ITP,1)(YIELD(1),YIELD(50))                             36000
   35 IF(UNIT,ITP) 35,36,37,37                                          37000
   37 PRINT 34                                                          38000
   36 CONTINUE                                                          39000
      DO 12 K=1,2                                                       40000
```

```
      PRINT 3001,NAMESIDE(K),(I,I=1,4)
      DO 12 J = 1,50
 3001 FORMAT(///2X,A4/9X,4(3X,6HIRECOV,4X,5HNMORE,9X)/9X,4(2I9,9X))
      IF(IRECOV(J,I,K)) 11,12
   11 PRINT 3002,J,(IRECOV (J,I,K),NMORE(J,I,K),I = 1,4)
 3002 FORMAT(I9,4(2I9,9X ))
   10 CONTINUE
   12 CONTINUE
      CALL PAGESKP
      PRINT 101
      WRITE(44,101)
  101 FORMAT (/40H *****PROCESSOR SIMULATE COMPLETED*****.)
    4 STOP
      END
```

```
                                        IDENT     ENDGAME
PROGRAM LENGTH                  .0411
ENTRY POINTS     ENDGAME        .0070
BLOCK NAMES
                 ITP            .0001
                 MYIDENT        00001
                 RECOV          .3101
                 NAMES          00413
                 TIME           .0002
                 TWORD          00001
                 WARHEAD        .0224
                 BRKPNT         .0447
EXTERNAL SYMBOLS
                 THEN.
                 QHQSTOPS
                 QHODICT.
                 SSTAT
                 STATSUM
                 HMOSTAT
                 AGZSUM
                 PAGESAP
                 WRWORD
                 WRARRAY
                 TERMTAPE
                 SETREAD
                 SKIPFILE
                 QHQIFUNI
                 STM.
                 HFC.
                 QNSINGL.
```

X00007	AGZSUM	00114										
P00377	BEGIN.	00377										
X00020	BFC.	00144	00164	00204								
X00006	BNDSTAT	00112										
C00144	CEP4											
P00326	CNVRTI.	00103	00233	00240	00241	00262	00267	00270				
P00003	CRFMT.	00106	00162	00247	00276	00322						
P00001	DICT.	00072	00101	00105	00107	00111	00113	00115	00117	00125	00127	00132
		00136	00140	00145	00151	00156	00161	00165	00171	00176	00201	00205
		00211	00216	00221	00227	00246	00257	00275	00305	00310	00313	00316
		00321	00324									
P00070	ENDGAME	00070										
P00400	ENDING.	00073	00324									
P00000	EXIT.	00400										
P00003	FORMAT.	00122	00133									
C00001	FGETME											
P00106	GG00000.	00077										
P00162	GG00002.	00154										
P00202	GG00004.	00174										
P00222	GG00006.	00214										
P00247	GG00007.	00225										
P00276	GG00010.	00255										
P00314	GG00011.	00300										
P00322	GG00012.	00314										
P00405	HTIME	00076	00103									
P00406	I	00235	00237	00241	00242	00263	00271	00355				
P00327	IN00002.	00252	00332	00345	00363	00374						
P00330	IN00003.	00255	00331	00344	00347	00361	00363	00375				
C00036	INDREGCL											
C00055	INDREGTY	00146										
P00377	INITIAL.	00073										
C00000	IRECOV	00130	00253	00253	00266	00266						
C00000	ITP	00120	00121	00141	00142	00142	00147	00147	00162	00162	00167	00167
		00202	00202	00207	00207							
C00000	ITSCND	00123	00123									
P00276	.1L											
P00255	.11	00254										
P00301	.1C	00254										
P00142	.30											
P00110	.3											
P00147	.31	00152										
P00162	.32	00152										
P00154	.33	00153										
P00207	.35	00212										
P00222	.36	00212										
P00214	.37	00213										
P00322	.4											
P00167	.41	00172										
P00202	.42	00172										
P00174	.43	00173										
P00003	..100	00102										
P00011	..100000	00122										
P00012	..100001	00133										
P00057	..101	00311	00317									

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P00022	..3.1	00233									
P00050	..3.02	00260									
P00013	..34	00157	00177	00217							
P00407	J	00250	00261	00276	00371						
P00410	K	00223	00231	00301	00340						
C03100	LSHIFT										
C00000	MYIDENT	00134	00134								
C00002	NAMCLS										
C00003	NAMESIDE	00156	00232	00232							
C00021	NAMETYPE	00156									
C00017	NBLUETYP										
C01440	NBORE	00270									
C02260	NRES										
C00000	NTYPECUM	00146									
P00331	P00300.0	00335									
P00347	P00301.0	00352									
P00363	P00302.0	00366									
X00010	PAGESKP	00116	00304								
C00062	PDUO										
X00003	QRADICT.	00300	00071								
X00016	QRAIPUNI	00150	00170	00210							
X00002	QRUSTOPS	00323									
X00021	QNSTOGL.	00325									
X00014	SETREAD	00135									
X00015	SKIPFILE	00137									
X00004	SSTAT	00136									
X00005	STATSUM	00110									
X00017	STH.	00100	00155	00175	00215	00226	00256	00307	00315		
X00013	TERMTAPE	00131									
X00001	TMENU.	00104	00160	00200	00220	00245	00274	00312	00320		
C00000	TIME	00074	00074								
C00620	TOPREC										
P00337	UPC0000.	00224	00302	00333	00340	00341	00342	00346	00349		
P00354	UPC0001.	00230	00243	00264	00272	00350	00355	00356	00357	00361	00362
P00370	UPC0002.	00251	00277	00354	00371	00372	00373	00376	00378		
X00012	WRARRAY	00120									
X00011	WRBOARD	00124									
P00225	WSC0001.	00301									
P00237	WSC0002.	00244									
P00252	WSC0003.	00390									
P00265	WSC0004.	00273									
C00000	YIELD	00200	00206								

00134 SYMBOLS

```
      SUBROUTINE ERAREA
CSUBR     ERAREA    15MAR71   ******************************************
C     RECORDS THE ARRIVAL OF A FULL TANKER AT A REFUELING AREA
      COMMON/DATTA/ISIZE
CUSE      EDATAR    4JAN71    ******************************************
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DMCBC,ITYPC,
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),
     2IHTC,JWTC,XA(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(320),SIDE,
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMCB,ITYPE,ICLASS,IREG,IALERT,
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),
     7ZDGZ(12),INDATA(320)
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)
      TYPE INTEGER DGX,DGY,DMCB,XDGZ,YDGZ,ZDGZ
      TYPE INTEGER DGXC,DGYC,DMCBC,XDGZC,YDGZC,ZDGZC
      TYPE INTEGER OUTDATA,SIDE,SIDEC
CEND      EDATAR    ******************************************************
      COMMON/EPSN/EPSN
      DATA(EPSN=1.0E-6)
      COMMON/REFUEL/NFTANK(100),NETANK(100)
      COMMON/TIME/TIME,FUTIME

    1 CONTINUE
C     RECORD CALL TO ERAREA
      CALL HIST(11,1)
C     GET REFUELING AREA NUMBER
      INDRA=INDP(IHT)
      INZONE = INDRA
C     INCREASE NUMBER OF FULL TANKERS IN THAT REFUELING AREA
    2 NFTANK(INDRA)=NFTANK(INDRA) + 60
C     ADVANCE HISTORY TABLE POINTER TO NEXT TANKER EVENT
    3 IHT = IHT - 1
C     TEST IF TANKER ABORT TIME IS PRIOR TO NEXT EVENT TIME
      FUTIME=TIME+TINC(IHT)
    4 IF(TABORT .GE. FUTIME+EPSN) 7,6
C     SET FUTURE EVENT EXECUTION TIME TO  EARLY  DEPARTURE TIME
    6 FUTIME=TABORT
C     PLANT LEAVE REFUELING AREA EVENT
    7 CALL PLANTS(12,ISIZE)
      END
```

```
                                        IDENT     ERAREA
PROGRAM LENGTH                  00050
ENTRY POINTS      ERAREA        00003
BLOCK NAMES
                  DATTA         00001
                  EDATA         01200
                  EPSN          00001
                  REFUEL        00310
                  TIME          00002
EXTERNAL SYMBOLS
                  QBODICT.
                  HIST
                  PLANTS
```

```
C00472  R
P00042  BEGIN.     00042
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHDR
C00007  DHDRC
P00001  DICT.      00005  00010  00037
P00043  ENDING.    00006  00041
C00000  EPSN       00003  00031  00031
P00003  ERAREA     00003
P00000  EXIT.      00043
C00526  EXTRA
C00001  FUTIME     00025  00026  00030  00030  00035  00035
X00002  HIST       00027
C00513  IALERT
C00013  IALERTC
C00517  IALT
C00017  IALTC
C00001  IBASE
C00511  ICLASS
C00011  ICLASSC
C00524  IHT        00012  00012  00021  00021  00022  00024  00024
C00024  IHTC
C00501  INBASE
C00500  INDATA
C00772  INDE
C00272  INDEC
C00002  INDM
C00652  INDP       00013
C00152  INDPC
P00047  INDRA      00014  00016
C00502  INDV
P00042  INITIAL.   00006
C00503  INTAR
C00514  INZONE     00014  00015
C00014  INZONC
C00512  IREG
C00012  IREGC
C00000  ISIZE      00040
C00510  ITYPE
C00010  ITYPC
C01112  IWTYP
C00412  IWTYPC
P00007  .1
P00016  .2
P00021  .3
P00027  .4
P00034  .6         00032
P00036  .7         00032  00033
C00003  JNTAR
C00525  JWT
C00025  JWTC
```

```
C00524  MHI
C00525  MWT
C00530  NALT
C00030  NALTC
C00520  NCM
C00020  NCMC
C00515  NDHI
C00015  NDHIC
C00516  NDLC
C00016  NDLCC
C00144  NETANK
C00000  NETANK    00017   00017   00020
C00530  NPLAN
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PKNAV
C00021  PKNAVC
X00003  PLANTS    00036
X00001  QBUDICT.  00000   00004
C00500  SIDE
C00000  SIDEC
C00522  SPARE
C00022  SPC
C00531  TABORT    00027   00027   00034   00034
C00031  TABORTC
C00000  TIME      00023   00023
C00532  TINC      00025
C00032  TINCC
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C01156  ZDGZ
C00456  ZDGZC
   00132 SYMBOLS
```

```
      SUBROUTINE ERROL(ITYP)                                            1000
CSUBR     ERROL     10JUN71   ****************************************  47000
C     PRINTS ERROR MESSAGE FOR PLANT OR UNSQUEEZ AND CALLS ABORT        2000
C     ERROR TYPE 10 - NO LIST MEMORY AVAILABLE AFTER EVSPILL (PLANT)    3000
C     ERROR TYPE 20 - NO LIST MEMORY AVAILABLE AFTER EVSPILL (UNSQUEEZ) 4000
C     ERROR TYPE 21 - FUTIME EARLIER THAN TIME (PLANT)                  5000
C     ERROR TYPE 11 - NO LIST MEMORY AVAILABLE AFTER EVSPILL            7000
      PRINT 1,ITYP                                                      9000
    1 FORMAT(26H PLANT OR UNSQUEEZ ERROR  ,I3)                         10000
      CALL ZABORT                                                      11000
      END                                                              12000
```

```
                                IDENT     ERROL
PROGRAM LENGTH              00066
ENTRY POINTS     ERROL      00013
EXTERNAL SYMBOLS
                 THEND.
                 QRQDICT.
                 ZABORT
                 STH.
                 QNSINGL.
```

```
P00034  BEGIN.      00050   00056   00062
P00033  CNVRTI.     00024
P00003  CRFMT.      00027
P00001  DICT.       00015   00021   00026   00030   00037   00040
P00051  ENDING.     00016   00031   00034   00035   00035   00036   00036
P00013  ERROR       00013
P00000  EXIT.       00054
P00003  FORMAT.
P00023  FP00001.    00046   00047
P00065  GETPL.      00041
P00055  GETPU.      00044   00061
P00027  GG00000.    00017
P00034  INITIAL.    00016
P00003  ITYP        00023
P00003  ..1         00022
P00050  PF00002.    00045
X00002  QRWDICT.    00000   00014
X00005  QNSINGL.    00032
X00004  STH.        00020
X00001  THEND.      00025
X00003  ZARORT      00027
   00025 SYMBOLS
```

```
      SUBROUTINE ESEC
CSUBR     ESEC      23SEPT71  ******************************************
C     ADJUSTS THE NUMBER OF PENETRATORS IN THE OLD AND NEW ZONES AS A
C     BOMBER ENTERS A ZONE
CUSE      EDATAB    4JAN71    ******************************************
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DMCBC,ITYPC,
     1ICLASSC,IWEBC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),
     2IHTC,JATC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),CUTDATA(320),SIDE,
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMCB,ITYPE,ICLASS,IWEB,IALERT,
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JHT,EXTRA(2),NALT,
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),
     7ZDGZ(12),INDATA(320)
      EQUIVALENCE (SIDEC,CUTDATA(1)), (SIDE,INDATA(1))
      EQUIVALENCE (NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)
      TYPE INTEGER DGX,DGY,DMCB,XDGZ,YDGZ,ZDGZ
      TYPE INTEGER DGXC,DGYC,DMCBC,XDGZC,YDGZC,ZDGZC
      TYPE INTEGER CUTDATA,SIDE,SIDEC
CEND      EDATAB    ******************************************************
      COMMON/HISTOUT/NHISTOUT(200)
      EQUIVALENCE (NHISTOUT(19),NBCODE)
      COMMON/HISREC/IREC,IDEPEN,LAZONE
CUSE      RECOV     28APR71   ******************************************
      COMMON/RECOV/IRECOV(50,4,2),TOFREC(50,4,2),NMORE(50,4,2),
     1        NRES(50,4,2),LSHIFT
CEND      RECOV     ******************************************************
      COMMON/TIME/TIME,FUTIME
      COMMON/ZONES/AREA(63),ZDEFPCT(63),ZCCPCT(63),NPENZ(63),KILLZ(63),
     1 MAXZONE(2)
      COMMON/KEYWORDS/KEYARRAY(20)
      EQUIVALENCE (KEYARRAY(1),TSTAT)
CUSE      NBCELL    22JUN71   ******************************************
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),CSLAR(4000)
CEND      NBCELL    ******************************************************
      COMMON/EPSN/EPSN

    1 CONTINUE
C     RECORD CALL ESEC
      CALL HIST(5,1)
C     TEST IF BOMBER HAS LEFT ITS LAUNCH ZONE
      IF (INZONE .GT. 0) 2,15
C     RECORD ENTRY TO ENEMY TERRITORY
   15 CALL HIST(5,2)
      GO TO 21
C     DECREASE PENETRATORS IN OLD ZONE BY BOMBERS AND ITS DECOYS
    2 NPENZ(INZONE) = NPENZ(INZONE) - 1 - NDHI - NDLO
C     GET NEW ZONE FROM HISTORY TABLE AND RECORD ZONE ENTRY
   21 LAZONE=INZONE
      INZONE=INDP(IHT)
C     TEST IF NEW ZONE IS IN ENEMY TERRITORY
      IF(INZONE .GE. 64) 30,5
C     INCREASE PENETRATORS IN NEW ZONE BY BOMBER AND ITS DECOYS
    5 NPENZ(INZONE) = NPENZ(INZONE) + 1 + NDHI + NDLO
    3 IF(NBCODE .EQ. 1)4,7
C     INTERNAL ZONE CROSSING
    4 CALL HIST(5,4)
```

```
    7 CALL NEXTEVNT
   81 RETURN
C     UNPACK IDEPEN,JMAX
   30 JMAX=INDP(IHT)/LSHIFT
      IDEPEN=INDP(IHT)-JMAX*LSHIFT
      IS = SIDE
C     RECORD DE-PENETRATION
      CALL HIST(5,3)
      IHTC=1  $ JWTC=0
      INZONC=IS
C     FIND MOST DISTANT AVAILABLE BASE
      IR=0
      DO 100 I=1,JMAX
      K=JMAX-I+1
      IBASE = IRECOV(IDEPEN,K,IS)
      IX=IGET(TSTAT,IBASE,STATUS)
      IF(IX)31,100
   31 IF(IX)33,32
C     MOST DISTANT LIVE BASE
   32 IR=K
   33 IF(NMORE(IDEPEN,K,IS).GT.0) 34,100
C     MOST DISTANT AVAILABLE BASE
   34 IR=K
      GO TO 35
  100 CONTINUE
C     DO COMPLETED-USE SATURATED BASE OR ABORT
      IF(IR)35,36
C     NO LIVE BASE
   36 INDPC=IDEPEN
      IR=JMAX  $  GO TO 37
   35 INDPC=IDEPEN+IR*LSHIFT
   37 FUTIME = TIME + TOFREC(IDEPEN,IR,IS)
      NRES(IDEPEN,IR,IS) = NRES(IDEPEN,IR,IS) - .
   38 IF(TABORT-FUTIME-EPSN)40,40,39
C     SET EVENT TAPE TO ZERO -- 16 MEANS RECOVERY AT HOME BASE
   39 INDEC=0
      CALL PLANTS(16,12)
      RETURN
C     ABORT PRIOR TO RECOVERY
   40 FUTIME=TABORT
      CALL PLANTS(13,12)
      RETURN
      END
```

```
                                        IDENT     ESEC
PROGRAM LENGTH                  00300
ENTRY POINTS     ESEC           00003
BLOCK NAMES
                 EDATA          01200
                 HISTOUT        00310
                 HISREC         00003
                 RECOV          03101
                 TIME           00002
                 ZONES          00475
                 KEYWORDS       00024
                 19501          54731
                 EPSN           00001
EXTERNAL SYMBOLS
                 QRODICT.
                 HIST
                 NEXTEVNT
                 IGET
                 PLANTS
```

```
C00000  AREA
C00472  B
P00255  BEGIN.      00256
C45071  COLAR
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCB
C00007  DHCBC
P00001  DICT.       00005  00010  00017  00046  00052  00072  00116  00173  00202
P00257  ENDING.     00006  00054  00176  00205
C00000  EPSN        00166  00166
P00003  ESEC        00003
P00090  EXIT.       00257
C00526  EXTRA
C00001  FUTIME      00161  00161  00165  00165  00200  00200
X00002  HIST        00007  00016  00045  00071
P00272  I           00104  00107  00140
C00513  IALERT
C00013  IALERTC
C00517  IALT
C00017  IALTC
C00001  IBASE       00113  00114  00117
C00511  ICLASS
C00011  ICLASSC
C00001  IDEPEN      00064  00064  00144  00144  00154  00154  00236  00236
X00004  IGET        00115
C00524  IHT         00032  00032  00055  00055
C00024  IHTC        00075  00076
P00206  INC0003.    00112  00130  00222  00232  00242
P00207  INC0004.    00157  00221  00243  00253
C00501  INBASE
C00500  INDATA
C00772  INDE
C00272  INDEC       00170  00171
C00002  INDM
C00652  INDP        00033  00056  00063  00063
C00152  INDPC       00145  00145  00155  00155
C00502  INDV
P00255  INITIAL.    00006
C00503  INTAR
C00514  INZONE      00013  00013  00023  00023  00030  00030  00033  00036  00036
C00014  INZONC      00100  00101
P00273  IR          00102  00123  00126  00135  00143  00147  00152  00247
C00000  IREC
C00000  IRECOV      00112  00113
C00512  IREG
C00012  IREGC
P00274  IS          00067  00100  00215
C00510  ITYPE
C00010  ITYPC
C01112  IWTYP
C00412  IWTYPC
```

```
P00275  IX        00121
P00007  .1
P00140  .100      00122  00132  00133
P00016  .15       00014  00015
P00023  .2        00015
P00030  .21       00022
P00043  .3
P00055  .30       00034  00035
P00123  .31       00122
P00125  .32
P00130  .33       00124
P00134  .34
P00152  .35       00137  00143
P00144  .36
P00156  .37       00151
P00164  .38
P00170  .39
P00045  .4
P00177  .40       00167  00167
P00036  .5        00035
P00051  .7        00044
P00054  .81
P00276  JMAX      00061  00061  00106  00141  00146
C00003  JNTAN
C00525  JWT
C00025  JWTC      00077
P00277  K         00110  00125  00134  00226
C00000  KEYARRAY
C00374  KILLZ
C00002  LAZONE    00031  00031
C00001  LINKM
C03100  LSHIFT    00057  00060  00062  00062  00153  00153
C00473  MAXZONE
C00524  MHT
C00525  MWT
C00530  MALT
C00030  NALTC
C00000  NBCELL
C00022  NBCODE    00043  00043
C00520  NCM
C00020  NCMC
C00515  NDHI      00025  00026  00040  00041
C00015  NDHIC
C00516  NDLC      00026  00041
C00016  NDLCC
X00003  NEXTEVNT  00051
C00000  NHISTOUT
C01440  NHORE     00131  00131
C00275  NPENZ     00024  00024  00027  00027  00037  00037  00042  00042
C00530  NPLAN
C02269  NRES      00162  00162  00163
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
```

```
C00521  PKNAV
C00021  PKNAVC
X00005  PLANTS     00172   00201
X00001  QBADICT.   00000   00004
P00211  RELCON..   00012   00021   00050   00053   00074   00175   00204   00235
C00500  SIDE       00066   00066
C00000  SIDEC
C00522  SPARE
C00022  SPC
C15531  STATUS     00120
C00531  TABORT     00164   00164   00177   00177
C00031  TABORTC
C00000  TIME       00156   00156
C00532  TINC
C00032  TINCC
C00620  TOTREC     00150   00150
P00141  TS.0001.   00105
C00000  TSTAT      00117
P00214  UP00003.   00070   00215   00216   00217   00223   00223
P00225  UP00004.   00111   00226   00227   00230   00232   00233
P00235  UP00005.   00065   00210   00237   00240   00241   00244   00244
P00246  UP00006.   00103   00127   00136   00150   00247   00250   00251   00253   00254
P00106  WS00001.   00142   00142
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C00176  ZCCPCT
C00077  ZDEFPCT
C01156  ZDGZ
C00456  ZDGZC
   00214 SYMBOLS
```

```
      SUBROUTINE EVPACK                                                 1000
CSUBR     EVPACK    22JUN71   ******************************************  4000
C     PACK ICUTD INTO ICUTDP                                            2000
      COMMON/ESTOR/SCALET,SCALETI,TMAX,NWORDS,NDIMD,NEXTEV,MERGS*,      3000
     1  INDATP(320),ICUTDP(320),ISVDAT(320),MEMTIM,TAPET(10),SVTIME(10) 4000
     2  ,ITOGO(10)                                                      5000
      COMMON/EDATA/ICUTD(320),INDATA(320)                               6000
      COMMON/EPACK/INDFORMC(100)                                        7000
      COMMON/FORMAT/JFORMAT(10)                                         8000
      COMMON/MONDAT/MONSW                                              10000
      DATA(IRSH12=10000B)                                              12000
                                                                       13000
C     UNPACK FORMAT INDEX ARRAY                                        15000
      CALL UNPFOR                                                      17000
C     INITIALIZE POINTERS                                              18000
      IUNP = 1                                                         19000
      IPK = 1                                                          19100
      NMX=INDFORMC(1)+1                                                20000
      DO 4 I=2,NMX                                                     21000
      J=INDFORMC(I)                                                    22000
      IWD=JFORMAT(J)                                                   23000
      IF(IWD-1)9,1,2                                                   24000
C     TRANSFER SIMPLE  VARIABLE                                        25000
    1 ICUTDP(IPK)=ICUTD(IUNP)                                          29000
      IPK=IPK+1                                                        30000
    9 IUNP = IUNP +1                                                   31000
      GO TO 4                                                          32000
C     TRANSFER ARRAY                                                   33000
    2 ID = IWD.AND.77777B                                              36000
      IU = IWD/IRSH12                                                  37000
      NUSE=ICUTD(IU)                                                   38000
      IE=IUNP+NUSE-1                                                   39000
      IB = IPK - IUNP                                                  40000
      DO 3 K=IUNP,IE                                                   41000
      ICUTDP(IB + K) = ICUTD(K)                                        42000
    3 CONTINUE                                                         43000
      IUNP=IUNP+ID                                                     44000
      IPK = IPK + NUSE                                                 45000
    4 CONTINUE                                                         46000
      NWORDS = IPK - 1                                                 47000
      IF(IPK-NDIMD)6,6,5                                               48000
C     ARRAY OVERFLOW                                                   49000
    5 CALL ZARCH1                                                      50000
    6 IF(MONSW)7,8,8                                                   52000
C     PRINT ICUTD AND ICUTDP                                           53000
    7 IWDS=IUNP-1                                                      54000
      CALL PRCUTDAT(IWDS)                                              55000
    8 RETURN                                                           56000
      END                                                              57000
```

```
                                        IDENT     EVPACK
PROGRAM LENGTH                  00143
ENTRY POINTS     EVPACK         00004
BLOCK NAMES
                 ESTOR          01746
                 EDATA          01200
                 EPACK          00144
                 FORMAT         00012
                 MONDAT         00001
EXTERNAL SYMBOLS
                 OBQDICT.
                 UNPFOR
                 ZABORT
                 PROUTDAT
```

P00120	BEGIN.	00121										
P00125	COUNT.	00057	00060									
P00001	DICT.	00006	00011	00106	00115							
P00122	ENDING.	00007	00117	00120	00121							
P00004	EVPACK	00004										
P00000	EXIT.	00123										
P00126	I	00017	00021	00075								
P00127	IB	00054	00061									
P00130	ID	00044	00072									
P00131	IF	00053	00056									
C00500	INDATA											
C00007	INDATP											
C00000	INDFORMC	00014	00015	00022	00022							
P00120	INITIAL.	00007										
C00000	ICUTD	00032	00032	00047	00050	00063	00064					
C00507	ICUTDP	00034	00034	00065	00065							
P00132	IPK	00014	00033	00035	00036	00053	00073	00074	00100	00102		
P00003	IRS412	00046										
C01207	ISVDAT											
C01734	ITCGC											
P00133	IU	00046	00047									
P00134	IUNP	00013	00031	00037	00040	00051	00054	00055	00056	00071	00072	00112
P00135	IWD	00026	00042	00044								
P00136	IWDS	00113	00116									
P00031	.1	00027										
P00042	.2	00030										
P00067	.3											
P00075	.4	00041										
P00105	.5											
P00107	.6	00104	00104									
P00112	.7	00110										
P00117	.8	00110	00111									
P00037	.9	00027										
P00124	.NSTIFF.	00063	00065									
P00137	J	00023	00024									
C00000	JFORMAT	00024	00025									
P00140	K	00055	00060	00062	00070							
C01707	MEATIM											
C00006	MERGSW											
C00000	MONSW	00107	00107									
P00141	NBA	00016	00076									
C00004	NCIMO	00103	00103									
C00005	NEXTEV											
P00142	NOSF	00051	00052	00073								
C00003	NWCROS	00101	00101									
X00004	PRCUTDAT	00114										
X00001	QBNDICT.	00000	00005									
C00000	SCALET											
C00001	SCALETI											
C01722	SVTIME											
C01710	TAPET											
C00002	TMAX											
P00076	TS00001.	00020										
P00071	TS00002.	00057										

```
X00002  UNPFCR     00010
P00021  WS00001.   00077   00077
P00061  WS00002.   00070
X00003  ZABORT     00105
   00072 SYMBOLS
```

```
      SUBROUTINE EVUNPK
CSUBR     EVUNPK     22JUN71   ****************************************
C     UNPACK DATA FROM INDATP INTO INDATA
C     IWD = INDEX OF PACKED FORMAT ARRAY.
      COMMON/ESTOR/SCALET,SCALETI,IMAX,NWORDS,NDIMD,NEATEV,MERGS#,
     1  INDATP(320),IOUTDP(320),ISVDAT(320),MEMTIM,TAPET(10),SVTIME(10)
     2  ,ITOGO(10)
      COMMON/EDATA/IOUTD(320),INDATA(320)
      DATA(IMAX=321)
      COMMON/EPACK/INDFORMO(100)
      COMMON/FORMAT/JFORMAT(10)
      COMMON/MONDAT/MONSW
      DATA(IRSH12 = 100000B)

C     UNPACK FORMAT INDEX ARRAY
      CALL UNPFOR
C     INITIALIZE POINTERS
      IUNP = 1
      IPK = 3
      NHX=INDFORMO(1) + 1
      DO 4 I=2,NHX
      J = INDFORMO(I)
      IWD=JFORMAT(J)
      IF(IWD-1)9,1,2
C     IWD = ID=0 IF VARIABLE IS NOT USED
    9 INDATA(IUNP) = J
      IUNP = IUNP  + 1
      GO TO 4
C     IWD = ID=1 IF VARIABLE IS SIMPLE
C     TRANSFER SIMPLE VARIABLE
    1 INDATA(IUNP)=INDATP(IPK)
      IUNP=IUNP+1    & IPK=IPK+1
      GO TO 4
C     TRANSFER ARRAY
C     ID IS THE DIMENSION OF A DIMENSIONED VARIABLE
    2 ID=IWD.AND.77777B
C     IU IS THE INDEX OF THE INDATA WORD WHICH GIVES THE NUMBER OF
C     WORDS ACTUALLY USED(NUSE) FOR THE VARIABLE.
      IU = IWD/IRSH12
      NUSE=INDATA(IU)
      IE=IPK+NUSE-1
      IR = IUNP - IPK
      DO 3 K=IPK,IE
      INDATA(IR + K) = INDATP(K)
    3 CONTINUE
      IPK=IE+1
      IUNP = IUNP + ID
    4 CONTINUE
      IF(IUNP-IMAX)6,6,5
C     ARRAY OVERFLOW
    5 CALL ZABORT
    6 IF(MONSW)7,8,8
C     PRINT INDATA AND INDATP
    7 IWDS=IUNP-1
      NWORDS=IPK-1
      CALL PRINDAT(IWDS)
```

```
      B RETURN                                          61000
        END                                             62000
```

```
                                        IDENT     EVUNPK
PROGRAM LENGTH                  00147
ENTRY POINTS     EVUNPK         00005
BLOCK NAMES
                 ESTOR          01746
                 EDATA          01200
                 EPACK          00144
                 FORMAT         00012
                 MONDAT         00001
EXTERNAL SYMBOLS
                 QPODICT.
                 UNPFCH
                 ZABORT
                 PRINDAT
```

```
P00124  BEGIN.     00125
P00131  COUNT.     00064  00065
P00001  DICT.      00007  00012  00110  00121
P00126  ENDING.    00010  00123  00124  00125
P00005  EVUNPK     00005
P00000  EXIT.      00127
P00132  I          00020  00022  00102
P00133  IB         00061  00066
P00134  ID         00051  00100
P00135  IE         00060  00063  00076
P00003  IMAX       00105
C00500  INDATA     00033  00034  00042  00042  00054  00055  00072  00073
C00007  INDATP     00040  00040  00070  00071
C00000  INDFORMC   00015  00016  00023  00023
P00124  INITIAL.   00010
C00000  IOUTD
C00507  IOUTDP
P00136  IPK        00015  00037  00045  00046  00056  00061  00062  00063  00077  00116
P00004  IRSHIZ     00053
C01207  ISVDAT
C01734  ITOGC
P00137  IU         00053  00054
P00140  IUNP       00014  00033  00035  00036  00041  00043  00044  00060  00100  00101  00105
                   00114
P00141  IWO        00027  00047  00051
P00142  IWOS       00115  00122
P00037  .1         00030
P00047  .2         00031
P00074  .3
P00102  .4         00036  00046
P00107  .5
P00111  .6         00106  00106
P00114  .7         00112
P00123  .8         00112  00113
P00032  .9         00030
P00130  .NSTIFF.   00070  00072
P00143  J          00024  00025
C00000  JFORMAT    00025  00026
P00144  K          00062  00065  00067  00075
C01707  MEMTIM
C00006  MERGSW
C00000  MONSW      00111  00111
P00145  MRX        00017  00103
C00004  NDIMO
C00005  NEXTEV
P00146  NUSE       00056  00057
C00003  NWORDS     00117  00117
X00004  PRINDAT    00120
X00001  QRDICT.    00000  00006
C00000  SCALET
C00001  SCALETI
C01722  SVTIME
C01710  TAPEI
C00002  TMAX
```

```
P00103  TS00001.   00021
P00076  TS00002.   00064
X00002  UNPFOR     00011
P00022  WS00001.   00104   00104
P00066  WS00002.   00075
X00003  ZABORT     00107
   00073 SYMBOLS
```

```
      SUBROUTINE HIST(IM,JM)                                            1000
CSUBR     HIST      15OCT71   ******************************************23000
C     PRINTS GAME HISTORY, FILLS BLOCKS TO BE WRITTEN ON HISTORY TAPE    2000
      COMMON/AREADAT/AINT(20,3),NLRR(20),IOVERLAP(20),KRAD              3000
CUSE      NUMBER    28APR71   ******************************************3100
      COMMON/NUMBER/PLABT(80),TMDEL(80),ABRATE(80),PRABT(80),CEPB(80),  1000
     1      TLINTB(80),IFUNCB(80)                                       2000
CEND      NUMBER    ******************************************************3100
CUSE      BRKPNT    28APR71   ******************************************5000
      COMMON/BRKPNT/NTYPECUM(15),NBLUETYP(15),INDBEGCL(15),INDBEGTY(250) 1000
CEND      BRKPNT    ******************************************************5000
      COMMON/DEFZONE/DEFZONE                                            6000
      TYPE INTEGER DEFZONE                                              7000
CUSE      EDATAB    4JAN71    ******************************************8000
      COMMON/EDATA/SIDEC,IBASE,INOM,JNTAR,NWTYPC,DGXC,DGYC,DMCBC,ITYPC, 1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2), 2000
     2IMTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),      3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(32 ),SIDE, 5000
     4 INBASE,INOV,INTAR,NWTYP,DGX,DGY,DMCB,ITYPE,ICLASS,IREG,IALERT,   6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IMT,JWT,EXTRA(2),NALT,   7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),    8000
     7ZDGZ(12),INDATA(32)                                               9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                 11000
      EQUIVALENCE(NPLAN,NALT) ,(MMT,IMT), (MWT,JWT)                    12000
      TYPE INTEGER DGX,DGY,DMCB,XDGZ,YDGZ,ZDGZ                         13000
      TYPE INTEGER DGXC,DGYC,DMCBC,XDGZC,YDGZC,ZDGZC                   14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                  15000
CEND      EDATAB    ******************************************************8000
      DIMENSION WPNLIST(18),LAUNLIST(18)                                9000
      EQUIVALENCE (NWPNS,INDATA(13)),(NTARG,INDATA(14)),               10000
     1            (WPNLIST(1),INDATA(15)),(LAUNLIST(1),INDATA(33)),    11000
     1            (MLIST,INDATA(51))                                   12000
      DIMENSION MLIST(270)                                             13000
      EQUIVALENCE (NWHUS,       INDATA( 13)),(TAIM,       INDATA( 14)),14000
     1            (AAIM,        INDATA( 15)),(IA,         INDATA( 16)),15000
     2            (TOF,         INDATA(27)),(INITVULN,INDATA(7))       16000
      EQUIVALENCE (NMIRV,INDATA(8))                                    17000
      TYPE INTEGER WPNLIST,TARLIST                                     18000
      TYPE INTEGER XLIST,YLIST,ZLIST                                   19000
      TYPE INTEGER TAIM                                                20000
      COMMON/GROUND/IAGX,IAGY                                          21000
      COMMON/HISTABM/IAREAX,NAL,NWHUSX,NDET,NAREA,NTERM                22000
      EQUIVALENCE (NPEN,NWHUSX)                                        23000
      COMMON/HISTAI/NLC,TOFLT,IW                                       24000
      COMMON/HISTOUT/NSIDE,NINBASE,NINOV,NINTAR,NNWTYP,HTIME,NEVENT,   26000
     1 NPLACE,NITYPE,NICLASS,NIREG,NIALERT,NDUD,NINZONE,NNDECOYS,NIALT,27000
     2 NNCM,NASMTYPE,NHCODE,DUMMY(5),NMMT,MDELAY,TINCN(40),INDPN(40),  28000
     3 INDEN(40),NWTYPEN(6),NHISTOUT(200)                              29000
      EQUIVALENCE (NSIDE,       NHISTOUT( 1))                          30000
      DIMENSION HISTOUT(200)                                           30100
      EQUIVALENCE (HISTOUT,NHISTOUT)                                   30200
      DIMENSION NWPNLIST(18),NLAUNLIS(18),NTARLIST(18),NTRYLC(18)      31000
      EQUIVALENCE (NCODE,       NHISTOUT(14)),(NNWPNS,      NHISTOUT(15)),32000
     1            (NNTARG,      NHISTOUT(16)),(NNCYCLE,     NHISTOUT(17)),33000
     2            (NNSUCC,      NHISTOUT(18)),(NNTEST,      NHISTOUT(19)),34000
     3            (NWPNLIST(1),NHISTOUT(25)),(NLAUNLIS(1),NHISTOUT(43)),35000
```

```
     4            (NTARLIST(1),NHISTOUT(61)),(NTRYLC(1),  NHISTOUT(79))
      EQUIVALENCE (NNAL,        NHISTOUT(13)),
     1            (NTAIM,       NHISTOUT(16)),(NNPEN,       NHISTOUT(16)),
     2            (NNWHDS,      NHISTOUT(15)),(NNDET,       NHISTOUT(15)),
     3            (NNTERM,      NHISTOUT(17)),(NNAREA,      NHISTOUT(18))
      DIMENSION INTARC(40)
      EQUIVALENCE (NDGX,        NHISTOUT(13)),(NDGY,        NHISTOUT(14)),
     1            (NDGZ,        NHISTOUT(15)),(NAGX,        NHISTOUT(16)),
     2            (NAGY,        NHISTOUT(17)),(NAGZ,        NHISTOUT(18)),
     3            (NNCOL,       NHISTOUT(19)),(ICUR,        NHISTOUT(19)),
     4            ((INTARC(1),NHISTOUT(20)),(NNMIRV,NHISTOUT(13))
      EQUIVALENCE (NDEPEN,NHISTOUT(20))
      EQUIVALENCE (THOUR,NHISTOUT(21)),(NTLIST,NHISTOUT(15))
      DIMENSION NTLIST(15)
      EQUIVALENCE(DTIME,HISTOUT(8))
      EQUIVALENCE(TOTIME,HISTOUT(22))
CUSE      HISTREF    15MAR71    ******************************************
      COMMON/HISTREF/NFGC,INEED
CEND      HISTREF    ******************************************************
      COMMON/IPRINT/IPRINT(60)
      TYPE LOGICAL IPRINT
      COMMON/KEYWORDS/KEYARRAY(20)
      EQUIVALENCE (KEYARRAY(15),KDEFZON),(KEYARRAY(16),KDEFCMP)
CUSE      MISSLE     28APR71    ******************************************
      COMMON/MISSLE/PINC(80),PABORT(80),PDES(80),PFPF(80),TPOWER(80),
     1      TRET(80),IR(80),CEPM(80),PKMIS(80),TLINTM(80),IFUNCM(80)
CEND      MISSLE     ******************************************************
CUSE      NAMES      28APR71    ******************************************
      COMMON/NAMES/NAMESIDE(2),NAMCLS(15),NAMETYPE(250)
CEND      NAMES      ******************************************************
      COMMON/NWORDOUT/NWORDOUT
      COMMON/TIME/TIME,FUTIME
      COMMON/TRYL/INDEXWPN(18),PINCOMM,PNOABORT,PDEST,PFLTFAIL,TPF,
     1 TRETANG,IREP,NCYCLE,NCON,NALIVE,NNABT,NSUCC,NLATER,NDES,NTEST
CUSE      WARHEAD    28APR71    ******************************************
      COMMON/WARHEAD/YIELD(50),PDUD(50),CEPW(50)
CEND      WARHEAD    ******************************************************
      DATA(LSHIFT=100000000B)
      DIMENSION KALT(2)
      DATA(KALT=5H HIGH,5H LOW     )
      COMMON/HISREC/IREC,IDEPEN,LAZONE
      TYPE INTEGER OSIDE

      GO TO (10,20,30,40,50,60,70,80,90,100,110,120,130,140,150,160,
     1170,180,190,20000,21000,2000) IH
    1 NPLACE    = INDP(IHT)
      NEVENT    = INDE(IHT)
    2 NRCODE = 1
      NINZONE   = INZONE
      NIALT     = IALT
      NNCM      = NCM
      NWORDOUT = 22
    5 NSIDE     = SIDE
      HTIME = TIME - 24.
      NINBASE   = INBASE
      NINDV     = INDV
```

```
      NITYPE   = ITYPE                                                  84000
      NICLASS  = ICLASS                                                 85000
      IF(ICLASS .EQ. 4)5001,5002                                        86000
 5001 NICLASS = 2                                                       87000
 5002 CONTINUE                                                          88000
      JTYPE = ITYPE + NTYPECUM(NICLASS-1)                               89000
      NIREG    = IREG                                                   90000
      NIALERT  = IALERT                                                 91000
      GO TO 9999                                                        92000
C     MISSILE LAUNCH EVENT                                              93000
   10 GO TO (11,12,13,14,15,16,17,18,19,200,210,220,230,240),JM         94000
   11 NEVENT = 1                                                        95000
      NPLACE = INBASE                                                   96000
      HTIME = TIME - 24.                                                97000
      NNWPNS = NWPNS                                                    98000
      NNTARG = NTARG                                                    99000
      NNMIRV=NMIRV                                                     100000
      DO 8006 I=15,50                                                  101000
 8006 NHISTOUT(I+10)=INDATA(I)                                         102000
      IF(IPRINT(1))11,5                                                103000
 1101 PRINT 9011, HTIME,NWPNS,NAMETYPE(ITYPE),NTARG                    104000
 9011 FORMAT(F8.4,3X,7H LAUNCH,I4,1X,A8,8H AGAINST,I4,12H TARGET SETS )105000
      GO TO 5                                                          106000
   12 K1 = 8HMISSILES                                                  107000
      K2 = 8HLAUNCHED                                                  108000
      NWORDOUT = 78 + NWPNS                                            109000
 1201 NNSUCC = NSUCC                                                   110000
      NNTEST = NTEST                                                   111000
      NNCYCLE = NCYCLE                                                 112000
      IF(IPRINT(3))1202,9999                                           113000
 1202 PRINT 9012, K1,K2,NSUCC                                          114000
 9012 FORMAT (10X,5H ALL ,A8,1X,A8,9H, NSUCC =,I5)                     115000
      GO TO 9999                                                       116000
   13 K1 = 8H TARGETS                                                  117000
      K2 = 8HCOVERED                                                   118000
      NWORDOUT = 78 + NCYCLE                                           119000
      J = NCYCLE + 1                                                   120000
      DO 1301 I=J,NWPNS                                                121000
 1301 NTRYLC(I) = 0                                                    122000
      GO TO 1201                                                       123000
   14 IF(NMIRV .GT. 1) 1403,1402                                       124000
 1402 NTARLIST(IW)=INTAR                                               125000
      TOTIME = TIME-24. + TOFLT                                        126000
      IF (IPRINT(4))1401,9999                                          127000
 1401 PRINT 9014,INDV,INBASE,INTAR,TOTIME                              128000
 9014 FORMAT(20X,8H MISSILE,I3,1H-,I4,17H TO ARRIVE AT TGT,            129000
     1 I6,3H AT,F8.4)                                                  130000
      GO TO 9999                                                       131000
 1403 IF(IPRINT(4)) 1404,9999                                          132000
 1404 PRINT 9414,INDV,INBASE,NMIRV                                     133000
 9414 FORMAT(20X,8H MISSILE,I3,1H-,I4,17H LAUNCHED AGAINST,            134000
     1I3,8H TARGETS )                                                  135000
   15 GO TO 9999                                                       136000
   16 J = NCYCLE + 1                                                   137000
      DO 1601 I=J,NWPNS                                                138000
 1601 NTRYLC(I) = 7                                                    139000
```

```
      IF(IPRINT(5))1602,9999
 1602 FTIME = FUTIME - 24.
      PRINT 9016, FTIME,NLC,NLATER
 9016 FORMAT (30X,14H NEW LAUNCH AT,F8.4,I5,12H MISSILES VS,I5,
     1 8H TARGETS )
   17 GO TO 9999
   18 NTRYLC(NCYCLE) = 1
      IF(IPRINT(2))1801,9999
 1801 PRINT 9018,INDV,INBASE
 9018 FORMAT(10X,8H MISSILE,I3,1H-,I4,18H NOT IN COMMISSION )
      GO TO 9999
   19 NTRYLC(NCYCLE) = 2
 1901 IF(IPRINT(2))1902,9999
 1902 PRINT 9019,INDV,INBASE
 9019 FORMAT(10X,8H MISSILE,I3,1H-,I4,10H SILO DEAD)
      GO TO 9999
  200 NTRYLC(NCYCLE) = 3
      IF(IPRINT(2))201,9999
  201 PRINT 9201,INDV,INBASE
 9201 FORMAT(10X,8H MISSILE,I3,1H-,I4,13H LAUNCH ABORT )
      GO TO 9999
  210 NTRYLC(NCYCLE) = 4
      IF(IPRINT(2))211,9999
  211 PRINT 9211,INBASE
 9211 FORMAT (55X,5H SILO,I6,10H DESTROYED)
      GO TO 9999
  220 NTRYLC(NCYCLE) = 5
      IF(IPRINT(2))221,9999
  221 PRINT 9221,INDV,INBASE
 9221 FORMAT(10X,8H MISSILE,I3,1H-,I4,25H FAILED IN POWERED FLIGHT )
      GO TO 9999
  230 NTRYLC(NCYCLE) = 6
      GO TO 9999
  240 NTRYLC(NCYCLE) = 8
      GO TO 1901
C     BOMBER/TANKER LAUNCH EVENT
   20 GO TO (1,22,23,24),JM
   22 NRCODE = 3
      IF(IPRINT(7))2201,9999
 2201 THOUR = FUTIME - 24.
      PRINT 9022, HTIME,NAMETYPE(JTYPE),INDV,INBASE,THOUR
 9022 FORMAT(F9.4,4X,A8,I3,1H-,I4,21H ABORT, NEW LAUNCH AT ,F8.4)
      GO TO 9999
   23 NRCODE = 2
      CALL RCM8F
      IF(IPRINT(8))2301,9999
 2301 PRINT 9023, HTIME,NAMETYPE(JTYPE),INDV,INBASE
 9023 FORMAT(F9.4,4X,A8,I3,1H-,I4,22H NO LAUNCH - BASE DEAD )
      GO TO 9999
   24 IF(IPRINT(6))2401,9999
 2401 THOUR = TABORT - 24.
      PRINT 9024, HTIME,NAMETYPE(JTYPE),INDV,INBASE,THOUR
 9024 FORMAT(F9.4,4X,A8,I3,1H-,I4,17H LAUNCH, TABORT =,F8.4)
      GO TO 9999
C     COMPLETE LAUNCH EVENT
   30 GO TO (31,32,33,34),JM
```

```
   31 NEVENT = 3
      NPLACE = INBASE
      NINTAR = INTAR
      JT=0
      HTIME=TIME-24.
      NNMIRV=NMIRV
      NWCRDOUT=14+NMIRV
      GO TO 5
   34 NCODE=2
      IF(IPRINT(9))3101,5
 3101 PRINT 9031,HTIME,NAMETYPE(ITYPE),INDV,INBASE,NMIRV
 9031 FORMAT(F8.4,4X,A8,I3,1H-,I4,25H DESTROYED IN FLIGHT #ITH,I3,7H  MI
     1RVS)
      GO TO 9999
   32 NCODE=1
      IF(IPRINT(47)) 3201,9999
 3201 HTIME=TIME-24.
      PRINT 9032,HTIME,NAMETYPE(ITYPE),INDV,INBASE,NMIRV
 9032 FORMAT(F9.4,4X,A8,I3,1H-,I4,9H RELEASES,I3,6H MIRVS)
      GO TO 9999
   33 FTIME =FUTIME-24.
      JT=JT+1
      NTLIST(JT)=INTAR
      IF(IPRINT(48))  3301,9999
 3301 PRINT 9033,INTAR,FTIME
 9033 FORMAT(48X,I5,3H AT,F9.4)
      GO TO 9999
C     REFUELING EVENT
   40 GO TO (41,42,1,44,45,46),JH
   41 IF(IPRINT(10))4101,9999
 4101 PRINT 9041, HTIME,NAMETYPE(JTYPE),INDV,INBASE
     1,INDP(IHT),INEED
 9041 FORMAT(F8.4,4X,A8,I3,1H-,I4,15H REFUEL IN AREA,I3,
     1            5H #ITH,I3,6H UNITS)
      GO TO 9999
   42 NBCODE = 4
      IF(IPRINT(11))4201,9999
 4201 PRINT 9042, HTIME,NAMETYPE(JTYPE),INDV,INBASE
     1,INDP(IHT)
 9042 FORMAT(F8.4,4X,A8,I3,1H-,I4,21H REFUEL ABORT IN AREA  ,I3)
      GO TO 9999
   44 NBCODE = 5
      IF(IPRINT(12))4401,9999
 4401 PRINT 9044, HTIME,NAMETYPE(JTYPE),INDV,INBASE
     1,INDP(IHT)
 9044 FORMAT(F8.4,4X,A8,I3,1H-,I4,19H NO TANKERS IN AREA,I3)
      GO TO 9999
   45 NBCODE = NBCODE + 15
      CALL BOMBF
 4502 IF(IPRINT(13)) 4501,9999
 4501 PRINT 9045
 9045 FORMAT (31X,12H RETURN HOME)
      GO TO 9999
   46 NBCODE=NBCODE+25
      GO TO 4502
C     ENTER ZONE EVENT (ESEC)
```

```
   50 GO TO (1,52,53,54),JH
   52 NBCODE = 6
      IF(IPRINT(15))5201,9999
 5201 PRINT 9052, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INDP(IHT)
 9052 FORMAT (F8.4,4X,A8,I3,1H-,I4,30H ENTER ENEMY TERRITORY AT ZONE,I3)
      GO TO 9999
   53 NBCODE = 7
      IF(IPRINT(16))5301,9999
 5301 PRINT 9053,HTIME,NAMETYPE(JTYPE),INDV,INBASE,LAZONE,IDEPEN
 9053 FORMAT(F8.4,4X,A8,I3,1H-,I4,32H LEAVE ENEMY TERRITORY FROM ZONE,I3
     1,9H CORRIDOR,I3)
      GO TO 9999
   54 NWCROUT = 0
      IF(IPRINT(14))5401,9999
 5401 PRINT 9054, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INZONE
 9054 FORMAT (F8.4,4X,A8,I3,1H-,I4,11H ENTER ZONE,I3)
   60 GO TO 9999
C     AREA ATTRITION EVENT
   70 GO TO (71,72),JH
   71 NPLACE = INZONE
      NEVENT = 7
      GO TO 4
   72 NBCODE = 8
      CALL BOMBF
      IF(IPRINT(18))7201,9999
 7201 PRINT 9072, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INZONE
 9072 FORMAT (F8.4,4X,A8,I3,1H-,I4,16H AATTRIT IN ZONE,I3)
      GO TO 9999
C     LOCAL ATTRITION EVENT
   80 GO TO (81,82,83,84,85,86,87,88,810,820) JH
   81 NINTAR=INDP(IHT)
      GO TO 1
   82 NDUD = 1
      GO TO 9999
   83 NDUD = 2
      IF(IPRINT(23))8301,9999
 8301 PRINT 9083
 9083 FORMAT(30X,12H DUD WARHEAD)
      GO TO 9999
   84 NBCODE = 9
      LPRINT = 6HBEFORE
 8401 IHT = IHT - 1
      CALL BOMBF
      IF(IPRINT(20))8402,9999
 8402 PRINT 9084, HTIME,NAMETYPE(JTYPE),INDV,INBASE,LPRINT,INTAR
 9084 FORMAT (F8.4,4X,A8,I3,1H-,I4,8H KILLED ,A6,4H TGT,I5)
      GO TO 9999
   85 NBCODE = 10
      LPRINT = 6H AFTER
CSUBR     HIST1     10CT71    ****************************************
      GO TO 8401
   86 NASMTYPE = NCM
      NBCODE=27
      IF(IPRINT(21))8601,9999
 8601 PRINT 9086, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INTAR
 9086 FORMAT (F8.4,4X,A8,I3,1H-,I4,16H ASM PEN. TO TGT,I5)
```

```
      GO TO 9999
   87 NBCODE = 11
      NASMTYPE = NCM
      IF(IPRINT(22))8701,9999
 8701 PRINT 9087, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INTAR
 9087 FORMAT (F8.4,4X,A8,I3,1H-,I4,16H ASM KILL AT TGT,I5)
      GO TO 9999
   88 IF(IPRINT(19))8801,9999
 8801 PRINT 9088, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INTAR
 9088 FORMAT (F8.4,4X,A8,I3,1H-,I4,20H BOMBER SURVIVES TGT,I5)
      GO TO 9999
  810 IF(IPRINT(54)) 811,9999
  811 PRINT 812,HTIME,NAMETYPE(JTYPE),INDV,INBASE,INTAR,PKNAV
  812 FORMAT(F8.4,4X,A8,I3,1H-,I4,7H TARGET,I5,16H SURVIVES PKNAV=,F6.4)
      GO TO 9999
  820 IF(IPRINT(55)) 813,9999
  813 PRINT 814,HTIME,NAMETYPE(JTYPE),INDV,INBASE,INTAR,PKNAV
  814 FORMAT(F8.4,4X,A8,I3,1H-,I4,21H PENETRATES TO TARGET,I5,7H PKNAV=,
     1F6.4)
      GO TO 9999
C     TERMINAL BALLISTIC MISSILE DEFENSE EVENT
   90 GO TO (91,92) JM
   91 NEVENT = 9
      NPLACE = NINTAR = INTAR
      NNWTYP = NWTYP
      NNAREA=NAREA
      NNTERM=NTERM
      NWORDOUT = 18
      GO TO 5
   92 NNAL = NAL
      NNPEN = NPEN
      NNDET = NDET
      IF(IPRINT(24))9201,9999
 9201 PRINT 9092, HTIME,NAMETYPE(ITYPE),INDV,INBASE,INTAR,NAL,NPEN,NDET
 9092 FORMAT (F8.4,4X,A8,I3,1H-,I4,15H TERMBMD AT TGT,I5,7H ALLOC.,I3,
     1 5H INT.,I3,15H WHDS. PEN. AND,I3,5H DET.)
      GO TO 9999
C     BURST DAMAGE EVENT
  100 GO TO (101,102,103,104,105,106,107,108) JM
  101 CONTINUE
      NEVENT   = 10
      NINTAR   = NPLACE = INTAR
      NNWTYP   = NWTYP
      NDGX     = DGX
      NDGY     = DGY
      NDGZ     = NAGZ = DMOB
      NAGX     = IAGX
      NAGY     = IAGY
      ICUR = 0
      NWORDOUT = 20
      IF(IPRINT(25))10101,10102
10101 PRINT 9101, NWTYP,YIELD(NWTYP),DGX,DGY,IAGX,IAGY
 9101 FORMAT (I10,F10.2,4I10)
10102 IF(ICLASS .GT. 2)10103,5
10103 NASMTYPE = NCM
      GO TO 5
```

```
  102 IGOT = 3
10201 ICUR = ICUR + 1
      INTARC(ICUR) = INTAR + IGOT*LSHIFT
      GO TO 108
  103 IGOT = 2
      GO TO 10201
  104 IGOT = 1
      GO TO 10201
  105 IGOT = 4
      GO TO 10201
  106 IGOT = 1
      GO TO 10201
  107 IGOT = 5
      GO TO 10201
  108 IF(IPRINT(26))10801,9999
10801 KS = JH - 1
      GO TO (10802,10803,10804,10805,10806,10807),KS
10802 PRINT 91082, INTAR
91082 FORMAT (10X,7H TARGET,I6,7H KILLED)
      GO TO 9999
10803 PRINT 91083, INTAR
91083 FORMAT (10X,7H TARGET,I6,12H NON-DYNAMIC)
      GO TO 9999
10804 PRINT 91084, INTAR
91084 FORMAT (10X,7H TARGET,I6,9H SURVIVES)
      GO TO 9999
10805 PRINT 91085, INTAR
91085 FORMAT (10X,7H TARGET,I6,13H ALREADY DEAD)
      GO TO 9999
10806 PRINT 91086, INTAR
91086 FORMAT (10X,7H TARGET,I6,12H TOO DISTANT)
      GO TO 9999
10807 PRINT 91087, INTAR
91087 FORMAT (10X,7H TARGET,I6,13H NOT IN COLAR)
      GO TO 9999
C     ENTER REFUELING AREA EVENT
  110 IF(IPRINT(28))11001,1
11001 HTIME = TIME - 24.
      JTYPE = ITYPE + NTYPECUM(2)
      PRINT 9110, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INDP(IHT)
 9110 FORMAT (F8.4,4X,A8,I3,1H-,I4,15H ARRIVE AT AREA,I3)
      GO TO 1
C     LEAVE REFUELING AREA EVENT
  120 GO TO (121,122,1,124),JH
  121 IF(IPRINT(29))12101,9999
12101 PRINT 9121, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INZONE
 9121 FORMAT (F8.4,4X,A8,I3,1H-,I4,13H DEPARTS AREA,I3,6H EMPTY)
      GO TO 9999
  122 NRCODE = 13
      IF(IPRINT(30))12201,9999
12201 PRINT 9122, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INZONE,NFGO
 9122 FORMAT(F8.4,4X,A8,I3,1H-,I4,13H DEPARTS AREA,I3,5H WITH,
     1   I3,6H UNITS)
      GO TO 9999
  124 NRCODE = 12
      IF(IPRINT(31))12401,9999
```

```
12401 PRINT 9124, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INZONE,NFGO
 9124 FORMAT(F8.4,4X,A8,I3,1H-,I4,14H ABORT IN AREA,I3,
     1          5H WITH,I3,6H UNITS)
      GO TO 9999
C     BOMBER ABORT EVENT
  130 GO TO (131,132,133),JH
  131 NPLACE = INZONE
      NEVENT   = 13
      GO TO
  132 NRCODE = 18
      IF(IPRINT(32))1321,9999
 1321 PRINT 9132, HTIME,NAMETYPE(JTYPE),INDV,INBASE
     1,INZONE
 9132 FORMAT(F8.4,4X,A8,I3,1H-,I4,25H SCHEDULED SPLASH IN ZONE,I3)
      GO TO 9999
  133 NRCODE = 14
      CALL BOMBF
      IF(IPRINT(33))1331,9999
 1331 PRINT 9133, HTIME,NAMETYPE(JTYPE),INDV,INBASE
     1,INZONE
 9133 FORMAT(F8.4,4X,A8,I3,1H-,I4,21H RANDOM ABORT IN ZONE,I3)
      GO TO 9999
C     ASM LAUNCH EVENT
  140 GO TO (1,142,143) JH
  142 NRCODE = 15
      I = IHT - 1
      TINCN(I) = TINC(I)
      INDPN(I) = INDP(I)
      INDEN(I) = INDE(I)
      I = JWT - 1
      NWTYPEN(I) = IWTYP(I)
      NASMTYPE = INDP(IHT)
      IF(IPRINT(35))1421,9999
 1421 PRINT 9142, HTIME,NAMETYPE(JTYPE),INDV,INBASE
 9142 FORMAT (F8.4,4X,A8,I3,1H-,I4,17H ASM LAUNCH ABORT)
      GO TO 9999
  143 NASMTYPE = INDP(IHT)
      IF(IPRINT(34))1431,9999
 1431 PRINT 9143, HTIME,NAMETYPE(JTYPE),INDV,INBASE
 9143 FORMAT (F8.4,4X,A8,I3,1H-,I4,11H ASM LAUNCH)
      GO TO 9999
C     DECOY LAUNCH EVENT
  150 CONTINUE
  152 IF(IPRINT(36))1521,1
 1521 J = 2 - IALT
      HTIME = TIME - 24.
      JTYPE = ITYPE + NTYPECUM(1)
      PRINT 9152, HTIME,NAMETYPE(JTYPE),INDV,INBASE,INDP(IHT),KALT(J)
     1,INZONE
 9152 FORMAT (F8.4,4X,A8,I3,1H-,I4,7H LAUNCH,I3,12H DECOYS FROM,A5,
     117H ALTITUDE IN ZONE,I3)
      GO TO 1
C     BOMBER RECOVERY EVENT
  160 GO TO (161,162,163,164,165,166,167) JH
  161 NEVENT=16
      NPLACE=INDP(IHT)
```

```
      GO TO 2
  162 IF(IPRINT(37))1621,9999
 1621 PRINT 9162,HTIME,NAMETYPE(JTYPE),INDV,INBASE,IREC
 9162 FORMAT (F8.4,4X,A8,I3,1H-,I4,17H RECOVERY AT BASE,I5)
      GO TO 9999
  163 NRCODE = 17
      IF(IPRINT(38))1631,9999
 1631 PRINT 9163,HTIME,NAMETYPE(JTYPE),INDV,INBASE,IREC
 9163 FORMAT (F8.4,4X,A8,I3,1H-,I4,14H RECOVERY BASE,I5,5H DEAD)
      GO TO 9999
  164 NRCODE=21
      IF(IPRINT(43))1641,9999
 1641 PRINT9164,HTIME,NAMETYPE(JTYPE),INDV,INBASE
 9164 FORMAT(F8.4,4X,A8,I3,1H-,I4,40H NO LIVE BASE AVAILABLE ON DEPENTRA
     1TION )
      GO TO 9999
  165 NRCODE=22
      IF(IPRINT(44))1651,9999
 1651 PRINT 9165,HTIME,NAMETYPE(JTYPE),INDV,INBASE,IREC
 9165 FORMAT(F8.4,4X,A8,I3,1H-,I4,14H RECOVERY BASE,I5,13H SATURATED)
      GO TO 9999
  166 NRCODE=25
      IF(IPRINT(50)) 1621,9999
  167 NRCODE=26
      IF(IPRINT(51)) 1631,9999
C     CHANGE ALTITUDE EVENT
  170 CONTINUE
      IF(IPRINT(39))172,1
  172 J = IALT + 1
      HTIME = TIME - 24.
      JTYPE = ITYPE + NTYPECUM(1)
      PRINT 9172, HTIME,NAMETYPE(JTYPE),INDV,INBASE,KALT(J)
 9172 FORMAT (F8.4,4X,A8,I3,1H-,I4,10H CHANGE TO,A5,9H ALTITUDE)
      GO TO 1
C     AREA  BALLISTIC MISSILE DEFENSE EVENT
  180 GO TO(181,182,183,184,185,186,187),JM
  181 NNWTYP   = NWTYP
      NEVENT   = 18
      NPLACE   = IAREAX
      NINTAR=INTAR
      NCODE    = 1
      NWORDOUT = 16
      GO TO 5
  182 NCODE = 1
      KW = 6H PREV.
 1821 IF(IPRINT(40))1822,9999
 1822 PRINT 9182, HTIME, NAMETYPE(ITYPE), INDV, INBASE, INTAR, KW
 9182 FORMAT (F8.4,4X,A8,I3,1H-,I4,4H TGT,I3,A6,
     1 22H SELECTED FOR AREA BMD )
      GO TO 9999
  183 NCODE = 2
      KW = 6H  NOT
      GO TO 1821
  184 NCODE = 3
      KW = 6H HERE
      GO TO 1821
```

```
  185 NNAL = NAL
      NTAIM    = TAIM
      NNWHOS   = NWHOSX
      IF(NCODE .EQ. 2)9999,1851
 1851 IF(IPRINT(41))1852,9999
 1852 PRINT 9185,NAL,DEFZONE,TAIM,NWHOSX
 9185 FORMAT(10X,10H ALLOCATED,I6,29H INTERCEPTORS FROM AREA ZONE ,I2,
     14H AND,I6,13H OBJECTS WITH,I6,20H WARHEADS PENETRATED)
      GO TO 9999
  186 OSIDE = 3 - SIDE
      PRINT 9186,NAMESIDE(OSIDE),DEFZONE
 9186 FORMAT(5H ALL ,A4,37H AREA INTERCEPTORS GONE IN AREA ZONE ,I2)
      GO TO 9999
  187 IF(IPRINT(42))1871,9999
 1871 PRINT 9187, HTIME, NAMETYPE(ITYPE), INDV, INBASE, INTAR
 9187 FORMAT (F8.4,4X,A8,I3,1H-,I4,23H RANDOM AREA BMO AT TGT,I5)
      GO TO 9999
  190 GO TO (191,192,193) JH
  192 NBCODE=23   $ NDEPEN=IREC
      IF(IPRINT(45))1921,9999
 1921 PRINT 9192,HTIME,NAMETYPE(JTYPE),INDV,INBASE,IREC
 9192 FORMAT(F8.4,4X,A8,I3,1H-,I4,30H KILLED AFTER RECOVERY AT BASE,I5)
      GO TO 9999
  193 NBCODE=24
      NDEPEN=IREC
      IF(IPRINT(49)) 1921,9999
  191 NEVENT=19
      NPLACE=INDP(IHT)
      GO TO 2
 2000 PRINT 9200, IH
 9200 FORMAT (22H EVENT INDEX IN HIST =, I6)
 9999 CONTINUE
      RETURN
20000 GO TO (20100,20200) JH
20100 NEVENT=20
      NSIDE=SIDE
      NINBASE=INBASE
      HTIME=TIME-24.
      NITYPE=ITYPE
      NICLASS=ICLASS
      NIREG=IREG
      NIALERT=IALERT
      JTYPE=ITYPE+NTYPECUM(NICLASS-1)
      NWORDOUT=12
      GO TO 9999
20200 IF(IPRINT(52)) 20300,9999
20300 DTIME =FUTIME-24.
      PRINT 20400,HTIME,NAMETYPE(JTYPE),INBASE,DTIME
20400 FORMAT(F8.4,4X,A8,4X,I4,38H SCHEDULED FOR NAVAL ATTRITION AT TIME,
     1 F8.4)
      GO TO 9999
21000 GO TO (21100,21200) JH
21100 NEVENT=21
      NSIDE=SIDE
      NINBASE=INBASE
      NITYPE=ITYPE
```

```
      HTIME=TIME-24.                                                    286000
      NICLASS=ICLASS                                                    287000
      JTYPE=ITYPE+NTYPECUM(NICLASS-1)                                   288000
      NIREG=IREG                                                        289000
      NIALERT=IALERT                                                    290000
      NWCRDOUT=12                                                       291000
      GO TO 9999                                                        292000
21200 IF(IPRINT(53)) 21300,9999                                         293000
21300 PRINT 21400,HTIME,NAMETYPE(JTYPE),INBASE                          294000
21400 FORMAT(F8.4,4X,A8,4X,I4,20H NAVAL ATTRITION                 )     295000
      GO TO 9999                                                        296000
      END                                                               297000
```

```
                                        IDENT     HIST
PROGRAM LENGTH                  05003
ENTRY POINTS      HIST          01517
BLOCK NAMES
                  AREADAT       00145
                  BOMBER        01060
                  BRKPNT        00447
                  DEFZONE       00001
                  EDATA         01200
                  GROUND        00002
                  HISTAHM       00004
                  HISTAI        00003
                  HISTOUT       00310
                  HISTREF       00002
                  IPRINT        00002
                  KEYWORDS      00024
                  MISSLE        01560
                  NAMES         00413
                  NWORDOUT      00001
                  TIME          00002
                  TRYL          00341
                  WARHEAD       00226
                  HISREC        00003
EXTERNAL SYMBOLS
                  Q3000.46
                  THEND.
                  Q8QDICT.
                  BCMBF
                  STH.
                  QNSINGL.
```

C00516	AAI4											
C00240	ABRATE											
C00000	AINT											
C00472	B											
P04663	BEGIN.	04747	04755	04761								
X00004	BOMBF	02244	02556	02716	03004	03674						
C00500	CEPB											
C01060	CEPM											
C00144	CEPW											
P04662	CNVRTI.	01665	01667	01671	01673	01723	01724	01726	01775	01776	01777	02001
		02015	02016	02017	02050	02052	02054	02073	02074	02113	02114	02133
		02134	02153	02172	02173	02226	02231	02233	02234	02236	02256	02261
		02263	02264	02302	02305	02307	02310	02312	02354	02357	02361	02362
		02363	02403	02406	02410	02411	02412	02435	02437	02462	02465	02467
		02470	02472	02474	02512	02515	02517	02520	02522	02540	02543	02545
		02546	02550	02614	02617	02621	02622	02624	02642	02645	02647	02650
		02652	02653	02671	02675	02676	02677	02700	02730	02733	02735	02736
		02737	03016	03021	03023	03024	03026	03030	03053	03056	03060	03061
		03062	03102	03105	03107	03110	03111	03125	03130	03132	03133	03134
		03150	03153	03155	03156	03157	03160	03174	03177	03201	03202	03203
		03204	03246	03251	03253	03254	03255	03257	03260	03281	03330	03332
		03334	03335	03337	03340	03414	03425	03436	03447	03460	03471	03513
		03516	03520	03521	03523	03544	03547	03551	03552	03553	03571	03574
		03576	03577	03600	03602	03620	03623	03625	03626	03627	03631	03657
		03662	03664	03665	03666	03706	03711	03713	03714	03715	03757	03762
		03764	03765	04004	04007	04011	04012	04037	04042	04044	04045	04047
		04051	04053	04103	04106	04110	04111	04113	04131	04134	04136	04137
		04141	04157	04162	04164	04165	04203	04206	04210	04211	04213	04252
		04255	04257	04260	04262	04323	04326	04330	04331	04332	04334	04370
		04372	04374	04376	04412	04414	04430	04433	04435	04436	04437	04463
		04466	04470	04471	04473	04520	04571	04574	04576	04600	04647	04652
		04654										
P04766	COUNT.	01745	01746	02031	02032							
P00006	CRMT.	01675	01731	02004	02022	02057	02077	02117	02137	02156	02176	02241
		02267	02315	02356	02415	02442	02477	02525	02553	02571	02627	02656
		02703	02742	02775	03033	03065	03114	03137	03163	03207	03264	03343
		03417	03430	03441	03452	03463	03474	03526	03556	03605	03634	03671
		03720	03770	04015	04056	04116	04144	04170	04216	04265	04337	04401
		04417	04442	04476	04523	04603	04657					
C00000	DEFZONE	04371	04371	04413	04413							
C00505	DGA	03303	03303	03333	03333							
C00005	DGAC											
C00506	DGY	03305	03305	03335								
C00006	DGYC											
C00507	DHCB	03307	03307									
C00007	DHCBC											
P00001	DICT.	01561	01662	01675	01720	01730	01772	02003	02012	02041	02046	02056
		02070	02076	02110	02116	02130	02136	02150	02155	02167	02175	02224
		02240	02245	02253	02265	02300	02314	02351	02365	02401	02414	02432
		02441	02457	02476	02507	02524	02535	02552	02557	02505	02570	02611
		02626	02637	02655	02666	02702	02717	02725	02741	02771	02774	03005
		03013	03032	03050	03064	03077	03113	03122	03136	03145	03162	03171
		03206	03243	03263	03325	03342	03411	03416	03422	03427	03433	03440
		03444	03451	03455	03462	03466	03473	03510	03525	03541	03555	03566

		03604	03615	03633	03654	03670	03675	03703	03717	03734	03767	04001
		04014	04034	04055	04100	04115	04126	04143	04154	04167	04200	04215
		04247	04264	04320	04336	04365	04400	04407	04416	04425	04441	04460
		04475	04515	04522	04567	04602	04644	04656	04666	04667		
C00007	DTIME	04564	04564	04577	04577							
C00023	DUMMY											
P04750	ENDING.	04522	04523	04663	04664	04664	04665	04665				
P00000	EXIT.	04753										
C00526	EXTRA											
P00006	FORMAT.	01677	01701	01732	01734	03000	03036	04311	04342	04346		
P01523	FP00001.	04675	04676									
P01615	FP00002.	04703	04704									
P02205	FP00003.	04705	04706									
P02316	FP00004.	04707	04710									
P02443	FP00005.	04711	04712									
P02575	FP00006.	04713	04714									
P02704	FP00007.	04715	04716									
P02743	FP00010.	04717	04720									
P03210	FP00011.	04721	04722									
P03265	FP00012.	04723	04724									
P03377	FP00013.	04725	04726									
P03527	FP00014.	04727	04730									
P03635	FP00015.	04731	04732									
P03721	FP00016.	04733	04734									
P04057	FP00017.	04735	04736									
P04266	FP00020.	04737	04740									
P04443	FP00021.	04741	04742									
P04517	FP00022.	04677	04700									
P04524	FP00023.	04743	04744									
P04604	FP00024.	04745	04746									
P04767	FTIME	02043	02050	02420	02436							
C00001	FUTIME	02041	02041	02217	02217	02416	02416	04562	04562			
P04764	GETPL.	04676	04701									
P04754	GETPU.	04673	04760									
P01676	GGO0000.	01685										
P01731	GGO0001.	01716										
P02004	GGO0002.	01770										
P02022	GGO0003.	02016										
P02057	GGO0004.	02044										
P02077	GGO0005.	02066										
P02117	GGO0006.	02106										
P02137	GGO0007.	02126										
P02156	GGO0010.	02146										
P02176	GGO0011.	02165										
P02241	GGO0012.	02222										
P02267	GGO0013.	02251										
P02315	GGO0014.	02276										
P02366	GGO0015.	02347										
P02415	GGO0016.	02377										
P02442	GGO0017.	02430										
P02477	GGO0020.	02455										
P02525	GGO0021.	02505										
P02553	GGO0022.	02533										
P02571	GGO0023.	02563										

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P02627  GG00024.  02607
P02656  GG00025.  02635
P02703  GG00026.  02664
P02742  GG00027.  02723
P02775  GG00030.  02767
P03033  GG00031.  03011
P03065  GG00032.  03046
P03114  GG00033.  03075
P03137  GG00034.  03120
P03163  GG00035.  03143
P03207  GG00036.  03167
P03264  GG00037.  03241
P03343  GG00040.  03323
P03417  GG00041.  03407
P03430  GG00042.  03420
P03441  GG00043.  03431
P03452  GG00044.  03442
P03463  GG00045.  03453
P03474  GG00046.  03464
P03526  GG00047.  03506
P03556  GG00050.  03537
P03605  GG00051.  03564
P03634  GG00052.  03613
P03671  GG00053.  03652
P03720  GG00054.  03701
P03770  GG00055.  03752
P04015  GG00056.  03777
P04056  GG00057.  04032
P04116  GG00060.  04076
P04144  GG00061.  04124
P04170  GG00062.  04152
P04216  GG00063.  04176
P04265  GG00064.  04245
P04337  GG00065.  04316
P04401  GG00066.  04363
P04417  GG00067.  04405
P04442  GG00070.  04423
P04476  GG00071.  04456
P04523  GG00072.  04513
P04603  GG00073.  04585
P04657  GG00074.  04642
C00031  HDELAY
P01517  HIST      01517
C00000  HISTOUT
C00005  HTIME     01570  01570  01640  01641  01664  01664  02226  02255  02255  02302  02334
                  02334  02353  02353  02376  02376  02403  02461  02461  02511  02511  02537
                  02537  02613  02613  02641  02641  02670  02670  02727  02727  03015  03015
                  03052  03052  03101  03101  03124  03124  03147  03147  03173  03173  03245
                  03245  03502  03502  03512  03512  03543  03543  03570  03570  03617  03617
                  03656  03656  03705  03705  03756  03756  04003  04003  04025  04026  04036
                  04036  04102  04102  04130  04130  04156  04156  04202  04202  04240  04241
                  04251  04251  04322  04322  04427  04427  04462  04462  04537  04540  04571
                  04621  04622  04646  04646
P04770  I         01650  01651  01742  01746  02026  02031  03730  03731  03741  03742
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C00517	IA											
C00000	IAGX	03311	03312	03336	03336							
C00001	IAGY	03313	03314	03340								
C00513	IALERT	01613	01613	04546	04547	04632	04633					
C00013	IALERTC											
C00517	IALT	01556	01557	04021	04022	04234	04234					
C00017	IALTC											
C00000	IAREAX	04300	04300									
C00001	IBASE											
C00511	ICLASS	01577	01577	01601	01601	03343	03343	04542	04543	04622	04623	
C00011	ICLASSC											
C00022	ICOR	03316	03353	03353	03354	03357	03360					
C00001	IDEPEN	02653										
C00740	IFUNCH											
C01440	IFUNCM											
P04771	IGOT	03352	03355	03363	03365	03367	03371	03373				
P04772	IGOTO.	01524	01617	02206	02317	02444	02576	02705	02744	03211	03266	03401
		03530	03636	03722	04060	04267	04444	04525	04605			
P00006	IH	01523	04517									
C00524	IHT	01546	01546	02471	02521	02547	02623	02755	02755	03002	03002	03003
		03522	03726	03727	03744	03745	03771	03771	04046	04067	04070	04507
		04510										
C00024	IHTC											
C00501	INBASE	01571	01571	01634	01635	01776	02016	02074	02114	02134	02152	02152
		02173	02234	02264	02310	02324	02325	02362	02411	02470	02520	02546
		02622	02650	02677	02736	03024	03061	03110	03133	03156	03202	03254
		03521	03552	03577	03626	03665	03714	03765	04012	04045	04111	04137
		04165	04211	04260	04331	04436	04471	04533	04534	04575	04575	04613
		04614	04653	04653								
C00500	INDATA	01652	01652									
C00036	INDREGCL											
C00055	INDREGTY											
C00772	INDE	01550	01551	03735	03736							
C00152	INDEN	03736	03737									
C00272	INDEC											
C00000	INDEXWPN											
C00002	INDM											
C00652	INDP	01547	02471	02521	02547	02623	02756	03522	03733	03734	03745	03772
		04046	04070	04510								
C00102	INDPN	03734	03735									
C00152	INDPC											
C00502	INDV	01573	01573	01774	01774	02014	02014	02072	02072	02112	02112	02132
		02132	02171	02171	02232	02232	02262	02262	02306	02306	02360	02360
		02407	02407	02466	02466	02516	02516	02544	02544	02620	02620	02646
		02646	02675	02675	02734	02734	03022	03022	03057	03057	03106	03106
		03131	03131	03154	03154	03200	03200	03252	03252	03517	03517	03550
		03550	03575	03575	03624	03624	03663	03663	03712	03712	03763	03763
		04010	04010	04043	04043	04107	04107	04135	04135	04163	04163	04207
		04207	04256	04256	04327	04327	04434	04434	04467	04467		
C00001	INEED	02473	02473									
P04663	INITIAL.	01522										
C00506	INITVULN											
C00503	INTAR	01756	01756	01777	02326	02327	02422	02422	02434	02434	03027	03027
		03062	03111	03134	03157	03203	03215	03216	03255	03276	03277	03356

		03357	03413	03413	03424	03424	03435	03435	03446	03446	03457	03457
		03470	03470	04302	04302	04332	04437					
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C00514	INZONE	01554	01555	02700	02710	02710	02737	03553	03600	03627	03641	03641
		03666	03715	04052	04052							
C00014	INZONC											
C00120	ICVERLAP											
C00000	IPRINT	01656	01714	01766	02006	02037	02064	02104	02124	02144	02163	02215
		02247	02271	02345	02372	02426	02453	02503	02531	02561	02605	02633
		02662	02721	02765	03007	03044	03073	03116	03141	03165	03237	03321
		03375	03476	03535	03562	03611	03650	03677	03750	03775	04017	04074
		04122	04150	04174	04222	04227	04232	04314	04361	04421	04454	04504
		04560	04640									
C00740	IR											
C00000	IREC	04112	04112	04140	04140	04212	04212	04450	04451	04472	04472	04500
		04501										
C00512	IREG	01611	01611	04544	04545	04630	04631					
C00012	IREGC											
C00030	IREP											
C00510	ITYPE	01575	01575	01605	01605	01670	02355	02355	02404	02404	03247	03247
		03503	03503	04026	04027	04241	04242	04324	04324	04431	04431	04540
		04541	04550	04551	04615	04616	04624	04625				
C00010	ITYPC											
C00002	IW	01757	01757									
C01112	IWTYP	03742	03743									
C00412	IWTYPC											
P01546	.1	02207	02447	02577	02757	03477	03526	03533	03723	04020	04056	04233
		04265										
P01616	.10	01525										
P03265	.100	01534										
P03275	.101	03267										
P03323	.10101	03322										
P03343	.10102	03322										
P03346	.10103											
P03351	.102	03270										
P03353	.10201	03363	03365	03367	03371	03373						
P03362	.103	03271										
P03364	.104	03271										
P03366	.105	03272										
P03370	.106	03273										
P03372	.107	03274										
P03374	.108	03274	03361									
P03377	.10801	03376										
P03407	.10802	03402										
P03420	.10803	03403										
P03431	.10804	03404										
P03442	.10805	03404										
P03453	.10806	03405										
P03464	.10807	03406										
P01633	.11	01620										
P03475	.110	01535										
P03500	.11001	03477										
P01660	.1101	01657										
P01677	.12	01621										

P03527	.120	01535	
P01705	.1201	01752	
P01716	.1202	01715	
P03534	.121	03531	
P03537	.12101	03536	
P03557	.122	03532	
P03564	.12201	03563	
P03606	.124	03533	
P03613	.12401	03612	
P01732	.13	01622	
P03635	.130	01536	
P01747	.1301		
P03641	.131	03637	
P03645	.132	03640	
P03652	.1321	03651	
P03672	.133	03640	
P03701	.1331	03700	
P01753	.14	01622	
P03721	.140	01537	
P01770	.1401	01767	
P01756	.1402	01754	01755
P02005	.1403	01755	
P02010	.1404	02007	
P03725	.142	03724	
P03752	.1421	03751	
P03771	.143	03724	
P03777	.1431	03776	
P02022	.15	01623	
P04016	.150	01540	
P04016	.152		
P04021	.1521	04020	
P02023	.16	01624	
P04057	.160	01540	
P02033	.1601		
P02041	.1602	02040	
P04066	.161	04061	
P04073	.162	04062	
P04076	.1621	04075	04223
P04117	.163	04063	
P04124	.1631	04123	04230
P04145	.164	04063	
P04152	.1641	04151	
P04171	.165	04064	
P04176	.1651	04175	
P04217	.166	04065	
P04224	.167	04065	
P02057	.17	01625	
P04231	.170	01541	
P04234	.172	04233	
P02060	.18	01625	
P04266	.180	01542	
P02066	.1801	02065	
P04275	.181	04270	
P04307	.182	04271	

P04313	.1821	04343	04347		
P04316	.1822	04315			
P04340	.183	04272			
P04344	.184	04272			
P04350	.185	04273			
P04360	.1851	04357			
P04363	.1852	04362			
P04402	.186	04274			
P04420	.187	04274			
P04423	.1871	04422			
P02100	.19	01626			
P04443	.190	01543			
P02103	.1901	02204			
P02106	.1902	02105			
P04506	.191	04445			
P04447	.192	04446			
P04456	.1921	04455	04505		
P04477	.193	04445			
P02120	.200	01627			
P02205	.20	01526			
P01553	.2	02713	03644	04072	04512
P04513	.2000	01545			
P04524	.20000	01543			
P02126	.201	02125			
P04530	.20100	04526			
P04557	.20200	04527			
P04562	.20300	04501			
P02140	.210	01632			
P04604	.21000	01544			
P02146	.211	02145			
P04610	.21100	04606			
P04637	.21200	04607			
P04642	.21300	04641			
P02157	.220	01630			
P02212	.22	02210			
P02217	.2201	02216			
P02165	.221	02164			
P02177	.230	01631			
P02242	.23	02211			
P02251	.2301	02230			
P02202	.240	01632			
P02270	.24	02211			
P02273	.2401	02272			
P02316	.30	01527			
P02323	.31	02320			
P02347	.3101	02346			
P02367	.32	02321			
P02374	.3201	02373			
P02416	.33	02322			
P02430	.3301	02427			
P02342	.34	02322			
P02443	.40	01527			
P02452	.41	02445			
P02455	.4101	02454			

P02500	.42	02446										
P02505	.4201	02504										
P02526	.44	02447										
P02533	.4401	02532										
P02554	.45	02450										
P02563	.4501	02562										
P02560	.4502	02574										
P02572	.46	02451										
P02575	.50	01530										
P01564	.5	01657	01676	02341	02346	03227	03344	03345	03350	04306		
P01603	.5001											
P01605	.5002	01672										
P02602	.52	02600										
P02607	.5201	02606										
P02630	.53	02601										
P02635	.5301	02634										
P02657	.54	02601										
P02664	.5401	02663										
P02703	.60	01531										
P02704	.70	01532										
P02710	.71	02706										
P02714	.72	02707										
P02723	.7201	02722										
P02743	.80	01532										
P01652	.8000											
P02755	.81	02745										
P03140	.813	02753										
P03143	.811	03142										
P03167	.813	03166										
P02760	.82	02746										
P03164	.820	02754										
P02762	.83	02747										
P02767	.8301	02766										
P02776	.84	02747										
P03002	.8401	03037										
P03011	.8402	03010										
P03034	.85	02750										
P03040	.86	02751										
P03046	.8601	03045										
P03066	.87	02752										
P03075	.8701	03074										
P03115	.88	02752										
P03120	.8801	03117										
P03210	.90	01533										
P03214	.91	03212										
P03230	.92	03213										
P03241	.9201	03240										
P04523	.9999	01515	01715	01731	01767	02004	02007	02022	02040	02057	02065	02077
		02105	02117	02125	02137	02145	02156	02164	02176	02201	02216	02241
		02250	02267	02272	02315	02366	02373	02415	02427	02442	02454	02477
		02504	02525	02532	02553	02562	02571	02606	02627	02634	02656	02663
		02703	02722	02742	02761	02766	02775	03010	03033	03045	03065	03074
		03114	03117	03137	03142	03163	03166	03207	03240	03264	03376	03417
		03430	03441	03452	03463	03474	03536	03556	03563	03605	03612	03634

		03651	03671	03700	03720	03751	03770	03776	04015	04075	04116	04123
		04144	04151	04170	04175	04216	04223	04230	04315	04337	04357	04362
		04401	04417	04422	04442	04455	04476	04505	04556	04561	04603	04636
		04641	04657									
P00025	..100000	01677										
P00026	..100001	01701										
P00043	..100002	01732										
P00044	..100003	01734										
P00526	..100004	03000										
P00546	..100005	03036										
P01332	..100006	04311										
P01354	..100007	04342										
P01355	..100008	04346										
P01466	..21400	04570										
P01504	..21400	04645										
P00617	..812	03146										
P00637	..814	03172										
P00006	..9011	01663										
P00027	..9012	01721										
P00045	..9014	01773										
P00106	..9016	02047										
P00124	..9018	02071										
P00141	..9019	02111										
P00220	..9022	02225										
P00236	..9023	02254										
P00253	..9024	02301										
P00271	..9031	02352										
P00312	..9032	02402										
P00331	..9033	02433										
P00340	..9041	02460										
P00362	..9042	02513										
P00400	..9044	02536										
P00416	..9045	02566										
P00424	..9052	02612										
P00443	..9053	02643										
P00466	..9054	02667										
P00503	..9072	02726										
P00520	..9083	02772										
P00527	..9084	03014										
P00547	..9086	03051										
P00564	..9087	03100										
P00601	..9088	03123										
P00660	..9092	03244										
P00711	..9101	03326										
P00716	..91082	03412										
P00726	..91083	03423										
P00737	..91084	03434										
P00750	..91085	03445										
P00761	..91086	03456										
P00772	..91087	03467										
P01003	..9110	03511										
P01020	..9121	03542										
P01037	..9122	03567										
P01061	..9124	03616										

P01103	..9132	03655										
P01122	..9133	03704										
P01140	..9142	03755										
P01155	..9143	04002										
P01171	..9152	04035										
P01216	..9162	04101										
P01234	..9163	04127										
P01253	..9164	04155										
P01272	..9165	04201										
P01312	..9172	04250										
P01333	..9182	04321										
P01356	..9185	04366										
P01406	..9186	04410										
P01422	..9187	04426										
P01440	..9192	04461										
P01457	..9200	04516										
P00155	..9201	02131										
P00171	..9211	02151										
P00202	..9221	02170										
P00066	..941	02413										
P04773	J	01741	01742	01744	02025	02025	02030	04023	04050	04236	04261	
P00006	JH	01616	02205	02316	02443	02575	02704	02743	03210	03205	03377	03527
		03635	03721	04057	04266	04443	04524	04604				
C00003	JNTAR											
P04774	JT	02331	02420	02421	02423							
P04775	JTYPE	01610	02227	02257	02303	02463	02513	02541	02615	02643	02672	02731
		03017	03054	03103	03126	03151	03175	03505	03514	03545	03572	03621
		03660	03707	03760	04005	04031	04040	04104	04132	04160	04204	04244
		04253	04464	04554	04572	04630	04650					
C00525	JWT	03737	03740									
C00025	JWTC											
P04776	K1	01700	01722	01733								
P04777	K2	01701	01724	01734								
P00003	KALT	00006	04051	04262								
C00017	KDEFCMP											
C00016	KDEFZON											
C00000	KEYARRAY											
C00144	KRAD											
P05000	KS	03401										
P05001	KW	04312	04333	04343	04347							
C00540	LAUNLIST											
C00002	LAZONE	02651	02651									
P05002	LPRINT	03001	03025	03037								
P00005	LSHIFT	03356										
C00524	MHT											
C00562	MLIST											
C00525	MWT											
C00017	NAGX	03312	03313									
C00020	NAGY	03314	03315									
C00021	NAGZ	03310	03310									
C00001	NAL	03230	03230	03256	03256	04350	04350	04367	04367			
C00033	NALIVE											
C00530	NALT											
C00030	NALTC											

C00002	NAMCLS											
C00000	NAMESIDE	04411	04412									
C00021	NAMETYPE	01670	01671	02230	02230	02260	02260	02304	02304	02356	02356	02405
		02405	02464	02464	02514	02514	02542	02542	02616	02616	02644	02644
		02673	02673	02732	02732	03020	03020	03055	03055	03104	03104	03127
		03127	03152	03152	03176	03176	03250	03250	03515	03515	03546	03546
		03573	03573	03622	03622	03661	03661	03710	03710	03761	03761	04006
		04006	04041	04041	04105	04105	04133	04133	04101	04101	04205	04205
		04254	04254	04325	04325	04432	04432	04465	04465	04573	04573	04651
		04651										
C00004	NAREA	03222	03222									
C00021	NASMTYPE	03041	03041	03070	03071	03347	03347	03746	03746	03772	03773	
C00022	NBCODE	01553	01554	02212	02213	02242	02243	02500	02501	02526	02527	02554
		02554	02555	02572	02572	02573	02602	02603	02630	02631	02714	02715
		02776	02777	03034	03035	03042	03066	03067	03557	03560	03606	03607
		03645	03646	03672	03673	03725	03726	04117	04120	04145	04146	04171
		04172	04217	04220	04224	04225	04447	04450	04477	04500		
C00017	NBLUETYP											
C00520	NCM	01560	01561	03040	03040	03067	03070	03346	03346			
C00020	NCMC											
C00015	NCODE	02342	02343	02367	02370	04304	04307	04310	04340	04341	04344	04345
		04356										
C00032	NCOM											
C00031	NCYCLE	01711	01711	01735	01736	01737	01740	02023	02023	02060	02061	02100
		02101	02120	02121	02140	02141	02157	02160	02177	02200	02202	02203
C00023	NDEPEN	04451	04452	04501	04502							
C00037	NDES											
C00003	NDLT	03234	03234	03261								
C00014	NDGX	03304	03304									
C00015	NDGY	03306	03306									
C00016	NDGZ	03311										
C00515	NDHI											
C00015	NDHIC											
C00516	NDLC											
C00016	NDLCC											
C00014	NDUD	02760	02761	02762	02763							
C00006	NEVENT	01551	01552	01633	01634	02323	02324	02712	03214	03215	03275	03276
		03643	04066	04067	04277	04506	04507	04530	04531	04610	04611	
C00000	NFGC	03601	03601	03630	03630							
C00000	NHISTOUT	01653	01653									
C00013	NIALERT	01614	01614	04547	04550	04633	04634					
C00017	NIALI	01557	01560									
C00011	NICLASS	01600	01600	01603	01604	01606	01606	04543	04544	04551	04552	04623
		04624	04625	04626								
C00001	NINBASE	01572	01572	04534	04535	04614	04615					
C00002	NINOV	01574	01574									
C00003	NINTAR	02327	02330	02756	02757	03216	03217	03300	04303	04303		
C00015	NINZONE	01555	01556									
C00012	NIREG	01612	01612	04545	04546	04631	04632					
C00010	NITYPE	01576	01576	04541	04542	04616	04617					
C00036	NLATER	02053	02053									
C00052	NLAUNLIS											
C00000	NLC	02051	02051									
C00074	NLRR											

C00030	NMHT											
C00507	NMIRV	01645	01646	01753	01753	02017	02335	02335	02337	02340	02363	02412
C00034	NMART											
C00014	NNAL	03231	03231	04351	04351							
C00021	NNAREA	03223	03223									
C00020	NNCM	01561	01562									
C00022	NNCOL											
C00020	NNCYCLE	01712	01712									
C00016	NNDECOYS											
C00016	NNDET	03235	3235									
C00014	NNMIRV	01646	01647	02336	02336							
C00017	NNPEN	03233	3233									
C00021	NNSUCC	01706	01706									
C00017	NNTARG	01644	01645									
C00020	NNTERM	03225	3225									
C00022	NNTEST	01710	01710									
C00016	NNWHOS	04355	04355									
C00015	NNWPNS	01642	01643									
C00004	NNWTYP	03221	03221	03302	03302	04276	04276					
C00002	NPEN	03232	03232	03260								
C00007	NPLACE	01547	01550	01635	01636	02325	02326	02711	02711	03217	03277	03300
		03642	03642	04071	04071	04301	04301	04511	04511			
C00530	NPLAN											
C00000	NSIDE	01565	01565	04532	04533	04612	04613					
C00035	NSUCC	01705	01705	01725	01725							
C00017	NTAIM	04353	04353									
C00515	NTARG	01643	01644	01672	01672							
C00074	NTARLIST	01760	01760									
C00005	NTERM	03224	3224									
C00040	NTEST	01707	01707									
C00016	NTLIST	02424	02424									
C00116	NTRYLC	01747	01750	02033	02034	02061	02062	02101	02102	02121	02122	02141
		02142	02160	02161	02200	02201	02203	02204				
C00000	NTYPECUM	01607	01607	03504	03504	04027	04030	04242	04243	04552	04553	04626
		04627										
C00514	NWHOS											
C00002	NWHOSX	04354	04354	04375	04375							
C00000	NWORDOUT	01563	01563	01703	01704	01736	01737	02340	02341	02657	02660	03226
		03227	03317	03317	04305	04306	04555	04555	04635	04635		
C00030	NWPNLIST											
C00514	NWPNS	01641	01642	01666	01565	01702	01703	01743	01743	02026	02027	
C00504	NWTYP	03220	03220	03301	03302	03327	03327	03331	04275	04275		
C00222	NWTYPEN	03743	03744									
C00004	NWTYPO											
P04660	OSIDE	04404	04411									
C00000	OUTDATA											
C00120	PABORT											
C00240	PDES											
C00024	PDEST											
C00062	PDUD											
P04701	PFC0002.	04674										
P04747	PFC0003.	04702										
C00025	PFLTFAIL											
C00360	PFPF											

C00000	PINC											
C00022	PINCOMM											
C01200	PKMIS											
C00521	PKNAV	03160	03204									
C00021	PKNAVC											
C00000	PLAHI											
C00023	PNCABORT											
C00360	PRABI											
X00001	QBWDOCT.	01655	01713	01765	02005	02036	02063	02103	02123	02143	02162	02214
		02246	02270	02344	02371	02425	02452	02502	02530	02560	02604	02632
		02661	02720	02764	03006	03043	03072	03115	03140	03164	03236	03320
		03374	03475	03534	03561	03610	03647	03676	03747	03774	04016	04073
		04121	04147	04173	04221	04226	04231	04313	04360	04420	04453	04503
		04557	04637									
X00003	QBWDICT.	00000	01520									
X00006	QNSTAL.	04661										
C00500	SIDE	01564	01564	04402	04403	04531	04532	04611	04612			
C00000	SIDEC											
C00522	SPARE											
C00022	SPC											
X00005	STH.	01661	01717	01771	02011	02045	02067	02107	02127	02147	02166	02223
		02252	02277	02350	02400	02431	02456	02506	02534	02564	02610	02636
		02665	02724	02770	03012	03047	03076	03121	03144	03170	03242	03324
		03410	03421	03432	03443	03454	03465	03507	03540	03565	03614	03653
		03702	03753	04000	04033	04077	04125	04153	04177	04246	04317	04364
		04406	04424	04457	04514	04566	04643					
C00531	TABORT	02273	02273									
C00031	TABORTC											
C00515	TAIM	04352	04352	04373	04373							
X00002	THEND.	01674	01727	02002	02020	02055	02075	02115	02135	02154	02174	02237
		02265	02313	02364	02413	02440	02475	02523	02551	02567	02625	02654
		02701	02740	02773	03031	03063	03112	03135	03161	03205	03262	03341
		03415	03426	03437	03450	03461	03472	03524	03554	03603	03632	03667
		03716	03766	04013	04054	04114	04142	04166	04214	04263	04335	04377
		04415	04440	04474	04521	04601	04655					
C00024	THOUR	02221	02221	02235	02235	02275	02275	02311	02311			
C00000	TIME	01566	01566	01636	01637	01761	01761	02332	02332	02374	02374	03500
		03500	04023	04024	04236	04237	04535	04536	04617	04620		
C00532	TINC	03731	03732									
C00032	TINCN	03732	03733									
C00032	TINCO											
C00620	TLINTB											
C01320	TLINTM											
C00120	TMDEL											
C00532	TOF											
C00001	TOFLT	01763	01763									
C00025	TOTIME	01764	01764	02009	02000							
C00026	TPF											
C00500	TPOWER											
C00620	TRET											
C00027	TRETARG											
P01752	TS00002.	01745										
P02036	TS00003.	02030										
C00516	WPNLIST											

```
P01652  WS00001.   01654
P01747  WS00002.   01751
P02033  WS00003.   02035
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C00000  YIELD      03321   03332
C01156  ZDGZ
C00456  ZDGZC
   01115 SYMBOLS
```

```
      SUBROUTINE HISTWRIT                                               1000
CSUBR     HISTWRIT  19OCT71   ****************************************  3800
C     WRITES OUT HISTOUT BLOCK ONTO HISTORY TAPE                        2000
      COMMON/HISTOUT/NHISTOUT(200)                                      3000
      EQUIVALENCE(HFTIME,NHISTOUT(22))                                  3100
      COMMON/ITP/ITP                                                    4000
      COMMON/NWORDOUT/NWORDOUT                                          5000
      COMMON/TWORD/ITWORD                                               6000
      COMMON/TIME/TIME,FUTIME                                           7000
                                                                        8000
C     WRITE OUT HISTOUT BLOCK ONTO HISTORY TAPE                         9000
      ITP = 5                                                          10000
      ITWORD = NWORDOUT                                                11000
      CALL WRWORD                                                      12000
      IF (NHISTOUT (1 ) .GE. 2) 1,4                                    13000
    1 IF (NHISTOUT (7) .EQ. 10 .OR. NHISTOUT(7) .EQ.  6) 4,3           13100
    3 HFTIME = FUTIME - 24.                                            14000
    4 CONTINUE                                                         15000
      CALL WRARRAY(NHISTOUT,NWORDOUT)                                  16000
C     CLEAR HISTOUT BLOCK                                              17000
      DO 2 I=1,NWORDOUT                                                18000
    2 NHISTOUT(I) = 0                                                  19000
      NWORDOUT = 0                                                     20000
      END                                                              21000
```

```
                                        IDENT     HISTWRIT
PROGRAM LENGTH                  00055
ENTRY POINTS     HISTWRIT       00003
BLOCK NAMES
                 HISTOUT        00310
                 ITP            00001
                 NWORDOUT       00001
                 TWORD          00001
                 TIME           00002
EXTERNAL SYMBOLS
                 QRQDICT.
                 WRWORD
                 WRARRAY
```

```
P00046  BEGIN.     00047
P00053  COUNT.     00037  00040
P00001  DICT.      00005  00014  00031
P00050  ENDING.    00006  00045  00046
P00000  EXIT.      00051
C00001  FUTIME     00025  00025
C00025  HFTIME     00027  00027
P00003  HISTWRIT   00003
P00054  I          00034  00037
P00022  IF00001.
P00046  INITIAL.   00006
C00000  ITP        00007  00010
C00000  ITWORD     00011  00012
P00020  .1         00016
P00041  .2
P00025  .3         00023
P00030  .4         00017  00021  00024
C00000  NHISTOUT   00015  00015  00020  00020  00022  00022  00032  00041  00042
C00000  NWORDOUT   00010  00011  00032  00034  00035  00044  00045
X00001  ORIGDICT.  00000  00004
C00000  TIME
P00044  TS00001.   00036
X00003  WRARRAY    00030
X00002  WRNCH      00013
P00041  WS00001.   00043
   00031 SYMBOLS
```

```
      FUNCTION IFIND(IX)                                                1000
CSUBR     IFIND     10JUN71   ****************************************  5100C
CUSE      NRCELL    22JUN71   ****************************************  2000
      COMMON/19501/NRCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NRCELL    ****************************************************  2000
      COMMON/NCOL/NCOL,MAXIND                                           3000
      DATA(ILSH=200000000000B)                                          4000
      INT=IX*ILSH                                                       5000
      DO 1 I=1,NCOL                                                     6000
      NX=COLAR(I).AND. 777760000000000B                                 7000
      IF(NX.EQ.INT)2,1                                                  8000
    1 CONTINUE                                                          9000
      IFIND=0                                                          10000
      RETURN                                                           11000
    2 IFIND=I                                                          12000
      END                                                              13000
```

```
                                IDENT     IFIND
PROGRAM LENGTH              00071
ENTRY POINTS     IFIND      00004
BLOCK NAMES
                 19501      54731
                 NCOL       00002
EXTERNAL SYMBOLS
                 QRODICT.
```

```
P00032  BEGIN.      00046  00055  00061
C45071  CCLAR       00015  00015
P00001  DICT.       00006  00035  00036
P00047  ENDING.     00007  00026  00030  00032  00033  00033  00034  00034
P00000  EXIT.       00053
P00010  FP00001.    00044  00045
P00064  GETPL.      00037
P00054  GETPU.      00042  00060
P00066  I           00013  00014  00022  00027
P00004  IFIND       00004
P00003  ILSH        00011
P00032  INITIAL.    00067
P00067  INT         00012  00020
P00004  IX          00010
P00022  .1          00020
P00027  .2          00021
C00001  LINKM
C00001  MAXIND
C00000  NBCELL
C00000  NCOL        00023  00023
P00070  NX          00017
P00046  PF00002.    00043
X00001  QBWDICT.    00006  00005
C15531  STATUS
P00023  TS00001.    00013
P00031  VALUE.      00026  00030  00052
P00014  WS00001.    00024  00024
   00033 SYMBOLS
```

```
      SUBROUTINE INITEV(ITAPES)
CSUBR     INITEV    26AUG70   ****************************************
      COMMON/ESTOR/SCALET,SCALETI,TMAX,NWORDS,NDIMD,NEXTEV,MERGS,
     1  INDATP(320),IOUTDP(320),ISVDAT(320),MEMTIM,TAPET(10),SVTIME(10)
     2  ,ITOGG(10)
      COMMON/TIME/TIME,FUTIME
      COMMON/CONST/LARGE,FTMAX
      EQUIVALENCE(LARGE,FTMAX)
      DIMENSION ITAPES(1)
      DATA (NDIMD=320),(TMAX=168.0)
      TIME=0.0
      NEXTEV=0
      LARGE=377777777777777b
      FTMAX=10.0*TMAX
      MEMTIM=TMAX
      DO 1 I=1,10
      TAPET(I)=FTMAX
    1 ITOGG(I)=-1
      DO 3 I=1,10
      J=ITAPES(I)
      IF(J)4,4,2
    2 ITOGG(J)=0
    3 CONTINUE
    4 MERGS=0
      END
```

```
                                        IDENT     INITEV
PROGRAM LENGTH                  00102
ENTRY POINTS     INITEV         00003
BLOCK NAMES
                 ESTOR          01746
                 TIME           00002
                 CONST          00002
EXTERNAL SYMBOLS
                 QBQDICT.
```

```
P00044  BEGIN.      00060   00066   00072
P00001  DICT.       00005   00047   00050
P00061  ENDING.     00005   00043   00044   00045   00045   00046   00046
P00000  EXIT.       00064
P00032  FP00001.    00056   00057
C00001  FTMAX       00016   00016   00023   00023
C00001  FUTIME
P00075  GETPL.      00051
P00065  GETPU.      00054   00071
P00100  I           00021   00022   00030   00031   00040
C00007  INDATP
P00003  INITEV      00003
P00044  INITIAL.    00006
C00507  IOUTOP
C01207  ISVDAT
P00003  ITAPES      00032
C00001  ITMAX       00017
C01734  ITOGO       00025   00026   00036   00037
P00025  .1
P00035  .2
P00040  .3
P00042  .4          00034   00034
P00101  J           00033   00036
C00000  LARGE       00013   00013
C01707  MEMTIM      00017   00020
C00006  MERGSW      00042   00043
C00004  NDIMD       00003
C00005  NEXTEV      00011   00011
C00003  NWCROS
P00060  PFG0002.    00055
X00001  Q80DICT.    00000   00004
C00000  SCALET
C00001  SCALETI
C01722  SVTIME
C01710  TAPET       00024   00024
C00000  TIME        00007   00010
C00002  TMAX        C00005  00015   00015
P00023  WS00001.    00027
P00031  WS00002.    00041
   00047 SYMBOLS
```

```
      SUBROUTINE INITLIST                                               1000
CSUBR     INITLIST  10JUN71   ***********************************       53000
C     INITIALIZE LIST MEMORY                                            2000
      COMMON/LISTMEM/IAVAIL                                             3000
      COMMON/EVINDX/NBIND,EVTIME(10),INDEVB(10)                         4000
      COMMON/ESTOR/SCALET,SCALETI,TMAX,NWORDS,NDIMD,NEXTEV,MERGSW,      5000
     1  INDATP(320),IOUTDP(320),ISVDAT(320),MEMTIM,IAPET(10),SVTIME(10) 6000
     2  ,ITOGO(10)                                                      7000
CUSE      NBCELL    22JUN71   ***************************************  8000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NBCELL    ***************************************************  9000
      COMMON/MONDAT/MONSW                                               9000
      MONSW=0                                                           10000
      IAVAIL=0                                                          11000
      DO 2 I=1,NBCELL                                                   12000
    2 LINKM(I)=0                                                        13000
      NX = NBCELL                                                       14000
      CALL ADDMEM(1,NX,LINKM)                                           15000
      DO 1 I=1,10                                                       16000
      EVTIME(I)=TMAX                                                    17000
      INDEVB(I)=0                                                       18000
    1 CONTINUE                                                          19000
      END                                                               20000
```

```
                                        IDENT     INITLIST
PROGRAM LENGTH                  00050
ENTRY POINTS     INITLIST       00003
BLOCK NAMES
                 LISTMEM        00001
                 EVINDX         00025
                 ESTOR           1746
                 195-1          54731
                 MONDAT         00001
EXTERNAL SYMBOLS
                 ORODICT.
                 ADDMEM
```

```
X00002  ADDMEM     00025
P00040  BEGIN.     00041
C45071  COLAR
P00045  COUNT.     00016   00017
P00001  DICT.      00005   00026
P00042  ENDING.    00006   00037   00040
C00001  EVTIME     00034   00034
P00000  EXIT.      00043
P00046  I          00013   00016   00031   00032
C00000  IAVAIL     00011   00011
C00007  INDATP
C00013  INDEVR     00035
P00040  INITIAL.   00005
P00003  INITLIST   00003
C00507  ICUTOP
C01207  ISVDAT
C01734  ITCGC
P00036  .1
P00020  .2
C00001  LINKX      00020   00021   00030
C01707  MEMTIM
C00006  MERGSW
C00000  MONSW      00007   00016
C00000  NHCELL     00013   00014   00023   00023
C00000  NRIND
C00004  NDIMR
C00005  NEXTEV
C00003  NWORDS
P00047  NX         00024   00027
X00001  OBWDICT.   00000   00004
C00000  SCALET
C00001  SCALETI
C15531  STATUS
C01722  SVTIME
C01710  TAPET
C00002  TMAX       00033   00033
P00023  TS00001.   00015
P00020  WSC0001.   00022
P00033  WSC0002.   00035
   00047 SYMBOLS
```

```
      SUBROUTINE LATTRIT                                                1000
CSUBR     LATTRIT   28APR71   ******************************************25000
C     TESTS IF VEHICLE SURVIVES PASSAGE THROUGH LOCAL TARGET DEFENSES    2000
CUSE      ASMS      28APR71   ******************************************3000
      COMMON/ASMS/PLABORT(20),CEPA(20)                                   1000
CEND      ASMS      ******************************************************3000
CUSE      BOMBER    28APR71   ******************************************4000
      COMMON/BOMBER/PLABT(80),TMDEL(80),ABRATE(80),PRABT(80),CEPB(80),   1000
     1      TLINTB(80),IFUNCB(80)                                        2000
CEND      BOMBER    ******************************************************4000
CUSE      EDATAB    4JAN71    ******************************************6000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DMCBC,ITYPC,  1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),  2000
     2IWTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),        3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(320),SIDE,   5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMCB,ITYPE,ICLASS,IREG,IALERT,     6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IWT,JWT,EXTRA(2),NALT,     7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),      8000
     7ZDGZ(12),INDATA(320)                                                9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                   11000
      EQUIVALENCE(NPLAN,NALT) ,(MWT,IWT), (MWT,JWT)                      12000
      TYPE INTEGER DGX,DGY,DMCB,XDGZ,YDGZ,ZDGZ                           13000
      TYPE INTEGER DGXC,DGYC,DMCBC,XDGZC,YDGZC,ZDGZC                     14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                    15000
CEND      EDATAB    ******************************************************6000
      EQUIVALENCE(NCM,INSMTYPE)                                          7000
      COMMON/GROUND/IAGX,IAGY                                            8000
      COMMON/KEYWORDS/KEYARRAY(2))                                       9000
      EQUIVALENCE (KEYARRAY( 3),TARDEFLO),(KEYARRAY( 4),TARDEFHI)       10000
      COMMON/LATTRIT/DEFHI,DEFLO,RKHRP                                  11000
      COMMON/TIME/TIME,FUTIME                                           12000
CUSE      WARHEAD   28APR71   ******************************************13000
      COMMON/WARHEAD/YIELD(50),PDUD(50),CEPW(50)                         1000
CEND      WARHEAD   ******************************************************13000
      COMMON/ZONES/AREA(63),ZDEFPCT(63),ZCCPCT(63),NPENZ(63),KILLZ(63),  14000
     1 MAXZONE(2)                                                        15000
CUSE      NBCELL    22JUN71   ******************************************16000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)          1000
CEND      NBCELL    ******************************************************16000
                                                                         17000
    1 CONTINUE                                                           19000
C     RECORD CALL TO LATTRIT                                             20000
      CALL HIST(8,1)                                                     21000
      IGO = 0                                                            22000
C     GET TARGET INDEX FROM HISTORY TABLE                                23000
      INTAR = INDP(IHI)                                                  24000
C     TEST IF NAVAL ATTACK WEAPON                                        25000
   16 IF(PKNAV .GT. 0) 21,17                                             26000
C     TEST ALTITUDE OF BOMBER, GET APPROPRIATE DEFENSE STATUS            27000
   17 IF(IALT .EQ. 0) 19,18                                              28000
   18 DEF=DEFHI*IGET(TARDEFHI,INTAR,STATUS)                              29000
      NDECOYS = NDHI                                                     30000
      GO TO 2                                                            31000
   19 DEF=DEFLO*IGET(TARDEFLO,INTAR,STATUS)                              32000
      NDECOYS = NDLO                                                     33000
C     TEST IF TARGET IS DEFENDED AGAINST VEHICLES AT THIS ALTITUDE       34000
```

```
      2 IF (DEF .EQ. 0) 5,3
      3 SP = EXPF(-DEF/(1. + .5*NDECOYS))
C       TEST IF VEHICLE SURVIVES LOCAL DEFENSES
      4 IF(SP .LT. RANF(-1)) 11,5
C       HERE VEHICLE SURVIVES
C       CLASS 2 CONSISTS OF BOMBERS, CLASS 4 OF ASMS
      5 IF (ICLASS .EQ. 2) 52,51
C       RECORD ASM LOCAL SURVIVAL
     51 CALL HIST(8,6)
        GO TO 6
C       ALL DECOYS DOWN--DECREASE NUMBER OF PENETRATORS IN ZONE
     52 NPENZ(INZONE) = NPENZ(INZONE) - NDLO
        NDLO = 0
C       RECORD BOMBER SURVIVAL OF LOCAL DEFENSES
        CALL HIST(8,8)
C       SET SWITCH TO PLANT FOLLOW-ON BOMBER EVENT
        IGO = 1
C       GET WEAPON TYPE FROM WEAPON  TABLE, TEST FOR DUD WARHEAD
      6 NWTYP = IWTYP(JWT)
        IF(PDUD(NWTYP) .LT. RANF(-1))7,14
C       CLASS 2 CONSISTS OF BOMBERS, CLASS 3 OF ASMS
      7 IF (ICLASS .EQ. 2) 72,71
C       COMPUTE WEAPON SIGMA USING ASM CEP
     71 SIG = CEPA(IASMTYPE)*42.4738
        GO TO 73
C       COMPUTE WEAPON SIGMA USING BOMBER CEP
     72 SIG = CEPB(ITYPE) * 42.4738
C       COMPUTE DESIRED GROUND ZERO COMPONENTS USING WEAPON TABLE DATA
     73 DGX =          XDGZ(JWT)
        DGY =          YDGZ(JWT)
        DHOR       = ZDGZ(JWT)
C       COMPUTE ACTUAL GROUND ZERO COMPONENTS
        IAGY = SIG * RNDEV(0) *DGY
        IAGX = SIG * RNDEV(0) *DGX
C       RECORD NON-DUD WEAPON RELEASE
        CALL HIST(8,2)
C       CALL FOR BURST DAMAGE ASSESSMENT
     77 CALL BDAMAGE
      8 CONTINUE
C       IF LIVE BOMBER, PLANT NEXT EVENT
        JWT = JWT - 1
        IF(IGO .EQ. 0)10,9
      9 CALL NEXTEVNT
     10 RETURN
C       HERE VEHICLE IS KILLED
C       CLASS 2 CONSISTS OF BOMBERS, CLASS 4 OF ASMS
     11 IF (ICLASS .EQ. 2) 112,111
C       RECORD ASM LOCAL ATTRITION
    111 CALL HIST(8,7)
        RETURN
C       DECREASE PENETRATORS BY ONE FOR BOMBER PLUS NUMBER OF ITS DECOYS
    112 NPENZ(INZONE) = NPENZ(INZONE) - 1 - NDHI - NDLO
C       TEST IF BOMBER RELEASED WEAPON BEFORE KILL
     12 IF(BKRWP .GT. RANF(-1)) 80,13
C       KILL AFTER WEAPON RELEASE
     13 CALL HIST(8,5)
```

```
      GO TO 6
C     RECORD DUD WEAPON RELEASE
   14 CALL HIST(8,3)
      GO TO 8
C     RECORD KILL BEFORE WEAPON RELEASE
   80 CALL HIST(8,4)
      RETURN
C     TEST IF NAVAL WEAPON WEAPON IS SUCCESSFUL
   21 IF(PKNAV .GE. RANF(-1)) 23,22
C     TARGET SURVIVES
   22 CALL HIST(8,9)
      IGO=1
      GO TO 8
C     WEAPON PENETRATES
   23 CALL HIST(8,10)
      IGO=1
      NWTYP=IWTYP(JWT)
      GO TO 77
      END
```

```
                                        IDENT     LATTRIT
        PROGRAM LENGTH              00327
        ENTRY POINTS    LATTRIT     00003
        BLOCK NAMES
                        ASMS        00050
                        BOMBER      01060
                        EDATA       01200
                        GROUND      00002
                        KEYWORDS    00024
                        LATTRIT     00003
                        TIME        00002
                        WARHEAD     00226
                        ZONES       00475
                        19501       54731
        EXTERNAL SYMBOLS
                        QIQ04100
                        QIQ02100
                        QIQ10100
                        QMQDICT.
                        HIST
                        IGET
                        RNDEV
                        BDAMAGE
                        NEXTEVNT
                        RANF
                        EXPF
```

C00240	ABRATE											
C00090	AREA											
C00472	B											
X00010	BDAMAGE	00176										
P00272	BEGIN.	00273										
C00002	BKBRP	00230	00230									
C00024	CEPA	00140	00140									
C00500	CEPB	00144	00144									
C00144	CEPW											
C45071	COLAR											
P00322	DEF	00036	00052	00055	00064							
C00000	DEFHI	00034	00035									
C00001	DEFLO	00050	00051									
C00505	DGX	00150	00170	00170								
C00005	DGXO											
C00506	DGY	00151	00160	00160								
C00006	DGYO											
C00507	DHOB	00152										
C00007	DHOBO											
P00001	DICT.	00005	00010	00026	00042	00067	00074	00104	00116	00127	00154	00164
		00174	00177	00206	00214	00227	00234	00240	00244	00252	00257	00264
P00274	ENDING.	00006	00207	00216	00246	00272						
P00000	EXIT.	00275										
X00013	EXPF	00066										
C00526	EXTRA											
C00001	FUTIME											
X00005	HIST	00007	00103	00115	00173	00213	00233	00237	00243	00256	00263	
C00000	IAGX	00172	00172									
C00001	IAGY	00162	00162									
C00513	IALERT											
C00013	IALERTO											
C00517	IALT	00022	00022									
C00017	IALTO											
C00520	IASMTYPE	00137	00137									
C00001	IBASE											
C00511	ICLASS	00100	00100	00134	00134	00210	00210					
C00011	ICLASSO											
C00740	IFUNCR											
X00006	IGET	00025	00041									
P00323	IGO	00013	00121	00202	00262	00267						
C00524	IHT	00013	00014									
C00024	IHTO											
C00501	INBASE											
C00500	INDATA											
C00772	INDE											
C00272	INDEO											
C00002	INDM											
C00652	INDP	00014										
C00152	INDPO											
C00502	INDV											
P00272	INITIAL.	00006										
C00503	INTAR	00015	00027	00043								
C00514	INZONE	00107	00107	00217	00217							
C00014	INZONO											

```
C00512  IREG
C00012  IREGC
C00510  ITYPE     00143  00143
C00010  ITYPC
C01112  IWTYP     00123  00270
C00412  IWTYPC
P00007  .1
P00207  .10       00204
P00210  .11       00077
P00213  .111      00211
P00217  .112      00212
P00224  .12
P00233  .13       00231  00231
P00237  .14       00132  00133
P00016  .16
P00022  .17       00020  00020
P00025  .18       00023
P00041  .19       00024
P00055  .2        00040
P00247  .21       00021
P00256  .22       00255
P00263  .23       00254  00255
P00060  .3        00056
P00071  .4
P00100  .5        00057  00076  00076
P00103  .51       00101
P00107  .52       00102
P00122  .6        00106  00236
P00134  .7
P00137  .71       00135
P00143  .72       00136
P00147  .73       00142
P00176  .77       00271
P00200  .8        00242  00262
P00243  .80       00232
P00205  .9        00203
P00276  .ERASER.  00034  00050  00063  00064  00065  00072  00125  00225  00250
C00003  JNTAR
C00525  JWT       00122  00122  00147  00147  00200  00200  00201  00207  00270
C00025  JWTC
C00000  KEYARRAY
C00374  KILLZ
P00003  LATTRIT   00003
C00001  LINKM
C00473  MAXZONE
C00524  MHT
C00525  MWT
C00530  NALT
C00030  NALTC
C00000  NBCELL
C00520  NCM
C00020  NCMC
P00324  NDECOYS   00040  00054  00062
C00515  NDHI      00036  00037  00221  00222
```

```
C00015  NDMIC
C00516  NDLC      00052  00053  00111  00111  00113  00114  00222
C00016  NDLCC
X00011  NEXTEVNT  00205
C00275  NPENZ     00110  00110  00112  00112  00220  00220  00223  00223
C00530  NPLAN
C00504  NWTYP     00123  00130  00131  00271
C00004  NWTYPC
C00000  OUTDATA
C00062  PDUD      00131  00132
C00521  PKNAV     00016  00016  00253  00254
C00021  PKNAVC
C00000  PLABORT
C00000  PLABT
C00360  PRABT
X00002  QIQ02100  00157  00157
X00001  QIQ04100  00061
X00003  QIQ10100  00161  00171
X00004  QBUDICT.  00000  00004
X00012  RANF      00073  00126  00226  00251
X00007  RNDEV     00153  00163
C00500  SIDE
C00000  SIDEC
P00325  SIG       00142  00146  00156  00166
P00326  SP        00070  00075
C00522  SPARE
C00022  SPC
C15531  STATUS    00030  00044
C00531  TABORT
C00031  TABORTC
C00003  TARDEFHI  00027
C00002  TARDEFLC  00043
C00000  TIME
C00532  TINC
C00032  TINCC
C00620  TLINTR
C00120  TMDEL
C01126  XDGZ      00150
C00426  XDGZC
C00026  XX
C01142  YDGZ      00151
C00442  YDGZC
C00000  YIELD
C00176  ZCCPCT
C00077  ZDEFPCT
C01156  ZDGZ      00152
C00456  ZDGZC
   00232 SYMBOLS
```

```
      SUBROUTINE LRAREA                                                 1000
CSUBR     LRAREA    10JUN71   ******************************************26000
C     RECORDS DEPARTURE OF A TANKER FROM A REFUELING AREA               2000
CUSE      EDATAR    4JAN71    ******************************************3000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DMCBC,ITYPC,  1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),2000
     2IWTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),      3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(320),SIDE, 5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMCB,ITYPE,ICLASS,IREG,IALERT,   6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IWT,JWT,EXTRA(2),NALT,   7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),    8000
     7ZDGZ(12),INDATA(320)                                              9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                 11000
      EQUIVALENCE(NPLAN,NALT) ,(MWT,IWT), (MWT,JWT)                    12000
      TYPE INTEGER DGX,DGY,DMCB,XDGZ,YDGZ,ZDGZ                         13000
      TYPE INTEGER DGXC,DGYC,DMCBC,XDGZC,YDGZC,ZDGZC                   14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                  15000
CEND      EDATAR    ******************************************************3000
      COMMON/EPSN/EPSN                                                  4000
      COMMON/HISTOUT/NHISTOUT(200)                                      5000
CUSE      HISTREF   15MAR71   ******************************************5200
      COMMON/HISTREF/NFGC,INEED                                         1000
CEND      HISTREF   ******************************************************5200
      EQUIVALENCE (NEVENT,NHISTOUT(7))                                  6000
      COMMON/KEYWORDS/KEYARRAY(20)                                      7000
      EQUIVALENCE (KEYARRAY(1),TSTAT)                                   8000
CUSE      RECOV     28APR71   ******************************************9000
      COMMON/RECOV/IRECOV(50,4,2),TCFREC(50,4,2),NMORE(50,4,2),         1000
     1        NRES(50,4,2),LSHIFT                                       2000
CEND      RECOV     ******************************************************9000
      COMMON/REFUEL/NFTANK(100),NETANK(100)                            10000
      COMMON/TIME/TIME,FUTIME                                          11000
CUSE      NBCELL    22JUN71   ******************************************12000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NBCELL    ******************************************************12000
                                                                       13000
    1 CONTINUE                                                         14000
      IABORT = 0                                                       15000
C     RECORD CALL TO LRAREA                                            16000
      CALL HIST(12,3)                                                  17000
C     GET REFUELING AREA NUMBER FROM TANKER HISTORY TABLE              18000
      INDRA=INDP(IHT)                                                  19000
C     TEST IF TANKER IS LEAVING BECAUSE OF ABORT                       20000
      IF(TABORT .LE. TIME+EPSN) 5,2                                    21000
C     TEST FOR EMPTY TANKERS IN REFUELING AREA                         22000
    2 IF(NETANK(INDRA) .GE.60) 3,4                                     23000
C     DECREASE NUMBER OF EMPTY TANKERS AS ONE LEAVES AREA              24000
    3 NETANK(INDRA)=NETANK(INDRA) - 60                                 25000
      NFGC = 0                                                         25200
C     RECORD EMPTY TANKER DEPARTURE FROM REFUELING AREA                26000
      CALL HIST(12,1)                                                  27000
      GO TO 9                                                          28000
C     DECREASE NUMBER OF FULL TANKERS IN AREA AS ONE LEAVES            29000
    4 NFGC = 60                                                        30000
      IF(NETANK(INDRA) .GT.0) 41,42                                    30200
   41 NFGC = 60-NETANK(INDRA)                                          30400
```

```
      NETANK(INDRA) = 0
   42 NETANK(INDRA) = NETANK(INDRA) - NFGO
C     RECORD FULL TANKER DEPARTURE FROM REFUELING AREA
      CALL HIST(12,2)
      GO TO 10
C     DETERMINE IF FULL OR EMPTY TANKER LEAVES
    5 NPT = 0
      NFT = NETANK(INDRA)/60
      NET = NETANK(INDRA)/60
      NPTANK = NETANK(INDRA) - NFT*60
   51 IF(NPTANK)53,53,52
   52 NPT = 1
   53 TOT = NPT + NFT + NET
   56 FEMPTY = NET/TOT
      R = RANF(-1)
   61 IF(FEMPTY .GT. R      )7,8
C       ABORT OF EMPTY TANKER
    7 IABORT = 1
      GO TO 3
    8 FFULL = NFT/TOT
   81 IF((FFULL + FEMPTY) .GT.R) 82,83
C     ABORT OF FULL TANKER
   82 NFGO = 60
      GO TO 84
C     ABORT OF PARTIAL TANKER
   83 NFGO = NPTANK
      NETANK(INDRA) = NETANK(INDRA) - 60 + NFGO
   84 NETANK(INDRA) = NETANK(INDRA) - NFGO
      CALL HIST(12,4)
      RETURN
    9 IF(IABORT)11,10
C     ABORT OF EMPTY TANKER
C     HISTWRIT RECORDS DEPARTURE OF EMPTY TANKER
C     THEN AN ABORT IS RECORDED
   11 CALL HISTWRIT
      INZONE=SIDE
      CALL HIST(13,1)
      CALL HIST(13,3)
      RETURN
C     PREPARE TO RECOVER TANKER
   10 INZONE=SIDE
      IHTO=1
      JWTO=0
      IR=0
      IS = SIDE
      DO 100 I=1,4
      K=INDP(IHT-I)/LSHIFT
      IDEPEN=INDP(IHT-I)-K*LSHIFT
      IBASE = IRECOV(IDEPEN,K,IS)
      IX=IGET(TSTAT,IBASE,STATUS)
      IF(IX) 31,100
   31 IF(IR) 33,32
C     MOST DISTANT LIVE BASE
   32 IR=I
   33 IF(NMORE(IDEPEN,K,IS).GT.0) 34,100
C     MOST DISTANT AVAILABLE BASE
```

```
   34 IR=I
      GO TO 35
  100 CONTINUE
C     DO COMPLETED- USE SATURATED BASE OR ABORT
      IF(IR) 35,36
C     NO LIVE BASE
   36 INDPO=0
      IR=1
      GO TO 37
   35 INDPO=INDP(IHT-IR)
   37 FUTIME=TIME+TINC(IHT-IR)
      NRES(IDEPEN,IR,IS) = NRES(IDEPEN,IR,IS) - 1
   38 IF(TABORT-FUTIME-EPSN)40,40,39
   39 INDEO=0
      CALL PLANTS(16,12)
      RETURN
   40 FUTIME=TABORT
      INZONO = SIDE
      CALL PLANTS(13,12)
      RETURN
      END
```

```
                                        IDENT     LRAREA
PROGRAM LENGTH                 00434
ENTRY POINTS     LRAREA        00003
BLOCK NAMES
                 EDATA         01200
                 EPSN          00001
                 HISTOUT       00310
                 HISTREF       00002
                 KEYWORDS      00024
                 RECOV         03161
                 REFUEL        00310
                 TIME          00002
                 19501         04731
EXTERNAL SYMBOLS
                 ORDDICT.
                 HIST
                 HIST*WRIT
                 IGET
                 PLANTS
                 RANF
```

C00472	B											
P00373	BEGIN.	00373										
C45071	COLAR											
C00505	DGX											
C00005	DGXC											
C00506	DGY											
C00006	DGYC											
C00507	DHOR											
C00007	DHORC											
P00001	DICT.	00005	00012	00035	00057	00117	00155	00163	00167	00172	00235	00315
		00325										
P00374	ENDING.	00006	00157	00174	00317	00327						
C00000	EPSN	00020	00021	00310	00310							
P00000	EXIT.	00374										
C00526	EXTRA											
P00414	FEMPTY	00114	00121	00134								
P00415	FFULL	00132	00133									
C00001	FUTIME	00302	00302	00307	00307	00321	00321					
X00002	HIST	00011	00034	00056	00154	00166	00171					
X00003	HISTWRIT	00162										
P00416	I	00206	00210	00221	00244	00253	00257					
P00417	IABORT	00010	00125	00160								
C00513	IALERT											
C00013	IALERTC											
C00517	IALT											
C00017	IALTC											
C00001	IBASE	00232	00233	00236								
C00511	ICLASS											
C00011	ICLASSC											
P00420	IDEPEN	00227	00355									
X00004	IGET	00234										
C00524	IHT	00014	00014	00207	00207	00220	00220	00267	00267	00274	00274	
C00024	IHTC	00177										
P00330	IN00003.	00231	00247	00341	00351	00350						
P00331	IN00004.	00303	00340	00361	00371							
C00501	INBASE											
C00500	INDATA											
C00772	INDE											
C00272	INDEC	00312	00313									
C00002	INDM											
C00652	INDP	00015	00212	00213	00225	00226	00272	00273				
C00152	INDPC	00262	00263	00273								
P00421	INDRA	00016	00023	00027	00042	00046	00052	00063	00143	00150		
C00502	INDV											
C00001	INEED											
P00373	INITIAL.	00006										
C00503	INTAR											
C00514	INZONE	00165	00176									
C00014	INZONC	00323										
P00422	IR	00201	00242	00245	00254	00261	00264	00270	00275	00365		
C00000	IRECOV	00231	00232									
C00512	IREG											
C00012	IREGC											
P00423	IS	00204	00334									

```
C00510  ITYPE
C00010  ITYPC
C01112  IWTYP
C00412  IWTYPC
P00424  IX          00240
P00007  .1
P00175  .10         00061   00161
P00257  .100        00241   00251   00252
P00162  .11         00161
P00023  .2          00022
P00027  .3          00025   00125
P00242  .31         00241
P00244  .32
P00247  .33         00243
P00253  .34
P00267  .35         00256   00261
P00262  .36
P00274  .37         00266
P00306  .38
P00312  .39
P00040  .4          00026
P00320  .40         00311   00311
P00045  .41
P00052  .42         00044   00044
P00062  .5          00021   00022
P00076  .51
P00100  .52
P00102  .53         00077   00077
P00110  .56
P00121  .61
P00124  .7
P00126  .8          00122   00123
P00133  .81
P00137  .82
P00141  .83         00135   00136
P00150  .84         00140
P00160  .9          00137
P00376  .ERASER.    00115
P00375  .NSTIFF.    00211   00212   00242   00225   00271   00272   00276   00300
C00003  JNTAR
C00525  JWT
C00025  JWTC        00200
P00425  K           00216   00223   00345
C00000  KEYARRAY
C00001  LINKM
P00003  LRAREA      00003
C03100  LSHIFT      00214   00215   00223   00224
C00524  MHT
C00525  MWT
C00530  NALT
C00030  NALTC
C00000  NBCELL
C00520  NCM
C00020  NCMC
```

```
C00515  NDHI
C00015  NDHIC
C00516  NDLO
C00016  NDLOC
P00426  NET      00072  00103  00110
C00144  NETANK   00024  00024  00030  00030  00031  00042  00043  00046  00047  00051  00051
                 00067  00070  00144  00144  00146  00147
C00006  NEVENT
C00000  NFGO     00032  00033  00040  00041  00047  00050  00054  00054  00137  00140  00142
                 00142  00145  00146  00152  00152
P00427  NFT      00067  00073  00103  00126
C00000  NFTANK   00053  00053  00055  00055  00064  00064  00074  00074  00151  00151  00153
                 00153
C00000  NHISTOUT
C01440  NMORE    00250  00250
C00530  NPLAN
P00430  NPT      00063  00101  00102
P00431  NPTANK   00075  00076  00141
C02260  NRES     00304  00304  00305
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PKNAV
C00021  PKNAVC
X00005  PLANTS   00314  00324
X00001  QBODTCT. 00000  00004
P00432  R        00120  00122  00135
X00006  RANF     00116
C00500  SIDE     00164  00164  00175  00175  00203  00203  00322  00322
C00000  SIDEC
C00522  SPARE
C00022  SPC
C15531  STATUS   00237
C00531  TAMORT   00016  00017  00306  00306  00320  00320
C00031  TAMORTC
C00000  TIME     00017  00020  00277  00277
C00532  TINC     00301  00301
C00032  TINCC
C00620  TOFREC
P00433  TOT      00107  00114  00132
C00000  TSTAT    00236
P00333  UP00003. 00205  00334  00335  00336  00342  00342
P00344  UP00004. 00217  00345  00346  00347  00351  00352
P00354  UP00005. 00230  00355  00356  00357  00362  00362
P00364  UP00006. 00202  00246  00255  00265  00365  00366  00367  00371  00372
P00207  WS00001. 00260
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C01156  ZDGZ
C00456  ZDGZC
   00235 SYMBOLS
```

```
      SUBROUTINE MLAUN                                                  1000
CSUBR     MLAUN     28APR71   ****************************************  2000
C     TESTS FOR SUCCESSFUL LAUNCHES OF MISSILES IN A SQUADRON           2000
CUSE      EDATAM    26AUG70   ****************************************  3000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHCBC,       1000
     1             ITYPC,ICLASSC,IREGC,IALERTC,NWPNSC,NTARGC,           2000
     1             NWPNLIST(18),MLAUNLIS(18),MLISTC(270),OUTDATA(320),  3000
     1             SIDE,INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHCB,           4000
     1             ITYPE,ICLASS,IREG,IALERT,NWPNS,NTARG,                5000
     1             WPNLIST(18),LAUNLIST(18),MLIST(270),INDATA(320)      6000
      TYPE INTEGER OUTDATA,SIDE,OSIDE,AAIM,TAIM,WPNLIST                 7000
      TYPE INTEGER DGX,DGY,DHCB,DGXC,DGYC,DHCBC                         8000
      TYPE INTEGER TAIMC,AAIMC                                          9000
      EQUIVALENCE (SIDEC,OUTDATA(1)),(SIDE,INDATA(1))                  10000
      EQUIVALENCE (IPAYLOAD,INDATA(5)),(NMIRV,INDATA(8))               11000
      EQUIVALENCE (INITVULC,OUTDATA(7)),(INITVULN,INDATA(7))           12000
      EQUIVALENCE (TCFC,OUTDATA(27)),(TCF,INDATA(27))                  13000
      DIMENSION MDATA(14),MDATAC(14),TCF(14),TCFC(14)                  14000
      EQUIVALENCE (MDATAC,OUTDATA(13)),(MDATA,INDATA(13))              15000
      EQUIVALENCE (NWHDS,INDATA(13)),(TAIM,INDATA(14))                 16000
      EQUIVALENCE (AAIM,INDATA(15))                                    17000
      EQUIVALENCE (TAIMC,OUTDATA(14)),(AAIMC,OUTDATA(15))              18000
      EQUIVALENCE (NWHDSC,OUTDATA(13))                                 19000
      DIMENSION FMLIST(270)                                            20000
      EQUIVALENCE (MLIST,FMLIST)                                       21000
CEND      EDATAM    ****************************************************  3000
      COMMON/HISTA1/NLC,TCFLT,IW                                        4000
      COMMON/INDEX/INDEX(30)                                            5000
      COMMON/INREP/INREP                                                6000
      COMMON/KEYWORDS/KEYARRAY(20)                                      7000
      EQUIVALENCE (KEYARRAY(6),TVULN)                                   8000
CUSE      MISSLE    28APR71   ****************************************  9000
      COMMON/MISSLE/PINC(80),PABORT(80),PDES(80),PFPF(80),TPOWER(80),   1000
     1      TRET(80),IR(80),CEPM(80),PKMIS(80),TLINTM(80),IFUNCM(80)   2000
CEND      MISSLE    ****************************************************  9000
      COMMON/TIME/TIME,FUTIME                                          11000
      COMMON/TRYL/INDEXWPN(18),PINCOMM,PNOABORT,PDEST,PFLTFAIL,TPF,    12000
     1 TRETARG,IREP,NCYCLE,NCOM,NALIVE,NNABT,NSUCC,NLATER,NDES,NTEST   13000
      DATA (IRS33=1000000000008)                                       14000
CUSE      NBCELL    22JUN71   ****************************************  15000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NBCELL    ****************************************************  15000
                                                                       16000
    1 CONTINUE                                                         18000
C     GET MISSILE TYPE DATA FOR THIS PARTICULAR TYPE OF MISSILE        19000
      PINCOMM  = PINC(ITYPE)                                           20000
      PNOABORT = 1. - PABORT(ITYPE)                                    21000
      PDEST    = PDES(ITYPE)                                           22000
      PFLTFAIL = PFPF(ITYPE)                                           23000
      TPF      = TPOWER(ITYPE)                                         24000
      TRETARG  = TRET(ITYPE)                                           25000
      IREP     = 1                                                     26000
      EPS      = TLINTM(ITYPE)                                         27000
      KMIRV=2*NMIRV                                                    28000
      NTARG=NTARG/KMIRV                                                29000
C     RECORD EXECUTION OF MISSILE LAUNCH EVENT                         30000
```

```
      CALL HIST(1,1)
      IF(IREP)2,3
    2 IREP = IR(ITYPE)
C     SET MISSILE LAUNCH RESULT COUNTERS TO ZERO
    3 NCYCLE=NCOM=NALIVE=NNABT=NSUCC=NLATER=NDES=0
C     TRY TO LAUNCH A MISSILE
    4 CALL TRYLAUN
C     TEST IF ALL WEAPONS LAUNCHED
    5 IF (NCYCLE .EQ. NWPNS) 51,9
C     ALL WEAPONS LAUNCHED
   51 CALL HIST(1,2)
C     TEST FOR SUCCESSFUL LAUNCHES.  IF ANY RANDOMIZE TARGETS VS WEAPONS
    6 IF (NSUCC .GT. 0) 7,10
    7 CALL RANORDER(NTEST)
C     MOVE WEAPON AND LAUNCH BASE DATA FROM INDATA TO OUTDATA
   71 DO 8 I=1,NSUCC
      IW=INDEXWPN(I)
      INWV = WPNLIST(IW)
      INBASE = LAUNLIST(IW)
C     GET INITIAL LAUNCH BASE HARDNESS AND SAVE IT
      INITVULN=IGET(IVULN,INBASE,STATUS)
C     TEMPORARILY SET HARDNESS TO 1
   72 CALL IPUT(IVULN,INBASE,1,STATUS)
      J=INDEX(I)
      L=KMIRV*(J-1)
C     LABEL MISSILE WITH FIRST TARGET IN GROUP
      INTAR=MLIST(L+1)/IRS33
      TOFL1=FMLIST(L+2)
      DO 75 K=1,NMIRV
      KX=2*K
      MDATAO(K)=MLIST(L+KX-1)
      TOFO(K)=FMLIST(L+KK)
   75 CONTINUE
C     SPACE INDIVIDUAL MISSILES BY EPS HOURS (EPS SMALL)
      FUTIME=TIME+TPF+EPS*(J-1)
C     RECORD MISSILE LAUNCH VS TARGET
      CALL HIST(1,4)
C     PLANT COMPLETE LAUNCH EVENT
    8 CALL PLANTS(3,12)
C     TEST IF ALL TARGETS ALREADY COVERED
C     MISSILES LEFT OVER = ORIGINAL NUMBER LESS NUMBER PROCESSED
   10 NLO = NWPNS - NCYCLE
      IF (NLO .GT. 0) 11,99
C     TEST IF ALL TARGETS COVERED
    9 IF(NTEST .EQ. NTARG) 91,4
C     ALL TARGETS COVERED
   91 CALL HIST (1,3)
      GO TO 5
C     SEE IF ANY TARGETS ARE LEFT FOR LATER
   11 IF(NLATER .GT. 0) 12,99
C     MOVE INDATA TO OUTDATA FOR PLANTING NEW LAUNCH EVENTS FOR THESE
   12 DO 13 K=1,12
   13 OUTDATA(K)=INDATA(K)
      NWPNSO = NLO
      NTARGO=NLATER*KMIRV
      DO 14 L=1,NLO
```

```
      LL=L+NCYCLE
      MWPNLIST(L)=WPNLIST(LL)
   14 MLAUNLIS(L)=LAUNLIST(LL)
      DO 15 M=1,NLATER
      MS=KMIRV*(M-1)
      MM=M+NSUCC
      JJ=INDEX(MM)
      JS=KMIRV*(JJ-1)
      DO 15 LL=1,KMIRV
      MLISTO(MS+LL)=MLIST(JS+LL)
   15 CONTINUE
C     NEW LAUNCH TIME IS CURRENT TIME PLUS TIME TO RETARGET
      FUTIME=TIME+TRETARG
C     RECORD PLANTING OF NEW LAUNCH EVENT
      CALL HIST(1,6)
C     PLANT NEW LAUNCH EVENT
      CALL PLANTS(1,0)
   99 RETURN
      END
```

```
                                        IDENT     MLAUN
PROGRAM LENGTH                  00355
ENTRY POINTS      MLAUN         00004
BLOCK NAMES
                  EDATA         01200
                  HISTAI        00003
                  INDEX         00036
                  INREP         00001
                  KEYWORDS      00024
                  MISSLE        01560
                  TIME          00002
                  TRYL          00041
                  19501         54731
EXTERNAL SYMBOLS
                  QBQDICT.
                  HIST
                  TRYLAUN
                  RANORDER
                  IGET
                  IPUT
                  PLANTS
```

```
C00516  AAIM
C00016  AAIMC
P00315  BEGIN.     00316
C01060  CEPM
C45071  COLAR
P00337  COUNT.     00133   00134   00231   00232   00264   00265
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCH
C00007  DHCHC
P00001  DICT.      00006   00041   00056   00063   00071   00104   00111   00163   00166   00205   00307
                   00312
P00317  ENDING.    00007   00314   00315   00316
P00340  EPS        00030   00156
P00000  EXIT.      00320
C00562  FMLIST     00126   00146   00147
C00001  FUTIME     00161   00161   00305   00305
X00002  HIST       00040   00062   00162   00204   00306
P00341  I          00074   00075   00114   00173
C00513  IALERT
C00013  IALERTC
C00001  IBASE
C00511  ICLASS
C00011  ICLASSC
C01440  IFUNCM
X00005  IGET       00103
C00501  INBASE     00102   00105   00112
C00500  INDATA     00216   00216
C00000  INDEX      00115   00115   00255   00256
C00000  INDEXWPN   00076   00076
C00002  INUM
C00502  INDV       00101
P00315  INITIAL.   00007
C00506  INITVOLN   00107
C00006  INITVOLC
C00000  INREP      00043   00043
C00503  INTAR      00125   00125
C00504  IPAYLOAD
X00006  IPUT       00110
C00740  IR         00046   00046
C00512  IREG
C00012  IREGC
C00030  IREP       00026   00047   00047
P00003  IRS33      00124
C00510  ITYPE      00010   00010   00045   00045
C00010  ITYPC
C00002  IW         00077   00077   00100
P00010  .1
P00173  .10        00066   00067
P00210  .11        00200
P00213  .12
P00216  .13
```

P00240	.14								
P00276	.15								
P00045	.2	00044							
P00050	.3	00044							
P00055	.4	00203							
P00057	.5								
P00062	.51								
P00065	.6	00207							
P00070	.7								
P00073	.71								
P00110	.72								
P00150	.75								
P00165	.8								
P00201	.9	00061							
P00204	.91								
P00314	.99	00177	00177	00211	00212				
P00323	.ERASER.	00117	00120	00156	00250	00251	00260	00261	
P00321	.NSTIFF.	00141	00141	00145	00146	00270	00272	00272	00274
P00342	J	00116	00152						
P00343	JJ	00257							
C00003	JNTAR								
P00344	JS	00261	00270						
P00345	K	00130	00134	00136	00151	00214	00214		
C00000	KEYARRAY								
P00346	KMIRV	00033	00036	00120	00224	00251	00260	00263	
P00347	KX	00136	00137	00144					
P00350	L	00121	00121	00137	00144	00266	00232	00233	00243
C00540	LAUNLIST	00102	00241	00241					
C00001	LINKM								
P00351	LL	00235	00236	00240	00262	00267	00271	00276	
P00352	M	00246	00247	00252	00300				
C00514	MDATA								
C00014	MDATAC	00143							
P00004	MLAUN	00004							
C00040	MLAUNLIS	00242							
C00562	MLIST	00122	00122	00142	00142	00273	00273		
C00062	MLISTC	00275	00275						
P00353	MM	00254	00255						
P00354	MS	00252	00266						
C00016	MWPNLIST	00237							
C00033	NALIVE	00053							
C00000	NBCELL								
C00032	NCOM	00053							
C00031	NCYCLE	00054	00057	00057	00174	00174	00234	00234	
C00037	NDES	00050	00051						
C00036	NLATER	00051	00210	00210	00222	00263	00301	00301	
C00000	NLC	00175	00175	00176	00220	00221	00227	00227	
C00507	NMIRV	00031	00032	00131	00131				
C00034	NNART	00052							
C00035	NSUCC	00052	00065	00065	00171	00171	00253	00253	
C00515	NTARG	00033	00034	00036	00037	00202	00202		
C00015	NTARGC	00224	00225						
C00040	NTEST	00072	00201	00201					
C00514	NWMDS								

C00014	NWHOSC				
C00514	NWPNS	00060	00060	00173	00173
C00014	NWPNSC	00221	00222		
C00504	NWTYP				
C00004	NWTYPC				
C00000	OUTDATA	00217			
C00120	PAHORT	00014	00014		
C00240	PDES	00016	00016		
C00024	PDEST	00017	00017		
C00025	PELTFAIL	00021	00021		
C00360	PFPF	00020	00020		
C00000	PINC	00011	00011		
C00022	PINCOMM	00012	00012		
C01200	PKMIS				
X00007	PLANIS	00165	00311		
C00023	PNOAHORT	00015	00015		
X00001	JB-DICT.	00000	00005		
X00004	RANORDER	00070			
C00500	SIDE				
C00000	SIDEC				
C15531	STATUS	00106	00113		
C00515	TAIM				
C00015	TAIMC				
C00000	TIME	00157	00157	00303	00303
C01320	TLINTM	00027	00027		
C00532	TOF				
C00001	TOFLT	00126	00127		
C00032	TOHC	00147			
C00026	TPF	00023	00023	00160	00160
C00500	TPOWER	00022	00022		
C00620	TRET	00024	00024		
C00027	TRETANG	00025	00025	00304	00304
X00003	TRYLAUN	00055			
P00171	TS00001.	00074			
P00152	TS00002.	00132			
P00245	TS00004.	00230			
P00301	TS00005.	00246			
P00300	TS00006.	00264			
C00005	TVOLN	00105	00112		
C00516	WPNLIST	00100	00101	00236	00237
P00075	WS00001.	00172	00172		
P00135	WS00002.	00151			
P00216	WS00003.	00220			
P00233	WS00004.	00244			
P00247	WS00005.	00302	00302		
P00266	WS00006.	00277			

00231 SYMBOLS

```
      SUBROUTINE MONPRIN                                                1000
CSUBR     MONPRIN   *JAN71    ****************************************  3900
C     CONTROLS DIAGNOSTIC PRINTOUT OF INDATA AND OUTDATA                2000
C     DONEXT TESTS MONS* AND CALLS PRINDAT IF IT IS ON                  3000
CUSE      EDATAB    4JAN71    ****************************************  4000
      COMMON/EDATA/SIDEO,IBASE,INDM,JNTAR,NWTYPO,DGXO,DGYO,DMOBO,ITYPO,  1000
     1ICLASSO,IREGO,IALERTO,INZONO,NDHIO,NDLOO,IALTO,NCMO,PKNAVO,SPO(2),  2000
     2IHTO,JWTO,XX(2),NALTO,TABORTO,TINCO(80),INDPO(80),INDEO(80),       3000
     3 IWTYPO(12),XDGZO(12),YDGZO(12),ZDGZO(12),B(6),OUTDATA(320),SIDE,  5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMOB,ITYPE,ICLASS,IREG,IALERT,    6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,    7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),     8000
     7ZDGZ(12),INDATA(320)                                               9000
      EQUIVALENCE (SIDEO,OUTDATA(1)), (SIDE,INDATA(1))                  11000
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)                     12000
      TYPE INTEGER DGX,DGY,DMOB,XDGZ,YDGZ,ZDGZ                          13000
      TYPE INTEGER DGXO,DGYO,DMOBO,XDGZO,YDGZO,ZDGZO                    14000
      TYPE INTEGER OUTDATA,SIDE,SIDEO                                   15000
CEND      EDATAB    ****************************************************  4000
      COMMON/EVENT/INDEV,INDF                                            4900
      COMMON/MONDAT/MONS*                                                5000
      COMMON/NS*/NS*                                                     6000
      COMMON/TIME/TIME,FUTIME                                           13000
      DIMENSION X(10),Y(10)                                             14000
                                                                        15000
C     ENTRY MONPRIN IS USED ONLY AFTER OPTPRIN HAS BEEN CALLED AT START 16000
      GO TO 20                                                          17000
C     ENTRY OPTPRIN INITIALIZES DIAGNOSTIC PRINTOUT SEQUENCE            18000
      ENTRY OPTPRIN                                                     19000
C     READ EXECUTION TIME LIMITS--MONS* WILL BE ON IN THESE INTERVALS   20000
      READ 100,(X(I),Y(I),I=1,NS*)                                      21000
  100 FORMAT(2F10.0)                                                    22000
      PRINT 101,(X(I),Y(I),I=1,NS*)                                     23000
  101 FORMAT(2F10.4)                                                    24000
C     THERE ARE TWO MONPRIN **HISTORY TABLE** LINES PER NS*             25000
      IHT = 2*NS*                                                       26000
C     SET CURRENT **HISTORY TABLE** LINE TO ONE, TURN OFF MONS*         27000
      MONS* = 1                                                         28000
C     FILL **HISTORY TABLE** TIME ENTRIES                               29000
      DO 15 I=1,NS*                                                     30000
      TINC(2*(NS*-I)+1)=Y(I)                                            31000
   15 TINC(2*(NS*-I)+2)=X(I)                                            32000
      GO TO 40                                                          33000
C     UNPACK **EVENT DATA** AND ADJUST MONS*                            34000
   20 CONTINUE                                                          35000
      MONS* = -1*MONS*                                                  36000
C     IF MONPRIN **HISTORY TABLE** EXHAUSTED, RETURN                    37000
      IF (IHT .EQ. 1  ) 50,30                                           38000
C     OTHERWISE PLANT MONPRIN EXECUTION FOR END OF NEXT TIME INCREMENT  39000
C     NEXT EXECUTION WILL ADJUST MONS* AND CHECK FOR FURTHER EXECUTIONS 40000
   30 IHT = IHT - 1                                                     41000
   40 FUTIME=TINC(IHT)+24.0                                             42000
      DO 45 I=1,200                                                     43000
   45 OUTDATA(I) = INDATA(I)                                            44000
      INDEV = 23                                                        45000
      INDF = 2                                                          45100
```

```
      CALL PLANT                                    45200
   50 RETURN                                        46000
      END                                           47000
```

```
                                        IDENT     MONPRIN

PROGRAM LENGTH                  00175
ENTRY POINTS        MONPRIN     00035
                    OPTPRIN     00042
BLOCK NAMES
                    EDATA       01200
                    EVENT       00002
                    MONDAT      00001
                    NSW         00001
                    TIME        00002
EXTERNAL SYMBOLS
                    THEN.
                    QHQDICT.
                    PLANT
                    TSH.
                    STH.
                    ONSIGNL.
```

```
C00472  B
P00164  BEGIN.     00165
P00163  CNVRTI.    00054   00056   00073   00074
F00173  COUNT.     00112   00113
P00027  CRFMT.     00064   00102
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCR
C00007  DHCRC
P00001  DICT.      00037   00044   00050   00063   00066   00101   00160
P00166  ENDING.    00040   00045   00161   00164   00165
P00000  EXIT.      00167
C00526  EXTRA
P00027  FORMAT.
C00001  FUTIME     00146   00147
P00064  GGUUUUU0.  00046
P00102  GGUUUU01.  00054
P00174  I          00053   00055   00057   00071   00072   00075   00107   00112   00115   00124   00133
                   00150   00151
C00513  IALERT
C00013  IALERTC
C00517  IALT
C00017  IALTC
C00001  IBASE
C00511  ICLASS
C00011  ICLASSC
C00524  IHT        00103   00104   00137   00137   00142   00142   00143   00144   00144
C00024  IHTC
C00501  INBASE
C00500  INDATA     00152   00152
C00772  INDE
C00272  INDEC
C00000  INDEV      00155   00155
C00001  INDF       00156
C00002  INDM
C00652  INDP
C00152  INDPC
C00502  INDV
P00164  INITIAL.   00040   00045
C00503  INTAR
C00514  INZONE
C00014  INZONC
C00512  IREG
C00012  IREGC
C00510  ITYPE
C00010  ITYPC
C01112  IWTYP
C00412  IWTYPC
P00123  .15
P00135  .20        00041
P00142  .30        00140
P00144  .40        00134
```

```
P00152  .45
P00161  .50        00141
P00171  .ERASER.   00116   00117   00125   00126
P00027  ..100      00051
P00032  ..101      00067
P00170  .NSTIFF.   00120   00121   00127   00130
C00003  JNIAR
C00525  JWI
C00025  JWIC
C00524  MHT
P00035  MONPRIN    00035
C00000  MONS*      00105   00105   00135   00136   00136
C00525  MWT
C00530  NALT
C00030  NALTC
C00520  NCM
C00020  NCMC
C00515  NDHI
C00015  NDHIC
C00516  NDLC
C00016  NDLCC
C00530  NPLAN
C00000  NS*        00060   00060   00076   00076   00102   00103   00107   00110   00114   00114   00123
                   00123
C00504  NWTYP
C00004  NWTYPC
P00042  OPTPRIN    00042
C00000  OUTDATA    00153
C00521  PKNAV
C00021  PKNAVC
X00003  PLANT      00157
X00002  QRQDICT.   00000   00036   00043
X00006  QNSINGL.   00102
C00500  SIDE
C00000  SIDEC
C00522  SPARE
C00022  SPC
X00005  STH.       00065
C00531  TABCNT
C00031  TABCNTC
X00001  THEND.     00062   00100
C00000  TIME
C00532  TINC       00122   00122   00131   00131   00145
C00032  TINCC
P00060  TS00001.   00053
P00076  TS00002.   00171
P00134  TS00003.   00111
X00004  TSH.       00047
P00054  *S00001.   00061   00061
P00072  *S00002.   00077   00077
P00114  *S00003.   00133
P00152  *S00004.   00154
P00003  X          00056   00073   00130
C01126  XDGZ
```

```
C00426  XDGZC
C00026  XX
P00015  Y          00057   00074   00121
C01142  YDGZ
C00442  YDGZC
C01156  ZDGZ
C00456  ZDGZC
   00161 SYMBOLS
```

```
      SUBROUTINE MSINPRIN
CSUBR     MSINPRIN  10JUN71   ******************************************
CUSE      EDATAM    26AUG70   ******************************************
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHCBC,
     1             ITYPC,ICLASSC,IREGC,IALERTC,NWPNSC,NTARGC,
     1             MWPNLIST(18),MLAUNLIS(18),MLISTC(270),OUTDATA(320),
     1             SIDE,INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHCB,
     1             ITYPE,ICLASS,IREG,IALERT,NWPNS,NTARG,
     1             WPNLIST(18),LAUNLIST(18),MLIST(270),INDATA(320)
      TYPE INTEGER OUTDATA,SIDE,CSIDE,AAIM,TAIM,WPNLIST
      TYPE INTEGER DGX,DGY,DHCB,DGXC,DGYC,DHCBC
      TYPE INTEGER TAIMC,AAIMC
      EQUIVALENCE (SIDEC,OUTDATA(1)),(SIDE,INDATA(1))
      EQUIVALENCE (IPAYLOAD,INDATA(5)),(NMIRV,INDATA(8))
      EQUIVALENCE (INITVULC,OUTDATA(7)),(INITVULN,INDATA(7))
      EQUIVALENCE (TCFC,OUTDATA(27)),(TCF,INDATA(27))
      DIMENSION MDATA(14),MDATAC(14),TCF(14),TCFC(14)
      EQUIVALENCE (MDATAC,OUTDATA(13)),(MDATA,INDATA(13))
      EQUIVALENCE (NWHDS,INDATA(13)),(TAIM,INDATA(14))
      EQUIVALENCE (AAIM,INDATA(15))
      EQUIVALENCE (TAIMC,OUTDATA(14)),(AAIMC,OUTDATA(15))
      EQUIVALENCE (NWHDSC,OUTDATA(13))
      DIMENSION FMLIST(270)
      EQUIVALENCE (MLIST,FMLIST)
CEND      EDATAM    ******************************************************
      COMMON/IPSWICH/IPSW1,IPSW2,IPSW3,IPSW4,IPSW5,IPSW6
     1,IPSW7
      DIMENSION KLIST(14,7)
      EQUIVALENCE (KLIST,INDATA(220))
   25 PRINT 701,(INDATA(M),M=1,14)
      PRINT 609
      N = 1
      JWPNS = NWPNS
      IF (JWPNS .LE. 14) 82,81
   81 JWPNS = N + 13
   82 IF (JWPNS .LT. NWPNS) 84,83
   83 JWPNS = NWPNS
   84 PRINT 702,(WPNLIST(M),M=N,JWPNS)
      PRINT 703,(LAUNLIST(M),M=N,JWPNS)
      PRINT 609
      IF (JWPNS .GE. NWPNS) 86,85
   85 N = JWPNS + 1
      GO TO 81
   86 IF(IPSW4 .EQ. 1 .OR. IPSW5 .EQ. 1)87,20
   87 N=1
      JTARG = NTARG
      IF(JTARG .LE. 28) 92,91
   91 JTARG=N+27
   92 IF (JTARG .LT. NTARG) 94,93
   93 JTARG = NTARG
   94 NCOUNT=0
      DO 96 M=N,JTARG,2
      NCOUNT=NCOUNT+1
      CALL MUNPK(MLIST(M))
      KLIST(NCOUNT,1)=INTAR
      KLIST(NCOUNT,2)=MLIST(M+1)
```

```
      KLIST(NCOUNT,3)=DGX                                               34000
      KLIST(NCOUNT,4)=DGY                                               35000
      KLIST(NCOUNT,5)=DHDB                                              36000
      KLIST(NCOUNT,6)=TAIMC                                             37000
   96 KLIST(NCOUNT,7)=AAIMC                                             38000
      IF(IPS.EQ.4) 97,98                                                39000
   97 PRINT 704,(KLIST(M,1),M=1,NCOUNT)                                 40000
      PRINT 706,(KLIST(M,2),M=1,NCOUNT)                                 41000
   98 IF(IPS.EQ.5) 99,100                                               42000
   99 PRINT 705,(KLIST(M,3),M=1,NCOUNT)                                 43000
      PRINT 707,(KLIST(M,4),M=1,NCOUNT)                                 44000
      PRINT 708,(KLIST(M,5),M=1,NCOUNT)                                 45000
      PRINT 709,(KLIST(M,6),M=1,NCOUNT)                                 46000
      PRINT 710,(KLIST(M,7),M=1,NCOUNT)                                 47000
      PRINT 609                                                         48000
  100 IF(JTARG .GE. NTARG) 20,95                                        49000
   95 N = JTARG + 1                                                     50000
   20 RETURN                                                            51000
  701 FORMAT(/8H INDATA ,3I8,F8.3,6I8/8X,8I8)                           52000
  702 FORMAT(8H WPNLIST,14I8)                                           53000
  703 FORMAT(8H LAUNLIS,14I8)                                           54000
  704 FORMAT(8H TARLIST,14I8)                                           55000
  705 FORMAT(8H X       ,14I8)                                          56000
  706 FORMAT(8H TOFLIST,14F8.3)                                         57000
  609 FORMAT(1H )                                                       58000
  707 FORMAT(8H Y       ,14I8)                                          59000
  708 FORMAT(8H Z       ,14I8)                                          60000
  709 FORMAT(8H TAIM    ,14I8)                                          61000
  710 FORMAT(8H AAIM    ,14I8)                                          62000
      END                                                               63000
```

```
                                        IDENT     MSINPRIN
PROGRAM LENGTH                  00470
ENTRY POINTS     MSINPRIN       00077
BLOCK NAMES
                 EDATA          01200
                 IPSWICH        00007
EXTERNAL SYMBOLS
                 THEND.
                 QRQDICT.
                 MUNPK
                 STH.
                 QNSINGL.
```

C00516	AAIM											
C00016	AAIMC	00263	00263									
P00457	BEGIN.	00460										
P00456	CNVRTI.	00113	00154	00172	00304	00322	00342	00360	00376	00414	00432	
P00003	CRFMT.	00455	00455	00455	00455	00455	00455	00455	00455	00455	00455	00455
C00505	DGX	00256										
C00005	DGXC											
C00506	DGY	00257										
C00006	DGYC											
C00507	DHOB	00260										
C00007	DHOBC											
P00001	DICT.	00101	00105	00117	00122	00125	00146	00161	00164	00177	00202	00205
		00247	00276	00311	00314	00327	00334	00347	00352	00365	00370	00403
		00406	00421	00424	00437	00442	00445					
P00461	ENDING.	00102	00454	00457								
P00000	EXIT.	00462										
C00562	FMLIST											
P00003	FORMAT.											
P00120	GGU0000.	00103										
P00126	GGU0001.	00120										
P00162	GGU0002.	00144										
P00200	GGU0003.	00162										
P00206	GGU0004.	00200										
P00312	GGU0005.	00274										
P00330	GGU0006.	00312										
P00350	GGU0007.	00332										
P00366	GGU0010.	00350										
P00404	GGU0011.	00366										
P00422	GGU0012.	00404										
P00440	GGU0013.	00422										
P00446	GGU0014.	00440										
C00513	IALERT											
C00013	IALERTC											
C00001	IBASE											
C00511	ICLASS											
C00011	ICLASSC											
P00217	IF00001.											
C00501	INBASE											
C00500	INDATA	00112	00112									
C00002	INDM											
C00502	INDV											
P00457	INITIAL.	00102										
C00506	INITVULN											
C00006	INITVULC											
C00503	INTAR	00251	00251									
C00504	IPAYLOAD											
C00000	IPSW1											
C00001	IPSW2											
C00002	IPSW3											
C00003	IPSW4	00215	00215	00272	00272							
C00004	IPSW5	00217	00217	00330	00330							
C00005	IPSW6											
C00006	IPSW7											
C00512	IREG											

```
C00012  IREGC
C00510  ITYPE
C00010  ITYPC
P00446  .100     00331
P00454  .20      00220   00450   00451
P00103  .25
P00134  .81      00133   00214
P00136  .82      00132   00133
P00142  .83      00140   00140
P00144  .84      00141
P00212  .85      00210
P00215  .86      00210   00211
P00221  .87      00216
P00227  .91      00226
P00231  .92      00225   00226
P00235  .93      00233   00233
P00237  .94      00234
P00452  .95      00450
P00263  .96
P00274  .97      00273
P00330  .98      00273
P00332  .99      00331
P00047  ..609    00123   00203   00443
P00003  ..701    00106
P00016  ..702    00147
P00023  ..703    00165
P00030  ..704    00277
P00035  ..705    00335
P00042  ..706    00315
P00053  ..707    00353
P00060  ..708    00371
P00065  ..709    00407
P00072  ..710    00425
P00250  .200001. 00245
C00003  JNTAR
P00463  JTARG    00224   00224   00230   00231   00236   00270   00446   00452
P00464  JWPNS    00131   00131   00135   00136   00143   00156   00174   00208   00212
C01033  KLIST    00253   00253   00256   00257   00260   00261   00262   00265   00265   00303   00303
                 00321   00321   00341   00341   00357   00357   00375   00375   00413   00413   00431
                 00431
C00540  LAUNLIST 00171   00171
P00465  M        00110   00111   00114   00151   00152   00155   00167   00170   00173   00241   00244
                 00254   00267   00301   00302   00305   00317   00320   00323   00337   00340   00343
                 00355   00356   00361   00373   00374   00377   00411   00412   00415   00427   00430
                 00433
C00514  MDATA
C00014  MDATAC
C00040  MLAUNLIS
C00562  MLIST    00244   00250   00255   00255
C00062  MLISTC
P00077  MSINPRIN 00077
X00003  MUNPK    00246
C00016  MWPNLIST
P00466  N        00127   00134   00150   00166   00213   00222   00227   00240   00453
```

```
P00467  NCOUNT    00240  00242  00243  00252  00264  00306  00324  00344  00362  00400  00416
                  00434
C00507  NMIRV
C00515  NTARG     00222  00223  00232  00232  00235  00235  00447  00447
C00015  NTARGC
C00514  NWHDS
C00014  NWHDSC
C00514  NWPNS     00127  00130  00137  00137  00142  00142  00207  00207
C00014  NWPNSC
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
X00002  QBWDICT.  00000  00100
X00005  QNSINGL.  00455
C00500  SIDE
C00000  SIDEC
X00004  STH.      00104  00121  00145  00163  00201  00275  00313  00333  00351  00367  00405
                  00423  00441
C00515  TAIM
C00015  TAIMC     00261
X00001  THEND.    00116  00124  00160  00176  00204  00310  00326  00346  00364  00402  00420
                  00436  00444
C00532  TOF
C00032  TOFC
P00156  TS00002.  00151
P00174  TS00003.  00167
P00270  TS00004.  00241
P00306  TS00005.  00301
P00324  TS00006.  00317
P00344  TS00007.  00337
P00362  TS00010.  00355
P00400  TS00011.  00373
P00416  TS00012.  00411
P00434  TS00013.  00427
C00516  WPNLIST   00153  00153
P00111  WS00001.  00115
P00152  WS00002.  00157  00157
P00170  WS00003.  00175  00175
P00242  WS00004.  00271  00271
P00302  WS00005.  00307  00307
P00320  WS00006.  00325  00325
P00340  WS00007.  00345  00345
P00356  WS00010.  00363  00363
P00374  WS00011.  00401  00401
P00412  WS00012.  00417  00417
P00430  WS00013.  00435  00435
   00220 SYMBOLS
```

```
      SUBROUTINE MUNPK(IDAT)                                            1000
CSUBR     MUNPK     26AUG70   ****************************************  68000
      COMMON/EDATA/ICUTD(320),INDATA(320)                               2000
      DATA(IRSH3=10B),(IRSH12=1000OB)                                   3000
      DATA(NEG=4000B),(MASK=777777777770000B)                           4000
      ICUTD(14)=IDAT.AND. 7B                                            5000
      IWD=IDAT/IRSH3                                                    6000
      ICUTD(15)=IWD.AND. 7B                                             7000
      IWD=IWD/IRSH3                                                     8000
      INDATA(8)=IWD.AND. 7B                                             9000
      IWD=IWD/IRSH3                                                    10000
      INDATA(7)=IWD.AND. 7777B                                         11000
      IWD=IWD/IRSH12                                                   12000
      INDATA(6)=IWD.AND. 7777B                                         13000
      IWD=IWD/IRSH12                                                   14000
      INDATA(4)=IWD.AND. 77777B                                        15000
      IF(INDATA(6).LT. NEG)2,1                                         16000
    1 INDATA(6)=INDATA(6).OR. MASK                                     17000
    2 CONTINUE                                                         18000
      IF(INDATA(7).LT. NEG)4,3                                         19000
    3 INDATA(7)=INDATA(7).OR. MASK                                     20000
    4 CONTINUE                                                         21000
      ICUTD(14)=ICUTD(14)*ICUTD(13)                                    22000
      ICUTD(15)=ICUTD(14)*ICUTD(15)                                    23000
      RETURN                                                           24000
      END                                                              25000
```

```
                                IDENT     MUNPK
PROGRAM LENGTH              00127
ENTRY POINTS     MUNPK      00007
BLOCK NAMES
                 EDATA      01200
EXTERNAL SYMBOLS
                 QBQDICT.
```

P00071	BEGIN.	00107	00115	00121								
P00001	DICT.	00011	00074	00075								
P00110	ENDING.	00012	00076	00071	00072	00072	00073	00073				
P00000	EXIT.	00113.										
P00013	FP00001.	00103	00104									
P00016	FP00002.	00105	00106									
P00124	GETPL.	00076										
P00114	GETPU.	00101	00120									
P00007	IDAT	00013	00017									
C00500	INDATA	00030	00030	00035	00035	00042	00042	00047	00047.	00050	00053	00053
		00055	00055	00056	00056	00062	00062	00064	00064			
P00071	INITIAL.	00012										
C00000	IOUTD	00015	00016	00023	00023	00065	00065	00066	00066	00067	00067	
P00004	IRSH12	00040	00045									
P00003	IRSH3	00021	00026	00033								
P00126	IWD	00021	00024	00026	00031	00033	00036	00040	00043	00045		
P00053	.1	00051	00052									
P00056	.2	00052										
P00062	.3	00060	00060									
P00065	.4	00061										
P00006	MASK	00054	00063									
P00007	MUNPK	00007										
P00005	NEG	00051	00057									
P00107	PF00002.	00102										
X00001	QBWDICT.	00000	00010									

00030 SYM-CLS

```
      SUBROUTINE NAVATR
CSUBR     NAVATR    28APR71   ****************************************
      COMMON/EDATA/OUTDATA(320),SIDE,INBASE,NCOL,INCOL(5),ITYPE,ICLASS,
     1IREG,IALERT,INDATA(320)
      EQUIVALENCE(SIDE,INDATA(1))
      COMMON/KEYWORDS/KEYARRAY(20)
      EQUIVALENCE (KEYARRAY(1),TSTAT)
CUSE      NBCELL    22JUN71   ****************************************
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)
CEND      NBCELL    ****************************************************
      CALL HIST(21,1)
      CALL HIST(21,2)
      CALL IPUT(TSTAT,INBASE,0,STATUS)
      DO 1  I=1,NCOL
      IC=INCOL(I)
    1 CALL IPUT(TSTAT,IC,0,STATUS)
      END
```

```
                                IDENT     NAVATR
PROGRAM LENGTH              00046
ENTRY POINTS     NAVATR     00003
BLOCK NAMES
                 EDATA      01200
                 KEYWORDS   00024
                 19501      54731
EXTERNAL SYMBOLS
                 QBQDICT.
                 HIST
                 IPUT
```

```
P00036  BEGIN.     00036
C45071  COLAR
P00001  DICT.      00005   00010   00013   00016   00027
P00037  ENDING.    00006   00035
P00000  EXIT.      00037
X00002  HIST       00007   00012
P00044  I          00022   00023   00032
C00513  IALERT
P00045  IC         00025   00030
C00511  ICLASS
C00501  INBASE     00017
C00503  INCOL      00024   00024
C00500  INDATA
P00036  INITIAL.   00006
X00003  IPUT       00015   00026
C00512  IREG
C00510  ITYPE
P00026  .10
C00000  KEYARRAY
C00001  LINKM
P00003  NAVATR     00003
C00000  NBCELL
C00502  NCOL       00033   00033
C00000  OUTDATA
X00001  QBUDICT.   00000   00004
C00500  SIDE
C15531  STATUS     00020   00031
P00033  TS00001.   00022
C00000  TSTAT      00017   00030
P00023  WS00001.   00034   00034
   00036 SYMBOLS
```

```
      SUBROUTINE NAVCAL                                                 1000
CSUBR     NAVCAL     28APR71   ****************************************  70000
      COMMON/EDATA/OUTDATA(320),SIDE,INBASE,NCOL,INCOL(5),ITYPE,ICLASS,  2000
     1IREG,IALERT,INDATA(320)                                           3000
      EQUIVALENCE (SIDE,INDATA(1))                                      4000
      COMMON/KEYWORDS/KEYARRAY(20)                                      5000
      EQUIVALENCE (KEYARRAY(2),TCOL),(KEYARRAY(9),KEYNTA),(KEYARRAY(8),  6000
     1KEYTIN),(KEYARRAY(18),NAVDBL)                                     7000
      COMMON/NAVDATA/PK(10,10),TK(10,10)                                8000
      COMMON/NWORDOUT/NWORDOUT                                          9000
      COMMON/TIME/TIME,FUTIME                                          10000
CUSE      NBCELL     22JUN71   ****************************************  11000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NBCELL     ****************************************************  11000
      JD=NCOL                                                          12000
C     AT THIS POINT NCOL=IDBL, THE INDEX TO THE NAVDATA TABLES          13000
      NCOL=0                                                           14000
C     NOW NCOL IS NUMBER OF TARGETS COLOCATED WITH THE BASE             15000
      MAXTIMS=10                                                       16000
C     MAXTIMS IS MAXIMUM NUMBER OF ENTRIES IN EACH TIME DEPENDENT       17000
C     DBL DATA TABLE                                                    18000
      CALL HIST(20,1)                                                  19000
    1 KDBL=IGET(NAVDBL,INBASE,STATUS)                                  20000
C     TEST IF DBL EVENT ALREADY PLANTED FOR THIS SHIP                   21000
    2 IF(KDBL)13,3                                                     22000
    3 CALL IPUT(NAVDBL,INBASE,1,STATUS)                                23000
C     SEE IF COLOCATED                                                  24000
      KCOL=IGET(TCOL,INBASE,STATUS)                                    25000
    4 IF(KCOL)17,5                                                     26000
C     FIND TIME OF DESTRUCTION                                          27000
    5 P=RANF(-1)                                                       28000
    6 DO 12 I=1,MAXTIMS                                                29000
    7 IF(P.GT.PK(I,JD))12,8                                            30000
C     TIME IN THIS INTERVAL                                             31000
    8 IF(I.GT.1)10,9                                                   32000
    9 PX=0.                                                            33000
      TX=0.                                                            34000
      GO TO 11                                                         35000
   10 PX=PK(I-1,JD)                                                    36000
      TX=TK(I-1,JD)                                                    37000
   11 R=(P-PX)/(PK(I,JD)-PX)                                           38000
      T=TX+R*(TK(I,JD)-TX)                                             39000
      GO TO 14                                                         40000
   12 CONTINUE                                                         41000
C     IF DO COMPLETED, RETURN WITHOUT PLANTING DESTRUCTION              42000
   13 NWORDOUT=0                                                       43000
      RETURN                                                           44000
C     PLANT DESTRUCTION EVENT                                           45000
   14 FUTIME=TIME+T                                                    46000
   15 CALL HIST(20,2)                                                  47000
   16 CALL PLANTS(21,12)                                               48000
      RETURN                                                           49000
C     FIND COLOCATED PARTS                                              50000
   17 KT=1                                                             51000
      KIND=IFIND(INBASE)                                               52000
   18 NTA=IGET(KEYNTA,KIND,COLAR)                                      53000
```

```
 19 IF (NTA)  20, 21, 20                                          54000
 20 KIND=KIND-NTA                                                 55000
 21 KIND=KIND+1                                                   56000
    INEXT=IGEY(KEYTIN,KIND,COLAR)                                 57000
 22 IF(INEXT.EQ.INBASE)5,23                                       58000
 23 CALL IPUT(NAVDHL,INEXT,1,STATUS)                              59000
    INCOL(KT)=INEXT                                               60000
    NCOL=KT                                                       61000
    KT=KT+1                                                       62000
 24 IF(KT.GT.5)25,18                                              63000
 25 PRINT 101,INBASE                                              64000
101 FORMAT(37H TOO  NY TARGETS COLOCATED WITH BASE,I5,            65000
   1   10H IN NAVDHL)                                             66000
    GO TO                                                         67000
    END                                                           68000
```

```
                                        IDENT     NAVCAL
PROGRAM LENGTH                 00276
ENTRY POINTS     NAVCAL        00017
BLOCK NAMES
                 EDATA         01200
                 KEYWORDS      00024
                 NAVDATA       00310
                 NWORDOUT      00001
                 TIME          00002
                 19501         54731
EXTERNAL SYMBOLS
                 THENJ.
                 QBQDICT.
                 HIST
                 IGET
                 IPUT
                 PLANTS
                 IFINU
                 RANF
                 STH.
                 QNSINGL.
```

P00246	BEGIN.	00246										
P00222	CNVRTI.	00215										
C45071	COLAR	00152	00165									
P00003	CRFMT.	00220										
P00001	DICT.	00021	00032	00035	00044	00050	00061	00133	00136	00144	00150	00163
		00173	00212	00217								
P00247	ENDING.	00022	00126	00140								
P00000	EXIT.	00247										
P00003	FORMAT.											
C00001	FUTIME	00131	00131									
P00220	GGOOOOO.	00210										
X00003	HIST	00031	00132									
P00260	I	00064	00073	00121	00231							
C00513	IALERT											
C00511	ICLASS											
X00007	IFIND	00143										
X00004	IGET	00034	00047	00147	00162							
P00223	INO0001.	00070	00101	00110	00224	00234	00244					
C00501	INBASE	00036	00045	00051	00145	00170	00170	00214	00214			
C00503	INCOL	00177	00200									
C00500	INDATA											
P00261	INEXT	00166	00167	00174	00176							
P00246	INITIAL.	00022										
X00005	IPUT	00043	00172									
C00512	IREG											
C00510	ITYPE											
P00034	.1											
P00101	.10	00075										
P00106	.11	00100										
P00121	.12	00072										
P00125	.13	00042										
P00127	.14	00120										
P00132	.15											
P00135	.16											
P00141	.17	00155										
P00147	.18	00206	00207									
P00154	.19											
P00041	.2											
P00156	.20	00155										
P00160	.21	00155										
P00167	.22											
P00172	.23	00171										
P00205	.24											
P00210	.25											
P00043	.3											
P00054	.4											
P00056	.5	00171	00220									
P00063	.6											
P00067	.7											
P00073	.8	00071	00072									
P00076	.9	00074	00075									
P00250	.ERASER.	00057	00107	00112	00113	00113						
P00003	..101	00213										
P00262	JO	00024	00240									

```
P00263  KCOL        00053   00054
P00264  KDBL        00040   00041
C00000  KEYARRAY
C00010  KEYNTA      00151
C00007  KEYTIN      00164
P00265  KIND        00146   00151   00156   00157   00160   00161   00164
P00266  KT          00142   00177   00201   00203   00204   00205
C00001  LINKM
P00267  MAXTIMS     00030   00123
P00017  NAVCAL      00017
C00021  NAVDBL      00036   00045   00174
C00000  NBCELL
C00502  NCOL        00023   00023   00026   00027   00201   00202
P00270  NTA         00153   00154   00157
C00000  NWCROCUT    00125   00126
C00000  OUTDATA
P00271  P           00062   00067   00136
P00224  P00000.U    00226
C00000  PK          00070   00071   00102   00102   00110   00111
X00006  PLANTS      00135
P00272  PX          00077   00103   00107   00112
X00002  QBUDICT.    00000   00020
X00012  QNSINGL.    00221
P00273  R           00114   00116
X00010  RANF        00060
C00500  SIDE
C15531  STATUS      00037   00046   00052   00175
X00011  STM.        00211
P00274  T           00117   00130
C00001  TCOL        00051
X00001  THEND.      00216
C00000  TIME        00127   00127
C00144  TK          00104   00104   00114   00115
P00123  TS00001.    00066
P00275  TX          00100   00105   00116   00117
P00230  UP00000.    00065   00122   00224   00231   00232   00233   00235   00235
P00237  UP00001.    00025   00240   00241   00242   00244   00245
P00067  WS00001.    00124   00124
   00133 SYMBOLS
```

```
      SUBROUTINE NEXTEVNT                                               1000
CSUBR     NEXTEVNT  21DEC70   ****************************************  28000
C     DETERMINES AREA ATTRITION AND PLANTS NEXT BOMBER EVENT            2000
      COMMON/ATTRIT/FK,FCM,ALT,CON,RPEN                                 3000
      COMMON/DATTA/ISIZE                                                4000
CUSE      EDATAR    4JAN71    ****************************************  5000
      COMMON/EDATA/SIDEO,IBASE,INDM,JNTAM,NWTYPO,DGXO,DGYO,DMOBO,ITYPO,  1000
     1ICLASSO,IREGO,IALERTO,INZONO,NDHIO,NDLOO,IALTO,NCMO,PKNAVO,SPO(2),  2000
     2IHTO,JWTO,XX(2),NALTO,TABORTO,TINCO(80),INDPO(80),INDEO(80),      3000
     3 IWTYPO(12),XDGZO(12),YDGZO(12),ZDGZO(12),S(6),OUTDATA(320),SIDE, 5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMOB,ITYPE,ICLASS,IREG,IALERT,   6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,   7000
     6TABORT,TINC(80),INDP(80),INCE(80),IWTYP(12),XDGZ(12),YDGZ(12),    8000
     7ZDGZ(12),INDATA(320)                                              9000
      EQUIVALENCE (SIDEO,OUTDATA(1)), (SIDE,INDATA(1))                 11000
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)                    12000
      TYPE INTEGER DGX,DGY,DMOB,XDGZ,YDGZ,ZDGZ                         13000
      TYPE INTEGER DGXO,DGYO,DMOBO,XDGZO,YDGZO,ZDGZO                   14000
      TYPE INTEGER OUTDATA,SIDE,SIDEO                                  15000
CEND      EDATAR    ****************************************************  5000
      COMMON/EPSN/EPSN                                                  6000
      COMMON/TIME/TIME,FUTIME                                           7000
      COMMON/ZONES/AREA(63),ZDEFPOT(63),ZCCPOT(63),NPENZ(63),KILLZ(63),  8000
     1 MAXZONE(2)                                                       9000
                                                                       10000
C     CHECK IF ANY MORE EVENTS                                         11000
      IF(IHT .LE. 119)1                                                12000
C     MOVE POINTER TO NEXT HISTORY TABLE EVENT OF THE BOMBER           13000
    1 IHT=IHT-1                                                        14000
C     TEST IF OUTSIDE ENEMY TERRITORY                                  15000
    2 IF(INZONE .GT. 2 .AND.ICLASS .EQ. 2) 20,3                        16000
C     NEXT EVENT FROM HISTORY TABLE                                    17000
    3 KEVENT = INDE(IHT)                                               18000
      F = 1.0                                                          19000
      GO TO 5                                                          20000
C     NEXT EVENT AREA ATTRITION                                        21000
    4 KEVENT = 7                                                       22000
      F = RANF(-1)                                                     23000
C     COMPUTE EXECUTION TIME OF NEXT SCHEDULED EVENT                   24000
    5 FUTIME = TIME + F * TINC(IHT)                                    25000
C     TEST IF BOMBER ABORT TIME LATER THAN  NEXT EVENT TIME            26000
    6 IF(TABORT .GE. FUTIME+EPSN) 8,7                                  27000
C     PLANT BOMBER ABORT EVENT                                         28000
    7 FUTIME = TABORT                                                  29000
      CALL PLANTS(13,ISIZE)                                            30000
      RETURN                                                           31000
C     PLANT NEXT EVENT FOR BOMBER                                      32000
    8 CALL PLANTS(KEVENT,ISIZE)                                        33000
    9 RETURN                                                           34000
C     IN ENEMY TERRITORY -- CHECK FOR AREA ATTRITION                   34100
   20 IF(TINC(IHT) .EQ. 0)3,22                                         35000
   22 NPEN = NPENZ(INZONE)                                             36000
      DEF = ZDEFPOT(INZONE) + 1.                                       37000
   23 DP = FK*TINC(IHT)*DEF*FCM**NCM*ALT**IALT/AREA(INZONE)            38000
   24 FC = 1.0 - CON*EXPF(-ZCCPOT(INZONE)/DEF)                         39000
   25 PSAT = (1. - EXPF(-RPEN*NPEN))/NPEN                              40000
```

```
      DPR = DP*FC*PSAT                                          41000
      SURVP = EXPF(-DPR)                                        42000
C     TEST IF BOMBER SURVIVES AREA DEFENSES                     43000
   26 IF(SURVP .GE. RANF(-1))3,4                                44000
      END                                                       45000
```

```
                                        IDENT     NEXTEVNT
PROGRAM LENGTH                  00172
ENTRY POINTS     NEXTEVNT       00003
BLOCK NAMES
                 AATTRIT        00005
                 DATTA          00001
                 EDATA          01200
                 EPSN           00001
                 TIME           00002
                 ZONES          00475
EXTERNAL SYMBOLS
                 02007110
                 01004100
                 01005100
                 QNODICT.
                 PLANTS
                 RANF
                 EXPF
```

```
C00002  ALT        00103  00103
C00000  AREA       00106  00107
C00472  H
P00151  BEGIN.     00152
C00003  CON        00117  00117
P00161  DEF        00070  00100  00113
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCB
C00007  DHCBC
P00001  DICT.      00005  00032  00050  00054  00072  00102  00116  00127  00140  00145
P00162  DP         00110  00133
P00163  DPR        00135  00135
P00153  ENDING.    00006  00052  00056  00151
C00000  EPSN       00042  00042
P00000  EXIT.      00154
X00007  EXPF       00115  00126  00137
C00526  EXTRA
P00164  F          00025  00033  00034
P00165  FC         00121  00134
C00001  FCM        00073  00073
C00000  FK         00075  00075
C00001  FUTIME     00037  00041  00041  00046  00046
C00513  IALERT
C00013  IALERTC
C00517  IALT       00104  00104
C00017  IALTC
C00001  IBASE
C00511  ICLASS     00017  00017
C00011  ICLASSC
P00017  IF00001.
C00524  IHT        00007  00007  00012  00012  00013  00022  00022  00035  00035  00057  00057
                   00076  00076
C00024  IHTC
C00501  INBASE
C00500  INDATA
C00772  INDE       00023
C00272  INDEC
C00002  INDM
C00652  INDP
C00152  INDPC
C00502  INDV
P00151  INITIAL.   00006
C00503  INTAR
C00514  INZONE     00014  00014  00063  00063  00105  00106  00111  00111
C00014  INZONC
C00512  IREG
C00012  IREGC
C00000  ISIZE      00051  00055
C00510  ITYPE
C00010  ITYPC
C01112  IWTYP
```

```
C00412  IWTYPC
P00012  .1        00011
P00014  .2
P00057  .20       00021
P00063  .22       00061
P00071  .23
P00111  .24
P00122  .25
P00142  .26
P00022  .3        00015   00016   00020   00062   00147   00150
P00026  .4        00147
P00034  .5        00025
P00040  .6
P00045  .7        00043
P00053  .8        00043   00044
P00056  .9        00010   00011
P00155  .ERASER.  00030   00100   00105   00114   00125   00136   00143
C00003  JNTAR
C00525  JWT
C00025  JWTC
P00166  KEVENT    00024   00027   00055
C00374  KILLZ
C00473  MAXZONE
C00524  MHT
C00525  MWT
C00530  NALT
C00030  NALTC
C00520  NCM       00074   00074
C00020  NCMC
C00515  NDMI
C00015  NDMIC
C00516  NDLC
C00016  NDLCC
P00003  NEXTEVNT  00003
P00167  NPEN      00065   00124   00132
C00275  NPENZ     00064   00064
C00530  NPLAN
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PKNAV
C00021  PKNAVC
X00005  PLANTS    00047   00053
P00170  PSAT      00133   00134
X00002  Q1404100  00123
X00003  Q1405100  00131
X00001  Q2437110  00071   00101
X00004  QBWDICT.  00000   00004
X00006  RANF      00031   00144
C00004  RPEN      00122   00122
C00500  SIDE
C00000  SIDEC
C00522  SPARE
 00022  SPC
```

```
P00171  SURVF     00141  00146
C00531  TABORT    00040  00040  00045  00045
C00031  TABORTC
C00000  TIME      00036  00037
C00532  TINC      00036  00060  00077
C00032  TINCC
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C00176  ZCCPOT    00112  00112
C00077  ZDEFPOT   00066  00066
C01156  ZDGZ
C00456  ZDGZC
   00172 SYMBOLS
```

```
      SUBROUTINE PLANT                                                  1000
CSUBR     PLANT     10JUN71   ****************************************  5500
      COMMON/ESTOR/SCALET,SCALETI,IMAX,NWORDS,NDIMO,NEXTEV,MERGSW,      3000
     1  INDATP(320),IOUTDP(320),ISVDAT(320),MEMTIM,TAPET(10),SVTIME(10)  4000
     2  ,ITOGO(10)                                                      5000
      COMMON/LISTMEM/IAVAIL                                             6000
      COMMON/TIME/TIME,FUTIME                                           7000
      EQUIVALENCE(FUTIME,IFUTIME)                                       8000
CUSE      NBCELL    22JUN71   ****************************************  9000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NBCELL    ****************************************************  9000
      COMMON/EVENT/INDEV,INDF                                           12000
      COMMON/EVINDX/NBIND,EVTIME(10),INDEVB(10)                         13000
      DATA(NMIND=10)                                                    14000
      DIMENSION IEVTIME(10)                                             15000
      EQUIVALENCE(EVTIME,IEVTIME)                                       16000
      COMMON/NEVTOT/NBEVTOT,NCTR                                        17000
      DATA(NBEVTOT=0),(NCTR=0)                                          18000
      DATA(NEVCY=200)                                                   19000
      EQUIVALENCE(XTIME,ITIME)                                          20000
C     PACK OUTDATA                                                      35000
      CALL EVPACK                                                       36000
C     TEST LIST FULL                                                    37000
      IF(IAVAIL)6,50,6                                                  38000
C     CHECK NOT IN PAST                                                 39000
    6 IF(FUTIME-TIME)52,7,7                                             40000
C     CHECK NOT EXCEED TMAX                                             41000
    7 IF(FUTIME-TMAX)8,40,40                                            42000
    8 CONTINUE                                                          43000
      IAVS=IAVAIL                                                       44000
      IAVAIL=LINKM(IAVS)                                                45000
      IF(IAVAIL.EQ.0)60,9                                               46000
C     INSERT HEADER WORD                                                47000
    9 LINKM(IAVS)=IFUTIME                                               48000
      LINKM(IAVS+1)=INDEV                                               49000
      LINKM(IAVS+2)=INDF                                                50000
      IF(NWORDS .LE. 0) 70,72                                           51000
   70 LINKM(IAVS + 4) = 0                                               52000
      GO TO 71                                                          53000
   72 CONTINUE                                                          54000
      LINKM(IAVS+4)=IAVAIL                                              55000
C     TRANSFER DATA TO LIST MEMORY                                      56000
      CALL UNSQUEEZ                                                     57000
C     INSERT EVENT INTO LIST                                            58000
   71 CONTINUE                                                          59000
C     FIND SUBLIST TO WHICH EVENT IS TO BE ADDED                        60000
      DO 10 I=1,NBIND                                                   61000
      IF(FUTIME .LT.EVTIME(I))11,10                                     62000
   10 CONTINUE                                                          63000
      I=NBIND                                                           64000
C     ADD TO SUBLIST I                                                  65000
   11 IST=INDEVB(I)                                                     66000
      ISX=I                                                             67000
      IPX=0                                                             68000
      IF(IST.EQ.0)12,14                                                 69000
C     START NEW SUBLIST WITH CURRENT EVENT                              70000
```

```
   12 INDEV8(ISX)=IAVS
      EVTIME(ISX)=FUTIME
      LINKM(IAVS+3)=0
      GO TO 30
C     START SCAN AT EVENT IST
C     IPX = INDEX TO PREVIOUS EVENT
C     IST = INDEX TO CURRENT EVENT
C     FIND TIME IN SUBLIST I GREATER THAN OR EQUAL TO TIME OF THIS EVENT
   14 CONTINUE
      ITIME=LINKM(IST)
      IF(FUTIME-ITIME)16,16,15
   15 IPX=IST
      IST=LINKM(IPX+3)
      IF (IST)  14, 20, 14
   16 CONTINUE
      IF(IPX.EQ.0)17,18
C     MAKE CURRENT EVENT FIRST IN SUBLIST I
   17 CONTINUE
      LINKM(IAVS+3)=IST
      INDEV8(ISX)=IAVS
      GO TO 30
C     INSERT CURRENT EVENT IN MIDDLE OF SUBLIST I
   18 CONTINUE
      LINKM(IAVS+3)=IST
      LINKM(IPX+3)=IAVS
      GO TO 30
C     ADD CURRENT EVENT TO END OF SUBLIST I
   20 CONTINUE
      LINKM(IAVS+3)=0
      LINKM(IPX+3)=IAVS
      EVTIME(ISX)=FUTIME
   30 CONTINUE
C     SET TIME OF NEXT EVENT IN MEMORY
   34 NEXTEV=INDEV8(1)
      IF(NEXTEV .EQ. 0)35,36
   35 CALL UPDIR
      NCTR=0
      NEXTEV=INDEV8(1)
   36 MEMTIME=LINKM(NEXTEV)
      NREVTOT=NREVTOT+1
      NCTR=NCTR+1
      IF(NCTR-NEVCY)40,40,31
C     UPDATE ENTRY POINT DIRECTORY.
   31 CALL UPDIR
      NCTR=0
   40 CONTINUE
      RETURN
C     HERE LIST MEMORY FULL.
   50 CALL EVSPILL
      IF(IAVAIL)6,51,6
   51 CALL ERROL(10)
      RETURN
C     FUTIME EARLIER THAN TIME
   52 CALL ERROL(21)
      RETURN
   60 CONTINUE
```

```
      CALL EVSPILL                                          127000
      IF(IAVAIL.EQ.0)61,9                                   126000
   61 CALL ERROL(11)                                        129000
      RETURN                                                130000
      END                                                   131000
```

```
                                        IDENT     PLANT
PROGRAM LENGTH                  00241
ENTRY POINTS     PLANT          00005
BLOCK NAMES
                 ESTOR          01746
                 LISTMEM        00001
                 TIME           00002
                 19501          54131
                 EVENT          00002
                 EVINOK         00025
                 NEVTOT         00002
EXTERNAL SYMBOLS
                 QBQDICT.
                 EVPACK
                 UNSQUEEZ
                 UPDIR
                 EVSPILL
                 ERROL
```

P00225	BEGIN.	00226										
C45071	COLAR											
P00001	DICT.	00007	00012	00053	00155	00174	00201	00206	00212	00216	00222	
P00227	ENDING.	00010	00177	00210	00214	00224	00225	00226				
X00006	ERHOL	00205	00211	00221								
X00002	EVPACK	00011										
X00005	EVSPILL	00200	00215									
C00001	EVTIME	00060	00060	00102	00103	00150	00150					
P00000	EXIT.	00230										
C00001	FUTIME	00015	00015	00020	00020	00056	00056	00101	00102	00112	00112	00146
		00146										
P00234	I	00055	00057	00063	00067	00070	00073					
C00000	IAVAIL	00013	00013	00024	00024	00027	00030	00047	00047	00202	00202	00217
		00217										
P00235	IAVS	00025	00026	00033	00045	00050	00077	00104	00126	00130	00134	00136
		00142	00144									
C00001	IEVTIME											
C00001	IFUTIME	00032	00032									
C00007	INDATP											
C00000	INDEV	00035	00035									
C00013	INDEVR	00071	00071	00100	00101	00131	00131	00151	00151	00157	00160	
C00001	INDF	00037	00037									
P00225	INITIAL.	00010										
C00507	IOUTDP											
P00236	IPX	00074	00116	00116	00123	00136	00144					
P00237	IST	00072	00075	00107	00115	00120	00125	00133				
C01207	ISVDAT											
P00240	ISX	00073	00100	00130	00147							
P00003	ITIME	00111										
C01734	ITOGO											
P00063	.10	00061	00061									
P00070	.11	00062										
P00077	.12											
P00107	.14	00076	00121	00122								
P00115	.15											
P00123	.16	00114	00114									
P00125	.17											
P00133	.18	00124										
P00141	.20	00121										
P00151	.30	00106	00132	00140								
P00173	.31											
P00151	.34											
P00154	.35											
P00162	.36	00153										
P00177	.40	00022	00023	00171	00172							
P00200	.50	00014										
P00205	.51	00203										
P00211	.52	00017										
P00015	.6	00014	00203	00204								
P00215	.60	00031										
P00221	.61											
P00020	.7	00016										
P00044	.70	00042										
P00054	.71	00046										

```
P00047  .72       00043
P00024  .8        00022
P00032  .9        00031  00220
C00001  LINKM     00026  00027  00034  00034  00036  00036  00040  00040  00045  00046  00051
                  00051  00105  00105  00110  00110  00117  00117  00126  00127  00134  00135
                  00137  00137  00142  00143  00145  00145  00163  00163
C01707  MEMTIM    00164  00164
C00006  MERGSW
C00000  NBCELL
C00000  NBEVTOT   00004  00165  00165  00166
C00000  NBIND     00004  00064  00064  00066
C00001  NCTR      C00001 00156  00157  00167  00170  00175  00176
C00004  NDIMD
P00004  NEVCY     00171
C00005  NFXTEV    00152  00152  00160  00161  00162  00162
C00003  NWORDS    00041  00041
F00005  PLANT     00005
X00001  QBUDICT.  00000  00006
C00000  SCALET
C00001  SCALETI
C15531  STATUS
C01722  SVTIME
C01710  TAPET
C00000  TIME      00016
C00002  TMAX      00021  00021
P00064  TS00001.  00055
X00003  UNSQUEEZ  00052
X00004  UPDTR     00154  00173
P00056  WS00001.  00065  00065
P00003  XTIME     00113
   00117 SYMBOLS
```

```
      SUBROUTINE PLANTS(K,L)
CSUBR     PLANTS    10JUN71   ******************************************
      COMMON/DATTA/ISIZE
C     MOVES INDATA TO OUTDATA FOR PLANTING AND CALLS PLANT
CUSE      EDATAX    26AU670   ******************************************
      COMMON/EDATA/OUTDATA(320),INDATA(320)
      TYPE INTEGER OUTDATA
CEND      EDATAX    ******************************************************
      COMMON/FUTPRINT/IFUT
      COMMON/EVENT/INDEV,INDF
      COMMON/TIME/TIME,FUTIME

C     MOVE FIRST L WORDS OF INDATA TO OUTDATA FOR PLANTING
      DO 99 I=1,L
      OUTDATA(I)=INDATA(I)
   99 CONTINUE
C     TEST SWITCHES CONTROLLING FUTIME PRINTOUT
      IF(IFUT .EQ. 0) 98,97
C     CALL FOR PRINTOUT OF EXECUTION TIME OF EVENT TO BE PLANTED
   97 FTIME = FUTIME-24.
      PRINT 971,FTIME
  971 FORMAT(51X,14H NEXT EVENT AT,F9.4)
   98 KK = K + 1
      INDEV = K
C     PLANT AN EVENT OF TYPE K FOR EXECUTION AT TIME FUTIME
      GO TO (91,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,91
     11 KK
    1 INDF = 1   $  GO TO 50
    2 INDF = 2   $  GO TO 50
    3 INDF = 3   $  GO TO 50
    4 INDF = 2   $  GO TO 50
    5 INDF = 2   $  GO TO 50
    6 INDF = 8   $  GO TO 50
    7 INDF = 2   $  GO TO 50
    8 INDF = 2   $  GO TO 50
    9 INDF = 4   $  GO TO 50
   10 INDF = 5   $  GO TO 50
   11 INDF = 2   $  GO TO 50
   12 INDF = 2   $  GO TO 50
   13 INDF = 2   $  GO TO 50
   14 INDF = 2   $  GO TO 50
   15 INDF = 2   $  GO TO 50
   16 INDF = 2   $  GO TO 50
   17 INDF = 2   $  GO TO 50
   18 INDF = 6   $  GO TO 50
   19 INDF = 2   $  GO TO 50
   20 INDF = 7   $  GO TO 50
   21 INDF = 7   $  GO TO 50
   50 CALL PLANT
      RETURN
C     IF ILLEGAL EVENT TYPE, PRINT DIAGNOSTIC AND ABORT
   91 PRINT 191, K, TIME, FUTIME
      PRINT 192
      PRINT 193, (INDATA(I), I=1,ISIZE)
      PRINT 194
      PRINT 193, (OUTDATA(I), I=1,ISIZE)
```

```
191 FORMAT(19H ILLEGAL EVENT TYPE,I13,7H TIME =,F9.4,9H FUTIME =,F9.4)   53000
192 FORMAT(/9H INDATA--/)                                                54000
193 FORMAT(5020)                                                         55000
194 FORMAT(/10H OUTDATA--/)                                              56000
    CALL ZABORT                                                          57000
    END                                                                  58000
```

```
                                    IDENT     PLANTS
PROGRAM LENGTH              00350
ENTRY POINTS     PLANTS     00051
BLOCK NAMES
                 DATTA      00001
                 EDATA      01200
                 FUTPRINT   00001
                 EVENT      00002
                 TIME       00002
EXTERNAL SYMBOLS
                 THEND.
                 QBQDICT.
                 PLANT
                 ZaBCHT
                 STM.
                 QNSINGL.
```

P00300	BEGIN.	00324	00332	00336								
P00277	CNVRTI.	00100	00215	00217	00220	00241	00265					
P00343	COUNT.	00061	00062									
P00003	CRFMT.	00103	00273	00273	00273	00273						
P00001	DICT.	00053	00076	00102	00206	00212	00222	00225	00230	00233	00246	00251
		00254	00257	00272	00274	00303	00304					
P00325	ENDING.	00054	00207	00275	00300	00301	00301	00302	00302			
P00000	EXIT.	00330										
P00003	FORMAT.											
P00057	FP00001.	00322	00323									
P00103	FP00002.	00312	00313									
P00106	FP00003.	00314	00315									
P00214	FP00004.	00316	00317									
P00344	FTIME	00073	00100									
C00001	FUTIME	00071	00071	00220								
P00341	GETPL.	00305	00320									
P00331	GETPU.	00310	00335									
P00103	GG00000.	00074										
P00223	GG00001.	00210										
P00231	GG00002.	00223										
P00247	GG00003.	00231										
P00255	GG00004.	00247										
P00273	GG00005.	00255										
P00345	I	00056	00062	00236	00237	00242	00262	00263	00266			
C00000	IFUT	00066	00066									
P00346	IGOTO.	00111										
C00500	INDATA	00063	00063	00240	00240							
C00000	INDEV	00107	00107									
C00001	INDF	00133	00134	00135	00136	00137	00140	00141	00142	00143	00144	00145
		00146	00147	00150	00151	00152	00153	00154	00155	00156	00157	00160
		00161	00162	00163	00164	00165	00166	00167	00170	00171	00172	00173
		00174	00175	00176	00177	00200	00201	00202	00203	00204		
P00300	INITIAL.	00054										
C00000	ISIZE	00243	00243	00267	00267							
P00133	.1	00112										
P00155	.10	00121										
P00157	.11	00122										
P00161	.12	00123										
P00163	.13	00123										
P00165	.14	00124										
P00167	.15	00125										
P00171	.16	00126										
P00173	.17	00126										
P00175	.18	00127										
P00177	.19	00130										
P00201	.20	00131										
P00135	.2	00113										
P00203	.21	00131										
P00137	.3	00114										
P00141	.4	00115										
P00143	.5	00115										
P00205	.50	00134	00136	00140	00142	00144	00146	00150	00152	00154	00156	00160
		00162	00164	00166	00170	00172	00174	00176	00200	00202		
P00145	.6	00116										

```
P00147  .7        00117
P00151  .8        00120
P00153  .9        00120
P00210  .91       00112   00132
P00071  .97       00067
P00103  .98       00070
P00065  .99
P00012  ..191     00213
P00030  ..192     00226
P00037  ..193     00234   00260
P00042  ..194     00252
P00003  ..971     00177
P00003  K         00103   00106   00214
P00347  KK        00105   00110
P00003  L         00057
C00000  OUTDATA   00064   00264   00264
P00320  PF00002.  00311
P00324  PF00003.  00321
X00003  PLANT     00205
P00051  PLANTS    00051
X00002  QBWDICT.  00000   00052
X00006  QNSINGL.  00276
X00005  STM.      00075   00211   00224   00232   00250   00256
X00001  THEND.    00101   00221   00227   00245   00253   00271
C00000  TIME      00216   00216
P00066  TS00001.  00060
P00243  TS00002.  00236
P00267  TS00003.  00262
P00063  WS00001.  00065
P00237  WS00002.  00244   00244
P00263  WS00003.  00270   00270
X00004  ZABORT    00273
   00121 SYMBOLS
```

```
      SUBROUTINE PRINDAT(IWDS)
CSUBR     PRINDAT   1FEB71    ******************************************
C     PRINTS INDATA AND INDATAP
CUSE      EDATAX    26AUG70   ******************************************
      COMMON/EDATA/OUTDATA(320),INDATA(320)
      TYPE INTEGER OUTDATA
CEND      EDATAX    ******************************************************
      COMMON/ESTOR/SCALET,SCALETI,TMAX,NWORDS,NDINDATA,NEXTEVNT,
     1 MERGSW,INDATAP(320),OUTDATAP(320),SVDATAP(320),MEMTIME,
     2  TAPETIME(10),SVTIME(10),WTOGO(10)
      COMMON/TIME/TIME,FUTIME

      MTIME=TIME-24.
      PRINT 1,MTIME
    1 FORMAT(/23H **INPUT DATA FOR TIME F10.4)
      PRINT 2,(INDATAP(I),I=1,NWORDS)
    2 FORMAT(8H INDATAP,12X,5(O16,4X)/(20X,5(O16,4X)))
      PRINT 3,(INDATA(I),I=1,IWDS)
    3 FORMAT(7H INDATA ,13X,5(O16,4X)/(20X,5(O16,4X)))
      END
```

```
                                        IDENT     PRINDAT
PROGRAM LENGTH                  00167
ENTRY POINTS     PRINDAT        00055
BLOCK NAMES
                 EDATA          01200
                 ESTOR          01746
                 TIME           00002
EXTERNAL SYMBOLS
                 THENU.
                 QRQDICT.
                 STH.
                 QNSINGL.
```

```
P00132  BEGIN.      00146  00154  00160
P00131  CNVRTI.     00070  00103  00121
P00003  CRFMT.      00073  00111  00127
P00001  DICT.       00057  00066  00072  00075  00110  00113  00126  00135  00136
P00147  ENDING.     00060  00127  00132  00133  00133  00134  00134
P00000  EXIT.       00152
P00003  FORMAT.
P00123  FP00001.    00144  00145
C00001  FUTIME
P00163  GETPL.      00137
P00153  GETPU.      00142  00157
P00073  GGG0000.    00064
P00111  GGG0001.    00073
P00127  GGG0002.    00111
P00165  HTIME       00063  00070
P00166  I           00100  00101  00104  00116  00117  00122
C00500  INDATA      00120  00120
C00007  INDATAP     00102  00102
P00132  INITIAL.    00060
P00003  IWDS        00123
P00003  ..1         00067
P00013  ..2         00076
P00034  ..3         00114
C01707  MEMTIME
C00006  MENGSW
C00004  NDIMDATA
C00005  NEXTEVNT
C00003  NWORDS      00105  00106
C00000  OUTDATA
C00507  OUTDATAP
P00146  PFGJOG2.    00143
P00055  PRINDAT     00055
X00002  QBADICT.    00000  00056
X00004  QNSINGL.    00130
C00000  SCALET
C00001  SCALETI
X00003  STH.        00065  00074  00112
C01207  SVDATAP
C01722  SVTIME
C01710  TAPETIME
X00001  THEND.      00071  00107  00125
C00000  TIME        00061  00061
C00002  TMAX
P00105  TS00001.    00100
P00123  TS00002.    00116
P00101  WS00001.    00106  00106
P00117  WS00002.    00124  00124
C01734  WTOGO
   00060 SYMBOLS
```

```
      SUBROUTINE PROUTDAT(IUNPKO)
CSUBR     PROUTDAT  26AUG70   ******************************************
C     PRINTS OUTDATA, OUTDATAP
CUSE      EDATAX    26AUG70   ******************************************
      COMMON/EDATA/OUTDATA(320),INDATA(320)
      TYPE INTEGER OUTDATA
CEND      EDATAX    ******************************************************
      COMMON/ESTOR/SCALET,SCALETI,IMAX,NWORDS,NOINDATA,NEXTEVNT,
     1 MERGSP,INDATAP(320),OUTDATAP(320),SVDATAP(320),MEMTIME,
     2  TAPETIME(10),SVTIME(10),WTOGO(10)
      COMMON/TIME/TIME,FUTIME
      MTIME=TIME-24.
      FTIME=FUTIME-24.

      PRINT 1,MTIME,FTIME
    1 FORMAT(/32H ** OUTPUT DATA PLANTED AT TIME F1..4,23H FOR EXECUTION
     1 AT TIME F1..4)
      NN=NWORDS+2
      PRINT 2,(OUTDATAP(I),I=1,NN)
    2 FORMAT(9H OUTDATAP,11X,5(O16,4X)/(20X,5(O16,4X)))
      PRINT 3,(OUTDATA(I),I=1,IUNPKO)
    3 FORMAT(8H OUTDATA,12X,5(O16,4X)/(20X,5(O16,4X)))
      END
```

```
                                        IDENT    PROUTDAT
PROGRAM LENGTH                  00206
ENTRY POINTS     PROUTDAT       00064
BLOCK NAMES
                 EDATA          01200
                 ESTOR          01746
                 TIME           00002
EXTERNAL SYMBOLS
                 THEND.
                 QBODICT.
                 STH.
                 UNSIMOL.
```

```
P00147  BEGIN.     00163  00171  00175
P00146  CNVRTI.    00101  00102  00120  00136
P00003  CRFMT.     00105  00126  00144
P00001  DICT.      00066  00077  00104  00112  00125  00130  00143  00152  00153
P00164  ENDING.    00067  00144  00147  00150  00150  00151  00151
P00000  EXIT.      00167
P00003  FORMAT.
P00140  FPOOOOI.   00161  00162
P00202  FTIME.     00074  00102
C00001  FUTI..     00072  00073
P00200  GETPL.     00154
P00170  GETPU.     00157  00174
P00105  GGU0000.   00075
P00126  GGU0001.   00110
P00144  GG..002.   00126
P00203  HT..E      00072  00101
P00204  I          00114  00116  00121  00133  00134  00137
C00500  INDATA
C00507  INDATAP
P00147  IN..TIAL.  00067
P00003  IUNPKO     00140
P00003  ..1        00100
P00021  ..2        00113
P00043  ..3        00131
C01707  MEMTIME
C00006  MERGSW
C00004  NDIMDATA
C00005  NE..EVNT
P00205  NN         00107  00122
C00003  NWORDS     00105  00105
C00000  OUTDATA    00135  00135
C00507  OUTDATAP   00117  00117
P00163  PF00002.   00160
P00064  PROUTDAT   00064
X00002  QBWDICT.   00000  00065
X00004  QNSINGL.   00145
C00000  SCALET
C00001  SCALETI
X00003  STH.       00076  00111  00127
C01207  SVDATAP
C01722  SVTIME
C01710  TAPETIME
X00001  THEND.     00123  00124  00142
C00000  TIME       00070  00070
C00002  TMAX
P00122  TS00001.   00115
P00140  TS00002.   00133
P00116  WS00001.   00123  00123
P00134  WS00002.   00141  00141
C01734  WTOGO
   00062 SYMBOLS
```

```
      SUBROUTINE RANORDER(NTEST)
CSUBR     RANORDER  26AUG70   ****************************************
C     RANDOMLY ORDERS A SET OF INDEXES
      COMMON/INDEX/INDEX(30)
      DIMENSION VAL(30)
C     FILL VAL WITH RNDOM NUMBERS
      DO 1 L=1,NTEST
      INDEX(L) = L
    1 VAL(L) = RANF(-1)
C     IF ONE OR FEWER INDICES TO BE FILLED,RETURN
      IF(NTEST.LE.1)9,10
   10 LI = NTEST - 1
C     ORDER INDEX ACCORDING TO ASCENDING SEQUENCE OF RANDOM VALUES
    2 DO 8 L=1,LI
      IF(VAL(INDEX(L)).LE.VAL(INDEX(L+1)))8,7
    7 ITEMP = INDEX(L)
      INDEX(L) = INDEX(L+1)
      INDEX(L+1) = ITEMP
    8 CONTINUE
C     ONE LESS COMPARE ES REQUIRED ON EACH SUCCEEDING PASS
      LI = LI - 1
      IF(LI)2,9
    9 RETURN
      END
```

```
                                IDENT     RANORDER
PROGRAM LENGTH              00167
ENTRY POINTS     RANORDER   00041
BLOCK NAMES
                 INDEX      00036
EXTERNAL SYMBOLS
                 QBQDICT.
                 RANF
```

```
P00122  BEGIN.     00142  00150  00154
P00163  COUNT.     00051  00052  00074  00075
P00001  DICT.      00043  00060  00125  00126
P00143  ENDING.    00044  00121  00122  00123  00123  00124  00124
P00000  EXIT.      00146
P00047  FP00001.   00134  00135
P00063  FP00002.   00136  00137
P00066  FP00003.   00140  00141
P00157  GETPL.     00127
P00147  GETPU.     00132  00153
C00000  INDEX      00054  00054  00076  00076  00100  00101  00107  00107  00111  00111  00112
                   00113  00114
P00122  INITIAL.   00044
P00164  ITEMP      00110  00113
P00055  .1
P00066  .10        00065
P00071  .2         00120
P00107  .7         00105
P00115  .8         00105  00106
P00121  .9         00064  00065
P00162  .ERASER.   00056
P00160  .NSTIFF.   00100  00102  00103  00104
P00165  '          00046  00052  00053  00062  00072  00074
P00166  LI         00070  00072  00116  00117
P00041  NTEST      00047  00063  00066
P00142  PF00002.   00133
X00001  QBJDICT.   00000  00042
X00002  RANF       00057
P00041  RANORDER   00041
P00063  TS00001.   00050
P00116  TS00002.   00073
P00003  VAL        00061  00103  00104
P00053  WS00001.   00062
P00076  WS00002.   00115
   00041 SYMBOLS
```

```
      SUBROUTINE RDCARDS                                                1000
CSUBR     RDCARDS   28APR71   ******************************************  8000
      COMMON/AATTRIT/FK,FCM,ALT,CON,RPEN                                2000
      COMMON/ABMDATA/IARDEF(2),PSEL(2),PAK(2),PREM(2),PAKD(2)           3000
CUSE      DAMAGE    28APR71   ******************************************  4000
      COMMON/DAMAGE/WTR2IMT,VULN(63)                                    1000
CEND      DAMAGE    ******************************************************  4000
      COMMON/FUTPRINT/IFUT                                              5000
      COMMON/INBOMBF/INBOMBF                                            6000
      COMMON/INREP/INREP                                                7000
      COMMON/IPRINT/IPRINT(60)                                          8000
      TYPE LOGICAL IPRINT                                               9000
      COMMON/IPSWICH/IPSW1,IPSW2,IPSW3,IPSW4,IPSW5,IPSW-               10000
     1,IPSW7                                                           11000
      COMMON/LATTRIT/DEFHI,DEFLO,RKHRP                                 12000
CUSE      NAMES     28APR71   ******************************************  13000
      COMMON/NAMES/NAMESIDE(2),NAMCLS(15),NAMETYPE(250)                 1000
CEND      NAMES     ******************************************************  13000
      COMMON/NSW/NSW                                                   14000
      COMMON/READ/HHCOUR,NET,DELAY(2)                                  15000
CUSE      TRMDATA   28APR71   ******************************************  16000
      COMMON/TRMDATA/PTK(2),NTINT(500)                                  1000
CEND      TRMDATA   ******************************************************  16000
      COMMON/VULNDATA/PG(12),PA(12),WG(8),WA(8)                        17000
      COMMON/ZONES/AREA(63),ZDEFPCT(63),ZCCPCT(63),NPENZ(63),KILLZ(63),  18000
     1MAXZONE(2)                                                       19000
      PRINT 110                                                        20000
  110 FORMAT(41H THE FOLLOWING DATA WAS READ FROM CARDS--)             21000
C     READ STARTING RANDOM NUMBER, SET RANDOM NUMBER GENERATOR         22000
      READ 104,R                                                       23000
      PRINT 117,R                                                      24000
  117 FORMAT(5X,3HR =,F11.0)                                           25000
      CALL RANFSET(R)                                                  26000
C     READ NUMBER OF EVENT TAPES                                       27000
      READ 107,NET                                                     28000
      PRINT 118,NET                                                    29000
  118 FORMAT(5X,5HNET =,I2)                                            30000
      READ 124, IPRINT                                                 31000
  124 FORMAT(80L1)                                                     32000
      PRINT 131,IPRINT                                                 33000
  131 FORMAT(6H PRINT,4X,1H-,5(9X,1H-)/1X,80L1)                        34000
C     READ VALUE FOR OPTION OF PRINTING INDATA BLOCKS READ FROM TAPE   35000
C     IPSW1 =MISSILE INDATA PRINTS  ,IPSW2 =BOMBER  ,IPSW3=TANKER      36000
C     MSLS- IPSW4=INTAR,TOF, IPSW5=XYZ*DEC,  BOMBERS- IPSW6=XYZ*WT     37000
C     NAVOBL - IPSW7                                                   38000
      READ 107,IPSW1,IPSW2,IPSW3,IPSW4,IPSW5,IPSW6                     39000
     1,IPSW7                                                           40000
      PRINT 119,IPSW1,IPSW2,IPSW3,IPSW4,IPSW5,IPSW6                    41000
     1,IPSW7                                                           42000
  119 FORMAT(5X,6HIPSW= ,7I2)                                          43000
C     READ VALUE FOR FUTIME PRINT OPTION                               44000
      READ 107,IFUT                                                    45000
      PRINT 120, IFUT                                                  46000
  120 FORMAT(5X, 6HIFUT =,I2)                                          47000
C     READ VALUE FOR OPTION OF PRINTING INDATA BLOCKS AT EXECUTION TIME 48000
      READ 1 7, NSW                                                    49000
```

```
      PRINT 111,NSW
  111 FORMAT(5X,5HNSW =,I2)
      IF(NSW .EQ. 0) 998,999
C     IF CALLED, OPTPRIN WILL READ NSW MONPRIN EXECUTION TIME DATA CARDS
  999 CALL OPTPRIN
  998 CONTINUE
      READ 107, INBOMBF
      PRINT 121, INBOMBF
  121 FORMAT(5X, 9HINBOMBF =, I2)
      READ 107, INREP
      PRINT 122, INREP
  122 FORMAT (5X,7HINREP =,I2)
C     READ AREA ATTRITION PARAMETERS
      READ 100,FK,FCM,ALT,CON,RPEN
  100 FORMAT(5F10.0)
      PRINT 101,FK,FCM,ALT,CON,RPEN
  101 FORMAT(5X,4HFK =,F6.2,6X,5HFCM =,F6.2,5X,5HALT =,F6.2,6X,
     15HCON =,F6.2,6X,6HRPEN =,F6.2)
C     READ MAX. NO. OF ZONES ON EACH SIDE
      READ 125,MAXZONE
  125 FORMAT(2I10)
      PRINT 126,MAXZONE
  126 FORMAT(16H MAX BLUE ZONE =,I3,16H MAX RED ZONE = ,I3)
C     READ LOCAL ATTRITION PARAMETERS
      READ 102, DEFHI, DEFLO, BKBRP
  102 FORMAT (3F10.0)
      PRINT 103,DEFHI,DEFLO,BKBRP
  103 FORMAT(5X,7HDEFHI =,F6.2,6X,7HDEFLO =,F6.2,6X,7HBKBRP =,F4.2)
C     READ VULNERABILITY DATA FOR VLRAD
      READ 123, (PG(I),I=1,12)
      READ 123, (PA(I), I=1,12)
      READ 123, (QG(I),I=1,8)
      READ 123, (QA(I),I=1,8)
  123 FORMAT (8F10.5)
C     READ MAXIMUM EFFECTIVE RADIUS OF ONE-MEGATON WARHEAD
      READ 104, WTR21MT
  104 FORMAT(F10.0)
      PRINT 108, WTR21MT
  108 FORMAT( 5X,9HWTR21MT =,F6.1)
  107 FORMAT(8I10)
C     READ BLUE AND RED DELAY TIMES
      READ 109,DELAY
  109 FORMAT(2F10.0)
      PRINT 105,DELAY
C     ADD A 24 HR BIAS TO THE DELAY TIMES TO ASSURE POS. FUTIMES
      DELAY(1)=DELAY(1)+24.0
      DELAY(2)=DELAY(2)+24.0
  105 FORMAT(5X,12HBLUE DELAY =,F6.3,2X,5HHRS.,,5X,11HRED DELAY =,F6.3,
     1 2X,4HHRS.)
C     READ BLUE AND RED TERMINAL BMD PARAMETERS
      READ 109,PTK
      PRINT 106,PTK
  106 FORMAT(5X, 18HBLUE TERMINAL PK =,F5.3,7X, 17HRED TERMINAL PK =,
     1 F5.3)
      PRINT 115
  115 FORMAT(4X,5H SIDE,7X,7H IARDEF,5X,5H PSEL,5X,5H  PAK,
```

```
     1 5X,5H PREM,5X,5H PAKD)                                          106000
C     READ BLUE AND RED AREA BMD PARAMETERS                            107000
      DO 15 I=1,2                                                      108000
      READ113,IARDEF(I),PSEL(I),PAK(I),PREM(I),PAKD(I)                 109000
  113 FORMAT(I10,10X,4F10.0)                                           110000
   15 PRINT114,NAMESIDE(I),IARDEF(I),PSEL(I), PAK(I),PREM(I),PAKD(I)   111000
  114 FORMAT(5X,A4,4X,I10,4F10.3)                                      112000
C     READ H-HOUR (TIME OF DAY) IN DEC. HRS. INTO COMMON               113000
      READ 114,HHOUR                                                   114000
      PRINT 130,HHOUR                                                  115000
  130 FORMAT(5X,8HH-HOUR =,F6.3)                                       116000
      PRINT 112                                                        117000
  112 FORMAT(28H END OF DATA READ FROM CARDS/)                         118000
      END                                                              119000
```

```
                                        IDENT     RDCARDS
PROGRAM LENGTH                  01175
ENTRY POINTS     RDCARDS        00341
BLOCK NAMES
                 AATTRIT        00005
                 ABMDATA        00012
                 DAMAGE         00100
                 FUTPRINT       00001
                 INBCMBF        00001
                 INREP          00001
                 IPRINT         00002
                 IPSWICH        00007
                 LATTRIT        00003
                 NAMES          00413
                 NSW            00001
                 READ           00004
                 TBMDATA        00766
                 VULNDATA       00050
                 ZONES          00475
EXTERNAL SYMBOLS
                 THENU.
                 QBQDICT.
                 RANFSET
                 OPTPRIN
                 TSH.
                 STH.
                 SL04.
                 SLI4.
                 SLO.
                 SLI.
                 QNSINGL.
```

C00002	ALT	00614	00630									
C00000	AREA											
P01170	BEGIN.	01170										
C00002	BKBRP	00671	00703									
P01167	CNVRTI.	00357	00370	00402	00413	00446	00450	00451	00452	00453	00454	00455
		00466	00467	00470	00471	00472	00473	00474	00503	00514	00523	00534
		00550	00561	00570	00601	00610	00612	00613	00614	00615	00626	00627
		00630	00631	00632	00665	00667	00670	00701	00702	00703	00714	00731
		00746	00763	00776	01007	01104	01107	01110	01111	01112	01124	01126
		01127	01130	01131	01132	01143	01154					
C00003	CON	00615	00631									
P00003	CRFNI.	00353	00373	00416	00430	00442	00477	00517	00537	00564	00604	00621
		00635	00647	00661	00674	00706	00772	01002	01012	01012	01024	01044
		01170	01076	01116	01137	01157	01165					
C00000	DEFHI	00666	00666	00700	00700							
C00001	DEFLO	00670	00702									
C00002	DELAY	01021	01033	01036	01036	01040	01040	01041	01042	01043		
P00001	DICT.	00343	00347	00352	00355	00362	00365	00372	00374	00400	00405	00410
		00415	00420	00424	00427	00432	00436	00441	00444	00460	00463	00476
		00501	00506	00511	00516	00521	00526	00531	00536	00543	00546	00553
		00556	00563	00566	00573	00576	00603	00606	00620	00623	00634	00637
		00643	00646	00651	00655	00660	00663	00673	00676	00705	00710	00722
		00725	00737	00742	00754	00757	00771	00774	01001	01004	01011	01014
		01020	01023	01026	01032	01035	01046	01052	01055	01060	01064	01067
		01072	01075	01102	01115	01120	01134	01141	01146	01151	01156	01161
		01164										
P01171	ENDING.	00344	01165									
P00000	EXIT.	01171										
C00001	FCM	00613	00627									
C00000	FK	00611	00611	00625	00625							
P00003	FORMAT.											
P00353	GG000000.	00345										
P00363	GG000001.	00353										
P00373	GG000002.	00363										
P00406	GG000003.	00376										
P00416	GG000004.	00406										
P00430	GG000005.	00416										
P00442	GG000006.	00430										
P00461	GG000007.	00442										
P00477	GG000010.	00461										
P00507	GG000011.	00477										
P00517	GG000012.	00507										
P00527	GG000013.	00517										
P00537	GG000014.	00527										
P00554	GG000015.	00544										
P00564	GG000016.	00554										
P00574	GG000017.	00564										
P00604	GG000020.	00574										
P00621	GG000021.	00604										
P00635	GG000022.	00621										
P00647	GG000023.	00635										
P00661	GG000024.	00647										
P00674	GG000025.	00661										
P00706	GG000026.	00674										

```
P00723  GGOOO27.   00706
P00740  GGOOO30.   00723
P00755  GGOOO31.   00740
P00772  GGOOO32.   00755
P01002  GGOOO33.   00772
P01012  GGOOO34.   01002
P01024  GGOOO35.   01012
P01036  GGOOO36.   01024
P01056  GGOOO37.   01044
P01070  GGOOO40.   01056
P01076  GGOOO41.   01070
P01116  GGOOO42.   01100
P01135  GGOOO43.   01116
P01147  GGOOO44.   01137
P01157  GGOOO45.   01147
P01165  GGOOO46.   01157
C00000  MMCOR      01144  01144  01153  01153
P01173  I          00713  00715  00717  00730  00732  00734  00745  00747  00751  00762  00766
                   00766  01077  01105  01122  01135
C00000  IANDEF     01106  01106  01125  01125
C00000  IFUT       00504  00504  00513  00513
C00000  INMCMRF    00551  00551  00560  00560
P01170  INITIAL.   00344
C00000  INREP      00571  00571  00600  00600
C00000  IPRINT     00425  00437
C00000  IPSW1      00447  00447  00465  00465
C00001  IPSW2      00451  00467
C00002  IPSW3      00452  00470
C00003  IPSW4      00453  00471
C00004  IPSW5      00454  00472
C00005  IPSW6      00455  00473
C00006  IPSW7      00456  00474
P01116  .15
P00544  .999       00541
P00542  .999       00540
P00111  ..100      00607
P00114  ..101      00624
P00157  ..102      00664
P00162  ..103      00677
P00203  ..104      00356  00775  01142
P00223  ..105      01027
P00245  ..106      01061
P00215  ..107      00401  00445  00502  00522  00547  00567
P00206  ..108      01005
P00220  ..109      01015  01047
P00033  ..110      00350
P00066  ..111      00532
P00331  ..112      01162
P00307  ..113      01103
P00314  ..114      01121
P00263  ..115      01073
P00014  ..117      00300
P00022  ..116      00411
P00052  ..119      00404
```

```
P00060  ..120    00512
P00074  ..121    00557
P00103  ..122    00577
P00200  ..123    00711   00726   00743   00760
P00030  ..124    00421
P00142  ..125    00640
P00145  ..126    00652
P00323  ..130    01152
P00033  ..131    00433
C00374  KILLZ
C00473  MAXZONE  00644   00656
C00002  NAMCLS
C00000  NAMESIDE 01123   01123
C00021  NAMETYPE
C00001  NET      00403   00403   00412   00412
C00275  NPENZ
C00000  NSW      00524   00524   00533   00533   00537   00537
C00002  NTINT
X00004  OPTPRIN  00542
C00014  PA       00733   00733
C00004  PAR      01111   01130
C00010  PARD     01113   01132
C00000  PG       00716   00716
C00006  PREM     01112   01131
C00002  PSEL     01110   01127
C00000  PTR      01053   01065
X00002  QBWDICT. 00000   00342
C00040  QA       00765   00765
C00030  QG       00750   00750
X00013  QNSINGL. 01166
P01174  R        00360   00367   00375
X00003  RANFSET  00373
P00341  RDCARDS  00341
C00004  RPEN     00616   00632
X00010  SLI4.    00423
X00012  SLI.     00642   01017   01051
X00007  SLO4.    00435
X00011  SLO.     00654   01031   01063
X00006  STM.     00346   00364   00407   00431   00462   00510   00530   00555   00575   00622   00650
                 00675   01003   01025   01057   01071   01117   01150   01160
X00001  THEND.   00351   00361   00371   00404   00414   00426   00440   00457   00475   00505   00515
                 00525   00535   00552   00562   00572   00602   00617   00633   00645   00657   00672
                 00704   00721   00736   00753   00770   01000   01010   01022   01034   01054   01066
                 01074   01114   01133   01145   01155   01163
X00005  TSM.     00354   00377   00417   00443   00500   00520   00545   00565   00605   00636   00662
                 00707   00724   00741   00756   00773   01013   01045   01101   01140
C00001  VULN
P00714  WS00001. 00720
P00731  WS00002. 00735
P00746  WS00003. 00752
P00763  WS00004. 00767
P01100  WS00005. 01136
C00000  WTH21MT  00777   00777   01006   01006
C00176  ZCCPOT
```

C00077 ZDEFPOT
00216 SYMBOLS

```
      SUBROUTINE READIN                                                 1000
CSUBR     READIN    18AUG71   ******************************************12000
C     READS IN DATA FROM LIBRARY DATA TAPE                              2000
      COMMON/AREADAT/AINT(20,3),NLRR(20),ICVERLAP(20),KRAD              3000
CUSE      ASMS      28APR71   ******************************************4000
      COMMON/ASMS/PLABORT(20),CEPA(20)                                  1000
CEND      ASMS      ******************************************************4000
CUSE      BOMBER    28APR71   ******************************************5000
      COMMON/BOMBER/PLABT(80),TMDEL(80),ABRATE(80),PRABT(80),CEPB(80),  1000
     1     TLINTB(80),IFUNCB(80)                                        2000
CEND      BOMBER    ******************************************************5000
CUSE      BRKPNT    28APR71   ******************************************6000
      COMMON/BRKPNT/NTYPECUM(15),NBLUETYP(15),INDBEGCL(15),INDBEGTY(250) 1000
CEND      BRKPNT    ******************************************************6000
      COMMON/CAPACITY/DEFPCT(40),CCPCT(40)                              9000
CUSE      DAMAGE    28APR71   ******************************************10000
      COMMON/DAMAGE/*TRZIMT,VULN(63)                                    1000
CEND      DAMAGE    ******************************************************10000
CUSE      FILABEL   28APR71   ******************************************10100
      COMMON/FILABEL/INIDENT,INRUNNO,INDATE,                            1000
     1    INFORM,INSECN,INTIME,INLNGTH,INCUMM(5)                        2000
CEND      FILABEL   ******************************************************10100
      DATA(JDATE = 8HNOV70    )                                         10300
CUSE      MISSLE    28APR71   ******************************************11000
      COMMON/MISSLE/PINC(80),PABORT(80),PDES(80),PFPF(80),TPOWER(80),   1000
     1     TRET(80),IR(80),CEPM(80),PKMIS(80),TLINTM(80),IFUNCM(80)     2000
CEND      MISSLE    ******************************************************11000
CUSE      NAMES     28APR71   ******************************************12100
      COMMON/NAMES/NAMESIDE(2),NAMCLS(15),NAMETYPE(250)                 1000
CEND      NAMES     ******************************************************12100
      COMMON/NAVDATA/PK(10,10),TK(10,10)                                13000
      COMMON/NCOL/NCOL,MAXIND                                           14000
      COMMON/PAYLOAD/MIRV(40,2),IWTYP(40,2),NBOMB(40,2),NTUEC(40,2),    15000
     1 NADEC(40,2)                                                      16000
CUSE      TANKER    28APR71   ******************************************17000
      COMMON/TANKER/TPLABT(40),TTMDEL(40),                              1000
     1     TARRATE(40),TLINTT(40),IFUNCT(40)                            2000
CEND      TANKER    ******************************************************17000
CUSE      TRMDATA   28APR71   ******************************************18000
      COMMON/TRMDATA/PTK(2),NTINT(500)                                  1000
CEND      TRMDATA   ******************************************************18000
      COMMON/TWORD/TWORD,ITWORD                                         19000
      EQUIVALENCE(TWORD,ITWORD)                                         20000
CUSE      WARHEAD   28APR71   ******************************************21000
      COMMON/WARHEAD/YIELD(50),PDUD(50),CEPW(50)                        1000
CEND      WARHEAD   ******************************************************21000
      COMMON/ZONES/AREA(63),ZDEFPCT(63),ZCCPCT(63),NPENZ(63),KILLZ(63), 22000
     1 MAXZONE(2)                                                       23000
      DIMENSION BOM(80,7),MIS(80,11),TANK(40,5)                         24000
      EQUIVALENCE(BOM,PLABT),(MIS,PINC),(TANK,TPLABT)                   25000
CUSE      NRCELL    22JUN71   ******************************************26000
      COMMON/19501/NRCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NRCELL    ******************************************************26000
                                                                        27000
C     PUT TAPE IN READ STATUS                                           28000
      CALL SETREAD                                                      29000
```

```
C     CHECK SIMTAPE FORMAT
      IF(INFORM.EQ.JDATE) 1,2
    2 PRINT 90014,INFORM,JDATE
90014 FORMAT(//,18H SIMTAPE FORMAT IS,A8,10H SHOULD BE,A8)
      STOP
C     READ BREAKPOINT TABLE DATA
    1 CALL RDWORD
      NTYPE=ITWORD
      PRINT 90001,NTYPE
90001 FORMAT(2X,9HNTYPE=          ,I5)
      CALL RDARRAY(INDREGTY,NTYPE)
      CALL RDARRAY(NAMETYPE,NTYPE)
      CALL RDARRAY(NTYPECUM,15)
      CALL RDARRAY(NBLUETYP,15)
      CALL RDARRAY(INDBEGCL,15)
      CALL RDARRAY(NAMCLS,15)
C     READ HARDNESS TABLE DATA
      CALL RDWORD
      NVULN=ITWORD
      PRINT 90002,NVULN
90002 FORMAT(2X,9HNVULN           ,I5)
      CALL RDARRAY(VULN,NVULN)
C     READ COLOCATED TARGETS DATA
      CALL RDWORD
      NCOL=ITWORD
      PRINT 90003,NCOL
90003 FORMAT(2X,9HNCOL            ,I5)
C     CHECK THAT NO. OF COLOCATED TARGETS DOES NOT EXCEED ARRAY SIZE
      IF(NCOL.GT.400) 99,5
    5 CALL RDARRAY(COLAR,NCOL)
C     READ NO. OF TERMINAL DEFENDERS AT EACH COMPLEX
      CALL RDWORD
      NTDEF = ITWORD
      CALL RDARRAY(NTINT,NTDEF)
C     READ AREA ABM DEFENSE DATA
      CALL RDWORD
      CALL RDARRAY(AINT,60)
      CALL RDWORD
      CALL RDARRAY(NLRR,20)
      CALL RDWORD
      CALL RDARRAY(IOVERLAP,20)
C     READ STATUS DATA
      CALL RDWORD
      MAXINO=ITWORD
90013 FORMAT(2X,9HMAXINO          ,I5)
      PRINT 90013,MAXINO
      CALL RDARRAY(STATUS,MAXINO)
C     READ MISSILE DATA
      CALL RDWORD
      NMIS=ITWORD
      PRINT 90004,NMIS
90004 FORMAT(2X,9HNMIS            ,I5)
      DO 1, IM = 1,11
      CALL RDARRAY(MIS(1,IM),NMIS)
    1 CONTINUE
C     READ NUMBER DATA
```

```
      CALL ROWORD
      NHOM=ITWORD
      PRINT 90005,NHOM
90005 FORMAT(2X,9HNHOM          ,I5)
      DO 20 IH = 1,7
      CALL ROARRAY(BOM(1,IB),NHOM4)
   20 CONTINUE
C     READ TANKER DATA
      CALL ROWORD
      NTANK=ITWORD
      PRINT 90006,NTANK
90006 FORMAT(2X,9HNTANK         ,I5)
      DO 30 IT = 1,5
      CALL ROARRAY(TANK(1,IT),NTANK)
   30 CONTINUE
C     READ ASM DATA
      CALL ROWORD
      NASM=ITWORD
      PRINT 90007,NASM
90007 FORMAT(2X,9HNASM=         ,I5)
      CALL ROARRAY(PLANCHT,NASM)
      CALL ROARRAY(CEPA,NASM)
C     READ WARHEAD DATA
      CALL ROWORD
      NWHD=ITWORD
      PRINT 90008,NWHD
90008 FORMAT(2X,9HNWHD=         ,I5)
      CALL ROARRAY(PDOD,NWHD)
      CALL ROARRAY(YIELD,NWHD)
      CALL ROARRAY(CEPW,NWHD)
C     READ ZONE DATA
      CALL ROWORD
      NZON=ITWORD
      PRINT 90009,NZON
90009 FORMAT(2X,9HNZON=         ,I5)
      CALL ROARRAY(AREA,NZON)
      CALL ROARRAY(ZCCPCT,NZON)
      CALL ROARRAY(ZDEFPCT,NZON)
C     READ DEFENSIVE COMMAND/CONTROL EFFECTIVENESS DATA
      CALL ROWORD
      NTYPCC=ITWORD
      PRINT 90010,NTYPCC
90010 FORMAT(2X,9HNTYPCC=       ,I5)
      CALL ROARRAY(CCPCT,NTYPCC)
C     READ INTERCEPTOR EFFECTIVENESS DATA
      CALL ROWORD
      NTYPIN=ITWORD
      PRINT 90011,NTYPIN
90011 FORMAT(2X,9HNTYPIN        ,I5)
      CALL ROARRAY(DEFPCT,NTYPIN)
C     READ PAYLOAD DATA
      DO 40 I=1,2
      CALL ROWORD
      NPAYLOAD = ITWORD
      PRINT 90012,NPAYLOAD
90012 FORMAT(2X,9HNPAYLOAD=     ,I5)
```

```
      CALL RDARRAY(MIRV (1,I),NPAYLOAD)
      CALL RDARRAY(IWTYP(1,I),NPAYLOAD)
      CALL RDARRAY(NSCMB(1,I),NPAYLOAD)
      CALL RDARRAY(NTDEC(1,I),NPAYLOAD)
      CALL RDARRAY(NADEC(1,I),NPAYLOAD)
   40 CONTINUE
      CALL RDWORD
      NWORDS=ITWORD
      CALL RDARRAY(PK,NWORDS)
      CALL RDARRAY(TK,NWORDS)
      CALL TERMTAPE
      RETURN
C     TOO MANY COLOCATED TARGETS--PRINT MESSAGE AND ABORT
   99 PRINT 101,NCOL
  101 FORMAT(7H NCOL =,I6,22H EXCEEDS LIMIT OF 4000)
      CALL ABORT
      END
```

```
                                        IDENT     READIN
PROGRAM LENGTH                  01015
ENTRY POINTS      READIN        00164
BLOCK NAMES
                  AREADAT       00145
                  ASMS          00050
                  BOMBER        01060
                  BRKPNT        00447
                  CAPACITY      00120
                  DAMAGE        00100
                  FILABEL       00014
                  MISSLE        1560
                  NAMES         00413
                  NAVDATA       00310
                  NCOL          00002
                  PAYLOAD       00620
                  TANKER        00310
                  THMDATA       00766
                  TWORD         00001
                  WARHEAD       00220
                  ZONES         00475
                  195.01        54731
EXTERNAL SYMBOL
                  THEND.
                  QRQSTOPS
                  QBODICT.
                  SETREAD
                  RDWORD
                  RDARRAY
                  TERMTAPE
                  ABORT
                  STH.
                  QNSINGL.
```

```
X00010  ABORT      00674
C00240  ABRATE
C00000  AINT       00321
C00000  AREA       00536
P00765  BEGIN.     00765
C00000  BCM        00417   00422
C00050  CCPCT      00562
C00024  CEPA       00474
C00500  CEPB
C01060  CEPM
C00144  CEPW       00520
P00700  CNVRTI.    00202   00204   00222   00257   00275   00344   00362   00410   00436   00464   00505
                   00531   00555   00573   00614   00671
C45071  COLAR      00305
P00004  CRFMT.     00207   00225   00262   00300   00340   00365   00413   00441   00467   00510   00534
                   00560   00576   00617   00674
C00000  DEFPCT     00600
P00001  DICT.      00166   00171   00177   00206   00211   00213   00220   00224   00226   00231   00234
                   00237   00242   00245   00250   00255   00261   00263   00266   00273   00277   00304
                   00307   00313   00315   00320   00323   00325   00330   00332   00335   00342   00346
                   00350   00353   00360   00364   00373   00401   00406   00412   00421   00427   00434
                   00440   00447   00455   00462   00466   00470   00473   00476   00503   00507   00511
                   00514   00517   00522   00527   00533   00535   00540   00543   00546   00553   00557
                   00561   00564   00571   00575   00577   00605   00612   00616   00622   00626   00632
                   00636   00642   00650   00654   00657   00662   00666   00673   00675
P00766  ENDING.    00167   00211   00663   00676
P00000  EXIT.      00766
P00004  FORMAT.
P00207  GG00000.   00175
P00225  GG00001.   00216
P00262  GG00002.   00253
P00300  GG00003.   00271
P00347  GG00004.   00340
P00365  GG00005.   00356
P00413  GG00006.   00404
P00441  GG00007.   00432
P00467  GG00010.   00460
P00510  GG00011.   00501
P00534  GG00012.   00525
P00560  GG00013.   00551
P00576  GG00014.   00567
P00617  GG00015.   00610
P00674  GG00016.   00664
P00774  I          00602   00644   00757
P00775  IB         00414   00423   00727
C00740  IFUNCB
C01440  IFUNCM
C00240  IFUNCT
P00776  IM         00366   00375   00713
P00701  IN00001.   00370   00705   00717
P00702  IN00002.   00416   00721   00733
P00703  IN00003.   00444   00735   00747
P00704  IN00004.   00617   00751   00763
C00007  INCOMM
```

C00002	INDATE											
C00036	INDREGCL	00243										
C00055	INDREGTY	00227										
C00003	INFORM	00172	00172	00201	00201							
C00000	INIDENT											
P00765	INITIAL.	00157										
C00006	INLNGTH											
C00001	INRUNNO											
C00004	INSECR											
C00005	INTIME											
C00120	ICVERLAP	00333										
C00740	IR											
P00777	IT	00442	00451	00743								
C00000	ITWORD	00214	00214	00251	00251	00267	00267	00310	00310	00336	00336	00354
		00354	00402	00402	00430	00430	00456	00456	00477	00477	00523	00523
		00547	00547	00565	00565	00606	00606	00651	00651			
C00120	IWTYP	00624	00627									
P00212	.1	00174										
P00375	.10											
P00175	.2	00174										
P00423	.20											
P00451	.30											
P00644	.40											
P00383	.5	00301	00302									
P00664	.99	00302										
P00153	..101	00657										
P00020	..90001	00221										
P00027	..90002	00256										
P00036	..90003	00274										
P00054	..90004	00361										
P00063	..90005	00407										
P00072	..90006	00435										
P00101	..90007	00463										
P00110	..90008	00504										
P00117	..90009	00530										
P00126	..90010	00554										
P00135	..90011	00572										
P00144	..90012	00613										
P00045	..90013	00343										
P00004	..90014	00200										
P00374	.Z00001.	00371										
P00422	.Z00002.	00417										
P00450	.Z00003.	00445										
P00623	.Z00004.	00620										
P00627	.Z00005.	00624										
P00633	.Z00006.	00630										
P00637	.Z00007.	00634										
P00643	.Z00010.	00640										
P00003	JDATE	00173	00203									
C00374	KILLZ											
C00144	KRAD											
C00001	LINK4											
C00001	MAAIND	00337	00337	00344	00351							
C00473	MAXZONE											

C00000	MIRV	00620	00623									
C00000	MIS	00371	00374									
C00500	NADEC	00640	00643									
C00002	NAMCLS	00246										
C00000	NAMESIDE											
C00021	NAMETYPE	00232										
P01000	NASM	00457	00464	00471	00474							
C00000	NBCELL											
C00017	NBLUETYP	00240										
P01001	NBOM	00403	00410	00422								
C00240	NBOMB	00630	00633									
C00000	NCOL	00270	00270	00275	00300	00300	00305	00670	00675			
C00074	NLNR	00360										
P01002	NMIS	00355	00362	00374								
P01003	NPAYLOAD	00607	00614	00623	00627	00633	00637	00643				
C00275	NPENZ											
P01004	NTANK	00431	00436	00450								
C00360	NTDEC	00634	00637									
P01005	NTDEF	00311	00314									
C00002	NTINT	00314										
P01006	NTYPCC	00550	00555	00562								
P01007	NTYPE	00215	00222	00227	00232							
C00000	NTYPECOM	00235										
P01010	NTYPIN	00566	00573	00650								
P01011	NVOLM	00252	00257	00264								
P01012	NWHD	00500	00505	00512	00515	00520						
P01013	NWORDS	00652	00655	00660								
P01014	NZON	00524	00531	00536	00541	00544						
P00705	P00000.0	00716										
P00721	P00001.0	00724										
P00735	P00002.0	00740										
P00751	P00003.0	00754										
C00120	PABORT											
C00240	PDES											
C00062	PDUD	00512										
C00360	PFPF											
C00000	PINC											
C00000	PK	00655										
C01200	PKMIS											
C00000	PLABORT	00471										
C00000	PLART											
C00360	PRART											
C00000	PTR											
X00003	QBADICT.	00000	00165									
X00002	QBUSTOPS	00210										
X00012	QNSINGL.	00077										
X00006	RDARRAY	00225	00230	00233	00236	00241	00244	00262	00303	00312	00317	00324
		00331	00347	00372	00420	00446	00467	00472	00510	00513	00516	00534
		00537	00542	00560	00576	00601	00625	00631	00635	00641	00653	00656
X00005	RDHORD	00212	00247	00265	00306	00315	00322	00327	00334	00352	00400	00426
		00454	00475	00521	00545	00603	00604	00647				
P00164	READIN	00164										
X00004	SETREAD	00170										
C15531	STATUS	00351										

```
X00011  STM.      00179  00217  00254  00272  00341  00357  00405  00433  00401  00506  00526
                  00552  00573  00611  00665
C00120  TABRATE
C00000  TAUK      00445  00450
X00007  TERATAPF  00001
X00001  THEN.     00205  00223  00280  00275  00345  00363  00411  00437  00405  00506  00532
                  00555  00574  00615  00672
C00144  TK        00000
C00620  TLINIK
C01320  TLINTK
C00170  TLINTT
C00120  TMOEL
C00000  TPLANT
C00500  TPOWER
C00620  TRET
C00050  TTMOEL
C00000  TWORK
P00712  UP00000.  00367  00376  00706  00713  00716  00715  00717  00720
P00726  UP00001.  00415  00424  00722  00727  00730  00731  00733  00734
P00742  UP00002.  00443  00452  00736  00743  00744  00745  00747  00750
P00756  UP00003.  00503  00645  00752  00757  00760  00761  00763  00764
C00001  VOLN      00204
P00370  WS00001.  00377
P00416  WS00002.  00425
P00444  WS00003.  00453
P00604  WS00004.  00646
C00000  WTWZIMT
C00000  YIELD     00515
C00176  ZCCPOT    00541
C00077  ZDEFPOT   00544
   00250 SYMBOLS
```

```
      SUBROUTINE RECHER
CSUBR     RECHER    28APR71   ****************************************
CUSE      EDATAR    4JAN71    ****************************************
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHCHC,ITYPC,
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),
     2IHTC,JHTC,XX(2),NALTC,IABORTC,TINCC(80),INDPC(80),INDEC(80),
     3 IWTYPC(12),ADGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(320),SIDE,
     4 IABASE,INDV,INTAR,NWTYP,DGX,DGY,DHCB,ITYPE,ICLASS,IREG,IALERT,
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JHT,EXTRA(2),NALT,
     6IABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),ADGZ(12),YDGZ(12),
     7ZDGZ(12),INDATA(320)
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MHT,JHT)
      TYPE INTEGER DGX,DGY,DHCB,XDGZ,YDGZ,ZDGZ
      TYPE INTEGER DGXC,DGYC,DHCBC,ADGZC,YDGZC,ZDGZC
      TYPE INTEGER OUTDATA,SIDE,SIDEC
CEND      EDATAR    ****************************************
CUSE      RECOV     28APR71   ****************************************
      COMMON/RECOV/IRECOV(50,4,2),TOFREC(50,4,2),NMORE(50,4,2),
     1        NRFS(50,4,2),LSHIFT
CEND      RECOV     ****************************************
      COMMON/HISREC/IREC,IDEPEN,LAZONE
      COMMON/NWORDOUT/NWORDOUT
      COMMON/KEY/ORDS/KEYARRAY(20)
      EQUIVALENCE(KEYARRAY(1),TSTAT)
CUSE      NHCELL    22JUN71   ****************************************
      COMMON/19501/NHCELL,LINKM(7000),STATUS(12000),COLAR(4000)
CEND      NHCELL    ****************************************
C     CHECK IF RECOVERY AT HOME BASE
    1 IF(INDE .EQ. 19) 6,2
C     UNPACK NUMBER IDEPEN
    2 IR=INDP/LSHIFT
      IS = SIDE
      IDEPEN=INDP-IR*LSHIFT
      IREC = IRECOV(IDEPEN,IR,IS)
    3 ILIVE=IGET(TSTAT,IREC,STATUS)
      IF(ILIVE)5,4
C     BASE KILLED AFTER RECOVERY
    4 CALL HIST(19,1)
      IF(INDE .EQ. 19) 7,41
   41 CALL HIST(19,2)
      RETURN
    5 NWORDOUT=0
      RETURN
    6 IREC=INDP
      GO TO 3
    7 CALL HIST(19,3)
      END
```

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```
                                        IDENT     RECHEK
PROGRAM LENGTH                  00136
ENTRY POINTS      RECHEK        00003
BLOCK NAMES
                  EDATA         01200
                  RECOV         03101
                  H1SREC        00003
                  NWORDOUT      00001
                  KEYWORDS      00024
                  195-L         54731
EXTERNAL SYMBOLS
                  BHODICT.
                  IGET
                  HIST
```

```
C00472  R
P00122  REGIN.      00123
C45071  SCLAR
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHCR
C00007  DHCRC
P00001  DICT.       00005  00033  00041  00050  00062
P00124  ENDING.     00006  00053  00055  00065
P00000  EXIT.       00124
C00526  EXTRA
X00003  HIST        00040  00047  00061
C00513  IALERT
C00013  IALERTC
C00517  IALT
C00017  IALTC
C00001  IBASE
C00511  ICLASS
C00011  ICLASSC
C00001  IDEPEN      00024  00025  00114  00114
X00002  IGET        00032
C00524  IHT
C00024  IHTC
P00133  ILIVE       00036
P00066  INCODGT.    00027  00100  00110  00120
C00501  INBASE
C00500  INDATA
C00772  INDE        00007  00007  00044  00044
C00272  INDEC
C00002  INDM
C00652  INDP        00012  00012  00023  00024  00056  00056
C00152  INDPC
C00502  INDV
P00123  INITIAL.    00006
C00503  INTAR
C00514  INZONE
C00014  INZONC
P00134  IR          00015  00022  00074
C00000  IREC        00031  00031  00034  00057  00057
C00000  IRECOV      00030  00030
C00512  IREG
C00012  IREGC
P00135  IS          00020  00104
C00510  ITYPE
C00010  ITYPC
C01112  ITYP
C00412  ITYPC
P00007  .1
P00012  .2          00010
P00032  .3          00060
P00040  .4
P00047  .41         00045
```

```
P00054  .5          00037
P00058  .6          00011
P00061  .7          00046
C00003  JNTAR
C00525  JWI
C00025  JWIC
C00000  KEYARRAY
C00002  LAZONE
C00001  LINKM
C03100  LSHIFT      00014   00014   00062   00023
C00524  MHI
C00525  MWI
C00530  NALT
C00030  NALTC
C00000  NCOLL
C00520  NCI
C00020  NCIC
C00515  NLHI
C00015  NLHIC
C00516  NOLC
C00016  NOLCC
C01440  NMORE
C00530  NPLAT
C02200  NRES
C00000  NRESPOUT    00054   00055
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00521  PRNAV
C00021  PRNAVC
X00001  GRADICT.    00000   00004
P00003  HECHEK      00003
P00070  HELCON..    00043   00052   00064   00122
C00500  SIDE        00017   00017
C00000  SIDEC
C00522  SPARE
C00022  SPC
C15531  STATUS      00035
C00531  TAMOHT
C00031  TAMOHTC
C00532  TINC
C00032  TINCC
C00620  TOPREC
C00000  TSTAT       00054
P00073  UPD00000.   00015   00074   00075   00076   00100   00101
P00103  UPD00001.   00021   00104   00105   -00105  00110   00111
P00113  UPD00002.   00026   00067   00115   00116   00117   00121   00121
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C01158  ZDGZ
C00456  ZDGZC
   00154 SYMBOLS
```

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```
      SUBROUTINE RECOVERY
CSUBR     RECOVERY  26APR71   ***********************************************
C     TESTS IF A BOMBER IS RECOVERED AFTER COMPLETING ITS MISSION
CUSE      EDATAR    4JAN71    ***********************************************
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHCBC,ITYPC,
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2),
     2IHTC,JWTC,XX(2),HALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(8),OUTDATA(32),SIDE,
     4 INBASE,INDM,JNTAR,NWTYP,DGX,DGY,DHCB,ITYPE,ICLASS,IREG,IALERT,
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),HALT,
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),
     7ZDGZ(12),INDATA(32)
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)
      TYPE INTEGER DGX,DGY,DHCB,XDGZ,YDGZ,ZDGZ
      TYPE INTEGER DGXC,DGYC,DHCBC,XDGZC,YDGZC,ZDGZC
      TYPE INTEGER OUTDATA,SIDE,SIDEC
CEND      EDATAR    ***********************************************************
      COMMON/KEYWORDS/KEYARRAY(20)
      EQUIVALENCE (KEYARRAY(1),TSTAT)
      COMMON/TIME/TIME,FUTIME
CUSE      RECOV     26APR71   ***********************************************
      COMMON/RECOV/IRECOV(50,4,2),IGFREC(50,4,2),NMORE(50,4,2),
     1        NRES(50,4,2),LSHIFT
CEND      RECOV     ***********************************************************
      DATA(LSHIFT=100H)
      COMMON/HISREC/IREC,IDEPEN,LAZONE
      COMMON/HISTOUT/NHISTOUT(200)
      EQUIVALENCE (NHISTOUT(20),NDEPEN)
      EQUIVALENCE (NHISTOUT( 7),NEVENT)
CUSE      NBCELL    22JUN71   ***********************************************
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)
CEND      NBCELL    ***********************************************************

      CALL HIST(16,1)
      IS = SIDE
C     TEST IF RECOVERY AT HOME BASE
    1 IF(INDE .EQ. 10) 12,2
C     UNPACK IDEPEN,IR
    2 IR=INDP/LSHIFT
C     TEST IF LIVE BASE AVAILABLE ON DEPENTRATION
      IF(IR .GE. 1) 4,3
    3 CALL HIST(16,4)
      RETURN
    4 IDEPEN=INDP-IR*LSHIFT
      IREC = IRECOV(IDEPEN,IR-IS)
      NDEPEN=IREC
C     TEST IF RECOVERY BASE KILLED AFTER DEPENETRATION
      ILIVE=IGET(TSTAT,IREC,STATUS)
    5 IF(ILIVE)6,11
    6 NMORE(IDEPEN,IR,IS) = NMORE(IDEPEN,IR,IS) - 1
      INDEC=0
C     TEST IF RECOVERY BASE SATURATED
    7 IF(NMORE(IDEPEN,IR,IS) .GE.0) 9,8
C     BASE SATURATED
    8 CALL HIST(16,5)
```

```
      GO TO 10
C     BASE UNSATURATED
    9 CALL HIST(16,2)
C     PLANT CHECK EVENT TO SEE IF BOMBER KILLED AFTER RECOVERY
   10 INDPC=INDP
      IWTC=1
      JWTC=0
      FUTIME=TIME+50.
      CALL PLANTS(19,12)
      RETURN
C     RECOVERY BASE DEAD ON ARRIVAL
   11 CALL HIST(16,3)
      RETURN
C     RECOVERY AT HOME BASE
   12 ILIVE=IGET(TSTAT,INDP,STATUS)
      NEVENT=16
      NDEPEN=0
      IREC=INDP
      IF(ILIVE) 13,14
   13 CALL HIST(16,6)
      INDEC=19
      GO TO 10
C     HOME BASE DEAD
   14 CALL HIST(16,7)
      END
```

```
                                        IDENT     RECOVERY
PROGRAM LENGTH                  00226
ENTRY POINTS      RECOVERY      00003
BLOCK NAMES
                  EDATA         01200
                  KEYWORDS      00024
                  TIME          00002
                  RECOV         03101
                  HISREC        00003
                  HISTOUT       00310
                  19501         54731
EXTERNAL SYMBOLS
                  QBQDICT.
                  HIST
                  IGET
                  PLANTS
```

C00472	H											
P00203	BEGIN.	00204										
C45071	COLAR											
C00505	DGX											
C00005	DGXC											
C00506	DGY											
C00006	DGYC											
C00507	DHCB											
C00007	DHCBC											
P00001	DICT.	00005	00010	00031	00047	00067	00074	00107	00114	00121	00135	00143
P00205	ENDING.	00006	00034	00112	00117	00146						
P00000	EXIT.	00205										
C00526	EXTRA											
C00001	FUTIME	00104	00105									
X00002	HIST	00007	00030	00066	00073	00113	00134	00142				
C00513	IALERT											
C00013	IALERTC											
C00517	IALT											
C00017	IALTC											
C00001	IBASE											
C00511	ICLASS											
C00011	ICLASSC											
C00001	IDEPEN	00040	00040	00175	00175							
X00003	IGET	00046	00120									
C00524	IHT											
C00024	IHTC	00101										
P00223	ILIVE	00052	00053	00124	00132							
P00147	INDUCT.	00042	00055	00062	00161	00171	00201					
C00501	INBASE											
C00500	INDATA											
C00772	INDE	00016	00016									
C00272	INDEC	00060	00061	00140	00141							
C00002	INDM											
C00652	INDP	00021	00021	00037	00037	00077	00077	00122	00127	00130		
C00152	INDPC	00100										
C00502	INDV											
P00204	INITIAL.	00006										
C00503	INTAR											
C00514	INZONE											
C00014	INZONC											
P00224	IR	00024	00035	00165								
C00000	IREC	00044	00044	00050	00130	00131						
C00000	IRECOV	00043	00043									
C00512	IREG											
C00012	IREGC											
P00225	IS	00014	00155									
C00510	ITYPE											
C00010	ITYPC											
C01112	IWTYP											
C00412	IWTYPC											
P00016	.1											
P00077	.10	00072	00141									
P00113	.11	00054										
P00120	.12	00020										

P00134	.13	00132								
P00142	.14	00133								
P00021	.2	00017								
P00030	.3	00027								
P00035	.4	00026	00027							
P00053	.5									
P00055	.6	00054								
P00062	.7									
P00066	.8	00065								
P00073	.9	00064	00065							
C00033	JNIAW									
C00525	JWT									
C00027	JWTC	00102								
C00000	KEYARRAY									
C00002	LAZONE									
C00001	LINKM									
C03100	LSHIFT	00003	00023	00023	00036	00036				
C00524	MHI									
C00525	MWT									
C00530	MALT									
C00030	MALTC									
C00000	MBCELL									
C00520	MC4									
C00020	MC4C									
C00023	MDEPEN	00045	00045	00127						
C00515	MDHI									
C00015	MDHIC									
C00516	MDLC									
C00016	MDLCC									
C00006	MEVENT	00125	00126							
C00000	MHISTOUT									
C01440	MMORE	00056	00056	00057	00063	00063				
C00530	MPLAN									
C02260	MRES									
C00534	MSTYP									
C00004	MWTYPC									
C00000	OUTDATA									
C00521	PKWAY									
C00021	PKWAYC									
X00004	PLASTS	00105								
X00001	PROJECT.	00000	00004							
P00003	RECOVERY	00003								
P00151	RELCON..	00012	00033	00071	00076	00111	00115	00137	00145	00203
C00500	SIDE	00013	00013							
C00000	SIDEC									
C00522	SPARE									
C00022	SPC									
C15541	STATUS	00051	00123							
C00531	TARGET									
C00031	TARGETC									
C00000	TIME	00102	00103							
C00532	TINC									
C00032	TINCC									
C00620	TOPREC									

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```
C00000  1STA1     00050  00122
P00154  UP00000.  00015  00155  00156  00157  00161  00162
P00164  UP00001.  00025  00165  00166  00167  00171  00172
P00174  UP00002.  00041  00150  00176  00177  00200  00202  00202
C01126  XDGZ
C00426  XDGZC
C00026  XX
C01142  YDGZ
C00442  YDGZC
C01156  ZDGZ
C00456  ZDGZC
   00167 SYMBOLS
```

```
      SUBROUTINE REFUEL                                                 1000
CSUBR     REFUEL    26APR71   ******************************************  1000
C     TESTS FOR SUCCESSFUL BOMBER REFUELING                             2000
CUSE      BOMBER    26APR71   ******************************************  3000
      COMMON/BOMBER/PLABT(80),IMOEL(80),ABRATE(80),PRABT(80),CEPB(80),  1000
     1      TLINTB(80),IFUNCB(80)                                       2000
CEND      BOMBER    ******************************************************  3000
CUSE      EDATAB    4JAN71    ******************************************  5000
      COMMON/EDATA/SIDEC,IBASE,INDM,JNIAR,NWTYPC,DGXC,DGYC,DMCHC,ITYPC, 1000
     1ICLASSC,IREGC,IALERTC,INZONC,NDHIC,NDLOC,IALTC,NCMC,PKNAVC,SPC(2), 2000
     2INTC,JWTC,XX(2),NALTC,TABORTC,TINCC(80),INDPC(80),INDEC(80),      3000
     3 IWTYPC(12),XDGZC(12),YDGZC(12),ZDGZC(12),B(6),OUTDATA(32 ),SIDE, 5000
     4 INBASE,INDV,INTAR,NWTYP,DGX,DGY,DMCH,ITYPE,ICLASS,IREG,IALERT,   6000
     5INZONE,NDHI,NDLO,IALT,NCM,PKNAV,SPARE(2),IHT,JWT,EXTRA(2),NALT,   7000
     6TABORT,TINC(80),INDP(80),INDE(80),IWTYP(12),XDGZ(12),YDGZ(12),    8000
     7ZDGZ(12),INDATA(32 )                                              9000
      EQUIVALENCE (SIDEC,OUTDATA(1)), (SIDE,INDATA(1))                 11000
      EQUIVALENCE(NPLAN,NALT) ,(MHT,IHT), (MWT,JWT)                    12000
      TYPE INTEGER DGX,DGY,DMCH,XDGZ,YDGZ,ZDGZ                         13000
      TYPE INTEGER DGXC,DGYC,DMCHC,XDGZC,YDGZC,ZDGZC                   14000
      TYPE INTEGER OUTDATA,SIDE,SIDEC                                  15000
CEND      EDATAB    ******************************************************  5000
CUSE      HISTREF   15MAR71   ******************************************  5200
      COMMON/HISTREF/NFGC,INEED                                         1000
CEND      HISTREF   ******************************************************  5200
      COMMON/REFUEL/NFTANK(100),NETANK(100)                             6000
      COMMON/TIME/TIME,FUTIME                                           8000
      COMMON/HISTOUT/NHISTOUT(200)                                      9000
      EQUIVALENCE (NHCODE,NHISTOUT(19))                                10000
      DATA(IRSH9 = 10008),(IRSH3 = 108)                                11000
C     UNPACK BOMBER EVENT DATA                                         12000
    1 CONTINUE                                                         13000
C     RECORD CALL TO REFUEL                                            14000
      CALL HIST(4,3)                                                   15000
C     ELIMINATE ALTERNATE WEAPONS UNTIL NEEDED                         16000
      JWTSAVE=JWT                                                      18100
      JWT = 0                                                          17000
C     GET THE CURRENT PLACE AND TEST  IF  IT IS A REFUELING AREA       18000
      INDRA = INDP(IHT) .AND. 7778                                     19000
      IHTR = INDP(IHT)/IRSH9                                           19100
      IF(IHTR)101,101,102                                              19200
  101 NT = 1                                                           19300
      NR = 1                                                           19400
      GO TO 103                                                        19500
  102 NT = IHTR.AND.78                                                 19600
      NR = IHTR/IRSH3                                                  19700
  103 INEED = (6*NT)/NR                                                19800
      IF (INDRA .EQ. 0) 3,2                                            20000
C     TEST FOR FULL TANKERS IN AREA                                    21000
    2 IF(NFTANK(INDRA) .LT.INEED)10,3                                  22000
C     TEST FOR REFUELING ABORT                                         23000
    3 IF (PRABT(ITYPE) .GT. RANF(-1)) 11,4                             24000
C     TEST IF CURRENT PLACE IS A REFUELING AREA                        25000
    4 IF (INDRA .EQ. 0) 7,5                                            26000
C     INCREASE NO. OF EMPTY TANKERS, DECREASE NO. OF FULL TANKERS      27000
    5 NETANK(INDRA) = NETANK(INDRA) + INEED                            28000
```

```
    6 NFTANK(INDRA) = NFTANK(INDRA) - INEED
C     RECORD SUCCESSFUL REFUELING
    7 CALL HIST(4,1)
C     CHECK TO SEE IF THIS IS THE FIRST OF TWO REFUELINGS
      IF(INDE(IHT-1) .EQ. 4) 152,75
   75 IHT=IHT-NALT
C     DISCARD ALTERNATE EVENTS IN HISTORY TABLE
      DO 8 I=1,IHT
      TINC(I) = TINC(I + NALT)
      INDP(I) = INDP(I + NALT)
      INDE(I) = INDE(I + NALT)
      IF(INDE(I).EQ.4 .OR. INDE(I).EQ.14)81,8
   81 JWT = JWT + 1
    8 CONTINUE
C     DISCARD ALTERNATE WEAPONS
      JALT=JWTSAVE-JWT
      DO 9 J=1,JWT
      IWTYP(J)=IWTYP(J+JALT)
      XDGZ(J)=XDGZ(J+JALT)
      YDGZ(J)=YDGZ(J+JALT)
    9 ZDGZ(J)=ZDGZ(J+JALT)
      GO TO 15
C     RECORD NO TANKERS AVAILABLE
   10 CALL HIST(4,4)
      GO TO 12
C     RECORD REFUELING ABORT
   11 CALL HIST(4,2)
C     SEE IF FAILURE ON FIRST OF TWO REFUELINGS
   12 IF(INDE(IHT-1) .EQ. 4)16,121
C     RESET HISTORY TABLE  COUNTER TO CONSIDER THE ALTERNATE EVENTS
  121 IHT = NALT + 1
      DO 14 I = 1, NALT
      IF(INDE(I).EQ.4 .OR. INDE(I).EQ.14)13,14
   13 JWT = JWT + 1
   14 CONTINUE
   15 NALT =
      IF(INDE(IHT-1) .EQ. 16) 17,151
  151 CALL NEXTEVNT
      RETURN
C     SUCCESSFUL FIRST OF TWO REFUELINGS
  152 NRCODE=28
      JWT=JWTSAVE
      GO TO 151
C     RETURN TO LAUNCH BASE
   16 CALL HIST(4,5)
C     FLAG RECOVERY AT HOME BASE
      INDEC=16
      INDPC=INHBSE
      FUTIME=TIME+TINC(IHT)
      IHT = 0
      JWT =
      CALL PLANTS(16,26)
      RETURN
C     ALTERNATE MISSION RETURN HOME
   17 CALL HIST(4,6)
      GO TO 151
```

```
                                        IDENT     REFUEL
PROGRAM LENGTH                  00322
ENTRY POINTS      REFUEL        00005
BLOCK NAMES
                  HCMHER        01060
                  EDATA         01200
                  HISTREF       00002
                  REFUEL        00310
                  TIME          00002
                  HISTOUT       00310
EXTERNAL SYMBOLS
                  OPDICT.
                  HIST
                  NEXTEVNT
                  PLANTS
                  RANF
```

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C00240	HRATE											
C00472	H											
P00273	HEDING.	00274										
C00560	CEPR											
P00311	COUNT.	00113	00114	00153	00154	00223	00224					
C00506	DGA											
C00506	DGAC											
C00506	DGT											
C00506	DGTC											
C00507	DHDA											
C00507	DHDAC											
P00001	DICT.	00007	00012	00057	00100	00204	00210	00241	00250	00264	00271	
P00275	ENDING.	00010	00242	00266	00273	00274						
P00004	EXIT.	00276										
C00525	EXTRA											
C00001	FUTIME	00257	00257									
C00002	HIST	00011	00077	00203	00207	00247	00267					
P00312	I	00110	00113	00115	00123	00130	00144	00220	00223			
C00513	IALERT											
C00513	IALERTC											
C00517	IALT											
C00517	IALTC											
C00001	INBASE											
P00313	INTR	00025	00033	00035								
C00511	ICLASS											
C00011	ICLASSC											
P00137	IFOUNCI.											
P00227	IFOUNC2.											
C00740	IFUNCH											
C00524	INT	00017	00102	00102	00105	00105	00106	00110	00111	00212	00212	00216
		00235	00255	00256	00260	00261						
C00024	INTC											
C00501	INBASE	00253										
C00500	INDATA											
C00772	INDE	00103	00134	00134	00135	00137	00137	00213	00225	00225	00227	00227
		00236										
C00272	INDEC	00252	00253									
C00002	INDM											
C00652	INDP	00020	00022	00023	00126	00127	00127					
C00152	INDPC	00254										
P00314	INDRA	00022	00045	00047	00064	00067	00074					
C00502	INDV											
C00001	INEEQ	00043	00044	00051	00051	00071	00071	00075	00075			
P00273	INITIAL.	00010										
C00503	INTAR											
C00514	INZONE											
C00014	INZONC											
C00512	IREG											
C00012	IREGC											
P00004	IRSH3	00037										
P00003	IRSH9	00065										
C00510	ITYPE	00060	00060									
C00010	ITYPC											
C00172	IWTYP	00160	00160	00161								

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C00412	IWTYPC											
P00011	.1											
P00203	.10	00053										
P00040	.101	00026	00026									
P00134	.102	00027										
P00140	.103	00032										
P00207	.11	00063										
P00212	.12	00206										
P00215	.121	00214										
P00231	.13	00226										
P00233	.14	00230										
P00234	.15	00202										
P00241	.151	00237	00246	00272								
P00243	.152	00104										
P00247	.16	00214										
P00267	.17	00237										
P00047	.2	00045										
P00054	.3	00045	00052	00052								
P00064	.4	00062	00062									
P00067	.5	00065										
P00073	.6											
P00077	.7	00066										
P00105	.75	00104										
P00143	.8	00147										
P00141	.81	00136										
P00173	.9											
P00300	.ERASER.	00041	00055									
P00277	.NSTIFF.	00120	00120	00125	00126	00133	00133	00157	00157	00153	00164	00170
		00173	00175	00175								
P00315	J	00150	00154	00155	00162	00166	00173	00200				
P00316	JALT	00147	00156	00162	00167	00174						
C00033	JMIAH											
C00525	JWF	00014	00014	00016	00017	00141	00141	00142	00146	00146	00151	00151
		00231	00231	00232	00245	00246	00262					
C00325	JWFC											
P00317	JWTSAVE	00015	00145	00245								
C00524	NHI											
C00525	NWI											
C00530	NALT	00106	00116	00116	00123	00124	00131	00131	00215	00215	00220	00221
		00234	00235									
C00030	NALTC											
P00320	NB	00032	00037	00043								
C00022	NACODE	00243	00244									
C00520	NC4											
C00020	NC4C											
C00515	NDHI											
C00015	NDHIC											
C00516	NDLC											
C00016	NDLCC											
C00144	NETANK	00070	00070	00072	00072							
X00003	NEXTEVNT	00243										
C00000	NFSC											
C00000	NFTANK	00050	00050	00074	00074	00076	00076					
C00000	NHISTOUT											

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```
C00530  NPLAN
P00321  NT          00031   00035   00041
C00504  N*TYP
C00004  N*TYPC
C00000  OUTD*TA
C00521  PRNAV
C00021  PRNAVC
C00000  PLANT
X00004  PLANTS      00263
C00350  PRABT       00001   00001
X00001  NRADICT.    00000   00006
X00005  RANF        00056
P00005  REFUEL      00005
C00500  SIDE
C00001  SIDEC
C00522  SPARE
C00022  SPC
C00531  TARGET
C00031  TARGETC
C00000  TIME        00254   00255
C00532  TINC        00121   00121   00122   00256
C00032  TINCC
C00620  TLINTR
C00120  TMDEL
P00145  TS00001.    00112
P00202  TS00002.    00152
P00234  TS00003.    00222
P00115  *S00001.    00144
P00155  *S00002.    00201
P00225  *S00003.    00233
C01126  XDGZ        00164   00165   00165
C00426  XDGZC
C00026  XX
C01142  YDGZ        00171   00171   00172
C00442  YDGZC
C01156  ZDGZ        00176   00176   00177
C00456  ZDGZC
   00214 STATCLS
```

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```
      SUBROUTINE RETLM                                                  1000
CSUBR     RETLM     1 JUN71   ****************************************  5800
C     RETURN LIST MEMORY TO AVAILABLE STORAGE.                          2000
C     INDEX  =  INDEX OF EVENT IN MEMORY                                3000
C     IAV  = POINTS TO FIRST CELL OF AVAILABLE STORAGE                  4000
CUSE      NRCELL    22JUN71   ****************************************  5000
      COMMON/19501/NRCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NRCELL    ****************************************************  5000
      COMMON/LISTMEM/IAVAIL                                             6000
      COMMON /ESTOR/ SCALET, SCALE(1, IMAX, NWORDS, NOTMO, NEXTEV       8000
     1     , IERRSW, INDATP(320), IOUTDA(320), ISVDAT(320), MEMTIM      9000
     2     , IAPET(10), SVTIME(10), ITOD(10)                            10000
      INDEX = NEXTEV                                                    11000
      LINKA(INDEX)=LINKM(INDEX+4)                                       12000
      IX=INDEX                                                          13000
    1 IPX=IX                                                            14000
      IX=LINKM(IX)                                                      15000
      IF(IX.EQ.0)2,1                                                    16000
    2 CONTINUE                                                          17000
      LINKA(IPX) = IAVAIL                                               18000
      IAVAIL = INDEX                                                    19000
      RETURN                                                            20000
      END                                                               21000
```

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```
                                        IDENT    RETLM
PROGRAM LENGTH                  00035
ENTRY POINTS     RETLM          00003
BLOCK NAMES
                 IBSUB          04731
                 LISTRET        00001
                 ESTOP          01745
EXTERNAL SYMBOLS
                 IBSUBCT.
```

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```
P00031  BEGIN.    00000
C00071  COLAR
P00001  DICT.     00000
P00031  ENDING.   00000  00027
P00000  EXIT.     00031
C00000  IAVAIL    00022  00022  00026  00025
P00032  IDEX      00010  00011  00013  00025
C00000  INDATP
P00030  INITIAL.  00000
C00537  IOATTR
P00033  IPA       00015  00023
C01277  ISVOAT
C01734  ITOKO
P00034  IX        00014  00015  00016  00020
P00015  .1        00021
P00022  .2
C00001  LINKM     00011  00012  00012  00017  00017  00024  00024
C01717  MEATIS
C00306  MERGER
C00000  MICELL
C00000  NOIAT
C00000  NEXTEV    00007  00007
C00000  NOORIS
K00001  OBJECT.   00000  00004
P00001  PETER     00013
C00000  SCALET
C00001  SCALETE
C1555.1 STATUS
C01722  SYTEM
C01710  TAPET
C00002  TMAX
   00037 SYMBOLS
```

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```
      FUNCTION RNDEV(X)
CSUBR     RNDEV      264U670   ****************************************
      SUM=0.0
      DO 1 I=1,12
    1 SUM=SUM+RANF(-1)
      RNDEV=SUM-6.0
      RETURN
      END
```

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```
P00033  RETLM.    00033
C45471  COLAR
P00001  DICT.     00005
P00031  ENDIAG.   00005   00027
P00000  EXIT.     00031
C00000  IAVAIL    00022   00022   00026   00025
P00032  IDEX      00010   00011   00013   00025
C00007  INDATP
P00030  INITIAL.  00005
C01517  IOUTPX
P00033  IPS       00015   00023
C01207  ISVDAT
C01734  ITOGO
P00034  IX        00014   00015   00016   00025
P00015  .1        00021
P00022  .2
C00011  LENKM     00011   00012   00012   00017   00017   00024   00024
C01707  METTIM
C00006  MERGEV
C00000  NBCELL
C00004  NOLAB
C00005  NEXTEV    00007   00007
C00013  NWORDS
X00001  OBJECT.   00000   00004
P00003  RETLM     00003
C00000  SCALET
C00031  SCALETI
C15531  STATUS
C01722  SVTIME
C01710  TAPET
C00002  TMAX
   00037 SYMBOLS
```

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```
                                        IDENT    RNDEV
PROGRAM LENGTH                  00051
ENTRY POINTS     RNDEV          00000
EXTERNAL SYMBOLS
                 RANDOM.
                 RANF
```

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[illegible]	[illegible]	[illegible]	00035	00041				
[illegible]	[illegible]	[illegible]	00015					
[illegible]	[illegible]	[illegible]	00021	00023	00024	00024	00025	00025
[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]							
[illegible]	[illegible]							
[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]	00004					
[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]	00016	00016	00017			
[illegible]	[illegible]	[illegible]	[illegible]					
[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]							
[illegible]	SYMBOLS							

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```
      SUBROUTINE SQUEEZE                                                1000
C     ******************************************************************
C     TRANSFER LIST OF HOLY DATA TO ARRAY INDATP                        2000
C     INDEX = INDEX OF EVENT IN MEMORY                                  3000
C     ******************************************************************
      COMMON/INPUT/SCALE,LINKM(7000),STATUS(12000),CCLAN(4000)          4000
C     ******************************************************************
      COMMON/STOR/SCALEI,SCALEII,IMAX,NWORDS,NUIMU,NEATEV,MEMORY,       5000
     1 IPLANP(420),IOUTOP(320),ISVDAT(420),MEMTIM,IAPET(10),SVTIME(10)  6000
     2 ,IIOC(10)                                                        7000
      DIMENSION IAW(1)                                                  8000
      EQUIVALENCE (IAW, INDATP)                                         9000
      COMMON/EVIDX/NEVDX,EVINDX(10),INDEVB(10)                          10000
      DATA(LSM=100,0)                                                   11000
      INDEX = NEATEV                                                    12000
      IPK=0                                                             13000
      IX=LINKM(INDEX+4)                                                 14000
      INDEVB(1)=LINKM(INDEX+3)                                          15000
      IAW(1)=LINKM(INDEX)                                               16000
      IAW(2)=LINKM(INDEX+2)*LSM+LINKM(INDEX+1)                          17000
      IAW(2)=IAW(2)*ILSM                                                18000
      IF(IX .EQ. 15)                                                    19000
    1 IAW(IPA)=LINKM(IX+1)                                              20000
      IAW(IPA+1)=LINKM(IX+2)                                            21000
      IAW(IPA+2)=LINKM(IX+3)                                            22000
      IAW(IPA+3)=LINKM(IX+4)                                            23000
      IX=LINKM(IX)                                                      24000
      IF(IX .EQ. 14)                                                    25000
    2 IPA=IPA+4                                                         26000
      IF(IPA .GT. 100-100)GO TO 1                                       27000
   10 RETURN                                                            28000
   11 FORMAT( 4H0 LIST OF HOLY DATA INCORRECT-SO-NO SQUEEZE )           29000
      CALL ZMSGM1                                                       30000
    3 CONTINUE                                                          31000
      IAW(2)=IAW(2)+IPA*3                                               32000
      WRITE(                                                            33000
    5 IAW(2)=IAW(2)+4                                                   34000
      WRITE(                                                            35000
      END                                                               36000
```

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```
                                        IDENT     SQUEEZE
PROGRAM LENGTH                  00113
ENTRY POINTS      SQUEEZE       00014
BLOCK NAMES
                  INPUT         04731
                  ASTOR         1746
                  EXTRA         0025
EXTERNAL SYMBOLS
                  FMEL.
                  SQUEEZ.
                  ZMBOT
                  ST=.
```

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```
P00104  [illegible]     00105
C45171  COLAN
P00004  CREST.          00073
P00001  CICT.           00015   00067   00072   00074
P00106  ENDSW.          00117   00100   00103   00104
C00001  EVTIB
P00000  EXIT.           00107
P00004  FORMAT.
P00173  [illegible]     00165
C00007  IAS             00030   00031   00034   00035   00036   00037   00045   00045   00047   00047   00051
                        00051   00053   00053   00075   00075   00077   00100   00101   00101   00102
P00110  IDEX            00021   00023
P00003  ILSS            00033   00035
C00007  INDATP
C00313  INDEXP          00025   00027
P00106  INTERNAL.       00117
C00507  ISUTOP
P00111  IPK             00042   00044   00060   00061   00062   00076
C01207  ISVOLT
C01734  ITOGO
P00112  IX              00025   00040   00042   00055
P00042  .1              00041   00063   00064
P00065  .1.
P00060  .2              00022
P00075  .3              00027
P00111  .5              00041
P00004  ..11            00047
C00001  LIMIT           00023   00025   00025   00026   00027   00031   00032   00033   00034   00043
                        00043   00046   00046   00050   00050   00052   00052   00054   00054
C01707  MFATIO
C00006  MERGE
C00000  MFCELL
C00000  [illegible]
C00004  [illegible]     00062   00063
C00005  NFATEV          00020   00020
C00000  NXORDS
X00002  OMOBJECT.       00100   00015
C00000  SCHEET
C00001  SCHEETI
P00014  SQUEEZE         00014
C15531  STATUS
X00004  STR.            00000
C01722  SVTIB
C01710  TAPEI
X00071  THEN.           00071
C00002  TIME
X00003  ZERO-T          00073
00005 SYMBOLS
```

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```
      SUBROUTINE SSTAT
CSUBR     SSTAT     27SEPT71  ****************************************
C     COMPUTES AND PRINTS ZONE STATUS INFORMATION
      COMMON/IPRINT/IPRINT(60)
      TYPE LOGICAL IPRINT
CUSF      NAMES     20APR71   ****************************************
      COMMON/NAMES/NAMESIDE(2),NAMECLS(15),NAMETYPE(250)
CEND      NAMES     ****************************************************
      COMMON/NUMBOUT/NUMBOUT
      COMMON/TIME/TIME,DTIME
      COMMON/ZONES/AREA(63),ZDEFPOT(63),ZCCPOT(63),NPENZ(63),KILLZ(63),
     1  AXZONE(2)
      COMMON/ZSTATUS/JMAX
      COMMON/HISTOUT/NSIDE,A,IBEG,Y,IEND,HTIME,NEVENT,NHISTOUT(200)
      EQUIVALENCE (NSIDE,NHISTOUT(1))
      DIMENSION MINZONE(2)
      DATA(MINZONE=3,33),(MAXZONE=24,51),(JT=0),(JTMAX=24 )
  102 FORMAT(I5,7X,I5,6X,F10.2,4X,F10.2,9X,I5)
  103 FORMAT(/5H TOTAL,6X,I5,6X,F10.2,4X,F10.2,9X,I5,/)

C     INCREMENT NO. OF STATUS EVENTS EXECUTED
      JT = JT + 1
C     DO FOR BOTH SIDES
      DO 5 K = 1,2
C     INITIALIZE COUNTER FOR NUMBER OF PENETRATORS
      NPENTOT = DEFTOT = CCTOT = KILLTOT =
C     GET FIRST AND LAST ZONE OF CURRENT SIDE
      IBEG = MINZONE(K)
      IEND = MAXZONE(K)
C     ADD UP THE TOTAL NUMBER OF PENETRATORS FOR THIS SIDE
      DO 10 I = IBEG,IEND
   10 NPENTOT = NPENTOT + NPENZ(I)
C     IF NONE, SKIP PRINTING OF STATUS
      IF(NPENTOT .NE. 0 .OR. TIME .EQ. 0. .OR. TIME .GT. 180.120-5)
C     PRINT TIME, SIDE NAME, AND FANCY HEADING
C     PRIOR TO PRINTING TIME ADD ON M-HOUR-REMOVE BIAS AND CONVERT
    2 HTIME = TIME - 24.
      NSIDE=K
      NEVENT=0
      PRINT 101,HTIME,NAMESIDE(K)
  101 FORMAT(//1X,F6.4,6X,11H STATUS OF ,A5,6H ZONES ,
     1 //6H  ZONE,4X,11HPENETRATORS,4X,12HINTERCEPTORS,4X,
     2  7HCONTROL,4X,11HTOTAL KILLS,/)
C     PRINT STATUS FOR EACH ZONE OF THIS SIDE
      DO 30 I = IBEG,IEND
      NHISTOUT(N+I-IBEG)=NPENZ(I)
      DEFTOT = DEFTOT + ZDEFPOT(I)
      CCTOT = CCTOT + ZCCPOT(I)
      KILLTOT = KILLTOT + KILLZ(I)
   30 PRINT 102,I,NPENZ(I),ZDEFPOT(I),ZCCPOT(I),KILLZ(I)
      PRINT 103, NPENTOT, DEFTOT, CCTOT, KILLTOT
      N=NUMBOUT+A*IEND-IBEG
      CALL HISTPUT
    5 CONTINUE
      IF(IPRINT(17)).GE.0
C     TEST IF DESIRED MAXIMUM OF STATUS EVENTS HAS BEEN REACHED
```

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```
   55 IF(JT .EQ. JTMAX .OR. TIME .GT. 160.)70,60
C     IF NOT PLANT ANOTHER FOR EXECUTION IN ONE-QUARTER HOUR
   60 FUTIME = TIME + .25
      CALL PLANTS(6,0)
   70 NWCRUCUT = 0
      RETURN
      END
```

```
                                        IDENT     SSTAT
PROGRAM LENGTH                 00316
ENTRY POINTS     SSTAT         00076
BLOCK NAMES
                 IPRINT        00002
                 NAMES         00413
                 NWORDOUT      00001
                 TIME          00002
                 ZONES         00475
                 ZSTATUS       00001
                 HISTOUT       00310
EXTERNAL SYMBOLS
                 01010100
                 THEND.
                 03000040
                 DHODICT.
                 HISTWRIT
                 PLANTS
                 STH.
                 UNSINGL.
```

C00000	AREA											
P00273	BEGIN.	00274										
P00307	CCTOT	00111	00177	00201	00234							
P00272	CNVRTI.	00154	00157	00212	00214	00215	00216	00217	00232	00233	00234	00235
P00310	COUNT.	00124	00125									
P00006	CREMT.	00076	00076	00162								
P00311	DEFTOT	00111	00175	00177	00233							
P00001	DICT.	00100	00152	00161	00207	00221	00227	00237	00244	00265		
P00275	ENDIAG.	00101	00270	00273								
P00000	EXIT.	00276										
P00006	FORMAT.											
C00001	FUTIME	00263	00263									
P00162	GGO0003.	00156										
P00222	GGO0001.	00205										
P00240	GGO0002.	00225										
X00005	HISTWRIT	00243										
C00005	HTIME	00144	00144	00154								
P00312	I	00121	00124	00163	00166	00171	00211	00213	00222			
C00002	IBEG	00115	00115	00120	00122	00162	00162	00166	00167	00241		
C00004	IEND	00117	00117	00121	00122	00223	00223	00240	00241			
P00134	IF00001.											
P00137	IF00002.											
P00255	IF00003.											
P00273	INITIAL.	00101										
C00000	IPHIAT	00250										
P00126	.10											
P00142	.20	00133	00136									
P00205	.30											
P00245	.50	00141	00141									
P00252	.55	00251										
P00261	.60	00257	00257									
P00267	.70	00251	00254	00260								
P00037	..101	00153										
P00006	..102	00210										
P00021	..103	00230										
P00277	.NSTIFF.	00170	00173									
P00005	JT	00102	00103	00252								
C00000	JTMAX	00006	00253	00253								
P00313	K	00104	00114	00145	00155	00245						
P00314	KILLTOT	00106	00202	00204	00235							
C00374	KILLZ	00202	00203	00217								
C00473	MAXZONE	00005	00116	00116								
P00003	MINZONE	00005	00114									
C00002	NAMCLS											
C00000	NAMESIDE	00156	00156									
C00021	NAMETYPE											
C00005	NEVENT	00147										
C00000	NHISTOUT	00173	00174									
P00315	NPENTOT	00113	00126	00130	00132	00231						
C00275	NPENZ	00127	00127	00171	00172	00213	00214					
C00000	NSIDE	00146	00146									
C00000	NWCRHOUT	00242	00242	00267	00270							
X00006	PLANTS	00264										
X00001	QIJTOIOO	00112										

```
X00003  03000040   00247
X00004  QBODICT.   00000   00077
X00010  UNSIGL.    00271
P00076  SSTAT      00076
X00007  STH.       00151   00206   00226
X00002  THEND.     00160   00220   00236
C00000  TIME       00134   00134   00137   00137   00142   00142   00255   00255   00261   00261
P00132  TS00002.   00123
P00223  TS00003.   00164
P00105  WS00001.   00246
P00126  WS00002.   00131
P00165  WS00003.   00224   00224
C00001  X
C00003  Y
C00176  ZCCPCT     00200   00200   00216
C00077  ZDEFPCT    00175   00176   00215
   00106 SYMBOLS
```

```
      SUBROUTINE STATSUM                                                1000
CSUBR     STATSUM   28APR71   ****************************************  3000
C     PRINTS A SUMMARY OF STATUSES OF GAME ITEMS BY CLASS AND TYPE      2000
CUSE      BRKPNT    28APR71   ****************************************  4000
      COMMON/BRKPNT/NTYPECUM(15),NBLUETYP(15),INDBEGCL(15),INDBEGTY(250) 1000
CEND      BRKPNT    ****************************************************  4000
      COMMON/KEYWORDS/KEYARRAY(20)                                      5000
      EQUIVALENCE(KEYARRAY(1),TSTAT),(KEYARRAY(17),IKEEP)               6000
CUSE      NAMES     28APR71   ****************************************  7000
      COMMON/NAMES/NAMESIDE(2),NAMCLS(15),NAMETYPE(250)                 1000
CEND      NAMES     ****************************************************  7000
CUSE      NBCELL    22JUN71   ****************************************  8000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NBCELL    ****************************************************  8000
      DIMENSION NSURV(250),NINIT(250),IK(250)                           9000
      TYPE LOGICAL IK                                                  10000
      EQUIVALENCE(NSURV,LINKM),(NINIT,LINKM(251))                      10100
                                                                       19000
C     EJECT A PAGE AND INITIALIZE FOR LOOP THROUGH ALL TYPES           20000
      CALL PAGESKP                                                     21000
    1 NTYPES = NTYPECUM(15)                                            22000
      DO 10 I=1,NTYPES                                                 23000
      NSURV(I)=0                                                       24000
      IK(I) = 0                                                        24100
C     GET FIRST AND LAST INDEX FOR THE CURRENT TYPE                    25000
      IBEG=INDBEGTY(I)                                                 26000
      IEND=INDBEGTY(I+1)-1                                             27000
C     ALL WERE ALIVE INITIALLY                                         28000
      NINIT(I)=IEND-IBEG+1                                             29000
C     SEE IF TYPE IS DYNAMIC                                           29100
      IDYN = IGET(IKEEP,16EG,STATUS)                                   29200
    7 IF(IDYN)10,10,8                                                  29300
    8 IK(I) = 1                                                        29400
C     COMPUTE NUMBER OF SURVIVORS BY TESTING STATUS ITEM IN STATUS ARRAY 30000
      DO 9 J = IBEG,IEND                                               31000
      NSURV(I) = NSURV(I) + IGET(TSTAT,J,STATUS)                       32000
    9 CONTINUE                                                         32100
   10 CONTINUE                                                         32200
      NT=0                                                             33000
C     PRINT CLASS NAME AND SIDE NAME--DO FOR ALL TYPES                 34000
      DO 21 K = 1,15                                                   35000
      PRINT 101,NAMCLS(K)                                              37000
  101 FORMAT(/5X,6HCLASS,A8,10X,7HINITIAL,7X,7HINITIAL,8X,6HNUMBER,8X, 37100
     1   6HNUMBER,7X,7HPERCENT/31X,5HINDEX,8X,6HNUMBER,8X,             37200
     2   9HSURVIVING,5X,6HKILLED,8X,6HKILLED)                          37300
   11 DO 20 L=1,2                                                      40000
      PRINT 102,NAMESIDE(L)                                            41000
  102 FORMAT(/10X,6HSIDE  ,A4)                                         41100
C     TEST FOR CURRENT SIDE BLUE (1) OR RED (2)                        42000
      IF(L.EQ.2)14,12                                                  43000
C     SIDE IS BLUE - SET LOOP LIMITS FROM 1 THRU BLUE ITEMS OF THIS TYPE 44000
   12 IBEG=NT+1                                                        45000
      IEND=NT+NBLUETYP(K)                                              46000
      GO TO 16                                                         47000
C     SIDE IS RED - SET LIMITS FROM BLUE END THRU LAST ITEM OF THIS TYPE 48000
   14 IBEG=IEND+1                                                      49000
```

```
      IEND = NT =NTYPECUM(K)                                            50000
   16 DO 19 I = IREG,IEND                                               52000
      IF(IK(I))17,18                                                    52100
   17 NKILL = NINIT(I) - NSURV(I)                                       53000
      PKILL = (100.*NKILL)/NINIT(I)                                     54000
C     PRINT TYPE NAME, INITIAL NUMBER, NUMBER SURVIVING, NO. KILLED,    55000
C     PERCENT KILLED                                                    56000
      PRINT 103,I,NAMETYPE(I),INDBEGTY(I),NINIT(I),NSURV(I),NKILL,PKILL 57000
  103 FORMAT(12X,I6,2X,A8,4(I6,8X),F6.2)                                57100
      GO TO 19                                                          59000
   18 PRINT 104,I,NAMETYPE(I),INDBEGTY(I),NINIT(I)                      61000
  104 FORMAT(12X,I6,2X,A8,I6,8X,I6)                                     61100
   19 CONTINUE                                                          61200
   20 CONTINUE                                                          62000
   21 CONTINUE                                                          62100
      CALL PAGESKP                                                      62300
      END                                                               63000
```

```
                                        IDENT     STATSUM
PROGRAM LENGTH                  00360
ENTRY POINTS     STATSUM        00115
BLOCK NAMES
                 ARKPNT         00447
                 KEYWORDS       00024
                 NAMES          00413
                 19501          54731
EXTERNAL SYMBOLS
                 Q3010040
                 THENU.
                 Q3000040
                 Q1004100
                 Q1005100
                 D8001CT.
                 PAGESKP
                 IGET
                 STH.
                 QNSI 00L.
```

P00336	BEGIN.	00337										
P00335	CNVRTI.	00207	00222	00266	00270	00272	00274	00275	00277	00300	00311	00313
		00315	00317									
C45071	COLAR											
P00344	COUNT.	00160	00161									
P00013	CRFMT.	00212	00225	00303	00322							
P00001	DICT.	00117	00122	00144	00163	00203	00211	00216	00224	00264	00302	00306
		00321	00332									
P00340	ENDING.	00120	00333	00336								
P00000	EXIT.	00341										
P00013	FORMAT.											
P00212	GG000000.	00201										
P00225	GG000001.	00214										
P00303	GG000002.	00262										
P00322	GG000003.	00304										
P00345	I	00125	00130	00153	00161	00174	00244	00245	00251	00266	00310	00312
		00322										
P00346	IREG	00135	00140	00145	00156	00157	00231	00237	00243			
P00347	IDYN	00147	00150									
P00350	IEND	00140	00157	00234	00236	00242	00323					
X00010	IGET	00143	00162									
P00003	IK	00133	00155	00247								
C00020	IKEEP	00145										
C00036	INDREGCL											
C00055	INDREGTY	00134	00134	00136	00136	00271	00271	00314	00314			
P00336	INITIAL.	00120										
P00174	.10	00151	00151									
P00123	.1											
P00212	.11											
P00230	.12	00226										
P00236	.14	00227										
P00243	.16	00235										
P00251	.17	00250										
P00304	.18	00250										
P00322	.19	00303										
P00325	.20											
P00327	.21											
P00150	.7											
P00152	.8											
P00172	.9											
P00342	.ERASER.	00166	00170									
P00013	..101	00204										
P00062	..102	00217										
P00071	..103	00265										
P00104	..104	00307										
P00351	J	00156	00164	00172								
P00352	K	00200	00205	00232	00240	00327						
C00000	KEYARRAY											
P00353	L	00213	00220	00225	00325							
C00001	LINKM											
C00002	NAMCLS	00206	00206									
C00000	NAMESIDE	00221	00221									
C00021	NAMETYPE	00267	00267	00312	00313							
C00000	NRCELL											

```
C00017  NRLUETYP   00233  00233
C00373  NINIT      00141  00142  00252  00252  00260  00260  00273  00273  00316  00316
P00354  NKILL      00254  00256  00276
C00001  NSURV      00130  00131  00167  00167  00171  00171  00253  00275
P00355  NT         00177  00230  00232  00242
C00000  NTYPECUM   00123  00123  00240  00241
P00356  NTYPES     00124  00175
X00007  PAGESKP    00121  00331
P00357  PKILL      00261  00300
X00004  Q1W04100   00255
X00005  Q1W05100   00257
X00003  Q3W00040   00246
X00001  Q3W10040   00132  00154
X00006  QBWOICT.   00300  00116
X00012  QNSINGL.   00334
P00115  STATSUM    00115
C15531  STATUS     00146  00165
X00011  STH.       00202  00215  00263  00305
X00002  THEND.     00210  00223  00301  00320
P00175  TS00001.   00126
P00174  TS00002.   00160
P00323  TS00005.   00244
C00000  TSTAT      00164
P00127  WS00001.   00176  00176
P00162  WS00002.   00173
P00201  WS00003.   00330
P00214  WS00004.   00326
P00245  WS00005.   00324  00324
   00117 SYMBOLS
```

```
      SUBROUTINE TERMBMD                                                1000
CSUBR     TERMBMD   27SEPT71  ******************************************  2000
C     TESTS FOR SURVIVAL OF MISSILES AGAINST A LOCAL DEFENSE SYSTEM     2000
CUSE      EDATAM    26AUG70   ******************************************  3000
      COMMON/EDATA/SIDEC,IBASE,INDM,INTAR,NWTYPC,DGXC,DGYC,DHCHC,       1000
     1             ITYPC,ICLASSC,IREGC,IALERTC,NWPNSC,NTARGC,           2000
     1             MWPNLIST(18),MLAUNLIS(18),MLISTC(270),OUTDATA(320),  3000
     1             SIDE,INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHCB,           4000
     1             ITYPE,ICLASS,IREG,IALERT,NWPNS,NTARG,                5000
     1             WPNLIST(18),LAUNLIST(18),MLIST(270),INDATA(320)      6000
      TYPE INTEGER OUTDATA,SIDE,CSIDE,AAIM,TAIM,WPNLIST                 7000
      TYPE INTEGER DGX,DGY,DHCB,DGXC,DGYC,DHCHC                         8000
      TYPE INTEGER TAIMC,AAIMC                                          9000
      EQUIVALENCE (SIDEC,OUTDATA(1)),(SIDE,INDATA(1))                  10000
      EQUIVALENCE (IPAYLOAD,INDATA(5)),(NMIRV,INDATA(8))               11000
      EQUIVALENCE (INITVULC,OUTDATA(7)),(INITVULN,INDATA(7))           12000
      EQUIVALENCE (TOFC,OUTDATA(27)),(TOF,INDATA(27))                  13000
      DIMENSION MDATA(14),MDATAC(14),TOF(14),TOFC(14)                  14000
      EQUIVALENCE (MDATAC,OUTDATA(13)),(MDATA,INDATA(13))              15000
      EQUIVALENCE (NWHDS,INDATA(13)),(TAIM,INDATA(14))                 16000
      EQUIVALENCE (AAIM,INDATA(15))                                    17000
      EQUIVALENCE (TAIMC,OUTDATA(14)),(AAIMC,OUTDATA(15))              18000
      EQUIVALENCE (NWHDSC,OUTDATA(13))                                 19000
      DIMENSION FMLIST(270)                                            20000
      EQUIVALENCE (MLIST,FMLIST)                                       21000
CEND      EDATAM    ******************************************************  3000
      COMMON/HISTABM/IAREAX,NAL,NWHDSX,NDET,NAREA,NTERM                 4000
      EQUIVALENCE (NPEN,NWHDSX)                                         5000
      COMMON/INDEX/INDEX(30)                                            6000
      COMMON/GROUND/IAGX,IAGY                                           7000
      COMMON/KEYWORDS/KEYARRAY(20)                                      8000
      EQUIVALENCE (IATTACK,KEYARRAY(12)),(IAREA,KEYARRAY(13)),          9000
     1 (ITERM,KEYARRAY(14))                                            10000
CUSE      MISSLE    28APR71   ******************************************  11000
      COMMON/MISSLE/PINC(80),PABORT(80),PDES(80),PFPF(80),IPCW(80),     1000
     1     TRET(80),IR(80),CEPM(80),PKMIS(80),TLINTM(80),IFUNCM(80)     2000
CEND      MISSLE    ******************************************************  11000
CUSE      TBMDATA   28APR71   ******************************************  13000
      COMMON/TBMDATA/PTK(2),NTINT(500)                                  1000
CEND      TBMDATA   ******************************************************  13000
CUSE      WARHEAD   28APR71   ******************************************  14000
      COMMON/WARHEAD/YIELD(50),PDUD(50),CEPW(50)                        1000
CEND      WARHEAD   ******************************************************  14000
      DIMENSION ICAT(30)                                               15000
C     NATURAL LOG OF .01                                               16000
      DATA(5 = -4.60517)                                               17000
CUSE      NACELL    22JUN71   ******************************************  18000
      COMMON/19501/NACELL,LINKM(7000),STATUS(12000),COLAR(4000)         1000
CEND      NACELL    ******************************************************  18000
                                                                       19000
C     TERMBMD IS CALLED FROM AREARMD--NO DATA NEEDS TO BE UNPACKED     20000
C     STORE NO. WHDS. ENTERING                                         21000
      NTERM=NWHDS                                                      22000
C     RECORD CALL TO TERMBMD                                           23000
      CALL HIST(9,2)                                                   24000
C     INITIALIZE COUNTERS                                              25000
```

```
      NPEN = NAL = NDET = 0
C     SIDE IS ATTACKING SIDE, OSIDE IS DEFENDING SIDE
      OSIDE = 3-SIDE
C     GET COMPLEX FOR THIS TARGET, TEST IF IT IS DEFENDED
      IF(TAIM .EQ. 0) 36,1
    1 IT=IGET(ITERM,INTAR,STATUS)
    2 IF(IT.EQ.0)50,3
C     DEFENDED--TEST IF INTERCEPTORS ARE AVAILABLE
    3 IF(NTINT(IT).LE.0)50,4
    4 CONTINUE
C     ASSIGN ENOUGH INTERCEPTORS FOR .99 KILL PROBABILITY
      IF(PTK(OSIDE).GE.0.99)5,6
    5 N=1
      GO TO 9
    6 N =(5/LOGF(1.-PTK(OSIDE)))*0.7
C     INTERCEPTORS ALLOCATED=INTERCEPTORS/POINT*NO. TERMINAL AIM POINTS
    9 NAL = N*TAIM
C     TEST IF ENOUGH INTERCEPTORS ARE AVAILABLE
   10 IF(NAL.GT.NTINT(IT))13,11
C     COMPUTE KILL PROBABILITY
   11 PK = 1.-(1.-PTK(OSIDE))**N
   12 GO TO 17
C     ONLY ONE INTERCEPTOR PER OBJECT
   13 N = 1
C     NUMBER ALLOCATED=1*NO. OF TERMINAL AIM POINTS
   14 NAL = TAIM
C     RETRIEVE KILL PROBABILITY
   15 PK = PTK(OSIDE)
C     TEST IF ENOUGH INTERCEPTORS ARE AVAILABLE
   16 IF(NAL.GT.NTINT(IT))38,17
C     AVAILABLE--DECREASE INTERCEPTOR SUPPLY
   17 NTINT(IT) = NTINT(IT)-NAL
C     CHECK EACH WARHEAD TO SEE IF IT GETS THROUGH
   18 DO 21 I=1,NWHDS
   19 IF(PK.GE.RANF(-1))21,20
C     WARHEAD LEAKS THROUGH
   20 NPEN = NPEN+1
   21 CONTINUE
C     TEST FOR ANY WARHEAD LEAKAGE
   23 IF(NPEN.EQ.0)32,24
C     COMPUTE MEAN POINT OF IMPACT
   24 SIG = CEPW(ITYPE)*42.4738
   25 MAGX = RNDEV(0) * SIG
      MAGY = RNDEV(0) * SIG
   26 SIG = CEPW(NWTYP)*42.4738
C     TEST EACH PENETRATING WARHEAD FOR DETONATION
   27 DO 31 I = 1,NPEN
      IF(PDUD(NWTYP).GE.RANF(-1))31,28
   28 NDET = NDET + 1
   31 CONTINUE
C     RECORD RESULTS OF ALLOCATION
   32 CALL HIST(9,2)
C     COMPUTE ACTUAL GROUND ZERO COMPONENTS
      DO 35 I=1,NDET
      JAGX = RNDEV(0)*SIG
      JAGY = RNDEV(0)*SIG
```

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```
C     COMPUTE DESIRED GROUND ZERO COMPONENTS
   29 IAGX = DGX + MAGX + JAGX
      IAGY = DGY + MAGY + JAGY
C     CALL FOR BURST DAMAGE ASSESSMENT
   30 CALL RDAMAGE
   35 CONTINUE
   36 CONTINUE
      RETURN
C     NOT ENOUGH INTERCEPTORS FOR N = I
   38 NAL = NTINT(IT)
   39 NTINT(IT) = 1
C     COMPUTE NUMBER OF OBJECTS NOT ATTACKED
   40 NREM = TAIM-NAL
      N1 = NWHDS+1
      DO 41 I = 1,NWHDS
   41 ICAT(I) = 1
      DO 42 I = N1,TAIM
   42 ICAT(I) = 0
C     CALL REORDER TO RANDOMLY REORDER ICAT
      CALLRANORDER(TAIM)
C     DETERMINE IF EACH UNATTACKED OBJECT IS A WARHEAD
      DO 44 I = 1,NREM
      IF(ICAT(INDEX(I)).EQ.0)44,43
   43 NPEN = NPEN+1
   44 CONTINUE
C     COMPUTE NUMBER OF WARHEADS REMAINING
      NWHDS = NWHDS-NPEN
      GO TO 18
C     NO INTERCEPTORS
   50 NPEN = NWHDS
      GO TO 23
      END
```

```
                                        IDENT     TERMBMD
PROGRAM LENGTH                  00425
ENTRY POINTS     TERMBMD        00042
BLOCK NAMES
                 EDATA          01200
                 HISTABM        00006
                 INDEX          00036
                 GROUND         00002
                 KEYWORDS       00024
                 MISSLE         01560
                 TBMDATA        00766
                 WARHEAD        00226
                 19501          54731
EXTERNAL SYMBOLS
                 Q1Q10100
                 Q2Q0711U
                 Q8QDICT.
                 HIST
                 IGET
                 RNDEV
                 BDAMAGE
                 RANGRDER
                 RANF
                 LOGF
```

C00516	AAIM											
C00016	AAIMC											
X00007	ADAMAGE	00300										
P00373	BEGIN.	00374										
C01000	CEPM	00204	00204									
C00144	CEPY	00224	00224									
C45071	COLAR											
P00411	COUNT.	00165	00165	00233	00235	00325	00326	00336	00337	00351	00352	
C00505	DGX	00271	00271									
C00015	DGXC											
C00506	DGY	00274	00275									
C00016	DGYC											
C00517	DHCR											
C00017	DHCRC											
P00001	DICT.	00044	00051	00063	00111	00143	00171	00210	00215	00241	00251	00256
		00284	00301	00344								
P00375	ENDING.	00345	00305	00373	00374							
P00000	EXIT.	00376										
C00562	FMLIST											
X00004	HIST	00050	00250									
P00412	I	00162	00230	00254	00302	00322	00324	00333	00335	00347	00351	
C00000	IAGX	00273	00274									
C00001	IAGY	00277	00277									
C00513	IALERT											
C00013	IALERTC											
C00014	IAREA											
C00000	IAREAX											
C00013	IATTACK											
C00001	IBASE											
P00003	ICAT	00330	00341	00356								
C00511	ICLASS											
C00011	ICLASSC											
C01440	IFUNCM											
X00005	IGET	00002										
C00501	INBASE											
C00500	INDATA											
C00000	INDEX	00353	00353									
C00002	INDM											
C00502	INDV											
P00373	INITIAL.	00345										
C00506	INITVOLN											
C00006	INITVOLC											
C00503	INTAR	00364										
C00504	IPAYLOAD											
C00740	IR											
C00512	IREG											
C00012	IREGC											
P00413	IT	00066	00067	00072	00122	00151	00155	00306	00312			
C00015	ITERM	00064										
C00510	ITYPE	00203	00203									
C00010	ITYPC											
P00062	.I	00061										
P00121	.10											
P00126	.11	00124	00124									

P00140	.12							
P00141	.13	00125						
P00143	.14							
P00145	.15							
P00150	.16							
P00155	.17	00140	00153	00153				
P00161	.18	00365						
P00166	.19							
P00067	.2							
P00175	.20	00173						
P00177	.21	00173	00174					
P00200	.23	00371						
P00203	.24	00201						
P00207	.25							
P00223	.26							
P00227	.27							
P00245	.28	00244						
P00271	.29							
P00072	.3	00070						
P00300	.30							
P00247	.31	00243	00244					
P00250	.32	00202						
P00302	.35							
P00305	.36	00061						
P00306	.38	00154						
P00311	.39							
P00076	.4	00075						
P00314	.40							
P00327	.41							
P00340	.42							
P00360	.43	00357						
P00362	.44	00357						
P00102	.5	00101						
P00367	.50	00071	00074	00075				
P00104	.8	00101						
P00116	.9	00103						
P00400	.ERASER.	00107	00112	00113	00131	00134	00167	00237
P00377	.NSTIFF.	00355	00355					
P00414	JAGX	00262	00273					
P00415	JAGY	00270	00276					
C00003	JNTAR							
C00000	KEYARRAY							
C00540	LAUNLIST							
C00001	LINKM							
X00012	LOGF	00110						
P00416	MAGX	00214	00272					
P00417	MAGY	00222	00276					
C00514	MDATA							
C00014	MDATAC							
C00040	MLAUNLIS							
C00562	MLIST							
C00062	MLISTC							
C00016	MWPNLIST							
P00420	N	00103	00115	00116	00135	00142		

P00421	N1	00321	00332	00335								
C00001	NAL	00054	00120	00120	00121	00121	00144	00144	00150	00150	00157	00157
		00310	00310	00315	00315							
C00004	NAREA											
C00000	NBCELL											
C00003	NDET	00053	00245	00245	00246	00303	00303					
C00507	NMIRV											
C00002	NPEN	00054	00175	00175	00176	00200	00200	00230	00231	00360	00360	00361
		00364	00364	00370	00370							
P00422	NREM	00316	00347									
C00515	NTARG											
C00015	NTARGC											
C00005	NTER4	00047	00047									
C00002	NTINT	00073	00073	00123	00123	00152	00152	00156	00156	00160	00160	00307
		00307	00312	00313								
C00514	NWHDS	00046	00046	00162	00163	00317	00317	00322	00323	00363	00363	00365
		00365	00367	00367								
C00014	NWHDSC											
C00002	NWHDSX											
C00514	NWPNS											
C00014	NWPNSC											
C00504	NWTYP	00223	00223	00233	00234							
C00004	NWTYPC											
P00372	OSIDE	00057	00076	00105	00127	00145						
C00000	OUTDATA											
C00120	PABORT											
C00240	PDES											
C00062	PDUD	00242	00243									
C00360	PFPF											
C00000	PINC											
P00423	PK	00137	00147	00172								
C01200	PKMIS											
C00000	PTK	00077	00077	00105	00106	00127	00130	00146	00146			
X00001	01010100	00114	00213	00221	00261	00267						
X00002	02207110	00132										
X00003	08DDICT.	00000	00043									
X00011	RANF	00170	00240									
X00010	RANCHDER	00343										
X00006	RNDEV	00207	00215	00255	00263							
P00041	S	00112										
C00500	SIDE	00055	00056									
C00000	SIDEC											
P00424	SIG	00206	00212	00220	00226	00260	00266					
C15531	STATUS	00065										
C00515	TAIM	00057	00060	00117	00117	00143	00143	00314	00314	00333	00334	00345
C00015	TAIMC											
P00042	TERMHMD	00042										
C01320	TLINTM											
C00532	TOF											
C00032	TOFC											
C00500	TPOWER											
C00620	TRET											
P00200	TS00001.	00164										
P00250	TS00002.	00232										

```
P00303  TS00003.   00254
P00332  TS00004.   00324
P00343  TS00005.   00335
P00363  TS00006.   00350
C00516  WPNLIST
P00166  WS00001.   00177
P00236  WS00002.   00247
P00255  WS00003.   00304   00304
P00327  WS00004.   00331
P00340  WS00005.   00342
P00353  WS00006.   00362
C00000  YIELD
   00251 SYMBOLS
```

```
      SUBROUTINE TRYLAUN
CSUBR     TRYLAUN   28APR71   ******************************************
C     TESTS FOR SUCCESSFUL MISSILE LAUNCH
CUSE      EDATAM    26AUG70   ******************************************
      COMMON/EDATA/SIDEC,IBASE,INDM,JNTAR,NWTYPC,DGXC,DGYC,DHCHC,
     1             ITYPC,ICLASSC,IREGC,IALERTC,NWPNSC,NTARGC,
     1             NWPNLIST(18),MLAUNLIS(18),MLISTC(27 ),CUTDATA(320),
     1             SIDE,INBASE,INDV,INTAR,NWTYP,DGX,DGY,DHCH,
     1             ITYPE,ICLASS,IREG,IALERT,NWPNS,NTARG,
     1             WPNLIST(18),LAUNLIST(18),MLIST(270),INDATA(320)
      TYPE INTEGER CUTDATA,SIDE,CSIDE,AAIM,TAIM,WPNLIST
      TYPE INTEGER DGX,DGY,DHCH,DGXC,DGYC,DHCHC
      TYPE INTEGER TAIMC,AAIMC
      EQUIVALENCE (SIDEC,CUTDATA(1)),(SIDE,INDATA(1))
      EQUIVALENCE (IPAYLOAD,INDATA(5)),(NWIRV,INDATA(8))
      EQUIVALENCE (INITVULC,CUTDATA(7)),(INITVULN,INDATA(7))
      EQUIVALENCE (TOFC,CUTDATA(27)),(TOF,INDATA(27))
      DIMENSION MDATA(14),MDATAC(14),TOF(14),TOFC(14)
      EQUIVALENCE (MDATAC,CUTDATA(13)),(MDATA,INDATA(13))
      EQUIVALENCE (NWHDS,INDATA(13)),(TAIM,INDATA(14))
      EQUIVALENCE (AAIM,INDATA(15))
      EQUIVALENCE (TAIMC,CUTDATA(14)),(AAIMC,CUTDATA(15))
      EQUIVALENCE (NWHDSC,CUTDATA(13))
      DIMENSION FMLIST(270)
      EQUIVALENCE (MLIST,FMLIST)
CEND      EDATAM    ******************************************************
      COMMON/KEYWORDS/KEYARRAY(20)
      EQUIVALENCE (KEYARRAY(1), TSTAT)
      COMMON/TRYL/INDEXWPN(18),PINCOMM,PNCABORT,PUEST,PFLTFAIL,TPF,
     1 THETANG,IREP,NCYCLE,NCOM,NALIVE,NNABT,NSUCC,NLATER,NDES,NTEST
CUSE      NBCELL    22JUN71   ******************************************
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)
CEND      NBCELL    ******************************************************

C     INCREMENT NO. OF MISSILES PROCESSED
    1 NCYCLE=NCYCLE+1
C     GET MISSILE INDEX AND SILO INDEX
    2 INDV = WPNLIST(NCYCLE)
      INBASE=LAUNLIST(NCYCLE)
C     INITIALIZE IN-COMMISSION FLAG
      IC=0
C     TEST IF MISSILE IS IN COMMISSION
    3 IF(PINCOMM .LT. RANF(-1)) 31,4
C     RECORD MISSILE NOT IN COMMISSION, TURN OFF IN-COMMISSION FLAG
   31 CALL HIST(1,8)
      IC=1
      GO TO 5
C     INCREMENT NUMBER OF MISSILES IN COMMISSION
    4 NCOM=NCOM+1
C     GET STATUS OF SILO AND TEST IF IT IS ALIVE
    5 ISTAT=IGET(TSTAT,INBASE,STATUS)
      IF (ISTAT .NE. 0) 54,51
C     SILO DEAD
   51 IF(IC .EQ. 1)53,52
C     RECORD THAT SILO IS DEAD AND THAT MISSILE WAS IN COMMISSION
   52 CALL HIST(1,9)
```

```
      GO TO 17
C     RECORD THAT SILO IS DEAD AND THAT MISSILE WAS NOT IN COMMISSION
   53 CALL HIST(1,14)
      GO TO 17
   54 IF (IC .EQ. 0) GO TO 17
C     INCREMENT NUMBER OF MISSILES ALIVE
    6 NALIVE=NALIVE+1
C     TEST FOR LAUNCH ABORT
    7 IF(PNOABORT .LT. RANF(-1)) 71,10
C     LAUNCH ABORT
   71 CALL HIST(1,10)
C     TEST FOR DESTRUCTIVE ABORT
    8 IF(PDEST .GE. RANF(-1)) 81,17
C     SILO DESTROYED
   81 CALL HIST(1,11)
C     SET SILO STATUS TO DEAD
    9 CALL IPUT(TSTAT,INBASE,0,STATUS)
      GO TO 17
C     INCREMENT NUMBER NOT ABORTED
   10 NNABT=NNABT+1
C     TEST FOR FAILURE IN POWERED FLIGHT
   11 IF(PFLTFAIL .GE. RANF(-1)) 12,14
C     FAILED IN POWERED FLIGHT
   12 CALL HIST(1,12)
C     TEST FOR REPROGRAMMING FOR POWERED FLIGHT FAILURE
      IF(IREP .GE. 5) 14,17
C     IF AVAILABLE, INCREMENT NUMBER OF MISSILES TO TRY LATER
   13 NLATER=NLATER+1
      GO TO 17
C     INCREMENT NUMBER SUCCESSFULLY LAUNCHED
   14 NSUCC=NSUCC+1
C     RECORD SUCCESSFUL LAUNCH
      CALL HIST(1,13)
C     STORE WEAPON INDEX NUMBER
   15 INDEXWPN(NSUCC)=NCYCLE
C     TEST FOR REPROGRAMMING CAPABILITY
   17 GO TO (171,172,173,174,174),IREP
C     TARGETS FOR REPROGRAMMING = NO. MISSILES PROCESSED
  171 NTEST=NCYCLE
      GO TO 99
C     TARGETS FOR REPROGRAMMING = NO. MISSILES IN COMMISSION
  172 NTEST=NCOM
      GO TO 99
C     TARGETS FOR REPROGRAMMING = NO. MISSILES ALIVE
  173 NTEST=NALIVE
      GO TO 99
C     TARGETS FOR REPROGRAMMING = NO. MISSILES NOT ABORTED
  174 NTEST=NNABT
   99 RETURN
      END
```

```
                                    IDENT     TRYLAUN
PROGRAM LENGTH                 00202
ENTRY POINTS     TRYLAUN       00003
BLOCK NAMES
                 EDATA         01200
                 KEYWORDS      00024
                 TRYL          00041
                 19501         54731
EXTERNAL SYMBOLS
                 QMODICT.
                 HIST
                 IGET
                 IPUT
                 RANF
```

```
C00516  AAIM
C00016  AAIMC
P00163  BEGIN.     00163
C45071  COLAR
C00505  DGX
C00005  DGXC
C00506  DGY
C00006  DGYC
C00507  DHOB
C00007  DHOBC
P00001  DICT.      00005  00021  00026  00035  00047  00053  00065  00072  00077  00104  00107
                   00120  00125  00140
P00164  ENDING.    00006  00162
P00000  EXIT.      00164
C00562  FMLIST
X00002  HIST       00025  00046  00052  00071  00103  00124  00137
C00513  IALERT
C00013  IALERTC
C00001  IBASE
P00177  IC         00015  00031  00043  00056
C00511  ICLASS
C00011  ICLASSC
X00003  IGET       00034
P00200  IGOTO.     00145
C00501  INBASE     00014  00036  00110
C00500  INDATA
C00000  INDEXWPN   00143
C00002  INDM
C00502  INDV       00013
P00163  INITIAL.   00006
C00506  INITVULN
C00006  INITVULC
C00503  INTAR
C00504  IPAYLOAD
X00004  IPUT       00105
C00512  IREG
C00012  IREGC
C00030  IREP       00127  00127  00144  00144
P00201  ISTAT      00040
C00510  ITYPE
C00010  ITYPC
P00007  .1
P00113  .10        00067  00070
P00115  .11
P00124  .12        00122
P00132  .13        00130
P00135  .14        00123
P00142  .15
P00144  .17        00051  00055  00057  00102  00112  00131  00134
P00152  .171       00145
P00154  .172       00147
P00156  .173       00150
P00160  .174       00150  00151
P00011  .2
```

```
P00016  .3
P00025  .31
P00032  .4        00023   00024
P00034  .5        00031
P00043  .51       00041
P00046  .52       00044
P00052  .53       00045
P00056  .54       00042
P00060  .6
P00062  .7
P00071  .71
P00074  .8
P00103  .81       00101
P00105  .9
P00162  .99       00153   00155   00157
P00165  .ERASER.  00017   00063   00075   00116
C00003  JNTAR
C00000  KEYARRAY
C00540  LAUNLIST  00013
C00001  LINKM
C00514  MDATA
C00014  MDATAC
C00040  MLAUNLIS
C00562  MLIST
C00062  MLISTC
C00016  NWPNLIST
C00033  NALIVE    00060   00060   00061   00156   00156
C00000  NBCELL
C00032  NCOM      00032   00032   00033   00154   00154
C00031  NCYCLE    00007   00007   00010   00011   00011   00142   00142   00152   00152
C00037  NDES
C00036  NLATER    00132   00132   00133
C00507  NMIRV
C00034  NNABT     00113   00113   00114   00160   00160
C00035  NSUCC     00135   00135   00136   00143
C00515  NTARG
C00015  NTARGC
C00040  NTEST     00153   00155   00157   00161
C00514  NWHOS
C00014  NWHOSC
C00514  NWPNS
C00014  NWPNSC
C00504  NWTYP
C00004  NWTYPC
C00000  OUTDATA
C00024  PDEST     00100   00101
C00025  PELTFAIL  00121   00122
C00022  PINCOMM   00022   00023
C00023  PNCARGNT  00066   00067
X00001  QBWDICT.  00000   00004
X00005  RANF      00020   00064   00076   00117
C00500  SIDE
C00000  SIDEC
C15531  STATUS    00037   00111
```

```
C00515  TAIM
C00015  TAIMC
C00532  TCF
C00032  TCFC
C00026  TPF
C00027  TRETARG
P00003  TRYLAUN    00003
C00000  TSTAT      00036   00110
C00516  WPNLIST    00012   00012
   00144 SYMBOLS
```

```
      SUBROUTINE UNPFOR                                                 1000
CSUBR     UNPFOR    10JUN71   ******************************************  6000
C     UNPACK FORMAT INDEX ARRAY                                         2000
      COMMON/EVENT/INDEV,INDF                                           2100
      COMMON/EPACK/INDFORMO(100)                                        3000
      COMMON/PLANTS/INDFOR(80)                                          4000
      DATA(IRSH6=100B)                                                  5000
                                                                        5100
    1 IF(INDF.EQ.INDFO)8,2                                              6000
    2 NC = 1                                                            6100
      J = 10*(INDF-1) + 1                                               6200
    3 IWD = INDFOR(J)                                                   7000
      DO 4 K = 1,7                                                      8000
      INDFORMO(NC + 8-K) = IWD.AND.77B                                  9000
      IWD=IWD/IRSH6                                                    10000
    4 CONTINUE                                                         11000
      INDFORMO(NC) = IWD.AND.77B                                       12000
      NC=NC+8                                                          13000
    5 IF(INDFORMO(J) - NC + 2) 7,7,6                                   14000
    6 J = J + 1                                                        15000
      GO TO 3                                                          16000
    7 INDFO = INDF                                                     17000
    8 RETURN                                                           17500
      END                                                              18000
```

```
                                IDENT     UNPFOR
PROGRAM LENGTH              00073
ENTRY POINTS     UNPFOR     00004
BLOCK NAMES
                 EVENT      00002
                 EPACK      00144
                 PLANTS     00120
EXTERNAL SYMBOLS
                 QBQDICT.
```

```
P00060  BEGIN.      00061
P00001  DICT.       00006
P00062  ENDING.     00007   00057   00060
P00000  EXIT.       00063
C00000  INDEV
C00001  INDF        00010   00010   00014   00015   00055   00055
P00066  INDFC       00011   00056
C00000  INDFCR      00022   00022
C00000  INDFCRMC    00033   00033   00042   00043   00046   00046
P00060  INITIAL.    00007
P00003  IRSR6       00036
P00067  IWD         00023   00031   00034   00036   00040
P00010  .1
P00013  .2          00012
P00021  .3          00054
P00037  .4
P00046  .5
P00052  .6
P00055  .7          00050   00051
P00057  .8          00012
P00065  .ERASER.    00016   00017
P00064  .NSTIFF.    00030   00032
P00070  J           00020   00021   00052   00053
P00071  K           00024   00027   00037
P00072  NC          00014   00026   00042   00044   00045   00047
X00001  QBQDICT.    00000   00005
P00004  UNPFOR      00004
P00026  WS00001.    00040
   00034 SYMBOLS
```

```
      SUBROUTINE UNSQUEEZ
CSURK     UNSQUEEZ  10JUN71   ******************************************
C     TRANSFER ARRAY IOUTOP TO LIST MEMORY
C     NWORDS  =  NUMBER OF WORDS TO TRANSFER TO LIST MEMORY
      COMMON/ESTOP/SCALET,SCALETI,TMAX,NWORDS,NDIMD,NEATEV,MERGS,
     1  INDATP(320),IOUTOP(320),ISVDAT(320),MEMTIM,TAPET(10),SVTIME(10)
     2  ,ITCOD(10)
      COMMON/LISTMEM/IAVAIL
CUSE      NRCELL    22JUN71   ******************************************
      COMMON/I9501/NRCELL,LINKM(7000),STATUS(12000),COLAR(4000)
CEND      NRCELL    ******************************************************
      J = 1
      NCT = 0
      ISW = 1
      NWORDS = NWORDS
      IF (NWORDS) 7, 7, 1
    1 IF(NWORDS-NCT)6,6,2
    2 I=IAVAIL
      LINKM(I+1)=IOUTOP(J)
      LINKM(I+2)=IOUTOP(J+1)
      LINKM(I+3)=IOUTOP(J+2)
      LINKM(I+4)=IOUTOP(J+3)
      J=J+4   $ NCT=NCT+4
      IAVAIL=LINKM(I)
      IF(IAVAIL.EQ.0)3,1
C     HERE LIST MEMORY FULL
    3 CONTINUE
      GO TO (4,5),ISW
    4 ISW=2
      CALL EVSPILL
      LINKM(I)=IAVAIL
      GO TO 1
    5 CALL ERROR(20)
      RETURN
C     HERE TERMINATE LIST
    6 LINKM(I)=0
    7 RETURN
      END
```

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```
                                IDENT     UNSQUEEZ
PROGRAM LENGTH                 00101
ENTRY POINTS     UNSQUEEZ      00003
BLOCK NAMES
                 ESTOR         01746
                 LISTMEM       00001
                 19501         54731
EXTERNAL SYMBOLS
                 GHODICT.
                 FVSPILL
                 FRROL
```

```
P00066  BEGIN.      00067
C45071  CCLAR
P00001  DICT.       00005   00051   00057
P00070  E DING.     00006   00061   00065   00066
X00003  ERROR       00056
X00002  EVSPILL     00050
P00000  EXIT.       00071
P00073  I           00022   00025   00053   00063
C00000  IAVAIL      00021   00021   00041   00041   00052   00052
P00074  IGOTO.      00044
C00007  INDATP
P00066  INITIAL.    00006
C00507  IOUTOP      00023   00024   00026   00027   00030   00031   00032   00033
C01207  ISVDAT
P00075  IS#         00012   00043   00047
C01734  ITOGO
P00016  .1          00042   00055
P00021  .2
P00043  .3
P00046  .4          00045
P00056  .5          00045
P00062  .6          00017   00020
P00065  .7          00014   00015
P00076  J           00010   00023   00035   00036
C00001  LINKM       00025   00026   00027   00030   00031   00032   00033   00034   00040   00043   00054
                    00054   00063   00064
C01707  MEMTIM
C00006  MERGSW
C00000  NBCELL
P00077  NBWDS       00014   00016
P00100  NCT         00011   00017   00036   00037
C00004  NDIMD
C00005  NEATEV
C00003  NWORDS      00012   00013
X00001  OBJDICT.    00000   00004
C00000  SCALET
C00001  SCALETI
C15531  STATUS
C01722  SVTIME
C01719  TAPET
C00002  TMAX
P00003  UNSQUEEZ    00003
   00051 SYMBOLS
```

```
      SUBROUTINE UPDIR                                                  1000
CSUBR     UPDIR     28APR71   ******************************************  5500
C     UPDATE ENTRY POINT DIRECTORY                                      2000
CUSE      NRCELL    22JUN71   ******************************************  3000
      COMMON/19501/NBCELL,LINKM(7000),STATUS(12000),COLAR(4000)         4000
CEND      NRCELL    ******************************************************  3000
      COMMON/NBEVTOT/NBEVTOT,NCTR                                       4000
      COMMON/EVTINDX/NBIND,EVTIME(10),INDEVB(10)                        5000
      DIMENSION IEVTIME(10)                                             6000
      EQUIVALENCE(EVTIME,IEVTIME)                                       7000
      COMMON/ESTOR/SCALET,SCALETI,TMAX,NBCRDS,NDIMD,NEXTEV,MERGSW,      8000
     1  INDATP(320),IOUTDP(320),ISVDAT(320),MEMTIM,TAPET(10),SVTIME(10) 9000
     2  ,ITOSC(10)                                                      10000
      IF(INDEVB(1).EQ.0)1,2                                             11000
    2 ISX=INDEVB(1)   $ NI=1  $IS=INDEVB(1) $   GO TO 4                 12000
    1 IF(INDEVB(2).EQ.0)40,3                                            13000
    3 ISX=INDEVB(2)  $ NI=2  $ IS=INDEVB(2)                             14000
C     LINK LIST MEMORY                                                  15000
    4 CONTINUE                                                          16000
      NMX=NBIND-1                                                       17000
    5 IF(ISX.EQ.0)7,6                                                   18000
    6 IPX=ISX   $ ISX=LINKM(ISX+3)                                      19000
      GO TO 5                                                           20000
    7 IF(INDEVB(NI+1).EQ.0)10,8                                         21000
    8 LINKM(IPX+3)=INDEVB(NI+1)                                         22000
      IF(NI.EQ.NMX)10,9                                                 23000
    9 NI=NI+1  $  ISX=LINKM(IPX+3)                                      24000
      GO TO 5                                                           25000
C     LIST MEMORY LINKED                                                26000
   10 CONTINUE                                                          27000
      IF(NBEVTOT-50)30,30,20                                            28000
C     PUT NB EVENTS INTO EACH LIST EXCEPT LAST.                         29000
   20 CONTINUE                                                          30000
      NB=NBEVTOT/NBIND                                                  31000
      NMX=NBIND-1                                                       32000
      INDEVB(1)=IS                                                      33000
      NI=1                                                              34000
   21 IF(NI-NMX)22,22,25                                                35000
   22 NC=0                                                              36000
   23 IPX=IS                                                            37000
      IS=LINKM(IPX+3)                                                   38000
      NC=NC+1                                                           39000
      IF(NB-NC)24,24,23                                                 40000
C     TERMINATE THIS LIST                                               41000
   24 CONTINUE                                                          42000
      IEVTIME(NI)=LINKM(IPX)                                            43000
      LINKM(IPX+3)=0                                                    44000
      INDEVB(NI+1)=IS                                                   45000
      NI=NI+1                                                           46000
      GO TO 21                                                          47000
C     GO TO END OF LIST AND INSERT MAX TIME.                            48000
   25 CONTINUE                                                          49000
      NX=NBIND                                                          50000
   26 IPX=IS   $  IS=LINKM(IPX+3)                                       51000
      IF(IS.EQ.0)27,26                                                  52000
   27 IEVTIME(NX)=LINKM(IPX)                                            53000
```

```
      RETURN                                                            54000
   30 CONTINUE                                                          55000
      INDEVR(1)=IS                                                      56000
      DO 31 I=2,NRIND                                                   57000
      INDEVR(I)=0                                                       58000
      EVTIME(I)=TMAX                                                    59000
   31 CONTINUE                                                          60000
      NX=1    $ GO TO 26                                                61000
   40 CONTINUE                                                          62000
      RETURN                                                            63000
      END                                                               64000
```

```
                                        IDENT     UPDIR
PROGRAM LENGTH                  00201
ENTRY POINTS     UPDIR          00003
BLOCK NAMES
                 19501          54731
                 NEVTOT         00002
                 EVINDX         00025
                 ESTOR           1746
EXTERNAL SYMBOLS
                 UPDICT.
```

```
P00163  BEGIN.     00104
C45071  COLAR
P00167  COUNT.     00151  00152
P00001  DICT.      00005
P00165  ENDING.    00006  00142  00162  00163
C00001  EVTIME     00155  00156
P00000  EXIT.      00166
P00170  I          00146  00151
C00001  IFVTIME    00120  00120  00141  00141
C00007  INDATP
C00013  INDEVB     00007  00007  00012  00012  00015  00015  00020  00020  00023  00023  00026
                   00026  00044  00044  00050  00050  00075  00075  00123  00124  00144  00144
                   00153  00154
P00163  INITIAL.   00006
C00507  IOUTOP
P00171  IPA        00037  00051  00060  00106  00106  00115  00132  00132  00136
P00172  IS         00016  00027  00074  00105  00110  00123  00131  00134  00143
C01207  ISVDAT
P00173  ISA        00013  00024  00033  00036  00037  00041  00062
C01734  ITOGC
P00020  .1         00011
P00063  .10        00046  00055
P00012  .2         00010
P00066  .20
P00100  .21        00126
P00103  .22        00101  00102
P00105  .23        00114
P00115  .24        00113  00114
P00127  .25        00102
P00131  .26        00135  00161
P00136  .27
P00023  .3         00021
P00143  .30        00064  00065
P00157  .31
P00030  .4         00017
P00162  .40        00022
P00033  .5         00042  00062
P00036  .6         00034
P00043  .7         00035
P00047  .8         00045
P00056  .9         00054
C00001  LINKM      00040  00040  00052  00052  00060  00061  00107  00107  00116  00116  00121
                   00122  00133  00133  00137  00137
C01707  MEMTIM
C00006  MERGSW
P00174  NP         00071  00112
C00000  NBCELL
C00000  NBEVTOT    00063  00063  00066  00066
C00000  NBIND      00030  00030  00070  00070  00072  00072  00127  00127  00146  00147
P00175  NBA        00032  00054  00074  00101
P00176  NC         00104  00111  00112  00113
C00001  NCTR
C00004  NDIMO
C00005  NEXTEV
```

```
P00177  NI        00014  00025  00043  00047  00053  00056  00057  00077  00100  00117  00125
                  00126
C00003  NWCRUS
P00200  NX        00130  00140  00161
X00001  WBJECT:   00000  00004
C00000  SCALET
C00001  SCALETI
C15531  STATUS
C01722  SVTIME
C01710  TAPET
C00002  TMAX      00154  00155
P00160  TS00001.  00150
P00003  UPDIR     00003
P00153  WS00001.  00157
   00100 SYMBOLS
```

```
      FUNCTION VLRAD(YIELD,NVN,HOR,FN)                                  1000
CSUBR     VLRAD     26AUG70   ****************************************  6000
      COMMON/VULNDATA/PG(12),PA(12),UG(8),UA(8)                         2000
      DECODE (4,100,NVR) VN,LETTER,AK                                   3000
  100 FORMAT (F2.0,A1,F1.0)                                             4000
      CRY=YIELD**.33333                                                 5000
      IF(XK) 1,1,2                                                      6000
    1 DELTA=0.                                                          7000
      IF (LETTER .EQ. 8HU        ) 19,9                                 8000
    2 A=.027144 * XK/CRY                                                9000
      R=1.-.1*XK                                                       10000
      IF (LETTER .EQ. 8HU        ) 15,5                                11000
C     F CASE                                                           12000
    5 X=2.                                                             13000
    6 Z=(X*X+R)/(2.*X-A)                                               14000
      IF(ABSF(X-Z) .LT. .0005) 8,7                                     15000
    7 X=Z  $GO TO 6                                                    16000
    8 RZ=(Z-1.)/(Z+1.)                                                 17000
      DELTA=(21.7991 + 9.1979*RZ*RZ)*RZ                                18000
    9 AVN=DELTA+VN                                                     19000
      ISW=1   $FN=6.   $GO TO 23                                       20000
C     U CASE                                                           21000
   15 X=1.                                                             22000
   16 Z=(2.*X*X+R)/(3.*X*X-A)                                          23000
      IF(ABSF(X-Z) .LT. .0003) 18,17                                   24000
   17 X=Z   $GO TO 16                                                  25000
   18 RZ=(Z-1.)/(Z+1.)                                                 26000
      DELTA=(16.3493+6.8984*RZ*RZ)*RZ                                  27000
   19 AVN=DELTA+VN                                                     28000
      ISW=2   $FN=3.                                                   29000
   23 IF(HOR) 24,24,25                                                 30000
   24 JSW=1   $GO TO 26                                                31000
   25 JSW=2                                                            32000
   26 DO 27 I=2,12                                                     33000
      IF(AVN .LE. 5.*(I-1)) 28,27                                      34000
   27 CONTINUE                                                         35000
      I=12                                                             36000
   28 IUP=I   $IL=I-1                                                  37000
      DV=AVN-5.*(IL-1)                                                 38000
      GO TO (29,32),ISW                                                39000
   29 GO TO (30,31),JSW                                                40000
   30 Y=PG(IL)   $Z=PG(IUP)   $GO TO 35                                41000
   31 Y=PA(IL)   $Z=PA(IUP)   $GO TO 35                                42000
   32 GO TO (33,34),JSW                                                43000
   33 Y=UG(IL)   $Z=UG(IUP)   $GO TO 35                                44000
   34 Y=UA(IL)   $Z=UA(IUP)                                            45000
   35 S=(Y-Z)*.2                                                       46000
      Y=Y-S*DV                                                         47000
      VLRAD =EXPF(Y)*CRY                                               48000
      END                                                              49000
```

```
                                        IDENT     VLRAD
PROGRAM LENGTH                  00374
ENTRY POINTS      VLRAD         00012
BLOCK NAMES
                  VULNDATA      00050
EXTERNAL SYMBOLS
                  THEND.
                  Q2007111
                  QHQDICT.
                  EXPF
                  DEC.
                  QNSINGL.
```

P00350	A	00046	00060	00116				
P00351	AVN	00103	00140	00162	00176			
P00352	K	00050	00056	00113				
P00254	BEGIN.	00305	00314	00320				
P00253	CNVRTI.	00022	00024	00025				
P00003	CHFMT.	00031						
P00353	CRY	00035	00045	00247				
X00005	DEC.	00317						
P00354	DELTA	00041	00101	00102	00136	00137		
P00001	DICT.	00014	00020	00030	00032	00246	00257	00260
P00355	DV	00177	00243					
P00306	ENDING.	00015	00250	00254	00255	00255	00256	00256
P00000	EXIT.	00312						
X00004	EXPF	00245						
P00003	FN	00106	00143					
P00003	FORMAT.	00042	00051					
P00021	FP00001.	00272						
P00033	FP00002.	00266	00267					
P00105	FP00003.	00301	00302					
P00142	FP00004.	00303	00304					
P00144	FP00005.	00275	00276					
P00323	GETPL.	00261	00270	00277				
P00313	GETPU.	00264	00273	00317				
P00031	GGOOOOO.	00016						
P00003	HCB	00144						
P00356	I	00154	00155	00164	00166	00167	00170	
P00357	IGOTO.	00200	00203	00222				
P00360	IL	00171	00205	00213	00224	00232		
P00254	INITIAL.	00015						
P00361	IS#	00104	00141	00177				
P00362	IUP	00170	00210	00216	00227	00235		
P00040	.1	00036	00037					
P00107	.15	00052						
P00111	.16	00126						
P00125	.17	00123	00124					
P00127	.18	00124						
P00137	.19	00143						
P00044	.2	00037						
P00144	.23	00105						
P00147	.24	00145	00145					
P00151	.25	00146						
P00153	.26	00150						
P00164	.27	00163						
P00167	.28	00162	00163					
P00202	.29	00201						
P00205	.30	00204						
P00213	.31	00204						
P00221	.32	00201						
P00224	.33	00223						
P00232	.34	00223						
P00240	.35	00212	00220	00231				
P00053	.5	00052						
P00055	.6	00071						
P00070	.7	00066	00067					

P00072	.R	00067										
P00102	.9	00143										
P00324	.ERASER.	00057	00061	00061	00062	00064	00073	00075	00075	00076	00114	00116
		00117	00117	00121	00130	00132	00132	00133	00161	00175		
P00003	..E00	00021										
P00010	..E00010	00142										
P00011	..E00011	00151										
P00363	JS#	00150	00152	00202	00221							
P00364	LETTER	00025	00042	00051								
P00003	NVN	00021										
C00014	PA	00214	00214	00216	00217							
P00270	PF00002.	00295										
P00273	PF00003.	00271										
P00277	PF00004.	00274										
P00305	PF00005.	00300										
C00000	PG	00206	00206	00210	00211							
X00002	QZ007111	00031										
X00003	QRJECT.	00100	00013									
C00040	QA	00233	00233	00235	00236							
C00030	QG	00225	00225	00227	00230							
X00006	QNSINGL.	00252										
P00365	RZ	00076	00077	00100	00101	00133	00134	00135	00136			
P00366	S	00242	00242									
X00001	THEND.	00027										
P00251	VALUE.	00247	00311									
P00012	VLRAD	00012										
P00367	VN	00023	00103	00140								
P00155	WS00001.	00165										
P00370	X	00054	00055	00056	00060	00063	00071	00110	00112	00112	00113	00115
		00115	00120	00126								
P00371	XK	00026	00036	00045	00047							
P00372	Y	00207	00215	00226	00234	00240	00243	00244				
P00003	YIELD	00033										
P00373	Z	00062	00063	00070	00072	00074	00120	00121	00125	00127	00131	00212
		00220	00231	00237	00241							

00126 SYMBOLS

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```
      SUBROUTINE ZABORT
CSUBR     ZABORT    JUNI0/1   ******************************************
      COMMON/ITP/ITP
      COMMON/MYIDENT/MYIDENT
      COMMON/TWORD/ITWORD
CUSE      RECOV     28APR71   ******************************************
      COMMON/RECOV/TRECOV(5 ,4,2),TCFREC(50,4,2),NMORE(50,4,2),
     1        NRES(50,4,2),LSHIFT
CEND      RECOV     ******************************************************
CUSE      WARHEAD   28APR71   ******************************************
      COMMON/WARHEAD/YIELD(50),PDUD(50),CEPW(50)
CEND      WARHEAD   ******************************************************
CUSE      BRKPNT    28APR71   ******************************************
      COMMON/BRKPNT/NTYPECUM(15),NBLUETYP(15),INDBEGCL(15),INDBEGTY(250)
CEND      BRKPNT    ******************************************************
      DIMENSION TEMP(2)
C     TERMINATE HISTORY BEFORE ABORTING
      ITP=5
      ITWORD=4HLAST
      CALL WRWORD
      CALL WRARRAY(TRECOV,400)
      CALL TERMTAPE
      MYIDENT = 4H HISTAPE
      CALL SETREAD
      CALL SKIPFILE(ITP)
   30 BUFFER OUT(ITP,1)(NTYPECUM(1),INDBEGTY(250))
   40 IF(UNIT,ITP)40,60,50,50
   50 PRINT 51
      WRITE(44,51)
   51 FORMAT( 30H ERROR IN WRITING HISTP ARRAYS    )
   60 BUFFER OUT(ITP,1)(YIELD(1),YIELD(5 ))
   70 IF(UNIT,ITP)70,90,80,80
   80 PRINT 51
      WRITE(44,51)
   90 END FILE ITP
      REWIND ITP
      CALL ABORT
      END
```

```
                                        IDENT     ZABORT
PROGRAM LENGTH                  00134
ENTRY POINTS     ZABORT         00016
BLOCK NAMES
                 ITP            00001
                 MYIDENT        00001
                 TWORD          00001
                 RECOV          03101
                 WARHEAD        00226
                 BRKPNT         00447
EXTERNAL SYMBOLS
                 THEND.
                 QBODICT.
                 WRWORD
                 WRARRAY
                 TERMTAPE
                 SETREAD
                 SKIPFILE
                 ABORT
                 QBOIFUNI
                 EFT.
                 REW.
                 STH.
                 RFC.
```

```
X00010  ABORT       00126
P00131  BEGIN.      00131
X00015  BFO.        00046   00074
C00144  CEPW
P00005  CRFMT.      00072
P00001  DICT.       00020   00027   00031   00034   00040   00042   00047   00053   00060   00063   00066
                    00071   00075   00101   00106   00111   00114   00117   00122   00125   00127
X00012  EFT.        00121
P00132  ENDING.     00021   00130
P00000  EXIT.       00132
P00005  FORMAT.     00024   00035
P00064  GG00001.    00056
P00072  GG00002.    00064
P00112  GG00004.    00104
P00120  GG00005.    00112
C00036  INDREGCL
C00055  INDREGTY    00050
P00131  INITIAL.    00021
C00000  IRECOV      00032
C00000  ITP         00022   00023   00043   00044   00044   00051   00051   00072   00072   00077   00077
                    00120   00120   00123
C00000  IT#CRD      00025   00025
P00044  .30
P00051  .40         00054
P00056  .50         00055
P00072  .60         00054
P00077  .70         00102
P00104  .80         00103
P00120  .90         00102
P00005  ..100000    00024
P00006  ..100001    00035
P00007  ..51        00061   00067   00107   00115
C03100  LSHIFT
C00000  MYIDENT     00036   00036
C00017  NBLDETYP
C01440  NMORE
C02260  NRES
C00000  NTYPECUM    00050
C00062  PDUD
X00002  QBQDICT.    00000   00017
X00011  QRQIFUNI    00052   00100
X00013  RE#.        00124
X00006  SETREAD     00037
X00007  SKIPFILE    00041
X00014  STM.        00057   00065   00105   00113
P00003  TEMP
X00005  TERMTAPE    00033
X00001  THEND.      00062   00070   00110   00116
C00620  TOFREC
X00004  WRARRAY     00030
X00003  WR#CRD      00025
C00000  YIELD       00076   00076
P00015  ZABORT      00015
   00063 SYMBOLS
```

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```
      PROGRAM READSUM
CSUBR     READSUM   19DC17)   ****************************************
      TYPE REAL MAXTIME
      COMMON/TIP/ITP
      COMMON/TAPES/ITAPE(10),MAXTAPE(10),NTP,NROUT
      COMMON/STIME/JDAY,JMON,JYEAR,JHOUR,JMIN
C     ITAPE(1) - INDEXDB
C     ITAPE(2) - RESERVED FOR EXECUTION
C     ITAPE(3) - AGZ TAPE
C     ITAPE(4) - HISTAPE
C     ITAPE(5) - HISTDATA
C     ITAPE(6) - HISTAGZ
C
      DATA(ITAPE=1,2,3,4,5,6,7,8,9,10)
      COMMON/NOPRINT/NOPRINT
      COMMON/MYIDENT/MYIDENT
      COMMON/FILAREL/INIDENT,INRUNNO,INDATE,INFORM,INSECR,INTIME,INLNGTH
     1,INCOMM(5)
      COMMON/TAPETYPE/NTPTYPE
CUSE      KNTWRT    940671   ****************************************
      COMMON/KNTWRT/NOWRTD,NOWRTA
CEND      KNTWRT    ****************************************
      NROUT=2
      CALL STORAGE
      MYIDENT=7HREADSUM
      NOPRINT=1
      CALL INITAPE
      ITP=ITAPE(4)
      MYIDENT=7HHISTAPE
      CALL SETREAD
      IF(INIDENT .EQ. 8HHISTPLAN) 2,1
    1 NTPTYPE=1
      GO TO 3
    2 NTPTYPE=2
C     READS STARTING TIME
    3 CONTINUE
      CALL READATA
      ITP=ITAPE(1)
      MYIDENT=7HINDEXDB
C     RESTRIEVES FROM DBINDEX INFORMATION NOT AVAILABLE TO SIMULATOR
      CALL MOREDATA
      ITP=ITAPE(4)
C     TRANSFERS INFORMATION FOR AN EVENT FROM THE HISTORY TAPE TO THE
C       VALUE ARRAY. IN TURN IT CALLS THE SPECIFIC EVENT ROUTINES BOMBFR
C       ETC. WHICH CALL ADDATA
      CALL READOUT
      CALL GENOUTPT
      CALL SPCTHLPT
      CALL ENDDATA(ITAPE(5))
    5 CALL ENDDATA(ITAPE(6))
      CALL NEWUNIT(ITAPE(5))
      CALL NEWUNIT(ITAPE(6))
      CALL WRAGZF
      WRITE( 44,7778)NOWRTD,NOWRTA
7778  FORMAT(11H DB WRITES= I6,14H  AGZ WRITES= I8)
      WRITE(44,7777)
```

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```
7777  FORMAT(43H ***** PROCESSOR READSUM COMPLETED ***** I    )        68000
      STOP                                                             68100
      END                                                              69000
```

```
                                    IDENT     READSUM
PROGRAM LENGTH              00151
ENTRY POINTS     READSUM    00032
BLOCK NAMES
                 ITP        00001
                 TAPES      00026
                 STIME      00005
                 NOPRINT    00001
                 MYIDENT    00001
                 FILABEL    00014
                 TAPETYPE   00001
                 KNTWRT     00002
EXTERNAL SYMBOLS
                 QBQENTRY
                 TMEND.
                 QBQSTOPS
                 QBQDICT.
                 STORAGE
                 INITAPE
                 SETREAD
                 READATA
                 MOREDATA
                 READOUT
                 GENOUTPT
                 SPCTBLPT
                 ENDDATA
                 NEWUNIT
                 WRAGZF
                 STM.
                 QNSINGL.
```

P00147	CNVRTI.	00131	00132									
P00003	CRFMT.	00135	00143									
P00001	DICT.	00034	00036	00042	00050	00056	00067	00075	00101	00103	00105	00107
		00112	00115	00120	00123	00126	00134	00137	00142	00145		
X00015	ENDDATA	00106	00111									
P00150	ENDING.	00145										
P00000	EXIT.	00150										
P00003	FORMAT.	00043	00053	00057	00072							
X00013	GENOUTPT	00102										
P00135	GGG0000.	00124										
P00143	GGG0001.	00135										
C00007	INCOMM											
C00002	INDATE											
C00003	INFORM											
C00000	INIDENT	00057	00057									
X00006	INITAPE	00047										
C00006	INLNGTH											
C00001	INRUNNO											
C00004	INSECR											
C00005	INTIME											
C00000	ITAPE	00003	00051	00051	00070	00070	00076	00076	00110	00113	00116	00121
C00000	ITP	00052	00052	00071	00071	00077	00077					
P00062	.1	00061										
P00064	.2	00061										
P00066	.3	00063										
P00111	.5											
P00003	..100000	00043										
P00004	..100001	00053										
P00005	..100002	00060										
P00006	..100003	00072										
P00021	..7777	00140										
P00007	..7778	00127										
C00000	JDAY											
C00003	JHOUR											
C00004	JMIN											
C00001	JMON											
C00002	JYEAR											
C00012	MAXTAPE											
X00011	MOREDATA	00074										
C00000	MYIDENT	00044	00044	00054	00054	00073	00073					
X00016	NEWUNIT	00114	00117									
C00000	NOPRINT	00045	00046									
C00001	NOWRTA	00132										
C00000	NOWRTO	00130	00130									
C00025	NROUT	00037	00040									
C00024	NTP											
C00000	NTPTYPE	00062	00063	00064	00065							
X00004	QBWDICT.	00000	00033									
X00001	QBWENTRY	00035										
X00003	QBWSTOPS	00144										
X00021	QNSINGL.	00146										
X00010	READATA	00066										
X00012	READOUT	00100										
P00032	READSUM	00032										

```
X00007  SETREAD    00055
X00014  SPCTBLPT   00104
X00020  STR.       00125   00136
X00005  STORAGE    00041
X00002  THEND.     00133   00141
X00017  WRAGZF     00122
   00073 SYMBOLS
```

```
      SUBROUTINE AUDATA                                                 1000
CSUBR     AUDATA    70C171    ****************************************  2000
      COMMON/TAPES/ITAPE(10),MAXTAPE(10),NTP,NRCUT                      2000
      COMMON/FILE/ACTIVE(10),READST(10),IAUX(10),IBEG(10),IDISPL(10),   7010
     1IEND(10),IPT(10),NAME...     NEC#(10),NEWT(10),LOCNC#(10)         7020
CUSE      TARGETS   24SEP71   ****************************************  8000
      COMMON/KEYS/KLAT,KLONG,KEYC#N,KETLOC,KEYFCN,KEYLAT,KEYREG         1000
     1,KEYUES,KEYTSR                                                    2000
      COMMON/1/KUXCTY(12000)                                            3000
      COMMON/2/KNTRY(256),KFCN(256),KREG(11),KLATPR(6000),KLATLONG(1)   4000
      COMMON/3/NDESTR(1)                                                5000
CEND      TARGETS   ****************************************************  6000
CUSE      MAXBLK    9AUG71    ****************************************  11000
      COMMON/MAXES/MAXRLS,MAXMOD,MAXASM,MAXMIS,MAXBOM,MAXLOC,MAXREG     1000
     1,MAXGRP                                                           1010
CEND      MAXBLK    ****************************************************  11000
      COMMON/*ARHEAD/YIELDX(50),FFRACX(50),PDUDX(50)                    12000
      COMMON/BYTYPE/COMNC(15),BTYPES(15),INDCLAS(15),INDBEG(250),       13000
     1        TYPENAME(250),KLASSES(250)                                14000
      TYPE INTEGER TYPENAME,COMNC,BTYPES                                15000
      EQUIVALENCE (NTYPE,COMNC(15))                                     16000
      COMMON/MYIDENT/MYIDENT                                            16100
CDECLAREX INDEANC   FUNCTION  CNTRYOWN  CNTRYLOC  INTAP                 17000
      COMMON/PROCESS/N1,NV,NC,INITEM(100),VALUE(500),DEF(500),LOLOG(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LOLOG
      COMMON/EDITERM/ISWTERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(INDEANC ,VALUE(  22))
      TYPE INTEGER INDEANC
      EQUIVALENCE(FUNCTION,VALUE(   6))
      TYPE INTEGER FUNCTION
      EQUIVALENCE(CNTRYOWN,VALUE(   4))
      TYPE INTEGER CNTRYOWN
      EQUIVALENCE(CNTRYLOC,VALUE(   5))
      TYPE INTEGER CNTRYLOC
      EQUIVALENCE(INTAP   ,VALUE( 129))
      TYPE INTEGER INTAP
CDECLARE  CNTYLOCT  WHDTYPE   YIELD     WHDTYPEN  CNTYOWNT              18000
      EQUIVALENCE(CNTYLOCT,VALUE( 155))
      TYPE INTEGER CNTYLOCT
      EQUIVALENCE(WHDTYPE ,VALUE(  58))
      TYPE INTEGER WHDTYPE
      EQUIVALENCE(YIELD   ,VALUE(  73))
      TYPE REAL    YIELD
      EQUIVALENCE(WHDTYPEN,VALUE( 147))
      TYPE INTEGER WHDTYPEN
      EQUIVALENCE(CNTYOWNT,VALUE( 154))
      TYPE INTEGER CNTYOWNT
CDECLARE  TYPET     CLASST                                              19000
      EQUIVALENCE(TYPET   ,VALUE( 152))
      TYPE INTEGER TYPET
      EQUIVALENCE(CLASST  ,VALUE( 153))
      TYPE INTEGER CLASST
CDECLARE  PDUD                                                          20000
      EQUIVALENCE(PDUD    ,VALUE(  80))
```

Reproduced from best available copy.

```
      TYPE REAL    POOD
DECLARE  PRIMETAR                                                    21000
      EQUIVALENCE(PRIMETAR,VALUE( 148 ))
      TYPE INTEGER PRIMETAR
DECLARE  IREG                                                        22000
      EQUIVALENCE(IREG    ,VALUE(  51 ))
      TYPE INTEGER IREG
DECLARE  DESIG     TASK                                              22001
      EQUIVALENCE(DESIG   ,VALUE( 19 ))
      TYPE INTEGER DESIG
      EQUIVALENCE(TASK    ,VALUE( 20 ))
      TYPE INTEGER TASK
      COMMON/IREGS/IREGT                                             22050
CUSE     KNTWRT    9AUG71    ****************************************22998
      COMMON/KNTWRT/NOWRTD,NOWRTA                                     1000
CEND     KNTWRT    ****************************************************22999
      DATA(NOWRTA=0),(NOWRTD=0)                                      22999
      ISW = 1                                                        23000
  100 CONTINUE                                                       24000
      IF(INDEXNO)110,110,101                                         25000
101   IF(INDEXNO-MAXLOC)103,103,102                                  26000
 102   PRINT 104                                                     27000
104   FORMAT(29H0INDEXNO GREATER THAN MAXLOC  )                      28000
      CALL PRITEM                                                    29000
      GO TO 152                                                      29050
103   CONTINUE                                                       30000
      NDXOWN=IGET(KEYOWN,INDEXNO,NDXCTY)                             30200
      NDXLOC=IGET(KEYLOC,INDEXNO,NDXCTY)                             30400
      NDXFCN=IGET(KEYFCN,INDEXNO,NDXCTY)                             30600
      NDXREG=IGET(KEYREG,INDEXNO,NDXCTY)                             30800
CHANGE     FUNCTION                                                  32000
      NC=    6
      CALL CHANGE
      FUNCTION = KFCN(NDXFCN)                                        33000
CHANGE     CNTRYOWN                                                  34000
      NC=    4
      CALL CHANGE
      CNTRYOWN= KNTRY(NDXOWN)                                        35
CHANGE     CNTRYLOC                                                  36000
      NC=    5
      CALL CHANGE
      CNTRYLOC=KNTRY(NDXLOC)                                         37000
CHANGE     IREG                                                      38000
      NC=   51
      CALL CHANGE
      IREG=KREG(NDXREG)                                              39000
110   IF(INTAR)111,120,111                                           40000
  111 NDXOWN=IGET(KEYOWN,INTAR,NDXCTY)                               41000
      NDXLOC=IGET(KEYLOC,INTAR,NDXCTY)                               41200
      NDXREG=IGET(KEYREG,INTAR,NDXCTY)                               41400
CHANGE     CNTYOWNT                                                  43000
      NC=  154
      CALL CHANGE
      CNTYOWNT=KNTRY(NDXOWN)                                         44000
CHANGE     CNTYLOCT                                                  45000
      NC=  155
```

```
      CALL CHANGE
      CNTYLOCT=KNTRY(NDXLOC)                                          46000
      IREGT=KREG(NDXREG)                                              47000
C     FILL CONGTYPE DATA FOR TARGETS                                  49000
      J=MAXKLS+1                                                      50000
  112 J=J-1                                                           51000
      IF(INDCLAS(J)-INTAR) 113,113,112                                52000
  113 CONTINUE                                                        53000
CHANGE    CLASST                                                      54000
      NC=  153
      CALL CHANGE
      CLASST=CLASSES(J)                                               55000
      J=NTYPE+1                                                       56000
  114 J=J-1                                                           57000
      IF(INDBEG(J)-INTAR) 115,115,114                                 58000
  115 CONTINUE                                                        59000
CHANGE    TYPET                                                       60000
      NC=  152
      CALL CHANGE
      TYPET=TYPENAME(J)                                               61000
  120 CONTINUE                                                        62000
      IF(WHDTYPE)131,140,131                                          63000
  131 CONTINUE                                                        64000
CHANGE    PDUD                                                        65000
      NC=   80
      CALL CHANGE
      PDUD=PDUDX(WHDTYPE)                                             66000
CHANGE    YIELD                                                       67000
      NC=   73
      CALL CHANGE
      YIELD=YIELDX(WHDTYPE)                                           68000
140   IF(WHDTYPEN)141,150,141                                         69000
  141 CONTINUE                                                        70000
CHANGE    YIELD                                                       71000
      NC=   73
      CALL CHANGE
      YIELD=YIELDX(WHDTYPEN)                                          72000
  150 CONTINUE                                                        73000
      NTP=5                                                           74000
      JOUT=ITAPE(5)                                                   75000
      CALL GENTBLES                                                   76000
      NOWRTD=NOWRTD+1                                                 78005
      IF(NUMREC*(JOUT)-1000000000) 167,167,166                        78205
  166 MYIDENT=8HHISTDAT2                                              78405
      CALL ENDREEL                                                    78500
167   CONTINUE                                                        78605
      CALL OUTITEM                                                    80000
      IF((NROUT.EQ.2).AND.(PRIMETAR.EQ.1))151,152                     81000
  151 JOUT = ITAPE(6)    $  NTP = 6                                   82000
      CALL OUTITEM                                                    83000
      NOWRTA=NOWRTA+1                                                 85005
      IF(NUMREC*(JOUT)-1000000000) 152,152,169                        85010
  169 MYIDENT=8HHISTAGZ                                               85020
      CALL ENDREEL                                                    85100
  152 CONTINUE                                                        87000
      GO TO (160,165)ISW                                              88000
```

```
      ENTRY RESTORE
  160 CONTINUE
      DO 1 I=1,NV,2
      L=INITEM(I)
      VALUE(L)=INITEM(I+1)
      DEF(L)=0
    1 CONTINUE
      NI=NV=0
  165 ISW=1
      RETURN
      ENTRY ADDREP
      ISW=2
      GO TO 160
      END
```

```
                                        IDENT     ADDATA
PROGRAM LENGTH                  00377
ENTRY POINTS      ADDATA        00014
                  ADDREP        00347
                  RESTORE       00316
BLOCK NAMES
                  TAPES         00026
                  FILE          00156
                  KEYS          00011
                  1             27340
                  2             20514
                  3             00001
                  MAXES         00010
                  WARHEAD       00226
                  BYTYPE        01433
                  MYIDENT       00001
                  PROCESS       01173
                  EDITERM       00001
                  EDITAPE       00015
                  IREGS         00001
                  KNTWRT        00002
EXTERNAL SYMBOLS
                  IMEND.
                  03610000
                  080DICT.
                  PRITEM
                  IGET
                  CHANGE
                  GENTBLES
                  ENDREEL
                  OUTITEM
                  STH.
```

```
C00000  ACTIVE
P00014  ADDATA    00014
P00347  ADDREP    00347
P00355  BEGIN.    00357
C00017  BTYPES
X00006  CHANGE    00065  00073  00101  00107  00136  00144  00167  00207  00220  00226  00237
C00377  CLASST    00173  00173
C00153  CNTRYLOC  00105  00105
C00152  CNTRYCNT  00077  00077
C00401  CNTYLOCT  00150  00150
C00400  CNTYCNT   00142  00142
P00365  COUNT.    00330  00331
P00003  CRFMT.    00035
C00000  CUMNO
C01133  DEF       00341
C00171  DESIG
P00001  DICT.     00018  00031  00034  00036  00041  00046  00053  00060  00066  00074  00102
                  00110  00117  00124  00131  00137  00145  00170  00210  00221  00227  00240
                  00250  00263  00265  00277  00312  00320  00351
P00360  ENDING.   00017  00321  00346  00352  00355  00356  00356
X00010  ENDREL    00262  00311
P00000  EXIT.     00362
C00062  FFMACX
P00003  FORMAT.   00200  00307
C00154  FUNCTION  00071  00071
X00007  GENTBLES  00247
P00035  GGGGGGG.  00027
P00365  I         00323  00330
C00024  IAUX
C00036  IBEG
C00050  IDISKFL
C00062  IEND
P00270  IFJJJ01.
X00005  IGET      00040  00045  00052  00057  00116  00123  00130
P00367  IGOTO.    00314
C00055  INDBEG    00201  00202
C00036  INDCLAS   00161  00162
C00174  INDEXNO   00022  00022  00024  00024  00042  00047  00054  00061
C00003  INITEM    00332  00332  00334  00334
P00355  INITIAL.  00017  00321  00352
C00347  INTAM     00114  00114  00120  00125  00132  00162  00163  00202  00203
C00000  INTP
C00074  IPT
C00231  IREG      00113  00113
C00000  IREGT     00153  00153
P00370  ISW       00021  00313  00346  00354
C00000  ISWTERM
C00000  ITAPE     00245  00272  00272
C00002  ITOUT
P00022  .100      00354
P00342  .1
P00024  .101
P00027  .102
P00040  .103      00026  00026
```

```
P00114  .110        00023  00023
P00116  .111        00115
P00157  .112        00164
P00165  .113        00163  00164
P00177  .114        00204
P00205  .115        00203  00204
P00214  .120        00115
P00216  .131        00215
P00233  .140        00215
P00235  .141        00234
P00244  .150        00234
P00272  .151
P00313  .152        00037  00267  00271  00305  00305
P00322  .160        00315
P00345  .165        00315
P00260  .166        00257
P00264  .167        00256  00256
P00307  .169        00306
P00012  ..100000    00260
P00013  ..100001    00307
P00003  ..104       00032
P00371  J           00156  00157  00160  00161  00171  00176  00177  00200  00201  00211
C00014  JOUT        00246  00246  00253  00253  00273  00273  00302  00302
C00007  KEYDES
C00004  KEYFCN      00054
C00005  KEYLAT
C00003  KEYLOC      00047  00125
C00002  KEYOWN      00042  00120
C00006  KEYREG      00061  00132
C00010  KEYTSK
C00400  KFCN        00070  00070
C01041  KLASSES     00172  00172
C00000  KLAT
C01013  KLATPK
C00001  KLONG
C00000  KNTRY       00076  00076  00104  00104  00141  00141  00147  00147
C01000  KREG        00112  00112  00152  00152
P00372  L           00333  00335
C20513  LATLONG
C01153  LGLOB
C00144  LOCNOW
C00002  MAXASM
C00004  MAXBOM
C00007  MAXGHP
C00000  MAXKLS      00154  00154
C00005  MAXLOC      00025  00025
C00003  MAXMIS
C00006  MAXREG
C00012  MAXTAPE
C00001  MAXWHD
C00000  MYIDENT     00261  00261  00310  00310
C00106  NAME
C00002  NC          00064  00064  00072  00100  00106  00135  00135  00143  00165  00166  00205
                    00206  00216  00217  00225  00235  00236
```

```
C00000  NDESTK
C00000  NDACTY     00043  00050  00055  00062  00121  00126  00133
P00373  NDXFCN     00056  00067
P00374  NDALOC     00051  00103  00127  00146
P00375  NDXOWN     00044  00075  00122  00140
P00376  NDAREG     00063  00111  00134  00151
C00132  NE#T
C00000  NI         00344
C00001  NOUT
C00001  NO#RTA     00003  00300  00300  00301
C00000  NO#RTD     C00002 00251  00251  00252
C00025  NROUT      00266  00266
C00024  NTP        00244  00245  00274  00275
C00016  NTYPE      00174  00174
C00120  NUMREC#    00254  00254  00303  00303
C00001  NV         00323  00324  00343  00344
X00011  OUTITEM    00264  00276
C00266  PDUD       00223  00224
C00144  PDUDX      00222  00223
C00372  PRIMETAR   00270  00270
X00004  PRITEM     00035
X00002  Q3010040   00340
X00003  Q8UDICT.   00000  00015  00317  00350
C00012  READST
P00316  RESTORE    00316
X00012  STM.       00030
C00172  TASK
X00001  THEND.     00033
P00343  TS00001.   00325  00327
C00447  TYPENAME   00212  00212
C00376  TYPET      00213  00213
C00147  VALUE      00336  00336
C00240  #HDTYPE    00214  00214  00222  00230
C00371  #HDTYPEN   00233  00233  00241
P00332  #S00001.   00342
C00257  YIELD      00231  00232  00242  00243
C00000  YIELDX     00230  00231  00241  00242
   00216 SYMBOLS
```

```
      SUBROUTINE ADDIN(V,AR,NCT,NSUB,K,I,M,N)                          1000
CSUBR     ADDIN     START     ****************************************  2000
      DIMENSION V(N,2),AR(M,N,2)                                       2000
      TYPE INTEGER V                                                   3000
CDECLARE TYPE      PARRIVE                                             4000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLOB
      COMMON/EDITERM/LS,TERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(TYPE     ,VALUE(   2))
      TYPE INTEGER TYPE
      EQUIVALENCE(PARRIVE ,VALUE( 164))
      TYPE REAL    PARRIVE
      DO 73 J=1,NCT                                                    5000
      IF(TYPE .EQ. V(J,K)) 72,73                                       6000
   72 AR(I,J,K)=AR(I,J,K)+PARRIVE                                      7000
      GO TO 74                                                         8000
   73 CONTINUE                                                         9000
      GO TO (777,74),NSUB                                             10000
  777 IF(NCT .GE. N) 772,773                                          11000
  772 PRINT 774,TYPE                                                  12000
  774 FORMAT(15H TOO MANY TYPES,2X,A8,2X,17HFIRST ONE MISSING)        13000
      NSUB=2                                                          14000
      GO TO 74                                                        15000
  773 NCT=NCT+1                                                       16000
      V(NCT,K)=TYPE                                                   17000
      AR(I,NCT,K)=AR(I,NCT,K)+PARRIVE                                 18000
   74 CONTINUE                                                        19000
      RETURN                                                          20000
      END                                                             21000
```

```
                                IDENT     ADDIN
PROGRAM LENGTH                00406
ENTRY POINTS     ADDIN        00017
BLOCK NAMES
                 PROCESS      01173
                 EDITERM      00001
                 EDITAPE      00015
EXTERNAL SYMBOLS
                 THEND.
                 QBUDICT.
                 STH.
                 UNSINGL.
```

P00017	ADDIN	00017						
P00003	AR	00034	00036	00075	00077			
P00171	BEGIN.	00360	00366	00372				
P00102	CNVRTI.	00060						
P00003	CRFMT.	00003						
C01133	DEF							
P00001	DICT.	00021	00035	00092	00237	00240		
P00376	DK00001.	00137	00204					
P00377	DK00002.	00114	00126	00206				
P00400	DK00003.	00141	00202					
P00401	DK00004.	00166	00172					
P00402	DM00002.	00142	00200					
P00403	DM00004.	00144	00175					
P00361	ENDING.	00022	00100	00234	00235	00235	00236	00236
P00000	EXIT.	00364						
P00003	FORMAT.							
P00031	FP00001.	00246	00247					
P00034	FP00002.	00254	00255					
P00036	FP00003.	00256	00257					
P00042	FP00004.	00266	00267					
P00044	FP00005.	00302	00303					
P00050	FP00006.	00270	00271					
P00051	FP00007.	00336	00337					
P00063	FP00010.	00304	00305					
P00065	FP00011.	00272	00273					
P00066	FP00012.	00276	00277					
P00073	FP00013.	00250	00251					
P00075	FP00014.	00260	00261					
P00077	FP00015.	00262	00263					
P00133	FP00016.	00310	00311					
P00150	FP00017.	00314	00315					
P00161	FP00020.	00274	00275					
P00171	FP00021.	00320	00321					
P00173	FP00022.	00322	00323					
P00174	FP00023.	00340	00341					
P00176	FP00024.	00324	00325					
P00177	FP00025.	00342	00343					
P00201	FP00026.	00344	00345					
P00203	FP00027.	00346	00347					
P00205	FP00030.	00326	00327					
P00211	FP00031.	00354	00355					
P00215	FP00032.	00352	00353					
P00217	FP00033.	00332	00333					
P00223	FP00034.	00350	00351					
P00226	FP00035.	00356	00357					
P00231	FP00036.	00330	00331					
P00375	GETPL.	00241	00252	00300	00312	00334		
P00365	GETPU.	00244	00264	00306	00316	00371		
P00003	GG00000.	00053						
P00003	I	00150						
P00404	IGOTO.	00045						
P00103	IN00001.	00030	00114	00125	00140	00213		
P00104	IN00002.	00033	00115	00127	00143	00154	00221	
P00105	IN00003.	00072	00141	00165	00225			

```
P00106  IN00004.   00074  00144  00155  00167  00233
C00003  INITEM
P00234  INITIAL.   00022
C00000  INTP
C00000  IS#TERM
C00002  ITOUT
P00033  .72
P00040  .73        00032
P00100  .74        00037  00047  00064
P00053  .772       00052
P00065  .773       00052
P00050  .777       00046
P00003  ..774      00056
P00405  J          00024  00040  00122
C00014  JOUT
P00003  K          00133
C00153  LGLOB
P00003  M          00171  00173  00176  00205  00220  00231
P00003  N          00051  00174  00177  00201  00203  00212  00215  00223  00227
C00002  NC
P00003  NCT        00042  00050  00065  00067  00161
C00000  NI
P00003  NOOC       00044  00064
C00001  NOUT
C00001  NV
P00114  P00000.0   00117
C00412  PARRIVE    00035  00035  00076  00076
P00252  PF00002.   00245
P00264  PF00003.   00253
P00300  PF00004.   00265
P00306  PF00005.   00301
P00312  PF00006.   00307
P00316  PF00007.   00313
P00334  PF00010.   00317
P00360  PF00011.   00335
X00002  U8001CT.   00000  00020
X00004  ONSINGL.   00101
P00112  RELCON..   00207
X00003  STH.       00054
X00001  THEND.     00061
P00042  TS00001.   00026
C00150  TYPE       00027  00027  00057  00057  00071  00071
P00121  UP00000.   00025  00041  00115  00122  00123  00124  00127  00130  00213  00216
P00132  UP00002.   00110  00134  00135  00136  00145  00145  00210  00214  00222  00225
P00147  UP00003.   00107  00151  00152  00153  00156  00156  00221  00232
P00160  UP00004.   00070  00111  00162  00163  00164  00167  00170  00224  00230
P00003  V          00031  00073
C00147  VALUE
P00027  WS00001.   00043  00043
   00147 SYMBOLS
```

```
      SUBROUTINE BDAMX                                                  1000
CSUBR     BDAMX     9AUG71    ****************************************  3000
      COMMON/HISTOUT/NSIDE,NINBASE,NINDV,NINTAR,NNWTYP,HTIME,NEVENT,    2000
     1NPLACE,NITYPE,NICLASS,NIMEG,NIALERT,                              3000
     3NDGX,NDGY,NDGZ,NAGX,NAGY,NAGZ,NCOL,INTARC(40),NCODEC(40),         4000
     4NHISTOUT(200)                                                     5000
      EQUIVALENCE (NSIDE,NHISTOUT(1)),(NHISTOUT,HISTOUT)                6000
      COMMON/TAPETYPE/NTPTYPE                                           7000
      COMMON/TWORD/TTWORD                                               8000
      DATA(INI=0)                                                       9000
CUSE      MAXBLK    9AUG71    ****************************************  10000
      COMMON/MAKES/MAXKLS,MAXWHD,MAXASM,MAXMIS,MAXBOM,MAXLOC,MAXMEG     1000
     1,MAXGRP                                                           1010
CEND      MAXBLK    ****************************************************  10000
      EQUIVALENCE(NHISTOUT(21),PARM)                                    11000
CDECLARE1 PRIMETAR  INDEXNO   INDV      WHDTYPE   INTAR                 12000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLOB
      COMMON/EDITERM/IS,TERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(PRIMETAR,VALUE( 148))
      TYPE INTEGER PRIMETAR
      EQUIVALENCE(INDEXNO ,VALUE(  22))
      TYPE INTEGER INDEXNO
      EQUIVALENCE(INDV    ,VALUE( 128))
      TYPE INTEGER INDV
      EQUIVALENCE(WHDTYPE ,VALUE(  56))
      TYPE INTEGER WHDTYPE
      EQUIVALENCE(INTAR   ,VALUE( 129))
      TYPE INTEGER INTAR
CDECLARE  DGY       DHOB      AGX       AGY       AHOB                  13000
      EQUIVALENCE(DGY     ,VALUE( 144))
      TYPE INTEGER DGY
      EQUIVALENCE(DHOB    ,VALUE( 146))
      TYPE INTEGER DHOB
      EQUIVALENCE(AGX     ,VALUE( 141))
      TYPE INTEGER AGX
      EQUIVALENCE(AGY     ,VALUE( 142))
      TYPE INTEGER AGY
      EQUIVALENCE(AHOB    ,VALUE( 145))
      TYPE INTEGER AHOB
CDECLARE  TIME      PARRIVE   CODE      DGX                           14000
      EQUIVALENCE(TIME    ,VALUE( 124))
      TYPE REAL    TIME
      EQUIVALENCE(PARRIVE ,VALUE( 164))
      TYPE REAL    PARRIVE
      EQUIVALENCE(CODE    ,VALUE( 138))
      TYPE INTEGER CODE
      EQUIVALENCE(DGX     ,VALUE( 143))
      TYPE INTEGER DGX
      KEYINTAR=KEYMAKE(2,0,24)                                          15000
      KEYCODE=KEYMAKE(2,24,24)                                          16000
CHANGE    PRIMETAR                                                      17000
      NC=  148
      CALL CHANGE
```

```
      PRIMETAR=0                                                        18000
CHANGE    INDEANC                                                       19000
      NC=   22
      CALL CHANGE
      INDEANC=NINBASE                                                   20000
CHANGE    INDV                                                          21000
      NC=  129
      CALL CHANGE
      INDV=NINDV                                                        22000
CHANGE    #HDTYPE                                                       23000
      NC=   58
      CALL CHANGE
      #HDTYPE=NANTYP                                                    24000
CHANGE    PARRIVE                                                       25000
      NC=  164
      CALL CHANGE
      GO TO (51,52),NTPTYPE                                             26000
   51 PARRIVE=1.                                                        27000
      GO TO 53                                                          28000
   52 PARRIVE=PARR                                                      29000
   53 CONTINUE                                                          30000
C     NCOL--NUMBER OF COLOCATED TARGETS                                 31000
      IF(NCOL) 1,1,2                                                    32000
    1 NCOL=1                                                            33000
    2 CONTINUE                                                          34000
      DO 10 I=1,NCOL                                                    35000
      J=NCOL-I+1                                                        36000
CHANGE    INTAR                                                         37000
      NC=  129
      CALL CHANGE
      INTAR=IGET(KEYINTAR,J,NHISTOUT(20))                               38000
      IF(INTAR)110,110,101                                              39000
101   IF(INTAR-MAXLOC)120,120,110                                       40000
  110 INT=INT+1                                                         41000
      IF(INT-10)102,120,120                                             42000
  102 PRINT 111,INTAR,TIME                                              43000
  111 FORMAT(//7H INTAR=,I10,10X,F10.5)                                 44000
      PRINT 112,(NHISTOUT(K),K=1,IF#ORD)                                45000
  112 FORMAT(5(4X,O16))                                                 46000
  120 CONTINUE                                                          47000
CHANGE    CODE                                                          48000
      NC=  138
      CALL CHANGE
      CODE=IGET(KEYCODE,J,NHISTOUT(20))                                 49000
      IF(J-1)8,4,8                                                      50000
C     TARGET IS FIRST MEMBER OF A COLOCATED ISLAND,OR AN INDIV TARGET   51000
C          THUS SET PRIMETAR TO 1 AND ADD THE GROUND ZERO DATA          52000
    4 CONTINUE                                                          53000
      PRIMETAR=1                                                        54000
CHANGE    DGX                                                           55000
      NC=  143
      CALL CHANGE
      DGX=NDGX                                                          56000
CHANGE    DGY                                                           57000
      NC=  144
      CALL CHANGE
```

```
      DG:=NDGY                                          58000
CHANGE    DHOB                                          59000
      NC=  146
      CALL CHANGE
      DHOB=NDGZ                                         60000
CHANGE    AGX                                           61000
      NC=  141
      CALL CHANGE
      AGX=NAGX                                          62000
CHANGE    AGY                                           63000
      NC=  142
      CALL CHANGE
      AGY=NAGY                                          64000
CHANGE    AHOB                                          65000
      NC=  145
      CALL CHANGE
      AHOB=NAGZ                                         66000
      CALL ADDREP                                       67000
      CALL WRAGZ                                        68000
      GO TO 10                                          69000
    8 CALL ADDREP                                       70000
   10 CONTINUE                                          71000
      CALL RESTORE                                      72000
      RETURN                                            73000
      END                                               74000
```

```
      UGY=NUGY                                          58000
CHANGE    UHCB                                          59000
      NC=  146
      CALL CHANGE
      UHCB=NUGZ                                         50000
CHANGE    AGX                                           61000
      NC=  141
      CALL CHANGE
      AGX=NAGX                                          62000
CHANGE    AGY                                           63000
      NC=  142
      CALL CHANGE
      AGY=NAGY                                          64000
CHANGE    AHCB                                          65000
      NC=  145
      CALL CHANGE
      AHCB=NAGZ                                         66000
      CALL ADDREP                                       67000
      CALL WRAGZ                                        68000
      GO TO 10                                          69000
    8 CALL ADDREP                                       70000
   10 CONTINUE                                          71000
      CALL RESTORE                                      72000
      RETURN                                            73000
      END                                               74000
```

```
                                        IDENT     BDAMX
PROGRAM LENGTH                  00270
ENTRY POINTS      BDAMX         00022
BLOCK NAMES
                  HISTOUT       00310
                  TAPETYPE      00001
                  IWORD         00001
                  MAXES         00010
                  PROCESS       01173
                  EITTERM       00001
                  C TTAPE       00015
EXTERNAL SYMBOLS
                  THEND.
                  ZAGDICT.
                  KEYMAKE
                  CHANGE
                  IGET
                  ADDREP
                  WRAGZ
                  RESTORE
                  STM.
                  UNSINGL.
```

```
X00005  ADDHEP     00235  00242
C00363  AGX        00222  00222
C00364  AGY        00227  00227
C00367  AHCR       00234  00234
P00022  HDAMX      00022
P00254  BEGIN.     00254
X00004  CHANGE     00041  00045  00052  00057  00064  00113  00163  00200  00205  00212  00217
                   00224  00231
P00253  CNVRT      00137  00140  00153
C00300  CODE       00171
P00004  CREMI.     00143  00161
C01133  DEF
C00365  DGX        00203  00203
C00366  DGY        00210  00210
C00370  DHCR       00215  00215
P00001  DICT.      00024  00027  00034  00042  00046  00053  00060  00065  00114  00116  00134
                   00142  00145  00160  00164  00166  00201  00208  00213  00220  00225  00232
                   00236  00240  00243  00250
P00255  ENDING.    00125  00251
P00000  EXIT.      00255
P00004  FORMAT.
P00143  GOOJOOJ.   00132
P00161  GOOJOOI.   00143
C00000  HISTOUT
C00005  HTIME
P00262  I          00103  00107  00244
X00005  IGET       00113  00165
P00263  IGETC.     00067
C00174  INDEXNO    00050  00050
C00346  INDV       00055  00055
C00003  INITEM
P00254  INITIAL.   00025
P00003  INT        00126  00127
C00347  INTAH      00121  00123  00123  00136  00136
C00023  INTAHC
C00000  INTP
C00000  ISWTERM
C00002  ITOUT
C00000  ITWORD     00155  00155
P00102  .1         00100  00100
P00244  .10        00241
P00123  .101
P00132  .102       00131
P00125  .110       00121  00122
P00161  .120       00125  00125  00130  00131
P00104  .2         00101
P00175  .4         00173
P00072  .51        00076
P00075  .52        00071
P00077  .53        00074
P00242  .8         00173  00174
P00004  ..111      00135
P00014  ..112      00146
P00264  J          00110  00117  00167  00172
```

C00014	JOUT											
P00265	K	00150	00151	00154								
P00266	KEYCODE	00037	00167									
P00267	KEYLNTAR	00032	00117									
X00003	KEYMAKE	00026	00033									
C01153	LGLOB											
C00002	MAXASM											
C00004	MAXBOM											
C00007	MAXGRP											
C00000	MAXKLS											
C00005	MAXLOC	00124	00124									
C00003	MAXMIS											
C00006	MAXREG											
C00001	MAXWHD											
C00017	NAGX	00221	00221									
C00020	NAGY	00226	00226									
C00021	NAGZ	00233	00233									
C00002	NC	00040	00040	00044	00051	00056	00063	00111	00112	00161	00162	00177
		00204	00211	00216	00223	00230						
C00073	NCODEC											
C00022	NCOL	00077	00077	00102	00103	00106	00106	00245	00245			
C00014	NDGX	00202	00202									
C00015	NDGY	00207	00207									
C00016	NDGZ	00214	00214									
C00006	NEVENT											
C00000	NHISTOUT	00120	00152	00152	00170							
C00000	NI											
C00013	NIALERT											
C00011	NICLASS											
C00001	NINBASE	00047	00047									
C00002	NINDV	00054	00054									
C00003	NINTAR											
C00012	NIREG											
C00010	NITYPE											
C00004	NNATYP	00061	00061									
C00001	NOUT											
C00007	NPLACE											
C00000	NSIDE											
C00000	NTPTYPE	00066	00066									
C00001	NV											
C00024	PARR	00075	00075									
C00412	PARRIVE	00073	00073	00076	00076							
C00372	PRIMETAR	00043	00175	00176								
X00002	QBWDICT.	00000	00023									
X00012	QNSINGL.	00252										
X00010	RESTORE	00247										
X00011	STM.	00133	00144									
X00001	THEND.	00141	00157									
C00342	TIME	00140										
P00245	TS00001.	00105										
P00155	TS00002.	00150										
C00147	VALUE											
C00240	WHOTYPE	00062	00062									
X00007	WRASZ	00237										

```
P00106  *S00001.   00246   00246
P00151  *S00002.   00156   00156
   00152 SYMBOLS
```

```
      SUBROUTINE BOMBANDT                                                1000
CSUBR     BOMBANDT  START     ****************************************   4000
      COMMON/HISTOUT/NSIDE,NINBASE,NINDV,NINTAR,NNWTYP,HTIME,NEVENT,     2000
     1NPLACE,NITYPE,NICLASS,NIREG,NIALERT,NDUD,                          3000
     2NINZONE,NNDECOYS,NIALT,NNCM,NASMTYPE,NBCODE,DUM(5),NMHT,NDELAY,    4000
     3TINCN(40),INDPN(40),INDEN(40),NWTYPEN(6),NHISTOUT(200)             5000
      EQUIVALENCE (NSIDE,NHISTOUT(1)),(NHISTOUT,HISTOUT)                 6000
      COMMON/BCDKLS/BCDBOM,BCDMSL,BCDTNK,BCDASM,BCDWHD                   7000
      TYPE INTEGER  BCDBOM,BCDMSL,BCDTNK,BCDASM,BCDWHD                   8000
      COMMON/TAPETYPE/NTPTYPE                                            9000
      EQUIVALENCE (NHISTOUT(20),NDEPEN)                                 10000
      EQUIVALENCE(NHISTOUT(21),PARR)                                    11000
CDECLARE1 INDEXNO   INDV      ZONE      NDECOYS   IALT                  12000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLOB
      COMMON/EDITERM/ISWTERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(INDEXNO ,VALUE(  22))
      TYPE INTEGER INDEXNO
      EQUIVALENCE(INDV    ,VALUE( 128))
      TYPE INTEGER INDV
      EQUIVALENCE(ZONE    ,VALUE(  28))
      TYPE INTEGER ZONE
      EQUIVALENCE(NDECOYS ,VALUE(  60))
      TYPE INTEGER NDECOYS
      EQUIVALENCE(IALT    ,VALUE( 134))
      TYPE INTEGER IALT
CDECLARE  BCODE     EVENT     IDUD      ASMTYPE   PLACE                 13000
      EQUIVALENCE(BCODE   ,VALUE( 139))
      TYPE INTEGER BCODE
      EQUIVALENCE(EVENT   ,VALUE( 130))
      TYPE INTEGER EVENT
      EQUIVALENCE(IDUD    ,VALUE( 140))
      TYPE INTEGER IDUD
      EQUIVALENCE(ASMTYPE ,VALUE(  59))
      TYPE INTEGER ASMTYPE
      EQUIVALENCE(PLACE   ,VALUE( 132))
      TYPE INTEGER PLACE
CDECLARE  CLASS     PARRIVE   NCM       DELAY                           14000
      EQUIVALENCE(CLASS   ,VALUE(   1))
      TYPE INTEGER CLASS
      EQUIVALENCE(PARRIVE ,VALUE( 164))
      TYPE REAL    PARRIVE
      EQUIVALENCE(NCM     ,VALUE(  77))
      TYPE INTEGER NCM
      EQUIVALENCE(DELAY   ,VALUE( 125))
      TYPE REAL    DELAY
CDECLARE  ICTHER                                                        15000
      EQUIVALENCE(ICTHER  ,VALUE(  53))
      TYPE INTEGER ICTHER
CHANGE    INDEXNO                                                       16000
      NC=   22
      CALL CHANGE
      INDEXNO=NINBASE                                                   17000
CHANGE    INDV                                                          18000
```

```
      NC=  128
      CALL CHANGE
      INDV=NINDV
CHANGE    ZONE
      NC=   28
      CALL CHANGE
      ZONE=NINZONE
CHANGE    NDECOYS
      NC=   60
      CALL CHANGE
      NDECOYS=NNDECOYS
CHANGE    IALT
      NC=  134
      CALL CHANGE
      IALT=NIALT
CHANGE    NCM
      NC=   77
      CALL CHANGE
      NCM=NNCM
CHANGE    DELAY
      NC=  125
      CALL CHANGE
      DELAY=NDELAY
CHANGE    BCODE
      NC=  139
      CALL CHANGE
      BCODE=NBCODE
CHANGE    PARRIVE
      NC=  164
      CALL CHANGE
      GO TO (51,52),NTPTYPE
   51 PARRIVE=1.
      GO TO 53
   52 PARRIVE=PARR
   53 CONTINUE
      IF(EVENT-8)3,8,3
C     LOCAL ATTRITION
    8 CONTINUE
CHANGE    IDUD
      NC=  140
      CALL CHANGE
      IDUD=NDUD
      GO TO 7
3     IF(EVENT-14)5,14,5
C     ASM LAUNCH EVENT
   14 CONTINUE
CHANGE    ASMTYPE
      NC=   59
      CALL CHANGE
      ASMTYPE=NASMTYPE
      CLASS=BCDBOM
C     LAUNCH OR BOMBER LOCAL ATTRITION
      GO TO 6
    5 IF(EVENT.EQ.2.OR.EVENT.EQ.8)7,6
C     RECOVERY OR KILL AFTER RECOVERY
    6 IF(EVENT .EQ. 16 .OR. EVENT .EQ. 19)18,4
```

```
18    IF(NUEPEN)9,10,9                                          55000
    9 IR=NPLACE/64                                              56000
      IDEPEN=NPLACE-IR*64                                       57000
CHANGE    PLACE                                                 58000
      NC=  132
      CALL CHANGE
      PLACE=NDEPEN                                              59000
      ICORR=IDEPEN                                              60000
CHANGE    IOTHER                                                61000
      NC=   53
      CALL CHANGE
      IOTHER=IR                                                 62000
      GO TO 7                                                   63000
   10 CONTINUE                                                  64000
CHANGE    PLACE                                                 65000
      NC=  132
      CALL CHANGE
      PLACE=NPLACE                                              66000
      GO TO 7                                                   67000
    4 CONTINUE                                                  68000
CHANGE    PLACE                                                 69000
      NC=  132
      CALL CHANGE
      PLACE=NPLACE                                              70000
    7 GO TO (1,2,1,1,1,1,1,2,2,2,1,1,1,2,1,1,1,1,2,2,1,1,1) NBCODE 71000
    1 CALL ADDATA                                               72000
      RETURN                                                    73000
C     DEAD BASE,KILLED,ABORT,REFUEL ABORT OR NO TANKER AVAIL    74000
    2 CALL BOMBFX                                               75000
      RETURN                                                    76000
      END                                                       77000
```

```
                                IDENT     BOMBANDT
PROGRAM LENGTH              00237
ENTRY POINTS     BOMBANDT   00003
BLOCK NAMES
                 HISTOUT    00310
                 BCDKLS     00005
                 TAPETYPE   00001
                 PROCESS    01173
                 EDITERM    00001
                 EDITAPE    00015
EXTERNAL SYMBOLS
                 QBQDICT.
                 CHANGE
                 ADDATA
                 BOMBFX
```

X00003	ADDATA	00221										
C00241	ASMTYPE	00116	00116									
C00003	BCDASM											
C00000	BCDRCM	00117	00117									
C00001	BCDMSL											
C00002	BCDTNK											
C00004	BCDWHC											
C00361	BCODE	00057	00057									
P00227	BEGIN.	00227										
P00003	BOMBANOT	00003										
X00004	BOMBFX	00224										
X00002	CHANGE	00011	00016	00023	00030	00035	00042	00047	00054	00061	00101	00113
		00145	00154	00163	00172							
C00147	CLASS	00120	00120									
C01133	DEF											
C00343	DELAY	00052	00052									
P00001	DICT.	00005	00012	00017	00024	00031	00036	00043	00050	00055	00062	00102
		00114	00146	00155	00164	00173	00222	00225				
C00023	DUM											
P00230	ENDING.	00006	00223	00226								
C00350	EVENT	00074	00074	00106	00106	00122	00122	00124	00124	00127	00127	00131
		00131										
P00000	EXIT.	00230										
C00031	HDELAY	00051	00051									
C00000	HISTOUT											
C00005	HTIME											
C00354	IALT	00040	00040									
P00233	ICOMM	00152										
P00234	ICEPEN	00143	00151									
C00362	IDUO	00104	00104									
P00124	IF00001.											
P00131	IF00002.											
P00235	IGOTO.	00064	00177									
C00152	INDEX											
C00174	INDEXNO	00014	00014									
C00102	INDPN											
C00346	INDV	00021	00021									
C00003	INITEM											
P00227	INITIAL.	00006										
C00000	INTP											
C00233	ICTHER	00157	00157									
P00236	IR	00140	00140	00156								
C00000	IS*TERM											
C00002	ITOUT											
P00161	.10	00134										
P00221	.1	00200	00202	00202	00203	00204	00205	00210	00210	00211	00213	00213
		00214	00215	00217	00220							
P00111	.14	00107										
P00133	.18	00130										
P00224	.2	00201	00205	00206	00207	00212	00216	00216				
P00106	.3	00076	00076									
P00170	.4	00132										
P00122	.5	00110	00110									
P00067	.51	00065										

```
P00072  .6      00067
P00124  .       00121
P00127  .       00121   00125
P00176  .7      00165   00123   00146   00160   00167
P00077  .8      00075
P00135  .9      00134
C00014  JCUT
C01153  LOLCH
C00021  MASWTYPE        00115   00115
C00022  MBCODE          00055   00056   00176   00176
C00002  MC              00007   00010   00015   00022   00027   00034   00041   00046   00053   00060   00077
                        00100   00111   00112   00144   00144   00153   00153   00161   00162   00170   00171
C00253  MCM             00045   00045
C00242  MDECCYS         00033   00033
C00023  MDEPEN          00133   00133   00147   00147
C00014  MDOO            00103   00103
C00006  MEVENT
C00000  MHISTOUT
C00000  MI
C00013  MIALERT
C00017  MIALI           00037   00037
C00011  MICLASS
C00001  MINBASE         00013   00013
C00002  MINDV           00020   00020
C00013  MINTAR
C00015  MINZONE         00025   00025
C00012  MIREG
C00010  MITYPE
C00030  MMHT
C00020  MNCM            00044   00044
C00015  MNOECCYS        00032   00032
C00004  MNWTYP
C00001  MOUT
C00007  MPLACE          00135   00135   00141   00142   00165   00165   00174   00174
C00000  MSIDE
C00000  MTRTYPE         00053   00053
C00001  MV
C00222  MWTYPEV
C00024  PARA            00072   00072
C00412  PARRIVE         00070   00070   00073   00073
C00352  PLACE           00150   00150   00166   00166   00175   00175
C00001  GRADICT         00000   00004
C00242  TINCM
C00147  VALUE
C00242  ZONE            00026   00026
  00136 SYMBOLS
```

```
      SUBROUTINE BOMBFX                                                 1000
CSUBR     BOMBFX     START     ******************************************  5000
      COMMON/HISTOUT/NSIDE,NINDASE,NINDV,NINTAR,NNWTYP,HTIME,NEVENT,    2000
     1NPLACE,NITYPE,NICLASS,NIREG,NIALERT,NDUD,                         3000
     2NIRZONE,NNDECOYS,NIALT,NNCM,NASMTYPE,NBCODE,DUM(5),NMHT,HDELAY,   4000
     3TINCN(40),INOPN(40),INDEN(40),NWTYPEN(6),NHISTOUT(200)            5000
      EQUIVALENCE (NSIDE,NHISTOUT(1)),(NHISTOUT,HISTOUT)                6000
CDECLARE1 TIME      TIMEN     PLACEN    EVENTN    WHDTYPEN              7000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLOB
      COMMON/EDITERM/ISWTERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(TIME     ,VALUE( 124))
      TYPE REAL    TIME
      EQUIVALENCE(TIMEN    ,VALUE( 123))
      TYPE REAL    TIMEN
      EQUIVALENCE(PLACEN   ,VALUE( 133))
      TYPE INTEGER PLACEN
      EQUIVALENCE(EVENTN   ,VALUE( 131))
      TYPE INTEGER EVENTN
      EQUIVALENCE(WHDTYPEN,VALUE( 147))
      TYPE INTEGER WHDTYPEN
CDECLARE  ASMTYPE                                                       8000
      EQUIVALENCE(ASMTYPE ,VALUE(  59))
      TYPE INTEGER ASMTYPE
      J=0                                                               9000
C     OUTPUT STATE OF EVENT BEFORE IT FAILED                           10000
      CALL ADDREP                                                      11000
C     PROCESS EVENTS MISSED BY THE BOMBER OR TANKER                    12000
      DO 10 I=1,NMHT                                                   13000
CHANGE    TIMEN                                                        14000
      NC=  123
      CALL CHANGE
      TIMEN=TIME+TINCN(I)                                              15000
CHANGE    EVENTN                                                       16000
      NC=  131
      CALL CHANGE
      EVENTN=INDEN(I)                                                  17000
      IF(EVENTN-14)13,12,13                                            18000
   12 CONTINUE                                                         19000
CHANGE    ASMTYPE                                                      20000
      NC=   59
      CALL CHANGE
      ASMTYPE =INOPN(I)                                                21000
      K=I+1                                                            22000
      INDEN(K)=8                                                       23000
      GO TO 14                                                         24000
   13 CONTINUE                                                         25000
CHANGE    PLACEN                                                       26000
      NC=  133
      CALL CHANGE
      PLACEN=INOPN(I)                                                  27000
14    IF(EVENTN-8)11,5,11                                              28000
    5 J=J+1                                                            29000
CHANGE    WHDTYPEN                                                     30000
```

```
      NC= 147
      CALL CHANGE
      &HUTYPEN=NWTYPEN(J)                                31000
   11 CALL ADDREP                                        32000
   10 CONTINUE                                           33000
      CALL RESTORE                                       34000
      RETURN                                             35000
      END                                                36000
```

```
                                        IDENT     BOMBFX
PROGRAM LENGTH                  00112
ENTRY POINTS     BOMBFX         00003
BLOCK NAMES
                 HISTOUT        00310
                 PROCESS        01173
                 EDITERM        00001
                 EDITAPE        00015
EXTERNAL SYMBOLS
                 QBQOICT.
                 ADDREP
                 CHANGE
                 RESTORE
```

```
X00002  ADDREP     00011  00073
C00241  ASMTYPE    00042  00042
P00103  BEGIN.     00104
P00003  BOMBFX     00003
X00003  CHANGE     00017  00026  00036  00052  00066
C01133  DEF
P00001  DICT.      00005  00012  00020  00027  00037  00053  00067  00074  00101
C00023  DUM
P00105  ENDING.    00006  00102  00103
C00351  EVENTN     00031  00031  00057  00057
P00000  EXIT.      00106
C00031  HDELAY
C00000  HISTOUT
C00005  HTIME
P00107  I          00013  00022  00040  00043  00054  00075
C00152  INDEN      00030  00030  00046  00046
C00102  INDPN      00041  00041  00055  00055
C00003  INITEM
P00103  INITIAL.   00006
C00000  INTP
C00000  ISWTERM
C00002  ITOUT
P00075  .10
P00073  .11        00061  00061
P00034  .12        00032
P00050  .13        00033  00033
P00057  .14        00047
P00062  .5         00060
P00110  J          00010  00062  00063  00070
C00014  JOUT
P00111  K          00044  00045
C01153  LGLOB
C00021  NASMTYPE
C00022  NBCODE
C00002  NC         00015  00016  00025  00034  00035  00050  00051  00064  00065
C00014  NDOD
C00006  NEVENT
C00000  NHISTOUT
C00000  NI
C00013  NIALERT
C00017  NIALT
C00011  NICLASS
C00001  NINBASE
C00002  NINDV
C00003  NINTAR
C00015  NINZONE
C00012  NIRES
C00010  NITYPE
C00030  NMHT       00076  00076
C00020  NNCM
C00015  NNDECOYS
C00004  NNWTYP
C00001  NOUT
C00007  NPLACE
```

```
C00000  NSIDE
C00001  NV
C00222  NWTYPEN     00071   00071
C00353  PLACEN      00056   00056
X00001  QBWDICT.    00000   00004
X00004  RESTORE     00100
C00342  TIME        00021
C00341  TIMEN       00023   00024
C00032  TINCN       00022   00023
P00076  TS00001.    00014
C00147  VALUE
C00371  WRUTYPEN    00072   00072
P00015  WS00001.    00077   00077
   001C3 SYMBOLS
```

```
      SUBROUTINE CLAUNX                                                 1000
USUBR     CLAUNX     START     ******************************************  6000
      COMMON/HISTOUT/NSIDE,NINBASE,NINDV,NINTAR,NNWTYP,NTIME,NEVENT,    2000
     INPLACE,NITYPE,NICLASS,NIREG,NIALERT,NOUD,NCODE,NHISTOUT(200)      3000
      EQUIVALENCE (NSIDE,NHISTOUT(1)),(NHISTOUT,HISTOUT)                4000
CDECLARE1 INDEXNO   INDV      INTAR     WHOTYPE   CODE                  5000
      COMMON/PROCESS/NI,NV,NC,INTEM(100),VALUE(500),DEF(500),LOLOB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LOLOB
      COMMON/EDITERM/IS,TERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(INDEXNO ,VALUE(  22))
      TYPE INTEGER INDEXNO
      EQUIVALENCE(INDV    ,VALUE( 128))
      TYPE INTEGER INDV
      EQUIVALENCE(INTAR   ,VALUE( 129))
      TYPE INTEGER INTAR
      EQUIVALENCE(WHOTYPE ,VALUE(  58))
      TYPE INTEGER WHOTYPE
      EQUIVALENCE(CODE    ,VALUE( 138))
      TYPE INTEGER CODE
CHANGE    INDEXNO                                                       6000
      NC=   22
      CALL CHANGE
      INDEXNO=NPLACE                                                    7000
CHANGE    INDV                                                          8000
      NC=  128
      CALL CHANGE
      INDV=NINDV                                                        9000
CHANGE    INTAR                                                        10000
      NC=  129
      CALL CHANGE
      INTAR=NINTAR                                                     11000
CHANGE    WHOTYPE                                                      12000
      NC=   58
      CALL CHANGE
      WHOTYPE=NNWTYP                                                   13000
CHANGE    CODE                                                         14000
      NC=  138
      CALL CHANGE
      CODE=NCODE                                                       15000
      CALL ADDWTA                                                      16000
      RETURN                                                           17000
      END                                                              18000
```

```
                                        IDENT     CLAUNX
PROGRAM LENGTH                  00046
ENTRY POINTS     CLAUNX         00003
BLOCK NAMES
                 HISTOUT        00310
                 PROCESS        01173
                 EDITERM        00001
                 EDITAPE        00015
EXTERNAL SYMBOLS
                 UBODICT.
                 CHANGE
                 ADDATA
```

```
X00003  ADDATA     00041
P00044  BEGIN.     00044
X00002  CHANGE     00011  00016  00023  00030  00035
P00003  CLAUNX     00003
C00363  CODE       00040  00040
C01133  DEF
P00001  DICT.      00005  00012  00017  00024  00031  00036  00042
P00045  ENDING.    00006  00043
P00000  EXIT.      00045
C00000  HISTOUT
C00005  HTIME
C00174  INDEXAC    00014  00014
C00346  INDV       00021  00021
C00003  INITEM
P00044  INITIAL.   00009
C00347  INTAR      00026  00026
C00000  INTP
C00000  ISWTERM
C00002  ITOUT
C00014  JOUT
C01153  LGLOB
C00002  NC         00007  00010  00015  00022  00027  00034
C00015  NCODE      00037  00037
C00014  NDOD
C00005  NEVENT
C00000  NHISTOUT
C00000  NI
C00013  NIALERT
C00011  NICLASS
C00001  NINBASE
C00002  NINDV      00020  00020
C00003  NINTAR     00025  00025
C00012  NIREG
C00010  NITYPE
C00004  NNWTYP     00032  00032
C00001  NOUT
C00007  NPLACE     00013  00013
C00000  NSIDE
C00001  NV
X00001  QBADICT.   00000  00004
C00147  VALUE
C00240  WHOTYPE    00033  00033
   00052 SYMBOLS
```

```
      SUBROUTINE ENDREEL                                                1000
CSUBR     ENDTAPE   2SEP71    ******************************************  7000
      COMMON/ITP/ITP                                                    2000
CDECLARE SIDE                                                           3000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLCB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLCB
      COMMON/EDITERM/IS,TERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(SIDE     ,VALUE(    3))
      TYPE INTEGER SIDE
      COMMON/TAPES/ITAPE(10),MAXTAPE(10),NTP,NHOUT                      4000
      PRINT 100,NTP,ITAPE(NTP)                                          5000
  100 FORMAT(8H0ENDTAPE,6X,6HITAPE(,I2,2H)=,I2)                         6000
CHANGE    SIDE                                                          7000
      NC=    3
      CALL CHANGE
      SIDE = 7HENDTAPE                                                  8000
      JOUT = ITAPE(NTP)                                                 9000
      CALL OUTITEM                                                     10000
      SIDE = INITEM(2)                                                 11000
      NI = NV = 0                                                      12000
      CALL ENDDATA(JOUT)                                               13000
      WRITE(44,101)ITP                                                 14000
101   FORMAT(42H0PLEASE LOAD A NEW FULL REEL TAPE ON UNIT  I5)         14005
      PAUSE 1                                                          15000
   10 ITP = ITAPE(NTP)                                                 18000
      CALL SETWRITE                                                    19000
      RETURN                                                           20000
      END                                                              21000
```

```
                                        IDENT     ENDREEL
        PROGRAM LENGTH              00115
        ENTRY POINTS    ENDREEL     00031
        BLOCK NAMES
                        ITP         00001
                        PROCESS     01173
                        EDITERM     00001
                        EDITAPE     00015
                        TAPES       00026
        EXTERNAL SYMBOLS
                        TMEND.
                        QBQPAUSE
                        QBQDICT.
                        CHANGE
                        OUTITEM
                        ENDDATA
                        SETWRITE
                        STM.
                        QNSINGL.
```

```
P00113  BEGIN.      00113
X00004  CHANGE      00051
P00112  CNVRTI.     00042   00044   00075
P00003  CREMT.      00047   00100
C01133  DEF
P00001  DICT.       00033   00037   00046   00052   00061   00066   00072   00077   00102   00107
X00006  ENDDATA     00095
P00114  ENDING.     00034   00110
P00031  ENDREEL     00031
P00000  EXIT.       00114
P00003  FORMAT.     00053
P00047  GGOOOCD.    00035
P00100  GGOOOCI.    00070
C00003  INITEM      00062   00062
P00113  INITIAL.    00034
C00000  INTP
C00000  ISATERM
C00000  ITAPE       00043   00056   00104
C00002  ITCUT
C00000  ITP         00074   00074   00104   00105
P00103  .10
P00003  ..100       00040
P00016  ..100000    00053
P00017  ..101       00073
C00014  JOUT        00056   00057   00097
C01153  LGLOB
C00012  MAXTAPE
C00002  NC          00047   00050
C00000  NI          00064
C00001  NOUT
C00025  NROUT
C00024  NTP         00041   00041   00043   00055   00055   00103   00103
C00001  NV          00054
X00005  OUTITEM     00060
X00003  QBADICT.    00000   00032
X00002  QBUPAUSE    00101
X00011  QNSINGL.    00111
X00007  SETWRITE    00105
C00151  SIDE        00054   00054   00063
X00010  STM.        00038   00071
X00001  THEND.      00045   00076
C00147  VALUE
   00052 SYMBOLS
```

```
      SUBROUTINE GENOUTPT                                                1000
CSUBR     GENOUTPT  START     ********************************************18000
      COMMON/OUTPUTSM/VC1(16,2),VC2(16,2),VC3(2,2),                      2000
     1NCT1(2),NCT2(2),NCT3(2),A(27,16,2),AM(14,16,2),                    3000
     2AT(14,2,2),NCDO1(2),NCDO2(2),NCDO3(2)                              4000
      TYPE INTEGER VC1,VC2,VC3                                           5000
      TYPE INTEGER BCDBOM,BCDMSL,BCDTNK,BCDASM,BCDWHD                    6000
      COMMON/BCDKLS/BCDBOM,BCDMSL,BCDTNK,BCDASM,BCDWHD                   7000
      COMMON/TBLSIZE/MAXROWB,MAXROWM,MAXROWT,MAXCOLB,MAXCOLM, MAXCOLT    8000
      COMMON/TITLES/TITLES(81),TITLEM(42),TITLET(42)                     9000
C*****THE TITLES ARRAYS SHOULD BE DIMENSIONED AS 3*MAXROW                10000
      TYPE INTEGER TITLES,TITLEM,TITLET                                 11000
      DATA (TITLES=                                                     12000
     1              8HSUCCESSF,8HUL LAUNC,8HH        ,                  13000
     1              8HUNS LAUN,8H  DEAD B,8HASE      ,                  14000
     1              8HUNS LAUN,8H DELAY L,8HAUNCH    ,                  15000
     1              8HATTEMPTE,8HD 1ST RE,8HFUEL     ,                  16000
     1              8H   ABORT,8H ON 1ST ,8HREFUEL   ,                  17000
     1              8H   NO TA,8HNKERS 1S,8HT REFUEL,                   18000
     1              8HATTEMPTE,8HD REFUEL,8H         ,                  19000
     1              8H   REFUE,8HL ABORTS,8H         ,                  20000
     1              8H   TANKE,8HRS NOT A,8HVAILABLE,                   21000
     1              8H   RETUR,8HN HOME  ,8H         ,                  22000
     1              8HABORT OU,8HTSIDE EN,8HEMY TERR,                   23000
     1              8HENTERING,8H ENEMY T,8HERRITORY,                   24000
     1              8HKILLS BY,8H AREA AT,8HTRITION ,                   25000
     1              8HKILLS BY,8H LOCAL A,8HTTRITION,                   26000
     1              8HASM KILL,8HED BY LO,8HCAL ATTR,                   27000
     1              8HABORT IN,8H ENEMY T,8HERR      ,                  28000
     1              8HSCHEDULE,8HD SPLASH,8H         ,                  29000
     1              8HDEPENETR,8HATE     ,8H         ,                  30000
     1        8H   RECOV,8HER       ,8H         ,                      31000
     1        8H   BASE ,8HDEAD     ,8H         ,                      32000
     1        8H   NO LI,8HVE BASE ,8HON DEPEN,                        33000
     1        8H   SATUR,8HATED     ,8H         ,                      34000
     1        8H   KILL,8HD AFTER ,8HRECOVERY,                         35000
     1        8HRETURN T,8HO HOME B,8HASE      ,                       36000
     1        8H   RECOV,8HER       ,8H         ,                      37000
     1        8H   BASE ,8HDEAD     ,8H         ,                      38000
     1        8H   KILLE,8HD AFTER ,8HRECOVERY)                        39000
      DATA(TITLEM=                                                      40000
     1              8HATTEMPTE,8HD LAUNCH,8H         ,                  41000
     1              8HNOT IN C,8HOMMISSIO,8HN        ,                  42000
     1              8HDEAD SIL,8HO        ,8H        ,                  43000
     1              8HNOT IN C,8HOMM DEAD,8H SILO    ,                  44000
     1              8HNON DEST,8HRUCTIVE ,8HABORTS   ,                  45000
     1              8HDESTRUCT,8HIVE ABOR,8HTS       ,                  46000
     1              8HPOWERED ,8H FLIGHT ,8HFAILURE  ,                  47000
     1              8HSUCCESSF,8HUL       ,8H        ,                  48000
     1              8HNUMBER U,3HNUSED    ,8H        ,                  49000
     1              8HDESTRUCT,8HION IN L,8HAUNCH    ,                  50000
     1              8HWEAPONS ,8HENTERING,8H AREA    ,                  51000
     1              8HWEAPONS ,8HENTERING,8H TERM    ,                  52000
     1              8HNUMBER W,8HEAPONS P,8HEN       ,                  53000
     1              8HNUMBER W,8HEAPONS D,8HET       )                  54000
      DATA (TITLET=                                                     55000
```

```
1            8HSUCCESSF,8HUL LAUNC,8HH        ,                    56000
1            8HUNS LAUN,8H  DEAD B,8HASE      ,                    57000
3            8HUNS LAUN,8H DELAY L,8HAUNCH    ,                    58000
1  8HABORT OU,8HT OF REF,8HUEL AREA,                                59000
1            8HENTER RE,8HFUEL AHE,8HA        ,                    60000
1  8HABORT IN ,8H REFUEL ,8HAREA     ,                             61000
1            8HLEAVE RE,8HFUEL AHE,8HA FULL   ,                    62000
1            8HLEAVE RE,8HFUEL AHE,8HA EMPTY  ,                    63000
1            8HRECOVER ,8H        ,8H         ,                    64000
1            8HSATURATE,8HD       ,8H         ,                    65000
1            8HHASE DEA,8HD       ,8H         ,                    66000
1  8HHO LIVE ,8HHASE ON ,8HDEPEN       ,                           67000
18HKILLED A,8HFTER REC,8HOVERY    ,                                68000
18HSCHEDULE,8HD SPLASH,8H           )                              69000
 CALL GENPRIN(A,VC1,NCT1,TITLES,8CDBOM,MAXROWB,MAXCOLB,A)          70000
 CALL GENPRIN(AM,VC2,NCT2,TITLEM,8CUMSL,MAXROWM,MAXCOLM,AM)        71000
 CALL GENPRIN(AT,VC3,NCT3,TITLET,8CUTNR,MAXROWT,MAXCOLT,AT)        72000
 RETURN                                                            73000
 END                                                               74000
```

```
                                    IDENT     GENOUTPT
PROGRAM LENGTH                 00034
ENTRY POINTS     GENOUTPT      00003
BLOCK NAMES
                 OUTPUTSM      02650
                 BCOKLS        00005
                 TBLSIZE       00006
                 TITLES        00245
EXTERNAL SYMBOLS
                 QBQDICT.
                 GENPRIN
```

```
C00112  A          00011  00014
C01652  AM         00017  00022
C02552  AT         00025  00030
C00003  BCDASM
C00000  BCDBCM     00013
C00001  BCDMSL     00021
C00002  BCDTNK     00027
C00004  BCDWMD
P00032  BEGIN.     00032
P00001  DICT.      00005  00010  00016  00024
P00033  ENDING.    00006  00031
P00000  EXIT.      00033
P00003  GENOUTPT   00003
X00002  GENPRIN    00007  00015  00023
P00032  INITIAL.   00006
C00003  MAXCOLB    00014
C00004  MAXCOLM    00022
C00005  MAXCOLT    00030
C00000  MAXROWB    00013
C00001  MAXROWM    00021
C00002  MAXROWT    00027
C00104  NCT1       00012
C00106  NCT2       00020
C00110  NCT3       00026
C02642  NCOC1
C02644  NCOC2
C02646  NCOC3
X00001  QBWDICT.   00000  00004
C00121  TITLEM     00003  00020
C00000  TITLES     00003  00012
C00173  TITLET     00003  00026
C00000  VC1        00011
C00040  VC2        00017
C00100  VC3        00025
   00042 SYMBOLS
```

```
      SUBROUTINE GENPRIN(A,VC,NCT,TITLE,TITLET,M,N,NA)
CSUBR     GENPRIN   START     ****************************************
      DATA(MCOL4RO#=9)
      COMMON/ST/KFAIL,NAMESIDE(2)
      DIMENSION NA(M,N,2),A(M,N,2),VC(N,2),TITLE(1),NCT(2)
      TYPE INTEGER VC,TITLE,TITLET
      DO 1 K=1,2
      SUM=0.
      DO 5 I=1,M
      DO 5 J=1,N
      SUM=SUM+A(I,J,K)
    5 NA(I,J,K)=A(I,J,K)
      IF(SUM) 2,1
    2 NCTK=NCT(K)
      JO=1
      NOCOLUMS=XMINOF(MCOL4RO#,NCTK)
    4 CONTINUE
      PRINT 1000,NAMESIDE(K),TITLET
 1000 FORMAT(1H1,20X,A6,2X,A6,6H  DATA  )
      PRINT 1001
 1001 FORMAT(1H //)
      PRINT 2000,(VC(J,K),J=JO,NOCOLUMS)
 2000 FORMAT(30X,9(A6,2X))
      PRINT 2001
 2001 FORMAT(1H /)
      II=1
      DO 22 I=1,M
      IF(TITLE(II) .EQ. 1H ) 305,304
  304 PRINT 2002,TITLE(II),TITLE(II+1),TITLE(II+2),(NA(I,J,K),J=JO,NOCOL
     1UMS)
 2002 FORMAT(/1X,3A8,5X,9(I8,2X))
      II=II+3
   22 CONTINUE
  305 IF(NCTK.LE. NOCOLUMS) 1,3
    3 JO=NOCOLUMS+1
      NOCOLUMS=XMINOF(NOCOLUMS+MCOL4RO#,NCTK)
      GO TO 4
    1 CONTINUE
      RETURN
      END
```

```
                                        IDENT     GENPRIN

PROGRAM LENGTH                  0G510
ENTRY POINTS      GENPRIN       00J52
BLOCK NAMES
                  ST            00003
EXTERNAL SYMBOLS
                  QIQIQIOU
                  THEND.
                  QBQDICT.
                  XMINOF
                  STH.
                  QNSINGL.
```

P00004	A	00077	00101									
P00332	BEGIN.	00455	00463	00467								
P00262	CNVRTI.	00131	00133	00156	00212	00214	00216	00225				
P00474	COUNT.	00073	00074									
P00004	CRFMT.	00136	00144	00165	00173	00234						
P00001	DICT.	00054	00120	00125	00135	00140	00143	00146	00164	00167	00172	00206
		00233	00252	00356	00357							
P00475	DK00001.	00075	00315	00326	00333							
P00476	DK00003.	00266	00301	00335								
P00477	DM00001.	00265	00277	00340								
P00456	ENDING.	00055	00260	00353	00354	00354	00355	00355				
P00000	EXIT.	00461										
P00004	FORMAT.	00175										
P00071	FP00001.	00435	00436									
P00077	FP00002.	00365	00366									
P00101	FP00003.	00367	00370									
P00103	FP00004.	00451	00452									
P00107	FP00005.	00421	00422									
P00114	FP00006.	00377	00400									
P00132	FP00007.	00415	00416									
P00155	FP00010.	00373	00374									
P00201	FP00011.	00403	00404									
P00211	FP00012.	00405	00406									
P00213	FP00013.	00407	00410									
P00215	FP00014.	00411	00412									
P00224	FP00015.	00453	00454									
P00240	FP00016.	00423	00424									
P00332	FP00017.	00425	00426									
P00334	FP00020.	00437	00440									
P00336	FP00021.	00427	00430									
P00337	FP00022.	00441	00442									
P00342	FP00023.	00443	00444									
P00345	FP00024.	00431	00432									
P00350	FP00025.	00445	00446									
P00052	GENPRIN	00052										
P00472	GETPL.	00360	00371	00401	00417	00447						
P00462	GETPU.	00363	00375	00413	00433	00466						
P00136	GG00000.	00123										
P00144	GG00001.	00136										
P00165	GG00002.	00144										
P00173	GG00003.	00165										
P00234	GG00004.	00204										
P00500	I	00063	00105	00175	00236	00310						
P00501	II	00174	00200	00210	00234	00235						
P00263	IN00001.	00074	00223	00265	00300	00303	00313	00315	00327	00347		
P00264	IN00003.	00154	00266	00301	00316	00330	00352					
P00353	INITIAL.	00055										
P00255	.1	00112	00243	00244								
P00113	.2	00112										
P00236	.22											
P00245	.3	00244										
P00204	.304	00203										
P00242	.305	00203										
P00101	.5											

```
P00123  .9          00254
P00473  .ERASEW.    00250   00253
P00004  ..1000      00126
P00037  ..100000    00202
P00016  ..1001      00141
P00023  ..2000      00147
P00032  ..2001      00170
P00040  ..2002      00207
P00502  J0          00116   00150   00217   00246
P00503  J           00067   00151   00157   00220   00226   00323
P00104  JS00003.    00075
P00504  K           00057   00113   00127   00255   00274
C00000  KFAIL
P00004  M           00107   00240   00332   00336   00345
P00003  MCOL4ROW    00121   00247
P00004  N           00071   00334   00337   00343   00351
P00004  NA          00103   00224
C00001  NAMESIDE    00130   00130
P00004  NCT         00114
P00505  NCTK        00115   00121   00242   00253
P00506  NOCOLUMS    00122   00161   00230   00243   00245   00247   00254
P00265  P00000.0    00271
P00303  P00001.0    00305
P00315  P00002.0    00320
P00371  PF00002.    00364
P00375  PF00003.    00372
P00401  PF00004.    00376
P00413  PF00005.    00402
P00417  PF00006.    00414
P00433  PF00007.    00420
P00447  PF00010.    00434
P00455  PF00011.    00450
X00001  QIU10100    00102
X00003  QBUDICT.    00000   00053
X00006  QNSINGL.    00261
X00005  STM.        00124   00137   00145   00166   00205
P00507  SUM         00062   00076   00100   00111
X00002  THEND.      00134   00142   00163   00171   00232
P00004  TITLE       00201   00211   00213   00215
P00004  TITLET      00132
P00107  TS00002.    00067
P00105  TS00003.    00072
P00101  TS00004.    00153
P00240  TS00005.    00177
P00230  TS00006.    00222
P00273  UP00000.    00060   00256   00267   00274   00275   00276   00302   00302   00341   00347
P00307  UP00001.    00064   00108   00176   00237   00303   00310   00311   00312   00314   00314   00346
P00322  UP00002.    00070   00152   00160   00221   00227   00316   00323   00324   00325   00330   00331
                    00344   00352
P00004  VC          00155
P00061  WS00001.    00257
P00066  WS00002.    00110   00110
P00076  WS00003.    00104
P00154  WS00004.    00162   00162
```

```
P00200  WS00005.   00241   00241
P00223  WS00006.   00231   00231
X00004  XMINUF     00117   00251
   00155 SYMBOLS
```

```
      SUBROUTINE GENTBLES                                               1000
CSUBR     GENTBLES  START     ******************************************  17000
CDECLAREX PARRIVE   SIDE      EVENTN    EVENT     BCODE                   2000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLOB
      COMMON/EDITERM/ISWTERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(PARRIVE ,VALUE( 164))
      TYPE REAL    PARRIVE
      EQUIVALENCE(SIDE    ,VALUE(   31))
      TYPE INTEGER SIDE
      EQUIVALENCE(EVENTN  ,VALUE( 131))
      TYPE INTEGER EVENTN
      EQUIVALENCE(EVENT   ,VALUE( 130))
      TYPE INTEGER EVENT
      EQUIVALENCE(BCODE   ,VALUE( 139))
      TYPE INTEGER BCODE
CDECLARE  ZONE      IDDD      CLASS     MCODE     TYPE                    3000
      EQUIVALENCE(ZONE    ,VALUE(   28))
      TYPE INTEGER ZONE
      EQUIVALENCE(IDDD    ,VALUE( 140))
      TYPE INTEGER IDDD
      EQUIVALENCE(CLASS   ,VALUE(   11))
      TYPE INTEGER CLASS
      EQUIVALENCE(MCODE   ,VALUE( 137))
      TYPE INTEGER MCODE
      EQUIVALENCE(TYPE    ,VALUE(    2))
      TYPE INTEGER TYPE
CDECLARE  NPEN      PRIMETAR  CODE      NDET      NWPNS                   4000
      EQUIVALENCE(NPEN    ,VALUE( 162))
      TYPE INTEGER NPEN
      EQUIVALENCE(PRIMETAR,VALUE( 148))
      TYPE INTEGER PRIMETAR
      EQUIVALENCE(CODE    ,VALUE( 138))
      TYPE INTEGER CODE
      EQUIVALENCE(NDET    ,VALUE( 163))
      TYPE INTEGER NDET
      EQUIVALENCE(NWPNS   ,VALUE( 135))
      TYPE INTEGER NWPNS
CDECLARE  NWHDS                                                         5000
      EQUIVALENCE(NWHDS   ,VALUE( 120))
      TYPE INTEGER NWHDS
      DATA(NCALL1=1)                                                    6000
      DATA(MAXROWB=27)                                                  7000
      DATA (MAXROWM=14)                                                 8000
      DATA(MAXROWT=14)                                                  9000
      DATA(MAXCOLM=16)                                                 10000
      DATA(MAXCOLH=16)                                                 11000
      DATA (MAXCOLT=2)                                                 12000
      COMMON/TBLSIZE/MAXROWB,MAXROWM,MAXROWT,MAXCOLB,MAXCOLM, MAXCOLT  13000
C*****THE COLUMNS ARE THE TYPES,THUS MAXCOLT SHOULD PREFERABLY BE THE  14000
C        MAX NO OR TANKER TYPES,ETC.  IF MORE TYPES,IT IGNORES THEM.   15000
C          THESE MAX DIMENSIONS ARE COORDINATED WITH THE VC ARRAYS AND 16000
C            THE A,AM,AT ARRAYS                                        17000
      COMMON/OUTPUTSM/VC1(16,2),VC2(16,2),VC3(2,2),                    18000
```

```
      1NCT1(2),NCT2(2),NCT3(2),A(27,15,2),AM(14,16,2),
      2AT(14,2,2),NCDC1(2),NCDC2(2),NCDC3(2)
      TYPE INTEGER VC1,VC2,VC3
      COMMON/BCDKLS/BCUBCM,BCDMSL,BCDTNK,BCDASM,BCDWHD
      TYPE INTEGER  BCUBCM,BCDMSL,BCDTNK,BCDASM,BCDWHD
      IF(NCALL1)450,451,450
  450 NCALL1=0
      DO 4 I=1,2
      NCDC1(I)=0
      NCDC2(I)=0
      NCDC3(I)=0
      NCT1(I)=0
      NCT2(I)=0
      NCT3(I)=0
4     CONTINUE
      DO 1 I=1,MAXCOLB
      DO 1 II=1,2
      VC1(I,II)=1H
      DO 1 III=1,MAXROWB
1     A(III,I,II)=0.0
      DO 2 I=1,MAXCOLM
      DO 2 II=1,2
      VC2(I,II)=1H
      DO 2 III=1,MAXROWM
      AM(III,I,II)=0.0
2     CONTINUE
      DO 3 I=1,MAXCOLT
      DO 3 II=1,2
      VC3(I,II)=1H
      DO 3 III=1,MAXROWT
      AT(III,I,II)=0.0
3     CONTINUE
  451 NAREA=NWPNS
      NTERM=NWHDS
      CALL SPCTBL
      IF(SIDE.EQ.3HRED)90,91
   90 K=2
      GO TO 92
   91 K=1
92    IF(CLASS.EQ.BCUBCM)800,3000
C     CHECKS WHETHER THIS EVENT DID NOT OCCUR
800   IF(EVENTNO)6,810,6
810   GO TO (6,20,6,40,50,6,70,80,6,6,6,6,130,6,6,160,6,6,190,6)EVENT
C     BOMBER LAUNCH
   20 GO TO (21,22,23)BCODE
   21 I=1
      GO TO 200
   22 I=2
      GO TO 200
   23 I=3
      GO TO 200
C     BOMBER REFUEL
   40 IF(BCODE.EQ.19.OR.BCODE.EQ.20.OR.BCODE.EQ.28)41,46
   41 I=4
      GO TO 200
42    IF(BCODE-19)44,43,44
```

```
   43 I=5                                                          75000
      GO TO 200                                                    76000
44    IF(BCODE-20)6,45,6                                           77000
   45 I=6                                                          78000
      GO TO 200                                                    79000
   46 IF(BCODE.EQ.4.OR.BCODE.EQ.5.OR.BCODE.EQ.1)47,402             80000
   47 I=7                                                          81000
      GO TO 200                                                    82000
48    IF(BCODE-4)400,49,400                                        83000
   49 I=8                                                          84000
      GO TO 200                                                    85000
400   IF(BCODE-5)6,401,6                                           86000
  401 I=9                                                          87000
      GO TO 200                                                    88000
  402 IF(BCODE .EQ. 29 .OR. BCODE .EQ. 30) 403,6                   89000
  403 I=10                                                         90000
      GO TO 200                                                    91000
404   IF(BCODE-29)401,49,401                                       92000
C     BOMBER ENTER ZONE                                            93000
50    IF(BCODE-6)52,51,52                                          94000
   51 I=12                                                         95000
      GO TO 200                                                    96000
52    IF(BCODE-7)6,53,6                                            97000
   53 I=15                                                         98000
      GO TO 200                                                    99000
C     BOMBER AREA ATTRIT                                          100000
70    IF(BCODE-8)6,71,6                                           101000
   71 I=13                                                        102000
      GO TO 200                                                   103000
C     BOMBER LOCAL ATTRIT                                         104000
   80 IF(BCODE .EQ. 9 .OR. BCODE .EQ. 10) 81,82                   105000
   81 I=14                                                        106000
      GO TO 200                                                   107000
82    IF(BCODE-11)6,83,6                                          108000
   83 I=15                                                        109000
      GO TO 200                                                   110000
C     ABORT                                                       111000
130   IF(BCODE-14)133,131,133                                     112000
131   IF(ZONE)132,134,132                                         113000
  134 I=16                                                        114000
      GO TO 200                                                   115000
132   IF(ZONE-2)6,6,135                                           116000
  135 I=16                                                        117000
      GO TO 200                                                   118000
133   IF(BCODE-15)6,136,6                                         119000
  136 I=17                                                        120000
      GO TO 200                                                   121000
C     RECOVERY                                                    122000
160   IF(BCODE-1)162,161,162                                      123000
  161 I=19                                                        124000
      GO TO 200                                                   125000
162   IF(BCODE-17)164,163,164                                     126000
  163 I=20                                                        127000
      GO TO 200                                                   128000
164   IF(BCODE-21)166,165,166                                     129000
  165 I=21                                                        130000
```

```
      GO TO 200                                                         131000
166   IF(BCODE-22)168,167,168                                           132000
  167 I=22                                                              133000
      GO TO 200                                                         134000
168   IF(BCODE-25)1600,169,1600                                         135000
  169 I=25                                                              136000
      GO TO 200                                                         137000
1600  IF(BCODE-26)6,1601,6                                              138000
 1601 I=26                                                              139000
      GO TO 200                                                         140000
 1602 I=24                                                              141000
      GO TO 200                                                         142000
C     CHECK BOMBER KILL AFTER RECOVERY                                  143000
190   IF(BCODE-23)192,191,192                                           144000
  191 I=23                                                              145000
      GO TO 200                                                         146000
192   IF(BCODE-24)6,193,6                                               147000
  193 I=27                                                              148000
      GO TO 200                                                         149000
200   CALL ADDIN(VC1,-1,NCT1(K),NCDC1(K),K,I,MAXRC,B,MAXCOLB)           150000
      GO TO (6,6,6,42,6,6,46,6,6,404,6,6,6,6,6,6,6,6,6,6,
     16,6,6,6,6,1602,1602,6)I                                           152000
300   IF(CLASS.EQ.BCUMSL)301,500                                        153000
301   IF(EVENT-11)302,302,310                                           154000
  302 I=1                                                               155000
      GO TO 300                                                         156000
  303 MM=MCODE+1                                                        157000
      GO TO (304,305,306,307,308,309,310,6,311)MM                       158000
  304 I=9                                                               159000
      GO TO 300                                                         160000
  305 I=2                                                               161000
      GO TO 300                                                         162000
  306 I=3                                                               163000
      GO TO 300                                                         164000
  307 I=5                                                               165000
      GO TO 300                                                         166000
  308 I=6                                                               167000
      GO TO 300                                                         168000
  309 I=7                                                               169000
      GO TO 300                                                         170000
  310 I=8                                                               171000
      GO TO 300                                                         172000
  311 I=4                                                               173000
      GO TO 300                                                         174000
  312 IF(EVENT.EQ.3.AND.CODE.EQ.2)313,314                               175000
  313 I=10                                                              176000
      GO TO 400                                                         177000
314   IF(EVENT-9)6,315,6                                                178000
  315 PARRIVE=XSMEA                                                     179000
      I=11                                                              180000
      GO TO 300                                                         181000
300   CALL ADDIN(VC2,AM,NCT2(K),NCDC2(K),K,I,MAXRCWM,MAXCOLM)           182000
      GO TO (303,6,6,6,6,6,6,6,6,316,317,318,6)I                        183000
  316 I=12                                                              184000
      PARRIVE=XTEXM                                                     185000
      GO TO 300                                                         186000
```

```
  317 I=13                                                          187000
      PARRIVE=NPEN                                                  188000
      GO TO 300                                                     189000
  318 I=14                                                          190000
      PARRIVE=NDET                                                  191000
      GO TO 300                                                     192000
500   IF(CLASS.EQ.BCDINK)501,6                                      193000
501   GO TO (6,502,6,6,6,6,6,6,6,506,509,504,6,6,510,6,6,522,6),EVENT 194000
C     LAUNCH                                                        195000
  502 GO TO (503,503,503,6)BCODE                                    196000
  503 I=BCODE                                                       197000
      GO TO 600                                                     198000
C     ABORT                                                         199000
504   IF(BCODE-14)705,505,705                                       200000
705   IF(BCODE-18)6,706,6                                           201000
706   I=14                                                          202000
      GO TO 600                                                     203000
  505 I=4                                                           204000
      GO TO 600                                                     205000
506   IF(BCODE-1)6,507,6                                            206000
  507 I=5                                                           207000
      GO TO 600                                                     208000
509   IF(BCODE-1)511,510,511                                        209000
  510 I=8                                                           210000
      GO TO 600                                                     211000
511   IF(BCODE-12)513,512,513                                       212000
  512 I=6                                                           213000
      GO TO 600                                                     214000
513   IF(BCODE-13)6,514,6                                           215000
  514 I=7                                                           216000
      GO TO 600                                                     217000
C     RECOVERY                                                      218000
516   IF(BCODE-1)518,517,518                                        219000
  517 I=9                                                           220000
      GO TO 600                                                     221000
518   IF(BCODE-22)520,519,520                                       222000
  519 I=10                                                          223000
      GO TO 600                                                     224000
520   IF(BCODE-17)525,521,525                                       225000
  521 I=11                                                          226000
      GO TO 600                                                     227000
525   IF(BCODE-21)6,526,6                                           228000
526   I=12                                                          229000
      GO TO 600                                                     230000
522   IF(BCODE-23)6,523,6                                           231000
523   I=13                                                          232000
  600 CALL ADDIN(VC3,AT,NCT3(K),NOOO3(K),K,I,MAXNOWT,MAXCOLT)       233000
    6 RETURN                                                        234000
      END                                                           235000
```

```
                                        IDENT     GENTBLES
PROGRAM LENGTH                  01251
ENTRY POINTS     GENTBLES       00010
BLOCK NAMES
                 PROCESS        01173
                 EDITERM        00001
                 EDITAPE        00015
                 TBLSIZE        00006
                 OUTPUTSM       02650
                 BCUKLS         00005
EXTERNAL SYMBOLS
                 WRQDICT.
                 SPCTBL
                 ADDIN
```

```
C00112  A          00053  00054  00524
X00003  ADDIN      00522  00670  01141
C01652  AM         00105  00106  00672
C02552  AT         00137  00140  01123
C00003  BCDASK
C00000  BCDBCM     00167  00167
C00001  BCDMSL     00557  00557
C00002  BCDTNK     00746  00746
C00004  BCDWMD
C00361  BCODE      00215  00215  00235  00235  00237  00237  00241  00241  00247  00247  00256
                   00256  00265  00265  00267  00267  00271  00271  00277  00277  00306  00306
                   00315  00315  00317  00317  00325  00325  00330  00330  00337  00337  00346
                   00346  00355  00355  00357  00357  00365  00365  00374  00374  00415  00415
                   00424  00424  00433  00433  00442  00442  00451  00451  00460  00460  00467
                   00467  00502  00502  00511  00511  00771  00771  00776  00776  01002  01002
                   01005  01005  01020  01020  01027  01027  01036  01036  01045  01045  01054
                   01054  01063  01063  01072  01072  01101  01101  01110  01110
P01224  BEGIN.     01225
C00147  CLASS      00166  00166  00556  00556  00745  00745
C00360  CODE       00644  00644
P01240  COUNT.     00051  00052  00103  00104  00135  00136
C01133  DEF
P00001  DICT.      00016  00156  00523  00671  01122
P01226  ENDING.    00013  01130  01224
C00350  EVENT      00174  00174  00561  00561  00642  00642  00652  00652  00750  00750
C00351  EVENTN     00171  00171
P00000  EXIT.      01227
P00004  FORMAT.    00037  00071  00123  00157
P00010  GENTBLES   00010
P01241  I          00020  00022  00034  00061  00066  00113  00120  00145  00222  00226  00232
                   00244  00253  00262  00274  00303  00312  00322  00334  00343  00352  00362
                   00371  00403  00412  00421  00430  00437  00446  00455  00464  00473  00477
                   00506  00515  00526  00531  00565  00603  00607  00613  00617  00623  00627
                   00633  00637  00647  00663  00674  00677  00714  00724  00735  00777  01011
                   01015  01024  01033  01042  01051  01060  01067  01076  01105  01114  01125
                   01147
C00362  IDUD
P00237  IF00001.
P00241  IF00002.
P00267  IF00003.
P00271  IF00004.
P00317  IF00005.
P00357  IF00006.
P00644  IF00007.
P01242  IGOTO.     00175  00216  00531  00572  00677  00751  00772
P01243  II         00040  00056  00072  00110  00124  00142  01174
P01244  III        00045  00077  00131  01215
P01131  IN00002.   00043  00075  01136  01153  01163  01201
P01132  IN00003.   00052  01141  01160  01166  01205  01207  01220
P01133  IN00004.   00104  01137  01155  01165  01204  01207  01221
P01134  IN00005.   00127  01136  01152  01162  01177
P01135  IN00006.   00136  01140  01156  01164  01202  01210  01222
C00003  INITEM
P01224  INITIAL.   00013
```

```
C00000  INTP
C00000  IS*TERM
C00002  ITOUT
P00053  .1
P00374  .130    00207
P00377  .131    00375
P00406  .132    00400   00401
P00415  .133    00376   00376
P00402  .134    00400
P00411  .135
P00420  .136    00416
P00424  .100    00211
P00457  .1000   00462   00462
P00472  .1001   00470
P00476  .1002   00554   00555
P00427  .101    00425
P00433  .102    00426   00426
P00438  .103    00434
P00442  .104    00435   00435
P00445  .105    00443
P00451  .106    00444   00444
P00454  .107    00452
P00460  .108    00453   00453
P00463  .109    00461
P00502  .110    00214
P00505  .111    00503
P00511  .112    00504   00504
P00514  .113    00512
P00107  .2
P00215  .20     00177
P00517  .200    00224   00230   00234   00246   00255   00264   00276   00305   00314   00324   00336
                00345   00354   00364   00373   00405   00414   00423   00432   00441   00450   00457
                00466   00475   00501   00510
P00221  .21     00217
P00225  .22     00220
P00231  .23     00220
P00141  .3
P00556  .3000   00170
P00565  .300    00567   00605   00611   00615   00621   00625   00631   00635   00641   00651   00722
                00733   00744
P00561  .301
P00564  .302    00562   00563
P00570  .303    00700
P00602  .304    00573
P00606  .305    00574
P00612  .306    00575
P00616  .307    00575
P00622  .308    00576
P00626  .309    00577
P00632  .310    00600
P00636  .311    00601
P00642  .312    00603
P00646  .313
P00652  .314    00643   00645
```

P00655	.315	00653									
P00713	.316	00710									
P00723	.317	00710									
P00734	.318	00711									
P00235	.40	00200									
P00306	.400	00301	00301								
P00032	.4										
P00311	.401	00307	00327	00327							
P00315	.402	00272									
P00321	.403	00316									
P00325	.404	00541									
P00243	.41	00236	00240								
P00247	.42	00534									
P00252	.43	00250									
P00256	.44	00251	00251								
P00261	.45	00257									
P00016	.450	00015									
P00151	.451	00015									
P00265	.46	00242									
P00273	.47	00266	00270								
P00277	.48	00537									
P00302	.49	00300	00326								
P00330	.50	00201									
P00745	.500	00560									
P00750	.501										
P00771	.502	00753									
P00776	.503	00773	00774	00775							
P01002	.504	00763									
P01014	.505	01003									
P01020	.506	00762									
P01023	.507	01021									
P01027	.509	00762									
P00333	.51	00331									
P01032	.510	01030									
P01036	.511	01031	01031								
P01041	.512	01037									
P01045	.513	01040	01040								
P01050	.514	01046									
P01054	.516	00765									
P01057	.517	01055									
P01063	.518	01056	01056								
01066	.519	01064									
00337	.52	00332	00332								
P01072	.520	01065	01065								
01075	.521	01073									
01110	.522	00776									
P01113	.523	01111									
P01101	.525	01074	01074								
P01104	.526	01102									
P00342	.53	00340									
P01116	.600	01001	01013	01017	01026	01035	01044	01053	01062	01071	01100	01107
P01130	.6	00172	00173	00176	00200	00202	00204	00205	00206	00206	00210	00211
		00212	00213	00214	00260	00260	00310	00310	00320	00341	00341	00350
		00350	00367	00367	00407	00410	00417	00417	00471	00471	00513	00513

		00532	00533	00534	00535	00536	00537	00540	00542	00542	00543	00544
		00545	00545	00546	00547	00550	00550	00551	00552	00553	00553	00555
		00600	00654	00654	00701	00702	00702	00703	00704	00705	00705	00706
		00707	00712	00747	00752	00754	00754	00755	00756	00757	00757	00760
		00761	00764	00765	00766	00767	00770	00775	01007	01007	01026	01022
		01047	01047	01103	01103	01112	01112					
P00346	.70	00203										
P01005	.705	01004										
P01010	.706	01006										
P00351	.71	00347										
P00171	.800											
P00355	.80	00203										
P00174	.810	00172										
P00361	.81	00356										
P00365	.82	00360										
P00370	.83	00366										
P00162	.90											
P00164	.91	00161										
P00166	.92	00163										
P00004	..100000	00042										
P00005	..100001	00074										
P00006	..100002	00126										
P00007	..100003	00160										
P00524	.200001.	00520	00521									
P00672	.200002.	00666	00667									
P01123	.200003.	01117	01120									
C00014	JOUT											
P01245	K	00163	00165	00517	00526	00665	00674	01116	01125			
C01153	LGLOB											
C00003	MAXCOLB	00004	00063	00063	00527							
C00004	MAXCOLM	00004	00115	00115	00675							
C00005	MAXCOLT	00004	00147	00147	01126							
C00000	MAXROWB	00004	00047	00047	00527							
C00001	MAXROWM	00004	00101	00101	00675							
C00002	MAXROWT	00004	00133	00133	01126							
C00357	MCODE	00570	00570									
P01246	MM	00572										
P01247	MAREA	00152	00655									
C00002	NC											
P00003	NCALL1	00014	00017									
C00104	NCT1	00027	00520	00525								
C00106	NCT2	00030	00666	00673								
C00110	NCT3	00031	01117	01124								
C00411	NDET	00737	00737									
C00000	NI											
C02642	NOOO1	00023	00024	00521	00525							
C02644	NOOO2	00025	00667	00673								
C02646	NOOO3	00026	01120	01124								
C00001	NOUT											
C00410	NPEN	00726	00726									
P01250	NTERM	00154	00716									
C00001	NV											
C00336	NWHDS	00153	00153									
C00355	NWPNS	00151	00151									

```
P01136  P00000.0   01144
P01162  P00301.0   01171
P01207  P00002.0   01212
C00412  PARRIVE    00661   00661   00721   00721   00732   00732   00743   00743
C00372  PRIMETAR
X00001  GRADICT.   00000   00011
C00151  SIDE       00157   00157
X00002  SPCTRL     00155
P00063  TS00002.   00036
P00058  TS00004.   00050
P00115  TS00005.   00070
P00110  TS00007.   00102
P00147  TS00010.   00122
P00142  TS00012.   00134
C00150  TYPE
P01146  UP00000.   00021   00035   00062   00067   00114   00121   00146   00223   00227   00233   00245
                   00254   00263   00275   00304   00313   00323   00335   00344   00353   00363   00372
                   00404   00413   00422   00431   00440   00447   00456   00465   00474   00500   00507
                   00516   00530   00566   00604   00610   00614   00620   00624   00630   00634   00640
                   00650   00664   00676   00715   00725   00736   01000   01012   01016   01025   01034
                   01043   01052   01061   01070   01077   01106   01115   01127   01142   01147   01150
                   01151   01160   01161
P01173  UP00001.   00041   00057   00073   00111   00125   00143   01167   01174   01175   01176   01206
                   01206
P01214  UP00002.   00040   00100   00132   01210   01215   01215   01217   01223   01223
C00147  VALUE
C00000  VC1        00043   00044   00524
C00040  VC2        00075   00076   00672
C00100  VC3        00127   00130   01143
P00023  *S00001.   00032
P00037  *S00002.   00064   00064
P00042  *S00003.   00060
P00053  *S00004.   00095
P00071  *S00005.   00116   00116
P00074  *S00006.   00112
P00105  *S00007.   00107
P00123  *S00010.   00150   00150
P00125  *S00011.   00144
P00137  *S00012.   00141
C00202  ZONE       00377   00377   00406   00406
   00341 SYMBOLS
```

```
      FUNCTION INZERO(M)                                                1000
CSUBR     NOBLANK   14DEC71   ******************************************19000
C     THIS FUNCTION SHOULD REPLACE ALL BCD BLANKS WITH BCD ZEROES        2000
      DIMENSION MASK(8)                                                 3000
      DATA(ALBLANK=8H        ),(ALZERO=8H00000000),(MASK=77000000000000 4000
     1B,77000000000000B,77000000000B,77000000B,77000000,7700            5000
     2B,77B)                                                            6000
      TYPE INTEGER ALBLANK,ALZERO                                       7000
      NOBLANK=M                                                         8000
      DO 1 I=1,8                                                        9000
      KMASK=MASK(I)                                                    10000
      JC=ALBLANK.AND.KMASK                                             11000
      JD=M.AND.KMASK                                                   12000
      IF(JC-JD)1,2,1                                                   13000
2     JD=NOBLANK.AND.(.NOT.JC)                                         14000
      NOBLANK=JD.OR.(KMASK.AND.ALZERO)                                 15000
1     CONTINUE                                                         16000
      INZERO=NOBLANK                                                   17000
      RETURN                                                           18000
      END                                                              19000
```

```
                                IDENT     INZERO
PROGRAM LENGTH              00112
ENTRY POINTS    INZERO      00015
EXTERNAL SYMBOLS
                Q8QDICT.
```

```
P00013  ALBLNK     00014  00026
P00014  ALZERO     00015  00041
P00053  BEGIN.     00006  00075  00101
P00001  DICT.      00017  00053  00054
P00067  ENDING.    00020  00046  00050  00051  00051  00052  00052
P00000  EXIT.      00073
P00021  FP00001.   00062  00063
P00031  FP00002.   00064  00065
P00104  GETPL.     00055
P00074  GETPU.     00060  00100
P00105  I          00023  00024
P00050  INITIAL.   00020
P00015  INZERO     00015
P00044  .1         00035  00036
P00037  .2         00035
P00106  JC         00030  00034  00040
P00107  JD         00033  00034  00040  00042
P00110  KMASK      00026  00027  00032  00041
P00015  M          00021  00031
P00003  MASK       00015  00025
P00111  NOBLNK     00022  00037  00043  00045
P00066  PF00002.   00061
X00001  QBADICT.   00000  00016
P00047  VALUE.     00046  00072
P00025  WS00001.   00044
   0003, SYMBOLS
```

```
      SUBROUTINE MATRIX                                                 1000
CSUBR     MATRIX  START     ******************************************  8000
      COMMON/HISTOUT/NSIDE,NINBASE,NINDV,NINTAR,NNWTYP,NTIME,NEVENT     2000
     *     NPLACE,NITYPE,NICLASS,NIREG,NIALERT,NNAL,NCODE,NMWHDS,NTAIM, 3000
     *   NTERM,NAREA,                                                   4000
     *     NHISTOUT(200)                                                5000
      EQUIVALENCE(NTAIM,NNPEN),(NMWHDS,NNDET)                           6000
      EQUIVALENCE (NSIDE,NHISTOUT(1)),(NHISTOUT,HISTOUT)                7000
CDECLARE INDEXNO   INDV       INTAR      WHDTYPE   CODE                8000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LOLOG(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LOLOG
      COMMON/EDITERM/ISWTERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(INDEXNO ,VALUE(  22))
      TYPE INTEGER INDEXNO
      EQUIVALENCE(INDV    ,VALUE( 128))
      TYPE INTEGER INDV
      EQUIVALENCE(INTAR   ,VALUE( 129))
      TYPE INTEGER INTAR
      EQUIVALENCE(WHDTYPE ,VALUE(  58))
      TYPE INTEGER WHDTYPE
      EQUIVALENCE(CODE    ,VALUE( 138))
      TYPE INTEGER CODE
CDECLARE  EVENT     NAL        TAIM       MWHDS      NPEN               9000
      EQUIVALENCE(EVENT   ,VALUE( 130))
      TYPE INTEGER EVENT
      EQUIVALENCE(NAL     ,VALUE( 159))
      TYPE INTEGER NAL
      EQUIVALENCE(TAIM    ,VALUE( 160))
      TYPE INTEGER TAIM
      EQUIVALENCE(MWHDS   ,VALUE( 161))
      TYPE INTEGER MWHDS
      EQUIVALENCE(NPEN    ,VALUE( 162))
      TYPE INTEGER NPEN
CDECLARE  PLACE     IDDD       NDET                                     10000
      EQUIVALENCE(PLACE   ,VALUE( 132))
      TYPE INTEGER PLACE
      EQUIVALENCE(IDDD    ,VALUE( 140))
      TYPE INTEGER IDDD
      EQUIVALENCE(NDET    ,VALUE( 163))
      TYPE INTEGER NDET
CDECLARE  NWPNS     NWHDS                                               11000
      EQUIVALENCE(NWPNS   ,VALUE( 135))
      TYPE INTEGER NWPNS
      EQUIVALENCE(NWHDS   ,VALUE( 120))
      TYPE INTEGER NWHDS
CHANGE    NWPNS                                                         12000
      NC=  135
      CALL CHANGE
      NWPNS=NAREA                                                       13000
CHANGE    NWHDS                                                         14000
      NC=  120
      CALL CHANGE
      NWHDS=NTERM                                                       15000
CHANGE    INDEXNO                                                       16000
```

```
      NC=  22
      CALL CHANGE
      INDEXNO=NINHASE
CHANGE    INDV
      NC=  128
      CALL CHANGE
      INDV=NINDV
CHANGE    INTAR
      NC=  129
      CALL CHANGE
      INTAR=NINTAR
CHANGE    MHOTYPE
      NC=   58
      CALL CHANGE
      MHOTYPE=NNMTYP
CHANGE    NAL
      NC=  159
      CALL CHANGE
      NAL=NNAL
      IF(EVENT-9)10,20,10
C      HERE FOR AREA ATTRITION
   10 CONTINUE
CHANGE    TAIM
      NC=  160
      CALL CHANGE
      TAIM=NTAIM
CHANGE    PLACE
      NC=  132
      CALL CHANGE
      PLACE=NPLACE
CHANGE    MMHOS
      NC=  161
      CALL CHANGE
      MMHOS=NMMHOS
CHANGE    CODE
      NC=  138
      CALL CHANGE
      CODE=NCODE
      GO TO 30
C      HERE FOR TERMINAL ATTRITION
   20 CONTINUE
CHANGE    MPEN
      NC=  162
      CALL CHANGE
      MPEN=NMPEN
CHANGE    MDET
      NC=  163
      CALL CHANGE
      MDET=NMDET
   30 CONTINUE
      CALL AUDATA
      RETURN
      END
```

```
                                        IDENT     MATTRITX
PROGRAM LENGTH                  00123
ENTRY POINTS      MATTRITX      00003
BLOCK NAMES
                  HISTOUT       00310
                  PROCESS       01173
                  EDITERM       00001
                  EDITAPE       00015
EXTERNAL SYMBOLS
                  OBUDICT.
                  CHANGE
                  ADDATA
```

X00003	ADDATA	00116										
P00121	BEGIN.	00121										
X00002	CHANGE	00011	00016	00023	00030	00035	00042	00047	00057	00064	00071	00076
		00105	00112									
C00360	CODE	00101	00101									
C01133	DEF											
P00001	DICT.	00005	00012	00017	00024	00031	00036	00043	00050	00060	00065	00072
		00077	00106	00113	00117							
P00122	ENDING.	00006	00120									
C00350	EVENT	00053										
P00000	EXIT.	00122										
C00000	HISTOUT											
C00005	HTIME											
C00362	IDOD											
C00174	INDEXNO	00025	00026									
C00346	INDV	00033	00033									
C00003	INITEM											
P00121	INITIAL.	00006										
C00347	INTAR	00040	00040									
C00000	INTP											
C00000	IS*TERM											
C00002	ITOUT											
P00055	.10	00054										
P00103	.20	00054										
P00116	.30	00102										
C00014	JOUT											
C01153	LGLOB											
P00003	MATTRITX	00003										
C00407	MMHDS	00074	00074									
C00405	MAL	00052	00052									
C00021	MAREA	00013	00013									
C00002	NC	00007	00010	00015	00022	00027	00034	00041	00046	00055	00056	00063
		00070	00075	00103	00104	00111						
C00015	NCODE	00100	00100									
C00411	NDET	00115	00115									
C00006	NEVENT											
C00000	NHISTOUT											
C00000	NI											
C00013	NIALERT											
C00011	NICLASS											
C00001	NINBASE	00025	00025									
C00002	NINDV	00032	00032									
C00003	NINTAR	00037	00037									
C00012	NIREG											
C00010	NITYPE											
C00016	NMMHDS	00073	00073									
C00014	NNAL	00051	00051									
C00016	NNDET	00114	00114									
C00017	NNPEN	00107	00107									
C00004	NNTYP	00044	00044									
C00001	NOUT											
C00410	NPEN	00110	00110									
C00007	NPLACE	00066	00066									
C00000	NSIDE											

```
C00017  NTAIM      00001   00001
C00020  NTERM      00020   00020
C00001  NV
C00336  NWMOS      00021   00021
C00355  NWPNS      00014   00014
C00352  PLACE      00067   00067
X00001  QBWDICT.   00000   00004
C00406  TAIM       00062   00062
C00147  VALUE
C00240  WHDTYPE    00045   00045
   00075 SYMBOLS
```

```
      SUBROUTINE MLAUNX                                                 1000
CSUBR     MLAUNX    START     ****************************************  9000
      COMMON/HISTOUT/NSIUE,NINBASE,NINDV,NINTAR,NNMTYP,NTIME,NEVENT,    2000
     1NPLACE,NITYPE,NICLASS,NIREG,NIALERT,NDUO,                         3000
     2NCODE,NNMPNS,NNTARG,NNCYCLE,NNSUCC,NNTEST,DUM(5),                 4000
     3NMPNLIST(18),NLAUNLST(18),NTARLIST(18),NTRYLC(18),NHISTOUT(200)   5000
      EQUIVALENCE (NSIUE,NHISTOUT(1)),(NHISTOUT,HISTOUT)                6000
CDECLARE1 WHDTYPE   CODE      INDEXNC   INDV      MCODE                 7000
      COMMON/PROCESS/N1,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLCB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLCB
      COMMON/EDITERM/IS,TERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(WHDTYPE ,VALUE(  58))
      TYPE INTEGER WHDTYPE
      EQUIVALENCE(CODE    ,VALUE( 138))
      TYPE INTEGER CODE
      EQUIVALENCE(INDEXNC ,VALUE(  22))
      TYPE INTEGER INDEXNC
      EQUIVALENCE(INDV    ,VALUE( 128))
      TYPE INTEGER INDV
      EQUIVALENCE(MCODE   ,VALUE( 137))
      TYPE INTEGER MCODE
CDECLARE  INTAR     NMPNS                                               8000
      EQUIVALENCE(INTAR   ,VALUE( 129))
      TYPE INTEGER INTAR
      EQUIVALENCE(NMPNS   ,VALUE( 135))
      TYPE INTEGER NMPNS
CHANGE    WHDTYPE                                                       9000
      NC=   58
      CALL CHANGE
      WHDTYPE=NNMTYP                                                   10000
CHANGE    CODE                                                         11000
      NC=  138
      CALL CHANGE
      CODE=NCODE                                                       12000
      IF(NCODE-2)10,100,10                                             13000
   10 DO 20 I=1,NMPNS                                                  14000
CHANGE    INDEXNC                                                      15000
      NC=   22
      CALL CHANGE
      INDEXNC=NLAUNLST(I)                                              16000
CHANGE    INTAR                                                        17000
      NC=  129
      CALL CHANGE
      INTAR=NTARLIST(I)                                                18000
CHANGE    INDV                                                         19000
      NC=  128
      CALL CHANGE
      INDV=NMPNLIST(I)                                                 20000
CHANGE    MCODE                                                        21000
      NC=  137
      CALL CHANGE
      MCODE=NTRYLC(I)                                                  22000
      CALL ADDREP                                                      23000
   20 CONTINUE                                                         24000
```

```
      CALL RESTORE                                          25000
      RETURN                                                26000
  100 CONTINUE                                              27000
CHANGE    NWPNS                                             28000
      NC=  135
      CALL CHANGE
      NWPNS=NWPNS                                           29000
CHANGE    INDEXAC                                           30000
      NC=   22
      CALL CHANGE
      INDEXAC=NLADNLST(1)                                   31000
CHANGE    INDV                                              32000
      NC=  128
      CALL CHANGE
      INDV=NWPNLIST(1)                                      33000
CHANGE    INTAR                                             34000
      NC=  129
      CALL CHANGE
      INTAR=NTARLIST(1)                                     35000
      CALL AUDATA                                           36000
      RETURN                                                37000
      END                                                   38000
```

```
                                        IDENT     MLAUNX
        PROGRAM LENGTH                  00120
        ENTRY POINTS     MLAUNX         00003
        BLOCK NAMES
                         HISTOUT        00310
                         PROCESS        01173
                         EDITERM        00001
                         EDITAPE        00015
        EXTERNAL SYMBOLS
                         UBQDICT.
                         CHANGE
                         AUDREP
                         RESTORE
                         AUDATA
```

X00005	ADDATA	00112										
X00003	ADDREP	00055										
P00115	BEGIN.	00115										
X00002	CHANGE	00011	00016	00031	00037	00044	00051	00067	00074	00101	00106	
C00360	CODE	00021	00021									
C01133	DEF											
P00001	DIST.	00005	00012	00017	00032	00040	00045	00052	00056	00063	00070	00075
		00102	00107	00143								
C00023	DO4											
P00116	ENDING.	00006	00064	00114								
P00000	EXIT.	00116										
C00000	HISTOUT											
C00005	HTIME											
P00117	I	00026	00033	00057								
C00174	INDEXNO	00035	00035	00077	00077							
C00346	INDV	00047	00047	00104	00104							
C00003	INITEM											
P00115	INITIAL.	00006										
C00347	INTAR	00042	00042	00111	00111							
C00000	INTP											
C00000	IS#TERM											
C00002	ITOUT											
P00025	.10	00024										
P00065	.100	00023										
P00057	.20											
C00014	JOUT											
C01153	LGLOB											
C00357	#CODE	00054	00054									
P00003	MLAUNX	00003										
C00002	NC	00007	00010	00015	00027	00030	00036	00043	00050	00065	00066	00073
		00100	00105									
C00015	NCODE	00020	00020	00022	00022							
C00014	NDUD											
C00006	NEVENT											
C00000	NHISTOUT											
C00000	NI											
C00013	NIALERT											
C00011	NICLASS											
C00001	NINBASE											
C00002	NINDV											
C00003	NINTAR											
C00012	NIMEG											
C00010	NITYPE											
C00052	NLAUNLST	00034	00034	00076	00076							
C00020	NNCYCLE											
C00021	NNSUCC											
C00017	NNTARG											
C00022	NNTEST											
C00016	NN#PNS	00060	00060	00071	00071							
C00004	NN#TYP	00013	00013									
C00001	NOUT											
C00007	NPLACE											
C00000	NSIDE											
C00074	NTARLIST	00041	00041	00110	00110							

```
C00116  NTRYLC     00053   00053
C00001  NV
C00030  NWPNLIST   00046   00046   00103   00103
C00355  NWPNS      00072   00072
X00001  WWDICT.    00000   00004
X00004  RESTORE    00062
P00060  TS00001.   00026
C00147  VALUE
C00240  WHDTYPE    00014   00014
P00027  WS00001.   00061   00061
   00076 SYMBOLS
```

```
      SUBROUTINE MOREDATA                                                1000
CSUBR     MOREDATA  10DEC71    ****************************************  10000
      COMMON/TAPES/ITAPE(10),MAXTAPE(10),NTP,NHOUT                       2000
      COMMON/ITP/ITP                                                     3000
      COMMON/MYIDENT/MYIDENT                                             4000
      COMMON/TWORD/ITWORD                                                5000
      COMMON/BYTYPE/COMNO(15),BTYPES(15),INDCLAS(15),INDBEG(250),        6000
     1        TYPENAME(250),KLASSES(250)                                 7000
      EQUIVALENCE(NTYPE,COMNO(15))                                       8000
      DATA(KLASSES=0,0,0,0,0,0,0,0,0,0,0,0,0,0,0)                        9000
      DATA(NDXBOM=2),(NDXTNK=3),(NDXMSL=1)                              10000
      COMMON/BCDKLS/BCDBOM,BCDMSL,BCDTNK,BCDASM,BCDWHD                  11000
      TYPE INTEGER BCDBOM,BCDMSL,BCDTNK,BCDASM,BCDWHD                   12000
      DATA(BCDASM=3HASM),(BCDWHD=7HWARHEAD)                             13000
C     THE ARRAY KLASSES IS USED TO ASSIGN CLASS NAMES IN THE DATA BASE  14000
C        OUTPUT THUS ALL PROGRAMS USING THISS WILL SEE THESE CLASS NAMES 15000
      COMMON/WARHEAD/YIELDX(50),FFRACX(50),PUDDX(50)                    16000
CUSE      MAXBLK    9AUG71    ****************************************  17000
      COMMON/MAXES/MAXKLS,MAXWHD,MAXASM,MAXMIS,MAXBOM,MAXLOC,MAXREG      1000
     1,MAXGRP                                                            1010
CEND      MAXBLK    ****************************************************  17000
      DATA(MAXKLS=15),(MAXWHD=50),(MAXASM=20),(MAXMIS=40),(MAXBOM=40),  18000
     1(MAXLOC=12000),(MAXREG=10),(MAXGRP=10)                            19000
C        MAXES WILL BE USED FOR CLEARING ARRAYS,ETC.  IF THE DIMENSION  20000
C             STATEMENTS ARE CHANGED SO SHOULD MAXES                    21000
CUSE      TARGETS   24SEP71    ****************************************  21050
      COMMON/KEYS/KLAT,KLONG,KEYCON,KEYLOC,KEYFCN,KEYLAT,KEYREG          1000
     1,KEYDES,KEYTSK                                                     2000
      COMMON/1/NDXCTY(12000)                                             3000
      COMMON/2/KNTRY(256),KFCN(256),KREG(11),KLATPK(8000),LATLONG(1)     4000
      COMMON/3/NDESTK(1)                                                 5000
CEND      TARGETS   ****************************************************  21050
      DATA(MAXNTRY=255),( MAXFCN=255),(MXLAT=7999)                      21100
C     THESE MAX NUMBERS CORRESPOND OT THE DIMENSIONS OF THE ARRAYS IN   21200
C     COMMON/1/.THERE ARE TWO FURTHER MAXES FOUND IN /MAXES/THAT ARE    21300
C       THE LIMITS FOR NDXCTY(MAXLOC)AND KREG(MAXREG).  THEY MUST ALSO F 21400
C         FIT IN THE NUMBER OF BITS SPECIFIED BY KEYCON,ETC             21500
      COMMON/ASP/CEPA(20),IAMDA(20)                                     22000
      COMMON/BOMBER/CEPB(40)                                            23000
      COMMON/MISSILE/CEPM(40)                                           24000
CDECLARE  DESIG     TASK                                                24010
      EQUIVALENCE(DESIG    ,VALUE(  19))
      TYPE INTEGER DESIG
      EQUIVALENCE(TASK     ,VALUE(  20))
      TYPE INTEGER TASK
CDECLAREI CLASS     WHDTYPE   YIELD     FFRAC     PUDD                  29000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLOB
      COMMON/EDITERM/ISATERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(CLASS    ,VALUE(   1))
      TYPE INTEGER CLASS
      EQUIVALENCE(WHDTYPE ,VALUE(  58))
      TYPE INTEGER WHDTYPE
      EQUIVALENCE(YIELD    ,VALUE(  73))
```

```
      TYPE REAL     YIELD
      EQUIVALENCE(FFRAC    *VALUE(  61))
      TYPE REAL     FFRAC
      EQUIVALENCE(PDUD     *VALUE(  60))
      TYPE REAL     PDUD
CDECLARE  CEP        JTYPE      INDEANG   FUNCTION  CNTRYLOC                30000
      EQUIVALENCE(CEP      *VALUE(  81))
      TYPE REAL     CEP
      EQUIVALENCE(JTYPE    *VALUE(  57))
      TYPE INTEGER JTYPE
      EQUIVALENCE(INDEANG *VALUE(  22))
      TYPE INTEGER INDEANG
      EQUIVALENCE(FUNCTION*VALUE(   6))
      TYPE INTEGER FUNCTION
      EQUIVALENCE(CNTRYLOC*VALUE(   5))
      TYPE INTEGER CNTRYLOC
CDECLARE  ISITE      ASMTYPE    CNTRYOWN                                    31000
      EQUIVALENCE(ISITE    *VALUE( 114))
      TYPE INTEGER ISITE
      EQUIVALENCE(ASMTYPE *VALUE(  59))
      TYPE INTEGER ASMTYPE
      EQUIVALENCE(CNTRYOWN*VALUE(   4))
      TYPE INTEGER CNTRYOWN
CDECLARE  LAT        LONG                                                    32000
      EQUIVALENCE(LAT      *VALUE(  30))
      TYPE REAL     LAT
      EQUIVALENCE(LONG     *VALUE(  31))
      TYPE REAL     LONG
CDECLARE  IREG                                                               33000
      EQUIVALENCE(IREG     *VALUE(  51))
      TYPE INTEGER IREG
CDECLARE  ICLASS                                                             34000
      EQUIVALENCE(ICLASS  *VALUE(  49))
      TYPE INTEGER ICLASS
      DATA(ILSHT=100000B)                                                    34100
C     INITIALIZE                                                             35000
      IPNDES=0                                                               35100
      KLONG=KEYMAKE(2,0,24)                                                  36000
      KLAT=KEYMAKE(1,24,24)                                                  37000
      KEYCWN=KEYMAKE(2,0,8)                                                  37020
      KEYLOC=KEYMAKE(2,8,8)                                                  37040
      KEYFCN=KEYMAKE(2,16,8)                                                 37060
      KEYREG=KEYMAKE(2,24,8)                                                 37100
      KEYLAT=KEYMAKE(2,32,16)                                                37101
      KEYDES=KEYMAKE(2,0,30)                                                 37102
      KEYTSK=KEYMAKE(2,31,12)                                                37103
      IDTPE=ITAPE(3)                                                         37104
      REWIND IDTPE                                                           37105
      ILAT=0                                                                 37120
      IKNTRY=0                                                               37140
      IFCN=0                                                                 37160
      IIREG=0                                                                37180
      IXLAT=0                                                                37200
      IXKNTRY=0                                                              37220
      IXFCN=0                                                                37240
      IXREG=0                                                                37260
```

```
      II=MAKNTRY+MXFCN+MAXREG+MALAT+4
C     DEBUG   PRINT
      PRINT 5151,MAXLOC,MAKNTRY,MXFCN,MAXREG,MALAT,II
      DO 6900 I=1,MAXLOC
 6900 NDXCTY(I)=0
      DO 6901 I=1,II
 6901 KNTRY(I)=0
C   READ IN BREAKPOINT TABLES
 5151 FORMAT(1X,6I10)
C     HERE FOR INDEXOB (2ND FILE AFTER LABEL)
      ITP=ITAPE(1)
C  POSITION TO BREAKPOINT TABLE
      CALL SETREAD
      CALL SKIPFILE(ITP)
   71 BUFFER IN (ITP,1) (COMNO(1),TYPENAME(250))
   72 IF(UNIT,ITP) 72,73,7372,7372
 7372 PRINT 7373,ITP
 7373 FORMAT (45H ERROR IN READING BREAKPOINT TABLES FROM LTN ,I2)
      CALL ABORT
   73 CONTINUE
C     READ DIRECTORY AND COPY OUT
      CALL TERMTAPE
      NOUT=NHOUT
      ITOUT(1)=ITAPE(5)
      ITOUT(2)=ITAPE(6)
      MYIDENT=BHDATA,AUZ
      CALL INITEDIT(ITAPE(1))
C     SET NOUT 0.B) HANDLER WILL NOT TERM. OUTPUT
      NOUT = 0
C     READ FIRST ITEM
      CALL INPITEM
      DO 100 ICL=1,MAXMHD
      YIELDX(ICL)=0.0
      FFRACX(ICL)=0.0
      PDUDX(ICL)=0.0
 100  CONTINUE
C     FILL CLASS TABLES
 61   IF(ICLASS)80,80,81
 81   IF(ICLASS-MAXKLS)82,82,80
 82   KLASSES(ICLASS)=CLASS
      BCDBOM=KLASSES(NDXHOM)
      BCDTNK=KLASSES(NDXTNK)
      BCDMSL=KLASSES(NDXMSL)
 80   IF(ISITE-1)1,1,40
 1    IF(CLASS.EQ.BCDMHD)2,10
    2 YIELDX(MHDTYPE)=YIELD
      FFRACX(MHDTYPE)=FFRAC
      PDUDX(MHDTYPE)=PDUD
       GO TO 50
 10   IF(CLASS.EQ.BCDASM)11,20
   11 CEPA(ASMTYPE)=CEP
      IWMDA(ASMTYPE)=MHDTYPE
       GO TO 50
 20   IF(CLASS.EQ.BCDBOM)21,30
   21 CEPB(JTYPE)=CEP
      GO TO 40
```

```
30    IF(CLASS.EQ.BCDMSL)32,40                                          92000
   32 CEPR(JTYPE)=CEP                                                   93000
C      FILL FILES FOR CNTRYCMN,CNTRYLOC,FUNCTION                        94000
   40 IF(INDEXNO)50,50,41                                               95000
41    IF(INDEXNO-MAXLOC)6040,6040,6041                                 101010
6041  PRINT 6042,INDEXNO,MAXLOC                                        101020
6042  FORMAT(33H0ITEM IN DATA BASE HAS INDEX-NO OF I12,42H,MEADSUM DOES N 101030
     1OT ACCEPT ANY GREATER THAN   I12)                                101040
6040  CONTINUE                                                         101070
C     CLEAR DECIMALS AND FIX                                           102000
      JLONG=LONG*10000.                                                103000
      JLAT=LAT*10000.                                                  104000
C     PACK                                                             105000
      MDESIG=DESIG/ILSHT                                               105100
      NDESTK(1)=MDESIG .AND. 77777777778                               105125
      NTSKM=TASK .AND. 77770000000000008                               105150
      NDESTK(1)=NTSKM .OR. NDESTK(1)                                   105200
      WRITE(IOTPE) INDEXNO,NDESTK(1)                                   105300
      IPNDES=IPNDES+1                                                  105400
      IF(IPNDES .GT. 100) 9001,9000                                    105500
 9000 PRINT 9002,INDEXNO,NDESTK(1)                                     105600
 9002 FORMAT(1X,I10,5X,O16)                                            105700
 9001 CONTINUE                                                         105800
      CALL IPUT(KLONG,1,JLONG,LATLONG(1))                              106000
      CALL IPUT(KLAT,1,JLAT,LATLONG(1))                                107000
      JLAT=1                                                           107010
6004  IF(JLAT-ILAT)6000,6000,6001                                      107020
6000  IF(KLATPK(JLAT)-LATLONG(1))6002,6003,6002                        107030
6002  JLAT=JLAT+1                                                      107040
      IF(JLAT-MXLAT)6004,6004,6005                                     107050
6005  IXLAT=IXLAT+1                                                    107060
      GO TO 6003                                                       107070
 6001 KLATPK(JLAT)=LATLONG(1)                                          107080
      ILAT=JLAT                                                        107090
6003  JREG=1                                                           107100
6014  IF(JREG-IIREG)6010,6010,6011                                     107110
6010  IF(KREG(JREG)-IREG)6012,6013,6012                                107120
6012  JREG=JREG+1                                                      107130
      IF(JREG-MAXREG)6014,6014,6015                                    107140
6015  IXREG=IXREG+1                                                    107150
      GO TO 6013                                                       107160
6011  KREG(JREG)=IREG                                                  107170
      IIREG=JREG                                                       107180
6013  JFCN=1                                                           107190
6024  IF(JFCN-IFCN)6020,6020,6021                                      107200
6020  IF(KFCN(JFCN)-FUNCTION)6022,6023,6022                            107210
6022  JFCN=JFCN+1                                                      107220
      IF(JFCN-MXFCN)6024,6024,6025                                     107230
6025  IXFCN=IXFCN+1                                                    107240
      GO TO 6023                                                       107250
6021  KFCN(JFCN)=FUNCTION                                              107260
      IFCN=JFCN                                                        107270
6023  KKNTRY=CNTRYCMN                                                  107280
      IK=1                                                             107290
6026  JKNTRY=1                                                         107300
6034  IF(JKNTRY-IKNTRY)6030,6030,6031                                  107310
```

```
 6030  IF(KNTRY(JKNTRY)-KKNTRY)6032,6033,6032
 6032  JKNTRY=JKNTRY+1
       IF(JKNTRY-MXKNTRY)6034,6034,6035
 6035  IXKNTRY=IXKNTRY+1
       GO TO 6033
 6031  KNTRY(JKNTRY)=KKNTRY
       IKNTRY=JKNTRY
 6033  GO TO (6037,6036),IK
 6037  KKNTRY=CNTRYLOC
       JJKNTRY=JKNTRY
       IK=2
       IF(CNTRYOWN-CNTRYLOC)6026,6036,6026
  6036 CALL IPUT(KEYOWN,INDEXNO,JJKNTRY,NOACTY)
       CALL IPUT(KEYLOC,INDEXNO,JKNTRY,NOACTY)
       CALL IPUT(KEYFCN,INDEXNO,JFCN,NOACTY)
       CALL IPUT(KEYREG,INDEXNO,JREG,NOACTY)
       CALL IPUT(KEYLAT,INDEXNO,JLAT,NOACTY)
    50 CALL NEXTITEM
       GO TO (61,60) IS=TERM
C      RESTORE NOUT TO OUTPUT U.B.
    60 CONTINUE
       NOUT=NROUT
       JOUT = ITAPE(5)
       NI = NV= 0
       ENDFILE IDTPE
       REWIND IDTPE
       ITP=ITAPE(1)
       CALL REWUNIT(ITP)
       PRINT 9003,IPNODES
 9003  FORMAT(25H NUMBER OF DESIGS STORED= I10)
       RETURN
       END
```

```
                                        IDENT     MOREDATA
PROGRAM LENGTH                  01011
ENTRY POINTS     MOREDATA       00070
BLOCK NAMES
                 TAPES          00026
                 ITP            00001
                 MYIDENT        00001
                 TWORD          00001
                 BYTYPE         01433
                 BCDKLS         00005
                 WARHEAD        00226
                 MAXES          00010
                 KEYS           00011
                 1              27340
                 2              20514
                 3              00001
                 ASM            00050
                 BOMBER         00050
                 MISSILE        00050
                 PROCESS        01173
                 EDITERM        00001
                 EDITAPE        00015
EXTERNAL SYMBOLS
                 THEND.
                 GIWIDIOO
                 U8QDICT.
                 KEYMAKE
                 SETREAD
                 SKIPFILE
                 ABORT
                 TERMTAPE
                 INITEDIT
                 INPITEM
                 IPUT
                 NEXTITEM
                 NEWUNIT
                 U8QIFUNI
                 EFT.
                 RE..
                 BF1.
                 STM.
                 STB.
                 UNSIWGL.
```

X00007	ABORT	00265										
C00241	ASMTYPE	00300										
C00003	BCDASM	00006	00363	00363								
C00000	BCDBGM	00335	00336	00373	00373							
C00001	BCDMSL	00343	00344	00401	00401							
C00002	BCDTNK	00340	00341									
C00004	BCDWHD	C00004	00351	00351								
P00735	BEGIN.	00737										
X00021	BFI.	00245										
C00017	BTYPES											
C00267	CEP	00365	00365	00375	00375	00403	00403					
C00000	CEPA	00366	00367									
C00000	CEPB	00376	00377									
C00000	CEPM	00404	00405									
C00147	CLASS	00331	00331	00350	00350	00362	00362	00372	00372	00400	00400	
C00153	CNTRYLOC	00641	00641	00646								
C00152	CNTRYCNK	00607	00607	00645	00645							
P00734	CNVRTI.	00200	00202	00203	00203	00207	00210	00262	00420	00422	00454	00456
		00473	00475	00727								
P00760	COUNT.	00217	00220	00227	00230	00314	00315					
P00012	CRFMT.	00234	00265	00425	00500	00732						
C00000	CUMNO	00247										
C01133	DEF											
C00171	DESIG	00435	00435									
P00001	DILT.	00072	00077	00104	00111	00116	00123	00130	00135	00142	00147	00156
		00175	00212	00237	00241	00248	00252	00257	00264	00266	00270	00302
		00307	00415	00424	00452	00460	00470	00477	00501	00505	00651	00653
		00661	00665	00671	00675	00711	00714	00720	00724	00731		
X00017	EFI.	00710										
P00740	ENDING.	00072	00732	00735	00736	00736						
P00000	EXIT.	00742										
C00243	FFRAC	00355	00356									
C00062	FFRACA	00320	00356	00357								
P00012	FORMAT.	00277										
C00154	FUNCTION	00571	00571	00602	00602							
P00213	GGGGGG0.	00173										
P00265	GGGGGG2.	00255										
P00425	GGGGGG3.	00413										
P00461	GGGGGG4.	00450										
P00500	GGGGGG5.	00400										
P00732	GGGGGG6.	00722										
P00761	I	00214	00217	00225	00227							
P00762	ICL	00311	00314									
C00227	ICLASS	00323	00323	00325	00325	00332						
P00763	IDTPE	00154	00447	00707	00712							
P00764	IFCN	00101	00565	00606								
P00765	IGOTO.	00637	00677									
P00766	II	00172	00210	00225								
P00767	IIREG	00102	00540	00561								
P00770	IK	00011	00636	00644								
P00771	IKNTRY	00100	00615	00635								
P00772	ILAT	00157	00513	00534								
P00011	ILSHT	00437										
C00055	INDPEG											

C00036	INDCLAS											
C00174	INDEAAC	00406	00406	00410	00410	00417	00417	00453	00453	00472	00472	00652
		00656	00662	00666	00672							
X00011	INITEDIT	00301										
C00003	INITEM											
P00735	INITIAL.	00073										
X00012	INPITEM	00306										
C00000	INTP											
P00773	IPNDES	00075	00461	00462	00463	00726						
X00013	IPUT	00500	00504	00650	00654	00660	00664	00670				
C00231	IREG	00544	00544	00555	00555							
C00330	ISITE	00345	00345									
C00000	IS*TERM	00676	00676									
C00000	ITMPC	00152	00153	00234	00234	00273	00273	00275	00275	00303	00703	00703
		00715	00715									
C00002	ITOUT	00274	00274	00276	00276							
C00000	ITP	00235	00235	00242	00243	00243	00250	00250	00251	00251	00716	00716
		00721										
C00000	IT*GRO											
C00024	I*MDA	00370	00371									
P00774	IXFCN	00105	00577	00600								
P00775	IXKNTRY	00104	00627	00630								
P00776	IXLAT	00103	00525	00526								
P00777	IXREG	00106	00552	00553								
P00322	.100											
P00350	.1	00346	00347									
P00362	.10	00352										
P00355	.11											
P00353	.2											
P00372	.20	00364										
P00375	.21											
P00400	.30	00374										
P00403	.32											
P00406	.40	00347	00377	00402								
P00410	.41											
P00674	.50	00361	00371	00407	00407							
P00515	.6000	00513	00514									
P00701	.60											
P00530	.6001	00514										
P00521	.6002	00520										
P00535	.6003	00517	00527									
P00512	.6004	00523	00524									
P00525	.6005											
P00542	.6010	00540	00541									
P00555	.6011	00541										
P00546	.6012	00545										
P00562	.6013	00545	00554									
P00537	.6014	00551	00551									
P00552	.6015											
P00567	.6020	00565	00566									
P00602	.6021	00566										
P00573	.6022	00572										
P00607	.6023	00572	00601									
P00564	.6024	00575	00576									

P00577	.6025									
P00612	.6026	00647	00647							
P00617	.6030	00615	00616							
P00632	.6031	00616								
P00623	.6032	00622								
P00636	.6033	00622	00631							
P00614	.6034	00625	00626							
P00627	.6035									
P00650	.6036	00646	00646							
P00641	.6037	00640								
P00425	.6040	00412	00412							
P00413	.6041									
P00323	.61	00700								
P00221	.6900									
P00231	.6901									
P00243	.71									
P00250	.72	00253								
P00267	.73	00253								
P00255	.7372	00254								
P00345	.80	00324	00324	00330						
P00325	.81									
P00331	.82	00327	00327							
P00466	.9000	00464	00464							
P00500	.9001	00465								
P00030	..100000	00277								
P00012	..5151	00176								
P00031	..6042	00418								
P00016	..7373	00260								
P00052	..9000	00471								
P00060	..9003	00725								
P01000	JFCN	00563	00564	00567	00573	00574	00603	00605	00663	
P01001	JJKNTRY	00643	00653							
P01002	JKNTRY	00613	00614	00617	00623	00624	00633	00635	00643	00657
P01003	JLAT	00434	00507	00511	00512	00515	00521	00522	00531	00533	00673
P01004	JLONG	00430	00503							
C00014	JOUT	00704	00706							
P01005	JREG	00538	00537	00542	00546	00547	00556	00560	00667	
C00237	JTYPE	00376	00404							
C00007	KEYDES	00145								
C00004	KEYFCN	00126	00662							
C00005	KEYLAT	00140	00672							
C00003	KEYLOC	00121	00656							
X00004	KEYMAKE	00076	00103	00110	00115	00122	00127	00134	00141	00146
C00002	KEYOPR	00114	00652							
C00006	KEYREG	00133	00666							
C00010	KEYTSK	00152								
C00400	KFCN	00570	00604	00604						
P01006	KKNTRY	00610	00621	00632	00642					
C01041	KLASSES	00003	00332	00333	00334	00335	00337	00340	00342	00343
C00000	KLAT	00107	00506							
C01013	KLATPK	00516	00516	00532	00532					
C00001	KLONG	00102	00102	00502						
C00000	KNTRY	00231	00232	00620	00620	00633	00634			
C01000	KREG	00543	00543	00557	00557					

C00204	LAT	00431	00431							
C20513	LATLONG	00503	00507	00517	00530	00530				
C01153	LOCOR									
C00205	LONG	00425	00425							
C00002	MAXASM	C00002								
C00004	MAXBCM	C00004								
C00007	MAXGRP	C00007								
C00000	MAXLS	00006	00326	00326						
C00005	MAXLOC	C00005	00177	00177	00214	00215	00411	00411	00421	00421
C00003	MAXMIS	C00003								
C00006	MAXREG	C00006	00170	00170	00204	00204	00550	00550		
C00012	MAXTAPE									
C00001	MAXWHD	C00001	00311	00312						
P01007	MDESIG	00446								
P00070	MCREDATA	00070								
P00007	MXFCN	00167	00203	00575						
P00006	MXENTRY	00167	00201	00625						
P00010	MXLAT	00171	00206	00523						
C00000	MYIDENT	00300	00300							
C00002	NC									
C00000	NDESTR	00441	00442	00445	00446	00446	00455	00455	00474	00474
P00003	NDXBCM	00334								
C00000	NDXCTY	00221	00222	00653	00657	00663	00667	00673		
P00005	NDXMSL	00342								
P00004	NDXTNK	00337								
X00015	NEWUNIT	00717								
X00014	NEXTITEM	00674								
C00000	NI	00706								
C00001	NOUT	00272	00272	00304	00305	00702	00702			
C00025	NROUT	00271	00271	00701	00701					
C00024	NTP									
P01010	NTSKM	00445								
C00016	NTYPE									
C00001	NW	00705	00706							
C00266	POUD	00357	00360							
C00144	POUDA	00321	00360	00361						
X00002	GIWIOIOO	00427	00430							
X00003	GBWDICT.	00000	00071							
X00316	GBWIFUNI	00251								
X00024	GNSINGL.	00733								
X00020	HEW.	00155	00713							
X00005	SETREAD	00236								
X00006	SKIPFILE	00240								
X00023	STB.	00451								
X00022	STH.	00174	00256	00414	00467	00723				
C00172	TASK	00442	00443							
X00010	TERMTAPE	00267								
X00001	THENU.	00211	00263	00423	00457	00476	00730			
P00224	TS00001.	00216								
P00234	TS00002.	00226								
P00323	TS00003.	00313								
C00447	TYPENAME	00247								
C00147	VALUE									
C00240	WHUTYPE	00354	00367	00370						

```
P00221  =S00001.   00223
P00231  =S00002.   00233
P00316  =S00003.   00322
C00257  YIELD      00353   00353
C00000  YIELDX     00316   00317   00354   00355
   00326 SYMBOLS
```

```
      SUBROUTINE READATA                                                1000
C     READATA   12/20/71   ***********************************************  1200
      COMMON/STIME/JDAY,JHOUR,JYEAR,JMOUR,JMIN                          7000
C     ANTEN     1/20/71    ***********************************************  9000
      COMMON/ANTEN/JANTEN,CANTEN                                        1000
C     ANTEN     ***********************************************************  9000
      COMMON/CMD/COMCOD(160)                                            9010
      TYPE IP*26EN COMCOD                                               9020
      COMMON/UCOD/NUCOD,NPRAGZ,NUSE,NPS                                 9030
      COMMON/APSYS/APSYS(992)                                           9040
      READ 1,JDAY,JHOUR,JYEAR,JMOUR,JMIN                                10000
1     FORMAT(5I10,F10.0)                                                11000
      PRINT 6                                                           12000
6     FORMAT(///,3HDAY,6X,5HHOUR,4X,4HYEAR,6X,4HHOUR,7X,3HMIN)          13000
      PRINT 1,JDAY,JHOUR,JYEAR,JMOUR,JMIN                               14000
C     READ COMCOD FOR ALL TYPES TO BE USED IN PRAGZ                     14010
      READ 7,COMCOD                                                     14020
7     FORMAT(16A1)                                                      14030
      PRINT 2,COMCOD                                                    14040
2     FORMAT(/9HR COMMAND CODES BY TYPE FOR USE IN WRITING AUZPLUS ETC. 14130
     1/1X,80A1/)                                                        14180
      READ 15,(APSYS(I,1),I=1,N)                                        14190
      READ 15,(APSYS(I,2),I=1,N)                                        14194
15    FORMAT(80A2)                                                      14195
      PRINT 16                                                          14200
      DO 10 I=1,N                                                       14205
      PRINT 17,I,APSYS(I,1),APSYS(I,2)                                  14210
16    FORMAT(                                                           14215
17    FORMAT(I[illegible],1X,A[illegible],2X,A[illegible])              14220
18    FORMAT(2X,[illegible]NCTIO[illegible],2X,18HBLUE WEAPON SYSTEM,2X,18H RED WEAPON SY 14225
     1STEM )                                                            14227
      [illegible]=2                                                     14230
      [illegible]=1                                                     14240
      READ 3,[illegible],PRAGZ                                          14330
3     FORMAT([illegible])                                               14360
      IF(PRAGZ .EQ. 0HRRINI) GO TO                                      14430
5     [illegible]=[illegible]                                           14460
      [illegible]=1                                                     14530
      IF(PRAGZ .EQ. 0HRRINI) GO TO                                      14560
      [illegible]=[illegible]                                           14630
      [illegible]=1                                                     14660
      GO TO 4                                                           14730
4     [illegible]=[illegible]                                           14760
      [illegible]=2                                                     14830
      PRINT 10,APV1,APV2                                                14900
10    FORMAT(22H SIGAC PRO RESI TAPES ,A4,1H, 8H PRODUCED, ,A7)         15930
      STOP                                                              32000
      END                                                               33000
```

```
                                        IDENT     HEADATA
PROGRAM LENGTH                  00305
ENTRY POINTS     HEADATA        00140
BLOCK NAMES
                 STIME          00005
                 KNTWRT         00002
                 CMCD           00240
                 DCARZ          00004
                 APSTS          00022
EXTERNAL SYMBOLS
                 THEND.
                 QBQDICT.
                 TSH.
                 STH.
                 SLO.
                 SLI.
                 UNSINGL.
```

P00350	BEGIN.	00300										
P00357	CNVRTI.	00150	00152	00153	00154	00155	00174	00175	00176	00177	00200	00235
		00252	00276	00300	00301	00316	00320	00351	00352			
C00000	COMCOU	00212	00224									
P00033	CHFMT.	00161	00167	00215	00227	00201	00300	00306	00324	00355		
P00031	DICT.	00142	00146	00160	00153	00166	00171	00202	00205	00211	00214	00217
		00223	00226	00231	00243	00246	00260	00263	00266	00273	00303	00314
		00323	00346	00354								
P00351	ENDING.	00143	00355									
P00000	EXIT.	00361										
P00033	FORMAT.	00310	00324	00327	00332	00335	00341					
P00151	GGG0000.	00144										
P00157	GGG0001.	00161										
P00233	GGG0002.	00167										
P00215	GGG0003.	00203										
P00227	GGG0004.	00215										
P00244	GGG0005.	00227										
P00251	GGG0006.	00244										
P00257	GGG0007.	00261										
P00334	GGG0010.	00271										
P00324	GGG0011.	00312										
P00355	GGG0012.	00344										
P00352	I	00234	00236	00240	00251	00253	00255	00270	00275	00277	00304	
P00350	INITIAL.	00143										
P00334	.10											
P00341	.4	00326										
P00327	.5	00326										
P00335	.8	00334										
P00344	.9	00333	00340									
P00111	..100000	00315										
P00125	..10	00347										
P00033	..1	00147	00172									
P00120	..100001	00325										
P00121	..100002	00327										
P00122	..100003	00333										
P00123	..100004	00335										
P00124	..100005	00341										
P00055	..15	00232	00247									
P00063	..17	00274										
P00072	..16	00204										
P00034	..2	00220										
P00112	..3	00315										
P00007	..6	00164										
P00031	..7	00206										
C00000	JDAY	00151	00151	00173	00173							
C00003	JHOUR	00155	00177									
C00004	JMIN	00156	00200									
C00001	JMON	00153	00175									
C00002	JYEAR	00154	00176									
C00000	NDCAGZ	00317	00317	00324	00324							
C00002	NDSW	00331	00331	00343	00343							
C00001	NCWRTA											
C00000	NCWRTD											
C00001	NPRAGZ	00321	00338									

```
C00003  NPS#      00306  00307  00337  00337
P00363  NPV1      00330  00342  00350
P00364  NPV2      00311  00336  00352
C00000  N#PSYS    00237  00237  00254  00254  00277  00300  00301
X00002  GB4BICT.  00006  00141
X00007  QNSINGL.  00350
P00140  READATA   00140
X00006  SL1.      00210
X00005  SL0.      00222
X00004  STH.      00162  00170  00216  00262  00272  00345
X00001  THEND.    00157  00165  00201  00213  00265  00242  00257  00265  00302  00322  00353
X00003  TSH.      00145  00204  00230  00245  00313
P00235  #S00001.  00241
P00252  #S00002.  00256
P00271  #S00003.  00305
  00102 SYMBOLS
```

```
      SUBROUTINE READOUT                                                1000
CSUBR     READOUT   27OCT71   ***********************************       1100
      COMMON/BYTYPE/COMNO(15),BTYPES(15),INDCLAS(15),INDBEG(250),       2000
     1        TYPENAME(250),RLASSES(250)                                3000
      TYPE INTEGER TYPENAME,COMNO,BTYPES                                4000
CUSE      KNTWRT    9AUG71    ***********************************      4005
      COMMON/KNTWRT/NOWRTD,NOWRTA                                       4006
CEND      KNTWRT    ***********************************                4005
      COMMON/TAPES/ITAPE(10),MAXTAPE(10),NIP,NHOUT                      5000
      COMMON/ITP/ITP                                                    6000
      COMMON/TWORD/ITWORD                                               7000
      COMMON/ST/KFAIL,NAMESIDE(2)                                       8000
      DATA(KFAIL=5HGREEN),(NAMESIDE=4HBLUE,3HRED)                       9000
      COMMON/HISTOUT/NSIDE,NINBASE,NINOV,NINTAR,NNWTYP,HTIME,NEVENT,    10000
     .NPLACE,NITYPE,NICLASS,NIREG,NIALERT,NDUD,                         11000
     4NHISTOUT(200)                                                     12000
      EQUIVALENCE (NSIDE,NHISTOUT(1)),(NHISTOUT,HISTOUT)                13000
      DATA(NSKIP=5)                                                     13100
CDECLARE SIDE      TIME      EVENT     IREG                             14000
      COMMON/PROCESS/NI,NV,NC,INITCH(100),VALUE(500),DEF(500),LOLOB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LOLOB
      COMMON/EDITERM/IS,IERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(SIDE     ,VALUE(   3))
      TYPE INTEGER SIDE
      EQUIVALENCE(TIME     ,VALUE( 124))
      TYPE REAL    TIME
      EQUIVALENCE(EVENT    ,VALUE( 130))
      TYPE INTEGER EVENT
      EQUIVALENCE(IREG     ,VALUE(  51))
      TYPE INTEGER IREG
CDECLARE  IALERT                                                        15000
      EQUIVALENCE(IALERT   ,VALUE( 126))
      TYPE INTEGER IALERT
CDECLARE  TYPE      CLASS                                               16000
      EQUIVALENCE(TYPE     ,VALUE(   2))
      TYPE INTEGER TYPE
      EQUIVALENCE(CLASS    ,VALUE(   1))
      TYPE INTEGER CLASS
CDECLARE  PARRIVE                                                       17000
      EQUIVALENCE(PARRIVE ,VALUE( 164))
      TYPE REAL    PARRIVE
CDECLARE  ICLASS                                                        18000
      EQUIVALENCE(ICLASS  ,VALUE(  49))
      TYPE INTEGER ICLASS
CDECLARE  ITYPE                                                         18010
      EQUIVALENCE(ITYPE   ,VALUE(  50))
      TYPE INTEGER ITYPE
  100 ITP=ITAPE(4)                                                      19000
      CALL RDWORD                                                       20000
      IF(ITWORD.EQ.4HLAST) GO TO 20                                     21000
20    IF((ITWORD).GE.0).AND.(ITWORD).LE.200)) GO TO 21                  22000
21    PRINT 22,ITWORD,NOWRTD                                            23000
22    FORMAT(8H0ITWORD= I10,13H  NO. OF WRITES =  I10)                  24000
23    PRINT 24,(NHISTOUT(I),I=1,200)                                    25000
```

```
24    FORMAT(5(4X,O16))                                          26000
      CALL RDARRAY(NHISTOUT,200)                                 27000
      PRINT24,(NHISTOUT(I),I=1,200)                              28000
      CALL ABORT                                                 29000
 28   IF(ITWORD)29,100                                           30000
 29   CALL RDARRAY(NHISTOUT,ITWORD)                              31000
CHANGE    ICLASS                                                 32000
      NC=   49
      CALL CHANGE
      ICLASS=NICLASS                                             33000
CHANGE    PARRIVE                                                34000
      NC=  164
      CALL CHANGE
      PARRIVE=1.                                                 35000
CHANGE    SIDE                                                   36000
      NC=    3
      CALL CHANGE
      SIDE=NAMESIDE(NSIDE)                                       37000
CHANGE    TIME                                                   38000
      NC=  124
      CALL CHANGE
      TIME=NTIME                                                 39000
CHANGE    EVENT                                                  40000
      NC=  130
      CALL CHANGE
      EVENT=NEVENT                                               41000
CHANGE    IREG                                                   42000
      NC=   51
      CALL CHANGE
      IREG=NIREG                                                 43000
CHANGE    IALERT                                                 44000
      NC=  126
      CALL CHANGE
      IALERT=NIALERT                                             45000
      IF(NICLASS-1)30,30,31                                      46000
30    ITYP=NITYPE                                                47000
      GO TO 32                                                   48000
31    ITYP=CUMNC(NICLASS-1)+NITYPE                               49000
   32 CONTINUE                                                   50000
CHANGE    ITYPE                                                  50010
      NC=   50
      CALL CHANGE
      ITYPE=ITYP                                                 50020
CHANGE    TYPE                                                   51000
      NC=    2
      CALL CHANGE
      TYPE=TYPENAME(ITYP)                                        52000
CHANGE    CLASS                                                  53000
      NC=    1
      CALL CHANGE
      CLASS=NCLASSES(NICLASS)                                    54000
      K=NEVENT+1                                                 55000
      GO TO (40,1,2,3,2,2,100,2,2,9,10,2,2,2,2,2,2,2,9,2,2,2,40),K   56000
40    PRINT 41,ITWORD,NOWRTO                                     57000
41    FORMAT(31HOUNKNOWN EVENT NO. AT ITWORD =  I10,18H  NO.OF WRITES =   58000
     1  I10)                                                      59000
```

```
      CALL PRITEM                                    59000
      GO TO 100                                      60000
    1 CALL MLAUNX                                    61000
      GO TO 100                                      62000
    2 CALL BOMBANDT                                  63000
      GO TO 100                                      64000
    3 CALL CLAUNX                                    65000
      GO TO 100                                      66000
    9 CALL MATTRITX                                  67000
      GO TO 100                                      68000
   10 CALL BDAMX                                     69000
      GO TO 100                                      70000
  300 CALL TERMTAPE                                  71000
      CALL NEWUNIT(ITP)                              71100
      RETURN                                         72000
      END                                            73000
```

```
                                        IDENT     READOUT
PROGRAM LENGTH                  00344
ENTRY POINTS      READOUT       00042
BLOCK NAMES
                  BYTYPE        01433
                  KNTWRT        00002
                  TAPES         00026
                  ITP           00001
                  TWORD         00001
                  ST            00003
                  HISTOUT       00310
                  PROCESS       01173
                  EDITERR       00001
                  EDITAPE       00015
EXTERNAL SYMBOLS
                  THEND.
                  QBQDICT.
                  RDWORD
                  RDARRAY
                  ABORT
                  CHANGE
                  PRITEM
                  MLAUNX
                  BOMBANDT
                  CLAUNX
                  MATTRITX
                  BDAMX
                  TERMTAPE
                  NEWUNIT
                  STH.
                  UNSINGL.
```

X00005	ABORT	00132										
X00014	HDAMX	00317										
P00332	HFGIN.	00333										
X00011	HOMBANDT	00306										
C00017	HTYPES											
X00006	CHANGE	00143	00150	00155	00163	00170	00175	00202	00222	00227	00235	
C00147	CLASS	00241	00241									
X00012	CLMAX	00311										
P00331	CNVRTI.	00070	00072	00105	00125	00273	00275					
P00004	CREMI.	00075	00112	00300								
C00000	COMNO	00215	00215									
C01133	DEF											
P00001	DICT.	00044	00051	00065	00074	00077	00111	00113	00117	00131	00133	00137
		00144	00151	00156	00164	00171	00176	00203	00223	00230	00236	00270
		00277	00301	00304	00307	00312	00315	00320	00323	00325		
P00334	ENDING.	00045	00327	00332								
C00350	EVENT	00173	00173									
P00000	EXIT.	00335										
P00004	FORMAT.	00052										
P00075	GGG0000.	00003										
P00112	GGG0001.	00075										
P00132	GGG0002.	00115										
P00300	GGG0003.	00266										
C00000	HISTOUT											
C00005	HTIME	00105	00105									
P00340	I	00102	00103	00106	00122	00123	00126					
C00344	IALERT	00205	00205									
C00227	ICLASS	00146	00146									
P00060	IF0001.	00056										
P00341	IGOTO.	00244										
C00055	INDREG											
C00036	INDCLAS											
C00003	INITEM											
P00332	INITIAL.	00045										
C00000	INTP											
C00231	IREG	00200	00200									
C00000	IS*TERM											
C00000	ITAPE	00046	00046									
C00002	ITOUT											
C00000	ITP	00047	00047	00326								
C00000	ITWORD	00052	00052	00055	00055	00060	00060	00067	00067	00134	00134	00140
		00272	00272									
P00342	ITYP	00212	00217	00224	00231							
C00230	ITYPE	00225	00225									
P00046	.100	00135	00252	00302	00305	00310	00313	00316	00321			
P00303	.1	00246										
P00317	.10	00255										
P00055	.20	00054										
P00306	.2	00247	00250	00251	00252	00253	00255	00256	00257	00260	00260	00261
		00262	00263	00264	00265							
P00063	.21	00057	00057									
P00075	.23											
P00134	.28	00061	00062									
P00136	.29	00135										

```
P00211  .30       00207  00210
P00311  .3        00247
P00322  .300      00054
P00214  .31       00210
P00220  .32       00213
P00266  .40       00245
P00314  .9        00254  00263
P00004  ..100000  00053
P00005  ..22      00066
P00017  ..24      00100  00120
P00025  ..41      00271
C00014  JOUT
P00343  K         00244
C00000  KFAIL     00003
C01041  KLASSES   00240  00240
C01153  LGLOB
X00013  MATRIX    00314
C00012  MAXTAPE
X00010  MLAUNX    00303
C00001  NAMESIDE  C00001 00160  00160
C00002  NC        00141  00142  00147  00154  00162  00167  00174  00201  00220  00221  00226
                  00234
C00014  NDOD
C00006  NEVENT    00172  00172  00242  00242
X00016  NEWUNIT   00324
C00000  NHISTOUT  00104  00104  00114  00124  00124  00140
C00000  NI
C00013  NIALERT   00204  00204
C00011  NICLASS   00145  00145  00206  00206  00214  00214  00237  00237
C00001  NINBASE
C00002  NINDV
C00003  NINTAR
C00012  NIREG     00177  00177
C00010  NITYPE    00211  00211  00216  00216
C00004  NMTYP
C00001  NOUT
C00001  NOWRTA
C00000  NOWRID    00071  00071  00274  00274
C00007  NPLACE
C00025  NROUT
C00000  NSIDE     00157  00157
P00003  NSKIP
C00024  NTP
C00001  NV
C00412  PARRIVE   00153  00153
X00007  PRITEM    00300
X00002  QBODICT.  00000  00043
X00020  QNSINGL.  00336
X00004  RDARRAY   00112  00136
X00003  RDWORD    00050
P00042  READOUT   00042
C00151  SIDE      00161  00161
X00017  STM.      00004  00076  00116  00267
X00015  TERMTAPE  00322
```

```
A00001  THEN0.     00073   00110   00130   00276
C00342  TIME       00166   00166
C00150  TYPE       00233   00233
C00447  TYPENAME   00232   00232
C00147  VALUE
P00123  *S00001.   00107
P00123  *S00002.   00127
   00156 SYMBOLS
```

```
      SUBROUTINE SPCTBL                                                 1000
CSUBR     SPCTBL    14DEC71   ********************************************  15000
C*********                  SPECIAL TABLES        **********              2000
C*****  SPCTBL IS CALLED EACH TIME THE VALUE ARRAY IS CHANGED              3000
C*****  SPCTBLPT WILL PRINT THE RESULTS ACCRUED HERE. THEREFORE            4000
C*****     INSERT ALL NECESSARY COMMON BLOCKS IN BOTH ROUTINES             5000
C*****ANYTHING TO BE PERFORMED ONLY THE FIRST TIME IN HERE MUST BE         6000
C*****CHECKED, SINCE THIS ROUTINE WILL BE CALLED FOR EACH SET OF DATA      7000
C***** STORED IN THE VALUE ARRAY                                          8000
      EQUIVALENCE (VALUE,FVALUE)                                          9000
      DIMENSION FVALUE(500)                                              10000
      COMMON/SPECIAL/NAGZ(12,10,2),YDEL(12,10,2),TAU(10),NAMESIDE(2)     11000
     1,NAMEREG(12,2),NUMREG,MAXTIM                                       12000
     1,NAGZ2(12,10,2),YDEL2(12,10,2),NUMGP(10,2),CCODES(20,10,2)         12020
     1,NAMEGP(10,2),CONGOPS                                              12040
      TYPE REAL  NAGZ2                                                   12060
      TYPE INTEGER   CONGOPS,CCODES                                      12080
C**********NAGZ,YDEL,NAMEREG HAVE THE DIMENSIONS MAXREG*2,MAXTIM         13000
      DATA(MAXTIM=10)                                                    14000
CUSE      MAXBLK    YAUG71    ********************************************  15000
      COMMON/MAXES/MAXKLS,MAXMD,MAXASM,MAXIS,MAXBCM,MAXLOC,MAXREG         16000
     1,MAXGRP                                                            16100
CEND      MAXBLK    ********************************************************  15000
      DATA(NAMESIDE= 4HBLUE,3HRED)                                       18000
      TYPE REAL NAGZ                                                     17000
      COMMON/IREGS/IREGT                                                 18000
      DATA (IREAD=1)                                                     20000
CDECLARE  PARRIVE                                                        21000
      EQUIVALENCE(PARRIVE ,VALUE( 164))
      TYPE REAL    PARRIVE
CDECLAREX PRIMETAR  CNTYLOCT  YIELD     TIME      SIDE                   22000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLOB
      COMMON/EDITERM/IS,TERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(PRIMETAR,VALUE( 148))
      TYPE INTEGER PRIMETAR
      EQUIVALENCE(CNTYLOCT,VALUE( 155))
      TYPE INTEGER CNTYLOCT
      EQUIVALENCE(YIELD   ,VALUE(  73))
      TYPE REAL    YIELD
      EQUIVALENCE(TIME    ,VALUE( 124))
      TYPE REAL    TIME
      EQUIVALENCE(SIDE    ,VALUE(   3))
      TYPE INTEGER SIDE
      TYPE INTEGER XSIDE                                                 23000
      IF(IREAD)5000,5001,5000                                            24000
 5000 READ 1101,TAU                                                      25000
 1101 FORMAT(8F10.0)                                                     26000
      READ 1102,NUMREG                                                   27000
 1102 FORMAT(I10)                                                        28000
      IF(NUMREG)5003,5003,5004                                           29000
 5003 NUMREG=MAXREG                                                      30000
 5004 IF(NUMREG-MAXREG)5007,5007,5003                                    31000
 5007 READ 1103,(NAMEREG(I,1),I=1,NUMREG)                                32000
```

```
      READ 1103,(NAMEREG(I,2),I=1,NUMREG)
 1103 FORMAT(8(A8,2X))
      IREAD=0
      READ 1102,CGROUPS
      IF(CGROUPS) 5100,5100,5101
 5101 IF(CGROUPS-MAXGRP) 5105,5105,5102
 5102 PRINT 5103,CGROUPS,MAXGRP
 5103 FORMAT(1X,11H CGROUPS OF,I10,23H GREATER THAN MAXGRP OF,I10)
      CALL ABORT
      RETURN
 5105 DO 5108 K=1,2
      DO 5107 I=1,CGROUPS
      READ 5106,NAMEGP(I,K),NUMGP(I,K)
 5106 FORMAT(A8,2X,I10)
      NGPS=NUMGP(I,K)
      READ 1103,(CCODES(J,I,K),J=1,NGPS)
 5107 CONTINUE
 5108 CONTINUE
      KK=MAXTIM*(MAXREG+2)*2
      DO 5006 I=1,KK
      NAGZ(I)=0
      YDEL(I)=0.0
 5006 CONTINUE
C     CLEAR ARRAYS FOR CNTRY GROUP
      KK=MAXTIM*(MAXGRP+2)*2
      DO 5109 I=1,KK
      NAGZ2(I)=0
      YDEL2(I)=0
 5109 CONTINUE
 5100 CONTINUE
 5001 CONTINUE
  400 IF(PRIMETAR-1)600,401,600
  401 CONTINUE
      IF(SIDE .EQ. 3HREL) 1,2
    1 XSIDE=2
      GO TO 3
    2 XSIDE=1
    3 CONTINUE
      JREG=IREGT
      IF(JREG-NUMREG)406,406,402
  406 IF(JREG)402,402,410
  402 JREG=NUMREG+1
  410 DO 415 I=1,MAXTIM
      IF (TIME.LE.TAU(I)) 420,415
  415 CONTINUE
      IT=MAXTIM
      GO TO 430
  420 IT=I
  430 NAGZ(JREG,IT,XSIDE)=NAGZ(JREG,IT,XSIDE)+PARRIVE
      YDEL(JREG,IT,XSIDE)= YDEL(JREG,IT,XSIDE)+YIELD*PARRIVE
      IF(CGROUPS) 600,600,5110
C     FIND APPROPRIATE CNTRY GROUP
 5110 DO 5115 I=1,MAXTIM
      IF(TIME .LE. TAU(I)) 5114,5115
 5115 CONTINUE
      IT=MAXTIM
```

```
      GO TO 5113
 5114 IT=I
 5113 IFOUND=1
      DO 5111 I=1,CGROUPS
      NGP=NUMGP(I)
      DO 5112 J=1,NGP
      IF(CNTYLOCT .EQ. CCODES(J,I,XSIDE)) 5116,5112
 5116 NAGZ2(I,IT,XSIDE)=NAGZ2(I,IT,XSIDE)+PARRIVE
      YDEL2(I,IT,XSIDE)=YDEL2(I,IT,XSIDE)+YIELD*PARRIVE
      IFOUND=2
      GO TO 5111
 5112 CONTINUE
 5111 CONTINUE
      GO TO (5500,600),IFOUND
 5500 I=CGROUPS+1
      NAGZ2(I,IT,XSIDE)=NAGZ2(I,IT,XSIDE)+PARRIVE
      YDEL2(I,IT,XSIDE)=YDEL2(I,IT,XSIDE)+PARRIVE*YIELD
  600 RETURN
      END
```

```
                                        IDENT     SPCTBL
PROGRAM LENGTH                  00651
ENTRY POINTS      SPCTBL        00042
BLOCK NAMES
                  SPECIAL       02637
                  MAXES         00010
                  IREGS         00001
                  PROCESS       01173
                  EDITERM       00001
                  EDITAPE       00015
EXTERNAL SYMBOLS
                  THEND.
                  GBODICT
                  ABORT
                  TSH.
                  STH.
                  SLI.
                  UNSIMOL.
```

000003	ABORT	00176										
000623	BEGIN.	00024										
001772	CCOUES	00237	00243	00243								
002636	CHECKPS	00134	00134	00137	00137	00151	00151	00170	00170	00250	00250	00400
		00404	00404	00471	00471							
000401	CNTYLCCT	00441	00441									
000307	CNVRT1.	00099	00113	00134	00153	00171	00173	00214	00217	00235		
000636	COUNT.	00265	00267	00305	00306							
000004	CRMRT.	00062	00072	00145	00179	00263						
001133	DEF											
000001	DICT.	00044	00052	00056	00061	00064	00071	00105	00123	00126	00144	00151
		00156	00166	00175	00177	00216	00222	00230	00245			
000625	END1MS.	00045	00200	00504	00523							
000000	EXIT.	00000										
000004	FORMAT.	00316										
000147	FRALUS											
000062	GOOD000.	00050										
000072	GOOD001.	00062										
000124	GOOD002.	00100										
000145	GOOD003.	00124										
000157	GOOD004.	00147										
000176	GOOD005.	00154										
000223	GOOD006.	00210										
000240	GOOD007.	00226										
000637	I	00114	00114	00116	00131	00135	00137	00205	00243	00263	00267	00302
		00305	00346	00392	00396	00396	00403	00407	00413	00423	00430	00433
		00462	00473	00525								
000640	IFOUND	00437	00455	00466								
000641	IGOTO.	00407										
000510	IN.0002.	00215	00223	00515	00531	00536	00551					
000511	IN.0003.	00236	00516	00533	00537	00552	00554	00565				
000512	IN.0004.	00371	00575	00606	00610							
000513	IN.0005.	00442	00517	00534	00554	00556	00621					
000514	IN.0006.	00445	00475	00515	00530	00552	00617					
000002	INITIA											
000523	INITIAL.	00045										
000000	INTP											
000053	INZAP	00045	00146									
000000	INZGT	00330	00330									
000000	ISETEM											
000642	IT	00133	00367	00423	00424	00601						
000002	ITOUT											
000321	.1											
000325	.2	00320										
000330	.3	00324										
000313	.400											
000315	.401	00314										
000341	.402	00335	00337	00337								
000336	.406	00334	00334									
000345	.410	00340										
000356	.415	00354										
000366	.420	00354	00355									
000371	.430	00365										
000052	.5000	00047										

P00313	.5001	00047											
P00075	.5003	00073	00073	00162									
P00077	.5004	00074											
P00273	.5006												
P00103	.5007	00101	00101										
P00313	.5100	00160	00160										
P00161	.5101												
P00164	.5102												
P00201	.5105	00163	00163										
P00246	.5107												
P00252	.5108												
P00312	.5109												
P00402	.5110												
P00462	.5111	00455											
P00456	.5112	00444											
P00426	.5113	00422											
P00423	.5114	00411	00412										
P00413	.5115	00411											
P00445	.5116												
P00471	.5500	00470											
P00504	.600	00315	00315	00400	00401	00470							
P00627	.ERASER.	00257	00261	00276	00300								
P00041	..100000	00317											
P00004	..1101	00053											
P00007	..1102	00065	00152										
P00012	..1103	00106	00127	00231									
P00020	..5103	00187											
P00034	..5106	00215											
P00643	J	00232	00240	00438	00456	00562							
C00014	JOUT												
P00644	JREG	00331	00335	00343	00572								
P00645	K	00202	00252	00545									
P00646	KK	00262	00265	00301	00304								
C01153	LGLOB												
C00002	MAXASM												
C00004	MAXBOM												
C00007	MAXGRP	00162	00162	00172	00172	00274	00274						
C00000	MAXKLS												
C00005	MAXLOC												
C00007	MAXMIS												
C00006	MAXREG	00075	00075	00100	00100	00255	00255						
C01005	MAXTIP	00003	00257	00265	00276	00277	00360	00360	00352	00415	00415	00417	
C00001	MAXWHO												
C00000	NAG2	00270	00271	00372	00372	00374	00374						
C01066	NAG22	00307	00310	00446	00446	00450	00450	00475	00476	00477	00500		
C02612	NAMEGP	00216	00216										
C00754	NAMEREG	00115	00115	00136	00136								
C00752	NAMESIDE	00003											
C00002	NC												
P00647	NGP	00435	00460										
P00650	NGPS	00225	00242										
C00000	NI												
C00001	NOUT												
C01746	NUMGP	00220	00224	00224	00434	00434							

```
C01004  NUMREG    00067  00067  00072  00072  00076  00076  00077  00077  00120  00120  00141
                  00141  00333  00333  00341  00341
C00001  NV
P00515  P00000.U  00522
P00536  P00001.U  00542
P00554  P00002.U  00557
C00412  PARRIVE   00373  00373  00376  00447  00447  00452  00476  00477  00500  00501
C00372  PRIMETAR  00313  00313
X00002  QBQDICT.  00000  00043
X00007  QNSINGL.  00506
C00151  SIDE      00316  00316
X00006  SLI.      00055
P00042  SPCYBL    00042
X00005  STM.      00165
C00740  TAU       00057  00353  00353  00410  00410
X00001  THEND.    00060  00070  00122  00143  00155  00174  00221  00244
C00342  TIME      00351  00351  00406  00406
P00173  TS00001.  00112
P00241  TS00002.  00133
P00250  TS00004.  00207
P00242  TS00005.  00234
P00274  TS00006.  00266
P00313  TS00007.  00305
P00360  TS00010.  00350
P00415  TS00011.  00405
P00464  TS00012.  00432
P00460  TS00013.  00440
X00004  TSM.      00051  00063  00104  00125  00150  00211  00227
P00544  UP00000.  00111  00117  00132  00140  00206  00247  00264  00303  00347  00357  00404
                  00414  00431  00463  00474  00520  00525  00526  00527  00535  00535
P00544  UP00001.  00203  00253  00540  00545  00546  00547  00553  00553
P00561  UP00002.  00233  00241  00437  00457  00555  00562  00563  00564  00567  00567
P00571  UP00003.  00332  00344  00572  00573  00574  00576  00576
P00600  UP00004.  00366  00370  00421  00425  00601  00602  00603  00607  00607
P00611  UP00005.  00323  00327  00612  00613  00614  00621  00622
C00147  VALUE
P00113  WS00001.  00121  00121
P00134  WS00002.  00142  00142
P00204  WS00003.  00254
P00210  WS00004.  00251  00251
P00235  WS00005.  00243  00243
P00270  WS00006.  00273
P00307  WS00007.  00312
P00351  WS00010.  00361  00361
P00406  WS00011.  00416  00416
P00433  WS00012.  00465  00465
P00441  WS00013.  00461  00461
P00505  XSIDE     00322  00326  00612
C00360  YDEL      00272  00376  00377  00377
C01366  YDEL2     00311  00452  00453  00453  00502  00502  00503
C00257  YIELD     00375  00375  00451  00451  00501
   0023. SYMBOLS
```

```
      SUBROUTINE SPCTBLPT                                               1000
CSUBR     SPCTBLPT  27OCT71   ***********************************      10000
C*********              SPECIAL TABLES PRINT **********                2000
C*****  SPCTBLPT PRINTS RESULTS OBTAINED IN SPCTBL'                     3000
      COMMON/SPECIAL/NAGZ(12,10,2),YDEL(12,10,2),TAU(10),NAMESIDE(2)    4000
     1,NAMEREG(12,2),NUMREG,MAXTIM                                      5000
     1,NAGZ2(12,10,2),YDEL2(12,10,2),NUMGP(10,2),CCODES(20,10,2)        5020
     1,NAMEGP(10,2),CGROUPS                                             5040
      TYPE REAL NAGZ2                                                   5060
      TYPE INTEGER CGROUPS   ,CCODES                                    5080
      DATA(CGROUPS = 0)                                                 5100
      DIMENSION FAGZ2(12,10,2)                                          5120
      EQUIVALENCE (FAGZ2,NAGZ2)                                         5140
      DIMENSION FAGZ(12,10,2)                                           6000
      EQUIVALENCE (FAGZ,NAGZ)                                           7000
      NUMREG=NUMREG+1                                                   7050
      NSMTYP=7HREGION                                                   7250
      NLIM=NUMREG+1                                                     8000
      NMANY=NUMREG                                                      8200
      DO 5 N=1,MAXTIM                                                   9000
      DO 5 L=1,2                                                       10000
      DO 5 M=1,NLIM                                                    11000
      NAGZ(M,N,L)=FAGZ(M,N,L)                                          12000
      NAGZ2(M,N,L)=FAGZ2(M,N,L)                                        12200
    5 CONTINUE                                                         13000
   51 CONTINUE                                                         13200
      DO 10 K= 1,2                                                     14000
      DO 11 I=1,NMANY                                                  15000
      DO 11 J=2,MAXTIM                                                 16000
      NAGZ(I,J,K)=NAGZ(I,J,K)+ NAGZ(I,J-1,K)                           17000
      YDEL(I,J,K)= YDEL(I,J,K) + YDEL(I,J-1,K)                         18000
   11 CONTINUE                                                         19000
      DO 15 I=1,NMANY                                                  20000
      DO 15 J=1,MAXTIM                                                 21000
      NAGZ(NLIM,J,K)=NAGZ(NLIM,J,K)+NAGZ(I,J,K)                        22000
      YDEL(NLIM,J,K)=YDEL(NLIM,J,K)+YDEL(I,J,K)                        23000
15    CONTINUE                                                         24000
      NAMEREG(NLIM,K)=7H TOTAL                                         25000
      NAMEREG(NMANY,K)=5HOTHER                                         25050
   10 CONTINUE                                                         26000
      PRINT 1000                                                       27000
 1000 FORMAT(1H1)                                                      28000
      DO 20 K= 1,2                                                     29000
      PRINT 1111,NAMESIDE(K),NSMTYP,TAU                                29200
 1111 FORMAT(//37X,38H CUMULATIVE NO. OF AGZS DELIVERED BY  ,A4/48A,   29300
     118HBY TARGET LOCATION/56X,5H TIME/1X,A7,4X,10F10.2)               29500
      DO 20 J=1,NLIM                                                   33000
      IF(NAMEREG(J,K) .EQ. 1H ) 20,21                                  33500
   21 PRINT 1112,NAMEREG(J,K),(NAGZ(J,I,K),I=1,MAXTIM)                 34000
   20 CONTINUE                                                         34500
 1112 FORMAT(1X,A8,3X,10I10)                                           35000
      DO 30 K=1,2                                                      36000
      PRINT 1113,NAMESIDE(K),NSMTYP,TAU                                36200
 1113 FORMAT(//37X,34H CUMULATIVE MEGATONS DELIVERED BY ,A4/46A,18HBY TA 36300
     1RGET LOCATION //56X,5H TIME/1X,A7,4X,10F10.2)                     36400
      DO 30 J=1,NLIM                                                   40000
```

```
      IF(NAMEREG(J,K) .EQ. IH )30,31
   31 PRINT 1114,NAMEREG(J,K),(YDEL(J,I,K),I=1,MAXTIM)
   30 CONTINUE
 1114 FORMAT(1X,A8,3X,10F10.1)
      IF(NUONE .EQ. 2) 40,50
   50 NMANY=CGROUPS+1
      NUONE=2
      NSMTYP=7HGROUP
      NLIM=NMANY+1
      DO 52 M=1,NLIM
      DO 52 L=1,2
      NAMEREG(M,L)=NAMEGP(M,L)
      DO 52 N=1,MAXTIM
      NAGZ(M,N,L)=NAGZ2(M,N,L)
      YDEL(M,N,L)=YDEL2(M,N,L)
   52 CONTINUE
      GO TO 51
   40 RETURN
      END
```

```
                                        IDENT     SPCTBLPT
PROGRAM LENGTH                 00713
ENTRY POINTS     SPCTBLPT      00115
BLOCK NAMES
                 SPECIAL       02637
EXTERNAL SYMBOLS
                 01010100
                 THEND.
                 QBQDICT.
                 STH.
                 SLO.
                 QNSINGL.
```

P00671	BEGIN.	00672										
C01772	CODES											
C02636	CSECTPS	00303	00430	00430								
P00501	CNTRTI.	00600	00270	00315	00324	00352	00334	00401	00410			
P00700	CONT.	00145	00140	00177	00200	00222	00224	00460	00461			
P00003	CRFET.	00455	00277	00342	00363	00426						
P00001	LIST.	00117	00251	00254	00262	00273	00276	00311	00332	00346	00357	00362
		00375	00416									
P00673	END1NG.	00166	00077	00671	00672							
P00000	EXIT.	00674										
C00000	FAMZ	00147	00147									
C01000	FAMZZ	00152										
P00003	FORMAT.	00163	00237	00241	00277	00303	00435					
P00255	MMOOOO.	00207										
P00277	MMOOOC1.	00200										
P00333	MMOOOC2.	00307										
P00363	MMOOOC3.	00340										
P00417	MMOOOC4.	00373										
P00701	I	00107	00206	00216	00233	00317	00325	00403	00411	00062		
P00502	IMOOOC1.	00140	00401	00513	00525	00531	00540	00550	00561			
P00503	IMOOOC2.	00200	00223	00571	00611	00614	00625	00632	00647			
P00504	IMOOOC3.	00224	00572	00612	00633	00650	00657					
P00505	IMOOOC4.	00237	00567	00606	00660							
P00506	IMOOOC5.	00242	00566	00605	00667							
P00507	IMOOOC7.	00303	00313	00367	00377	00565	00604	00631	00644			
P00510	IMOOOC8.	00322	00406	00570	00610	00615	00627	00631	00645			
P00511	IMOOOC11.	00451	00536	00544	00551	00563						
P00512	IMOOOC12.	00467	00527	00543	00550	00562						
P00671	INITIAL.	00160										
P00244	.10											
P00255	.11											
P00271	.12											
P00333	.20	00306										
P00337	.21	00300										
P00417	.30	00376										
P00373	.31	00372										
P00473	.40	00421										
P00153	.5											
P00430	.50	00421										
P00153	.51	00476										
P00400	.52											
P00000	..1000	00052										
P00003	..100000	00123										
P00004	..100001	00237										
P00005	..100002	00241										
P00006	..100003	00300										
P00105	..100004	00371										
P00114	..100005	00435										
P00012	..1111	00203										
P00045	..1112	00312										
P00053	..1113	00307										
P00106	..1114	00376										
P00702	J	00173	00216	00300	00333	00364	00417	00641				
P00703	K	00180	00244	00250	00264	00337	00342	00350	00423	00640		

```
P00704  L          00137  00154  00445  00467  00537
P00705  P          00142  00441  00472  00558
C01005  PARTIP     00161  00161  00175  00175  00220  00220  00327  00327  00413  00413  00456
                   00456
P00706  R          00133  00157  00454  00521
C00000  NAMZ       00151  00151  00201  00202  00202  00225  00225  00226  00226  00323
                   00323  00464  00464
C01006  NAMZZ      00152  00462  00462
C02612  NAMEGP     00456  00456
C00754  NAMEREG    00240  00240  00242  00243  00304  00304  00314  00314  00370  00370  00400
                   00400  00452  00452
C00752  NAMESIDE   00265  00265  00351  00351
P00707  NCOMP      00426  00434
P00710  NLIM       00125  00144  00335  00421  00437  00474  00654
P00711  NMAXY      00131  00210  00235  00432  00436  00664
P00712  NSATYP     00124  00267  00353  00435
C01746  NUMGP
C01004  NUMREG     00121  00121  00122  00124  00125  00130  00130
P00513  P00000.0   00516
P00527  P00001.0   00534
P00550  P00002.0   00553
P00565  P00003.0   00575
P00614  P00004.0   00617
P00631  P00005.0   00636
X00001  GIVIDIDO   00150  00463
X00003  GRADICT.   00000  00116
X00006  GASIMGL.   00500
X00005  SLC.       00272  00356
P00115  SPCTbLPT   00115
X00004  STM.       00250  00261  00310  00345  00374
C00740  TAU        00274  00360
X00002  THERO.     00253  00275  00331  00361  00415
P00191  TS00001.   00135
P00154  TS00003.   00145
P00210  TS00005.   00171
P00206  TS00006.   00176
P00235  TS00007.   00214
P00233  TS00010.   00221
P00335  TS00012.   00302
P00327  TS00013.   00321
P00421  TS00015.   00366
P00413  TS00016.   00405
P00474  TS00017.   00443
P00467  TS00021.   00457
P00520  UP00000.   00134  00160  00455  00514  00521  00522  00523  00525  00526
P00536  UP00001.   00140  00155  00446  00470  00532  00537  00540  00541  00546  00547
P00555  UP00002.   00143  00442  00473  00551  00556  00557  00560  00564  00564
P00577  UP00003.   00165  00245  00257  00340  00343  00424  00573  00600  00601  00602  00613
                   00613
P00621  UP00004.   00170  00207  00213  00234  00320  00326  00404  00412  00615  00622  00623
                   00624  00627  00630
P00640  UP00005.   00174  00217  00301  00334  00365  00420  00634  00641  00642  00643  00651
                   00651
P00653  UP00006.   00127  00440  00654  00655  00656  00661  00661
```

```
P00663  UPC0067.   00132   00433   00664   00665   00666   00670   00670
P00136  *S00001.   00162   00162
P00141  *S00002.   00156
P00147  *S00003.   00153
P00166  *S00004.   00246
P00172  *S00005.   00211   00211
P00201  *S00006.   00205
P00215  *S00007.   00236   00236
P00225  *S00010.   00232
P00260  *S00011.   00341
P00363  *S00012.   00336   00336
P00322  *S00013.   00330   00330
P00344  *S00014.   00425
P00367  *S00015.   00422   00422
P00405  *S00016.   00414   00414
P00444  *S00017.   00475   00475
P00447  *S00020.   00471
P00462  *S00021.   00466
C00360  YDEL       00203   00203   00204   00227   00227   00230   00407   00407   00405
C01366  YDEL2      00405
   00171 SYMBOLS
```

```
      SUBROUTINE WRAGZ                                                  1000
CSUBR     WRAGZ     14DEC71   ***********************************      14000
      COMMON/STIME/JDAY,JMON,JYEAR,JHOUR,JMIN                           3000
      DIMENSION IDATIME(2)                                              4000
CUSE      TARGETS   24SEP71   ***********************************       7000
      COMMON/KEYS/KLAT,KLONG,KEYOWN,KEYLOC,KEYFCN,KEYLAT,KEYREG         1000
     1,KEYDES,KEYTSR                                                    2000
      COMMON/1/NOFCTY(12000)                                            3000
      COMMON/2/KNTRY(256),RFCN(256),KREG(11),KLATPK(8000),LATLONG(1)    4000
      COMMON/3/NDESTR(1)                                                5000
CEND      TARGETS   ***********************************                7000
CDECLARE1 AGX       AGY       AHOB      INTAR     WHDTYPE               6000
      COMMON/PROCESS/N1,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLCO(500)
      TYPE INTEGER VALUE
      TYPE LOGICAL DEF,LGLCO
      COMMON/EDITERM/ISWTERM
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT
      EQUIVALENCE(AGX     ,VALUE( 141))
      TYPE INTEGER AGX
      EQUIVALENCE(AGY     ,VALUE( 142))
      TYPE INTEGER AGY
      EQUIVALENCE(AHOB    ,VALUE( 145))
      TYPE INTEGER AHOB
      EQUIVALENCE(INTAR   ,VALUE( 129))
      TYPE INTEGER INTAR
      EQUIVALENCE(WHDTYPE ,VALUE(  58))
      TYPE INTEGER WHDTYPE
CDECLARE  TIME      CEP       PDUD                                      9000
      EQUIVALENCE(TIME    ,VALUE( 124))
      TYPE REAL    TIME
      EQUIVALENCE(CEP     ,VALUE(  81))
      TYPE REAL    CEP
      EQUIVALENCE(PDUD    ,VALUE(  80))
      TYPE REAL    PDUD
CDECLARE  SIDE      IREG                                              9005
      EQUIVALENCE(SIDE    ,VALUE(   3))
      TYPE INTEGER SIDE
      EQUIVALENCE(IREG    ,VALUE(  51))
      TYPE INTEGER IREG
CDECLARE  INDV      ITYPE                                             9010
      EQUIVALENCE(INDV    ,VALUE( 128))
      TYPE INTEGER INDV
      EQUIVALENCE(ITYPE   ,VALUE(  50))
      TYPE INTEGER ITYPE
CDECLARE  CNTRYLOCT INDEXNO                                           9020
      EQUIVALENCE(CNTRYLOC,VALUE(   5))
      TYPE INTEGER CNTRYLOC
      EQUIVALENCE(INDEXNO ,VALUE(  22))
      TYPE INTEGER INDEXNO
CDECLARE  CNTYLOCT                                                    9021
      EQUIVALENCE(CNTYLOCT,VALUE( 155))
      TYPE INTEGER CNTYLOCT
      COMMON/WARHEAD/YIELDX(50),FFRACX(50),PDUDX(50)                  10000
      COMMON/ASM/CEPA(20),IWHDA(20)                                   11000
      COMMON/CMCD/CCMCOD(100)                                         11100
      TYPE INTEGER CCMCOD                                             11200
```

```
      COMMON/BOMBER/CEPB(40)
      COMMON/MISSILE/CEPM(40)
      COMMON/TAPES/ITAPE(10),MAXTAPE(10),NTP,NNOUT
      COMMON/ITP/ITP
CUSE      MAXBLK     9AUG71     ***********************************
      COMMON/MAXES/MAXNLS,MAXMND,MAXASM,MAXMIS,MAXBOM,MAXLOC,MAXNEW
     1,MAXGRP
CEND      MAXBLK     ***********************************************
      DATA(ITCNT=0)
      DATA(ILSMI=10000000B)
C     FINAL STRIKE AND REST OUTPUT TAPES
      TYPE INTEGER  AGZBLUS*,AGZREDS*,AGZBLUND,AGZREDRC
      DATA(NTP1=3),(NTP2=10),(NTP3=7),(NTP4=8)
     1,(NTP5=9)
      TYPE INTEGER AGZBLUS,AGZREDS
C     TO CHANGE DEGREES TO RADIANS, MULTIPLY BY DEGPRAD
      DATA(DEGPRAD=.0174533)
      DATA(ISTART=0)
      COMMON/DOAGZ/NDOAGZ,NPRAGZ,NDS*,NPS*
      COMMON/*PSYS/N*PSYS(9,2)
C     WRITE AGZTAPES IF NDS* SET TO 1
      GO TO (400,401),NDS*
  401 RETURN
  400 CONTINUE
      NHRPERDY=24
CONVERT ABX, ABY FROM SIXTHS OF MILES TO WHOLE MILES
      CABY=ABY
      CABY=CABY/50.
      CABX=ABX
      CABX=CABX/50.
C  OBTAIN XLAT AND XLONG
      NDXLAT=IGET(KEYLAT,INTAR,NDXCITY)
      LATLONG(1)=KLATPR(NDXLAT)
      JLAT=IGET(KLAT,1,LATLONG)
      JLONG=IGET(KLONG,1,LATLONG)
      XLAT=JLAT
      XLONG=JLONG
      XLAT=XLAT/10000.
      XLONG=XLONG/10000.
CONVERT ABX, ABY TO LAT/LONG
      XLY=CABY/60.00+XLAT
      XLX=CABX/(60.00*COSF(XLAT*DEGPRAD)) + XLONG
CONVERT LAT INTO DEG,MIN,SEC,AND N OR S
      IF(XLY) 10,20,20
   10 XLY=-XLY
      INS=1HS
      GO TO 21
   20 INS=1HN
   21 IYDEG=XLY
      STEMP=XLY-IYDEG
      STEMP=STEMP*60.
      IYMIN=STEMP
      STEMP=STEMP-IYMIN
      IYSEC=60.*STEMP+.5
      IF(IYSEC-60)26,25,25
 25   IYSEC=IYSEC-60
```

```
      IYMI=IYMI+1                                                       48000
26    IF(IYMI-60)28,27,27                                               49000
 27   IYMI=IYMI-60                                                      50000
      IYDE=IYDE+1                                                       51000
 28   CONTINUE                                                          52000
CONVERT LONG INTO DEG.MIN.SEC. AND E OR W                               53000
      IF(XLX-180.) 31,31,30                                             54000
   30 XLX=-(XLX-360.)                                                   55000
      IEW=IWE                                                           56000
      GO TO 32                                                          57000
   31 IEW=IWW                                                           58000
   32 IXDE=XLX                                                          59000
      STEMP=XLX-IXDE                                                    60000
      STEM=STEMP*60.                                                    61000
      IXMI=STEMP                                                        62000
      STEMP=STEMP-IXMI                                                  63000
      IXSEC=STEMP*60.+.5                                                64000
      IF(IXSEC-60)36,35,35                                              65000
 35   IXSEC=IXSEC-60                                                    66000
      IXMI=IXMI+1                                                       67000
36    IF(IXMI-60)38,37,37                                               68000
 37   IXMI=IXMI-60                                                      69000
      IXDE=IXDE+1                                                       70000
 38   CONTINUE                                                          71000
C  AIR BURST OR GROUND BURST                                            72000
      IF(ICB) 40,40,41                                                  73000
   40 ICB=IWA                                                           74000
      GO TO 42                                                          75000
   41 ICB=IWB                                                           76000
   42 CONTINUE                                                          77000
COMPUTE ELAPSED TIME                                                    82000
C     MAKE SURE TIMES ARE POSITIVE IF ZERO                              82020
      IF(JYEAR .EQ. 0) 350,351                                          82040
  350 JYEAR=0                                                           82060
  351 IF(JMON .EQ. 0) 352,353                                           82080
  352 JMON=0                                                            82100
  353 IF(JDAY .EQ. 0) 354,355                                           82120
  354 JDAY=0                                                            82140
  355 IF(JHOUR .EQ. 0) 356,357                                          82160
  356 JHOUR=0                                                           82180
  357 IF(JMIN .EQ. 0) 358,359                                           82200
  358 JMIN=0                                                            82220
  359 CONTINUE                                                          82240
      KYEAR=JYEAR                                                       83000
      KMON=JMON                                                         84000
      ADAY=TIME/24.                                                     85000
      KDAY=ADAY                                                         86000
      IDAY=KDAY-JDAY                                                    87000
      AHOUR=(ADAY-KDAY)*24.                                             88000
      KHOUR=AHOUR                                                       89000
      IHOUR=KHOUR-JHOUR                                                 90000
      AMIN=(AHOUR-KHOUR)*60.                                            91000
      KMIN=AMIN                                                         92000
      IMIN=KMIN-JMIN                                                    93000
      IF(IHOUR)181,182,182                                              94000
 181  IHOUR=IHOUR+24                                                    95000
```

```
      IDAY=IDAY-1                                                       96000
      IF(IMON-1)183,187,187                                             97000
  183 IMON=IMON-12                                                      98000
      IYEAR=IYEAR-1                                                     99000
  187 IF(IDAY-1)185,186,186                                            100000
  185 IDAY=IDAY+30                                                     101000
      IMON=IMON-1                                                      102000
      GO TO 187                                                        103000
  186 IF(IMON-1)188,189,189                                            104000
  188 IMON=IMON-12                                                     105000
      IYEAR=IYEAR-1                                                    106000
      GO TO 189                                                        107000
  189 IYEAR=IYEAR                                                      108000
      IMON=IMON                                                        109000
      GO TO 194                                                        110000
  192 IF(IMON-30)193,193,193                                           111000
  193 IMON=IMON-30                                                     112000
      IMON=IMON-1                                                      113000
      GO TO 192                                                        114000
  194 IF(IDAY-24)196,195,195                                           115000
  195 IDAY=IDAY-24                                                     116000
      IDAY=IDAY+1                                                      117000
      GO TO 194                                                        118000
  196 IF(IDAY-30)191,191,192                                           119000
  192 IDAY=IDAY-30                                                     120000
      IMON=IMON-1                                                      121000
      GO TO 196                                                        122000
  191 IF(IMON-12)189,189,190                                           123000
  190 IMON=IMON-12                                                     124000
      IYEAR=IYEAR+1                                                    125000
      GO TO 191                                                        126000
  199 CONTINUE                                                         127000
C     LEIGH DESTROYS IF A STRING GOES IN COLUMN 1                      128000
      IESS=IES                                                         129000
      IF(IDE .EQ. 0) GO TO 220,221                                     130000
  220 ASK=LOS*TP3                                                      130100
      IT=ASK/LOS                                                       131000
      GO TO 222                                                        131100
  221 ASK=DES*TP4                                                      131150
      IT=ASK/EDS                                                       131200
  222 CONTINUE                                                         131300
      ENCODE(10,200,LDA)IYE,IMON,IDAY,IHOUR,IMIN,ISEC,IYEAR            132000
  200 FORMAT(5I2)                                                      133000
      IDATIME(1)=INZERO(IDATIME(1))                                    134000
      IDATIME(2)=INZERO(IDATIME(2))                                    135000
      ENCODE(7,201,LA)A) ITDEG,ITMIN,ITSEC,INS                         136000
  201 FORMAT(3I2,A1)                                                   137000
      LATX=INZERO(LA(1))                                               138000
      ENCODE(6,202,LONX)ILDEG,ILMIN,ILSEC,IEW                          139000
  202 FORMAT(I3,2I2,A1)                                                140000
      LONX=INZERO(LONX)                                                141000
      IMPERMC(ITYPE                                                    144000
      RYIELDX=YIELDX(IMPC(ITYPE))*1000.                                144010
      AFFRACX=FFRACX(IMPC(ITYPE))*100.                                 144020
      INTAMP=INTAM                                                     144030
  225 FORMAT(I5)                                                       144037
```

```
      IZERO=0                                                           144040
      IREC=IREC                                                         144060
      NDESIG=IM                                                         144080
      NTASK=IM                                                          144090
      KCEP=3HGOC                                                        144092
      WRITE(IT,204)IESS,IZERO,COMCOD(ITYPE),INTARB,IDATIME(1),IDATIME(2),144100
     1LATX,LONGX,NDESIG,IREGT,REFRACX,AYIELDX,IHOB,KCEP,NTASK,CNTYLOCT,  144110
     1IWTYP,IITYPE,INDEXAND,INUV                                        144120
  204 FORMAT(   A1,I1,I1,I5,A6,A2,A7,A8,A5,6A,I1,I3,1X,I5,A1,2A,A3,1X,  144130
     1A2,A2,4X,I2,I2,I4,I2,1A)                                          144140
      RETURN                                                            148000
      ENTRY     WRAGZF                                                  148100
      GO TO (402,403),NUSW                                              148200
  403 RETURN                                                            148300
  402 CONTINUE                                                          148400
      AGZBLUS=NTP3                                                      148500
      AGZREDS=NTP4                                                      148600
C     INCOMPLETE SIDAC TAPES                                            148700
      ENDFILE     AGZREDS                                               148800
      ENDFILE AGZBLUS                                                   148900
      REWIND AGZREDS                                                    149000
      REWIND AGZBLUS                                                    149100
C     ADD DESIGN TASK TO STRATAPE                                       149200
C     WRITE REST TAPES                                                  149300
C     TEMP STORAGE TAPE FOR PACKED DESIG+TASK                           149400
      IOTPE=ITAPE(3)                                                    149500
      REWIND IOTPE                                                      149600
      DO 300 I=1,MAXLOC                                                 149700
  300 NDXCTY(I)=IM                                                      149800
      IPNDES=0                                                          149810
  301 READ(IOTPE) INDEXAND,NDXCTY(INDEXAND)                             149900
      IPNDES=IPNDES+1                                                   149910
      IF(EOF,IOTPE) 310,301                                             150000
  310 REWIND IOTPE                                                      150100
      IPNDES=IPNDES-1                                                   150110
      PRINT 9003,IPNDES                                                 150110
 9003 FORMAT(25H NUMBER OF DESIGS STORED= I10)                          150120
      ITLONE=1                                                          150200
      IBLKO=1                                                           150300
      IT=AGZBLUS                                                        150400
      AGZBLUS=NTP1                                                      150500
      ITC=AGZBLUS                                                       150600
      AGZBLURC=NTP5                                                     150700
      ITC1=AGZBLURC                                                     150800
      REWIND ITC1                                                       150900
      GO TO (470,471),NPSW                                              151000
  470 PRINT 450                                                         151100
  450 FORMAT(1H1,10X,19HBLUE SIDAC AGZBLUSW /)                          151200
  471 CONTINUE                                                          151300
  303 READ(IT,204) IESS,IZERO,ICOMCOD,INTARB,IDATIME(1),IDATIME(2),     151400
     1LATX,LONGX,NDESIG,IREGT,REFRACX,AYIELDX,IHOB,KCEP,NTASK,CNTYLOCT,  151500
     1NWTYP,NVTYP,NUNSOR                                                151600
      IF(EOF,IT) 320,302                                                151700
  302 INTARX=NUMGET(INTARB,5)                                           151750
      NDESIG=NDXCTY(INTARX) .AND. 7777777776                            151800
      NTASK=NDXCTY(INTARX)                                              151900
```

```
      NDESIG=NDESIG*ILSMT                                               151950
C     PUT LEADING ZEROES IN INTAR                                       152000
      INTARB=INZERO(INTARB)                                             152100
      NUNSCR=INZERO(NUNSCR)                                             152200
      WRITE(ITO,208) IESS,IZRO,ICOMCOD ,INTARB,IDATIME(1),IDATIME(2),   152300
     1LATX,LONGX,NDESIG,IREGT,RFFRACX,RYIELDX,IHOB,KCEP,NTASK,CNTYLOCT, 152400
     INWTYP,NVTYP,NUNSCR                                                152500
      ENCODE(3,203,LFFRACX)RFFRACX                                      152600
  203 FORMAT(I3)                                                        152700
      LFFRACX=INZERO(LFFRACX)                                           152800
      IF(RYIELDX .LT. 100) LFFRACX=3M                                   152801
  315 WRITE(ITO1,206) IESS,IZRO,ICOMCOD,INTARB,IDATIME(1),IDATIME(2),   152900
     1LATX,LONGX,NDESIG,IREGT,LFFRACX,RYIELDX,IHOB,KCEP,NTASK,CNTYLOCT, 153000
     INWPSYS(ICOMCOD,IBLRD),NVTYP,NUNSCR                                153100
      GO TO (304,303),NPSW                                              153200
C     PRINT SIDAC TAPES IF REQUESTED                                    153300
  304 PRINT 209,    IESS,IZRO,ICOMCOD ,INTARB,IDATIME(1),IDATIME(2),    153400
     1LATX,LONGX,NDESIG,IREGT,RFFRACX,RYIELDX,IHOB,KCEP,NTASK,CNTYLOCT, 153500
     INWTYP,NVTYP,NUNSCR                                                153600
      GO TO 303                                                         153700
  320 ENDFILE ITO                                                       153800
      ENDFILE ITO1                                                      153900
      REWIND ITO                                                        154000
      REWIND ITO1                                                       154100
      REWIND IT                                                         154200
      GO TO (404,405),ITDONE                                            154300
  404 ITDONE=2                                                          154400
      IT=AGZREDS                                                        154500
      AGZREDSW=NTP2                                                     154600
      ITO=AGZREDSW                                                      154700
      AGZREDRO=NTP3                                                     154800
      ITO1=AGZREDRO                                                     154900
      IBLRD=2                                                           155000
      GO TO (472,473),NPSW                                              155100
  472 PRINT 451                                                         155200
  451 FORMAT(1H1,10X,18HRED SIDAC AGZREDS# /)                           155300
  473 CONTINUE                                                          155400
      GO TO 303                                                         155500
  405 GO TO (406,407),NPSW                                              155600
C     PRINT REST TAPES                                                  155700
  406 PRINT 452                                                         155800
  452 FORMAT(1H1,10X,18HBLUE REST AGZBLURO /)                           155900
      ITO1=AGZBLURO                                                     156000
      IBLRD=1                                                           156100
  475 READ(ITO1     ,200)IESS,IZRO,ICOMCOD,INTARB,IDATIME(1),IDATIME(2), 156200
     1LATX,LONGX,NDESIG,IREGT,LFFRACX,RYIELDX,IHOB,KCEP,NTASK,CNTYLOCT, 156300
     INWPS,NVTYP,NUNSCR                                                 156400
      IF(EOF,ITO1) 481,480                                              156500
  480 PRINT 207,IESS,IZRO,ICOMCOD,INTARB,IDATIME(1),IDATIME(2),         156600
     1LATX,LONGX,NDESIG,IREGT,LFFRACX,RYIELDX,IHOB,KCEP,NTASK,CNTYLOCT, 156700
     INWPS,NVTYP,NUNSCR                                                 156800
      GO TO 475                                                         156900
  481 REWIND ITO1                                                       157000
      GO TO (482,407),IBLRD                                             157100
  482 IBLRD=2                                                           157200
      ITO1=AGZREDRO                                                     157300
```

```
      PRINT 453                                                         157400
  453 FORMAT(1H1,10X,17HRED REST A0ZREURC /)                            157500
  206 FORMAT(A1,I1,I1,A5,A8,A2,A7,A8,A5,6X,I1,A3,1X,I5,A1,2X,A3,1X,     157600
     1A2,A2,3X,A3,I2,A6,1X)                                             157700
  207 FORMAT(1X,A1,I1,I1,A5,A8,A2,A7,A8,A5,6X,I1,A3,1X,I5,A1,2X,A3,1X,  157800
     1A2,A2,3X,A3,I2,A6,1X)                                             157900
  208 FORMAT(   A1,I1,I1,A5,A8,A2,A7,A8,A5,6X,I1,I3,1X,I5,A1,2X,A3,1X,  158000
     1A2,A2,4X,I2,I2,A6,1X)                                             158100
  209 FORMAT(1X,A1,I1,I1,A5,A8,A2,A7,A8,A5,6X,I1,I3,1X,I5,A1,2X,A3,1X,  158200
     1A2,A2,4X,I2,I2,A6,1X)                                             158300
      GO TO 475                                                         158400
  497 RETURN                                                            158500
      END                                                               158600
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IDENT [illegible]

[illegible] [illegible]
[illegible] [illegible]
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[illegible]

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[illegible] [illegible]

EXTERNAL SYMBOLS

[illegible]
[illegible]
[illegible]
[illegible]
IGET
IAZERO
[illegible]
[illegible]
[illegible]
EPT.
[illegible].
TSH.
TSH.
STH.
EXC.
[illegible].

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P01764  AQAY      00620  00625
C00363  AGX       00366  00367
C00364  AGY       00360  00361
P01712  AGZBLORC  01224  01561
P01710  AGZBLOS   00744  01125  01131  01137  01221
P01714  AGZBLOSW  01222
P01711  AGZREDRC  01530  01676
P01707  AGZREDS   00747  01126  01134  01525
P01713  AGZREDSW  01527
C00367  AHOB      00557  00557
P01765  AHOUR     00630  00635
P01766  AMIN      00640
P01737  BEGIN.    01740
P01767  CAGX      00373  00374  00437
P01770  CAGY      00365  00366  00430
C00267  CEP
C00000  CEPA
C00000  CEPB
C00000  CEPM
C00153  CNTRYLOC
C00401  CNTYLOCT  01101  01101  01270  01270  01352  01352  01427  01427  01471  01471  01614
                  01614  01654  01654
P01716  CNVRTI.   00755  00756  00757  00760  00761  01000  01001  01002  01003  01010  01017
                  01020  01021  01057  01060  01063  01065  01066  01067  01070  01071  01072
                  01073  01074  01075  01076  01077  01100  01102  01104  01106  01107  01110
                  01164  01166  01212  01246  01247  01250  01253  01254  01255  01256  01257
                  01260  01261  01262  01263  01264  01265  01266  01267  01271  01273  01274
                  01333  01334  01335  01336  01337  01340  01341  01342  01343  01344  01345
                  01346  01347  01350  01351  01353  01355  01356  01357  01307  01410  01411
                  01412  01413  01414  01415  01416  01417  01420  01421  01422  01423  01424
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                  01604  01605  01606  01607  01610  01611  01612  01613  01615  01617  01620
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                  01650  01651  01652  01653  01655  01657  01660  01661
C00000  COMCOD    01062  01062
X00010  CCSF      00434
P01771  COUNT.    01151  01152
P00016  CRFMI.    00704  01006  01024  01045  01113  01215  01241  01372  01546  01561  01705
                  01705  01705  01705  01705
C01133  DEF
P00014  DEGRAD    00433
P00001  DICT.     00351  00376  00405  00412  00435  00752  00763  00765  00771  00776  01005
                  01007  01013  01023  01025  01055  01116  01118  01130  01133  01136  01141
                  01145  01163  01172  01177  01203  01210  01214  01226  01235  01240  01244
                  01277  01302  01305  01320  01324  01331  01361  01364  01371  01373  01400
                  01440  01447  01500  01504  01507  01512  01515  01520  01542  01545  01555
                  01560  01570  01623  01625  01632  01663  01667  01701  01704
X00012  EFI.      01127  01132  01503  01506
X00017  ERC.      00751  00775  01013  01363
P01741  ENDING.   00352  00356  01113  01117  01123  01706  01737
P00000  EXIT.     01742
C00002  FFSACX    01037  01037
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P00016	FCRMAT.	00445	00447	00515	00517	00562	00564	00736	00740	01050	01051	01052
		01146	01401									
P00784	GGG0000.	00750										
P01006	GGG0001.	00774										
P01024	GGG0002.	01012										
P01113	GGG0003.	01053										
P01173	GGG0004.	01101										
P01215	GGG0005.	01206										
P01241	GGG0006.	01233										
P01300	GGG0007.	01242										
P01362	GGG0010.	01327										
P01372	GGG0011.	01362										
P01441	GGG0012.	01404										
P01501	GGG0013.	01445										
P01546	GGG0014.	01540										
P01561	GGG0015.	01553										
P01624	GGG0016.	01566										
P01664	GGG0017.	01630										
P01705	GGG0020.	01677										
P01772	I	01146	01152									
P01773	IBCRD	01217	01532	01563	01670	01674	01722					
P01774	ICOMCOD	01251	01335	01412	01454	01575	01637	01732				
P00003	IDATIME	00753	00766	00767	00772	00773	01066	01067	01255	01256	01337	01340
		01414	01415	01456	01457	01601	01602	01641	01642			
P01775	IDAY	00624	00651	00652	00661	00664	00665	00716	00717	00720	00723	00724
		00754										
P01776	IDTPE	01143	01160	01175	01201							
P01777	IESS	00757	01057	01247	01333	01410	01451	01573	01634			
P02000	IE4	00515	00520	01021								
X00005	IGET	00375	00404	00411								
P02001	IGOTO.	00354	01121	01230	01442	01521	01535	01550	01670			
P02002	IHOR	00563	00565	01076	01265	01347	01424	01466	01611	01651		
P02003	IHOUR	00634	00645	00647	00650	00657	00660	00707	00710	00711	00714	00715
		00756										
P00006	ILSHT	01316										
P02004	IMIN	00644	00652	00655	00656	00702	00705	00706	00757			
P02005	IMON	00701	00760									
P01717	INC0007.	01431	01726	01735								
C00174	INDEXAC	01107	01165	01165	01167							
C00346	INDV	01110										
C00003	INITEM											
P01737	INITIAL.	00352	01117									
P02006	INS	00445	00450	01003								
C00347	INTAR	00377	01043	01043								
P02007	INTARB	01044	01064	01254	01306	01321	01322	01336	01413	01455	01600	01640
P02010	INTARX	01307	01310									
C00000	INTP											
X00006	INZERO	00764	00770	01006	01024	01317	01323	01372				
P02011	IPNOES	01157	01173	01174	01204	01205	01212					
C00231	IREG	01046	01046									
P02012	IREGT	01047	01073	01262	01344	01421	01463	01606	01646			
P00015	ISTART											
C00000	ISWTERM											
P02013	IT	00744	00747	01053	01221	01241	01300	01516	01526			

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C00000  ITAPE     01142  01142
P00005  ITCNT
P02014  ITONE     01216  01521  01525
P02015  ITO       01223  01326  01502  01510  01527
P02016  ITOI      01224  01403  01505  01513  01531  01562  01565  01624  01665  01676
C00002  ITOUT
C00000  ITP
C00230  ITYPE     01061  01061  01105  01105
P02017  IWHD      01331  01103
C00024  IWHDA
P02020  IXDEG     00523  00526  00555  00556  01016
P02021  IXMIN     00532  00535  00546  00547  00550  00553  00554  01017
P02022  IXSEC     00541  00544  00545  01020
P02023  IYDEG     00453  00456  00505  00506  01000
P02024  IYEAR     00700  00761
P02025  IYMIN     00462  00465  00476  00477  00500  00503  00504  01001
P02026  IYSEC     00471  00474  00475  01002
P02027  IZRO      01045  01060  01250  01334  01411  01453  01574  01630
P00443  .10       00442
P01401  .100001   01400
P01403  .100002   01377  01377
P00647  .181      00646
P00702  .182      00645  00646  00710
P00655  .183      00653
P00664  .185      00663
P00670  .186      00662  00663  00676
P00651  .187      00653  00654  00697
P00673  .188      00672
P00677  .189      00671  00672  00730  00731
P00727  .191      00721  00722  00735
P00723  .192
P00705  .193      00703
P00711  .194      00704  00717
P00714  .195      00712
P00720  .196      00713  00726
P00732  .198
P00735  .199      00701
P00447  .20       00441  00442
P00451  .21       00446
P00743  .223
P00745  .221      00742
P00750  .222      00745
P00474  .25       00472
P00500  .26       00473
P00503  .27       00501
P00507  .28       00502
P00512  .30
P01153  .300
P01163  .301      01200
P01304  .302
P01241  .303      01444  01501  01546
P01445  .304      01443
P00517  .31       00510  00511
P01201  .310      01200
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P00403	.315			
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P00502	.323	01303		
P00570	.350			
P00544	.35	00542		
P00572	.351	00567		
P00574	.352			
P00576	.353	00573		
P00600	.354			
P00602	.355	00577		
P00604	.356			
P00606	.357	00603		
P00610	.358			
P00612	.359	00607		
P00550	.36	00543		
P00553	.37	00551		
P00557	.38	00556		
P00562	.40	00560	00561	
P00357	.400	00350		
P00350	.401			
P01124	.402	01126		
P01123	.403			
P01124	.404	01122		
P01147	.405	01143		
P01153	.406	01151		
P01160	.407	01156	01172	
P00500	.41	00501		
P00540	.42	00533		
P01233	.470	01231		
P01241	.471	01236		
P01540	.472	01234		
P01560	.473	01237		
P01500	.475	01234	01120	
P01630	.480			
P01660	.481	01667		
P01673	.482	01671		
P01703	.4[illegible]	00433	00430	00437
P00010	..100030	00003		
P00017	..100031	00007		
P00060	..100032	00010		
P00021	..100033	00017		
P00022	..100034	00026		
P00023	..100035	00034		
P00024	..100036	00730		
P00025	..100037	00741		
P00027	..100038	01030		
P00040	..100039	01031		
P00047	..100040	01036		
P00140	..100041	01103		
P00150	..100042	01001		
P00026	..400	00703		
P00031	..401	00777		
P00035	..402	01030		
P00127	..403	01005		

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P00133	[illegible]	01543										
P00145	[illegible]	01508										
P00157	[illegible]	01702										
P00155	[illegible]	01411										
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C00023	[illegible]	00602	00602	00604	00603	00633	00633					
P00230	[illegible]	00015	00015									
P00231	[illegible]	00015	00021									
C00000	[illegible]	00608	00608	00610	00611	00643	00643					
C00051	[illegible]	00572	00572	00574	00575	00614	00614					
C00014	[illegible]											
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P00140	[illegible]	01082	01177	01298	01350	01425	01487	01612	01652			
P00133	[illegible]	00622	00627									
C00007	RETURN											
C00006	RETFLS											
C00005	RETLAT	00711										
C00003	RETLON											
C00002	RETCOA											
C00006	RETRES											
C00010	RETTOA											
C00001	RFCX											
P00230	RFFRACX	01302	01074	01203	01305	01306	01464					
P00235	RFCOR	00612	00637									
C00000	RLAT	00008										
C01213	RLATPX	00002	00002									
C00001	RLONG	00013										
P00230	RPIX	00002										
P00237	RPOX	00015	00666	00607	00670	00673	00674	00700	00725	00726	00727	00732
		00733										
C00000	RRTBT											
C01000	SIZE											
P00240	SYEAR	00612	00675	00676	00677	00734	00735					
P00241	SYIELDX	01036	01075	01264	01346	01378	01421	01465	01610	01630		
S20513	LATLONG	00403	00407	00414								
P00242	LATX	00777	01010	01011	01070	01257	01391	01416	01400	01403	01403	
P00243	LEFRACX	01365	01378	01375	01402	01422	01607	01647				
C01153	LONGS											
P00244	LONGX	01015	01326	01067	01071	01290	01342	01417	01401	01604	01644	
C00002	PARASP											
C00004	PARASP											
C00007	PARSPS											
C00006	PARTIS											
C00005	PARLIT	01147	01147									
C00003	PARNTS											
C00006	PARRES											
C00012	PARTAPE											

C00001	PARAMS											
C00002	NC											
P02045	NDESIG	01050	01072	01261	01313	01315	01316	01343	01420	01482	01605	01645
C00000	NDESTK											
C00000	NDGAGZ											
C00002	NDSW	00353	00353	01120	01120							
C00000	NDACTY	00400	01154	01154	01167	01170	01310	01311	01313	01314		
P02045	NDALAT	00401	00401									
P02047	NHRPERDY	00300										
C00000	NI											
C00001	NOUT											
C00001	NPRAGZ											
C00003	NPSW	01227	01227	01441	01441	01534	01534	01547	01547			
C00025	NRQUT											
P02050	NTASK	01051	01100	01267	01315	01351	01426	01470	01513	01653		
C00024	NTP											
P00007	NTP1	01222										
P00010	NTP2	01526										
P00011	NTP3	00743	01124	01530								
P00012	NTP4	00746	01125									
P00013	NTP5	01223										
X00007	NUMGET	01304										
P02051	NUNSOR	01275	01325	01326	01357	01436	01476	01621	01661			
C00001	NV											
P02052	NVTYP	01274	01356	01434	01475	01620	01660					
P02053	NWPS	01616	01656									
C00000	NWPSYS	01432	01432									
P02054	NWTYP	01272	01354	01473								
C00266	PDUD											
C00144	PDUDX											
X00002	Q1Q03100	00455	00464	00525	00534	00626	00636					
X00001	Q1Q10100	00452	00461	00470	00522	00531	00540	00621	00631	00641	01035	01041
X00004	Q8WDICT.	00000	00350	01115								
X00011	Q8WIFEOF	01176	01301	01625								
X00020	QNSINGL.	01715										
X00013	REW.	01135	01140	01144	01202	01225	01511	01514	01516	01606		
C00151	SIDE	00740	00740									
P02055	STEMP	00457	00460	00463	00466	00467	00527	00530	00533	00535		
X00016	STM.	01054	01207	01234	01330	01405	01446	01541	01554	01631	01700	
X00003	THENO.	00762	01004	01042	01111	01171	01213	01237	01276	01300	01370	01437
		01477	01544	01557	01622	01662	01703					
C00342	TIME	00616	00616									
P01150	TS00001.	01150										
X00015	TSB.	01162										
X00014	TSM.	01243	01567									
P01721	UP00006.	01220	01533	01564	01675	01722	01723	01724	01726	01727		
P01731	UP00007.	01252	01576	01732	01733	01734	01736	01736				
C00147	VALUE											
C00240	WHDTYPE	01030	01030	01032	01032							
P00347	WRAGZ	00347										
P01114	WRAGZF	01114										
P01153	WS00001.	01155										
P02056	XLAT	00421	00425	00426	00431	00432						
P02057	XLONG	00425	00427	00430	00440							

```
PU2060  XLX      00440   00507   00512   00514   00521   00524
PU2061  XLY      00432   00441   00443   00444   00451   00454
C00000  YIELDX   01033   01033
   00455 SYMBOLS
```

```
      PROGRAM TABGEN                                                    1000
CSUBR     TABGEN    START     ****************************************  1000
      COMMON/EDITERM/ISWTERM                                            2000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLSW(500) 3000
      TYPE INTEGER VALUE                                                4000
      TYPE LOGICAL DEF,LGLSW                                            5000
      COMMON/SIZES/MAXCOL,MAXROW,MAXCYC,MAXSET                          6000
      COMMON/PASS/NSIDENSW,NPASS                                        7000
      COMMON/SWITCH/COLINSW,ROWINSW,CYCINSW,TRUESW,MAXROWSW,MAXCYCSW,   8000
     1MAXCOLSW,ADDSW,ROWSW,NCSIDESW,VALCOLSW,NSEPSW                     9000
      TYPE INTEGER COLINSW,ROWINSW,CYCINSW,TRUESW,ADDSW,ROWSW,VALCOLSW  10000
      COMMON/ITIME/ITIME,NTEMP,XTEMP                                    11000
      EQUIVALENCE (NTEMP,XTEMP)                                         12000
      COMMON/ITP/ITP                                                    13000
      COMMON/ATTIND/ICYCLE,IROW,IADD,ICOL,JSIDE                         14000
      COMMON/EDITAPE/INTP,NOUT,ITOUT(10),JOUT                           15000
      CALL STORAGE                                                      16000
    1 CONTINUE                                                          17000
      NPASS=1                                                           18000
      CALL INITAPE                                                      19000
    5 ITAPE=1                                                           20000
      CALL INITEDIT(ITAPE)                                              21000
      GO TO (6,7),NPASS                                                 22000
    7 CALL INITIL                                                       23000
      GO TO 8                                                           24000
    6 CALL SETUP                                                        25000
    8 CALL INPITEM                                                      26000
  505 CALL TRUTH                                                        27000
      GO TO (503,501),TRUESW                                            28000
  503 CALL CYCLER                                                       29000
      GO TO (500,501),CYCINSW                                           30000
  500 CALL ROWFIND                                                      31000
      GO TO (502,501),ROWINSW                                           32000
  502 CALL COLFIND                                                      33000
      GO TO (504,501),COLINSW                                           34000
  504 CALL TABLER                                                       35000
  501 CALL NEXTITEM                                                     36000
      IF(VALUE(JSIDE) .EQ. 7HENDTAPE) 520,510                           37000
  520 CALL TERMTAPE                                                     38000
      ITAPE=ITAPE+1                                                     39000
      INTP=ITAPE                                                        40000
      ITP=INTP                                                          41000
      CALL SETREAD                                                      42000
      GO TO 501                                                         43000
  510 GO TO (505,506),ISWTERM                                           44000
  506 CALL PRINTER                                                      45000
      CALL PAGESKP                                                      46000
      IF(MAXROWSW .EQ. 0) 600,603                                       47000
  600 IF(MAXCYCSW .EQ. 0) 601,604                                       48000
  601 IF(MAXCOLSW .EQ. 0) 602,605                                       49000
  603 PRINT 610                                                         50000
      GO TO 600                                                         51000
  604 PRINT 611                                                         52000
      GO TO 601                                                         53000
  605 PRINT 612                                                         54000
  602 CONTINUE                                                          55000
```

```
  610 FORMAT(1H ,30HMORE ROWS THAN DIMENSIONED FOR )                    56000
  611 FORMAT(1H ,32HMORE CYCLES THAN DIMENSIONED FOR )                  57000
  612 FORMAT(1H ,33HMORE COLUMNS THAN DIMENSIONED FOR )                 58000
      GO TO (1,2),NSEPS                                                 59000
    2 IF(NSIDENOW .E[illegible] [illegible]HED) 1,4                     60000
    4 NSIDEN[illegible]=3HRE[illegible]                                 61000
      NPASS=[illegible]                                                 62000
      GO TO [illegible]                                                 63000
      END                                                               64000
```

```
                                        IDENT    TABGEN
PROGRAM LENGTH                  00225
ENTRY POINTS     TABGEN         00042
BLOCK NAMES
                 EXITSAM        00001
                 PROCESS        01173
                 SIZES          00006
                 PASS           00002
                 SWITCH         00014
                 ITIME          00002
                 ITP            00001
                 ATTIME         00005
                 ESTIME         00015
EXTERNAL SYMBOLS
                 PROEXIT
                 INEXC.
                 PROCICT.
                 STORAGE
                 INITAPE
                 INITERIT
                 INITIL
                 SETUP
                 INPUTEP
                 TRCT-
                 CYCLEX
                 ROWFIXC
                 COLFIXC
                 TABLEX
                 NEXTITEM
                 TERMTAPE
                 SETMEAN
                 PRINTER
                 PAGESUP
                 STAL
DC142 SYMBOLS
```

```
      SUBROUTINE COLFINC                                                1000
C$SUB     COLFINC   START     ****************************************  2000
      COMMON/SIZES/MAXCOL,MAXRC,MAXCYC,MASSET                           2000
      COMMON/TABINDEX/COLIND,CYCIND,RCIND                               3000
      TYPE INTEGER COLIND,CYCIND,RCIND                                  4000
      COMMON/ATTIND/ICYCLE,IRC,IADD,ICOL,JSIGE                          5000
      COMMON/SWITCH/COLINS,RCINS,CYCINS,TRUES,MAXRCS,MAXCYCS,           6000
     1MAXCOLS,ADDS,RCSS,NCSICES,VALCOLS,NSEPS                           7000
      TYPE INTEGER COLINS,RCINS,CYCINS,TRUES,ADDS,RCSS,VALCOLS          8000
      COMMON/COLS/NCOL,RANGES(100)                                      9000
      DIMENSION RVALUE(100),RRANGES(100)                               10000
      EQUIVALENCE(RVALUE(1),VALUE(1)),(RRANGES(1),RANGES(1))           11000
      TYPE INTEGER RANGES                                              12000
      COMMON/PROCESS/NI,NV,NC,INITE4(100),VALUE(500),DEF(500),LGLC8(500) 13000
      TYPE INTEGER* VALUE                                              14000
      TYPE LOGICAL DEF,LGLC8                                           15000
      COMMON/COL748/MCOL(50),NAMECOL(12,50)                            16000
      COLINS=1                                                         17000
      IF(ICOL) 31,31,30                                                18000
   31 COLIND=1                                                         19000
      RETURN                                                           20000
   30 GO TO (1,2,10),VALCOLS                                           21000
   10 COLIND=ITLE(VALUE(ICOL),NAMECOL(1,CYCIND),MCOL(CYCIND))          22000
      IF(COLIND) 11,11,4                                               23000
   11 IF(MCOL(CYCIND) .EQ. MAXCOL) 13,12                               24000
   12 MCOL(CYCIND)=MCOL(CYCIND)+1                                      25000
      NAMECOL(MCOL(CYCIND),CYCIND)=VALUE(ICOL)                         26000
      COLIND=MCOL(CYCIND)                                              27000
      RETURN                                                           28000
   13 MAXCOLS=MAXCOLS+1                                                29000
      COLINS=2                                                         30000
      RETURN                                                           31000
    1 COLIND=ITLE(VALUE(ICOL),RANGES,NCOL)                             32000
      IF(COLIND) 3,3,20                                                33000
   20 COLIND=ITLE(VALUE(ICOL),NAMECOL(1,CYCIND),MCOL(CYCIND))          34000
      IF(COLIND) 11,11,21                                              35000
   21 RETURN                                                           36000
    3 COLINS=2                                                         37000
    4 RETURN                                                           38000
2     RV=VALUE(ICOL)                                                   39000
      DO 5 I=1,NCOL                                                    40000
      IF(RANGES(I)-RV)5,7,7                                            41000
    7 COLIND=I                                                         42000
      RETURN                                                           43000
    5 CONTINUE                                                         44000
      COLINS=2                                                         45000
      RETURN                                                           46000
      END                                                              47000
```

```
                                  IDENT     COLFIND
PROGRAM LENGTH              00173
ENTRY POINTS     COLFIND    00003
BLOCK NAMES
                 SIZES      00004
                 TABINDEX   00003
                 ATTIND     00005
                 SWITCH     00014
                 COLS       00145
                 PROCESS    01173
                 COLVAR     01212
EXTERNAL SYMBOLS
                 OBGDICT.
                 ITLE
  00111 SYMBOLS
```

```
      SUBROUTINE CYCLER                                                 1000
CSUBR     CYCLER    START    ******************************************  3000
      COMMON/SIZES/MAXC L,MAXRC#,MAXCYC,MAXSET                          2000
      COMMON/T:SINDEX/COLINC,CYCIND,RC#IND                              3000
      TYPE INTEGER COLIND,CYCIND,RC#IND                                 4000
      COMMON/ATTIND/ICYCLE,IRC#,IADD,ICOL,JSIDE                         5000
      COMMON/SWITCH/COLINS#,RC#INS#,CYCINS#,TRUES#,MAXRCS#,MAXCYCS#,    6000
     1MAXCOLS#,ADDS#,RC#S#,NCSIDES#,VALCOLS#,NSEPS#                     7000
      TYPE INTEGER COLINS#,RC#INS#,CYCINS#,TRUES#,ADDS#,RC#S#,VALCOLS#  8000
      COMMON/PASS/NSIDENC#,NPASS                                        9000
      COMMON/CYCS/NAMECYC(50),NUMCYC,CYCSIDE(50)                       10000
      TYPE INTEGER CYCSIDE                                             11000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLCB(500) 12000
      TYPE INTEGER VALUE                                               13000
      TYPE LOGICAL DEF,LGLCB                                           14000
      CYCINS#=1                                                        15000
      IF(ICYCLE .EQ. 0) 8,9                                            16000
    8 CYCIND=1                                                         17000
      GO TO (10,11),NCSIDES#                                           18000
   10 IF(VALUE(JSIDE) .EQ. 4HBLUE) 11,12                               19000
   12 CYCIND=2                                                         20000
   11 RETURN                                                           21000
    9 GO TO (20,17),NCSIDES#                                           22000
   20 GO TO (17,25),NSEPS#                                             23000
   25 IF(NSIDENC# .EQ. VALUE(JSIDE)) 17,21                             24000
   21 CYCINS#=2                                                        25000
      RETURN                                                           26000
   17 CONTINUE                                                         27000
      CYCIND=ITLE(VALUE(ICYCLE),NAMECYC,NUMCYC)                        28000
      IF(CYCIND) 1,1,15                                                29000
   15 GO TO (16,6),NCSIDES#                                            30000
   16 IF(CYCSIDE(CYCIND) .EQ. VALUE(JSIDE)) 6,13                       31000
   13 NCYCIND=ITLE(VALUE(ICYCLE),NAMECYC(CYCIND+1),NUMCYC-CYCIND)      32000
      IF(NCYCIND) 1,1,14                                               33000
   14 CYCIND=CYCIND+NCYCIND                                            34000
      RETURN                                                           35000
    1 IF(NUMCYC .EQ. MAXCYC) 2,4                                       36000
    2 MAXCYCS#=MAXCYCS#+1                                              37000
      CYCINS#=2                                                        38000
    6 RETURN                                                           39000
    4 NUMCYC=NUMCYC+1                                                  40000
      NAMECYC(NUMCYC)=VALUE(ICYCLE)                                    41000
      CYCSIDE(NUMCYC)=VALUE(JSIDE)                                     42000
      CYCIND=NUMCYC                                                    43000
      RETURN                                                           44000
      END                                                              45000
```

```
                                        IDENT     CYCLER
PROGRAM LENGTH                  00142
ENTRY POINTS      CYCLER        00004
BLOCK NAMES
                  SIZES         00004
                  TABINDEX      00003
                  ATTIND        00005
                  SWITCH        00014
                  PASS          00002
                  CYCS          00145
                  PROCESS       01173
EXTERNAL SYMBOLS
                  QMQDICT.
                  ITLE
   00104 SYMBOLS
```

```
      SUBROUTINE FORMAT                                                 1000
CSUBR     FORMAT    START     ******************************************  12000
      COMMON /FORMATS/ INWORD, NFORMT, INABS, IF2X                      2000
      EQUIVALENCE (WORDIN, INWORD), (ABSIN, INABS)                      3000
      DATA (IF2X = 1), (NX = 22700000000008), (MASK = 77000777777777778) 4000
      INABS = INWORD                                                    5000
      NFORMT = 6H   I8,                                                 6000
      IF (INWORD) 1, 2, 3                                               7000
1     INABS = - INWORD                                                  8000
3     I = INABS .AND. 77777700000000008                                 9000
      IF (I .NE. 0) 4, 2                                               10000
4     IF (ABSIN .GT. 99999.9) 18,  5                                   11000
5     IF (ABSIN .GT. 9999.99) 17,  6                                   12000
6     IF (ABSIN .GT. 999.999) 16,  7                                   13000
7     IF (ABSIN .GT. 99.9999) 15,  8                                   14000
8     IF (ABSIN .GT. 9.99999) 14,  9                                   15000
9     IF (ABSIN .GT. .999999) 13, 10                                   16000
10    IF(ABSIN-.00001)11,11,13                                         17000
11    NFORMT = 8H   E8.2,  $  GO TO 19                                 18000
13    NFORMT = 8H   F8.6,  $  GO TO 19                                 19000
14    NFORMT = 8H   F8.5,  $  GO TO 19                                 20000
15    NFORMT = 8H   F8.4,  $  GO TO 19                                 21000
16    NFORMT = 8H   F8.3,  $  GO TO 19                                 22000
17    NFORMT = 8H   F8.2,  $  GO TO 19                                 23000
18    NFORMT = 8H   E8.2,                                              24000
19    IF (WORDIN .GE. 0) 2, 20                                         25000
20    NFORMT = NFORMT - 100B                                           26000
2     GO TO (21, 22), IF2X                                             27000
21    NFORMT = NFORMT .AND. MASK                                       28000
      NFORMT = NFORMT + NX                                             29000
22    RETURN                                                           30000
      END                                                              31000
```

```
                                        IDENT     FORMAT
PROGRAM LENGTH                  00153
ENTRY POINTS     FORMAT         00015
BLOCK NAMES
                 FORMATS        00004
EXTERNAL SYMBOLS
                 BEGDIST.
   00057 SYMBOLS
```

```
      SUBROUTINE INITIL                                                 1000
CSUBR     INITIL    START     ****************************************  4000
      COMMON/ATTIND/ICYCLE,IROW,IADD,ICOL,JSIDE                         2000
      COMMON/SIZES/MAXCOL,MAXROW,MAXCYC,MAXSET                          3000
      COMMON/TABINDEX/COLIND,CYCIND,ROWIND                              4000
      TYPE INTEGER COLIND,CYCIND,ROWIND                                 5000
      COMMON/SWITCH/COLINSW,ROWINSW,CYCINSW,TRUESW,MAXROWSW,MAXCYCSW,   6000
     1MAXCOLSW,ADDSW,ROWSW,NOSIDESW,VALCOLSW,NSEPSW                     7000
      TYPE INTEGER COLINSW,ROWINSW,CYCINSW,TRUESW,ADDSW,ROWSW,VALCOLSW  8000
      COMMON/PASS/NSIDENOW,NPASS                                        9000
      COMMON/CYCS/NAMECYC(50),NUMCYC,CYCSIDE(50)                       10000
      TYPE INTEGER CYCSIDE                                             11000
      COMMON/ROWS/NAMEROW(50,50),NUMROW(50)                            12000
      COMMON/COLS/NCOL,RANGES(100)                                     13000
      TYPE INTEGER RANGES                                              14000
      COMMON/001/TABLE(9600),NTABLE(9600),XVAL,MVAL                    15000
      EQUIVALENCE (TABLE,NTABLE),(XVAL,MVAL)                           16000
C     I=COLUMNS, J=ROWS, K=CYCLES                                      17000
      COMMON/SETS/SETNAME(100),SETREL(100),SETLEFT(100),SETRIGHT(100), 18000
     1VALORSET(100),SETVAL(100),SETTRUE(100),SETDEF(100),NSETS         19000
      TYPE INTEGER SETNAME,SETREL,SETLEFT,SETRIGHT,SETVAL              20000
      TYPE LOGICAL VALORSET,SETTRUE,SETDEF                             21000
      COMMON/HEAD/NHEAD,HEAD(14,5)                                     22000
      TYPE INTEGER HEAD                                                23000
      COMMON/COLVAR/MCOL(50),NAMECOL(12,50)                            24000
      COMMON/INITROW/NUMROWS,INITROW(100),MXROW                        25000
      GO TO (30,31),NPASS                                              26000
   30 NUMROWS=0                                                        27000
      MXROW=100                                                        28000
      MAXCOL=12                                                        29000
      MAXSET=100                                                       30000
      MAXTAB=9600                                                      31000
      DO 2 I=1,100                                                     32000
      INITROW(I)=1H                                                    33000
    2 RANGES(I)=0                                                      34000
      NOSIDESW=1                                                       35000
      NCOL=0                                                           36000
      NSETS=0                                                          37000
      NHEAD=0                                                          38000
      ICYCLE=0                                                         39000
      IROW=0                                                           40000
      IADD=0                                                           41000
      ICOL=0                                                           42000
   31 GO TO (20,32),NPASS                                              43000
   32 GO TO (21,21,20),VALCOLSW                                        44000
   20 DO 4 I=1,MAXCYC                                                  45000
      MCOL(I)=0                                                        46000
      DO 5 J=1,MAXCOL                                                  47000
    5 NAMECOL(J,I)=1H                                                  48000
    4 CONTINUE                                                         49000
   21 DO 6 I=1,MAXCYC                                                  50000
      NUMROW(I)=0                                                      51000
      NAMECYC(I)=1H                                                    52000
      CYCSIDE(I)=1H                                                    53000
      DO 3 J=1,MAXROW                                                  54000
    3 NAMEROW(J,I)=1H                                                  55000
```

```
    6 CONTINUE                                                          56000
      DO 1 I=1,MAXTAB                                                   57000
    1 TABLE(I)=0                                                        58000
      NUMCYC=0                                                          59000
      MAXROWSW=0                                                        60000
      MAXCYCSW=0                                                        61000
      MAXCOLSW=0                                                        62000
      END                                                               63000
```

```
                                IDENT    INITIL
PROGRAM LENGTH                  00226
ENTRY POINTS     INITIL         00010
BLOCK NAMES
                 ATTIND         00005
                 SIZES          00004
                 TABINDEX       00003
                 SWITCH         00014
                 PASS           00002
                 CYCS           00145
                 ROWS           00766
                 COLS           00145
                 I              22601
                 SETS           01001
                 HEAD           00107
                 COLVAR         01212
                 INITROW        00146
EXTERNAL SYMBOLS
                 QBQDICT.
   00143 SYMBOLS
```

```
      FUNCTION INTREL(INREL)                                            1000
CSUBR     INTREL    START     ****************************************  5000
      DIMENSION IRF(10)                                                 2000
      DATA (IRF=6HANDNOT,5HORNOT,3HAND,2HOR,2HEQ,2HNE,2HGT,2HLT,2HGE,2HL 3000
     1E)                                                                4000
      INTREL=ITLE(INREL,IRF,10)                                         5000
      END                                                               6000
```

```
                                    IDENT     INTREL
PROGRAM LENGTH              00063
ENTRY POINTS    INTREL      00015
EXTERNAL SYMBOLS
                QBQDICT.
                ITLE
  00017 SYMBOLS
```

```
      FUNCTION NVALFIND(ISW,NP1,NP2)                                    1000
CSUBR     NVALFIND  START     ****************************************  6000
      GO TO (1,2,3,4,5,6,7,8,9,10),ISW                                  2000
    1 IF(NP1 .AND. .NOT. NP2) 11,12                                     3000
    2 IF(NP1 .OR.  .NOT. NP2) 11,12                                     4000
    3 IF(NP1 .AND. NP2) 11,12                                           5000
    4 IF(NP1 .OR.  NP2) 11,12                                           6000
    5 IF( NP1 .EQ. NP2) 11,12                                           7000
    6 IF( NP1 .NE. NP2) 11,12                                           8000
    7 IF(NP1 .GT.  NP2) 11,12                                           9000
    8 IF( NP1 .LT. NP2) 11,12                                          10000
    9 IF( NP1 .GE. NP2) 11,12                                          11000
   10 IF( NP1 .LE. NP2) 11,12                                          12000
   11 NVALFIND=1                                                       13000
      RETURN                                                           14000
   12 NVALFIND=0                                                       15000
      END                                                              16000
```

```
                                IDENT     NVALFIND

PROGRAM LENGTH              00203
ENTRY POINTS    NVALFIND    00003
EXTERNAL SYMBOLS
                QBQDICT.
   00066 SYMBOLS
```

```
      SUBROUTINE PRINTER                                                1000
CSUBR     PRINTER   START     ****************************************  7000
      COMMON/DIRECTRY/IDEF,LASTLIST,NDIMDIR,NDIMLIST,ATTNAME(500),      2000
     1        IFORMAT(500),ICODE(500),DEFAULT(500),IDEFAULT(500),       3000
     2         N1(500),FN1(500),N2(500),FN2(500),LISTCHEK(500),         4000
     3         GLOB(500),LISTVALS(2000)                                 5000
        EQUIVALENCE(N1,FN1),(N2,FN2),(DEFAULT,IDEFAULT)                 6000
              TYPE LOGICAL LISTCHEK,GLOB                                7000
              TYPE INTEGER ATTNAME                                      8000
              EQUIVALENCE(LOG1,LISTCHEK),(LOG2,GLOB)                    9000
      COMMON/JXCODE/TABCODE,IFWHAT                                     10000
      TYPE INTEGER TABCODE                                             11000
      COMMON/SWITCH/COLINSW,ROWINSW,CYCINSW,TRUESW,MAXROWSW,MAXCYCSW,  12000
     1MAXCOLSW,ADDSW,ROWSW,NOSIDESW,VALCOLSW,NSEPSW                    13000
      TYPE INTEGER COLINSW,ROWINSW,CYCINSW,TRUESW,ADDSW,ROWSW,VALCOLSW 14000
      COMMON/CYCS/NAMECYC(50),NUMCYC,CYCSIDE(50)                       15000
      TYPE INTEGER CYCSIDE                                             16000
      COMMON/ROWS/NAMEROW(50,50),NUMROW(50)                            17000
      DIMENSION JXFORM(10)                                             18000
      DATA (JXFORM=4H(1X,1H ,4H,1X,1H ,1H(,1H ,1H,,1H ,1H),1H))        19000
      COMMON/JXFORM/ROWFORM,TABFORM,COLFORM,CYCFORM                    20000
      TYPE INTEGER ROWFORM,TABFORM,COLFORM,CYCFORM                     21000
      COMMON/001/TABLE(9600),NTABLE(9600),XVAL,MVAL                    22000
      EQUIVALENCE (TABLE,NTABLE),(XVAL,MVAL)                           23000
      COMMON/SIZES/MAXCOL,MAXROW,MAXCYC,MAXSET                         24000
      COMMON/ATTIND/ICYCLE,IROW,IADD,ICOL,JSIDE                        25000
      COMMON/TARINDEX/COLIND,CYCIND,ROWIND                             26000
      TYPE INTEGER COLIND,CYCIND,ROWIND                                27000
      COMMON/COLS/NCOL,RANGES(100)                                     28000
      TYPE INTEGER RANGES                                              29000
      COMMON/HEAD/NHEAD,HEAD(14,5)                                     30000
      TYPE INTEGER HEAD                                                31000
      DIMENSION COLADD(16),NCOLADD(16)                                 32000
      EQUIVALENCE (NCOLADD,COLADD)                                     33000
      EQUIVALENCE (ROWADD,NROWADD)                                     34000
      EQUIVALENCE(TROWADD,NTROWADD)                                    35000
      DIMENSION TCOLADD(16),NTCOLADD(16)                               36000
      EQUIVALENCE(TCOLADD,NTCOLADD)                                    37000
      EQUIVALENCE(TOTROW,NTOTROW)                                      38000
      DATA (JCFORM=7H(///2X,,3HA8,,6H3H----,1H ,1H))                   39000
      DIMENSION JCFORM(5)                                              40000
      COMMON/COLVAR/MCOL(50),NAMECOL(12,50)                            41000
      DIMENSION JZFORM(30)                                             42000
      COMMON/FORMATS/INWORD,NFORMT,INABS,IF2X                          43000
      EQUIVALENCE (WORDIN,INWORD),(ABSIN,INABS)                        44000
      NFORMT=TARFORM                                                   45000
      IF2X=2                                                           46000
      IF(NUMCYC) 41,41,40                                              47000
   41 GO TO (42,43),NOSIDES                                            48000
   42 NUMCYC=2                                                         49000
      GO TO 40                                                         50000
   43 NUMCYC=1                                                         51000
   40 CONTINUE                                                         52000
      DO 50 I=1,16                                                     53000
   50 TCOLADD(I)=0                                                     54000
      TOTROW=0                                                         55000
```

```
      DO 8 K=1,NUMCYC                                                   56000
      KPART=(K-1)*MAXRO*                                                57000
      JXFORM(2)=1H                                                      58000
      CALL PAGESKP                                                      59000
      GO TO (31,30,31),VALCOLS*                                         60000
   31 CONTINUE                                                          61000
      NNCOL=*COL(K)+1                                                   62000
      NXNUM=*COL(K)                                                     63000
      GO TO 32                                                          64000
   30 CONTINUE                                                          65000
      NNCOL=NCOL+1                                                      66000
      NXNUM=NCOL                                                        67000
   32 IF(NNCOL .GE. 12) 1,2                                             68000
    1 JXFORM(8)=1H                                                      69000
      JZZ=1H,                                                           70000
      GO TO 5                                                           71000
    2 IF(NNCOL .EQ. 11) 3,4                                             72000
    3 JXFORM(6)=2H1X                                                    73000
      JZZ=4H,1X,                                                        74000
      GO TO 5                                                           75000
  103 FORMAT(I8)                                                        76000
    4 JXFORM(8)=2H2X                                                    77000
      JZZ=4H,2X,                                                        78000
    5 JXFORM(6)=TABFORM                                                 79000
   24 JCFORM(4)=CYCFORM                                                 80000
      JCFORM(1)=7H(///2X,                                               81000
      IF(ICYCLE) 44,44,25                                               82000
   25 PRINT JCFORM,ATTNAME(ICYCLE),NAMECYC(K)                           83000
   44 CONTINUE                                                          84000
      GO TO (33,37),NCSIDES*                                            85000
   33 JCFORM(1)=4H(2X,                                                  86000
      JCFORM(4)=2HA8                                                    87000
      IF(ATTNAME(ICYCLE) .EQ. 4HSIDE) 37,39                             88000
   39 CONTINUE                                                          89000
      PRINT JCFORM,ATTNAME(JSIDE),CYCSIDE(K)                            90000
   37 CONTINUE                                                          91000
      PRINT 100                                                         92000
      PRINT 101,((HEAD(I*,IH),I*=1,14),IH=1,NHEAD)                      93000
  101 FORMAT(10X,7(A8,A2))                                              94000
      IF(ICOL) 305,305,304                                              95000
  305 COLFORM=2HA8                                                      96000
      GO TO 306                                                         97000
  304 PRINT 102,ATTNAME(ICOL)                                           98000
  102 FORMAT(12X,A8)                                                    99000
  306 JXFORM(1)=4H(1X,                                                 100000
      JXFORM(2)=2HA8                                                   101000
      JXFORM(3)=4H,2X,                                                 102000
      JXFORM(9)=5H),2X,                                                103000
      NTHEAD=5HTOTAL                                                   104000
      JXFORM(10)=3HA5)                                                 105000
      JXFORM(6)=COLFORM                                                106000
      ENCODE(8,103,JXFORM(4)) NXNUM                                    107000
      GO TO (35,34,35),VALCOLS*                                        108000
   35 PRINT JXFORM,ATTNAME(IRO*),(NAMECOL(IR,K),IR=1,NXNUM)            109000
     1,NTHEAD                                                          110000
      GO TO 36                                                         111000
```

```
 34 PRINT JXFORM,ATTNAME(IROW),(RANGES(IR),IR=1,NCOL)
   1,NTHEAD
 36 GO TO (51,51,52,52,52,52,51),TABCODE
 51 JZFORM(1)=4H(1X,
    JZFORM(30)=1H)
    JZFORM(3)=3H,2X
    DO 53 IJ=4,28,2
    JZFORM(IJ)=JZZ
 53 JZFORM(IJ+1)=1H
    GO TO 62
 52 JXFORM(2)=ROWFORM
    JXFORM(3)=4H,1X,
    JXFORM(9)=1H)
    JXFORM(10)=1H)
    ENCODE(8,103,JXFORM(4)) NNCOL
 62 CONTINUE
    TROWADD=0
    DO 10 L=1,NNCOL
    COLADD(L)=0
 10 CONTINUE
    JXFORM(6)=TABFORM
    NNROW=NUMROW(K)
    DO 7 I=1,NNROW
    JZFORM(2)=ROWFORM
    NRPART=(I-1+KPART)*MAXCOL
    ROWADD=0
    DO 6 L=1,NXNUM
    IND=NRPART+L
    GO TO (11,11,12,12,6,6,11)TABCODE
 11 ROWADD=ROWADD+TABLE(IND)
    COLADD(L)=COLADD(L)+TABLE(IND)
    TROWADD=TROWADD+TABLE(IND)
    TCOLADD(L)=TCOLADD(L)+TABLE(IND)
    TOTROW=TOTROW+TABLE(IND)
    GO TO (201,207),IFWHAT
201 WORDIN=TABLE(IND)
    CALL FORMAT
207 JZFORM(2*L+3)=NFORMT
    GO TO 6
 12 NROWADD=NROWADD+NTABLE(IND)
    NCOLADD(L)=NCOLADD(L)+NTABLE(IND)
    NTROWADD=NTROWADD+NTABLE(IND)
    NTCOLADD(L)=NTCOLADD(L)+NTABLE(IND)
    NTOTROW=NTOTROW+NTABLE(IND)
  6 CONTINUE
    NSTART=NRPART+1
    NEND=NRPART+NXNUM
    GO TO (60,60,61,61,61,61,60),TABCODE
 60 GO TO (202,208),IFWHAT
202 WORDIN=ROWADD
    CALL FORMAT
208 JZFORM(2*NXNUM+5)=NFORMT
    PRINT JZFORM,NAMEROW(I,K),(TABLE(J),J=NSTART,NEND),ROWADD
    GO TO 7
 61 CONTINUE
    PRINT JXFORM,NAMEROW(I,K),(TABLE(J),J=NSTART,NEND),ROWADD
```

```
  7 CONTINUE                                                          168000
    GO TO (55,55,54,54,54,54,55),TABCODE                              169000
 55 JZFORM(2)=8H6H TOTAL                                              170000
    JZFORM(1)=4H(3X,                                                  171000
    DO 56 IJ=1,NXNUM                                                  172000
    GO TO (203,209),IFWHAT                                            173000
203 WORDIN=COLADD(IJ)                                                 174000
    CALL FORMAT                                                       175000
209 JZFORM(2*IJ+3)=NFORMT                                             176000
 56 CONTINUE                                                          177000
    GO TO (204,210),IFWHAT                                            178000
204 WORDIN=TROWADD                                                    179000
    CALL FORMAT                                                       180000
210 JZFORM(2*NXNUM+5)=NFORMT                                          181000
    PRINT JZFORM,(COLADD(L),L=1,NXNUM),TROWADD                        182000
    GO TO 8                                                           183000
 54 CONTINUE                                                          184000
    JXFORM(1)=4H(4X,                                                  185000
    JXFORM(2)=7H5HTOTAL                                               186000
    PRINT JXFORM,(COLADD(L),L=1,NXNUM),TROWADD                        187000
  8 CONTINUE                                                          188000
    PRINT 104                                                         189000
104 FORMAT(////20X,20HTOTAL FOR ALL CYCLES /)                         190000
    GO TO (57,57,58,58,58,58,57),TABCODE                              191000
 57 DO 59 IJ=1,NXNUM                                                  192000
     GO TO (205,211),IFWHAT                                           193000
205 WORDIN=TCOLADD(IJ)                                                194000
    CALL FORMAT                                                       195000
211 JZFORM(2*IJ+3)=NFORMT                                             196000
 59 CONTINUE                                                          197000
    GO TO (206,212),IFWHAT                                            198000
206 WORDIN=TOTROW                                                     199000
    CALL FORMAT                                                       200000
212 JZFORM(2*NXNUM+5)=NFORMT                                          201000
    PRINT JZFORM,(TCOLADD(L),L=1,NXNUM),TOTROW                        202000
    RETURN                                                            203000
 58 CONTINUE                                                          204000
    PRINT JXFORM,(TCOLADD(L),L=1,NXNUM),TOTROW                        205000
100 FORMAT(/)                                                         206000
    END                                                               207000
```

```
                                        IDENT     PRINTER
PROGRAM LENGTH                  01454
ENTRY POINTS      PRINTER       00212
BLOCK NAMES
                  DIRECTRY      11654
                  JXCODE        00002
                  SWITCH        00014
                  CYCS          00145
                  ROWS          04766
                  JXFORM        00004
                  1             22601
                  SIZES         00004
                  ATTIND        00005
                  TABINDEX      00003
                  COLS          00145
                  HEAD          00107
                  COLVAR        01212
                  FORMATS       00004
EXTERNAL SYMBOLS
                  THEND.
                  QBQDICT.
                  PAGESKP
                  FORMAT
                  STH.
                  ENC.
                  QNSINGL.
   00426 SYMBOLS
```

```
      SUBROUTINE ROWFIND                                                1000
CSUBR     ROWFIND   START     ****************************************  8000
      COMMON/SIZES/MAXCOL,MAXROW,MAXCYC,MAXSET                          2000
      COMMON/TABINDEX/COLIND,CYCIND,ROWIND                              3000
      TYPE INTEGER COLIND,CYCIND,ROWIND                                 4000
      COMMON/SWITCH/COLINSW,ROWINSW,CYCINSW,TRUESW,MAXROWSW,MAXCYCSW,   5000
     1MAXCOLSW,ADDSW,ROWSW,NOSIDESW,VALCOLSW,NSEPSW                     6000
      TYPE INTEGER COLINSW,ROWINSW,CYCINSW,TRUESW,ADDSW,ROWSW,VALCOLSW  7000
      COMMON/ATTIND/ICYCLE,IROW,IADD,ICOL,JSIDE                         8000
      COMMON/ROWS/NAMEROW(50,50),NUMROW(50)                             9000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500) 10000
      TYPE INTEGER VALUE                                                11000
      TYPE LOGICAL DEF,LGLOB                                            12000
      COMMON/INITROW/NUMROWS,INITROW(100),MXROW                         13000
      ROWINSW=1                                                         14000
      ROWIND=ITLE(VALUE(IROW),NAMEROW(1,CYCIND),NUMROW(CYCIND))         15000
      GO TO (11,9),ROWSW                                                16000
   11 IF(ROWIND) 12,12,6                                                17000
   12 NRIND=ITLE(VALUE(IROW),INITROW,NUMROWS)                           18000
      IF(NRIND) 5,5,4                                                   19000
    9 CONTINUE                                                          20000
      IF(ROWIND) 1,1,6                                                  21000
    1 IF(NUMROW(CYCIND) .EQ. MAXROW) 2,4                                22000
    2 MAXROWSW=MAXROWSW+1                                               23000
    5 ROWINSW=2                                                         24000
    6 RETURN                                                            25000
    4 NUMROW(CYCIND)=NUMROW(CYCIND)+1                                   26000
      NAMEROW(NUMROW(CYCIND),CYCIND)=VALUE(IROW)                        27000
      ROWIND=NUMROW(CYCIND)                                             28000
      RETURN                                                            29000
      END                                                               30000
```

```
                                    IDENT     ROWFIND
PROGRAM LENGTH                00126
ENTRY POINTS     ROWFIND      00003
BLOCK NAMES
                 SIZES        00004
                 TABINDEX     00003
                 SWITCH       00014
                 ATTIND       00005
                 ROWS         04766
                 PROCESS      01173
                 INITROW      00146
EXTERNAL SYMBOLS
                 DBQDICT.
                 ITLE
   00075 SYMBOLS
```

```
      SUBROUTINE SETUP                                                  1000
CSUBR     SETUP     START     ****************************************  9000
      COMMON/PASS/NSIDENOW,NPASS                                        2000
      TYPE INTEGER COLINSW,ROWINSW,CYCINSW,TRUESW,ADDSW,ROWSW,VALCOLSW  3000
      COMMON/DIRECTRY/IDEF,LASTLIST,NDIMDIR,NDIMLIST,ATTNAME(500),      4000
     1        IFORMAT(500),ICODE(500),DEFAULT(500),IDEFAULT(500),       5000
     2         N1(500),FN1(500),N2(500),FN2(500),LISTCHEK(500),         6000
     3         GLOB(500),LISTVALS(2000)                                 7000
               EQUIVALENCE(N1,FN1),(N2,FN2),(DEFAULT,IDEFAULT)          8000
               TYPE LOGICAL LISTCHEK,GLOB                               9000
               TYPE INTEGER ATTNAME                                    10000
               EQUIVALENCE(LOG1,LISTCHEK),(LOG2,GLOB)                  11000
      COMMON/SETS/SETNAME(100),SETREL(100),SETLEFT(100),SETRIGHT(100),12000
     1VALORSET(100),SETVAL(100),SETTRUE(100),SETDEF(100),NSETS        13000
      DIMENSION NX(16)                                                14000
      TYPE INTEGER SETNAME,SETREL,SETLEFT,SETRIGHT,SETVAL             15000
      TYPE LOGICAL VALORSET,SETTRUE,SETDEF                            16000
      COMMON/SIZES/MAXCOL,MAXROW,MAXCYC,MAXSET                        17000
      COMMON/ATTIND/ICYCLE,IROW,IADD,ICOL,JSIDE                       18000
      COMMON/SWITCH/COLINSW,ROWINSW,CYCINSW,TRUESW,MAXROWSW,MAXCYCSW, 19000
     1MAXCOLSW,ADDSW,ROWSW,NOSIDESW,VALCOLSW,NSEPSW                   20000
      COMMON/ROWS/NAMEROW(50,50),NUMROW(50)                           21000
      COMMON/COLS/NCOL,RANGES(100)                                    22000
      TYPE INTEGER RANGES                                             23000
      COMMON/HEAD/NHEAD,HEAD(14,5)                                    24000
      TYPE INTEGER HEAD                                               25000
      COMMON/INITROW/NUMROWS,INITROW(100),MXROW                       26000
      COMMON/COMMAND/NCOMM,ICOMMAND(12)                               27000
      COMMON/JXFORM/ROWFORM,TABFORM,COLFORM,CYCFORM                   28000
      TYPE INTEGER ROWFORM,TABFORM,COLFORM,CYCFORM                    29000
      COMMON/JXCODE/TABCODE,IFWHAT                                    30000
      TYPE INTEGER TABCODE                                            31000
      DIMENSION NFORM(3)                                              32000
      DATA (NFORM=1H(,1H ,1H))                                        33000
      DATA (NCOMM=8),(ICOMMAND=3HSET,6HHEADER,5HCYCLE,3HADD,3HROW,    34000
     16HCOLUMN,3HRUN,4HSTOP,1H ,1H ,1H ,1H )                          35000
C     SETNAME INCLUDES NAMES OF ALL SETS                              36000
C     SETREL= ASWITCH FOR VALUE TESTS                                 37000
C     SETLEFT= THE ATTRIBUTE NAME OR SET DEFINITION ON LEFT           38000
C     SETRIGHT= THE ATTRIBUTE VALUE OR SET NAME ON RIGHT              39000
C     VALORSET= A LOGICAL ARRAY 1, IF VALUE TEST, 0 IF SET TEST       40000
C     SETVAL= TRUTH VALUE OF THE SET FOR ITEMS                        41000
C     SETTRUE= 1 IF SET MUST BE TRUE FOR ITEM, 0 OTHERWISE            42000
C     SETDEF= 1 IF SET CURRENTLY DEFINED, 0 OTHERWISE                 43000
C     NSETS= NUMBER OF SETS                                           44000
C     MAXSET= MAXIMUM NUMBER OF SETS                                  45000
      COMMON/ITIME/ITIME,NTEMP,XTEMP                                  46000
      EQUIVALENCE (NTEMP,XTEMP)                                       47000
      ITIME=ITLE(4HTIME,ATTNAME,IDEF)                                 48000
      JSIDE=ITLE(4HSIDE,ATTNAME,IDEF)                                 49000
  999 CONTINUE                                                        50000
      CALL PAGESKP                                                    51000
      IXSW=1                                                          52000
      READ 100,NX                                                     53000
      PRINT 105,NX                                                    54000
      IF(NX(1) .EQ. 4HSIZE) 300,301                                   55000
```

```
  301 MAXROW=30
      MAXCYC=26
  305 NSEPSW=1
      CALL INITIL
      GO TO 997
  300 MAXROW=NUMGET(NX(3),8)
      MAXCYC=NUMGET(NX(5),8)
      IF(MAXROW*MAXCYC*2 .GT. 800) 302,304
  302 IF(MAXROW*MAXCYC .GT. 800) 303,306
  303 PRINT 106,NX
      IXSWW=2
  106 FORMAT(3H **,8(A8,2X),5X,20HDIMENSIONS TOO LARGE)
      GO TO 998
  304 MAXCYC=MAXCYC*2
      NSEPSW=1
      GO TO 998
  306 NSEPSW=2
      NSIDENOW=4HBLUE
  998 CALL INITIL
    3 READ 100,NX
  105 FORMAT(1H ,8(A8,A2))
      PRINT 105,NX
  100 FORMAT(8(A8,A2))
  997 CONTINUE
      ICOMM=ITLE(NX(1),ICOMMAND,NCOMM)
      IF(ICOMM) 213,213,17
   17 GO TO (1,50,60,70,90,200,230,240),ICOMM
C     ***********************SET*****************************************
    1 LOGREL=INTREL(NX(7))
      IF(LOGREL) 2,2,4
    2 PRINT 101,NX
  101 FORMAT(3H **,8(A8,A2),5X,23HIMPROPER SET DEFINITION)
      IXSWW=2
      GO TO 3
    4 IF(NSETS .EQ. MASET) 5,7
    5 PRINT 102
  102 FORMAT(3H **,19HNO OF SETS EXCEEDED)
      IXSWW=2
      GO TO 3
    7 NSETS=NSETS+1
      SETREL(NSETS)=LOGREL
      IF(LOGREL .GT. 4) 8,14
C     SET  ATTR  OPER  VALUE
    8 SETNAME(NSETS)=NX(3)
      SETLEFT(NSETS)=ITLE(NX(5),ATTNAME,IDEF)
      IF(SETLEFT(NSETS)) 2,2,9
    9 IC=ICODE(SETLEFT(NSETS))
      GO TO (11,11,10,10,12,12,11),IC
   10 SETRIGHT(NSETS)=NUMGET(NX(9),8)
      GO TO 13
   11 NFORM(2)=IFORMAT(SETLEFT(NSETS))
      DECODE(8,NFORM,NX(9)) SETRIGHT(NSETS)
      GO TO 13
   12 SETRIGHT(NSETS)=NX(9)
   13 VALORSET(NSETS)=1
      SETTRUE(NSETS)=1
```

```
      SETDEF(NSETS)=1
      GO TO 3
C     AND OR NOT DEFINITIONS
   14 CONTINUE
      SETNAME(NSETS)=NX(3)
      SETLEFT(NSETS)=ITLE(NX(5),SETNAME,NSETS)
      IF(SETLEFT(NSETS)) 2,2,15
   15 VALORSET(NSETS)=0
      SETTRUE(NSETS)=1
      SETTRUE(SETLEFT(NSETS))=0
      SETRIGHT(NSETS)=ITLE(NX(9),SETNAME,NSETS)
      IF(SETRIGHT(NSETS)) 2,2,16
   16 SETTRUE(SETRIGHT(NSETS))=0
      SETDEF(NSETS)=1
      GO TO 3
C     ************************HEADER*************************************
   50 IF(NHEAD .EQ. 5) 3,52
   52 NHEAD=NHEAD+1
      DO 53 I=1,14
   53 HEAD(I,NHEAD)=NX(I+2)
      GO TO 3
C     ************************CYCLE**************************************
   60 IF(NX(3) .EQ. 6HNOSIDE) 61,64
   64 ICYCLE=ITLE(NX(3),ATTNAME,IDEF)
      CYCFORM=IFORMAT(ICYCLE)
      IF(ICYCLE) 62,62,65
   65 IF(NX(5) .EQ. 6HNOSIDE) 61,3
   61 NOSIDESW=2
      GO TO 3
   62 PRINT 63,NX
   63 FORMAT(3H **,8(A8,A2),5X,26HATTRIBUTE NOT IN DIRECTORY)
      IXSW=2
      GO TO 3
C     ************************ADD****************************************
   70 IF(NX(3) .EQ. 1H ) 80,71
   71 ADDSW=1
      IFWHAT=1
      IADD=ITLE(NX(3),ATTNAME,IDEF)
      TABCODE=ICODE(IADD)
      TABFORM=IFORMAT(IADD)
      IF(NX(5) .EQ. 1H ) 72,73
   73 TABFORM=NX(5)
      IFWHAT=2
   72 IF(IADD) 62,62,3
C     ************************COUNT**************************************
   80 ADDSW=2
      IFWHAT=1
      TABFORM=2HIR
      TABCODE=3
      IF(NX(5) .EQ. 1H ) 3,81
   81 TABFORM=NX(5)
      IFWHAT=2
      GO TO 3
C     ************************ROW****************************************
   90 IROW=ITLE(NX(3),ATTNAME,IDEF)
      ROWFORM=IFORMAT(IROW)
```

```
      IF(IHOW) 62,62,91
   91 IF(NX(5) .EQ. 1H ) 92,93
   92 ROWSW=2
      GO TO 3
   93 ROWSW=1
      NADD=4
      NN=12
   96 DO 95 I=1,NN,2
      IF(NX(I+NADD) .NE. 1H ) 94,3
   94 IF(NUMROWS .EQ. MXROW) 3,97
   97 NUMROWS=NUMROWS+1
      DECODE(8,ROWFORM,NX(I+NADD)) INITROW(NUMROWS)
   95 CONTINUE
      NADD=0
      NN=16
      READ 100,NX
      PRINT 105,NX
      ICOMM=ITLE(NX(1),ICOMMAND,NCOMM)
      IF(ICOMM) 96,96,17
C     ************************COLUMN*************************************
  200 ICOL=ITLE(NX(3),ATTNAME,IDEF)
      COLFORM=IFORMAT(ICOL)
      IF(ICOL) 62,62,202
  202 NCOL=0
      IF(NX(5) .EQ. 5HMATCH) 203,211
C     LIST TO MATCH ON FOLLOWS
  203 VALCOLSW=1
  215 IC=ICODE(ICOL)
      NFORM(2)=IFORMAT(ICOL)
      NN=10
      NADD=6
  209 DO 210 I=1,NN,2
      IF(NX(I+NADD) .EQ. 1H ) 3,219
  219 GO TO (220,207,220),VALCOLSW
  220 IF(NCOL .EQ. 100) 3,208
  207 IF(NCOL .EQ. MAXCOL) 3,208
  208 NCOL=NCOL+1
      GO TO (204,204,205,205,206,206,204),IC
  205 RANGES(NCOL)=NUMGET(NX(I+NADD),8)
      GO TO 210
  204 DECODE(8,NFORM,NX(I+NADD)) RANGES(NCOL)
      GO TO 210
  206 RANGES(NCOL)=NX(I+NADD)
  210 CONTINUE
      NADD=0
      READ 100,NX
      PRINT 105,NX
      ICOMM=ITLE(NX(1),ICOMMAND,NCOMM)
      IF(ICOMM) 216,216,17
  216 NN=16
      GO TO 209
  211 IF(NX(5) .EQ. 3HMAX) 212,217
  217 IF(NX(5) .EQ. 1H ) 218,213
  218 VALCOLSW=3
      GO TO 3
  213 PRINT 214,NX
```

```
  214 FORMAT(3H **,8(A8,A2),5X,15HIMPROPER FORMAT)                  224000
      IXSWW=2                                                       225000
      GO TO 3                                                       226000
C     MAXIMUM FOR EACH COLUMN FOLLOWS                               227000
  212 VALCOLSW=2                                                    228000
      GO TO 215                                                     229000
C     ***********************RUN*****************************************230000
  230 CONTINUE                                                      231000
      GO TO (232,233),IXSWW                                         232000
  232 RETURN                                                        233000
  233 CALL INITIL                                                   234000
      GO TO 999                                                     235000
C     ***********************STOP****************************************236000
  240 WRITE(44,7777)                                                237000
 7777 FORMAT(41H ***** PROCESSOR TABGEN   COMPLETED *****)          238000
      STOP                                                          239000
      END                                                           240000
```

```
                                        IDENT     SETUP
PROGRAM LENGTH                 01331
ENTRY POINTS     SETUP         00171
BLOCK NAMES
                 PASS          00002
                 DIRECTRY      11654
                 SETS          01001
                 SIZES         00004
                 ATTIND        00005
                 SWITCH        00014
                 ROWS          04766
                 COLS          00145
                 HEAD          00107
                 INITROW       00146
                 COMMAND       00015
                 JXFORM        00004
                 JXCODE        00002
                 ITIME         00002
EXTERNAL SYMBOLS
                 THEND.
                 Q3Q10040
                 QRQSTOPS
                 Q8QDICT.
                 ITLE
                 PAGESKP
                 INITIL
                 NUMGET
                 INTREL
                 TSH.
                 DEC.
                 STH.
                 SLO.
                 SLI.
                 QNSINGL.
  00346 SYMBOLS
```

```
      SUBROUTINE TABLER                                                 1000
CSUBR     TABLER    START     ****************************************  10000
      COMMON/001/TABLE(9600),NTABLE(9600),XVAL,MVAL                     2000
      EQUIVALENCE (TABLE,NTABLE),(XVAL,MVAL)                            3000
      COMMON/ATTIND/ICYCLE,IROW,IADD,ICOL,JSIDE                         4000
      COMMON/JXCODE/TABCODE,IFWHAT                                      5000
      TYPE INTEGER TABCODE                                              6000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500) 7000
      TYPE INTEGER VALUE                                                8000
      TYPE LOGICAL DEF,LGLOB                                            9000
      TYPE INTEGER COLINSW,ROWINSW,CYCINSW,TRUESW,ADDSW,ROWSW,VALCOLSW  10000
      COMMON/SWITCH/COLINSW,ROWINSW,CYCINSW,TRUESW,MAXROWSW,MAXCYCSW,   11000
     1MAXCOLSW,ADDSW,ROWSW,NOSIDESW,VALCOLSW,NSEPSW                     12000
      COMMON/TABINDEX/COLIND,CYCIND,ROWIND                              13000
      TYPE INTEGER COLIND,CYCIND,ROWIND                                 14000
      COMMON/SIZES/MAXCOL,MAXROW,MAXCYC,MAXSET                          15000
      IND=COLIND-1+MAXCOL*(ROWIND-1+MAXROW*(CYCIND-1))+1                16000
      GO TO (1,2),ADDSW                                                 17000
    2 NTABLE(IND)=NTABLE(IND)+1                                         18000
      RETURN                                                            19000
    1 MVAL=VALUE(IADD)                                                  20000
      GO TO (3,3,4,4,5,5,3),TABCODE                                     21000
    5 RETURN                                                            22000
    3 TABLE(IND)=TABLE(IND)+XVAL                                        23000
      RETURN                                                            24000
    4 NTABLE(IND)=NTABLE(IND)+MVAL                                      25000
      RETURN                                                            26000
      END                                                               27000
```

```
                                    IDENT     TABLER
PROGRAM LENGTH                 00062
ENTRY POINTS      TABLER       00003
BLOCK NAMES
                  1            22601
                  ATTIND       00005
                  JXCODE       00002
                  PROCESS      01173
                  SWITCH       00014
                  TABINDEX     00003
                  SIZES        00004
EXTERNAL SYMBOLS
                  QBQDICT.
  00064 SYMBOLS
```

```
      SUBROUTINE TRUTH                                                  1000
CSUBR     TRUTH     START     ****************************************  11000
      COMMON/SWITCH/COLINSW,ROWINSW,CYCINSW,TRUESW,MAXROWSW,MAXCYCSW,    2000
     1MAXCOLSW,ADDSW,ROWSW,NOSIDES#,VALCOLSW,NSEPSW                      3000
      TYPE INTEGER COLINSW,ROWINSW,CYCINSW,TRUES#,ADDS#,RO#SW,VALCOLSW   4000
C     TRUESW=1 FOR ACCEPT ITEM, 2 FOR REJECT                             5000
      COMMON/PROCESS/NI,NV,NC,INITEM(100),VALUE(500),DEF(500),LGLOB(500) 6000
      TYPE INTEGER VALUE                                                 7000
      TYPE LOGICAL DEF,LGLOB                                             8000
      COMMON/SETS/SETNAME(100),SETREL(100),SETLEFT(100),SETRIGHT(100),   9000
     1VALORSET(100),SETVAL(100),SETTRUE(100),SETDEF(100),NSETS          10000
      TYPE INTEGER SETNAME,SETREL,SETLEFT,SETRIGHT,SETVAL               11000
      TYPE LOGICAL VALORSET,SETTRUE,SETDEF                              12000
      DO 3 I=1,NSETS                                                    13000
      IF(SETDEF(I)) 1,3                                                 14000
    1 IF(VALORSET(I)) 5,6                                               15000
    5 SETVAL(I)=NVALFIND(SETREL(I),VALUE(SETLEFT(I)),SETRIGHT(I))       16000
    7 IF(SETTRUE(I)) 2,3                                                17000
    2 IF(SETVAL(I)) 3,4                                                 18000
    6 SETVAL(I)=NVALFIND(SETREL(I),SETVAL(SETLEFT(I)),SETVAL(SETRIGHT(I)) 19000
     1))                                                                20000
      GO TO 7                                                           21000
    3 CONTINUE                                                          22000
      TRUESW=1                                                          23000
      RETURN                                                            24000
    4 TRUESW=2                                                          25000
      END                                                               26000
```

```
                                        IDENT     TRUTH
PROGRAM LENGTH                 00102
ENTRY POINTS     TRUTH         00003
BLOCK NAMES
                 SWITCH        00014
                 PROCESS       01173
                 SETS          01001
EXTERNAL SYMBOLS
                 Q300004U
                 Q8QDICT.
                 NVALFIND
   00062 SYMBOLS
```

```
      PROGRAM HISTP                                                     1000
CSUBR     HISTP     SCCF71    ****************************************  1100
      TYPE INTEGER EVENT,BCCDE,TYPE,ZONE,TAIM,DGX, DGY,DGZ,AGX,AGY,AGZ  2000
     1,TARLIST                                                          3000
      TYPE INTEGER CODE,SIDE                                            4000
      DIMENSION NPENZ(63)                                               5000
      EQUIVALENCE (NPENZ,NHISTOUT(8))                                   6000
      EQUIVALENCE( IBEG,NHISTOUT(3)),(IEND,NHISTOUT(5))                 7000
      EQUIVALENCE (HTIME,TIME)                                          8000
      COMMON/NAMES/NAMESIDE(2),NAMECLAS(15),NAMETYPE(250)               9000
      COMMON/ITP/ITP                                                   11000
      COMMON/TWORD/ITWORD                                              12000
      COMMON/NOPRINT/NOPRINT                                           12100
      COMMON/MYIDENT/MYIDENT                                           12200
      COMMON/BRKPOINT/NTYPECUM(15),NBLUETYP(15),INDBEGCL(15)           13000
     1INDHEGTY(250)                                                    14000
      COMMON/HISTOUT/SIDE,INDEXNO,INDV,INTAR,NWTYP,TIME,EVENT,PLACE,NYPE 15000
     1,KCLASS,IWEG,IALERT,IUUD,ZONE,NDECOYS,IALT,NCM,ASKTYPE,BCCDE,NHIST 16000
     1OUT(200)                                                          17000
      EQUIVALENCE(SIDE,NHISTOUT(1))                                     18000
      EQUIVALENCE(DGY,NCCDE,NHISTOUT(14))                               19000
      EQUIVALENCE(NTLIST,DGZ,NWHDS,NDET,NWPNS,NHISTOUT(15))             20000
      EQUIVALENCE(AGX,TAIM,NPEN,NTARG,NHISTOUT(16))                     21000
      EQUIVALENCE(AGY,NTERM,NCYCLE,NHISTOUT(17))                        22000
      EQUIVALENCE(AGZ,NAREA,NSUCC,NHISTOUT(18))                         23000
      EQUIVALENCE(NCOL,NTEST,NHISTOUT(19))                              24000
      EQUIVALENCE(LAUNLIS,NHISTOUT(43))                                 25000
      EQUIVALENCE(TARLIST,NHISTOUT(61))                                 26000
      EQUIVALENCE(NTRYLC,NHISTOUT(79))                                  27000
      EQUIVALENCE(DGX,NMIRV,NAL,NHISTOUT(13))                           28000
      EQUIVALENCE(INTARC,NDEPEN,NHISTOUT(20))                           29000
      EQUIVALENCE (THOUR,NHISTOUT(21))                                  30000
      EQUIVALENCE (INZONE,NHISTOUT(14))                                 31000
      EQUIVALENCE (FUTIME,NHISTOUT(22))                                 31500
      EQUIVALENCE (FTIME,NHISTOUT(8))                                   31700
      EQUIVALENCE (INMASE,NHISTOUT(2))                                  31900
      DIMENSION LAUNLIS(18)                                             32000
      DIMENSION TARLIST(18)                                             33000
      DIMENSION NTRYLC(18)                                              34000
      DIMENSION NTLIST(15)                                              35000
      DIMENSION INTARC(40)                                              36000
      TYPE INTEGER CLSSWAN,TYPEWAN,SIDEWAN                              37000
      DIMENSION JPRINT(80)                                              38000
      DIMENSION TX(50),TY(50)                                           39000
      DIMENSION KALT(2)                                                 40000
      DATA(KALT=5H HIGH,5H  LOW)                                        41000
      DATA(IKS24=100000008)                                             42000
      TYPE INTEGER PLACE                                                45000
      EQUIVALENCE (NWPNLIST,NHISTOUT(25))                               46000
      DIMENSION NWPNLIST(18)                                            47000
      DIMENSION IRECOV(50,4,2)                                          48000
      LSHIFT=64                                                         49000
      NCONT=0                                                           50000
      NOPRINT=1                                                         50100
      READ 8888, JPRINT                                                 51000
 8888 FORMAT(80I1)                                                      52000
```

```
      READ 6888,  ITIM                                                  53000
 6888 FORMAT(I10)                                                       54000
      IF(ITIM.LE.0) 6889,68810                                          55000
68810 READ 6088,(TX(I),TY(I),I=1,ITIM)                                  56000
 6088 FORMAT(2F10.4)                                                    57000
 6889 READ6085,CLSSWAN,TYPEWAN,SIDEWAN                                  58000
 6085 FORMAT(3(A8,2X))                                                  59000
      READ 6888,IFUT                                                    59500
      PRINT 14401,ITIM                                                  60000
14401 FORMAT(37H TELLS HISTORY BETWEEN THE FOLLOWING ,I8,11H TIME PAIRS) 61000
      DO 14406 J=1,ITIM                                                 62000
      PRINT 14402,TX(J),TY(J)                                           63000
14402 FORMAT(F10.4,7X,F10.4)                                            64000
14406 CONTINUE                                                          65000
      PRINT 14403, CLSSWAN                                              66000
14403 FORMAT(5H FOR ,A8,10H CLASS(ES))                                  67000
      PRINT 14404, TYPEWAN                                              68000
14404 FORMAT(5H FOR ,A8, 8H TYPE(S))                                    69000
      PRINT 14405,SIDEWAN                                               70000
14405 FORMAT(5H FOR ,A8, 8H SIDE(S))                                    71000
      MYIDENT=8HHISTP                                                   71100
      IF(IFUT .EQ. 1) 9903,9904                                         71120
 9903 PRINT 9905                                                        7114
 9905 FORMAT(23H FUTIME WILL BE PRINTED )                               71160
 9904 CONTINUE                                                          71180
      CALL INITAPE                                                      72000
      ITP=1                                                             73000
      MYIDENT=8HHISTAPE                                                 73100
      CALL SETREAD                                                      74000
88886 CALL RDWORD                                                       78000
      IF(ITWORD .EQ. 4HLAST) 88885,88886                                79000
88885 CALL RDARRAY(IRECOV,400)                                          80000
      CALL TERMTAP                                                      80100
      CALL SETREAD                                                      80200
      CALL SKIPFILE(ITP)                                                81000
       BUFFERIN(ITP,1) (NTYPECUM(I),INUBEGTY(250))                      82000
  725 IF(UNIT,ITP) 725,726,727,727                                      83000
  727 PRINT 728                                                         84000
  728 FORMAT(35H ERROR IN READING BREAKPOINT TABLES)                    85000
      STOP                                                              86000
  726 CONTINUE                                                          87000
      BUFFERIN(ITP,1) (NAMESIDE(I), NAMETYPE(250))                      87010
 7725 IF( UNIT,ITP) 7725, 7726, 727, 727                                87020
 7726 CALL TERMTAPE                                                     87030
      CALL SETREAD                                                      88000
    1 CALL RDWORD                                                       89000
      IF(ITWORD .EQ. 0) 1,88889                                         90000
88889 CONTINUE                                                          91000
      IF(ITWORD.EQ.4HLAST)88888,2                                       92000
    2 CALL RDARRAY(NMISTOUT,ITWORD)                                     93000
 6092 IF(ITIM.LE.0)6084,6082                                            94000
 6082 DO6083 I=1,ITIM                                                   95000
       IF( TIME .GE. TX(I) .AND. TIME .LT. TY(I) + .0001) 6084, 6083    96000
 6083 CONTINUE                                                          97000
      GO TO 9999                                                        98000
 6084 JTYPE=NTYPE+NTYPECUM(KCLASS-1)                                    99000
```

```
      NSIDE=SIDE                                                        100000
      ITYPE=NYPE                                                        101000
      TYPE=NAMETYPE(JTYPE)                                              102000
      SIDE=NAMESIDE(SIDE)                                               103000
      ICLASS=NAMECLAS(KCLASS)                                           104000
      IF( EVENT .EQ. 6) 6060, 6070                                      104100
 6060 IF( SIDEWAN .EQ. 3HALL .OR. SIDEWAN .NE. SIDE ) 60, 9999          104200
 6070 CONTINUE                                                          104300
      IF(SIDEWAN .EQ. 3HALL) 6089,6090                                  105000
 6090 IF(SIDE .EQ. SIDEWAN) 6089,9999                                   106000
 6089 IF(CLSSWAN .EQ. 3HALL) 6087,6086                                  107000
 6086 IF(ICLASS .EQ. CLSSWAN) 6087,9999                                 108000
 6087 IF(TYPE WAN .EQ. 3HALL) 3,6088                                    109000
 6088 IF(TYPE .EQ. TYPEWAN) 3,9999                                      110000
    3 GO TO(10,20,30,40,50,60,70,80,90,100,110,120,130,140,150,160,170,1 111000
     180,190,200,210),EVENT                                             112000
C     MISSILE LAUNCH EVENT                                              113000
   10 IF(JPRINT(1))11,12                                                114000
   11 PRINT 9011,TIME,NWPNS,NAMETYPE(ITYPE),NTARG                       115000
 9011 FORMAT(F9.4,3X,7H LAUNCH,I4,1X,A8,8H AGAINST,I4,8H TARGETS)       116000
   12 IF(JPRINT(2))13,15                                                117000
   13 DO 14 I=1,NCYCLE                                                  118000
      J=NTRYLC(I)                                                       119000
      GO TO (131,132,133,134,135,136,137,138),J                         120000
  131 PRINT 9131,NWPNLIST(I),LAUNLIS(I)                                 121000
 9131 FORMAT(10X,8H MISSILE,I3,1H-,I4,18H NOT IN COMMISSION)            122000
      GO TO 14                                                          123000
  132 PRINT 9132,NWPNLIST(I),LAUNLIS(I)                                 124000
 9132 FORMAT(10X,8H MISSILE,I3,1H-,I4,5H SILO,5H DEAD)                  125000
      GO TO 14                                                          126000
  133 PRINT 9133,NWPNLIST(I),LAUNLIS(I)                                 127000
 9133 FORMAT(10X,8H MISSILE,I3,1H-,I4,13H LAUNCH ABORT)                 128000
      GO TO 14                                                          129000
  134 PRINT 9134,NWPNLIST(I),LAUNLIS(I)                                 130000
 9134 FORMAT(10X,8H MISSILE,I3,1H-,I4,12H ABORT, SILO,10H DESTROYED)    131000
      GO TO 14                                                          132000
  135 PRINT 9135,NWPNLIST(I),LAUNLIS(I)                                 133000
 9135 FORMAT(10X,8H MISSILE,I3,1H-,I4,25H FAILED IN POWERED FLIGHT)     134000
  136 GO TO 14                                                          135000
  137 GO TO 14                                                          136000
  138 PRINT 9138,NWPNLIST(I),LAUNLIS(I)                                 137000
 9138 FORMAT(10X,8H MISSILE,I3,1H-,I4,24H NOT IN COMMISSION, SILO,5H DEA 138000
     D)                                                                 138100
   14 CONTINUE                                                          139000
   15 IF(JPRINT(3))16,17                                                140000
   16 IF(NCYCLE.EQ.NWPNS)161,162                                        141000
  161 K1=8HMISSILES                                                     142000
      K2=8HLAUNCHED                                                     143000
      GO TO 163                                                         144000
  162 K1=8H TARGETS                                                     145000
      K2=8HCOVERED                                                      146000
  163 PRINT 9163,K1,K2,NSUCC                                            147000
 9163 FORMAT(10X,5H ALL ,A8,1X,A8,9H, NSUCC =,I5)                       148000
   17 IF(JPRINT(4)) 186,187                                             149000
  186 J=0                                                               150000
      DO 185 I=1,NCYCLE                                                 151000
```

```
      IF(NMIRVLC(I) .EQ. 6) 182,185
  182 J=J+1
      IF(NMIRV .EQ. 1) 183,184
  183 PRINT 9183,NWPNLIST(I),LAUNLIS(I),INBASE,TARLIST(J),FUTIME
 9183 FORMAT(2X,8H MISSILE,I3,1H-,I4,10H FROM BASE,I6,17H TO ARRIVE AT
     1TGT,I6,3H AT,F8.4)
      GO TO 185
  184 PRINT 9184,NWPNLIST(I),LAUNLIS(I),NMIRV
 9184 FORMAT(20X,8H MISSILE,I3,1H-,I4,17H LAUNCHED AGAINST,I3,8H TARGETS
     1)
  185 CONTINUE
  187 GO TO 9999
C     NUMBER OF TANKER LAUNCH EVENT
   20 GO TO (201,202,203)BCODE
  201 IF(JPRINT(6))211,9999
  211 PRINT 2001,TIME,TYPE,INDV,INDEXNO,THOUR
 2001 FORMAT(F9.4,4X,A8,I3,1H-,I4,17H LAUNCH, TABORT =,F8.4)
      GO TO 9900
  202 IF(JPRINT(8))222,9999
  222 PRINT 2002,TIME,TYPE,INDV,INDEXNO
 2002 FORMAT(F8.4,4X,A8,I3,1H-,I4,22H NO LAUNCH - BASE DEAD)
      GO TO 9900
  203 IF(JPRINT(7)) 233,9999
  233 PRINT 2003,TIME,TYPE,INDV,INDEXNO,THOUR
 2003 FORMAT(F8.4,4X,A8,I3,1H-,I4,21H ABORT, NEW LAUNCH AT,F8.4)
      GO TO 9900
   30 NCONT=NCONT+1
      IF(NCONT .GT. 5) 33335,33334
33334 PRINT 33333,NCODE
33333 FORMAT(4X,O16)
33335 GO TO (31,32) NCODE
   31 IF(JPRINT(47)) 311,312
  311 PRINT 9311,HTIME,NAMETYPE(ITYPE),INDV,INDEXNO,NMIRV
 9311 FORMAT(F9.4,4X,A8,I3,1H-,I4,9H RELEASES,I3,6H MIRVS)
  312 IF(JPRINT(48)) 313,9999
  313 DO 314 I=1,NMIRV
  314 PRINT 9313,NTLIST(I)
 9313 FORMAT(48X,I5)
      GO TO 9999
   32 IF(JPRINT(9)) 321,9999
  321 PRINT 9321,HTIME,NAMETYPE(ITYPE),INDV,INDEXNO,NMIRV
 9321 FORMAT(F9.4,4X,A8,I3,1H-,I4,25H DESTROYED IN FLIGHT WITH,I3,6H MIR
     1VS)
      GO TO 312
C     NUMBER REFUEL EVENT
   40 IF(BCODE.EQ.1)   401,41
   41 IF(BCODE.EQ.4.OR.BCODE.EQ.19.OR.BCODE.EQ.29)404,42
   42 IF(BCODE.EQ.5.OR.BCODE.EQ.20.OR.BCODE.EQ.30)405,401
  401 IF(JPRINT(10))4001,9999
 4001 PRINT 4101,TIME,TYPE,INDV,INDEXNO, PLACE
 4101 FORMAT(F8.4,4X,A8,I3,1H-,I4,15H REFUEL IN AREA,I3)
      GO TO 9900
C     REFUEL ABORT
  404 IF(JPRINT(11))4004,9999
 4004 PRINT 4104,TIME,TYPE,INDV,INDEXNO,PLACE
 4104 FORMAT(F8.4,4X,A8,I3,1H-,I4,21H REFUEL ABORT IN AREA,I3)
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      GO TO 410                                                         207000
  405 IF(JPRINT(12))4105,9999                                           208000
 4005 PRINT 4105,TIME,TYPE,INDV,INDEXNO,PLACE                           209000
 4105 FORMAT(F8.4,4X,A8,I3,1H-,I4,19H NO TANKERS IN AREA,I3)            210000
  410 IF(RCODE .GE. 14) 419,9900                                        211000
C     RETURN HOME (RCODE=19 OR20)                                       212000
  419 IF(JPRINT(13)) 4019,9900                                          213000
 4019 PRINT4119                                                         214000
 4119 FORMAT(31X,12H RETURN HOME)                                       215000
      GO TO 9900                                                        216000
C     ENTER ZONE EVENT                                                    1000
CSUBR     HISTP1    15NOV71   ******************************************  2000
   50 IF(BCODE.EQ.6)506,507                                               2000
  506 IF(JPRINT(15))5006,9999                                             3000
 5006 PRINT5106,TIME,TYPE,INDV,INDEXNO,PLACE                              4000
 5106 FORMAT(F8.4,4X,A8,I3,1H-,I4,30H ENTER ENEMY TERRITORY AT ZONE,I3)   5000
      GO TO 9900                                                          6000
  507 IF(JPRINT(16))5007,9999                                             7000
 5007 PRINT 5107,TIME,TYPE,INDV,INDEXNO,INZONE                            8000
 5107 FORMAT(F8.4,4X,A8,I3,1H-,I4,32H LEAVE ENEMY TERRITORY FROM ZONE,I3  9000
     1)                                                                  10000
      GO TO 9900                                                         11000
   60 IF(JPRINT(17)) 610,9999                                            12000
  610 PRINT 620,HTIME,SIDE                                               13000
  620 FORMAT(///10X,F8.4,6X,11H STATUS OF ,A5,6H ZONES//6H ZONE ,4X,      14000
     1 12H PENETRATORS)                                                  15000
      NSUM=0                                                             16000
      DO 630 I=IBEG,IEND                                                 17000
      NP=NPENZ(I+1-IBEG)                                                 18000
      NSUM=NSUM+NP                                                       19000
  630 PRINT 640,I,NP                                                     20000
  640 FORMAT(I5,7X,I5)                                                   21000
  650 FORMAT( /6H TOTAL,6X,I5//)                                         22000
      PRINT 650,NSUM                                                     23000
      GO TO 9999                                                         24000
C     AREA ATTRITION EVENT                                               25000
   70 IF(JPRINT(18))7008  ,9999                                          26000
 7008 PRINT7108,TIME,TYPE,INDV,INDEXNO,ZONE                              27000
 7108 FORMAT(F8.4,4X,A8,I3,1H-,I4,23H AREA ATTRITION IN ZONE,I3)         28000
      GO TO 9999                                                         29000
C     LOCAL ATTRITION EVENT                                              30000
   80 IF(RCODE.EQ.1)801,81                                               31000
   81 IF(RCODE.EQ.9)809,802                                              32000
  802 IF(RCODE.EQ.10)8010,808                                            33000
  808 IF(RCODE.EQ.11)8011,804                                            34000
  804 IF(RCODE.EQ.27)817,9999                                            35000
  801 IF(JPRINT(19))   8001,9999                                         36000
 8001 PRINT8101,TIME,TYPE,INDV,INDEXNO,INTAR                             37000
 8101 FORMAT(F8.4,4X,A8,I3,1H-,I4,20H BOMBER SURVIVES TGT,I5)            38000
      KS=1                                                               38100
      GO TO 82                                                           39000
  809 IF(JPRINT(20))8009,9999                                            40000
 8009 PRINT8109,TIME,TYPE,INDV,INDEXNO,INTAR                             41000
 8109 FORMAT(F8.   4,4X,A8,I3,1H-,I4,18H KILLED BEFORE TGT,I5)           42000
      GO TO 9999                                                         43000
 8010 IF(JPRINT(20))8110,9999                                            44000
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```
 8110 PRINT 8210,TIME,TYPE,INDV,INDEXNO,INTAR
 8210 FORMAT(F8.4,4X,A8,I3,1H-,I4,17H KILLED AFTER TGT,I5)
      KS=0
      GO TO 82
 8111 IF(JPRINT(22))8111,9999
 8111 PRINT 8211,TIME,TYPE,INDV,INDEXNO,INTAR
 8211 FORMAT(F8.4,4X,A8,I3,1H-,I4,16H ASM KILL AT TGT,I5 )
      GO TO 9999
  817 IF(JPRINT (21)) 8117,9999
 8117 PRINT 8217,TIME,TYPE,INDV,INDEXNO,INTAR
 8217 FORMAT(F8.4,4X,A8,I3,1H-,I4,16H ASM PEN. TO TGT,I5)
C     TEST FOR DUD
   82 IF(IDUD .EQ. 2) 83,84
   83 IF(JPRINT(23))8003,9999
  803 PRINT8003
 8003 FORMAT(30X,12H DUD WARHEAD)
   84 IF(KS .EQ. 1) 9900,9999
C     TERMINAL BALLISTIC MISSILE DEFENSE EVENT
   90 IF(JPRINT(24))900,9999
  900 PRINT 9000,TIME,NAMETYPE(ITYPE),INDV,INDEXNO,INTAR,NAL,NPEN,NDET
 9000 FORMAT(F8.4,4X,A8,I3,1H-,I4,
     115H TERMBMD AT TGT,I5,7H ALLOC.,I3,5H INT.,I3,15H WHDS. PEN. AND,
     1I3,5H DET.)
      GO TO 9999
C     BURST DAMAGE EVENT
  100 IF(JPRINT(25))101,102
  101 PRINT 7,NWTYP,DGX,DGY,AGX,AGY
    7 FORMAT(5I10)
  102 IF(JPRINT(26)) 103,9999
  103 DO 105 I=1,NCOL
      CODE=INTARC(I)/IRS24
      INTAR=INTARC(I)-CODE*IRS24
      GO TO (61,62,63,64,65,66)CODE
   61 PRINT 71, INTAR
   71 FORMAT(10X,7H TARGET,I6,9H SURVIVES)
      GO TO 105
   62 PRINT 72,INTAR
   72 FORMAT(10X,7H TARGET,I6,12H NON-DYNAMIC)
      GO TO 105
   63 PRINT 73,INTAR
   73 FORMAT(10X,7H TARGET,I6,7H KILLED)
      GO TO 105
   64 PRINT 74,INTAR
   74 FORMAT(10X,7H TARGET,I6,13H ALREADY DEAD)
      GO TO 105
   65 PRINT 75,INTAR
   75 FORMAT(10X,7H TARGET,I6,13H NOT IN COLAR)
      GO TO 105
   66 PRINT 17
   17 FORMAT(46H ERROR IN BDAM, CODE LT 1 OR GT 5 CONTINUE RUN)
  105 CONTINUE
      GO TO 9999
C     ENTER REFUEL AREA EVENT
  110 IF(JPRINT(28)) 18,9999
   18 PRINT 19,TIME,TYPE,INDV,INDEXNO,PLACE
   19 FORMAT(F8.4,4X,A8,I3,1H-,I4,15H ARRIVE AT AREA,I3 )
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```
      GO TO 9999
C     LEAVE REFUEL AREA EVENT
  120 IF(BCODE.EQ.11)21,24
   21 IF(JPRINT(29))91,9999
   91 PRINT 45,TIME,TYPE,INDV,INDEXNO,ZONE
   45 FORMAT(F8.4,4X,A8,I3,1H-,I4,13H DEPARTS AREA,I3,5H EMPTY  )
      GO TO 9999
   24 IF(BCODE.EQ.12)22,33
   22 IF(JPRINT(31))92,9999
   92 PRINT 46,TIME,TYPE,INDV,INDEXNO,ZONE
   46 FORMAT(F8.4,4X,A8,I3,1H-,I4,14H ABORT IN AREA,I3 )
      GO TO 9999
   33 IF(BCODE.EQ.13)23,23
   23 IF(JPRINT(30))93,9999
   93 PRINT 47,TIME,TYPE,INDV,INDEXNO,ZONE
   47 FORMAT(F8.4,4X,A8,I3,1H-,I4,13H DEPARTS AREA,I3,5H FULL )
      GO TO 9999
C     BOMBER ABORT EVENT
  130 IF(BCODE.EQ.14)1314,1318
 1314 IF(JPRINT(33))13014,9999
13014 PRINT 13114, TIME, TYPE, INDV, INDEXNO
13114 FORMAT(F8.4,4X,A8,I3,1H-,I4,13H RANDOM ABORT)
      GO TO 9999
 1318 IF(JPRINT(32))13018,9999
13018 PRINT13118,TIME,TYPE,INDV,INDEXNO
13118 FORMAT(F8.4,4X,A8,I3,1H-,I4,17H SCHEDULED SPLASH)
      GO TO 9999
C     ASM LAUNCH EVENT
  140 IF(BCODE.EQ.1)1401,1415
 1401 IF(JPRINT(34))14001,9999
14001 PRINT 14101,TIME,TYPE,INDV,INDEXNO
14101 FORMAT(F8.4,4X,A8,I3,1H-,I4,11H ASM LAUNCH)
      GO TO 9900
 1415 IF(JPRINT(35))14015,9999
14015 PRINT14115,TIME,TYPE,INDV,INDEXNO
14115 FORMAT(F8.4,4X,A8,I3,1H-,I4,17H ASM LAUNCH ABORT   )
      GO TO 9900
C     DECOY LAUNCH EVENT
  150 IF(JPRINT(36))1500,9999
 1500 J=2-IALT
      PRINT1501,TIME,TYPE,INDV,INDEXNO,PLACE,KALT(J)
 1501 FORMAT(F8.4,4X,A8,I3,1H-,I4,7H LAUNCH,I3,12H DECOYS FROM,A5,9H ALT
     1ITUDE)
      GO TO 9900
C     BOMBER RECOVERY EVENT
  160 IF(PLACE .LT. 350) 1630,1631
 1630 IR=PLACE/LSHIFT
      IDEPEN=PLACE-IR*LSHIFT
      PLACE=IRECOV(IDEPEN,IR,NSIDE)
 1631 IF(BCODE .EQ. 1) 1601,1604
 1601 IF(JPRINT(37))1602,9999
 1602 PRINT1603,TIME,TYPE,INDV,INDEXNO,PLACE
 1603 FORMAT(F8.4,4X,A8,I3,1H-,I4,17H RECOVERY AT BASE,I5)
      GO TO 9999
 1604 IF(BCODE .EQ. 17) 1605,1610
 1605 IF(JPRINT(38))1606,9999
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 1606 PRINT1607,TIME,TYPE,INDV,INDEXNO,PLACE
 1607 FORMAT(F8.4,4X,I3,1H-,I4,14H RECOVERY BASE,I5,5H DEAD)
      GO TO 9999
 1610 IF(BCODE.EQ.21)1611,1620
 1611 IF(JPRINT(43))1612,9999
 1612 PRINT 9161,TIME,TYPE,INDV,INDEXNO
 9161 FORMAT(F8.4,4X,A8,I3,1H-,I4,40H NO LIVE BASE AVAILABLE ON DEPENATR
     1ATION)
      GO TO 9999
 1620 IF(BCODE .EQ. 22) 1621,1623
 1621 IF(JPRINT(44))1622,9999
 1622 PRINT 9162,TIME,TYPE,INDV,INDEXNO,PLACE
 9162 FORMAT(F8.4,4X,A8,I3,1H-,I4,14H RECOVERY BASE,I5,10H SATURATED)
      GO TO 9999
 1623 IF(BCODE .EQ. 25) 1624,1625
 1624 IF(JPRINT(50)) 1602,9999
 1625 IF(BCODE .EQ. 26) 1626,9999
 1626 IF(JPRINT(51)) 1606,9999
C     CHANGE ALTITUDE EVENT
  170 IF(JPRINT(39))1700,9999
 1700 J=IALT+1
      PRINT1701,TIME,TYPE,INDV,INDEXNO,KALT(J)
 1701 FORMAT(F8.4,4X,A8,I3,1H-,I4,10H CHANGE TO,A5,9H ALTITUDE)
      GO TO 9900
C     AREA BMD EVENT
  180 IF(CODE.EQ.0)1811,1800
 1800 IF(JPRINT(40))181,1814
  181 GO TO (1801,1805,1809)CODE
 1801 PRINT 1802,TIME,NAMETYPE(ITYPE),INDV,INDEXNO,INTAR
 1802 FORMAT(F8.4,4X,A8,I3,1H-,I4,4H TGT,I5,
     12HH PREV. SELECTED FOR AREA BMD)
      GO TO 1814
 1805 PRINT 1806,TIME,NAMETYPE(ITYPE),INDV,INDEXNO,INTAR
 1806 FORMAT(F8.4,4X,A8,I3,1H-,I4,4H TGT,I5,
     12HH NOT SELECTED FOR AREA BMD)
      GO TO 9999
 1809 PRINT 1810,TIME,NAMETYPE(ITYPE),INDV,INDEXNO,INTAR
 1810 FORMAT(F8.4,4X,A8,I3,1H-,I4,4H TGT,I5,
     127H HERE SELECTED FOR AREA BMD)
      GO TO 1814
 1811 IF(JPRINT(42))1812,1814
C     OTHERWISE CODE EQ ZERO
 1812 PRINT 1813,TIME,NAMETYPE(ITYPE),INDV,INDEXNO,INTAR
 1813 FORMAT(F8.4,4X,A8,I3,1H-,I4,23H RANDOM AREA BMD AT TGT,I5)
      GO TO 1814
 1814 IF(JPRINT(41))1815,9999
 1815 PRINT 1816,NAL,TAIM,NWHDS
 1816 FORMAT(10X,10H ALLOCATED,I6,18H INTERCEPTORS, AND,I6,
     113H OBJECTS WITH ,I6,20H WARHEADS PENETRATED )
      GO TO 9999
C     RECHEK EVENT
  190 IF(BCODE .EQ. 23) 191,193
  191 IF(JPRINT(45)) 192,9999
  192 PRINT 9192,TIME,TYPE,INDV,INDEXNO,PLACE
 9192 FORMAT(F8.4,4X,A8,I3,1H-,I4,30H KILLED AFTER RECOVERY AT BASE,I5)
      GO TO 9999
```

FTN5.5

```
193 IF(NCODE .EQ. 24) 194,9999
194 IF(JPRINT(49)) 192,9999
200 IF(JPRINT(52)) 204,9999
204 PRINT 205,HTIME,NAMETYPE(JTYPE),INBASE,FTIME
205 FORMAT(F8.4,4X,A8,4X,I4,38H SCHEDULED FOR NAVAL ATTRITION AT TIME
   1,F8.4)
    GO TO 9999
210 IF(JPRINT(53)) 212,9999
212 PRINT 213,HTIME,NAMETYPE(JTYPE),INBASE
213 FORMAT(F8.4,4X,A8,4X,I4,20H NAVAL ATTRITION      )
    GO TO 9999
9900 IF(IFIN .EQ. 1) 9902,1
9902 PRINT 9901,FUTIME
9901 FORMAT(50X,14H NEXT EVENT AT ,F9.4)
    GO TO 9999
9999 GO TO 1
88888 STOP
    END
```

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                                        IDENT     HISTP
PROGRAM LENGTH                  0577
ENTRY POINTS        HISTP       02736
BLOCK NAMES
                    NAMES       0G13
                    ITP         0000
                    TMCR        0001
                    COPRINT     0001
                    MYIDENT     0001
                    BRKPOINT    00447
                    HISTOUT     031
EXTERNAL SYMBOLS
                    BFQENTRY
                    THEN.
                    GPOSTOPS
                    GRODICT.
                    INITAPE
                    SETHEAD
                    RDWCHU
                    RCARRAY
                    TERMTAP
                    SKIPFILE
                    TERMTAPE
                    UNCIFUNI
                    TSM.
                    BFI.
                    STM.
                    SLI.
                    UNSTRL.
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C00020	A6Y	04506										
C00021	A6Z											
C00021	ASMTYPE											
C00022	BCODE	03611	03611	04004	04004	04007	04007	04011	04011	04013	04013	04016
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		05425										
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P05512	CLSSMAN	03017	03067	03307	03313							
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		03632	03645	03647	03651	03652	03665	03667	03671	03672	03673	03711
		03727	03732	03734	03735	03736	03753	03771	03774	03776	03777	04000
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C00015	DGY	04504										
C00016	DGZ											
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P02771	GG00001.	02761										
P03012	GG00002.	02774										
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P03072	GG00007.	03063										
P03102	GG00010.	03072										
P03112	GG00011.	03102										
P03124	GG00012.	03110										
P03173	GG00014.	03165										
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P04145	GG00043.	04127										
P04165	GG00044.	04150										
P04202	GG00045.	04171										
P04227	GG00046.	04210										
P04242	GG00047.	04232										
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P05016	GG00075.	05001									
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P05172	GG00102.	05155									
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C00017	IALT	05141	05042	05230	05230						
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P03276	IF00002.										
P04011	IF00003.										
P04013	IF00004.										
P04020	IF00005.										

P04022	IFOOOOO.											
P05560	IFUT	03032	03114	05472								
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P03060	.14406						
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P05132	.1606	05131	05225				
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P04303	.801	04266										
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P03221	.88889	03217										
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P04671	.92	04670										
P04714	.93	04713										
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P01370	..100010	03526											
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P02326	..13118	04702											
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P01162	..14404	03[illegible]											
P01171	..14405	031[illegible]											
P02374	..15[illegible]	05[illegible]											
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P02435	..16[illegible]7	[illegible]135											
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P02633	..1816	05372											
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P01471	..2002	03043											
P01506	..2003	03063											
P02676	..205	05435											
P02714	..213	05457											
P01524	..33333	03707											
P01574	..4101	04032											
P01611	..4104	04053											
P01627	..4105	04074											
P01645	..4119	04117											
P02237	..45	04051											

P02256	..45	04074										
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P01653	..5109	04132										
P01672	..5107	04103										
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P01120	..0068	02777										
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P01115	..0805	02704	03030									
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P02146	..72	04546										
P01211	..726	03170										
P02157	..73	04557										
P02167	..74	04573										
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P02056	..8217	04415										
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P02472	..9152	05202										
P01372	..9153	03525										
P01406	..9153	03555										
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P01201	..9905	03121										
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		04755	04777	05017	05037	05105	05130	05153	05175	05220	05224	05226
		05250	05344	05365	05404	05427	05431	05452				
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P05572  LSHIFT    02744  05072  05075
C00008  MYIDENT   03113  03113  03131  03131
C00014  NAL       04405  05373  05373
C00002  NAMECLAS  03267  03270
C00000  NAMESIDE  03202  03265  03266
C00021  NAMETYPE  03202  03262  03263  03356  03356  03731  03731  03773  03773  04457  04457
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C00021  NAMEA
C00017  NBLDETYP
C00020  NCM
C00015  NCODE     03710  03710  03714  03714
C00022  NCOL      04616  04616
P05573  NCONT     02745  03677  03700  03701
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C00016  NDECOYS
C00023  NDEPEN
C00016  NDET      04467
C00000  NHISTOUT  03226
C00014  NHIRV     03550  03550  03602  03726  03757  03757  04000
C00000  NOPRINT   02746  02746
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C00007  NPENZ     04212  04213
P05575  NSIDE     03256  05522
C00021  NSUCC     03532  03532
P05576  NSUM      04203  04214  04215  04236
C00017  NTARG     03360  03360
C00020  NTERM
C00022  NTEST
C00016  NTLIST    03752  03752
C00016  NTRYLC    03371  03371  03544  03544
C00000  NTYPECUM  03157  03252  03253
C00016  NWHOS     05376
C00030  NWPNLIST  03407  03407  03422  03422  03435  03435  03450  03450  03463  03463  03477
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C00016  NWPNS     03354  03512
C00004  NWTYP     04501  04501
C00010  NYPE      03251  03251  03260  03260
C00007  PLACE     04042  04063  04104  04142  04636  05057  05065  05065  05070  05070  05076
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X00004  QBUDICT.  00000  02737
X00001  QBUENTRY  02741
X00014  QBUIFUNI  03101  03204
X00003  QBUSTOPS  03174  05506
X00021  QNSINGL.  05515
X00010  RDARRAY   03141  03224
X00007  RDCARD    03134  03214
X00006  SETREAD   03132  03146  03212
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X00020	SLI.	02754										
X00017	STM.	03036	03050	03064	03073	03103	03117	03166	03347	03403	03416	03431
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		04555	04566	04577	04610	04624	04647	04672	04715	04740	04760	05002
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C00074	TAXLIST	03564	03564									
X00011	TERMTAP	03144										
X00013	TERMTAPE	03210										
X00002	THEND.	02757	02767	03010	03023	03033	03043	03056	03073	03100	03110	03122
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		03633	03653	03674	03712	03737	03754	04001	04043	04064	04105	04120
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		05250	05301	05321	05341	05363	05377	05422	05447	05467	05502	
C00024	THOUR	03632	03673									
C00005	TIME	03234	03234	03240	03240	03352	03352	03623	03623	03644	03644	03664
		03664	04033	04033	04054	04054	04075	04075	04133	04133	04154	04154
		04251	04251	04311	04311	04333	04333	04354	04354	04376	04376	04417
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		05113	05135	05136	05161	05161	05203	05203	05237	05237	05270	05270
		05310	05310	05330	05330	05352	05352	05412	05412			
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P03061	TS00002.	03040										
P03246	TS00003.	03233										
P03505	TS00004.	03367										
P03606	TS00005.	03542										
P03757	TS00006.	03744										
P04230	TS00007.	04205										
P04616	TS00010.	04514										
X00015	TSM.	02750	02762	02775	03013	03026						
P00123	TX	03004	03054	03236								
P00205	TY	03005	03055	03242								
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P05511	TYPE*AN	03021	03076	03315	03321							
P05521	UP00006.	03257	05522	05523	05524	05526	05527					
P05531	UP00007.	05174	05532	05533	05534	05536	05537					
P05541	UP00010.	05100	05542	05543	05544	05546	05546					
P03002	*S00001.	03007	03007									
P03047	*S00002.	03062	03062									
P03234	*S00003.	03247	03247									
P03370	*S00004.	03506	03506									
P03543	*S00005.	03607	03607									
P03745	*S00006.	03760	03760									

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P04206  *S00007.   04231   04231
P04515  *S00010.   04617   04617
C00015  ZONE       04200   04661   04704   04727
   00764 SYMBOLS
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