

TYPE HELP  
NO FILES OF THE FORM: HELP.

.TYPE HELP.HA  
NO FILES OF THE FORM: HELP.HA

.DIR \*.H?

HELP .HL 102

368 FREE BLOCKS

.TYPE HELP.HL

&ABSLDR  
ABSLDR.SV

@CALLING COMMANDS:  
.LOAD DEV:BINFILE.BN,...  
.LOAD BINFILE.BN,... /FROM DSK

@SWITCHES:  
/8 PROG DOESN'T USE BELOW 02000  
/9 PROG DOESN'T USE BELOW 12000  
/G GO  
/I CORE IMAGE FILE  
/P PROG DOESN'T DESTROY EXTENDED BATCH RESIDENT  
/R RESET  
/S MULTIPLE BINARIES/FILE  
/N FORCE LOADING TO FIELD N (N IS AN OCTAL DIGIT)  
=FNNNN SET STARTING ADDRESS

&BASIC  
BASIC.SV

@CALLING COMMANDS:  
.BASIC  
.R BASIC

@INTERNAL COMMANDS:  
BYE EXIT FROM BASIC  
LIST LIST CURRENT PROGRAM'S STATEMENTS  
NAME RENAME CURRENT PROGRAM  
NEW PREPARE FOR A NEW PROGRAM  
OLD RETRIEVE AN OLD PROGRAM  
RUN RUN CURRENT PROGRAM  
SAVE SAVE CURRENT PROGRAM  
SCRATCH DELETE CURRENT PROGRAM

.HELP BCOMP PRINTS BASIC COMPILER ERROR MESSAGES  
.HELP BRYS PRINTS BASIC RUN-TIME ERROR MESSAGES

&BCOMP  
BCOMP.SV (ERRORS)

@ERRORS:  
CH ERROR IN CHAIN STATEMENT  
DE ERROR IN DEF STATEMENT  
DI ERROR IN DIM STATEMENT

```

FN  ERROR IN FILE NUMBER OR FILE NAME
FP  INCORRECT FOR STATEMENT
FR  ERROR IN FUNCTION ARGS
IF  ERROR IN IF STATEMENT
IO  I/O ERROR
LS  MISSING EQUALS SIGN IN LET
LT  STATEMENT TOO LONG
MD  MULTIPLY DEFINED LINE NUMBER
ME  MISSING END STATEMENT
MO  OPERAND EXPECTED AND NOT FOUND
MP  PARENTHESIS ERROR
MT  OPERAND OF MIXED TYPE
NF  NEXT STATEMENT WITHOUT FOR
NM  MISSING LINE NUMBER
OF  OUTPUT FILE ERROR
PD  PUSHDOWN STACK OVERFLOW
QS  STRING LITERAL TOO LONG
SS  SUBSCRIPT OR FUNCTION ARG ERROR
ST  SYMBOL TABLE OVERFLOW
SY  SYSTEM INCOMPLETE
TB  PROGRAM TOO BIG
TD  TOO MUCH DATA IN PROGRAM
TS  TOO MANY CHARS IN STRING LITERALS
UD  ERROR IN UDEF STATEMENT
UF  FOR STATEMENT WITHOUT NEXT
US  UNDEFINED STATEMENT NUMBER
UU  USE STATEMENT ERROR
XC  EXTRA CHARS AFTER LOGICAL END OF LINE

```

&BRTS

BRTS.SV (ERRORS)

@ERRORS:

```

BO  NO MORE FILE BUFFERS AVAILABLE
CI  INQUIRE FAILURE IN CHAIN. DEVICE NOT FOUND
CL  LOOKUP FAILURE IN CHAIN. FILENAME NOT FOUND.
CX  CHAIN ERROR
DA  ATTEMPT TO READ PAST END OF DATA LIST
DE  DEVICE DRIVER ERROR
DO  NO MORE ROOM FOR DRIVERS
DV  ATTEMPT TO DIVIDE BY 0
EF  LOGICAL END OF FILE
EM  ATTEMPT TO RAISE A NEGATIVE NUMBER TO A REAL POWER
EN  ENTER ERROR
FB  ATTEMPT TO USE A FILE ALREADY IN USE
FC  CLOSE ERROR
FE  FETCH ERROR
FI  ATTEMPT TO CLOSE OR USE AN UNOPENED FILE
FM  ATTEMPT TO FIX NEGATIVE NUMBER
FN  ILLEGAL FILE NUMBER
FO  ATTEMPT TO FIX NUMBER GREATER THAN 4095
GR  RETURN WITHOUT A GOSUB
GS  TOO MANY NESTED GOSUBS
IA  ILLEGAL ARGUMENT IN UDEF FUNCTION CALL
IF  ILLEGAL DEV:FILENAME SPECIFICATION
IN  INQUIRE FAILURE
IO  TTY INPUT BUFFER OVERFLOW
LM  ATTEMPT TO TAKE LOG OF A NEGATIVE NUMBER
OE  DRIVER ERROR WHILE OVERLAYING
OV  NUMERIC OR INPUT OVERFLOW
PA  ILLEGAL ARGUMENT IN POS FUNCTION
RE  ATTEMPT TO READ PAST END OF FILE
SC  STRING TOO LONG AFTER CONCATENATING

```

SL STRING TOO LONG OR UNDEFINED  
SR ATTEMPT TO READ STRING FROM NUMERIC FILE  
ST STRING TRUNCATION ON INPUT  
SU SUBSCRIPT OUT OF DIM STATEMENT RANGE  
SW ATTEMPT TO WRITE STRING INTO NUMERIC FILE  
VR ATTEMPT TO READ VARIABLE LENGTH FILE  
WE ATTEMPT TO WRITE PAST END OF FILE

&BOOT

BOOT.SV

@CALLING COMMANDS:

.BOOT/DV

@SWITCHES:

/CA TA8E CASSETTE CAPS-8  
/DK ANY DISK  
/DL LINCTAPE DIAL  
/DM ANY DISK DISK MONITOR  
/DT ANY TAPE  
/LT LINCTAPE  
/PT PT8E (LOADS BINLDR)  
/RE RK8E DISK  
/RF RF08,DF32 DISKS  
/RK RK8 DISK  
/RX RX8E FLOPPY DISK  
/TD TD8E DECTAPE  
/TY TYPESET (UNIT 4)  
/VE VERSION #  
/TC TC08 DECTAPE ALL SYSTEMS  
/ZE ZEROES CORE (FIELD 0)

DEVICES ARE UNIT 0 IF NOT SPECIFIED

DV. HALT AFTER LOADING BOOTSTRAP

&BUILD

BUILD.SV

@INTERNAL COMMANDS:

\$ALTER GRP,LOC  
\$ALTER GRP,LOC=VALUE  
\$BOOT  
\$BUILD  
\$CTL ACTNAM  
\$CTL ACTNAM=VALUE  
\$CORE N  
\$DCB ACTNAM  
\$DCB ACTNAM=VALUE  
\$DELETE ACTNAM,...  
\$DSK ACTNAM  
\$DSK GRP:NAME  
\$EXAMINE GRP,LOC  
\$INSERT GRP  
\$INSERT GRP:NAME,...  
\$LOAD DEV:FILENM.BN  
\$LOAD ACTNAM  
\$NAME ACTNAM=NEWNAM  
\$PRINT  
\$QLIST  
\$REPLACE ACTNAM,...=GRP:NEWNAM,,,  
\$SIZE ACTNAM  
\$SIZE ACTNAM=VALUE

```
$SYS GRP
$SYS GRP:NAME,...
$UNLOAD GRP
$UNLOAD GRP:NAME,...
```

## @ERRORS:

```
?BAD ARG          NO DEVICE NAME IN LOAD COMMAND
?BAD INPUT        INPUT NOT A VALID BINARY FILE
?BAD LOAD         BINARY HANDLER NOT IN CORRECT FORMAT
?BAD ORIGIN       ORIGIN IN BINARY FILE NOT IN RANGE 200-577
?CORE            NOT ENOUGH MEMORY AVAILABLE
?DSK             DSK IS NOT FILE STRUCTURED
?HANDLERS        MORE THAN 15 HANDLERS ARE ACTIVE
I/O ERROR        ERROR DURING LOAD
?NAME            MISSING NAME
NO ROOM          TOO MANY DEVICE HANDLERS LOADED
NAME NOT FOUND   DEVICE OR FILE NAME NOT FOUND
?PLAT           TOO MANY PLATTERS SPECIFIED FOR DEVICE
?SYNTAX         BAD SYNTAX
?SYS            HANDLER IS NOT A SYSTEM HANDLER OR TWO SYSTEM HANDLERS
                ARE ACTIVE OR HANDLER CORESIDENT WITH NON-ACTIVE SYS
SYS ERROR        I/O ERROR OCCURED WITH SYSTEM HANDLER.  PRESS CONTINUE
                TO RETRY
SYS NOT FOUND    NO ACTIVE HANDLER BY NAME OF SYS DURING BOOTSTRAP
```

&amp;

&amp;CCL

## OS/8 MONITOR COMMANDS

CMD	PROG	EXPL
ASSIGN	KBM	ASSIGNS LOGICAL NAME
BACKSP	CAMP	BACKSPACES DEV
BASIC	BASIC	ENTERS BASIC SYSTEM
BOOT	BOOT	BOOTSTRAPS TO DEV
CCL	CCL	DISABLES CCL
COMPARE	SRCCOM	COMPARES FILES
COMPILE	PAL8	COMPILES PROG
	F4/FORT	
	BASIC	
	RALF	
	SABR	
COPY	FOTP	COPIES FILES
CREATE	EDIT	OPENS FILE FOR EDITING
CREF	PAL8	ASSEMBLES AND CHAINS TO CREF
	CREF	CREF'S LISTING
DATE	KBM/CCL	SPECIFIES DATE
DEAS	CCL	DEASSIGNS LOGICAL DEVICES
DELETE	FOTP	DELETES FILES
DIRECT	DIRECT	PRINTS DIRECTORIES
DUPLIC	RXCOPY	COPIES RX DISKS
EDIT	EDIT	EDITS FILE
EOF	CAMP	WRITES END-OF-FILE
EXECUTE	PAL8	COMPILES AND EXECUTES
	F4/FORT	
	BASIC	
	RALF	
	SABR	
	ABSLDR	LOADS AND EXECUTES
	LOAD(ER)	
GET	KBM	GETS CORE-IMAGE
HELP	HELP	LIST'S HELP FILE
LIST	FOTP	LISTS FILES
LOAD	ABSLDR	LOADS FILES

```

LOAD(ER)
MAKE  TECO  MAKES NEW FILE FOR EDITING
MAP   BITMAP PRINTS BITMAP
MEMORY CCL   SPECIFIES MACHINE CORE SIZE
MUNG  TECO  MUNGS FILE WITH TECO MACRO
ODT   KBM   RUNS OCTAL DEBUGGER
PAL   PAL8  RUNS PAL8
PRINT LPTSPL RUNS 'LPTSPL' IF PRESENT
PUNCH FOTP  PUNCHES DATA
R     KBM   RUNS PROGRAM FROM SYS:
RENAME FOTP  RENAMES FILES
RESORC RESORC PRINTS RESOURCES OF SYSTEMS
REWIND CAMP  REWINDS DEV
RUN   KBM   RUNS PROGRAM
SAVE  KBM   SAVES CORE IMAGE
SET   SET   ALTERS PARAMETERS
SKIP  CAMP  SKIPS RECORDS
SQUISH PIP  SQUISHES DEV
START KBM   STARTS PROG
SUBMIT BATCH STARTS BATCH JOB
TECO  TECO  EDITS FILE
TYPE  FOTP  TYPES FILES
UA    CCL   REMEMBERS COMMAND
UB    CCL
UC    CCL
UNLOAD CAMP  UNLOADS DEV
VERSION CCL  TYPES VERSION #
ZERO  PIP   ZEROES DEV

```

## @SWITCHES:

```

-L     OUTPUT TO LPT:
-S     OUTPUT TO TV:
-T     OUTPUT TO TTY:
-P     OUTPUT TO PTP:
-D     OUTPUT TO DUMP:
-N     OUTPUT TO NULL:
-LS    PRODUCE LISTING
-NB    NO BINARY YET
-MP    PRODUCE MAP
-EXT   SET DEFAULT EXTENSION

```

## @FEATURES:

```

/X     PASS SWITCH OPTION X TO PROGRAM
(XYZ)  PASS SWITCH OPTIONS TO PROGRAM
[N]    MAX OUTPUT SIZE
=NNN   PASS OCTAL NUMBER TO PROGRAM
#NNN   TAKE INTERNAL OCTAL FORM OF FILENAME
@FILE  REPLACE IN CMD LINE BY FILE'S CONTENTS
$      COMPLEMENT DEFAULT ALTMODE SWITCH

```

## &amp;CREF

```
CREF.SV
```

## @CALLING COMMANDS:

```

.CREF DEV:BINFILE.BN,DEV:LISTFILE.LS,DEV:TEMPFILE.TM<DEV:INFILE.PA
.CREF DEV:INFILE.PA      /LISTING TO LINE PRINTER ONLY
.CREF INFILE.PA         /LISTING TO LINE PRINTER, INPUT FILE ON DSK

```

## @SWITCHES:

```

/E     DON'T DELETE CREFLS.TM
/M     MAMMOTH (TWICE AS MANY SYMBOLS, TWICE AS SLOW)

```

```

/P      NO PASS 1 LISTING
/Q      SABR
/R      RALF
/U      NO LISTING OR SYMBOL TABLE
/X      NO LITERALS

```

```

&EDIT
&CREATE
        EDIT.SV

```

```

@CALLING COMMANDS:
.EDIT DEV:OUTFILE.PA<DEV:INFILE.PA
.CREATE OUTFILE.PA

```

```

@SWITCHES:
/A      RETURN TO EDITOR ON CLOSE
/B      CONVERT 2 OR MORE SPACES TO TAB
/D      PREDELETE

```

```

@ERRORS:
?0      INPUT ERROR
?1      OUTPUT ERROR
?2      CLOSE ERROR
?3      OPEN ERROR
?4      COULDN'T LOAD DEVICE HANDLER

```

```

@INTERNAL COMMANDS:
A      APPEND TEXT
B      LIST # OF CORE LOCATIONS LEFT
C      CHANGE TEXT
D      DELETE TEXT
E      OUTPUT BUFFER, TRANSFER REST OF DATA, AND CLOSE
F      AFTER J, SEARCH FOR NEXT OCCURRENCE OF SAME STRING
G      GET AND LIST TAGGED LINE
I      INSERT
J      INTER-BUFFER STRING SEARCH
K      KILL BUFFER
L      LIST TEXT
M      MOVE TEXT
N      WRITE BUFFER, KILL AND READ NEXT PAGE
P      WRITE TEXT BUFFER TO OUTPUT
Q      IMMEDIATE END OF FILE
R      READ TEXT FROM INPUT DEVICE
S      CHARACTER SEARCH
T      PUNCH TRAILER TAPE
V      PRINT ON LP08
Y      INPUT TEXT PAGE, NO OUTPUT
#      PRINT VERSION NO.

```

```

&EPIC
        EPIC.SV

```

```

@SWITCHES:
/0$    PAPER TAPE I/O TO/FROM OS/8 FILES
        /E    DON'T PUNCH EOT
        /H    SET HIGH BIT=N
        /L    LOW SPEED
        /P    PUNCH PATCH
        /Z    REL BLOCK=0
        =N    REL BLOCK TO PATCH
        NO OUT FILE IS READ

```

```

FILE</1$      EDIT 'FILE'
              C      CURRENT STATUS
              E      EXIT TO CD
              O,N    OPEN BLOCK N
              R,N    READ BLOCK N
              S,N,M  SEARCH FOR N WITH MASK M
              W      WRITE

```

```

FILE1<FILE2/2$  COMPARE FILE1 AND FILE2
                /A    ABORT
                /B    BAD BLOCKS ONLY

```

```

&FORT
    FORT.SV

```

## @CALLING COMMANDS:

```

.COMPILE DEV:BINFILE.BN,DEV:LISTFILE.LS,DEV:MAPFILE.MP<DEV:INFILE.FT
.EXE INFILE.FT

```

## @SWITCHES:

```

/G      GO
/K      KEEP FORTRN.TM
/L      LOAD

```

## @ERRORS:

```

ALOG    ATTEMPT TO COMPUTE LOG OF NEGATIVE NUMBER
IOER    INPUT/OUTPUT ERROR
CHER    CHAIN ERROR
FMT1    INVALID FORMAT STATEMENT
FMT2    ILLEGAL CHARACTER IN I FORMAT
FMT3    ILLEGAL CHARACTER IN E OR F FORMAT
DIVZ    ATTEMPT TO DIVIDE BY 0
EXP     ARGUMENT TO EXP TOO LARGE
OVFL    FLOATING POINT OVERFLOW
FLPW    ATTEMPT TO RAISE NEGATIVE NUMBER TO REAL POWER
SQRT    ATTEMPT TO TAKE SQUARE ROOT OF NEGATIVE NUMBER
FIX     ATTEMPT TO FIX NUMBER GREATER THAN 2047

```

```

&FRTS
    FRTS.SV

```

## @SWITCHES:

```

/C      CARRIAGE CONTROL SWITCH
/E      IGNROE ERRORS
/H      HALT BEFORE STARTING
/P      PUNCH TO PAPER TAPE

```

```

&F4
&FORTRAN
    F4.SV

```

## @CALLING COMMANDS:

```

.COMPILE DEV:RALFFILE.RL,DEV:LISTFILE.LS,DEV:MAPFILE.MP<DEV:INFILE.FT
.COMPILE INFILE.FT          /FROM DSK

```

## @SWITCHES:

```

/A      RETURN TO KBM AFTER COMPILATION
/F      PRODUCE RALF LISTING
/N      SUPPRESS INTERNAL STATEMENT NUMBERS
/Q      OPTIMIZE

```

.HELP F4ERR PRINTS FORTRAN IV COMPILER ERROR MESSAGES

&F4ERR  
F4.SV (ERRORS)

@ERRORS:

AA MORE THAN 6 SUBROUTINE ARGUMENTS ARE ARRAYS  
AS BAD ASSIGN STATEMENT  
BD BAD DIMENSIONS  
BS ILLEGAL STATEMENT IN BLOCK DATA SUBPROGRAM  
CL BAD COMPLEX LITERAL  
CO SYNTAX ERROR IN COMMON STATEMENT  
DA BAD SYNTAX IN DATA STATEMENT  
DE ILLEGAL STATEMENT AT END OF DO  
DF BAD DEFINE FILE STATEMENT  
DH HOLLERITH FIELD ERROR IN DATA STATEMENT  
DL DATA LIST AND VARIABLE LIST ARE NOT SAME LENGTH  
DN DO-END MISSING OR INCORRECTLY USED  
DO SYNTAX ERROR IN DO OR IMPLIED DO  
DP DO LOOP PARAMETER NOT INTEGER OR REAL  
EX SYNTAX ERROR IN EXTERNAL STATEMENT  
GT SYNTAX ERROR IN GOTO STATEMENT  
GV ASSIGNED OR COMPUTED GOTO VARIABLE NOT INTEGER OR REAL  
HO HOLLERITH FIELD ERROR  
IE ERROR READING INPUT FILE  
IF IMPROPER STATEMENT USED WITH LOGICAL IF  
LI ARGUMENT TO LOGICAL IF IS NOT LOGICAL  
LT INPUT LINE TOO LONG (TOO MANY CONTINUATIONS)  
MK MISSPELLED KEYWORD  
ML MULTIPLY DEFINED LINE NUMBER  
MM MISMATCHED PARENTHESES  
MO EXPECTED OPERAND IS MISSING  
MT MIXED VARIABLE TYPES  
OF ERROR WRITING OUTPUT FILE  
OP ILLEGAL OPERATOR  
OT OPERAND TYPE WRONG FOR GIVEN OPERATOR  
PD COMPILER STACK OVERFLOW, STATEMENT TOO BIG OR TOO MANY NESTED LOOPS  
PH BAD PROGRAM HEADER LINE  
QL NESTING ERROR IN EQUIVALENCE STATEMENT  
QS SYNTAX ERROR IN EQUIVALENCE STATEMENT  
RD ATTEMPT TO REDEFINE THE DIMENSIONS OF A VARIABLE  
RT ATTEMPT TO REDEFINE THE TYPE OF A VARIABLE  
RW SYNTAX ERROR IN READ/WRITE STATEMENT  
SF BAD ARITHMETIC STATEMENT FUNCTION  
SN ILLEGAL SUBROUTINE NAME IN CALL  
SS ERROR IN SUBSCRIPT EXPRESSION  
ST COMPILER SYMBOL TABLE FULL  
SY SYSTEM ERROR; PASS MISSING OR NO ROOM FOR OUTPUT  
TD BAD SYNTAX IN TYPE DECLARATION STATEMENT  
US UNDEFINED STATEMENT NUMBER  
VE VERSION ERROR

&LIBRA  
LIBRA.SV

@SWITCHES:

/C CONTINUE INPUT SPECIFICATIONS  
/I INSERTION DECISION  
/R REPLACE MODULE  
/Z REPLACE LIBRARY  
=N EXTRA BLOCKS



&amp;LOAD

LOAD.SV

@CALLING COMMANDS:

.LOAD DEV:OUTFILE.LD&lt;DEV:INFILE1.RL,...

@SWITCHES:

/C MORE INPUT TO LOAD  
 /G CHAIN TO RUN-TIME SYSTEM  
 /L ACCEPT LIBRARY FILE  
 /O MORE OVERLAYS  
 /S SYMBOL MAP  
 /U IGNORE RULES GOVERNING SUBROUTINE CALLS BETWEEN OVERLAYS

&amp;LOADER

LOADER.SV

@CALLING COMMANDS:

.LOAD MAPFILE.MP&lt;INFILE.RL,...

@SWITCHES:

/G GO  
 /H 2 PAGE HANDLERS  
 /I OS/8 FILE INPUT  
 /L 1ST INPUT FILE IS LIBRARY FILE  
 /M PRODUCE MAP  
 /O OS/8 FILE OUTPUT  
 /P OUTPUT COUNT OF FREE PAGES  
 /R RESTART  
 /U OUTPUT UNDEFINED SYMBOLS  
 /N LOAD IN FIELD N (0-7) OR HIGHER  
 =N SET STARTING ADDRESS

&amp;MAP

&amp;BITMAP

BITMAP.SV

@CALLING COMMANDS:

.MAP MAPFILE.MP&lt;INFILE.BN,...

@SWITCHES:

/N FORCES MAPPING OF ALL FILES TO FIELD N (0-7)  
 /R RESET INTERNAL MAP  
 /S ALLOW MULTIPLE BINARIES PER FILE  
 /T INVERT TTY-STYLE OUTPUT SWITCH

&amp;ODT

ODT

@CALLING COMMANDS:

.ODT

@INTERNAL COMMANDS:

NNNNN/ OPEN LOC  
 / REOPEN LAST OPENED LOC  
 NN<CR> DEPOSIT NN IN OPEN LOC, CLOSE LOC  
 NN<LF> DEPOSIT NN IN OPEN LOC, CLOSE LOC, OPEN AND DISPLAY NEXT LOC  
 NN;... DEPOSIT NN IN OPEN LOC, CLOSE AND OPEN NEXT LOC  
 <CR> CLOSE PREVIOUSLY OPENED LOC  
 <LF> CLOSE LOC, OPEN NEXT LOC  
 N+ OPEN CUR LOC+N  
 N- OPEN CUR LOC-N

```

^      CLOSE LOC, OPEN LOC ADDRESSED BY CONTENTS
_      CLOSE LOC, OPEN POINTED TO BY CONTENTS
NNG    GO
NNB    ESTABLISH BREAKPOINT
B      REMOVE BREAKPOINT
A      OPEN AC
L      OPEN LINK
C      CONTINUE FROM BREAKPOINT
NNC    CONTINUE, ITERATE NN TIMES
M      OPEN SEARCH MASK
<LF>   OPEN LOWER SEARCH LIMIT
<LF>   OPEN UPPER SEARCH LIMIT
NNW    SEARCH CORE FOR NN MASKED BETWEEN LIMITS
D      OPEN DATA FIELD (0010=FIELD 1)
F      OPEN FIELD FOR ^, _, W (0010=FIELD 1)
^0     SUPPRESS PRINTING

```

```

&PAL8
&PAL      PAL8.SV

```

## @CALLING COMMANDS:

```

.PAL DEV:BINFILE.BN,DEV:LISTFILE.LS,DEV:TEMPFILE.TM<DEV:INFILE.PA/C
.PAL DEV:BINFILE.BN,DEV:LISTFILE.LS<DEV:INFILE.PA
.PAL INFILE.PA /FROM DSK

```

```
.HELP PALERR PRINTS PAL8 ERROR MESSAGES
```

## @SWITCHES:

```

/B      TREAT ! AS BYTE SHIFT
/C      CHAIN TO CREF
/D      DDT-COMPATIBLE SYMBOL TABLE
/E      ENABLE ERROR MSG ON LINK GENERATED
/F      DISABLE 0-FILL IN TEXT
/G      GO
/H      NON-PAGINATED OUTPUT
/J      DON'T LIST LINES CONDITIONALIZED OUT
/K      USE EXTRA CORE
/L      LOAD
/N      NO LISTING
/O      DISABLE ORIGIN 200 AFTER FIELD
/S      NO SYMBOL TABLE
/T      NO FORM FEEDS
/W      DON'T REMEMBER LITERALS

```

```

&PALERR      PAL8.SV      (ERRORS)

```

## @ERRORS:

```

BE      TABLES OVERLAPPED
CF      CREF.SV NO ON SYS:
DE      DEVICE ERROR
DF      DEVICE FULL
IC      ILLEGAL CHARACTER
ID      ILLEGAL REDEFINITION
IE      ILLEGAL EQUALS
II      ILLEGAL INDIRECT
IP      ILLEGAL PSEUDO-OP
IZ      ILLEGAL PAGE ZERO REF
LD      SYS:ABSLDR.SV NOT FOUND
LG      LINK GENERATED
PE      PAGE EXCEEDED
PH      END OF SOURCE CONDITIONALIZED OUT

```

```
RD      REDEFINITION
SE      SYMBOL TABLE EXCEEDED
UO      UNDEFINED ORIGIN
US      UNDEFINED SYMBOL
ZE      PAGE 0 EXCEEDED
```

```
&PIP
      PIP.SV
```

```
@SWITCHES:
/A      ASCII MODE
/B      BINARY MODE
/C      ELIM TRAILING BLANKS
/D      DELETE OUTPUT FILE BEFORE TRANSFER
/G      IGNORE ERRORS
/I      IMAGE MODE
/O      OKAY TO COMPRESS OR ZERO
/S      SQUISH
/T      CONVERT TABS TO SPACES, ETC.
/V      VERSION #
/Y      COPY SYSTEM HEAD
/Z      ZERO OUTPUT DIRECTORY BEFORE TRANSFER
=N      # OF ADDITIONAL INFO WORDS (/Z OR /S)
=N      SIZE TO CLOSE OUTPUT FILE (/I)
```

```
&PIP10
      PIP10.SV
```

```
@SWITCHES:
/B      BINARY MODE
/D      DELETE OLD OUTPUT FILE BEFORE TRANSFER
/F      FAST PDP-10 DIRECTORY
/I      IMAGE MODE
/L      LIST PDP-10 DIRECTORY
/P      PRESERVE LINE NUMBERS
/Z      ZERO PDP-10 DIRECTORY BEFORE TRANSFER
```

```
&DUPLIC
&RXCOPY
      RXCOPY.SV
```

```
@CALLING COMMANDS:
.DUPLIC OUTDEV:<INDEV:
```

```
@SWITCHES:
/M      MATCH WITH NO IMPLIED COPY
/N      COPY WITH NO IMPLIED MATCH
/P      PAUSE BEFORE AND AFTER ACCESSING DISKS
/R      READ OUTPUT DEVICE WITH NO IMPLIED COPY OR MATCH
/V      PRINT VERSION NUMBER
```

```
&SABR
      SABR.SV
```

```
@CALLING COMMANDS:
.COMPILE BINFILE.RL,LISTFILE.LS,MAPFILE.MP<INFILE.SB
.EXE DEV:BINFILE.RL,DEV:LISTFILE.LS,DEV:MAPFILE.MP<DEV:INFILE.SB
```

```
@SWITCHES:
/F      INPUT IS FROM FORT
/G      CHAIN TO LOADER AND GO
```

```

/L      CHAIN TO LOADER
/N      NO LISTING
/S      NO SYMBOL TABLE

```

## @ERRORS:

```

A      WRONG NO. OF ARG'S
C      BAD CHAR
D      I/O ERROR
E      NO END STMT
I      ILLEGAL SYNTAX
L      SYS:LOADER.SV NOT FOUND
M      MULTIPLY DEFINED SYMBOL
S      SYMBOL OVERFLOW
U      UNDEFINED SYMBOL

```

## &amp;SET

```

      SET.SV

```

## @CALLING COMMANDS:

```

.SET DEV PARAMETER(S)
.SET DEV NO PARAMETER(S)

```

## @PARAMETERS:

```

READONLY      DECLARE DEVICE TO BE READ ONLY
FILES         DECLARE DEVICE TO BE FILE STRUCTURED
DVC           CHANGE DEVICE CODES
VERSION X     CHANGE VERSION
LOCATION N[=M] EXAMINE OR CHANGE LOCATIONS
LV8E         DECLARE LINE PRINTER TO BE AN LV8E
LA8A         DECLARE LINE PRINTER TO BE LA180 ON DKC8-AA
LA78         SAME AS .SET LPT NO LA8A
WIDTH N      SET WIDTH OF LINE PRINTER OR TTY
LC           DECLARE LINE PRINTER OR TTY TO HAVE LOWER CASE
ECHO         RESTORE TTY CHARACTER ECHOING
PAGE         RESTORE TTY ^S AND ^Q FACILITIES
TAB          IN TTY PRINT TABS (DON'T SIMULATE WITH SPACES)
FILL         IN TTY APPEND FILL CHARACTERS AFTER TABS
FLAG         IN TTY FLAG LOWER CASE CHARACTERS
SCOPE        ERASE CHARACTER ON TTY RUBOUTS
ESC          PRINT ESC(ASCII 033) WITHOUT CONVERTING IT TO $ SIGN
ARROW        PRINT CONTROL CHARACTERS WITH UP ARROW (E.G. ^C, ^S)
HEIGHT [M]   SET TTY SCREEN HEIGHT
PAUSE [N]    SET TTY PAUSE TIME
COL N        SET DIRECT TO USE N COLUMNS (.SET TTY COL 2)
CODE N       CHANGE TTY IOTS OR CARD READER CODES
PARITY EVEN/ODD SET MAGTAPE PARITY
OS8          DECLARE SYS TO BE OS/8
OS78         DECLARE SYS TO BE OS/8
INIT XXXXX   CAUSE SYS TO EXECUTE XXXXX ON BOOTSTAPPING

```

## &amp;SRCCOM

## &amp;COMPAR

```

      SRCCOM.SV

```

## @CALLING COMMANDS:

```

.COMPAR DEV:OUTFILE.PA<DEV:INFILE1.PA,DEV:INFILE2.PA
.COMPAR OUTFILE.PA<INFILE1.PA,INFILE2.PA           /FILES ON DSK

```

## @SWITCHES:

```

/B      COMPARE BLANK LINES
/C      DON'T COMPARE (SLASHED) COMMENTS
/S      DON'T COMPARE TABS AND SPACES
/T      CONVERT TABS TO SPACES ON OUTPUT

```

/X DON'T COMPARE OR PRINT COMMENTS

@ERRORS:

?0 INSUFFICIENT CORE  
 ?1 INPUT ERROR FILE 1 (OR LESS THAN 2 INPUT FILES)  
 ?2 INPUT ERROR FILE 2  
 ?3 OUTPUT FILE TOO LARGE  
 ?4 OUTPUT ERROR  
 ?5 CAN'T OPEN OUTPUT FILE

&BATCH  
 &SUBMIT

BATCH.SV

@CALLING COMMANDS:

.SUBMIT SPOOLDEV:<INPUTDEV:FILE.BI

@SWITCHES:

/C CARDS  
 /E DON'T ABORT ON MONITOR, CD AND CCL ERRORS  
 /P PTR  
 /Q NO BATCH LOG  
 /H HUSH  
 /T OUTPUT TO TTY  
 /U UNATTENDED  
 /6 USE 026 CARD CODES

&TECO  
 &MAKE  
 &MUNG

TECO.SV

@CALLING COMMANDS:

.TECO DEV:OUTFILE.PA<DEV:INFILE.PA  
 .TECO FILE.PA /ON DSK  
 .MAKE DEV:OUTFILE.PA  
 .MAKE OUTFILE.PA /ON DSK  
 .MUNG DEV:INFILE.PA,TECO MACRO ARGUMENT TEXT

@ERRORS:

?ILL ILLEGAL COMMAND  
 ?UTC UNTERMINATED COMMAND  
 ?IQN ILLEGAL Q-REGISTER NAME  
 ?PDO INTERNAL PUSH DOWN OVERFLOW (RECURSION)  
 ?MEM MEMORY OVERFLOW  
 ?STL SEARCH STRING TOO LONG  
 ?ARG ARGUMENT ERROR  
 ?IFN ILLEGAL FILE NAME  
 ?SNI SEMICOLON NOT IN ITERATION  
 ?BNI CLOSE BRACKET NOT IN ITERATION  
 ?POP POINTER OFF PAGE  
 ?QMO Q-REGISTER OVERFLOW  
 ?UTM UNTERMINATED MACRO  
 ?OUT OUTPUT ERROR  
 ?INP INPUT ERROR  
 ?FER FILE ERROR  
 ?FUL OUTPUT COMMAND WOULD HAVE OVERFLOWED  
 ?NAY NEGATIVE ARGUMENT TO Y  
 ?IEC ILLEGAL E CHARACTER  
 ?IQC ILLEGAL " CHARACTER  
 ?NAE NO ARGUMENT BEFORE =  
 ?NAU NO ARGUMENT BEFORE U  
 ?NAQ NO ARGUMENT BEFORE "

?SRH FAILING SEARCH  
 ?NAP NEGATIVE OR 0 ARGUMENT TO P  
 ?NAC NEGATIVE ARGUMENT TO ,  
 ?NIC NEGATIVE OR 0 ITERATION COUNT  
 ?NAS NEGATIVE OR 0 COUNT TO SEARCH  
 ?WLO CAN'T WRITE OUT ERROR MESSAGE OVERLAY  
 ?NFO NO FILE FOR OUTPUT

&FOTP  
 &LIST  
 &COPY  
 &RENAME  
 &TYPE  
 &DELETE  
 FOTP.SV

## @CALLING COMMANDS:

.COPY DEV:OUTFILE.EX<DEV:INFILE.EX /\* IS WILD NAME OR EXTENSION  
 .REN DEV:NEWFILE.EX<DEV:OLDFILE.EX /\* IS WILD CHARACTER  
 .DEL DEV:FILE.EX  
 .LIST DEV:FILE.EX /= .COPY LPT:<DEV:FILE.EX  
 .TYPE DEV:FILE.EX /= .COPY TTY:<DEV:FILE.EX

## @SWITCHES:

/C MATCH ONLY FILES WITH CURRENT DATE  
 /D DON'T TRANSFER (I.E. AT MOST ONLY DELETE)  
 /F REQUEST NEW DEVICE IF OUT OF ROOM  
 /L TYPE LOG OF INPUT FILENAME MATCHES (\*)  
 /N NO PRE-DELETE  
 /O MATCH ONLY FILES WITH OTHER THAN TODAY'S DATE  
 /Q QUERY USER ABOUT FILE BEFORE OPERATION (\*)  
 /R RENAME  
 /T USE TODAY'S DATE  
 /U TREAT EACH INPUT SPECIFICATION SEPARATELY  
 /V MATCH FILES NOT OF FORM SPECIFIED  
 /W PRINT VERSION #

## NOTES:

(\*) /D CAUSES LOG OF OUTPUT FILES (IF /L ALSO)

IF INDEV: EQUALS OUTDEV:, THEN /N IS FORCED.

IF NO INPUT FILE, \*.\* IS FORCED EXCEPT FOR /D  
 IF OUTPUT DEVICE SPECIFIED, BUT NO FILE, \*.\* IS ASSUMED.

^P ABORT OPERATION, FIX OUTPUT DIRECTORY  
 ^C FIX OUTPT DIRECTORY, RETURN TO OS/8  
 ^O SUPPRESS TYPEOUT

&ASSIGN  
 &DATE  
 &DEASSIGN  
 &GET  
 &MEMORY  
 &R  
 &RUN  
 &SAVE  
 &START  
 &SQUISH  
 &UA  
 &ZERO

KEYBOARD MONITOR AN OTHER COMMANDS

## @CALLING COMMANDS:

```
.ASSIGN DEV NAME           /ASSIGN NAME TO DEVICE
.DAY DD-MON-YY             /ENTER DATE INTO SYSTEM
.DEASSIGN                  /DEASSIGN LOGICAL DEVICE NAMES
.GET DEV FILE.EX          /LOAD CORE IMAGE
.MEMORY N                  /SPECIFY HIGHEST MEMORY FIELD AVAILABLE
.R FILE                    /EXECUTE FILE.SV FROM SYS
.RUN DEV FILE.EX          /EXECUTE FILE.EX FROM THE DEVICE
.SAVE DEV FILE.EX         /SAVE CORE IMAGE
.SQUISH DEV:              /COMPRESS FILE STORAGE ON DEVICE
.START FNNNN              /START EXECUTION
.UA COMMAND                /SAVE COMMAND(.UA<CR> EXECUTES IT)
.ZERO DEV:                /ZERO DEVICE'S DIRECTORY
```

## &amp;FIX

```
FIX.SV          -          OS/8 FILE BLOCK FIXUP PROGRAM
```

PROGRAM TO ALLOW ODT-LIKE EXAMINATION AND MODIFICATION OF DATA STORED ON AN OS-8 DEVICE.

THE FOLLOWING COMMANDS ARE AVAILABLE:

```
D XXXX (CR)      WORK ON DEVICE XXXX. THE HANDLER IS FETCHED
                  AND THE PROGRAM IS SET UP TO READ AND WRITE
                  THAT DEVICE.

L XXXXXX (CR)    LOOK UP FILE NAMED XXXXXX ON THE CURRENT DEVICE.
                  FIX RESPONDS WITH "NNNN, MMMM" WHERE NNNN IS THE
                  STARTING BLOCK NUMBER OF THE FILE AND MMMM IS
                  ITS LENGTH.

E XXXXXX=NNN (CR) ENTER TENTATIVE FILE XXXXXX ON THE CURRENT
                  DEVICE. NNN SPECIFIES THE REQUESTED SIZE OF THE
                  FILE, AND MAY BE 377 OR LESS. IF NNN IS GREATER
                  THAN 377 OR IS NOT SPECIFIED, THE FILE WILL BE
                  ENTERED IN THE LARGEST AVAILABLE SPACE. ENTER
                  RESPONDS WITH THE STARTING BLOCK NUMBER AND ACTUAL
                  LENGTH IN THE SAME MANNER AS LOOKUP.

C XXXXXX=NNNN (CR) CLOSE A FILE ON THE CURRENT DEVICE. THE ACTIVE
                  TENTATIVE FILE IS MADE PERMANENT WITH THE LENGTH
                  SPECIFIED BY NNNN AND THE OLD FILE NAMED XXXXXX
                  IS SEARCHED FOR AND DELETED.

R NNNN (CR)      READ BLOCK NUMBER NNNN FROM THE SELECTED DEVICE
                  INTO THE BUFFER. IF THE BLOCK NUMBER IS NOT
                  SPECIFIED, THE LAST ONE TYPED IS USED.

W NNNN (CR)      WRITE THE CONTENTS OF THE BUFFER ONTO BLOCK NNNN
                  OF THE SELECTED DEVICE. IF THE BLOCK NUMBER IS
                  NOT SPECIFIED, THE LAST ONE TYPED IS USED.

PX DEV:FILE (CR) PRINT THE CONTENTS OF THE BUFFER ONTO
                  THE SPECIFIED FILE.
                  DEFAULT IS LINE PRINTER.

X SPECIFIES ONE OF THE FOLLOWING FORMATS:

PO              PRINT IN OCTAL
P8              PRINT 8 BIT BYTES (IN OCTAL)
PA              PRINT IN ASCII
```

P6 PRINT SIX BIT ASCII

NNN/ EXAMINE AND OPEN RELATIVE LOCATION NNN OF THE BUFFER. WORKS JUST LIKE ODT.

(CR) CLOSE THE OPENED LOCATION

NNNN (CR) MODIFY AND CLOSE THE OPENED LOCATION

(LF) CLOSE THE OPENED LOCATION AND OPEN THE NEXT

NNNN (LF) MODIFY AND CLOSE THE OPENED LOCATION AND OPEN THE NEXT

IN ADDITION TO TYPING OCTAL VALUES INTO LOCATIONS, IT IS POSSIBLE TO INPUT PACKED SIXBIT WITH THE CONSTRUCTION "'XX". FIX WILL ACCEPT TWO CHARACTERS FOLLOWING THE SINGLE QUOTE, TRIM THEM TO SIXBIT, AND ADD THEM TO ANY OCTAL VALUE TYPED SO FAR.

## &amp;CONVRT

CONVRT.SV

SAVE FORMAT - BINARY FILE PUNCHER

THIS PROGRAM PRODUCES AN ABSOLUTE BINARY FILE FROM AN OS/8 SAVE FILE. ONLY THOSE AREAS OF MEMORY SPECIFIED IN THE CORE CONTROL BLOCK ARE ACTUALLY PUNCHED.

COMMAND DECODER RESPONSE IS:

OUTPUT &lt; INPUT, INPUT .....

DEFAULT INPUT EXTENSION IS ".SV", DEFAULT OUTPUT IS THE HIGH SPEED PAPER TAPE PUNCH.

## &amp;FUTIL

FUTIL.SV

FUTIL IS AN OS-8 UTILITY PROGRAM THAT IS EXTREMELY USEFUL

I F Y O U K N O W W H A T Y O U ' R E D O I N G  
 --       -----                   -----                   -----

IT IS EQUALLY AS DANGEROUS IF YOU DON'T !!!!!

FUTIL IS TOO COMPLICATED TO EXPLAIN IN A SIMPLE HELP FILE, SO PLEASE READ ABOUT IT IN THE OS-8 HANDBOOK UPDATE (DEC-S8-OSHBA-A-DN4) APPENDEX K.

ONE ESPECIALLY HANDY FEATURE IS THE ABILITY TO "SCAN" A GIVEN DEVICE TO ESTABLISH IF THERE ARE ANY "BAD BLOCKS". THIS IS SIMILIAR TO RT-11 PIP OPTION K.

## &amp;VERI

VPIP.SV

VPIP IS A SYSTEM PROGRAM WHICH COMPLEMENTS THE OPERATIONS OF



OS/8-PIP, BY INCLUDING VERIFICATION OF ALL BLOCK STRUCTURED TRANSFERS. IT PERFORMS SLASH "S" SQUISHES, PARTIAL SQUISHES, NON-DESTRUCTIVE SQUISHES AND MULTIPLE TRANSFERS.

#### BASIC THEORY OF OPERATION:

VPIP HAS TWO PASSES OR PHASES: THE FIRST IS OPTIONAL AND IS INVOKED WITH A /S (OR /N) TO PERFORM A DESTRUCTIVE (OR NON-DESTRUCTIVE) IMAGE MODE TRANSFER OF FILES. THE SECOND IS A VERIFICATION PHASE WHICH MAY BE INHIBITED WITH A /H.

THE FILES TO BE TRANSFERED AND/OR VERIFIED ARE SPECIFIED TO THE C.D.

\* OUTDEV: < INDEV:[FILENAME] [ ,INDEV:FILENAME ... ]

ALL DEVICES MUST BE BLOCK STRUCTURED. FOR EACH COMMAND DECODER INPUT-ENTRY, IF A FILENAME IS SPECIFIED, ALL FILES FROM SAID FILE ON ARE TAKEN (UNLESS "/O" OPTION IS SPECIFIED, IN WHICH CASE ONLY THE "ONE" FILE PER C.D. ENTRY IS TAKEN). IF NO FILENAME IS SPECIFIED, ALL FILES (OR ONLY THE FIRST) ON THE DEVICE ARE TAKEN.

#### PROGRAM OPTIONS:

/H INHIBIT PASS-II (VERIFICATION)  
/C DON'T PRINT "CANT FIND" MESSAGES DURING PASS-II

#### INPUT OPTION:

/O MOVE OR VERIFY ONLY THE SINGLE FILENAMES SPECIFIED (NOT FROM FILENAME ON)

#### TRANSFER OPTIONS:

/N NON:DESTRUCTIVE SQUISH. WILL TRANSFER SPECIFIED FILES TO THE OUTPUT-DEVICE WITHOUT FIRST ZEROING THE OUT-DEVICE DIRECTORY. (CREATION DATES ARE NOT UPDATED) (WARNING: MONITOR ERROR 6 LEAVES BAD SYS DATE).  
/D DELETE OLD COPY BEFORE EACH FILE MOVE (DURING /N ONLY) AND INSERT FILES IN THE BEST FIT HOLE (RATHER THAN THE LRGST).  
/S DESTRUCTIVE SQUISH SIMILAR TO OS/8-PIP. WILL SQUISH FILES ONTO OUTDEV, AFTER ZEROING THE OUT-DIRECTORY. (/S IS IGNORED IF /N IS SPECIFIED.)  
=# CREATE # "ADDITIONAL-INFORMATION-WORDS" DURING /S SQUISH. (DEFAULT=1)  
/T VERIFY DURING PASS-I TRANSFERS (READ/RE-READ AND WRITE/READ COMPARES EMPLOYED)

ON ANY SQUISH WHICH RUNS OUT OF OUTPUT-ROOM, THE OUT-DEVICE IS CLOSED BEFORE THE SQUISH IS ABORTED .

A SELF SQUISH (A /S WITH INPUT DEVICE SAME AS OUTPUT DEVICE) CANNOT BE PASS-II VERIFIED, THEREFORE SHOULD ONLY BE DONE USING "/T/H" WITH A SINGLE INPUT-DEVICE. MULTIPLE INPUT DEVICES OR FILE SPECIFICATIONS

ON A SELF SQUISH MAY RESULT IN MULTIPLE FILES OF THE SAME NAME IN THE OUTPUT DIRECTORY OR IN INCORRECT TRANSFERS (IF BLOCKS OF THE DEVICE ARE WRITTEN ON (AS OUTPUT AREA) BEFORE FILES IN SAME LOCATIONS COULD BE READ (AS INPUT)).

## HELPFUL EXAMPLES:

TO SQUISH A DISK

\* DISK: < DISK:(STH)

TO ZERO A DEVICE

\* DEV: < /S/H

TO PUT ALL FILES OF A DECTAPE ON A DISK (LEAVING OTHER STUFF  
STILL ON DISK): (NOTE: NO /D WOULD PUT ALL IN BIGGEST  
HOLE, IE: USUALLY TOGETHER)

\* DISK: < DTAPE: /N/D

TO BACKUP A LARGE DEVICE (DISK?) ON SMALLER DEVICES (DTAPES?)

\* DTAPE1: < DISK: /S

THEN:

\* DTAPE2: < DISK: (FIRST-FILE-NOT-TRANSFERED ABOVE) /S

TO GO THE OTHERWAY:

\* DISK: < DTAPE1:, DTAPE2: /S

TO WORK WITH TOP PORTIONS OF DEVICE:

\* DTAPE1: < DISK:FRST-FILE /N

TO TRANSFER SPECIFIED FILES WHEREVER THEY'LL FIT,  
VERIFY DURING TRANSFER ONLY:

\* DEVICE: < DEV1:FILE1, FILE2, DEV2:FILE3, FILE4, DEV3:FILE5 (NODTH)

## &amp;SDUMP

SDUMP.SV

THIS PROGRAM DUMPS THE CONTENTS OF A SAVE FILE IN OCTAL  
AS A LOADED CORE IMAGE.

APPROPRIATE COMMAND DECODER RESPONSE IS

"OUTPUT < INPUT1,INPUT2,..."

DEFAULT OUTPUT IS LPT, DEFAULT INPUT EXTENSION IS .SV.

DUMP FORMAT IS NORMALLY 20 (OCTAL) WORDS WIDE, ABOUT 105  
COLUMNS. SPECIFYING A "/N" OPTION CHANGES THE FORMAT TO  
10 WORDS WIDE, ALLOWING IT TO FIT ON A TTY.

## &amp;DASM

DASM.SV - PAL8 DISASSEMBLER

/

/ THIS PROGRAM DOES A SYMBOLIC DISASSEMBLY OF FROM ONE

/ TO EIGHT BINARY INPUT FILES.

/

/ COMMAND DECODER RESPONSE IS:

/

/ OUTPUT < SFILE, BFIL1, BFIL2, ...

/

/ DEFAULT OUTPUT IS THE LINEPRINTER (LPT)

/ DEFAULT INPUT EXTENSION IS .BN FOR ALL INPUT FILES

/

/ THE FIRST INPUT FILE IS A SYMBOL FILE, CONSISTING OF

```

/      SYMBOL NAMES FOLLOWED BY THE SYMBOL VALUE (FROM ONE TO
/      FOUR OCTAL DIGITS).  THE NAME AND VALUE MUST BE
/      SEPARATED BY ONE OR MORE SPACES.  SEVERAL SYMBOLS MAY
/      BE LISTED ON A LINE, IN A FORMAT SIMILAR TO THAT OF
/      THE SYMBOL LISTING PRODUCED BY PAL8.  THE REMAINING
/      INPUT FILES ARE BINARY FILES TO BE DISASSEMBLED.

```

```

/      OPERATION:
/

```

```

/      THE DISASSEMBLER WILL OUTPUT A SYMBOLIC REPRESENTATION OF
/      A BINARY FILE (OR FILES) THAT INCLUDES THE LOCATION,
/      SYMBOLIC LOCATION (IF THERE IS A SYMBOL DEFINED WITH THE VALUE
/      OF THE LOCATION, OCTAL VALUE IN THAT LOCATION, AND THE
/      CONTENTS OF THE LOCATION INTERPRETED AS AN INSTRUCTION.
/      EAE INSTRUCTIONS ARE INTERPRETED IN 'A' MODE.  WHERE
/      APPROPRIATE AND POSSIBLE, MEMORY REFERENCES ARE
/      PRINTED SYMBOLICALLY.  THIS CAN NOT HAPPEN AS OFTEN
/      AS MIGHT BE DESIRED BECAUSE OF THE PAGED NATURE OF
/      THE PDP-8, WHICH FORCES MANY INDIRECT REFERENCES
/      TO DATA TO BE MADE.  THE TARGET OF AN INDIRECT
/      REFERENCE CAN NOT BE PRINTED SYMBOLICALLY.
/

```

```
&SORT
```

```

SORT.SV          -          ASCII FILE SORTER

```

```

SORT:  SORTS INFINITE NUMBER OF LINES IN ASCENDING OR DESCENDING SEQUENCE
        ACCORDING TO ASCII CHARACTER SET, FAST!  (TIME IN SECONDS TO SORT
        FILE OF N BLOCKS APPROX= 3 + N/3 + N/10*(LOG10(N/10)) ).

```

```

TO RUN: .R SORT
        * OUTPUT < ORDER, INFIL [,INFIL ...]

```

```

WHERE:  OUTPUT WILL CONTAIN SORTED FILE
        INFIL IS THE UNSORTED INPUT FILE
        ORDER SPECIFIES THE COLUMNS (IN DECIMAL, 1 IS LEFTMOST) TO BE SORTED;
        POSITIVE FOR ASCENDING, NEGATIVE FOR DESCENDING; MAY USE FROM-TO:
        EG:  "1-10, -12-19,11, -20,25-21<CR>"

```

```
ERRORS:
```

```

USER ERROR 2  SYS: I/O (HANDLER, FETCH, ETC)
USER ERROR 3  INPUT DEVICE I/O
USER ERROR 4  OUTPUT DEVICE I/O
USER ERROR 5  BAD NUMBER IN ORDER FILE
USER ERROR 6  NO INFIL
USER ERROR 7  TOO MANY NUMBERS IN ORDER FILE
USER ERROR 8  NUMBER IN ORDER FILE TOO LARGE
USER ERROR 9  LINE TOO LONG IN INFIL (128. CHAR MAX)
               OR A "^Y" IN INFIL

```

```
&WUMPUS
```

```

WUMPUS.BA      -          A "HUNT THE WUMPUS" GAME

```

```

YOU ARE A FAMOUS HUNTER DESCENDING DOWN INTO THE CAVES OF DARKNESS,
LAIR OF THE INFAMOUS MAN-EATING WUMPUS.  YOU ARE EQUIPPED WITH FIVE
BENT ARROWS, AND ALL YOUR SENSES.  THERE ARE TWENTY CAVES CONNECTED
BY TUNNELS, AND THERE ARE TWO OTHER KINDS OF HAZARDS:

```

A) PITS, WHICH ARE BOTTOMLESS, AND USUALLY FATAL TO FALL INTO. THERE ARE THREE SUCH PITS IN THE NETWORK.

B) SUPER-BATS, WHICH IF YOU STUMBLE INTO THEIR ROOM WILL PICK YOU UP AND DROP YOU IN SOME RANDOM ROOM IN THE NETWORK. YOU MAY SHOOT SUPER-BATS, THERE IS ONE IN EACH OF THREE OR FOUR ROOMS WITHIN THE NETWORK. THE SUPER-BATS GENERALLY STAY IN THEIR OWN ROOMS, EXCEPT WHEN DISPOSING OF INTRUDERS OR SCAVENGING FOR FOOD IN THE PITS.

IF YOU BLUNDER INTO THE SAME ROOM AS THE WUMPUS, YOU LOSE....  
THE NORMALLY SLEEPING WUMPUS DOES NOT MOVE (HAVING GORGED HIMSELF UPON A PREVIOUS HUNTER). HOWEVER SEVERAL THINGS CAN WAKE HIM UP:

- 1) WALKING INTO HIS ROOM,
- 2) SHOOTING AN ARROW ANYWHERE IN THE NETWORK,
- 3) TRIPPING OVER DEBRIS (CLUMSINESS),
- 4) TURNING ON THE LIGHTS, IN ORDER TO SEE WHERE YOU ARE HEADED.

IF HE WAKES UP THERE'S A POSSIBILITY HE WILL MOVE, HOWEVER, HE'S TOO LAZY TO MOVE MORE THAN ONE ROOM BETWEEN SNOOZES. THE WUMPUS IS TOO BIG TO BE PICKED UP BY SUPER-BATS AND HAS SUCKER FEET, SO HE DOESN'T FALL INTO THE PITS.

YOU CAN SMELL THE WUMPUS FROM ONE OR TWO ROOMS AWAY. YOU WILL TREMBLE WITH FEAR WHEN HE MOVES ABOUT. YOU CAN HEAR SUPER-BATS FROM ONE ROOM AWAY, AND FEEL DRAFTS (FROM BOTTOMLESS PITS) FROM ONE ROOM AWAY (AND TASTE THE FEAR...).

TO SHOOT AN ARROW TYPE "SHOOT" INSTEAD OF A MOVE, AND THEN SPECIFY WHICH ROOMS THE ARROW SHOULD PASS THROUGH. YOU ARE STRONG ENOUGH TO SHOOT IT THROUGH AS MANY AS FIVE ROOMS. BENT ARROWS HAVE NO PROBLEM ROUNDING CORNERS OF LESS THAN 98.6 DEGREES. IF YOU SPECIFY AN IMPOSSIBLE PATH THE ARROW WILL RICOCHET OFF THE WALLS OF THE ROOM, LOSING SPEED, AND WILL EVENTUALLY COME TO REST IN ONE OF THE ADJOINING ROOMS. THE PATH MAY BE TERMINATED BY SPECIFYING ROOM 0.

EACH ROOM IS CONNECTED TO THREE OTHER ROOMS BY THREE TUNNELS A, B AND C. YOU MUST ALWAYS MOVE BETWEEN ROOMS BY SPECIFYING WHICH TUNNEL YOU WISH TO EXPLORE. YOU CAN ALWAYS RETRACE YOUR FOOT STEPS BY MOVING BACK USING THE SAME TUNNEL DESIGNATOR.

IF YOU WISH TO SEE WHICH ROOMS ARE AT THE ENDS OF THE TUNNELS YOU MAY TYPE "LIGHTS ON" INSTEAD OF A MOVE. THIS MAY BE AN UNHEALTHY LUXURY HOWEVER BECAUSE THE LIGHT GIVES THE WUMPUS INSOMNIA. TO EXTINGUISH THE LIGHTS SIMPLY TYPE "LIGHTS OFF".

GOOD LUCK HUNTING!!

&DIRECT

DIRECT.SV

@CALLING COMMANDS

.DIR DEV:LISTFILE.DI<DEV:FILETYPE

/\* IS WILD NAME OR EXTENSION

.DIR FILETYPE

/? IS WILD CHARACTER

@SWITCHES:

/A ALPHABETIZE DIRECTORY BEFORE PROCESSING

/B INCLUDE STARTING BLOCK NUMBERS (OCTAL)

/C LIST ONLY FILES WITH THE CURRENT DATE

/D SORT FILES BY DATE, THEN ALPHABETICALLY

/E INCLUDE EMPTIES IN THE LISTING

```

/F      FAST MODE (NO LENGTHS OR DATES)
/H      LIST CONTENTS OF THE HEADER BLOCK
/I      PRINT ADDITIONAL INFORMATION WORDS
/M      LIST ONLY THE EMPTIES
/N      PRINT DATES IN NUMERIC FORM (MM/DD/YY)
/O      LIST ONLY FILES WITH OTHER THAN TODAY'S DATE
/P      ELIMINATE PAGING (NO FORMFEEDS IN THE OUTPUT)
/R      LIST REMAINDER OF FILES AFTER THE FIRST ONE
/T      PRINT THE MOST TIMELY (RECENT) FILES FIRST
/U      TREAT EACH INPUT SPECIFICATION SEPARATELY
/V      LIST FILES NOT OF THE FORM SPECIFIED
/W      PRINT THE VERSION NUMBER
/X      ALPHABETIZE BY EXTENSION, THEN BY NAME
=N      USE N COLUMNS - OUTPUT IS ORDERED BY COLUMN

```

#### &OCOMP

OCOMP.SV - COMPARE & DUMP FILES UNDER A MASK

DEFAULT OUTPUT IS TO TTY:

DEFAULT OUTPUT EXTENSION IS .LS.

THE MASK IS SPECIFIED AS THE LEAST SIGNIFICANT 12 BITS OF =.

#### 1) COMPARE:

TWO INPUT FILES ARE COMPARED UNDER A MASK.

IF MASK=0, USE 7777.

#### 2) DUMP:

ONE INPUT FILE.

DUMP ALL WORDS WITH NO MASK BITS OFF.

IF MASK=0, USE 7777.

#### 3) SEARCH:

ONE INPUT FILE WITH /S.

DUMP ALL WORDS EQUAL TO THE MASK.

AFTER SPECIFIED OPERATIONS ARE COMPLETED, THE COMMAND DECODER IS RECALLED, UNLESS INPUT WAS TERMINATED BY AN ALT MODE CHARACTER.

#### OTHER COMMAND DECODER OPTIONS:

```

/I      IMAGE MODE
        INPUT FILE IS CORE IMAGE (SAVE) FILE.
        ADDRESSING IS BY MEMORY ADDRESS, RATHER THAN FILE ADDRESS.
        DEFAULT INPUT EXTENSION IS .SV.
/C      CCB OUTPUT
        WHEN COMBINED WITH /I, CCB IS PRINTED AS PART OF THE RUN TITLE.
/D      DIFFERENCE MODE
        ONLY OUTPUT IS A MESSAGE TELLING THAT COMPARED FILES ARE
        SAME OR DIFFERENT.
/F      FORM FEED
        ALL BLOCKS WHICH CAUSE OUTPUT HAVE THEIR OUTPUT PRECEDED
        BY A FORM FEED CHARACTER.
/T      TELETYPE
        OUTPUT FORMAT IS NARROWED FOR OUTPUT TO 72 COLUMN TELETYPES.
        THIS IS ALSO USEFUL FOR SCOPES.
/H      HEADER
        OUTPUT HEADER LINE EVEN IF OUTPUT DEVICE IS TTY:..

```

## ERRORS ARE SIGNALLED BY "USER ERROR ..." MESSAGES

ERROR	CONDITION
1	MORE THAN TWO INPUT FILES.
2	OUTPUT FILE TOO SMALL.
3	OUTPUT HANDLER FETCH OR ENTER FAILED.
4	INPUT HANDLER FETCH OR LOOKUP FAILED.
5	INPUT FILE #1 ERROR.
6	INPUT FILE #2 ERROR.
7	OUTPUT FILE ERROR.
8	OUTPUT FILE CLOSE FAILED.
9	CCB DECODE ERROR.

## &amp;SPACWR

## INSTRUCTIONS FOR SPACWR

THE GALAXY IS DIVIDED INTO AN 8,8 QUADRANT GRID WHICH IS IN TURN DIVIDED INTO AN 8,8 SECTOR GRID.

THE CAST OF CHARACTERS IS AS FOLLOWS:

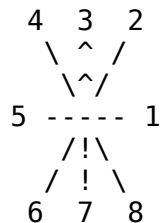
<\*> = ENTERPRISE

+++ = KLINGON

>!<=STARBASE

\* =STAR

COMMAND 0 = WARP ENGINE CONTROL:  
COURSE IS IN A CIRCULAR NUMERICAL VECTOR ARRANGEMENT AS SHOWN. INTEGER AND READ VALUES MAY BE USED. THEREFORE COURSE 1.5 IS HALF WAY BETWEEN 1 AND 2.



A VECTOR OF 9 IS UNDEFINED, BUT VALUES MAY APPROACH 9.

COURSE  
ONE WARP FACTOR IS THE SIZE OF ONE QUADRANT. THEREFORE TO GET FROM QUADRANT 6,5 TO 5,5 YOU WOULD USE COURSE 3. WARP FACTOR 1

COMMAND 1 = SHORT RANGE SENSOR SCAN  
PRINT THE QUADRANT YOU ARE CURRENTLY IN. INCLUDING STARS, KLINGONS, STARBASES, AND THE ENTERPRISE, ALONG WITH OTHER PERTINATE INFORMATION.

COMMAND 2 = LONG RANGE SENSOR SCAN  
SHOWS CONDITIONS IN SPACE FOR ONE QUADRANT ON EACH SIDE OF THE ENTERPRISE IN THE MIDDLE OF THE SCAN. THE SCAN IS CODED IN THE FORM XXX, WHERE THE UNITS DIGIT IS THE NUMBER OF STARS, THE TENS DIGIT IS THE NUMBER OF STARBASES. THE HUNDREDS DIGIT IS THE NUMBER OF KLINGONS.

COMMAND 3 = PHASER CONTROL  
ALLOWS YOU TO DESTROY THE KLINGONS BY HITTING HIM WITH

SUITABLY LARGE NUMBERS OF ENERGY UNITS TO DEplete HIS SHIELD POWER. KEEP IN MIND THAT WHEN YOU SHOOT AT HIM, HE GONNA SHOOT AT YOU, TOO!

COMMAND 4 = PHOTON TORPEDO CONTROL  
 COURSE IS THE SAME AS USED IN WARP ENGINE CONTROL  
 IF YOU HIT THE KLINGON, HE IS DESTROYED AND CANNOT FIRE BACK AT YOU. IF YOU MISS, YOU ARE SUBJECT TO HIS PHASER FIRE.

NOTE: THE LIBRARY COMPUTER (COMMAND 7) HAS AN OPTION TO COMPUTE TORPEDO TRAJECTORY FOR YOU (OPTION 2).

COMMAND 5 = SHIELD CONTROL  
 DEFINES NUMBER OF ENERGY UNITS TO BE ASSIGNED TO SHIELDS  
 ENERGY IS TAKEN FROM TOTAL SHIP'S ENERGY.  
 NOTE THAT TOTAL ENERY INCLUDES SHIELD ENERGY.

COMMAND 6 = DAMAGE CONTROL REPORT  
 GIVES STATE OF REPAIRS OF ALL DEVICES. A STATE OF REPAIR LESS THAN ZERO SHOWS THAT THE DEVICE IS TEMPORARALY DAMAGED.

COMMAND 7 = LIBRARY COMPUTER  
 THE LIBRARY COMPUTER CONTAINS THREE OPTIONS:  
 OPTION 0 = CUMULATIVE GALACTIC RECORD  
 WHICH SHOWS COMPUTER MEMORY OF THE RESULTS OF ALL PREVIOUS LONG RANGE SENSOR SCANS  
 OPTION 1 = STATUS REPORT  
 WHICH SHOWS NUMBER OF KLINGONS, STARDATES, AND STARBASES LEFT.  
 OPTION 2 = PHOTON TORPEDO DATA  
 GIVES TRAJECTORY AND DISTANCE BETWEEN THE ENTERPRISE AND ALL KLINGONS IN YOUR QUADRANT

COMMAND 8 = BEGIN NEW CONTEST (WITH NEW GALAXY LAYOUT).

&KING  
 &KING.BA  
 K I N G . . . A LAND & RESOURCE MANAGEMENT GAME

C O N G R A T U L A T I O N S !  
 -----

YOU HAVE JUST BEEN ELECTED PREMIER OF SETUTS DETINU , A SMALL COMMUNIST ISLAND  
 30 BY 70 MILES LONG. YOUR JOB IS TO DECIDE UPON THE COUNTRY'S BUDGET AND TO  
 DISTRIBUTE MONEY TO YOUR COUNTRYMEN FROM THE COMMUNAL TREASURY.

THE MONEY SYSTEM IS RALLODS AND EACH PERSON NEEDS 100 RALLODS PER YEAR T  
O  
SURVIVE.

&KING  
&KING.BA

K I N G . . . A LAND & RESOURCE MANAGEMENT GAME

C O N G R A T U L A T I O N S !  
-----

YOU HAVE JUST BEEN ELECTED PREMIER OF SETUTS DETINU , A SMALL COMMUNIST  
ISLAND  
30 BY 70 MILES LONG. YOUR JOB IS TO DECIDE UPON THE COUNTRY'S BUDGET AN  
D TO  
DISTRIBUTE MONEY TO YOUR COUNTRYMEN FROM THE COMMUNAL TREASURY.

THE MONEY SYSTEM IS RALLODS AND EACH PERSON NEEDS 100 RALLODS PER YEAR T  
O  
SURVIVE.

YOUR COUNTRY'S INCOME COMES FROM FARM PRODUCE AND THE TOURISTS THAT VISI  
T YOUR  
MAGNIFICENT FORESTS; HUNTING, FISHING, ETC. HALF OF YOUR LAND IS FARM  
LAND,  
WHICH ALSO HAS EXCELLENT MINERAL CONTENT AND MAY BE SOLD TO FOREIGN INDU  
STRY  
FOR STRIP MINING. UNFORTUNATELY, THIS WREAKS THE LAND FOR ALL OTHER USES  
, AND  
IN ADDITION, THESE FOREIGN INTERESTS IMPORT ( AND SUPPORT ) THEIR OWN LA  
BOR  
SUPPLY.

IT COSTS YOU BETWEEN 10 AND 15 RALLODS PER SQ. MILE TO PLANT CROPS.

YOUR GOAL IS TO COMPLETE AN 8 YEAR TERM OF OFFICE . . . GOOD LUCK !!

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