IDENTIFICATION

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THE TROP USER MANUAL CONSISTS OF THE FOLLOWING SECTIONS:
SECTION 1. TROP INTRODUCTION
SECTION 2. TROP GENERAL USE DOCUMENTATION
SECTION 3. TROP UPDATE PROGRAM (UPD2TR)
SECTION 1. TRDP INTRODUCTION

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1. WHAT IS TRDP
2. TRDP REQUIREMENTS
3. DISCLAIMERS
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1. WHAT IS TRDP

TRDP IS A NAME FOR A PDP-11 DIAGNOSTIC PACKAGE AVAILABLE ON MULTIMEDIA, INCLUDES TR74F DIAGNOSTIC PACKAGE (9 TRACK MAGTAPE).

THE TRDP PACKAGES CONTAIN PDP-11 FAMILY DIAGNOSTIC PROGRAMS ON MEDIA OTHER THAN PAPER TAPE. TRDP PACKAGES HAVE THE FOLLOWING ADVANTAGES:

A. MORE COMPACT STORAGE MEDIA,
B. EASY AND CONVENIENT MEANS OF LOADING PROGRAMS UNDER KEYBOARD CONTROL,
C. MEANS ARE PROVIDED FOR UPDATING AND MODIFYING PROGRAMS,
D. POSSIBLE TO SEQUENTIALLY RUN A SERIES OF PROGRAMS THROUGH USE OF THE "CHAIN MODE" FEATURE. (PROGRAMS MUST BE CHAINABLE).
2. TRDP REQUIREMENTS

2.1 ALL TRDP PACKAGES REQUIRE:
   A. PDP-11 PROCESSOR WITH AT LEAST 16K STORAGE.
   B. CONSOLE DEVICE
   C. TR79F DIAGNOSTIC PACKAGE MEDIA:

   THE ABOVE REQUIREMENTS ARE FOR LOADING AND RUNNING DIAGNOSTIC PROGRAMS
   ALREADY STORED IN THE DIAGNOSTIC PACKAGE MEDIA. THEY ARE ALSO
   SUFFICIENT FOR IMPLEMENTING PERMANENT PATCHES ON PROGRAMS WHEN REQUIRED.

2.2 TO UPDATE A DIAGNOSTIC PACKAGE, THAT IS ADD NEW PROGRAMS OR NEW
   VERSIONS OF PROGRAMS TO THE PACKAGE, THE FOLLOWING HARDWARE IS REQUIRED:
   A. PCL11 HIGH SPEED READER, OR
   B. ASR 33 OR ASR 35 TELETYPE.

2.3 OPTIONAL HARDWARE:
   A. BOOTSTRAP ROM FOR THE TR79F
      IT MAKES LOADING THE TRDP MONITOR MORE CONVENIENT.
3. DISclaimers

3.1 THE TROP PACKAGES HAVE BEEN DESIGNED FOR DIAGNOSTIC PURPOSES ONLY. THE TROP SOFTWARE IS NOT INTENDED TO BE COMPATIBLE WITH ANY OTHER PDP-11 FAMILY SOFTWARE. ANY NON-DIAGNOSTIC USES OF THE SOFTWARE, OR USES OF THE SOFTWARE IN OTHER THAN THE MANNER DESCRIBED IN THIS DOCUMENT ARE NOT SUPPORTED.

3.2 THE TROP PACKAGES ARE BINARY PACKAGES ONLY. THEY PROVIDE THE PDP-11 FAMILY DIAGNOSTIC PROGRAMS IN THE MEDIA DESCRIBED. DOCUMENTATION FOR EACH OF THE PROGRAMS STORED IN A TROP PACKAGE MUST BE OBTAINED SEPARATELY FROM SOFTWARE DISTRIBUTION CENTER (SDC). HOWEVER, THIS DOCUMENTATION MUST BE OBTAINED AT THE SAME TIME AS THE PACKAGE IN ORDER TO INSURE THAT THE DOCUMENTS AND THE PROGRAMS ARE AT THE SAME REVISION LEVEL.
4. CONTENTS OF A TRDP PACKAGE

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THE BASIC PARTS OF A TRDP PACKAGE ARE:

A. A CONTROL PROGRAM REFERRED TO AS THE "MONITOR". THE MONITOR PROVIDES
THE MEANS TO LOAD PROGRAMS UNDER KEYBOARD CONTROL TO OBTAIN A
DIRECTORY OF CONTENTS OF THE TRDP MEDIUM (DISK, MAGTAPE, ETC).

B. TRDP UPDATE PROGRAM #2 (UPD2TR). A 6.5K PROGRAM THAT PROVIDES A MORE COMPREHENSIVE
SET OF COMMANDS THAT PROVIDE MORE CONVENIENCE AND EASE OF UPDATING
THE TRDP PACKAGE.

5. THE TRDP PACKAGE

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THE TRDP PACKAGE PROVIDES THE PDP-11 FAMILY DIAGNOSTICS ON 9
TRACK MAGTAPE (TR79F). THE PACKAGE CONSISTS OF THE FOLLOWING ITEMS
THAT MUST BE ORDERED INDIVIDUALLY:

MAINDEC-11-DMQXA TRDP USER MANUAL (THIS DOCUMENT).

SECTION 2. TRDP GENERAL USE DOCUMENTATION

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APPENDIX A. TRDP RESIDENT MONITOR COMMANDS
1.1 LOADING TRDP MONITOR

------------------------

THE TRDP MONITOR CAN BE LOADED BY BM8873-S1,
OR VIA A "TOGGLE-IN" PROCEDURE.
THE TOGGLE-IN PROCEDURE IS ONLY VALID FOR THE TR79F.

1.1.1 VIA BOOTSTRAP LOADER

------------------------

A. MOUNT THE TRDP TAPE ON DRIVE D AND MAKE READY
B. REWIND DRIVE D TO "BOT" AND SET "ON-LINE"
C. LOAD BM8873-S1 STARTING ADDRESS 173536
D. PRESS START
E. GO TO 1.4.3 STEP A.
1.1.2 VIA "TOGGLE-IN" PROCEDURE

A. MOUNT TAPED TAPE ON DRIVE 0 AND MAKE READY.
B.REWIND DRIVE 0 TO "BOT" AND SET "ON-LINE" 
DRIVE SHOULD BE A LOAD PGM.
C. TOGGLE IN PROGRAM
D. STARTING ADDRESS AT LOCATION 10000 
E. WAIT UNTILL DRIVE & CPU HALT
F. LOAD START ADDRESS AT LOCATION ZERO (0) PRESS START KEY

```
010000 012700 164000  START: MOV          #164000.R0
010004 012701 164002  MOV          #164002.R1
010008 012702 164004  MOV          #164004.R2
01000C 012703 164006  MOV          #164006.R3
010010 012704 077776  MOV          #777776.SP
010014 000001 000005  YES: CLR          #23.F1
010018 000476 000070  BURST: JSR          PC,READY
01001C 005011 005012  REED: MOV          05.R5,AR2
010020 012710 000005  MOV          #5,AR2
010024 004767 000020  MOV          #5,AR1
010028 005011 005011  INC          #5,AR1
01002C 004767 000036  MOV          05.R4,AR1
010030 004767 000036  MOV          #5.R4
010034 004767 000044  MOV          05.R4
010038 004767 000052  MOV          05.R4
01003C 012711 174000  MOV          #2048.R4
010040 005011 005011  MOV          #2048,R4
010044 012710 000005  MOV          #5.R5
010048 004767 000014  MOV          #5.R5
01004C 011530 337100  MOV          05.3R3
010050 000000 000200  PACK: MOVB        (RS)+,(R4)+
010054 037100 000200  INC          RS,AR3
010058 006013 006013  MOV          RS,AR3
01005C 000173 000000  MOV          BNE          PACK
010060 000000 000200  MOV          HLT          READY
010064 037100 000200  MOV          #200,AR0
010068 001775 001775  MOV          BEQ          READY
01006C 037100 100000  MOV          #100000,AR0
010070 007404 007404  MOV          BEQ          RTN
010074 037110 010000  MOV          #100000,AR1
010078 001001 001001  MOV          BNE          RTN
01007C 000000 000000  TAPERR: HLT          RTN
010080 000207 000207  RTN: RTS          PC
```
1.1.3 COMMON PROCEDURE

A. THE MONITOR IS LOADED FROM MEDIUM.
B. THE MONITOR TYPES THE FOLLOWING MESSAGE AND IS THEN READY TO ACCEPT KEYBOARD COMMANDS.
   XXXXXX-X TRDP - TR719F MONITOR MNK RESTART: XXXXXX
   (HELP MESSAGE)
   
   WHERE: MNK IS THE SYSTEM'S STORAGE UP TO 26K
   XXXXXX IS THE MONITOR'S RESTART ADDRESS.
   THE DOT (.) INDICATES THE MONITOR IS READY TO ACCEPT COMMANDS.

C. THE HELP MESSAGE MAY BE ELIMINATED BY TYPING CTL C.
D. GO TO SECTION 2. USE PROCEDURES.

NOTE: <CR> MEANS PRESSING THE "RETURN" KEY ON KEYBOARD.
2. USE PROCEDURES

THE USE PROCEDURES THAT FOLLOW APPLY TO TROD

2.1 SET THE FILL COUNT

THE TTY OUTPUT ROUTINE OF THE UPDATE PROGRAM NORMALLY OUTPUTS 1H(B) FILLER CHARACTERS AFTER A CARRIAGE RETURN. IN ORDER TO INSURE THAT THE LCDS TERMINAL PRINTS CORRECTLY, HOWEVER, ON TERMINALS OTHER THAN THE LCDS THE FILLER CHARACTERS ARE NOT REQUIRED AND ARE TIME CONSUMING AND ANNOYING. THE NUMBER OF FILLER CHARACTERS OUTPUT CAN BE CHANGED BY MEANS OF THE "F" COMMAND. THE F COMMAND SHOULD BE THE FIRST COMMAND ISSUED IN ORDER TO PROPERLY SET UP THE CONSOL. TYPE:

F<CR>

000014 1

;THE 000014 IS TYPED BY THE PROGRAM AND
;INDICATES THE CURRENT FILLER COUNT. THE 1
;INDICATES THE USER TYPED A FILLER COUNT OF 1.

2.2 OBTAINING A DIRECTORY

TO OBTAIN A DIRECTORY TYPE ONE OF THE FOLLOWING:

D<CR> TO OBTAIN DIRECTORY ON CONSOLE TERMINAL, OR
D/F<CR> TO OBTAIN SHORT DIRECTORY ON CONSOLE TERMINAL,
D/L<CR> TO OBTAIN DIRECTORY ON LINE PRINTER. LINE PRINTER MUST BE PRESENT ON SYSTEM. NO CHECK IS MADE FOR IT.

THE DIRECTORY CONTAINS THE FOLLOWING INFORMATION:

FILNAM.EXT PROGRAM NAME AND EXTENSION ASSIGNED. .BIN, .BIC, AND .SAV ARE THE ONLY VALID EXTENSIONS FOR TROD MONITOR USE.

NOTE: .BIN IS A BINARY FILE
.BIC IS A CHAINABLE BINARY FILE
.SAV IS A CORE IMAGE FILE

LENGTH NUMBER OF BLOCKS USED. DECIMAL NUMBER. (DISK).
START STARTING BLOCK NUMBER. OCTAL NUMBER. (DISK AND DECTAPE).
DATE DATE WHEN PROGRAM WAS PUT ON MEDIUM.
2.3 LOADING AND RUNNING PROGRAMS

A. TYPE "R" AND THE PROGRAM NAME (UP TO 6 CHARACTERS). DO NOT TYPE THE EXTENSION ( .BIN, .BIC ).
   THIS WILL LOAD AND RUN THE PROGRAM, TO JUST LOAD THE PROGRAM
   TYPE "L" AND THE PROGRAM NAME. ONCE LOADED TYPING A "S"
   WILL START THE PROGRAM.

B. DEPRESS THE CTL AND C KEYS.
   IF A TYPING ERROR IS MADE, DEPRESS THE CTRL AND C KEYS AT SAME TIME.
   A DOT (.) WILL BE TYPED. RETYPE "R" AND THE PROGRAM NAME.

C. THE DESIRED PROGRAM IS LOADED, A DOT TYPED, AND,
   1. THE PROGRAM SELF STARTS IF IT IS SELF STARTING, OR
   2. THE PROGRAM IS STARTED AT LOC 000200 IF THE PROGRAM NAME WAS
      ENDED WITH AN ALPHABETIC CHARACTER, OR
   3. THE MONITOR WAITS FOR ANOTHER COMMAND, THE PROGRAM JUST LOADED
      MUST BE STARTED MANUALLY BY TYPING S PROGRAM NAME (CR).

D. TO LOAD ANOTHER PROGRAM AFTER RUNNING THE PREVIOUSLY LOADED PROGRAM,
   RESTART THE MONITOR AT THE RESTART ADDRESS, OR RELOAD THE MONITOR
   AS DESCRIBED IN SECTION 1.

E. POSSIBLE ERRORS ARE DESCRIBED IN SECTION 3.

CAUTION: WHEN LOADING DIAGNOSTICS THAT TEST THE TRESP MEDIUM CARE MUST
BE TAKEN TO INSURE THAT THE MEDIUM IS NOT ACCIDENTALLY
DESTROYED. THAT IS THE REASON THAT THE MEDIUM MUST BE WRITE-
LOCKED. REMOVE IT IF IT IS DESIRED TO TEST THAT DRIVE.
2.4 CHAIN MODE OPERATION

CHAIN MODE OPERATION CONSISTS OF THE SEQUENTIAL EXECUTION OF PROGRAMS WITHOUT OPERATOR INTERVENTION. ONLY PROGRAMS THAT HAVE BEEN MODIFIED TO RUN IN CHAIN MODE CAN BE CHAINED. CHAINABLE PROGRAMS ARE IDENTIFIED IN THE DIRECTORY BY THE EXTENSION .BIC.

NOTE: .BIC IS A CHAINABLE BINARY FILE.

TO RUN CHAIN MODE, THE TSO/PM MONITOR REQUIRES A FILE INDICATING THE PROGRAMS TO RUN, AND THE NUMBER OF TIMES EACH PROGRAM MUST EXECUTE BEFORE GOING ON TO THE NEXT PROGRAM IN THE TABLE.

A CHAIN FILE MAY BE GENERATED BY USING THE XTECO TEXT EDITOR, AND THE USER MUST PUT A .CCC EXTENSION ON THE CHAIN FILE.

TO SUMMARIZE:

1. CHAIN MODE RUNS CHAINABLE PROGRAMS ONLY (.BIC EXTENSIONS).
2. A CHAIN FILE INDICATES THE PROGRAMS TO RUN AND THEIR PASS COUNTS.
3. ONLY PROGRAMS RESIDENT ON THE SAME MEDIUM DRIVE CAN BE CHAINED.
4. THE CHAIN FILE MUST BE ON THE SAME MEDIUM WITH A .CCC EXTENSION.

NOTE: THE .CCC EXTENSION INDICATES A CHAIN FILE.

CHAIN MODE IS ENTERED BY TYPING:

C FILENAME(CR) (WHILE IN MONITOR MODE).

WHERE:

C IS THE "CHAIN" COMMAND.
FILENAME IS THE VALUE OF THE ASCII FILE THAT CONTAINS THE MONITOR COMMANDS TO BE EXECUTED. THE FILE MUST HAVE A " .CCC " EXTENSION.
2.4.1 MAKING A CHAIN ASCII FILE

THE CHAIN ASCII FILE MAY BE CREATED BY RUNNING THE XTECO PROGRAM AND USING THE TEXT EDITOR TO CREATE THE ASCII CHAIN FILE. THE CHAIN FILE MAY CONTAIN ANY OF THE COMMANDS SUPPORTED UNDER THE TROP MONITOR. THE COMMANDS IN THE ASCII FILE ARE EXECUTED IN THE ORDER IN WHICH THEY ARE ENTERED AND RUN AS A BATCH MODE.

EXAMPLE OF A CHAIN FILE:

;CPU, CCC
; THIS CHAIN FILE EXERCISES THE XYZ PROCESSOR WITH T1-T13.

R D00A/1000
R D00B/1000
R D00C/1000
R D00D/1000
R D00E/1000
R D00F/1000
R D00G/1000
R D00H/1000
R D00I/1000
R D00J/1000
R D00K/1000
R D00L/1000
L D00A
S/1000
C CPU

; RUN T1 1000 TIMES (CR)
; RUN T2 1000 TIMES (CR)
; RUN T3 1000 TIMES (CR)
; RUN T4 1000 TIMES (CR)
; RUN T5 1000 TIMES (CR)
; RUN T6 1000 TIMES (CR)
; RUN T7 1000 TIMES (CR)
; RUN T8 1000 TIMES (CR)
; RUN T9 1000 TIMES (CR)
; RUN T10 1000 TIMES (CR)
; RUN T11 1000 TIMES (CR)
; RUN T12 1000 TIMES (CR)
; LOAD T13 (CR)
; START IT, RUN 1000 TIMES (CR)
; RESUBMIT CHAIN FILE AGAIN.
2.4.2  RUNNING A CHAIN

TO EXECUTE A CHAIN FILE THE USER TYPES:

C FILENAME<CR>  OR
C FILENAME/QV<CR>

IN THE FIRST CASE THE PASS COUNT SPECIFIED IN THE CHAIN FILE
IS USED BY THE TRDP MONITOR TO DETERMINE THE NUMBER OF PASSES TO
EXECUTE EACH PROGRAM. IN THE SECOND CASE THE PASS COUNT
IS NOT USED AND EACH PROGRAM IS EXECUTED ONLY ONCE. THE /QV SWITCH
PROVIDES A SINGLE EXECUTION MODE OF OPERATION OR "QUICK VERIFY".
THE CHAIN FILE TO BE EXECUTED MUST HAVE AN EXTENSION OF .CCC.

THE CHAIN FILE AND THE OBJECTIVE PROGRAMS TO BE RUN MUST RESIDE IN
THE SAME TRDP MEDIUM AND MUST BE MOUNTED ON DRIVE D OF TRDP DEVICE

WHEN IN CHAIN MODE SWITCH REGISTER OR SOFTWARE SWITCH REGISTER SHOULD BE SET TO 00000.

THE TRDP MONITOR WILL TYPE EACH COMMAND THAT IT EVALUATES AND THEN
PROCEED TO EXECUTE IT.

IF THE MONITOR ENCOUNTERS A PROGRAM THAT DOES NOT HAVE A .BIC
EXTENSION IT TYPES "NOFILE". THEN IF THE ERROR RESULTED FROM A R
(RUN COMMAND) ONLY, IT WILL CONTINUE WITH THE CHAIN FILE COMMAND,
OTHERWISE IT TERMINATES THE CHAIN OPERATION.

WHEN THE LAST COMMAND OTHER THAN ANOTHER "$ Command HAS BEEN EXECUTED
THE TRDP MONITOR TERMINATES CHAIN MODE AND TYPES A DOT(.),
READY TO ACCEPT ANOTHER COMMAND FROM THE CONSOLE.

IF THE USER WISHES TO TERMINATE CHAIN MODE BEFORE ITS NORMAL TERMINATION
HE MAY DO SO BY REPEATEDLY TYPING CIL C (1C) AT THE CONSOLE UNTIL
THE MONITOR ACCEPTS IT AT THE END OF A PROGRAM PASS.
3. ERRORS

3.1 TRDF RESIDENT MONITOR ERRORS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INVCMDSW</td>
<td>INVALID COMMAND AND/OR SWITCH. CHECK COMMAND JUST GIVEN.</td>
</tr>
<tr>
<td>DEVEAR</td>
<td>DEVICE ERROR ON EITHER INPUT OR OUTPUT DEVICE. CHECK THAT OUTPUT DEVICE IS WRITE-ENABLED.</td>
</tr>
<tr>
<td>EOM</td>
<td>END OF MEDIUM. OCCURS DURING INPUT OPERATIONS WHEN THE PROGRAM ATTEMPTS TO INPUT AND THE FILE IS AT AN END. SERIOUS PROBLEM. FILE IN STORAGE IS PROBABLY WIPED OUT.</td>
</tr>
<tr>
<td>INVADR</td>
<td>INVALID ADDRESS. MUST BE EVEN WITHIN EXISTING LOCORE AND HICORE LIMITS, AND MUST NOT BE WITHIN UPDATE PROGRAM.</td>
</tr>
<tr>
<td>CKSUM</td>
<td>CHECKSUM ERROR DURING &quot;LOAD&quot; COMMAND.</td>
</tr>
<tr>
<td>POFLO</td>
<td>PROGRAM TOO LARGE TO LOAD WITHIN EXISTING CORE SPACE.</td>
</tr>
<tr>
<td>INVNAK</td>
<td>INVALID CHARACTER TYPED FOR FILE NAME.</td>
</tr>
<tr>
<td>NEXFIL</td>
<td>NON-EXISTENT FILE. IF IN CHAIN MODE THE PROGRAM TO BE RUN DOES NOT HAVE .BIC EXTENSION.</td>
</tr>
</tbody>
</table>
APPENDIX A. TROP RESIDENT MONITOR COMMANDS

F<CR>    SET CONSOLE FILL COUNT.
D<CR>    DIRECTORY ON THE TTY CONSOLE.
D/F<CR>  SHORT DIRECTORY ON THE TTY CONSOLE.
D/L      DIRECTORY ON THE LINE PRINTER.
D/L/F    SHORT DIRECTORY ON LINE PRINTER.
R COPY   STARTS THE COPY PROGRAM.
R FILENAME STARTS INDICATED PROGRAM.
L FILENAME LOADS DESIRED PROGRAM.
S FILENAME STARTS DESIRED PROGRAM WHICH WAS LOADED UNDER "L" COMMAND.
S ADDR    STARTS PROGRAM AT SPECIFIED ADDRESS.
C FILENAME RUNS DESIRED CHAIN TABLE.
C FILENAME/QV RUNS DESIRED CHAIN IN QUICK VERIFY.
E D<CR>  ENABLE DRIVE D(TADP)
E I<CR>  ENABLE DRIVE I(TADP)
SECTION 3. TRDP UPDATE PROGRAMS #2 (UPD2TR)

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APPENDIX A. UPD2TR COMMANDS
APPENDIX B. PERIPHERALS SUPPORTED BY UPDATE PROGRAMS
APPENDIX C. PROGRAM NAMING CONVENTIONS

1. ABSTRACT

Each TRDP package contains program called UPD2TR.BIN. This program is used to add, delete, rename, or patch programs on TRDP packages, and in general, provide file maintenance services.

UPD2TR is a 8K program which relocates itself to the top 8K of memory, leaving lower storage free for other programs. It is capable of performing operations on all TRDP mass storage devices.
LOADING AND STARTING PROCEDURE

UPD2TR IS LOADED VIA THE TRDP MONITOR BY TYPING A UPD2TR.CR.

ONCE LOADED, IT OUTPUTS THE FOLLOWING MESSAGE:

XXXXX-X - TRDP UPDATE PROGRAM #2 21-FEB-76
DATE:

TYPE THE DATE ACCORDING TO FOLLOWING FORMAT:

DATE:DD-MM-YY<CR>

DD IS THE DAY OF THE MONTH, MM IS JAN, FEB, MAR, APR, MAY,
JUN, JUL, AUG, SEP, OCT, NOV, DEC, AND YY IS BETWEEN 70 AND 99.

TEST IS MADE TO MAKE SURE NO MONTH HAS MORE THAN 31 DAYS. BUT
DATES LIKE FEB 30, APR 31, ETC. WILL NOT BE DETECTED AS ERRORS
BUT WILL BE STORED AWAY AS FEB 30, APR 1, ETC.

THE PROGRAM WILL TYPE BACK THE DATE FOLLOWED BY:

PROGRAM RELOCATED TO:YYYYYY ;INITIAL ADDR WHERE PROGRAM RELOCATED TO.
RESTART: XXXXXX ;UPD1 RESTART ADDRESS.
* ;# INDICATES READY FOR KEYBOARD COMMANDS.

COMMAND DESCRIPTIONS

4.1 IN THE COMMAND DESCRIPTIONS THAT FOLLOW, AN INDICATION IS PROVIDED
AS TO THE AVAILABILITY OF THE COMMAND UNDER UPD2TR.

4.2 THE FILL COMMAND (UPD2TR)

THE CONSOLE TERMINAL OUTPUT ROUTINE OF THE UPDATE PROGRAM NORMALY OUTPUTS
4(0) FILLER CHARACTERS AFTER A CARRIAGE RETURN IN ORDER TO INSURE
THAT THE LINO TERMINAL PRINTS CORRECTLY. HOWEVER, ON TERMINALS OTHER
THAN THE LINO THE FILLER CHARACTERS ARE NOT REQUIRED AND ARE TIME
CONSUMING AND ANNOYING. THE NUMBER OF FILLER CHARACTERS OUTPUT CAN
BE CHANGED BY MEANS OF THE “FILL” COMMAND. THE FILL COMMAND SHOULD
BE THE FIRST COMMAND ISSUED IN ORDER TO PROPERLY SET UP THE CONSOLE. TYPE:

FILL<CR>

000014 1 ;THE 000014 IS TYPED BY THE PROGRAM AND
;INDICATES THE CURRENT FILLER COUNT. THE 1
;INDICATES THE USER TYPED A FILLER COUNT OF 1.
THE FILLER COUNT SHOULD BE SET TO A 1 FOR ASR33 AND ASR35 TERMINALS.
FOR OTHER TERMINALS, SET THE NUMBER TO WHATEVER PRODUCES CORRECT
PRINTING AFTER A CARRIAGE RETURN, WITHOUT UNDE DELAY.

4.3 THE "CLR" COMMAND

THE "CLR" COMMAND IS USED TO CLEAR TO ZERODES ALL CORE STORAGE BELOW
THE UPDATE PROGRAM. IT IS PROVIDED IN CASE THE USER WISHES CORE
STORAGE TO BE ZERODES PRIOR TO LOADING A PROGRAM. TYPE:
CLR<CR>

THE PROGRAM Responds WITH #

4.4 LOAD Command

THE LOAD COMMAND IS USED TO LOAD FILES STORED IN ABS FORMAT.
(FILES WITH EXTENSIONS OF .BIN, .BIC, OR OTHER EXTENSIONS KNOWN
TO INDICATE ABS FORMAT).

LOAD DEV: FILNAM.EXT ;COMMAND FORMAT
IF THE DEVICE HAS NO DIRECTORY, THEN THE FILE NAME AND EXTENSION
SHOULD BE OMITTED.

LOAD PR: ;USER COMMAND TO LOAD FROM PAPER TAPE.
XFRADR: DDDDD0 CORE: DDDDD0,017670

* XFRADR: INDICATES THE STARTING ADDRESS OF THE PROGRAM LOADED. IF
IT IS DDDDD1 OR ODD, THE PROGRAM IS NOT SELF-STARTING.
CORE: LEFT NUMBER INDICATES THE LOWEST LOCATION LOADED INTO DURING
THE LOAD, THE RIGHT NUMBER INDICATES THE HIGHEST LOCATION
LOADED INTO DURING THE LOAD. THE LEFT AND RIGHT NUMBERS
IN EFFECT INDICATE THE CORE LIMITS OF THE PROGRAM.

4.5 DUMP Command

THE MEMORY CONTENTS CAN BE WRITTEN TO A TRDP MEDIUM IN ABS FORMAT BY THE
DUMP COMMAND.

DUMP DEV: FILNAM.EXT ;COMMAND FORMAT

PROCESSING STARTS FROM PROGRAM'S LOW CORE LIMIT AND PROCEEDS TO
AND INCLUDES THE PROGRAM'S HIGH CORE LIMIT.

*DUMP DKO:XXX.BIN ;DUMP PROGRAM ONTO DKO:. CALL IT XXX.BIN

12-JAN-76
ENTRY#

FILNAM .EXT DATE LENGTH START
000001 XXX .BIN 26-AUG-72 17 000105
4.6 THE "XFR" COMMAND (UPD2TR)

Once a program has been loaded into core via the "load" command, it can be made self-starting or not self-starting at the user's discretion. As described under "load command" the load routine types: XFRADR :XXXXXX indicating whether a program is or is not self-starting. The use of "XFR :IC:

XFR(CR) ;REQUEST CURRENT TRANSFER ADDRESS.
000001 000050 ;000001 is the current XFR address. 000050 is the
;NEW XFR ADDRESS ENTERED BY THE USER.

Note: Diagnostic programs are purposely made not self-starting.

4.7 THE "START" COMMAND (UPD2TR)

The "start" command is used to begin execution of a program in core.

START(CR) ;used to start a self-starting program.

START ADDR(CR) ;used to start a program at a specific location.

Note: If the command START(CR) is given for a non-self-start program, the processor will trap out without an error message.

4.8 THE SAVE COMMAND (UPD2TR)

The contents of core are written onto the output device as a single block of data, starting at loc 000000 and proceeding to the high limit of the program in core. The save command in effect, saves a "core image" of the contents of core. For TRDP purposes the only valid extension for saved programs is .SAV.

The only current use of the save command is to place a core image of the TRDP monitor on cassette and magnetic tape. TRDP packages do not contain any other core image files.

Note: .SAV is a core image file.

SAVE DEV: FILNAM.EXT ;COMMAND FORMAT.

SAVE CKD: UPDATE.SAV

*SAVE CKD:

12-JAN-76
ENTRY# FILNAM .EXT DATE LENGTH START
000001 UPDATE .BIN 26-AUG-72 17 000105
4.9 THE GET COMMAND (UPD2TR)

THE GET COMMAND PLACES THE "SAVED" PROGRAM INTO CORE STARTING AT LOC 000000.

GET DEV: FILNAM, EXT

GET DKO: Update.SAV

* NOTE: SAVE CORE IMAGE FILES (.SAV FILES) ARE NO LONGER IN USE. THE "GET" COMMAND IS NO LONGER VERY USEFUL, IT HAS BEEN LEFT AS THE COMPLEMENTARY COMMAND FOR THE SAVE COMMAND.

4.10 THE MOD COMMAND (UPD2TR)

ONCE A PROGRAM IS LOADED IT CAN BE PATCHED BY THE MOD COMMAND.

MOD ADR CAUSES UPDATE TO PRINT THE FOLLOWING:

ADR CONTENTS OF ADR,

AND WaITS FOR USER RESPONSE.

THE USER MAY TYPE IN AN OCTAL NUMBER AND A TERMINATOR, OR JUST A TERMINATOR.

If A NUMBER is TYPED, IT is USED as THE NEW CONTENT of ADR.

THE TERMINATOR CAN BE EITHER A CARRIAGE RETURN OR A LINE FEED.
CARRIAGE RETURN TAKes THE PROGRAM BACK TO COMMAND MODE, WHEREAS THE LINE FEED CAUSES THE NEXT WORD (ADR+2) TO BE OPENED FOR MODIFICATION

MOD 50
000050 000005 3 (LF)
000052 012737 4 (LF)
000054 000040 5 (CR)
MOD 50
000050 000003 (LF)
000052 000004 (CR)

THE MOD COMMAND WILL NOT ALLOW THE USER TO GO BEYOND THE PROGRAM'S PROTECTION LIMIT, AN "INVCL" ERROR WILL OCCUR.

(SEE SECTION 4.13)
4.11 THE CORE COMMAND  (UPD2TR)

THE CORE COMMAND CAUSES THE LOWER AND UPPER LIMITS OF THE PROGRAM IN CORE TO BE TYPED:

*CORE(CR)
000000,014776
;LEFT NUMBER IS THE LOWER CORE LIMIT.
;RIGHT NUMBER IS THE UPPER CORE LIMIT.

4.12 THE "LOCORE" COMMAND  (UPD2TR)

THE "LOCORE" COMMAND IS USED TO CHANGE THE LOWER LIMIT OF THE PROGRAM IN CORE:

*LOCORE ADDR(CR)
;WHERE ADDR IS THE NEW LOW CORE LIMIT. IT IS RECOMMENDED
;THAT ADDRESS BE EVEN.

4.13 THE "HICORE" COMMAND  (UPD2TR)

THE "HICORE" COMMAND IS USED TO CHANGE THE UPPER LIMIT OF THE PROGRAM IN CORE:

*HICORE ADDR(CR)
;WHERE ADDR IS THE NEW HIGH CORE LIMIT. RECOMMEND THAT
;ADDRESS BE EVEN, BUT MUST BE HIGHER THAN THE LOWER
;LIMIT, AND MUST BE LOWER THAN START OF UPDATE PROGRAM.

TYPICALLY, THE HICORE COMMAND IS USED TO RESERVE AN AREA FOR PATCHING A PROGRAM. THE UPDATE PROGRAM WILL NOT ALLOW MODIFICATION OF CORE OUTSIDE THE UPPER AND LOWER CORE LIMITS. THEREFORE, THE NEW LIMITS MUST BE SET FIRST. THIS PROTECTS THE CORE OUTSIDE THE PROGRAM FOR THE USER.

4.14 THE DIRLP AND DIR COMMANDS  (UPD2TR)

DIR  (UPD2TR)
DIRLP (UPD2TR)

*DIRLP DEM:  COMMAND FORMAT
COMMAND EXAMPLES;
UPD2TR ONLY

*DIR DEV:* .BIN

*DIR DEV:* .BI?

DIR DEV:ZTC???.BI?

;GIVES A DIRECTORY OF ALL FILES WITH A " .BIN" EXTENSION.
;GIVES A DIRECTORY OF ALL FILES WITH AN EXTENSION BEGINNING WITH "BI" AND ANY OTHER CHARACTER SUCH AS BIN OR BIC.
;GIVES A DIRECTORY OF ALL FILES WITH THE FIRST THREE CHARACTERS OF THE FILENAME BEING "ZTC" AND HAVING AN EXTENSION BEGINNING WITH "BI". EXAMPLES; ZTCA.BIN, ZTCB.BIN, ZTCC.BIC.

NOTE: AT THE END OF THE DIRECTORY THE FREE FILES AND FREE BLOCKS WILL BE
INDICATED ONLY ON RANDOM ACCESS DEVICES.

NOTE: DIR IN UPDATE #1 GIVES ONLY THE SHORT DIRECTORY (NO LENGTH, NO START).

DIRLP CAUSES THE DIRECTORY OF DEV: TO PRINTED ON LINE PRINTER. IF
DIR IS USED, THE DIRECTORY IS TYPED ON CONSOLE DEVICE. DO NOT USE
DIRLP UNLESS A LINE PRINTER EXISTS, AS NO CHECK IS MADE FOR ITS
EXISTENCE. THE PROGRAM WILL PROBABLY TRAP.

*DIR DKO:
12-JAN-76
ENTRY#  FILNAM .EXT   DATE     LENGTH     START
000001  1      2-AUG-72  14        000105
000002  3      2-AUG-72  12C       000122
000003  4      2-AUG-72  12C       000206
000004  5      2-AUG-72  12C       000222
FREE FILES: 444

LENGTH IS THE NUMBER OF BLOCKS (10) THE FILE OCCUPIES. A "C" AFTER
THE FILE LENGTH INDICATES THE FILE IS CONTIGUOUS.

START IS THE ADDR OF FIRST BLOCK OF FILE. OCTAL NUMBER.
DATE IS THE FILE CREATION DATE.

4.15 THE DELETE COMMAND (UPD2TR)

DEL DEV: FILNAM .EXT
CAUSES THE FILE NAMED TO BE DELETED FROM THE DIRECTORY.

#DEL DKO: 1
#DIR DKO:
12-JAN-76
ENTRY#  FILNAM .EXT   DATE     LENGTH     START
000002  3      2-AUG-72  12C       000122
000003  4      2-AUG-72  12C       000206
000004  5      2-AUG-72  12C       000222
FREE FILES: 444

4.16 THE ZERO COMMAND (UPD2TR)

ZERO DEV:
DESTROYS THE DIRECTORY. AS FAR AS UPDATE IS CONCERNED, THERE IS
NOTHING ON THE DEVICE. THIS SHOULD BE DONE ON A BRAND NEW TAPE
OR CARTRIDGE SINCE UPDATE USES THE ZERO COMMAND TO RESERVE SOME
ROOM FOR USE BY THE TRDP MONITOR. VALID FOR ALL M655 STORAGE DEVICES.

*ZERO DKO:
*DIR DK0:  
26-AUG-72  

FILNM.EXT LENGTH START DATE  
FREE FILES: 448  
*  

4.17  THE BOO (UPD2TR)  

4.17.1  BOO DEV:  
CAUSES BLOCK O OF DEV TO BE LOADED INTO MEMORY, STARTING AT LOC 0000000.  
BLOCK O IS ASSUMED TO HAVE A BOO LOADER. THE PROGRAM THEN JUMPS TO  
LOC 0000000 TO START THE BOO LOADER.  

EXAMPLE:  

BOOT DK0:<CR>  ;BOO IN THE RKDP MONITOR.  
BOOT NTO:<CR>  ;BOO IN THE TRDP MONITOR.  

4.17.2  SAUV DEV:  
(UPD2TR)  

CAUSES THE FIRST 4K TO BE WRITTEN IN .SAUV FORMAT (CORE IMAGE)  
STARTING AT THE MONITOR CORE IMAGE BLOCK OF THE DEVICE.  
THIS COMMAND IS USED TO WRITE THE TRDP MONITOR ON THE  
DEVICE AS A CORE IMAGE THAT IS BOOTEABLE.  

#LOAD DK0:RKDP.BIN  ;LOAD RKDP MONITOR  
#SAVE DK0;  ;SAVE IT AS CORE IMAGE ON DK0:  

THE SAUV COMMAND IS VALID ONLY ON RANDOM ACCESS DEVICES.  
NOTE: SAUV IS NOT A DIRECTORY ENTRY IT WILL NOT SHOW  
ON DIRECTORY.  

4.18  THE RENAME COMMAND  
(UPD2TR)  

*RENM:NEWNAM.EXT-DEV:OLDNAM.EXT  

RENAME'S THE OLD FILE, THE DEVICES MUST BE THE SAME, NOT ALLOWED  
ON MAGTAPE OR CASSETTE.  

#DIR DKO:  
12-JAN-76  
ENTRY# FILNM.EXT DATE LENGTH START  

FILNM.EXT LENGTH START DATE  
FREE FILES: 448  
*  

4.17  THE BOO (UPD2TR)  

4.17.1  BOO DEV:  
CAUSES BLOCK O OF DEV TO BE LOADED INTO MEMORY, STARTING AT LOC 0000000.  
BLOCK O IS ASSUMED TO HAVE A BOO LOADER. THE PROGRAM THEN JUMPS TO  
LOC 0000000 TO START THE BOO LOADER.  

EXAMPLE:  

BOOT DK0:<CR>  ;BOO IN THE RKDP MONITOR.  
BOOT NTO:<CR>  ;BOO IN THE TRDP MONITOR.  

4.17.2  SAUV DEV:  
(UPD2TR)  

CAUSES THE FIRST 4K TO BE WRITTEN IN .SAUV FORMAT (CORE IMAGE)  
STARTING AT THE MONITOR CORE IMAGE BLOCK OF THE DEVICE.  
THIS COMMAND IS USED TO WRITE THE TRDP MONITOR ON THE  
DEVICE AS A CORE IMAGE THAT IS BOOTEABLE.  

#LOAD DK0:RKDP.BIN  ;LOAD RKDP MONITOR  
#SAVE DK0;  ;SAVE IT AS CORE IMAGE ON DK0:  

THE SAUV COMMAND IS VALID ONLY ON RANDOM ACCESS DEVICES.  
NOTE: SAUV IS NOT A DIRECTORY ENTRY IT WILL NOT SHOW  
ON DIRECTORY.  

4.18  THE RENAME COMMAND  
(UPD2TR)  

*RENM:NEWNAM.EXT-DEV:OLDNAM.EXT  

RENAME'S THE OLD FILE, THE DEVICES MUST BE THE SAME, NOT ALLOWED  
ON MAGTAPE OR CASSETTE.  

#DIR DKO:  
12-JAN-76  
ENTRY# FILNM.EXT DATE LENGTH START
4.19 PIP COMMAND  (UPD2TR)

PIP IS USED TO COPY A LINKED FILE FROM ANY DEVICE THAT CAN INPUT TO ANY DEVICE THAT CAN PERFORM OUTPUT OPERATIONS. FILE DATA IS NOT CHECKED FOR FORMAT OR CHECKS.

PIP DEVI:FILNAM.EXT+DEV2:FILNAM.EXT

PIP PP:*PR:  (COPIES PAPER TAPE)
  *PIK DKO:123.456*PR:  ;PAPER TAPE TO DISK
  *PIK PP:*DKO:123.456  ;DISK TO PAPER TAPE PUNCH.
  *DIR DKO:

12-JAN-76

ENTRY# FIELNAM .EXT DATE LENGTH START
000001 123 .ASD 26-AUG-76 16C 000105
000002 123 .456 26-AUG-72 3 000125
FREE FILES: 446

* THE USER SHOULD MAKE SURE THAT THE OUTPUT FILE NAME DOESN'T EXIST ALREADY ON THE OUTPUT DEVICE DIRECTORY.

PIP  DKO:A+DKO:A  ;IS A NO.
DELLOD  ;CAUSES THIS ERROR. DELETE OLD FILE 1ST.

PIP HAS OTHER USEFUL FEATURES:

PIP PP:*PR:  COPIES A PAPER TAPE.

IMPORTANT!!!

A PROGRAM THAT HAS BEEN "PIPPED" TO A TROPO DEVICE MUST BE LOADED IMMEDIATELY VIA THE "LOAD" COMMAND TO INSURE THAT NO ERRORS HAVE OCCURRED DURING THE "PIP" COMMAND AS THE PIP COMMAND DOES NOT CHECKSUM INPUT DATA!

4.20 THE "FILE" COMMANDS  (UPD2TR)
UPD2TR includes a group of commands which can execute on multiple files without requiring the name of each file to be individually listed in the command strings. These are the "FILE" commands including FILE, FILEF, FILEE, FILEG, FILEH, and FILET. Following this general description, their differences will be individually explained. Note that the "FILE" commands in general, can NOT be used with non-directory devices (such as PR, PP, LP).

The "FILE" commands recognize two special characters in the file name and extension. These characters, the asterisk (*) and the question-mark (?) allow a single name to reference several files.

Note that file names are always recorded as having 6 characters, and extensions always have 3 characters. They are left-justified with trailing blanks added, and the blanks are part of the name.

Because the "FILE" commands can handle several files per command issued, their treatment of error conditions should be noted. If a device error occurs in the process of finding a file (i.e. when the directory is referenced in the case of disk or dec tape, or the blocks are scanned in the case of cassette or mag tape) the "FILE" command is aborted and the error is printed. If a device error, checksum error, or end of medium error occurs while reading a file (FILE, FILEF, and FILEE) the error is reported and then processing of the command is continued.

The "FILE" commands list the descriptive information about each file as it is processed, including file name, transfer address, and locore andxicore values. The /N and /LP switches are included to alter this if desired.

4.21 THE "ASTERISK" CONSTRUCTION

The "ASTERISK" construction permits reference to all files having a desired extension (any filename) to all files having a desired filename (any extension) or to all files on a device. Its use in the filename position means "ALL FILENAME" and in the file extension position means "ANY EXTENSION".

To refer to all files having a desired extension (any filename), an asterisk is typed for the filename:

DKO:* .OBJ  MEANS ALL FILES ON DISK O WITH A .OBJ EXTENSION

To refer to all files with a desired filename (any extension), an asterisk is typed for the extension:

DKO:UPD2TR.* MEANS ALL FILES ON DISK O WITH THE FILENAME UPD2TR, SUCH AS UPD2TR.P11, UPD2TR.LST, AND UPD2TR.DOC
DO3

TO REFER TO ALL FILES ON A DEVICE (ANY FILENAME, ANY EXTENSION),
ASTERISKS ARE TYPED FOR BOTH THE FILENAME AND THE EXTENSION.

MT3:.*

Means all files on MAGTAPE 3

4.22 THE "WILD CHARACTER" CONSTRUCTION

The "wild character" construction permits reference to all files
whose file names differ in specific character positions. When
searching for files corresponding to the name in the command string,
any character is accepted as matching a question mark. For example:

DKO:UPD*.DOC

Means any file whose name begins with "UPD",
has any character next (including a blank)
and then two blanks, with a .DOC extension.

UPD1.DOC and UPD2TR.DOC would both qualify.

4.23 THE FILE COMMAND

The file command is used to do bulk transfers from one device to
another. It is similar to a PIP command except that it can utilize
the "asterisk" and "wild character" constructions. If a file of the
same name already exists on the output device, the file command
(unlike the PIP command) will delete the old file. Note also that
the file command can transfer both linked and contiguous (core-
image) files.

FILE DEV:<DEV:FILNAM.EXT

;COMMAND FORMAT

WHERE THE DEVICE NAME ON THE LEFT IS THE OUTPUT DEVICE AND
THAT ON THE RIGHT IS THE INPUT DEVICE.

4.24 THE FILEF COMMAND

The filef command is used to do fast transfers onto all directory devices.
For MAG TAPE logical end of tape is found and all the requested
files are transferred sequentially onto the tape starting at that
point. This fast transfer command eliminates the check of the tape
directory which is made before each file transfer if the file command
is used.

For random access devices the file is transferred to the first
available space on the device.

FILEF DEV:<DEV:FILNAM.EXT

;COMMAND FORMAT
4.25 THE FILED COMMAND (UPD2TR)

THE FILED COMMAND DELETES THE FILES NAMED FROM THE DEVICE'S DIRECTORY.
FILED  DEV:FILENAME,EXT ;COMMAND FORMAT

UPD2TR NOW PERMITS THE USE OF THE DEL(ETE) COMMAND WITH * AND WILD CHARACTER FILENAME CONSTRUCTION. EXAMPLE:
DEL DKO:*.* ;DELETES ALL FILES IN DKO. WITH .* EXTENSION.

CAUTION!!! THE UPD2TR PROGRAM DOES NOT REQUIRE VERIFICATION OF A MASS DELETION COMMAND. THE USER MUST BE CAREFUL NOT TO SPECIFY A DELETE THAT HE DOES NOT REALLY MEAN TO OCCUR. IF IT SHOULD, TYPING CONTROL C WILL ABORT THE COMMAND AT THE EARLIEST OPPORTUNITY.

4.26 THE FILED COMMAND (UPD2TR)

THE FILED COMMAND SEQUENTIALLY LOADS INTO CORE EACH FILE REFERENCED. IT ASSUMES THAT ALL REFERENCED FILES ARE ABS FORMAT (IF NOT A CKSME9 OR EOM ERROR WILL OCCUR). ITS PURPOSE IS TO SHOW THAT ALL ABS FORMATTED FILES CAN BE CORRECTLY LOADED (CHECKS FOR DEVICE AND CHECKSUM ERRORS). IF AN ERROR OCCURS, IT WILL IDENTIFY THE TYPE OF ERROR AND THE DEVICE.
FILED  DEV:FILENAME,EXT ;COMMAND FORMAT
THE LOAD COMMAND MAY ALSO BE USED IN UPD2TR TO PERFORM THE SAME FUNCTIONS AS THE FILED COMMAND.

4.27 THE FILEG COMMAND (UPD2TR)

THE FILEG (FILE GET) COMMAND IS SIMILAR TO THE FILED COMMAND EXCEPT THAT IT LOADS AND CHECKS CONTIGUOUS (CORE-IMAGE) FILES INSTEAD OF ABS FORMAT FILES. DEVICE ERRORS AND SIZE ERRORS WILL BE REPORTED.
FILEG  DEV:FILENAME,EXT ;COMMAND FORMAT
THE GET COMMAND MAY ALSO BE USED IN UPD2TR TO PERFORM THE SAME FUNCTIONS AS THE FILEG COMMAND.

4.28 THE FILET COMMAND (UPD2TR)

THE FILET COMMAND TESTS ALL FILES NAMED BY READING THEM INTO A BUFFER TO MAKE CERTAIN THAT NO DEVICE ERRORS OCCUR. ANY DEVICE ERRORS ARE LISTED AS THEY OCCUR.
FILET  DEV:FILENAME,EXT ;COMMAND FORMAT
4.29 THE /LP AND /N SWITCHES (UPD2TR)

THE "FILE" COMMANDS NORMALLY CAUSE PRINTING OF THE NAMES OF THE FILES
CHECKED, THEIR TRANSFER ADDRESSES AND LOCODE AND HICORE VALUES.
ON THE CONSOLE TERMINAL. THE /LP SWITCH CAUSES THIS INFORMATION TO BE
OUTPUT ON THE LINE PRINTER INSTEAD. THE /N SWITCH INHIBITS PRINTING
OF THIS INFORMATION, SO THAT ONLY ERROR PRINTOUTS ARE OUTPUT. SWITCHES MUST
NOW BE SPECIFIED AT END OF THE COMMAND STRING.

FILE DKO:*.*/LP
; TEST ALL FILES ON DKO AND PRINT
; THE FILE INFORMATION AND ERROR
; INFORMATION ON THE LINE PRINTER

FILEL /N MT2:*.BIN/LP
; LOAD ALL .BIN FILES FROM MAGTAPE 2,
; REPORTING ONLY ERROR INFORMATION
; ON THE LINE PRINTER

DEL DKO:*.TXT/LP
; DELETE ALL .TXT FILES FROM DKO; AND
; PRINT DELETED FILES ON LINE PRINTER.

4.30 THE "EOT" COMMAND (UPD2TR)

THE "EOT" COMMAND IS PROVIDED AS A MEANS OF PLACING AN "END-OF-TAPE"
MARK OR SENTINEL FILE AT A SELECTED SPOT ON MAGTAPE OR CASSETTE. APPLICATIONS
OF THIS COMMAND INCLUDE REPLACING AN "EOT" MARK WHEN IT HAS BEEN
ACCIDENTALLY DESTROYED, OR WHEN THE USER WISHES TO DELETE FILES AT THE
END OF THE MEDIUM, AND STILL BE ABLE TO USE THE SPACE TAKEN UP BY
THOSE DELETED FILES.

THE PROCEDURE TO BE USED IS AS FOLLOWS:

A. POSITION THE MAGTAPE BY PERFORMING A FILET COMMAND ON THE FILE
PRECEDING THE SPOT WHERE THE "EOT" IS TO BE PLACED. IN PRACTICE,
IF AN "EOT" HAS BEEN LOST, THE USER SHOULD FILET THE NEXT TO THE
LAST FILE, SINCE THE LAST FILE MAY BE UNRECOVERABLE.

B. PERFORM AN "EOT" COMMAND.

EXAMPLE:

FILET MT0:ZORADO.BIN(CR)
FILEL EOT(CR)

4.31 THE TEXT COMMAND (UPD2TR)

UPD2TR INCLUDES THE FACILITY TO EXECUTE A SEQUENCE OF COMMANDS
CONTAINED IN AN ASCII TEXT FILE. THIS ASCII TEXT FILE IS CREATED
VIA THE TEXT COMMAND. ALSO SEE SECTION 4. XTECO TEXT EDITOR.

TEXT DEV:FILNAME.EXT

WHEN THE TEXT COMMAND IS ISSUED UPD2TR OPENS THE NAMED FILE FOR
OUTPUT ANDfühNS WITH A QUOTATION MARK (""") TO INDICATE ITS
READINESS TO ACCEPT TEXT. ANY ASCII CHARACTER (EXCEPT CONTROL C AND
RUBOUT) WILL BE ACCEPTED AS INPUT TO THE TEXT FILE. CONTROL C ("\b"")
WILL ABORT TEXT MODE, RETURNING TO COMMAND MODE AND CLOSING
THE OUTPUT FILE. CONTROL Z ("\z") IS THE STANDARD TERMINATOR FOR INPUT
TO THE TEXT FILE. RUBOUT CAN BE USED TO DELETE CHARACTERS ON THE
CURRENT LINE (BUT NOT ON PRECEDING LINES).

THREE CHARACTERS, THE POUND SIGN (#), THE SEMICOLON (;), AND THE DOLLAR
SIGN ($), HAVE SPECIAL SIGNIFICANCE IN THE TEXT FILE. THE # SIGN AND ; ARE
USED TO START A COMMENT WHICH IS TO BE PRINTED DURING COMMAND FILE
EXECUTION. THE $ SIGN IS USED TO START A COMMENT WHICH IS TO BE PRINTED
AND FOLLOWED BY A HAlt DURING COMMAND FILE EXECUTION (SUCH AS "$PRESS Cont
WHEN READY").

4.32 THE PRINT COMMAND (UPD2TR)

--------------------------

THE PRINT COMMAND OUTPUTS A FILE ON THE LINE PRINTER. IT IS
USED TO PRINT TEXT FILES, AND WILL OUTPUT TO THE LINE PRINTER.
AFTER THE TEXT FILE IS PRINTED THE PROGRAM OUTPUTS 10 CARRIAGE RETURNS
AND LINE FEEDS TO SIMULATE A FORM FEED. NOTE THAT BOTH PRINT AND TYPE
COMMANDS USE # AND $ AND ALL CHARACTER CONSTRUCTION IN FILENAMES, SO
THAT MULTIPLE TEXT FILES MAY BE PRINTED WITH ONE COMMAND.

PRINT DEV: FILNAM.EXT ;COMMAND FORMAT
PRINT DEV: *.TXT
WHERE DEV IS THE SOURCE DEVICE ON WHICH THE FILE RESIDES.
NOTE THAT NO CHECK IS MADE OF FILE PRINTABILITY.

4.33 THE TYPE COMMAND (UPD2TR)

--------------------------

SAME AS THE PRINT COMMAND EXCEPT THAT IT OUTPUTS TO THE CONSOLE
TERMINAL INSTEAD OF TO THE LINE PRINTER.

TYPE DEV: FILNAM.EXT ;COMMAND FORMAT

4.34 THE DO COMMAND (UPD2TR)

-------------------------------

THE DO COMMAND IS USED TO CAUSE THE EXECUTION OF A COMMAND FILE.
THE FILE MUST BE ON ONE OF THE TRADITIONAL STORAGE MEDIA (DECTAPE, RAMTAPE,
CASSETTE OR DISK). THE FILE IS EXECUTED LINE BY LINE, AND MUST BE TERMINATED BY A Z (CONTROL Z). EXECUTABLE FILES ARE CREATED
VIA THE TEXT COMMAND, OR VIA THE XTECO TEXT EDITOR PROGRAM (SEE SECTION 4.)
FOR NOTES ON THE FILE'S FORMAT AND THE USE OF SPECIAL CHARACTERS,
SEE THE PRECEDEDING TEXT COMMAND DESCRIPTION.

DO DEV: FILNAM.EXT ;COMMAND FORMAT
4.35 THE ASG (ASSIGN) COMMAND (UPD2TR)

-------------

THE ASG (ASSIGN) COMMAND ALLOWS THE USE OF LOGICAL DEVICE NAMES IN COMMAND FILES. ALLOWED LOGICAL DEVICE NAMES ARE 1, 2, 3, 4, AND SYS. A COMMAND FILE MAY USE A LOGICAL NAME SUCH AS "1" INSTEAD OF SPECIFYING, FOR EXAMPLE, DKO OR DKL. THEN, BEFORE EXECUTING THE COMMAND FILE, THE USER CAN ASSIGN THE DESIRED PHYSICAL DEVICE TO THE LOGICAL NAME, PERMITTING USE OF ANY AVAILABLE UNIT.

ASG PHYSICAL DEV = LOGICAL DEV ;COMMAND FORMAT

REVERSAL OF PHYSICAL AND LOGICAL DEVICE NAMES IN THE COMMAND STRING RESULTS IN "INVDEV" ERROR MESSAGE. THE COMMAND IS NOT PERFORMED.

ASG DKL1 = 2; ;ASSIGNS DISK 1 TO LOGICAL DEVICE "2"

4.37 THE PATCH COMMAND (UPD2TR)

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THE PATCH COMMAND ENABLES THE USER TO PATCH A PROGRAM ON ANY DIRECTORY-ORIENTED (RANDOM ACCESS) TROP SUPPORTED DEVICE. NO OUTPUT.

DEV: FILE SPECIFICATION IS REQUIRED OR PERMITTED, THE INPUT DEVICE IS ASSUMED TO BE THE DESIRED OUTPUT DEVICE.

THE FILE(S) TO BE PATCHED MUST BE IN ABS FORMAT.

BINARY FILE. THE PATCH ROUTINE DOES NOT CHECK IN ADVANCE FOR CORRECT FILE FORMAT. THE FOLLOWING EXTENSION ARE FOR TROP ABS FORMAT FILES; .BIN, .BIC, .BPG.

CARRIAGE-RETURN OR LINE-FEED ARE THE ONLY CHARACTERS WHICH MAY BE USED FOR TERMINATING A TYPED ENTRY. THE LINE-FEED MAY BE THOUGHT OF AS AN "ADVANCE" KEY WHICH WILL GO TO THE NEXT ADDRESS. THE ROBUOT KEY MAY BE USED TO CORRECT TYPING MISTAKES MADE ON INPUT. ALL ADDRESSES ENTERED MUST BE EVEN. IF AN ADDRESS IS TYPED (IN RESPONSE TO A PROMPT) WHICH IS ODD, THE PROMPT WILL BE RE-ASKED.

IF AN ADDRESS IS TYPED WHICH IS NOT WITHIN THE CORE LOAD LIMITS OF THE FILE BEING OPERATED UPON, THE UNKNOWN CONTENTS OF THE SPECIFIED ADDRESS WILL BE INDICATED BY "XXXXX". THE PROGRAM WILL THEN GIVE THE USUAL "?" PROMPT, ASKING IF MODIFICATION IS DESIRED.

IN RESPONSE TO THE "ADD?" PROMPT, IF A CARRIAGE-RETURN OR A LINE-FEED IS TYPED AS THE ONLY THING ON THE INPUT LINE, THE EXIT SEQUENCE WILL BE ENTERED. AT SUCH TIME, THE USER IS ASKED TO WRITE-ENABLE THE OUTPUT DEVICE AND CONFIRM THE FACT THAT THE PATCHES SHOULD BE ENTERED INTO THE SPECIFIED FILE.

IF A FILE IS MODIFIED BY THE USE OF THE "PATCH" COMMAND, THE DATE AND LENGTH OF THE FILE OPERATED UPON ARE UPDATED IN THE DEVICE DIRECTORY AS
REQUIRED.

IF THE FILE BEING PATCHED CONTAINS REPRESENTATIONS OF ISOLATED SINGLE-BYTE DATA, FOR EXAMPLE THOSE GENERATED BY THE FOLLOWING ASSEMBLY CODE SEQUENCES;

A. 
   .EQB 120
   .EVEN
   ; GENERATES ONLY 1 BYTE OF DATA

B. 
   .EQB 413
   .BYTE-1

CORE LIMITS. OCCURS DURING DUMP COMMAND.

DIRERR   INVALID NAME IN DEVICE DIRECTORY.

DELERR   BIT MAP ERROR DURING DELETE OPERATION ON DECKAPE OR DISK.
          NOT USUAL UNLESS MEDIUM HAS BEEN WIPED OUT. TRANSFER FILES TO OTHER MEDIUM. (SEE SECTION 4.).

P0FLOW   PROGRAM TOO LARGE TO LOAD WITHIN EXISTING CORE SPACE.

INVSW    INVALID SWITCH SPECIFIED IN COMMAND STRING.

DUMP ERROR ACT MODE ONLY (SEE SECTION 7). OCCURS DURING DUMP COMMAND WHEN DATA DUMPED ON OUTPUT DEVICE DOES NOT MATCH DATA IN CORE.
5. ERRORS

INVCMD    INVALID COMMAND. CHECK COMMAND JUST GIVEN.

INVDEV    INVALID DEVICE SPECIFIED FOR COMMAND GIVEN.

INVADR    INVALID ADDRESS. MUST BE EVEN, WITHIN EXISTING LOCORE
          AND MICORE LIMITS, AND MUST NOT BE WITHIN UPDATE PROGRAM.

INVNAM    INVALID FILE NAME. NO SPECIAL CHARACTERS ALLOWED.
          A THROUGH Z, AND 0 THROUGH 9 ARE ONLY VALID CHARACTERS.
          ALSO OCCURS IF # OR WILD CHARACTER CONSTRUCTION FILENAMES
          ARE SPECIFIED TO A COMMAND THAT DOES NOT ALLOW IT.

NEXFIL    NON-EXISTENT FILE. FILE DOES NOT EXIST IN DEVICE DIRECTORY.

DELOLD    DELETE OLD FILE BEFORE GIVING COMMAND THAT WOULD CREATE
5.1 ERRORS UNIQUE TO THE FILCMP COMMAND

UNEQUAL FILE TYPES
INDICATES THE TWO FILES BEING COMPARED ARE NOT OF SIMILAR STRUCTURE.

UNEQUAL FILE SIZES
INDICATES THE TWO FILES BEING COMPARED ARE NOT THE SAME SIZE.

SCRATCH FILE SHORTER THAN MASTER FILE
THE SCRATCH FILE IS THE FILE ON THE DEVICE WHICH IS ON THE LEFT OF THE BACK ARROW IN THE COMMAND STRING.

SCRATCH FILE LONGER THAN MASTER FILE
THE SCRATCH FILE WHICH IS ON THE LEFT OF THE BACK ARROW IS LONGER THAN THE FILE ON THE RIGHT.

BLOCK COMPARE ERROR XTH BLOCK, YTH BYTE
THIS INDICATES THERE WAS AN ERROR IN THE COMPARE. X AND Y INDICATE THE BLOCK NUMBER AND BYTE NUMBER WHERE THE ERROR OCCURRED.
6. **UPDATING TROP MEDIA**

**UPDATING TROP MEDIA CONSISTS OF:**

A. PATCHING EXISTING PROGRAMS (DEPO), OR  
B. REPLACING PROGRAMS WITH NEWER VERSIONS, OR  
C. ADDING NEW PROGRAMS.  

WHEN FIRST BECOMING ACQUAINTED WITH THE USE OF THE UPDATE PROGRAMS  
THE USER SHOULD MAKE EXTRA SURE THAT A BACKUP FOR THE MEDIUM TO  
BE MODIFIED EXISTS, IN ORDER TO BE ABLE TO RECOVER FROM FATAL ERRORS.  
(ZEROING THE MEDIUM, DELETING THE WRONG FILE, ETC.).

6.1 **PATCHING EXISTING PROGRAMS**

**PATCHING A PROGRAM IN A TROP MEDIUM CONSISTS OF:**  
A. LOADING EXISTING PROGRAM INTO MEMORY (LOAD COMMAND)  
B. MAKING MODIFICATIONS (PATCHING - MOD COMMAND)  
C. DELETING OLD PROGRAM (DEL COMMAND)  
D. STORING MODIFIED PROGRAM (DUMP COMMAND)  

AN ALTERNATE SAFER PROCEDURE WOULD STORE THE PATCHED PROGRAM FIRST,  
AND THEN AFTER TRYING THE MODIFIED PROGRAM, THE OLD PROGRAM WOULD  
BE DELETED.

**EXAMPLE:**

```
1C  
LOAD MTO:DOSAD.BIN (LOAD PROGRAM)  
MOD 3450 (MODIFY PROGRAM)  
003450 012737 000000  
MOD 3766  
003766 012737 000000  
003770 000005 000000  
DEL MTO:DOSAD.BIN (DELETE OLD PROGRAM)  
DUMP MTO:DOSAL.BIN (STORE MODIFIED PROGRAM)  
LOAD MTO:DOSAL.BIN (LOAD NEW PROGRAM)  
START 200 (TRY OUT NEW PROGRAM)  
```

IT IS IMPORTANT WHEN IMPLEMENTING DEPO'S THAT THE NAME OF THE  
PROGRAM REFLECT THE DEPO LEVEL OF THE PROGRAM. SEE APPENDIX D.  
PROGRAM NAMING CONVENTIONS.

6.2 **REPLACING PROGRAMS WITH NEWER VERSIONS, OR**  
**ADDDING NEW PROGRAMS**

**TO REPLACE A PROGRAM, OR TO ADD A NEW ONE:**  
A. DELETE OLD PROGRAM IF REPLACING IT,
B. LOAD NEW PROGRAM INTO MEMORY,
C. DUMP PROGRAM ONTO DEVICE.

EXAMPLE 1:
#DEL MTO:DOSAI.BIN           (DELETE OLD PROGRAM)
#LOAD PR: (LOAD NEW PROGRAM)
#DUMP MTO:DOSBO.BIN           (STORE NEW PROGRAM)
#LOAD MTO:DOSBO.BIN           (LOAD NEW PROGRAM)
#START 200                    (TRY NEW PROGRAM)

EXAMPLE 2:
DEL MTO:DOSAI.BIN           ;DELETES OLD PROGRAM.
LOAD PR:                 ;LOADS NEW PROGRAM FROM PAPER TAPE.
DUMP MTO:DOSBO.BIN         ;REDOES NEW PROGRAM.
LOAD MTO:DOSBO.BIN         ;CHECKS THAT PROGRAM LOADS CORRECTLY.

NOTE: DELETING A PROGRAM FROM CASSETTE OR MAGTAPE DOES NOT PHYSICALLY
REMOVE THE PROGRAM FROM THE MEDIUM. IT STILL TAKES UP SPACE. TO
CLEAN UP THE CASSETTE OR MAGTAPE, IT MUST BE COPIED VIA ITS TOP
MONITOR’S COPY ROUTINE, WHICH COPIES ONLY “GOOD” FILES.

#PIP MTO:OVLY.BIN-PR:       (PIP TO MTO: FROM PR:)
#LOAD MTO:OVLY.BIN          (LOAD OVERLAY)

RELOADING OF A PROGRAM THAT HAS BEEN “PIPED” DIRECTLY TO A DEVICE
IS IMPORTANT, TO INSURE THAT NO READING ERRORS HAVE OCCURRED.
THE PIP COMMAND DOES NOT CHECKSUM INPUT DATA.

6.3 GENERATING A TROMP MEDIUM
---------------

IT MAY BE DESIRABLE TO CREATE A CUSTOM MADE MEDIUM CONTAINING ONLY
THOSE PROGRAMS REQUIRED TO TEST A PARTICULAR SYSTEM. AS AN EXAMPLE,
SUCH A MEDIUM COULD CONTAIN:

A. PROCESSOR TESTS
B. MEMORY TESTS
C. I/O PROGRAMS FOR THAT SYSTEM

WITH SUCH A MEDIUM, THE ENTIRE SYSTEM COULD BE TESTED USING THE
CHAIN MODE OF OPERATION, WITHOUT HAVING TO SWITCH DECTAPES, OR CASSETTES.
THE PROCEDURES FOR GENERATING A NEW MEDIUM FOLLOW.

6.3.1 CREATING A NEW TROMP MAGTAPE
-----------------------------

A. MOUNT “NEW” MAGTAPE ON DRIVE D
B. PERFORM THE FOLLOWING COMMANDS:

FOR A TR79F
6.3.9 CREATING A TRDP MEDIUM - COMMON PROCEDURE

ONCE THE MONITOR HAS BEEN SAVED ON THE MEDIUM, UPD2TR.BIN SHOULD BE SAVED:

FILEF DEV1:<DEVO:UPD?.BIN ; TRANSFERS UPD1.BIN AND UPD2TR.BIN

CONTIGUOUS (CORE-IMAGE) FILES SHOULD BE TRANSFERRED NEXT (TO GUARANTEE ROOM ON THE MEDIUM). THIS CAN BE DONE VIA THE FILEF COMMAND:

FILEF DEV1:<DEVO:A.SAV ; TRANSFER A.SAV

FROM THIS POINT ON, THE DESIRED PROGRAMS ARE TRANSFERRED FROM THE INPUT MEDIA TO THE OUTPUT MEDIUM VIA THE FILEF COMMAND. USE OF THE SPECIAL FEATURES CAN CONSIDERABLY DECREASE THE NUMBER OF COMMANDS REQUIRED. FOR EXAMPLE, TO TRANSFER ALL DECTAPE DIAGNOSTICS TO THE NEW MEDIUM A SINGLE FILEF COMMAND WILL SUFFICE:

FILEF DEV1:<DEVO:XTCR???.* ; TRANSFERS ALL PROGRAMS WHOSE NAMES START WITH "XTC"

AFTER ALL THE DESIRED FILES HAVE BEEN STORED ON THE NEW MEDIUM, IT SHOULD BE TESTED VIA THE FILET, FILEL, AND FILEG COMMANDS:

FILET DEV1:*.*/LP ; READ EVERY FILE ON THE NEW MEDIUM, LISTING ALL INFORMATION ON THE LINE PRINTER
FILEL DEV1:*.BI?/N ; LOAD ALL ARR FORMAT FILES TO VERIFY THAT NO ERRORS OCCUR, LIST ERRORS ONLY
FILEG DEV1:*.SA*/N ; LOAD ALL CONTIGUOUS FILES TO VERIFY THAT NO ERRORS OCCUR, LIST ERRORS ONLY

IT IS ALSO A GOOD IDEA TO DUPLICATE THE NEW MEDIUM TO PROVIDE A BACKUP.
APPENDIX B. UPD2TR PROGRAM COMMANDS

---

FILL<CR>             SETS UP TERMINAL FOR CORRECT PRINT
                     AFTER CRLF.
CLR<CR>              CLEARS CORE BELOW UPDATE PROGRAM
XFR<CR>              PERMITS MAKING PROGRAM SELF-STARTING,
                     OR NON SELF-STARTING.
DUMP DEV:<FILNAM.EXT> WRITES MEMORY CONTENTS IN ABS FORMAT
LOAD DEV:<DILNAM.EXT> LOADS ABS FORMAT PROGRAM (.BIN, .BIC)
PILL DEV1:<FILNAM.EXT>-DEV2:<FILNAM.EXT> COPIES FILE FROM ONE DEVICE TO ANOTHER.
SAVE DEV:<FILNAM.EXT> WRITES MEMORY CONTENTS ONTO CONTIGUOUS BLOCKS
GET DEV:<FILNAM.EXT>  LOADS CORE IMAGE PROGRAM
MOD ADR               MODIFIES CORE CONTENTS
CORE                  TYPES PROTECTION LIMITS
L OCORE ADR           ENTERS LOW PROTECTION LIMIT
HICORE ADR            ENTERS HIGH PROTECTION LIMIT
DIR DEV:              TYPES DEV DIRECTORY ON TTY
DIRLP DEV:            TYPES DEV DIRECTORY ON LINE PRINTER.
DEL DEV:<FILNAM.EXT>  DELETES FILE FROM DEV DIRECTORY
ZERO DEV:             ZEROS DEVICE DIRECTORY
BOOT DEV:             LOADS BLOCK 0 OF DEV STARTING AT LOC D00C00
SAVM DEV:             WRITES 4K ONTO DEV STARTING AT BLOCK 30
START                 STARTS PROGRAM AT LOC D00000
START ADR             STARTS PROGRAM AT ADR
ACT                   PUTS UPD2TR PROGRAM IN "ACT MODE"
NOTACT                TAKES UPD2TR PROGRAM OUT OF "ACT MODE"
FILE DEV:<DEV:<FILNAM.EXT> COPIES FILE(S) FROM ONE DEVICE TO
                     ANOTHER, DELETING FILE OF SAME NAME
                     BEFORE DOING THE TRANSFER
FILEF DEV:<DEV:<FILNAM.EXT> SAME AS FILE EXCEPT THAT WITH CASSETTE OR
                     MAGTAPE FAST TRANSFERS ARE PERFORMED (NO DIR CHE
FILET DEV:FILENAME.EXT  READS FILE AND CHECKS FOR DEVICE ERRORS (FILE "TEST")
FILEL DEV:FILENAME.EXT  LOADS FILES (ASSUMES ABS FORMAT) CHECKING FOR DEVICE AND CHECKSUM ERRORS
FILEG DEV:FILENAME.EXT  LOADS FILES (ASSUMES CONTIGUOUS FORMAT) CHECKING FOR DEVICE AND FILE SIZE ERRORS
FILED DEV:FILENAME.EXT  DELETES NAMED FILES
FILCMP DEV:<DEV:FILENAME.EXT  COMPARES TWO FILES AGAINST EACH OTHER ON TWO TREP MEDIUMS.
PATCH
TEXT DEV:FILENAME.EXT  ENABLE THE USER TO PATCH A PROGRAM.
PRINT DEV:FILENAME.EXT  CREATES TEXT FILE FOR PRINTING OR FOR COMMAND EXECUTION
PRINT DEV:FILENAME.EXT  OUTPUTS A FILE TO THE LINE PRINTER (ASSUMES IT ENDS WITH A $Z)
TYPE DEV:FILENAME.EXT  OUTPUTS A FILE TO THE CONSOLE TERMINAL
DO DEV:FILENAME.EXT  EXECUTES A COMMAND FILE.
ASG PHYSICAL = LOGICAL  ASSIGNS A PHYSICAL DEVICE TO A LOGICAL DEVICE NAME
EOT  WRITES END OF TAPE MARK (FILE) ON MAGTAPE OR CASSETTE AFTER TAPE HAS BEEN POSITIONED.
PATCH DEV:FILENAME.EXT  ENABLES PATCHING CAPABILITIES TO A FILE ON THE TREP MEDIA.
FILCMP DEV:=DEV:FILENAME.EXT  COMPARES TWO FILES WITH EACH OTHER.
1C (CONTROL C)  RETURNS TO COMMAND MODE (OPEN OUTPUT FILE IS CLOSED).
1Z (CONTROL Z)  ENDS INPUT TO A TEXT FILE
*  USED FOR FILE NAMING TO MEAN "ANY" (ANY FILE NAME OR ANY FILE EXTENSION)
?  USED FOR FILE NAMING TO INDICATE A WILD CHARACTER (ANY CHARACTER WILL MATCH IT)
$ OR ;  USED IN A FILE OF EXECUTABLE COMMANDS TO START A COMMENT LINE WHICH IS TO BE TYPED DURING EXECUTION
$  SAME AS $ BUT CAUSES A HALT AFTER
1754
1755
1756

THE COMMENT IS PRINTED
APPENDIX C. PERIPHERALS SUPPORTED BY UPDATE PROGRAMS

TRDP SUPPORTS OR WILL SUPPORT THE FOLLOWING DEVICES:

PR:    PC11 HIGH SPEED PAPER TAPE READER (UPD2TR)
PP:    PC11 HIGH SPEED PAPER TAPE PUNCH (UPD2TR)
KB:    TTY KEYBOARD, OR LOW SPEED READER (UPD2TR)
PT:    TTY PRINTER AND PUNCH (UPD2TR)

DKN:   RK11/RK05 DISK (UPD2TR, N=0-3)
MTN:   TR79F MAGTAPE 9 TRACK (UPD2TR, N=0)
CTN:   TA11 CASSETTE (UPD2TR, N=0 OR 1).
APPENDIX D. PROGRAM NAMING CONVENTIONS

The following program naming convention has been used for TROP. Its use will permit users to determine both the version, and the MCN level of the stored programs. Continued use of this scheme when programs are updated in the field is highly recommended.

+ D + ZFPA#
   ^  ^
   |   |
   |   +---# = indicates MCN level
   |       +---Q = indicates no MCN issued
   |       +---A thru Z = revision designation
   |       +---A thru Z = program designation
   |       +---Q thru 9 = overlay designation
   |       +---2 digits = option designation
   |       +---A = 11/05, 15, 20 processors
   |       +---B = 11/25 processor
   |       +---C = 11/45 processor
   |       +---Z = all processors
   +-----+-------D indicates a diagnostic program, and is not used in naming a program.

.BIN extension used to store program in ABS format.
.SAV extension used to store program in core image format.
.BIC extension indicates ABS format chainable program.
7. HELP ASCII REDRECNE FILE

---

THIS FILE RESIDENT TO THE DIAGNOSTIC DISTRIBUTION
MEDIA IS FOR QUICK COMMAND STRING REFERENCE.
THE FILE CAN BE TYPED/PRINTED OUT BY USING STANDARD
UPDATE COMMANDS.

DETAILED CMD'D DISCRION REFERENCE TRUMP USER MANUAL M-11-DMQX9

TRUMP RESIDENT MONITOR COMMANDS
---

F<CR>    SET CONSOLE FILL COUNT
D<CR>    DIRECTORY ON THE TTY CONSOLE
D/F<CR>   SHORT DIRECTORY ON THE TTY CONSOLE
D/L<CR>   DIRECTORY ON THE LINE PRINTER
D/L/F<CR> SHORT DIRECTORY ON THE LINE PRINTER
R FILENAME<CR> STARTS THE INDICATED PROGRAM
F FILENAME<CR> LOADS THE INDICATED PROGRAM
S FILENAME<CR> STARTS THE DESIRED PROGRAM THAT WAS LOADED UNDER "L" COMMAND.
S ADDR<CR> STARTS PROGRAM AT SPECIFIED ADDRESS
C FILENAME<CR> RUNS DESIRED CHAIN TABLE
C FILENAME/GV<CR> RUNS DESIRED CHAIN IN QUICK VERIFY

XXDP RESIDENT MONITOR ERRORS
---

INVCMD/SW  INVALID COMMAND AND/OR SWITCH, CHECK COMMAND JUST GIVEN.
DEVERR    DEVICE ERROR ON INPUT DEVICE
EOM       END OF MEDIUM OCCURS DURING INPUT OPERATIONS WHEN
          THE PROGRAM ATTEMPTS TO INPUT AND THE FILE IS AT
          AN END. SERIOUS PROBLEM, FILE IN STORAGE IS PROBABLY
          WIPED OUT.
INVADR    INVALID ADDRESS, MUST BE EVEN.
CKSUMER   CHECKSUM ERROR DURING "LOAD" COMMAND.
POO       PROGRAM TOO LARGE TO LOAD WITHIN AVAILABLE CORE SPACE.
INVNAM    INVALID CHARACTER USED FOR FILE NAME
NXFIL     NON-EXISTENT FILE, FILE DOES NOT EXIST ON MEDIUM

UPDP PROGRAM COMMANDS
---

FILL<CR>  SETS UP TERMINAL FOR CORRECT PRINT
           AFTER CRLF.
CLR<CR>   clears core below update program
XFR<CR>   PERMITS MAKING PROGRAM SELF-STARTING,
           OR NON SELF-STARTING.
DUMP DEV:FILENAME.ACT ADR  WRITES MEMORY CONTENTS IN ABS FORMAT.
LOAD DEV:FILENAME.ACT ADR  LOADS ABS FORMAT PROGRAM (.BIN, .BIC)
PUP DEV:FILENAME.ACT+DEV2:FILENAME.ACT ADR  COPIES FILE FROM DEVICE TO DEVICE
SAVE DEV:FILENAME.ACT ADR  WRITES MEMORY CONTENTS INTO CONTIGUOUS BLOCKS
SET DEV:FILENAME.ACT ADR  READS CONTIGUOUS BLOCKS INTO MEMORY
MDD ADR    MODIFIES CORE CONTENTS
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORE</td>
<td>Types Protection Limits</td>
</tr>
<tr>
<td>LOCORE ADR</td>
<td>Enters Low Protection Limit</td>
</tr>
<tr>
<td>MICORE ADR</td>
<td>Enters High Protection Limit</td>
</tr>
<tr>
<td>DIR DEV:</td>
<td>Types Dev Directory on TTY</td>
</tr>
<tr>
<td>DLRP DEV:</td>
<td>Deletes File from Dev Directory</td>
</tr>
<tr>
<td>DEL DEV: FILNAM.EXT</td>
<td>Deletes File from Dev Directory</td>
</tr>
<tr>
<td>ZERO DEV:</td>
<td>Docs Block 0 of Dev Starting at Loc 000000</td>
</tr>
<tr>
<td>BOOT DEV:</td>
<td>Loads 4K onto Dev Start/ing at Block 30</td>
</tr>
<tr>
<td>SAVM DEV:</td>
<td>Writes Program at Its Transfer Address</td>
</tr>
<tr>
<td>START</td>
<td>Starts Program at Addr</td>
</tr>
<tr>
<td>ACT</td>
<td>Updates &quot;Act Mode&quot;</td>
</tr>
<tr>
<td>NOTACT</td>
<td>Updates out of &quot;Act Mode&quot;</td>
</tr>
<tr>
<td>FILE DEV: &lt;DEVS&gt; FILNAM.EXT</td>
<td>Copies File(s) from One Device to Another, Deleting File of Same Name</td>
</tr>
<tr>
<td>FILEF DEV: &lt;DEVS&gt; FILNAM.EXT</td>
<td>Same as File except that with Cassette or Magtape Fast Transfers Are Performed (No Dir Checking, No Dir Checking for Device)</td>
</tr>
<tr>
<td>FILET DEV: FILNAM.EXT</td>
<td>Reads File and Checks for Device Errors (File &quot;Test&quot;)</td>
</tr>
<tr>
<td>FILEL DEV: FILNAM.EXT</td>
<td>Loads Files (Assumes Abs Format)</td>
</tr>
<tr>
<td>FILEL DEV: FILNAM.EXT</td>
<td>Checking for Device and Checksum Errors</td>
</tr>
<tr>
<td>FILEG DEV: FILNAM.EXT</td>
<td>Checking for Device and File Size Errors</td>
</tr>
<tr>
<td>FILEDEV: FILNAM.EXT</td>
<td>Deletes Named Files</td>
</tr>
<tr>
<td>TEXT DEV: FILNAM.EXT</td>
<td>Creates Text File for Printing</td>
</tr>
<tr>
<td>PATCH DEV: FILNAM.EXT &lt;CR&gt;</td>
<td>Enables the User to Patch an Abs Format Program or for Command Execution</td>
</tr>
<tr>
<td>PRINT DEV: FILNAM.EXT</td>
<td>Outputs a File to the Line Printer</td>
</tr>
<tr>
<td>TYPE DEV: FILNAM.EXT</td>
<td>Outputs a File to the Console Terminal</td>
</tr>
<tr>
<td>DO DEV: FILNAM.EXT</td>
<td>Executes a Command File</td>
</tr>
<tr>
<td>RSG PHYSICAL = LOGICAL</td>
<td>Assigns a Physical Device to a Logical Device Name</td>
</tr>
<tr>
<td>EOT</td>
<td>Writes End of Tape Mark (File) on Magtape</td>
</tr>
<tr>
<td>1C (CONTROL C)</td>
<td>Or Cassette After Tape Has Been Positioned</td>
</tr>
<tr>
<td>12 (CONTROL Z)</td>
<td>Return to Command Mode (Open Output File Is Closed)</td>
</tr>
<tr>
<td>*</td>
<td>Used for File Naming to Mean &quot;Any&quot; (Any File Name or Any File Extension)</td>
</tr>
<tr>
<td>?</td>
<td>Used for File Naming to Indicate a Wild Character (Any Character Will Match It)</td>
</tr>
<tr>
<td># OR ;</td>
<td>Used in a File of Executable Commands to Start a Comment Line Which Is to Be Typed During Execution</td>
</tr>
<tr>
<td>$</td>
<td>Same as # But Causes a Halt After The Comment Is Printed</td>
</tr>
<tr>
<td>/LP</td>
<td>Aborts Type Outs</td>
</tr>
<tr>
<td>/N</td>
<td>Line Printer Output</td>
</tr>
</tbody>
</table>

**Errors**

- INVCMD: Invalid Command
- INVDEV: Invalid Device
- INVAR: Invalid Address
- INVNAME: Invalid File Name
<table>
<thead>
<tr>
<th>Line</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1944</td>
<td>MEXFIL: NON-EXISTENT FILE</td>
</tr>
<tr>
<td>1945</td>
<td>DELVD: DELETE OLD FILE BEFORE GIVING COMMAND</td>
</tr>
<tr>
<td>1946</td>
<td>DEVERR: DEVICE ERROR ON EITHER INPUT OR OUTPUT DEVICE</td>
</tr>
<tr>
<td>1947</td>
<td>NOTADD: PAPER TAPE DEVICE IS NOT READY</td>
</tr>
<tr>
<td>1948</td>
<td>CKSMEP: CHECKSUM ERROR</td>
</tr>
<tr>
<td>1949</td>
<td>EOM: END OF MEDIUM</td>
</tr>
<tr>
<td>1950</td>
<td>DEVFULL: DEVICE FULL</td>
</tr>
<tr>
<td>1951</td>
<td>INVCLR: HIGH CORE LIMIT LOWER THAN LOWER CORE LIMIT</td>
</tr>
<tr>
<td>1952</td>
<td>DIRMERR: INVALID NAME IN DEVICE DIRECTORY</td>
</tr>
<tr>
<td>1953</td>
<td>DELEVR: BIT MAP ERROR DURING DELETE OPERATION ON DECTAPE OR DISK</td>
</tr>
<tr>
<td>1954</td>
<td>POFSW: PROGRAM TOO LARGE TO LOAD WITHIN EXISTING CORE SPACE</td>
</tr>
<tr>
<td>1955</td>
<td>INVSW: INVALID SWITCH SPECIFIED IN COMMAND STRING</td>
</tr>
<tr>
<td>1956</td>
<td>DUMP ERR: ACT MODE ONLY DATA Dumped On OUTPUT DEVICE DOES NOT MATCH</td>
</tr>
</tbody>
</table>

**PERIPHERALS SUPPORTED BY UPDATE PROGRAMS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA: PC11 HIGH SPEED PAPER TAPE READER</td>
<td>(UPD2)</td>
</tr>
<tr>
<td>PP: PC11 HIGH SPEED PAPER TAPE PUNCH</td>
<td>(UPD2)</td>
</tr>
<tr>
<td>KB: TTY KEYBOARD, OR LOW SPEED READER</td>
<td>(UPD2)</td>
</tr>
<tr>
<td>PT: TTY PRINTER AND PUNCH</td>
<td>(UPD2)</td>
</tr>
<tr>
<td>DKN: RK11/RKDS DISK</td>
<td>(UPD2, N=0-3)</td>
</tr>
<tr>
<td>MTN: TR79F</td>
<td>(UPD2, N=0)</td>
</tr>
</tbody>
</table>

**CREATING A NEW XXDP DECPACK**

- ZERO DK1: LOAD DKD: RKP.BIN
- SAVE DK1: DUMP DK1: RKP.BIN
- LOAD DKD: UPD1.BIN
- DUMP DK1: UPD1.BIN
- LOAD DKD: UPD2.BIN
- DUMP DK1: UPD2.BIN

**CREATING A NEW XXDP MAGTAPE (TR79F)**

- ZERO: MTO: LOAD DKO: TRP.BIN
- SAVE MTO: TRP.SAV
- DUMP MTO: TRP.BIN
- LOAD DKO: UPDTR.BIN
- DUMP MTO: UPDTR.BIN

```c
12
% .ENABLE ABS .END
```
Symbol Table

PC  =%000007  R1  =%000001  R3  =%000003  R5  =%000005  .  = 000000

ERRORS DETECTED:  0
DEFAULT GLOBALS GENERATED:  0

#DMQXAB SER=SQL=DMQXAB.M11
RUN-TIME:  130 SECONDS
RUN-TIME RATIO:  IOB/4=23.6
CORE USED:  5K (9 PAGES)

EOF1DMQXABSEQ  00010000  770325  PDP10 411  7