

ccm-70-7 (R)

OS-3 EDITOR MANUAL

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COMPUTER CENTER

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1. INTRODUCTION

THIS IS A MANUAL FOR THE OS-3 SYSTEM TEXT EDITOR. TEXT IS ANY CHARACTER INFORMATION -- IT COULD BE SOURCE INPUT FOR ANY OF THE COMPILERS OR ASSEMBLERS, DATA FOR SOME PROGRAM, OR EVEN A LETTER HOME. THIS EDITOR ALLOWS THE CREATION AND MODIFICATION OF TEXT THAT IS STORED ON PAPER TAPE OR SAVED ON SOME FILE IN HOLLERITH, EDIT, OR COSY FORMATS. IT ALLOWS THE ADDITION AND DELETION OF LINES OR STRINGS OF CHARACTERS. IT HAS TAB STOPS TO AID INPUTTING AND SYSTEM FILE CONTROL COMMANDS FOR CONVENIENCE.

1.1 THE TEXT BUFFER AND EDIT USE

THE EDITOR HAS A TEXT BUFFER (SOMETIMES CALLED A SCRATCH PAD) INTO WHICH THE TEXT MUST BE PUT BEFORE IT CAN BE MODIFIED. THIS TEXT BUFFER IS INTERNAL TO THE EDITOR AND HAS NO RELATION TO A FILE (THAT IS, CHANGES MADE TO TEXT IN THE EDITOR'S TEXT BUFFER DO NOT AFFECT ANYTHING ELSE). THUS THE AVERAGE EDIT SESSION CONSISTS OF CALLING THE EDITOR, READING THE TEXT INTO THE EDITOR'S TEXT BUFFER, MODIFYING THE TEXT IN THE TEXT BUFFER, THEN WRITING THE TEXT IN THE TEXT BUFFER ONTO A FILE TO SAVE THE MODIFIED VERSION.

EXAMPLE (BOLD PRINT IS TYPED BY COMPUTER):

>EDIT	FROM CONTROL MODE, CALL THE EDITOR
]FIN,PROGRAM	USE THE FILE INPUT COMMAND TO READ THE TEXT SAVED ON THE FILE PROGRAM INTO THE EDITOR'S TEXT BUFFER
]ERASE,5,7	MODIFY THE TEXT
...	
]FILE,PROGRAM	WRITE THE MODIFIED TEXT BACK ONTO THE SAVED FILE
]EXIT	LEAVE THE EDITOR
>	ENTER CONTROL MODE

1.2 LINE NUMBERS AND TEXT ORDER

WHEN TEXT IS IN THE TEXT BUFFER, EACH LINE HAS A NUMBER (THE EXCEPTION IS INSERTED LINES) WHICH WILL STAY WITH THAT LINE EVEN IF THE LINE IS MOVED TO A DIFFERENT POSITION. TEXT ALSO

HAS LINE ORDERING -- EACH LINE HAS A CERTAIN LINE BEFORE IT AND A CERTAIN LINE AFTER IT. THIS LINE ORDERING CAN BE CHANGED (USING THE MOVE COMMAND) BUT THE NUMBERS ON THE MOVED LINES REMAIN THE SAME (SEE MAXLINE FOR AN EXAMPLE). THUS THE TEXT HAS NUMBERED LINES AND A LINE ORDER BUT IN GENERAL THE LINE NUMBERS DO NOT NECESSARILY GIVE THE LINE ORDER AND VICE VERSA. LINE NUMBERS ARE USED ONLY TO IDENTIFY LINES--NOT TO INDICATE THEIR ORDER.

IF TEXT IS SAVED ON FILE IN EDIT FORMAT, THE LINE NUMBERS (AND OTHER EDITOR-RELATED INFORMATION) ARE SAVED WITH THE TEXT. THUS TEXT THAT IS OUTPUT IN EDIT FORMAT (OUTPUT WITH THE FILE COMMAND) AND THEN READ BACK INTO THE EDITOR WILL HAVE THE SAME LINE NUMBERS. MOST ASSEMBLERS AND COMPILERS WILL PRINT THE EDIT LINE NUMBER OF A LINE IN THE SOURCE LISTING IF THE TEXT IS IN EDIT FORMAT.

1.3 ENTERING COMMANDS AND TEXT

1.3.1 FROM TELETYPE

THE EDITOR WILL SIGNIFY IT IS READY FOR A COMMAND BY PRINTING A RIGHT SQUARE BRACKET (]). THE COMMAND AND ITS PARAMETERS ARE TYPED USING THE BKUPC TO BACKSPACE OVER TYPING MISTAKES AND THE KILLC TO KILL EVERYTHING TYPED ON THE LINE SO FAR. AT ANY TIME, TYPING AN ESCAPE (ALT MODE ON SOME TERMINALS) WILL CAUSE WHAT HAS BEEN TYPED IN THE LINE SO FAR TO BE IGNORED (LIKE THE KILLC) AND PRINT ANOTHER PROMPT CHARACTER (]).

WHEN THE COMMAND AND PARAMETERS HAVE BEEN TYPED ON THE LINE, IT IS FOLLOWED BY A CARRIAGE RETURN. EDIT WILL PROCESS THE COMMAND AND PRINT OUT THE REQUESTED INFORMATION OR THE APPROPRIATE ERROR MESSAGE. THEN, WHEN IT HAS FINISHED EXECUTING THE COMMAND, IT WILL PRINT ANOTHER RIGHT SQUARE BRACKET TO REQUEST THE NEXT COMMAND.

WHEN MANUALLY INPUTTING TEXT, THE EDITOR WILL REQUEST A LINE BY TYPING THE LINE NUMBER IT WANTS NEXT. ENTER THE TEXT, FOLLOWED BY A CARRIAGE RETURN. WHEN TYPING IN TEXT, USE THE BKUPC TO BACKSPACE OVER TYPING MISTAKES, THE KILLC TO IGNORE WHAT HAS BEEN TYPED ON THE THE LINE SO FAR, AND THE TAB CHARACTERS TO INSERT SPACES TO THE NEXT TAB STOP. WHEN INPUTTING TEXT, TYPING ESCAPE (ALT MODE ON SOME TERMINALS) WILL STOP TEXT INPUTTING, PRINT A RIGHT SQUARE BRACKET AND WAIT FOR AN EDIT COMMAND.

TAB CHARACTERS MAKE LITTLE SENSE IN A COMMAND EXCEPT WHEN IN THE SEARCH OR REPLACEMENT STRINGS OF THE SEARCH AND REPLACE COMMANDS. IN THIS CASE THE TAB CHARACTERS ARE NOT EXPANDED AS THEY OCCUR IN THE COMMAND LINE BUT ARE EXPANDED TO THE PROPER

NUMBER OF SPACES FOR THE TEXT THEY ARE BEING COMPARED AGAINST
(SEE THE SAR COMMAND FOR DETAILS).

1.3.2 FROM CRT TERMINAL

INPUTTING TO THE EDITOR FROM CRT IS NOT BY LINE-BY-LINE PROMPT AS FROM TELETYPE. FROM THE TV A WHOLE SCREENFULL OF INFORMATION AND/OR COMMANDS IS ENTERED AT A TIME. EDIT SIGNIFIES ITS WILLINGNESS TO ACCEPT COMMANDS BY WRITING A SCREEN WITH A BLOT IN THE LOWER RIGHT HAND CORNER AND A PRINT MARK IN THE UPPER LEFT HAND CORNER. COMMANDS ARE ENTERED BEGINNING IN THE UPPER LEFT HAND CORNER. MORE THAN ONE COMMAND MAY BE ENTERED ON A SCREEN. THIS IS DONE BY FOLLOWING EACH COMMAND WITH A RETURN AND TERMINATING ALL OF THE COMMANDS WITH A SEND.

TEXT MUST BE ENTERED ON THE SAME SCREEN AS THE COMMAND THAT WILL USE THE TEXT. ONLY ONE SCREEN FULL OF TEXT CAN BE INPUT AT A TIME. THUS, TEXT IS INPUT BY TYPING A TEXT REQUESTING COMMAND (INSERT FOR INSTANCE) FOLLOWED BY A RETURN THEN ENTERING THE LINES OF TEXT ON THE SCREEN AND TERMINATING THE SCREEN WITH A SEND. WHEN INSERTING OR REPLACING, POINT(SEE BELOW) IS SET TO THE LAST LINE ENTERED SO IT IS EASY TO CONTINUE ADDING TEXT (WITH A INSERT,.). INPUTTING WOULD BE CONTINUED USING APPEND.

TEXT THAT IS ENTERED CANNOT BEGIN WITH A PRINT MARK BECAUSE A LINE BEGINNING WITH A PRINT MARK IS AN EDITOR COMMAND.

1.4 POINT

WHEN SPECIFYING A LINE NUMBER IN THE PARAMETER LIST OF A COMMAND, THE CHARACTER POINT (.) CAN BE USED TO SPECIFY A CERTAIN LINE. THE VALUE OF POINT IS CHANGED BY VARIOUS COMMANDS (SEE THE INDIVIDUAL COMMAND DESCRIPTIONS TO DETERMINE WHETHER THEY CHANGE THE VALUE OF POINT OR NOT) AND IT IS USUALLY SET TO THE LAST LINE CHANGED OR INPUT OR LISTED. SO IF ONE LISTS A LINE ON THE TELETYPE, IT MAY BE REFERRED TO BY POINT IN A SARL STATEMENT THAT OCCURS DIRECTLY AFTER THE LISTING.

THE COMMAND POINT WILL PRINT OUT THE LINE NUMBER OF THE LINE POINTED TO BY POINT.

1.5 DECKNAME AND EDITION NUMBERS

ASSOCIATED WITH THE TEXT IS A DECKNAME AND EDITION NUMBERS. THE DECKNAME IS A NAME GIVEN TO THE TEXT SO THAT IT MAY BE RETRIEVED FROM A TEXT LIBRARY (THE LIBRARY BEING EITHER A COSY OR EDIT TEXT LIBRARY). THE NAME IS GIVEN TO THE DECK BY THE INPUT COMMANDS OR WITH A D PARAMETER ON OUTPUT OR IS READ IN WITH THE TEXT IF THE TEXT WAS SAVED IN EITHER COSY OR EDIT FORMATS.

A DECK HAS EDITION NUMBERS THAT AID IN THE SEPARATION OF DIFFERENT VERSIONS OF A PROGRAM OR SET OF DATA. THERE IS A COSY EDITION NUMBER WHICH IS READ IN FROM A COSY FORMAT TEXT FILE AND INCREMENTED BY ONE WHEN THE TEXT IS OUTPUT IN COSY FORMAT (USING THE COUT COMMAND). THERE IS ALSO AN EDIT EDITION NUMBER WHICH IS READ IN FROM AN EDIT FORMAT TEXT FILE AND INCREMENTED BY ONE WHEN THE TEXT IS OUTPUT IN EDIT FORMAT (USING THE FILE COMMAND). SINCE ARCHIVAL COPIES OF PROGRAMS ARE USUALLY KEPT IN COSY FORMAT, A PROGRAM THAT IS READ IN COSY FORMAT, SAVED IN EDIT FORMAT BETWEEN DIFFERENT EDIT SESSIONS, AND FINALLY OUTPUT IN COSY FORMAT WHEN DEBUGGED WILL HAVE THE COSY EDITION NUMBER INCREMENTED BY ONE AND THE EDIT EDITION NUMBER INCREMENTED BY ONE BETWEEN EACH EDIT SESSION.

1.6 DIFFERENCES BETWEEN OLD AND NEW EDIT

THE NEW VERSION OF THE TEXT EDITOR WAS DESIGNED SO THAT IT IS UPWARD COMPATIBLE WITH THE OLD VERSION (I.E., ANYTHING THAT COULD BE DONE WITH THE OLD EDITOR CAN BE DONE WITH THE NEW EDITOR USING THE SAME COMMANDS). THE MAJOR CHANGES ARE THE ADDITION OF NEW COMMANDS AND ADDITIONS TO THE EDITOR FILE FORMAT. SOME COMMANDS HAVE BEEN ENHANCED (E.G., COLUMN SPECIFICATION IN THE SAR COMMAND) AND NEW COMMANDS HAVE BEEN ADDED (E.G. THE WINDOW COMMAND).

ALTHOUGH ALL SYSTEM PROGRAMS THAT COULD READ THE OLD EDIT FILE FORMAT CAN READ THE NEW FORMAT, THE OLD EDITOR CANNOT READ THE NEW EDIT FILE FORMAT. ONCE TEXT HAS BEEN SAVED IN THE NEW EDITOR BY THE FILE COMMAND, IT CANNOT BE USED WITH THE OLD EDITOR.

1.7 LEAVING THE EDITOR

WHEN AN ATTEMPT IS MADE TO LEAVE THE EDITOR EITHER BY USING THE EXIT COMMAND OR BY CALLING ONE OF THE SYSTEM PROGRAMS (SEE NEXT SECTION) A FLAG IS CHECKED TO SEE IF THE TEXT IN

THE TEXT BUFFER HAS BEEN MODIFIED WITHOUT BEING OUTPUT ONTO SOME FILE OR PAPER TAPE. IF SO, THE MESSAGE TEXT NOT SAVED IS PRINTED, THE COMMAND IS NOT EXECUTED, AND THE USER REMAINS IN THE EDITOR. IF THE INTENTION REALLY WAS TO LEAVE THE EDITOR, REENTERING THE COMMAND WILL CAUSE THE EDITOR TO IGNORE THE FLAG AND EXECUTE THE COMMAND.

1.8 CALLING SYSTEM PROGRAMS

TO MAKE IT EASIER TO MOVE BETWEEN THE EDITOR AND OTHER SYSTEM PROGRAMS, SOME SYSTEM ROUTINES CAN BE CALLED DIRECTLY FROM THE EDITOR. TO CALL THESE ROUTINES JUST TYPE IN THE ROUTINE NAME AND THE APPROPRIATE PARAMETERS AS AN EDIT COMMAND. A LIST OF THE CALLABLE SYSTEM ROUTINES IS:

- ALGOL
- ASSEM
- BASIC
- COBOL
- COMPASS
- COPY
- COSY
- DATE
- COSYEDIT
- DECKEDIT
- DFCKLIST
- DUMP
- FORTRAN
- LABEL
- LOAD
- MERGE
- NEWS
- OSCAR
- SIPS
- SORT
- RADAR

1.9 EXPLANATION OF EXPLANATIONS

SECTIONS TWO THROUGH SIX, GIVE AN EXPLANATION OF EACH OF THE EDITOR COMMANDS. AT THE TOP OF EACH EXPLANATION IS A DESCRIPTION OF THE COMMAND AND ITS PARAMETERS IN A NOTATION THAT GIVES ALL THE OPTIONAL PARAMETERS AND SPECIFIES THE DIFFERENT FORMS OF THE COMMAND. FOR INSTANCE:

- FETCH
- CIN

```

FIN, (<LUN>[/R]/<FILENAME>)
    [,L=<LINE>[/<LINE>]]
    [,S=[-]<SHIFTCOUNT>]
    [,R=<RECORD LENGTH>]
    [,<DECKNAME>]

```

FIRST IS A LIST OF THE ALTERNATE FORMS OF THE COMMAND (W IS AN ALTERNATE FORM OF WINDOW) FOLLOWED BY A LIST GIVEN VERTICALLY FOR CONVENIENCE, OF ALL THE POSSIBLE PARAMETERS. THINGS ENCLOSED IN ANGLE BRACKETS (<>) ARE ITEMS THAT ARE LATER DEFINED TO BE NUMBERS OR NAMES OR SUCH -- E.G., <LUN> IS A NUMBER BETWEEN ZERO AND 100 SPECIFYING A LOGICAL UNIT. THINGS ENCLOSED IN SQUARE BRACKETS ARE OPTIONAL -- E.G., [,<DECKNAME>] IS AN OPTIONAL PARAMETER. THINGS ENCLOSED IN NORMAL PARENTHESES AND SEPARATED BY A SLASH DENOTES A CHOICE BETWEEN ITEMS. THUS

```

(<LUN>[/R]/<FILENAME>)

```

SAYS THAT FOR THE INPUT FILE PARAMETER EITHER SPECIFY A LOGICAL UNIT NUMBER (<LUN> WITH AN OPTIONAL SLASH-R) OR A FILE NAME (<FILENAME>).

NOTICE THAT THIS NOTATION CAN BE RATHER CONFUSING BECAUSE DUE TO THE SMALL CHARACTER SET ALLOWED. SLASHES, FOR EXAMPLE, ARE USED BOTH TO SEPARATE CHOICE ITEMS INCLOSED IN PARANTHESES AND AS A PARAMETER ITEM. SO THE OPTIONAL ELEMENT:

```

[,L=<LINE>[/<LINE>]]

```

CAN BE EITHER:

```

    ,L=<LINE>
OR ,L=<LINE>/<LINE>

```

2. INPUT COMMANDS

THE INPUT COMMANDS ALLOW THE ENTRY OF TEXT INTO THE TEXT BUFFER. ONE CAN MANUALLY INPUT, APPEND, OR REPLACE TEXT OR ONE CAN GET TEXT FROM EXISTING FILES OR PAPER TAPE.

IN THE PARAMETER LIST OF THE INPUT COMMANDS, THE FOLLOWING FORMS ARE USED:

ITEM MEANING

<LUN> THIS SPECIFIES A LOGICAL UNIT NUMBER. THIS LUN MUST BE EQUIPPED.

<FILENAME> THIS SPECIFIES A SAVED FILE NAME. THE NAME CONFORMS TO THE OS3 FILE NAME CONVENTIONS, AND THE SAVED FILE MUST EXIST.

<LINE> THIS SPECIFIES A LINE NUMBER ON THE INPUT FILE. IT MAY BE OF THE FORM:
<DECIMAL NUMBER>
OR <DECIMAL NUMBER>+<DECIMAL NUMBER>.

2.1 APPEND COMMAND (WITH PARAMETERS)

```
APPEND, [<LUN>[/R]/<FILENAME>]  
      [,L=<LINE>[/<LINE>]]  
      [,S=[-]<SHIFTCOUNT>]  
      [,R=<RECORD LENGTH>]  
      [,<DECKNAME>]
```

THE APPEND COMMAND READS TEXT FROM THE SPECIFIED LUN OR NAMED FILE AND APPENDS IT TO THE TEXT IN THE TEXT BUFFER. THE ORDER OF THE L, S, R, AND DECKNAME PARAMETERS IS ARBITRARY. IF THE SPECIFIED LUN NUMBER IS FOLLOWED BY A SLASH AND AN R, THEN THE LUN IS REWOUND BEFORE BEING READ. THE TEXT IN THE INPUT UNIT MAY BE IN HOLLERITH, COSY, OR NEW OR OLD EDIT TEXT FORMAT, BUT IF IT IS COSY OR EDIT FORMAT THEN THE INPUT UNITS SHOULD BE REWOUND BEFORE USING.

THE VALUE OF POINT (.) IS SET TO THE LAST LINE APPENDED.

2.1.1 APPEND - L PARAMETER

THE OPTIONAL L PARAMETER SPECIFIES THAT ONLY PART OF THE INPUT TEXT IS TO BE APPENDED. <LINE> CORRESPONDS TO LINES ON THE INPUT UNIT (THE <LINE>TH LINE IN EITHER COSY OR HOLLERITH DECKS AND THE LINE WITH THAT NUMBER IF APPENDING AN EDIT DECK). L=<LINE> WILL APPEND THE <LINE>TH THRU THE LAST LINE OF THE INPUT UNIT, AND L=<LINE1>/<LINE2> WILL APPEND THE <LINE1>TH THRU THE <LINE2>TH LINES FROM THE INPUT UNIT. IF THE L PARAMETER IS OMITTED THEN ALL THE INPUT TEXT IS APPENDED.

2.1.2 APPEND - S PARAMETER

THE OPTIONAL S PARAMETER SPECIFIES THE AMOUNT TO SHIFT EACH LINE OF THE TEXT BEFORE APPENDING. <SHIFTCOUNT> MUST BE A DECIMAL NUMBER BETWEEN, OR INCLUDING, ZERO AND 128, THUS INPUT MAY BE SHIFTED PLUS (TO THE RIGHT) OR MINUS (TO THE LEFT) UP TO 128 CHARACTERS. IF S IS NOT SPECIFIED A SHIFT OF ZERO IS ASSUMED.

2.1.3 APPEND - R PARAMETER

THE OPTIONAL R PARAMETER SPECIFIES THE RECORD LENGTH OF THE INPUT TEXT. <RECORD LENGTH> SPECIFIES THE NUMBER OF CHARACTERS TO BE TAKEN FROM EACH TEXT LINE FROM THE INPUT UNIT. THIS IS USUALLY USED TO TRUNCATE TEXT LINES. <RECORD LENGTH> MUST BE GREATER THAN ZERO AND LESS THAN 257. RECORD LENGTH IS PROCESSED BEFORE SHIFTING SO THE PARAMETERS R=10,S=5 WOULD TAKE THE FIRST TEN CHARACTERS FROM EACH INPUT LINE AND SHIFT IT RIGHT 5 PLACES BEFORE APPENDING IT TO THE TEXT BUFFER -- EACH APPENDED LINE WOULD CONSIST OF 15 CHARACTERS MADE UP OF 5 SPACES AND FIRST 10 CHARACTERS OF

EACH INPUT LINE. IF A RECORD LENGTH IS NOT SPECIFIED, THEN 256 IS ASSUMED.

2.1.4 APPEND - DECKNAME PARAMETER

THE <DECKNAME> PARAMETER, IF SPECIFIED, GIVES THE NAME OF THE DECK TO APPEND IF THE INPUT UNIT IS EITHER A COSY OR EDIT FORMAT LIBRARY. IF NO DECKNAME IS SPECIFIED, THE FIRST COSY OR EDIT DECK ENCOUNTERED WILL BE USED. SPECIFYING A DECKNAME WHEN APPENDING A HOLLERITH DECK HAS NO EFFECT.

2.1.5 APPEND - LINE NUMBER ASSIGNMENT

WHEN APPENDING, LINE NUMBERS ARE ASSIGNED TO EACH NEW LINE. IF THE INPUT FILE IS AN EDIT FORMAT FILE, THE APPENDED LINES RETAIN THEIR LINE NUMBERS. IF THE INPUT UNIT IS A COSY DECK THEN THE APPENDED LINES ARE ASSIGNED NUMBERS BEGINNING WITH ONE AND INCREMENTING BY ONE FOR EACH NEW LINE. IN THESE TWO CASES DUPLICATE LINE NUMBERS MAY OCCUR IN THE TEXT BUFFER AND WHEN A LINE NUMBER IS SPECIFIED, THE RESULT IS UNCERTAIN.

IF THE APPENDED FILE IS IN HOLLERITH FORMAT, THE LINES ARE ASSIGNED LINE NUMBERS BEGINNING WITH THE LARGEST CURRENT LINE NUMBER (MAXLINE) PLUS ONE AND INCREMENTING BY ONE FOR EACH NEW LINE.

2.2 APPEND COMMAND (NO PARAMETERS)

APPEND

THE APPEND COMMAND WITH NO PARAMETERS ALLOWS THE MANUAL APPENDING OF TEXT TO THE TEXT IN THE TEXT BUFFER. FROM TELETYPE, THE EDITOR WILL PROMPT THE INPUT OF LINES BY TYPING THE LINE NUMBER OF THE NEXT LINE TO ENTER IN A MANNER SIMILAR TO THE INPUT COMMAND. APPENDING IS ENDED FROM TELETYPE BY TYPING EITHER AN ALT MODE, AN ESCAPE OR A FILE MARK (CNTL-W).

FROM TV, ONE APPENDS ONE SCREENFUL AT A TIME - THE SAME AS WITH THE INPUT COMMAND.

2.3 FIN - FILE INPUT COMMAND

```
FETCH  
CIN  
FIN, (<LUN>[/R]/<FILENAME>)  
    [,L=<LINE>[/<LINE>]]  
    [,S=[-]<SHIFTCOUNT>]  
    [,R=<RECORD LENGTH>]  
    [,<DECKNAME>]
```

THESE THREE COMMANDS ARE EQUIVALENT (THE DIFFERENT FORMS ARE KEPT IN ORDER TO BE COMPATIBLE WITH THE OLD EDITOR) AND THEY ALL READ TEXT INFORMATION INTO THE TEXT BUFFER FROM A LUN OR SAVED FILE. IT IS SUGGESTED THAT THE FIN COMMAND BE USED.

WHEN THESE COMMANDS ARE USED, ANY TEXT IN THE TEXT BUFFER IS LOST.

2.3.1 FIN - L PARAMETER

THE OPTIONAL L PARAMETER SPECIFIES THAT ONLY PART OF THE INPUT TEXT IS TO BE INPUTTED. <LINE> CORRESPONDS TO LINES ON THE INPUT UNIT (THE <LINE>TH LINE IN EITHER COSY OR HOLLERITH DECKS AND THE LINE WITH THAT NUMBER IF INPUTTING AN EDIT FORMAT DECK). L=<LINE> WILL INPUT THE <LINE>TH THROUGH THE LAST LINE OF THE INPUT UNIT, AND L=<LINE1>/<LINE2> WILL APPEND THE <LINE1>TH THRU THE <LINE2>TH LINES FROM THE INPUT UNIT. IF THE L PARAMETER IS OMITTED THEN ALL THE TEXT IS INPUTTED.

2.3.2 FIN - S PARAMETER

THE OPTIONAL S PARAMETER SPECIFIES WHETHER EACH LINE OF THE INPUT TEXT IS TO BE SHIFTED A CERTAIN NUMBER OF CHARACTERS BEFORE APPENDING. <SHIFTCOUNT> MUST BE A DECIMAL NUMBER BETWEEN ZERO AND 128 INCLUSIVE, THUS INPUT MAY BE SHIFTED PLUS (TO THE RIGHT) OR MINUS (TO THE LEFT) UP TO 128 CHARACTERS. IF S IS NOT SPECIFIED A SHIFT OF ZERO IS ASSUMED.

2.3.3 FIN - R PARAMETER

THE OPTIONAL R PARAMETER SPECIFIES THE RECORD LENGTH OF THE INPUT TEXT. <RECORD LENGTH> SPECIFIES THE NUMBER OF CHARACTERS TO BE TAKEN FROM EACH TEXT LINE FROM THE INPUT UNIT. THIS IS USUALLY USED TO TRUNCATE TEXT LINES. <RECORD LENGTH> MUST BE GREATER THAN ZERO AND LESS THAN 257. RECORD LENGTH IS PROCESSED BEFORE SHIFTING SO THE PARAMETERS R=10,S=5 WOULD TAKE THE FIRST TEN CHARACTERS FROM EACH INPUT LINE AND SHIFT IT RIGHT 5 PLACES BEFORE INPUTTING IT TO THE TEXT BUFFER -- EACH INPUTTED LINE WOULD CONSIST OF 15 CHARACTERS MADE UP OF 5 SPACES AND FIRST 10 CHARACTERS OF EACH INPUT LINE. IF A RECORD LENGTH IS NOT SPECIFIED, 256 IS

ASSUMED.

2.3.4 FIN - DECKNAME PARAMETER

THE DECKNAME PARAMETER SPECIFIES WHICH COSY OR EDIT DECK TO INPUT FROM A COSY OR EDIT LIBRARY. THIS PARAMETER HAS NO EFFECT IF THE INPUT FILE IS IN HOLLERITH FORMAT.

2.3.5 FIN - LINE NUMBER ASSIGNMENT

LINE NUMBERS ARE ASSIGNED ACCORDING TO THE LAST SET STARTING LINE NUMBER AND INCREMENT IF THE INPUT UNIT CONTAINS HOLLERITH FORMAT TEXT. IF THE INPUT IS IN COSY FORMAT, THE LINE NUMBERS ARE NUMBERED BEGINNING WITH ONE AND ADDING ONE FOR EACH NEW LINE. IF THE INPUT IS IN EDIT FORMAT THEN THE LINE NUMBERS PREVIOUS WILL BE RETAINED.

2.3.6 FIN - CONTROL CHARACTER ASSIGNMENT

IF THE INPUT FILE IS IN NEW EDIT FORMAT, THESE COMMANDS NOT ONLY READ THE TEXT INTO THE TEXT BUFFER BUT ALSO SET THE TAB STOPS, THE TAB CHARACTERS, THE KILLC, NULLC, AND BKUPC, RESTORE THE EDIT AND COSY EDITION NUMBERS, AND SET THE DECKNAME AND LAST MODIFIED DATE OF THE TEXT INFORMATION. ALL OF THESE THINGS ARE SAVED WHEN A NEW EDIT FORMATTED TEXT FILE IS CREATED AND THEY ARE RESTORED WHEN THE TEXT IS READ INTO THE EDITOR. TEXT IN COSY FORMAT, WHEN INPUT, DOES NOT CHANGE THE TAB STOPS OR ANY OF THE CONTROL CHARACTERS, BUT THE DECKNAME AND LAST MODIFIED DATE AND COSY EDITION NUMBER ARE FETCHED OFF THE COSY CARD. IF THE INPUT TEXT IS IN HOLLERITH FORMAT, THE TAB STOPS AND THE CONTROL CHARACTERS ARE NOT CHANGED, BUT THE DECKNAME IS SET TO BLANKS, THE COSY AND EDIT EDITION NUMBERS ARE SET TO ZERO, AND THE LAST MODIFIED DATE IS SET TO THE CURRENT DATE.

2.3.7 FIN - EXAMPLES

FIN,PROGSRC

INPUT TO THE TEXT BUFFER THE INFORMATION FOUND ON THE FILE PROGSRC.

FIN,TEXT,L=26+2/44,PROG2

INPUT THE TEXT FOUND ON THE FILE TEXT BEGINNING WITH THE SECOND LINE AFTER THE TWENTY SIXTH AND ENDING WITH THE FORTY-FOURTH. IF THE INPUT TEXT IS IN COSY OR EDIT FORMAT, USE ONLY THE TEXT WITH THE DECKNAME PROG2.

2.4 INPUT COMMAND (MANUAL INPUT)

```
INPUT[.,S=<START SEQUENCE NUMBER>]
      [.,I=<SEQUENCE NUMBER INCREMENT>]
      [.,<DECKNAME>]
```

THIS COMMAND ALLOWS YOU TO MANUALLY ENTER TEXT INTO THE TEXT BUFFER. ANY TEXT THAT MIGHT HAVE BEEN IN THE TEXT BUFFER IS LOST. THE ORDER OF PARAMETERS IS ARBITRARY.

THE VALUE OF POINT (.) IS SET TO THE LAST LINE INPUTTED.

2.4.1 INPUT - SEQUENCE PARAMETERS

THE S AND I PARAMETERS SPECIFY HOW LINE NUMBERS ARE TO BE ASSIGNED TO THE INPUTTED TEXT. THE <START SEQUENCE NUMBER> IS A DECIMAL NUMBER THAT WILL BE THE LINE NUMBER OF THE FIRST LINE OF INPUT AND <SEQUENCE NUMBER INCREMENT> IS A DECIMAL NUMBER THAT WILL BE ADDED TO THE LAST LINE NUMBER TO GET THE NEXT. FOR INSTANCE, S=5,I=3 WILL RESULT IN LINES NUMBERED 5,8,11,14,... IF S OR I ARE NOT SPECIFIED, THE LAST SPECIFIED (FROM THE LAST INPUT COMMAND) OR ONE IS ASSUMED.

2.4.2 INPUT - DECKNAME PARAMETER

<DECKNAME> IS SAVED AS THE DECKNAME OF THE TEXT BEING INPUT. THE NAME WILL BE OUTPUT WITH THE TEXT IF IT IS EVENTUALLY OUTPUT IN COSY OR EDIT FORMAT.

2.4.3 INPUT - MANUAL TEXT ENTERING

WHEN INPUTTING FROM TELETYPE, THE EDITOR WILL TYPE THE LINE NUMBER OF EACH LINE TO INPUT AND WAIT FOR THE LINE TO BE ENTERED. WHEN TYPING IN THE TEXT LINE, ONE MAY USE THE LINE KILL CHARACTER (KILLC) TO DELETE ALL TEXT TYPED IN THE LINE SO FAR, THE BACKUP CHARACTER (BKUPC) TO DELETE THE LAST CHARACTER OF THE LINE TYPED SO FAR, AND THE TAB CHARACTERS TO INSERT ENOUGH SPACES TO MOVE TO THE NEXT TAB STOP. ONE SHOULD NOTE THAT THE SPECIAL CHARACTERS ARE PROCESSED IN THE FOLLOWING ORDER: FIRST KILLC, THEN BKUPC, THEN THE TAB CHARACTERS. THUS ONE MAY USE THE BACKUP CHARACTER TO REMOVE THE TAB CHARACTER (AND ITS SPACES).

ON THE TELETYPE, ONE STOPS INPUTTING BY EITHER TYPING AN ALT MODE (MARKED ESC ON SOME TELETYPES) OR A FILE MARK (CNTRL-W).

WHEN INPUTTING FROM TV, ONE IS RESTRICTED TO THE AMOUNT OF INFORMATION ONE CAN GET ON ONE SCREEN. THE INPUT COMMAND AND ITS PARAMETERS ARE TYPED FOLLOWED BY A RETURN, THEN UP TO 19 LINES OF TEXT ARE TYPED USING THE POSITIONING CONTROLS TO CORRECT TYPING ERRORS AND TERMINATING EACH LINE WITH A RETURN

AND THE FINAL LINE WITH A SEND MARK. TO ENTER MORE TEXT AFTER THE FIRST SCREENFUL, USE THE APPEND COMMAND.

2.5 INSERT COMMAND

INSERT[,<LINE>]

THIS COMMAND ALLOWS ONE TO MANUALLY INSERT TEXT BETWEEN LINES OF TEXT IN THE TEXT BUFFER. <LINE> SPECIFIES THE LINE AFTER WHICH TEXT IS TO BE INSERTED. IT CAN BE OF THE FORMS:

<DECIMAL NUMBER>
<DECIMAL NUMBER>+<DECIMAL NUMBER>
<DECIMAL NUMBER>-<DECIMAL NUMBER>

.
.+<DECIMAL NUMBER>
.-<DECIMAL NUMBER>

IF NO LINE IS SPECIFIED, THE ENTERED TEXT IS INSERTED BEFORE THE FIRST LINE OF THE TEXT BUFFER.

THE VALUE OF POINT (.) IS SET TO THE LAST LINE INPUTTED.

TEXT IS INPUT IN THE SAME MANNER AS WITH THE INPUT COMMAND EXCEPT THE EDITOR ASSIGNS THE INPUTTED LINES INSERTED LINE NUMBERS. THESE LINE NUMBERS ARE PRINTED OUT AS (XXX) WHERE XXX IS THE NUMBER OF LINES SINCE THE LAST NUMBERED LINE.

2.6 TAPE - PAPER TAPE INPUT

```
TAPE[,S=<START SEQUENCE NUMBER>]  
  [,I=<SEQUENCE NUMBER INCREMENT>]  
  [,<DECKNAME>]
```

THIS COMMAND ALLOWS THE INPUTTING OF TEXT FROM A PAPER TAPE INTO THE TEXT BUFFER. ANYTHING THAT MIGHT HAVE BEEN IN THE TEXT BUFFER IS LOST AND THE VALUE OF POINT (.) IS SET TO THE LAST LINE INPUTTED. THE ORDER OF THE PARAMETERS IS ARBITRARY.

2.6.1 TAPE - SEQUENCE PARAMETERS

THE S AND I PARAMETERS SPECIFY HOW LINE NUMBERS ARE TO BE ASSIGNED TO THE INPUTTED TEXT. THE <START SEQUENCE NUMBER> IS A DECIMAL NUMBER THAT WILL BE THE LINE NUMBER OF THE FIRST LINE AND <SEQUENCE NUMBER INCREMENT> IS A DECIMAL NUMBER THAT WILL BE ADDED TO THE LAST LINE NUMBER TO GET THE NEXT. FOR INSTANCE, S=5, I=3 WILL RESULT IN LINES NUMBERED 5, 8, 11, 14, ... IF S OR I ARE NOT SPECIFIED, THE LAST SPECIFIED (FROM THE LAST INPUT COMMAND) OR ONE IS ASSUMED.

2.6.2 TAPE - DECKNAME PARAMETER

<DECKNAME> IS SAVED AS THE DECKNAME OF THE TEXT BEING INPUT. THE NAME WILL BE OUTPUT WITH THE TEXT IF IT IS EVENTUALLY OUTPUT IN COSY OR EDIT FORMAT.

2.6.3 TAPE - READING THE TAPE

WHEN THIS COMMAND IS ENTERED, THE EDITOR WILL TYPE AN ASTERISK (*). THEN ONE MAY START THE PAPER TAPE READER ON THE TELETYPE. BECAUSE OF THE WAY THE OPERATING SYSTEM WORKS, IT IS BEST TO STOP THE PAPER TAPE MOMENTARILY AFTER FIVE OR SIX LINES TO MAKE SURE THE COMPUTER IS KEEPING UP WITH THE PAPER TAPE READER. WHEN MANY PEOPLE ARE USING THE COMPUTER AT THE SAME TIME, IT IS POSSIBLE FOR THE EDITOR TO GET SO FAR BEHIND THAT DISASTEROUS EFFECTS CAN OCCUR (ONE WILL GET PUT INTO CONTROL MODE).

WHEN THE END OF THE TAPE IS REACHED, TYPE EITHER AN ALT MODE (ESC ON SOME TELETYPES) OR A FILE MARK (CNTRL-W).

3. OUTPUT COMMANDS

THE OUTPUT COMMANDS ENABLE THE TEXT BUFFER TO BE OUTPUT TO A LUN OR NAMED FILE IN VARYING FORMATS. THE TEXT CAN BE OUTPUT IN HOLLERITH, NEW EDIT, OR COSY FORMATS.

IN THE PARAMETER LIST OF THE OUTPUT COMMANDS, THE FOLLOWING FORMS ARE USED

ITEM	MEANING
----	-----
<LUN>	THIS SPECIFIES A LOGICAL UNIT NUMBER. THIS UNIT WILL BE EQUIPPED IF IT IS NOT.
<FILENAME>	THIS SPECIFIES A SAVED FILE NAME. FOR THE OUTPUT COMMANDS, IF THE NAMED FILE DOES NOT EXIST, IT IS CREATED AND A MESSAGE IS PRINTED TO THAT EFFECT. IF THE NAME IS THE RESERVED NAME TASK, ONE CAN APPEND A TASK DESTINATION CODE IN PARENTHESES [E.G., TASK(MT1)].
<LINE>	THIS SPECIFIES A LINE NUMBER IN THE TEXT BUFFER. IT MAY BE OF THE FORMS: <DECIMAL NUMBER> <DECIMAL NUMBER>+<DECIMAL NUMBER> <DECIMAL NUMBER>-<DECIMAL NUMBER> . .+<DECIMAL NUMBER> OR .-<DECIMAL NUMBER>

3.1 COUT (COSY OUT) COMMAND

```
COUT, (<LUN>[/R], <FILENAME>)  
    [, <DECKNAME>]  
    [L=<LINE>[/<LINE>]]  
    [, <EDITION NUMBER>]
```

THE COUT COMMAND (COSY OUT) OUTPUTS TEXT FROM TEXT BUFFER ONTO A LUN OR SAVED FILE IN COSY FORMAT. THE TEXT IN THE TEXT BUFFER IS NOT MODIFIED AND THE LINE NUMBERS THAT WERE ASSIGNED BY THE EDITOR TO EACH LINE ARE NOT SAVED WHEN THE DECK IS CONVERTED TO COSY FORMAT.

THE ORDER OF THE PARAMETERS IS ARBITRARY.

THE VALUE OF POINT (.) IS NOT CHANGED.

3.1.1 COUT - L PARAMETER

THE OPTIONAL L PARAMETER SPECIFIES WHAT PART OF THE TEXT BUFFER TO OUTPUT. L=<LINE> SPECIFIES THAT THE FIRST THROUGH THE <LINE>TH LINES IN THE TEXT BUFFER ARE TO BE OUTPUT. L=<LINE1>/<LINE2> WILL OUTPUT THE <LINE1>TH THROUGH THE <LINE2>TH LINES OF THE TEXT BUFFER. IF NO L PARAMETER IS SPECIFIED THEN THE WHOLE TEXT BUFFER IS OUTPUT.

3.1.2 COUT - DECKNAME PARAMETER

<DECKNAME> IS THE DECKNAME TO PLACE ON THE COSY CARD FOR THE DECK. IF NO DECKNAME IS GIVEN THEN THE DECKNAME THAT WAS INTERNALLY SAVED FOR THE TEXT IS USED.

3.1.3 COUT - EDITION NUMBER PARAMETER

THE <EDITION NUMBER> IS THE EDITION NUMBER TO BE PLACED ON THE COSY CARD. IF NO EDITION NUMBER IS SPECIFIED, THE ONE SAVED FOR THE TEXT IS INCREMENTED BY ONE AND USED. THUS, INPUTTING A COSY DECK, MODIFYING IT, AND OUTPUTTING IT WILL INCREMENT THE EDITION NUMBER BY ONE.

THE DATE AND THE TIME PLACED ON THE COSY CARD IS THE TIME IT WAS COUTED.

3.2 FILE - EDIT FORMAT OUTPUT

```
FILE, (<LUN>[/R]/<FILENAME>)  
[,<DECKNAME>]  
[,<L=LINE>[/<LINE>]]  
[,<EDITION NUMBER>[+<EDIT EDITION NUMBER>]]
```

THE FILE COMMAND OUTPUTS TEXT FROM THE TEXT BUFFER ONTO A LUN OR NAMED FILE IN EDIT FORMAT. SAVING TEXT IN EDIT FORMAT HAS THE ADVANTAGE OF KEEPING THE ASSIGNED LINE NUMBERS, THE TAB CHARACTERS, TAB STOPS, KILLC, NULLC, AND BKUPC, AS WELL AS THE TEXT DECKNAME, TIME OF MODIFICATION, COSY EDITION NUMBER AND EDIT EDITION NUMBER. BY THE WAY, THIS NEW EDIT FORMAT TEXT CANNOT BE READ BY THE OLD EDITOR. HOWEVER, OLD EDIT TEXT CAN BE READ BY THE NEW EDITOR.

THE VALUE OF POINT (.) IS NOT CHANGED.

3.2.1 FILE - L PARAMETER

THE L PARAMETER SPECIFIES THAT ONLY PART OF THE TEXT IS TO BE OUTPUT. L=<LINE> SPECIFIES THAT THE FIRST THROUGH THE <LINE>TH LINES IN THE TEXT BUFFER ARE TO BE OUTPUT. L=<LINE1>/<LINE2> WILL OUTPUT THE <LINE1>TH THROUGH THE <LINE2>TH LINES OF TEXT. IF NO L IS SPECIFIED THE WHOLE TEXT BUFFER IS OUTPUT.

3.2.2 FILE - DECKNAME PARAMETER

<DECKNAME> IS THE DECKNAME TO BE SAVED WITH THE TEXT. THE DECKNAME CONSISTS OF ONE TO EIGHT CHARACTERS BEGINNING WITH A LETTER AND CONSISTING OF LETTERS, OR ASTERISKS, UP-ARROWS, OR DOLLAR SIGNS. IF NO DECKNAME IS SPECIFIED, THE DECKNAME SAVED IS THE ONE ALREADY SAVED FOR THE TEXT.

3.2.3 FILE - EDITION NUMBER PARAMETER

THE EDIT EDITION NUMBER IS GIVEN BY INCLUDING <EDITION NUMBER> OR BOTH THE COSY AND THE EDIT EDITION NUMBERS MAY BE SPECIFIED BY INCLUDING BOTH <EDITION NUMBER> AND <EDIT EDITION NUMBER>. IF NEITHER IS SPECIFIED, THE LAST COSY EDITION NUMBER IS USED AND THE LAST EDIT EDITION NUMBER IS INCREMENTED BY ONE AND USED.

THE LAST MODIFIED DATE THAT GOES WITH THE TEXT IS WHEN IT WAS FILED.

3.3 LIST - TERMINAL OUTPUT

```
L
LST
LIST[,<LINE>[,<LINE>]]
      [,T[=<TRUNCATION>]]
```

THIS COMMAND LISTS PART OR ALL OF THE TEXT BUFFER ONTO THE OUTPUT TERMINAL. THE TEXT IN THE TEXT BUFFER IS NOT MODIFIED.

THE VALUE OF POINT (.) IS SET TO THE LAST LINE LISTED.

3.3.1 LIST - LINE PARAMETER

THE COMMAND LIST,<LINE1>,<LINE2> WILL LIST THE <LINE1>TH THROUGH THE <LINE2>TH LINES OF THE TEXT BUFFER. THE COMMAND LIST,<LINE> WILL LIST THE <LINE>TH LINE OF THE TEXT BUFFER. IF NO LINE NUMBERS ARE SPECIFIED, THE WHOLE TEXT BUFFER IS OUTPUT.

FROM TV, THE COMMAND LIST,<LINE> WILL LIST ONE SCREENFUL OF LINES BEGINNING WITH LINE <LINE>. TO CONTINUE LISTING ONE MAY USE THE COMMAND LIST,. OR JUST HIT SEND.

3.3.2 LIST - TRUNCATION PARAMETER

THE T PARAMETER SPECIFIES TRUNCATION OF EACH LISTED LINE. <TRUNCATION> SPECIFIES THE NUMBER OF CHARACTERS OF EACH LINE TO PRINT. <TRUNCATION> MUST BE GREATER THEN ZERO AND LESS THAN 257. IF THE T PARAMETER IS PRESENT BUT NO TRUNCATION IS SPECIFIED, THE VALUE OF (WIDTH MINUS SIX) IS ASSUMED (WIDTH IS USUALLY 50 FOR TVS AND 70 FOR TELETYPES). IF T IS NOT SPECIFIED, THE MAXIMUM VALUE OF 256 IS ASSUMED.

3.4 OUT - HOLLERITH OUTPUT

```
OUT, (<LUN>[/R]/<FILENAME>)  
  [,N]  
  [,V]  
  [,R=<RECORD LENGTH>]  
  [,S=[-]<SHIFT COUNT>]  
  [,L=<LINE>[/<LINE>]]
```

THE OUT COMMAND OUTPUTS TEXT FROM THE TEXT BUFFER ONTO A LUN OR NAMED FILE IN HOLLERITH FORMAT. THE TEXT IN THE TEXT BUFFER IS NOT MODIFIED. IF THE SLASH-R IS SPECIFIED AFTER THE LUN NUMBER, THAT LUN IS REWOUND BEFORE BEING WRITTEN ON. IF A <FILENAME> IS SPECIFIED THAT DOES NOT EXIST, IT WILL BE CREATED AND A MESSAGE TO THAT EFFECT WILL BE PRINTED.

THE VALUE OF POINT IS NOT CHANGED.

WHEN OUTING ONTO A LUN, THE EDITOR WRITES THE TEXT, A FILE MARK, THEN BACKSPACES OVER THE FILE MARK. THUS IF MORE TEXT IS OUTTED ONTO THAT LUN WITHOUT REWINDING IT, THE FILE MARK IS WRITTEN OVER AND THE NEW TEXT IS APPENDED TO WHAT IS ON THE LUN ALREADY.

3.4.1 OUT - L PARAMETER

THE L PARAMETER SPECIFIES THAT ONLY PART OF THE TEXT BUFFER IS TO BE OUTPUT. L=<LINE> WILL OUTPUT ALL TEXT FROM THE <LINE>TH LINE IN THE TEXT BUFFER THROUGH THE END OF TEXT. L=<LINE1>/<LINE2> WILL OUTPUT THE <LINE1>TH THROUGH THE <LINE2>TH LINES OF THE TEXT BUFFER. IF L IS NOT SPECIFIED THE WHOLE TEXT BUFFER IS OUTPUT.

3.4.2 OUT - R AND V PARAMETERS

THE V PARAMETER SPECIFIES THAT VARIABLE LENGTH RECORDS ARE TO BE OUTPUT (I.E., TRAILING BLANKS ARE REMOVED). THE R PARAMETER SPECIFIES THE OUTPUT RECORD LENGTH. IF RECORD LENGTH IS SPECIFIED AND VARIABLE LENGTH RECORDS ARE NOT, THEN FIXED LENGTH RECORDS ARE WRITTEN THAT ARE <RECORD LENGTH> CHARACTERS LONG. IF BOTH R AND V ARE SPECIFIED, VARIABLE LENGTH RECORDS ARE WRITTEN BUT THE RECORDS ARE NO LONGER THAN <RECORD LENGTH> CHARACTERS. IF NO R IS SPECIFIED, 256 CHARACTERS IS ASSUMED, WITH VARIABLE LENGTH RECORDS.

3.4.3 OUT - S PARAMETER

THE S PARAMETER SPECIFIES A CHARACTER SHIFT COUNT. <SHIFT COUNT> MUST BE BETWEEN (OR INCLUDING) ZERO AND 128. THUS ONE MAY SHIFT A LINE FROM -128 CHARACTERS (128 CHARACTERS TO THE LEFT) TO 128 CHARACTERS (128 CHARACTERS TO THE RIGHT). IF NO

S IS SPECIFIED, A VALUE OF ONE IS ASSUMED IF A TELETYPE OR LINE PRINTER IS THE OUTPUT DEVICE, OTHERWISE, ZERO IS ASSUMED.

IT SHOULD BE NOTED THAT SHIFTING IS DONE BEFORE CALCULATING RECORD LENGTH. THUS S=10,R=20 WILL SHIFT THE OUTPUTTED LINES TEN CHARACTERS TO THE RIGHT THEN TRUNCATE THE RECORDS TO 20 CHARACTERS BEFORE OUTPUTTING.

3.4.4 OUT - N PARAMETER

THE N PARAMETER SPECIFIES THAT LINE NUMBERS ARE TO BE OUTPUT WITH THE LINES. IF A RECORD LENGTH IS SPECIFIED (R PARAMETER) THEN THE LINE NUMBERS ARE PLACED IN THE LAST FIVE COLUMNS OF EACH RECORD. IF NO RECORD LENGTH IS SPECIFIED BUT LINE NUMBERS ARE, A RECORD LENGTH OF 80 IS ASSUMED AND THE LINE NUMBERS ARE PLACED IN COLUMNS 76 THROUGH 80. THE EXCEPTION TO THIS IS IF THE OUTPUT DEVICE IS EITHER A LINE PRINTER OR A TELETYPE AND NO SHIFTING IS SPECIFIED. IN THIS CASE THE LINE IS SHIFTED 7 CHARACTERS TO THE RIGHT AND THE LINE NUMBERS ARE PLACED AT THE BEGINNING OF EACH LINE.

3.5 TTP - PAPER TAPE PUNCH

```
TTP[,<LINE>[/<LINE>]]  
[ ,T=<TRUNCATION>]
```

TTP (STANDING FOR TELETYPE PUNCH) IS IDENTICAL TO THE LIST COMMAND EXCEPT THAT NO LINE NUMBERS ARE TYPED BEFORE EACH LINE AND RUBOUTS ARE PUNCHED BEFORE AND AFTER LISTING TO PROVIDE LEADER AND TRAILER ON THE PAPER TAPE. ONE TYPES THE TTP COMMAND WITHOUT THE TERMINATING CARRIAGE RETURN, TURNS ON THE PAPER TAPE PUNCH, TYPES THE CARRIAGE RETURN AND WAITS FOR THE TAPE TO FINISH PUNCHING.

THE VALUE OF POINT IS CHANGED TO THE LAST LINE PUNCHED.

4. TEXT MANIPULATION COMMANDS

THESE COMMANDS ALLOW ONE TO CHANGE LINES OR PARTS OF LINES OF TEXT IN THE TEXT BUFFER.

THE FOLLOWING FORMS ARE USED IN THE COMMANDS:

ITEM	MEANING
----	-----
<LINE>	NUMBER OF A LINE IN THE TEXT BUFFER. IT MAY BE OF THE FORMS: <DECIMAL NUMBER> <DECIMAL NUMBER>+<DECIMAL NUMBER> <DECIMAL NUMBER>-<DECIMAL NUMBER> . .+<DECIMAL NUMBER> .-<DECIMAL NUMBER>

4.1 COVER

```
COVER[.,L=LINE1>[/<LINE2>]]  
    [,C=<COLUMN NUMBER>]  
    [,I=<INPUT UNIT>]
```

THE COVER COMMAND ALLOWS ONE TO ADD TEXT TO THE END OF LINES. THIS COMMAND IS USUALLY USED BY THOSE PROGRAMMERS WHO WRITE ASSEMBLY LANGUAGE ROUTINES AND THEN DECIDE TO DOCUMENT THEM LATER.

4.1.1 COVER - L PARAMETER

THE L PARAMETER SPECIFIES WHICH LINES TO MODIFY. IF ONLY <LINE1> IS SPECIFIED THEN THE TEXT BEGINNING WITH <LINE1> AND ENDING WITH THE LAST LINE OF TEXT IS COVERED. IF BOTH <LINE1> AND <LINE2> ARE SPECIFIED, THEN THE TEXT FROM <LINE1> TO <LINE2> IS MODIFIED. IF NO L PARAMETER IS GIVEN ALL OF TEXT IS MODIFIED.

4.1.2 COVER - C PARAMETER

THE C PARAMETER SPECIFIES THE COLUMN AT WHICH TO BEGIN ADDING TEXT. IF NO COLUMN IS SPECIFIED, COLUMN 40 IS ASSUMED.

4.1.3 COVER - INPUTTING

USUALLY THE COVERING TEXT IS ENTERED MANUALLY BUT WITH THE I PARAMETER ONE CAN ADD TEXT FROM A FILE. AN EMPTY LINE ON THE INPUT FILE DOES NOT MODIFY THE CORRESPONDING LINE IN THE TEXT BUFFER.

FROM TELETYPE, EACH LINE WILL BE TYPED OUT UNTIL THE COVER COLUMN IS REACHED THEN THE BELL WILL RING. THE USER CAN THEN ENTER THE ADDED INFORMATION OR MERELY A CARRIAGE RETURN IF THE LINE IS NOT TO BE MODIFIED. AN ESCAPE WILL STOP COVERING.

FROM TV, THE LINE TO BE CHANGED WILL BE DISPLAYED AND ONE TYPES IN THE ADDITIONS BEGINNING IN THE UPPER LEFT HAND CORNER AND TERMINATING IT WITH A SEND. MERELY HITTING SEND WILL NOT MODIFY THE LINE AND THE NEXT LINE WILL BE DISPLAYED. FROM TV, ONE MUST DO A MANUAL INTERRUPT OR ENTER A FILE MARK OR A PRINT MARK TO STOP COVERING.

THE VALUE OF POINT (.) IS SET TO THE LAST LINE CHANGED.

4.2 DUP - DUPLICATE LINES OF TEXT

DUP,<LINE1>,[<LINE2>],<LINE3>

THE DUP COMMAND WILL DUPLICATE A SECTION OF THE TEXT BUFFER INTO ANOTHER SECTION. THE COMMAND DUP,<LINE1>,<LINE2>,<LINE3> WILL DUPLICATE LINES <LINE1> THROUGH <LINE2> AND PLACE THEM AFTER <LINE3>. IF <LINE2> IS NOT SPECIFIED, ONLY A COPY OF <LINE1> IS MADE.

THE DUPLICATED LINES ARE GIVEN INSERTED LINE NUMBERS.

THE VALUE OF POINT (.) IS NOT CHANGED.

4.3 ERASE - REMOVE LINES FROM THE TEXT BUFFER

ERASE,<LINE1>,[<LINE2>]

THE ERASE COMMAND WILL ERASE SPECIFIED LINES FROM THE TEXT BUFFER. IF BOTH <LINE1> AND <LINE2> ARE SPECIFIED, <LINE1> THROUGH <LINE2> OF THE TEXT BUFFER IS ERASED. IF ONLY <LINE1> IS SPECIFIED THEN ONLY <LINE1> IS ERASED.

4.4 MOVE - MOVE LINES OF TEXT IN THE TEXT BUFFER

MOVE,<LINE1>,[<LINE2>],<LINE3>

THE MOVE COMMAND MOVES LINES OF TEXT. THIS COMMAND WILL MOVE <LINE1> THROUGH <LINE2> TO AFTER <LINE3>. IF <LINE2> IS NOT SPECIFIED, ONLY <LINE1> IS MOVED.

4.5 REPLACE - REPLACE LINES OF TEXT

REP
REPLACE,<LINE1>[,<LINE2>]

THE REPLACE COMMAND IS EQUIVALENT TO ERASING THE SPECIFIED LINES OF TEXT AND THEN DOING AN INSERT WHERE THEY USED TO BE. IF BOTH <LINE1> AND <LINE2> ARE SPECIFIED, LINES <LINE1> THROUGH <LINE2> ARE ERASED AND ARE REPLACED BY TEXT ENTERED MANUALLY. IF <LINE2> IS NOT GIVEN, ONLY <LINE1> IS REPLACED.

SEE THE INSERT COMMAND FOR THE DESCRIPTION OF MANUAL TEXT ENTERING.

4.6 SAR/SAD - SEARCH AND REPLACE/DELETE

```
SAD
SADL
SAR
SARL( (<COLUMN1>[,<COLUMN2>] ) )
    , [<LINE1>,<LINE2>]
    , <CHAR1><STRING1><CHAR1>
    [,<CHAR2><STRING2><CHAR2>]
```

THESE ARE STRING SEARCH AND REPLACEMENT COMMANDS. A STRING IS ALMOST ANY SEQUENTIAL GROUP OF CHARACTERS. THE NAMES HAVE THE FOLLOWING MEANING:

COMMAND	MEANING
SAD	SEARCH AND DELETE LINE
SADL	SEARCH AND DELETE LINE AND LIST
SAR	SEARCH AND REPLACE STRING
SARL	SEARCH AND REPLACE STRING AND LIST

THESE COMMANDS WILL SEARCH FOR THE OCCURRENCE OF A STRING OF CHARACTERS IN CERTAIN LINES (POSSIBLY ONLY IN CERTAIN COLUMNS OF THOSE LINES) AND GIVE THE LINE NUMBER OF WHERE IT WAS FOUND OR LIST THE LINE IT OCCURRED IN OR DELETE THE LINE OR REPLACE THE STRING WITH ANOTHER STRING EITHER LISTING THE LINE OR NOT.

THE SAD COMMAND WILL SEARCH FOR THE SPECIFIED STRING AND DELETE THE LINES IT IS FOUND IN. THE SADL COMMAND WILL DO THE SAME BUT IT WILL ALSO LIST THE LINES IT DELETES. FOR THESE TWO COMMANDS THE SECOND STRING IS NEVER SPECIFIED.

THE SAR COMMAND WILL SEARCH FOR THE SPECIFIED STRING (<STRING1>) AND GIVE THE LINE NUMBER OF THE LINES IT OCCURRED ON (IF <STRING2> IS NOT GIVEN) OR REPLACE THE FOUND STRING (WITH <STRING2> IF IT IS GIVEN). THE SARL COMMAND WORKS IN THE SAME WAY EXCEPT THE WHOLE LINE IS LISTED INSTEAD OF JUST THE LINE NUMBER AND THE WHOLE LINE IS LISTED IF THE LINE IS MODIFIED. NOTE THAT WHEN REPLACING A STRING THE SAR COMMAND WILL GIVE NO INDICATION OF SUCCESS OR FAILURE WHILE THE SARL COMMAND WILL.

AS TO PARAMETERS, <LINE1> AND <LINE2> SPECIFY THE RANGE OF LINES TO SEARCH. THEY BOTH ARE OPTIONAL AND THEY WILL SEARCH:

SPECIFIED	TEXT SEARCHED
SAR,<LINE1>,<LINE2>	FROM <LINE1> THROUGH <LINE2>
SAR,<LINE1>,,,,	ONLY <LINE1>
SAR,,<LINE2>,,,,	FROM THE BEGINNING OF TEXT TO LINE <LINE2>

SAR,,,,...

ALL OF TEXT

THE USER MAY SEARCH ONLY CERTAIN COLUMNS OF THE SPECIFIED LINES BY ENDING THE COMMAND WORD DIRECTLY WITH A LEFT PARENTHESIS AND ENCLOSING THE COLUMNS HE WISHES TO SEARCH. THESE PARAMETERS MAY BE SUMMARIZED THUS:

SPECIFIED	COLUMNS SEARCHED
SAR(<COL1>,<COL2>)	TEXT IN COLUMNS <COL1> THRU <COL2>
SAR(<COL1>)...	ONLY SCAN IN <COL1>

THE STRING BEING SEARCHED FOR OR THE REPLACEMENT STRING IS DEFINED BY TYPING THE STRING CHARACTERS DELIMITED BY SOME PRINTING CHARACTER. THESE DELIMITING CHARACTERS - <CHAR1> AND <CHAR2> - MARK THE BEGINNING AND END OF THE STRING. <CHAR1> AND <CHAR2> CAN BE ANY CHARACTER EXCEPT ONE THAT OCCURS IN THE ENCLOSED STRING AND, OF COURSE, THE KILLC AND THE BKUPC. MOST PEOPLE USE A SLASH (/). THE STRINGS THEMSELVES MAY CONSIST OF ANY CHARACTERS EXCEPT THEIR RESPECTIVE DELIMITING CHARACTER, THE KILLC, OR THE BKUPC. THE STRING MAY CONTAIN TAB CHARACTERS WHICH ARE EXPANDED TO THE PROPER NUMBER OF SPACES WHEN BEING COMPARED TO THE TEXT (E.G., A STRING BEGINNING WITH A TAB CHARACTER WHEN BEING COMPARED WITH THE CHARACTER IN COLUMN 2 WOULD EXPAND TO BEGIN WITH 8 SPACES IF THE FIRST TAB STOP WAS 10).

THE SECOND STRING MAY BE EMPTY (JUST <CHAR2><CHAR2>) WHICH WOULD SEARCH FOR A STRING AND REPLACE IT WITH THE EMPTY STRING (MERELY DELETE THE STRING).

THE VALUE OF POINT IS SET TO THE LAST LINE LISTED BY THE SARL OR SADL COMMANDS BUT IS NOT CHANGED BY THE SAR OR SAD COMMANDS.

EXAMPLES:

SAR,10,20,/ZOTE/,/ZOT/

SEARCH LINES TEN THRU TWENTY AND REPLACE ANY OCCURRENCE OF THE CHARACTERS ZOTE WITH THE CHARACTERS ZOT.

SADL(1,9),,,/BEGIN/

SEARCH ALL OF TEXT FOR THE OCCURRENCE OF THE CHARACTERS BEGIN WITHIN THE FIRST NINE COLUMNS OF A LINE. IF SUCH A LINE IS FOUND, LIST IT, THEN ERASE IT.

SARL,126+5,,%TEZT%,=TEXT=

SEARCH THE FIFTH LINE AFTER

LINE 126 FOR THE CHARACTERS
TEXT AND IF FOUND, REPLACE THE
STRING WITH THE CHARACTERS TEXT
THEN LIST THE MODIFIED LINE.

SARL,,,/H/

LIST ALL LINES IN THE TEXT
BUFFER THAT CONTAIN THE LETTER
H.

SAD(20),100,200,/CASES/

SEARCH ALL LINES BETWEEN LINE
100 AND LINE 200 FOR THE
OCCURRENCE OF THE CHARACTERS
CASES STARTING IN COLUMN 20.
DELETE EACH LINE THAT MEETS
THIS CONDITION.

4.7 SARH/SADM - SEARCH AND REPLACE/DELETE MASKED

```
SADM
SADLM
SARH
SARLM( (<COLUMN1>[,<COLUMN2>] ) )
  ,<MASK CHARACTER>
  , [<LINE1>]
  , [<LINE2>]
  , <CHAR1><STRING1><CHAR1>
  [ , <CHAR2><STRING2><CHAR2> ]
```

THESE FOUR SEARCH COMMANDS ARE IDENTICAL TO THEIR CORRESPONDING COMMANDS ABOVE WITHOUT THE M. THE DIFFERENCE IN THESE COMMANDS IS THAT THEY SPECIFY A MASK CHARACTER. THIS MASK CHARACTER, WHEN IT OCCURS IN THE SEARCH STRING, WILL MATCH ANY CHARACTER. WHEN IT OCCURS IN THE REPLACEMENT STRING THE CHARACTER THAT WAS COVERED IN THE SEARCH STRING WILL BE INSERTED. FOR EXAMPLE:

```
]LIST,10
00010:1234567890
]SARLM,$,10,,/34$!7/,/X$Y$Z/
00010:12X5Y6Z890
]
```

NOTICE THAT THE MASKING CHARACTERS NEED NOT BE CONSECUTIVE. IN THE REPLACEMENT STRING, THERE MAY BE FEWER OR THE SAME NUMBER OF MASKING CHARACTERS AS IN THE SEARCH STRING BUT THERE CANNOT BE MORE.

EXAMPLES:

```
SARH,X,,,/DECKX%1/
```

LIST THE LINE NUMBER OF ANY LINE IN THE TEXT BUFFER THAT CONTAINS THE CHARACTERS DECK FOLLOWED BY ANY TWO CHARACTERS FOLLOWED BY A ONE.

```
SADLM(10,20),X,23,54,/AXXB/
```

SEARCH LINES 23 THRU 54 FOR A LINE WITH THE CHARACTERS A AND B SEPARATED BY ANY TWO CHARACTERS WITHIN COLUMNS 10 AND 20 OF THOSE LINES. IF SUCH A LINE IS FOUND, LIST IT THEN ERASE IT.

4.8 WINDOW - TV WINDOW EDITING

W

WINDOW[, [<LINE>][, <COLUMN>]]

THE WINDOW COMMAND ALLOWS A PERSON AT A TV TERMINAL TO USE THE SCREEN EDITING CAPABILITIES OF THE TERMINAL TO MODIFY TEXT. THIS COMMAND IS ILLEGAL FROM TELETYPE.

<LINE> SPECIFIES THE FIRST LINE TO PLACE ON THE SCREEN. IF NO LINE IS SPECIFIED, THE FIRST LINE OF TEXT IS ASSUMED.

<COLUMN> SPECIFIES THE TEXT COLUMN TO BE PLACED IN THE FIRST COLUMN OF THE TV SCREEN. IF <COLUMN> IS NOT SPECIFIED THEN COLUMN ONE IS ASSUMED.

THE WINDOW COMMAND WILL PLACE ON THE FIRST LINE OF THE TV SCREEN A SEND MARK (A SMALL DELTA), THE LINE NUMBER OF THE FIRST LINE OF TEXT DISPLAYED AND THE COLUMN NUMBER DISPLAYED IN COLUMN ONE OF THE SCREEN, FOLLOWED BY 19 LINES OF TEXT ON THE REMAINING LINES OF THE TERMINAL SCREEN. AS LONG AS THE SEND MARK IS IN THE UPPER LEFT HAND CORNER OF THE SCREEN WHENEVER SEND IS HIT, THE TEXT DISPLAYED ON THE SCREEN WILL REPLACE THE CORRESPONDING TEXT IN THE TEXT BUFFER. THUS TO STOP WINDOWING, JUST TYPE A COMMAND THAT OVERLAYS THE SEND MARK IN THE UPPER CORNER.

WHEN WINDOWING, ONE MAY DO ANYTHING TO THE DISPLAYED TEXT. THE NULLC, IF TYPED OVER A CHARACTER, CAUSES THAT CHARACTER TO BE REMOVED FROM THE TEXT BUFFER. A RETURN WILL CAUSE THE REMAINDER OF THE CHARACTERS IN THE LINE TO BE DELETED. IF A SEND MARK IS PLACED SOMEWHERE ON THE SCREEN, THE CHARACTER THAT IT OVERLAYS IS NOT CHANGED.

ONE MODIFIES THE TEXT ON THE SCREEN THEN PRESSES SEND. THE EDITOR WILL READ THE SCREEN, MODIFY THE TEXT BUFFER, THEN WRITE THE MODIFIED TEXT BACK ON THE SCREEN SO ONE MAY VERIFY THE CHANGES AND MAKE SOME MORE.

ONE CANNOT ADD LINES TO THE TEXT BUFFER WITH THE WINDOW COMMAND. ONE CAN ONLY MODIFY LINES THAT ALREADY EXIST IN THE BUFFER.

THE VALUE OF POINT (.) IS SET TO THE FIRST LINE THAT IS DISPLAYED ON THE SCREEN.

5. EDIT CONTROL COMMANDS

THESE COMMANDS CHANGE EDIT CONTROL CHARACTERS, LIST THE SETTING OF CERTAIN PARAMETERS, AND PROVIDE CONTROL OVER OTHER EDIT RELATED FUNCTIONS.

5.1 BKUPC - SET BACKSPACE CHARACTER

BKUPC,<CHAR>

WHEN ONE IS ENTERING COMMANDS OR TEXT FROM A TELETYPE, TYPING A BKUPC (BACKUP CHARACTER) WILL REMOVE THE LAST CHARACTER ON THE LINE. THIS CHARACTER IS INITIALIZED TO BE A BACK-SLASH BUT CAN BE SET TO ANY CHARACTER EXCEPT A COMMA, A LETTER, A DIGIT, A CARRIAGE RETURN, OR A LINE FEED.

WHEN TEXT IS OUTPUT WITH THE FILE COMMAND, THE CURRENT BACKSPACE CHARACTER IS SAVED AND WILL BE RESTORED WHEN THE TEXT IS AGAIN READ INTO THE EDITOR.

IF THE BACKSPACE CHARACTER IS A PERCENT SIGN (SET BY BKUPC,%) THEN **ABDDXZCEXZ** IS EQUIVALENT TO **ABCD**.

5.2 COMMANDS - LIST EDITOR COMMANDS

COMMANDS

THIS COMMAND PRINTS A LIST OF ALL OF THE EDIT COMMANDS.

5.3 C - COMMENT

C,<COMMENT>

THIS COMMAND DOES NOTHING. IT IS USED TO INCLUDE COMMENTS IN EDITOR COMMAND FILES (USED WITH DO COMMAND) OR TO DOCUMENT EDIT SESSIONS FOR INSTRUCTIONAL PURPOSES.

5.4 DO - DO AN EDIT COMMAND FILE

DO[, (<LUN>[/R])/<FILENAME>)

THIS COMMAND WILL CAUSE THE EDITOR TO READ EDIT COMMANDS FROM THE SPECIFIED LUN OR SAVED FILE. THE COMMANDS READ FROM THE DO FILE ARE PROCESSED SEQUENTIALLY AND THEY CANNOT INCLUDE ANOTHER DO COMMAND.

IF AN ERROR OCCURS, PROCESSING OF THE DO FILE STOPS AND CAN BE CONTINUED BY TYPING THE DO COMMAND WITH NO PARAMETERS.

5.5 EXIT - EXIT FROM THE EDITOR

EXIT

THIS COMMAND WILL EXIT FROM THE EDITOR AND RETURN CONTROL TO THE SYSTEM CONTROL MODE ROUTINE. IF ANY FILES HAVE BEEN CREATED THE DIRECTRY FILE WILL BE UPDATED. IF TEXT HAS BEEN MODIFIED BUT HAS NOT BEEN SAVED THEN THE MESSAGE TEXT NOT SAVED WILL BE OUTPUT AND THE USER WILL REMAIN IN THE EDITOR. IN THIS CASE EXIT MUST BE TYPED AGAIN TO LEAVE THE EDITOR(HOPEFULLY AFTER THE TEXT IS SAVED).

5.6 KILLC - SET LINE KILL CHARACTER

KILLC,<CHARACTER>

WHEN ENTERING TEXT FROM THE TELETYPE, TYPING THE KILLC WILL CAUSE THE EDITOR TO IGNORE WHATEVER HAS BEEN TYPED ON THE LINE SO FAR. THIS LINE KILL CHARACTER IS INITIALIZED TO BE AN AT-SIGN BUT CAN BE SET TO ANY CHARACTER EXCEPT A COMMA, A LETTER, A DIGIT, A CARRIAGE RETURN, OR A LINE FEED.

WHEN TEXT IS OUTPUT WITH THE FILE COMMAND, THE CURRENT LINE KILL CHARACTER IS SAVED WITH THE TEXT AND WILL BE RESTORED WHEN THE TEXT IS AGAIN READ INTO THE EDITOR.

IF THE LINE KILL CHARACTER IS A PERCENT SIGN (SET BY KILLC,%) THEN TYPING ABCDZXWYZ IS EQUIVALENT TO WXYZ.

5.7 LASTLINE - LINE NUMBER OF LAST LINE

LASTLINE

THIS COMMAND WILL PRINT OUT THE LINE NUMBER OF THE LAST LINE OF TEXT. THIS IS NOT NECESSARILY THE LARGEST LINE NUMBER BUT IS MERELY THE LINE NUMBER OF THE LAST LINE.

SEE MAXLINE FOR AN EXAMPLE.

5.8 MAXLINE - LARGEST LINE NUMBER

MAXLINE

THIS COMMAND LISTS THE LARGEST LINE NUMBER OF ANY LINE IN THE TEXT BUFFER. THIS IS NOT NECESSARILY THE LINE NUMBER OF THE LAST LINE OF TEXT.

EXAMPLE:

```

)LIST
00001:THIS IS THE FIRST LINE
00002:THIS IS THE SECOND LINE
00003:THIS IS THE THIRD LINE
00004:THIS IS THE FOURTH LINE
00005:THIS IS THE FIFTH LINE
)MOVE,4,5,2
)MAXLINE
5
)LASTLINE
3
)LIST
00001:THIS IS THE FIRST LINE
00002:THIS IS THE SECOND LINE
00004:THIS IS THE FOURTH LINE
00005:THIS IS THE FIFTH LINE
00003:THIS IS THE THIRD LINE
```

5.9 NULLC - SET WINDOW NULL CHARACTER

NULLC[,<CHARACTER>]

WHEN USING THE WINDOW COMMAND, ENTERING THE NULLC (NULL CHARACTER) OVER ANOTHER CHARACTER ON THE SCREEN WILL CAUSE THAT CHARACTER TO BE REMOVED FROM THE TEXT BUFFER WHEN THE WINDOW UPDATE IS DONE. THIS NULLC IS INITIALIZED TO A DOWN CARROT ON THE TV TERMINAL KEYBOARD AND CAN BE SET TO ANY CHARACTER WITH THIS COMMAND EXCEPT A LETTER, A DIGIT, A COMMA, A SEND MARK, A PRINT MARK, OR A CARRIAGE RETURN. IF THIS COMMAND IS ENTERED WITH NO PARAMETERS THEN THE NULLC IS SET TO NO CHARACTER - THAT IS NO CHARACTER IN THE CHARACTER SET WILL REMOVE CHARACTERS DURING THE WINDOW.

WHEN TEXT IS OUTPUT WITH THE FILE COMMAND, THE CURRENT NULLC IS SAVED WITH THE TEXT AND WILL BE RESTORED WHEN THE TEXT IS AGAIN READ INTO THE EDITOR.

5.10 POINT - GIVE CURRENT POINT POSITION

POINT

THIS COMMAND PRINTS THE LINE NUMBER OF THE LINE REFERENCED BY POINT. THAT IS, MOST TEXT MODIFICATION COMMANDS SET THE VALUE OF THE CHARACTER #.# TO THE LAST MODIFIED OR LISTED LINE OF TEXT. THIS CHARACTER CAN BE USED TO SPECIFY A LINE AS A PARAMETER IN MOST OF THE COMMANDS.

5.11 RESEQ - RESEQUENCE LINE NUMBERS

RESEQ[<FIRST LINE NUMBER>[, [<NUMBER INCREMENT>]]

THIS COMMAND RENUMBERS ALL THE LINES IN THE TEXT BUFFER. IF NO PARAMETERS ARE SPECIFIED THEN THE LINES ARE NUMBERED BEGINNING WITH ONE AND INCREMENTING BY ONE FOR EACH LINE. THE LINES ARE NUMBERED AS THEY SEQUENTIALLY OCCUR IN THE TEXT BUFFER. IF <FIRST LINE NUMBER> IS GIVEN THEN THE LINES ARE NUMBERED BEGINNING WITH IT AND ARE INCREMENTED BY ONE FOR EACH LINE UNLESS <NUMBER INCREMENT> IS GIVEN.

5.12 * - COMMENTS

*,<COMMENTS>

THIS COMMAND DOES NOTHING. IT IS USED TO INCLUDE COMMENTS IN EDITOR COMMAND FILES (SEE DO COMMAND) OR IN EDIT SESSIONS TO PROVIDE INSTRUCTION AND DOCUMENTATION.

5.13 STATUS - GIVE EDITOR AND TEXT STATUS

STATUS

THIS COMMAND (SIMILAR TO THE FILE STATUS COMMAND BUT WITH NO PARAMETERS) PRINTS OUT THE CURRENT TAB CHARACTERS AND TAB STOPS, THE BKUPC, THE KILLC, THE NULLC (IF ON TV), THE TEXT#S DECKNAME AND DATE, AND THE EDIT AND COSY EDITION NUMBERS.

EXAMPLE:

```
]STATUS
*** EDIT STATUS ***
TAB1=CNTRL-I:10,20,40,72
TAB2=CNTRL-I:10,20,40,72
BKUPC=%
KILLC=$
INPUT FILE:*EDITMAN
DECK:EDITMAN 06/02/75 1551
EDITION:1+9
]
```

5.14 TAB1 - SET TAB STOPS FOR TABC1

TAB1,<UP TO 6 TAB STOPS>

THIS COMMAND SETS THE TAB STOPS FOR TABC1. SEE THE TAB COMMAND FOR DETAILS OF THE PARAMETERS.

5.15 TAB2 - SET TAB STOPS FOR TABC2

TAB2,<UP TO 6 TAB STOPS>

THIS COMMAND SETS THE TAB STOPS FOR TABC2. SEE THE TAB COMMAND FOR DETAILS OF THE PARAMETERS.

5.16 TAB - SET THE TAB STOPS

TAB,<UP TO 6 TAB STOPS>

THIS COMMAND SETS THE TAB STOPS FOR BOTH TABC1 AND TABC2. IF BOTH TAB STOPS ARE NOT BEING USED THEN THE TAB AND THE TABC COMMANDS ARE USED TO SET THE TAB CONTROL.

THE PARAMETERS ARE FROM ONE TO SIX INTEGERS THAT ARE GREATER THAN ZERO AND LESS THAN 256 AND ARE GIVEN IN INCREASING ORDER. THUS, **TAB,5,20,40** SETS THE TAB STOPS FOR BOTH TABC1 AND TABC2 AT COLUMNS 5, 20, AND 40. THERE WOULD BE NO TAB STOPS SET AFTER COLUMN 40 AND ANY TAB CHARACTER IN A LINE AFTER THE THIRD ONE (IN THIS EXAMPLE) WOULD ONLY INSERT ONE SPACE.

5.17 TABC1 - SET TAB CHARACTER ONE

TABC1,<CHARACTER>

THIS COMMAND SETS THE TAB CHARACTER ONE. SEE THE TABC COMMAND FOR DETAILS.

5.18 TABC2 - SET TAB CHARACTER TWO

TABC2,<CHARACTER>

THIS COMMAND SETS THE TAB CHARACTER TWO. SEE THE TABC COMMAND FOR DETAILS.

5.19 TABC - SET THE TAB CHARACTER

TABC,<CHARACTER>

THIS COMMAND SETS BOTH TABC1 AND TABC2. <CHARACTER> CAN BE ANY CHARACTER EXCEPT A LETTER, A DIGIT, THE BKUPC, THE KILLC, A CARRIAGE RETURN, OR A LINE FEED. FROM A TELETYPE, THE TAB CHARACTER MAY ALSO BE ANY OF THE CONTROL CHARACTERS EXCEPT CONTROL-A.

WHEN TEXT IS SAVED WITH THE FILE COMMAND, THE CURRENT TAB CHARACTERS ARE SAVED WITH THE TEXT AND WOULD BE RESTORED WHEN THE TEXT IS AGAIN READ INTO THE EDITOR.

THE TAB CHARACTERS, WHEN THEY OCCUR IN INPUT LINES, ARE REPLACED WITH ENOUGH SPACES SO THAT THE NEXT CHARACTER TYPED IS PLACED IN THE COLUMN OF THE NEXT TAB STOP FOR THAT TAB CHARACTER. IF THERE ARE NO MORE SPECIFIED TAB STOPS, THEN THE TAB CHARACTER IS REPLACED WITH ONE SPACE.

EXAMPLE:

```

)TAB1,3,6,8
)TAB2,4,7,9
)TABC1,%
)TABC2,>
)INPUT
00001:A%B%C%D%E
00002:A>B>C>D>E
00003:%>>A%B
00004:<ESCAPE>
)LIST
00001:A B C D E
00002:A B C D E
00003: AB
)

```

NORMALLY ONLY ONE TAB CHARACTER AND ONE SET OF TAB STOPS ARE USED. THUS, NORMALLY ONLY THE TAB AND TABC COMMANDS ARE USED SINCE THESE SET BOTH TABC1 AND TABC2 AND TAB1 AND TAB2 TO THE SAME.

THE DEFAULT VALUES OF THE TAB CONTROLS ARE:

```

TABC1 (ON TTY) - CONTROL-I
TABC2 (ON TTY) - CONTROL-I
TABC1 (ON TV) - DOWN ARROW
TABC2 (ON TV) - DOWN ARROW
TAB1 - 10,20,40,72
TAB2 - 10,20,40,72

```


5.20 WIDTH - SET CARRIAGE WIDTH

WIDTH, <NUMBER>

THIS COMMAND SPECIFIES TO THE EDITOR THE WIDTH OF THE CARRIAGE OF THE TERMINAL IN CHARACTERS. WHEN THE EDITOR IS LISTING, A CARRIAGE RETURN AND A LINE FEED IS INSERTED WHEN THE END OF THE CARRIAGE IS REACHED SO THE LINE BEING LISTED IS BROKEN PROPERLY. THE CARRIAGE WIDTH IS ALSO USED BY THE T OPTION IN THE LIST COMMAND IF NO TRUNCATION IS SPECIFIED.

<NUMBER> IS THE NUMBER OF CHARACTERS THAT FIT ON ONE LINE ON THE TERMINAL. THE DEFAULT VALUES ARE 72 FOR A TELETYPE AND 50 FOR TV TERMINALS.

6. SYSTEM CONTROL COMMANDS

THESE COMMANDS ARE SUPPLIED IN THE EDITOR TO ALLOW THE USER TO SAVE AND DELETE FILES, REPOSITION FILES, OBTAIN SYSTEM STATUS, AND OTHER SIMILAR SYSTEM FUNCTIONS.

6.1 BKSP - BACKSPACE A LUN ONE RECORD

BKSP,<LUN>[(<COUNT>)]...

THIS COMMAND CAUSES A BACKSPACE FUNCTION(S) TO BE PERFORMED ON THE SPECIFIED LUN(S). IF <COUNT> IS NOT SPECIFIED, THE SPECIFIED LUN IS BACKSPACED ONE RECORD. IF <COUNT> IS SPECIFIED THEN THE SPECIFIED LUN IS BACKSPACED <COUNT> TIMES (E.G., BKSP,10(5) WILL BACKSPACE LUN 10 FIVE RECORDS.)

6.2 CLEAR - CLEAR THE SPECIFIED LUN

CLEAR,<LUN>...

THIS COMMAND WILL PERFORM A CLEAR FUNCTION IN THE SPECIFIED LUN. THE CLEAR FUNCTION WILL CLEAR CERTAIN STATUSES ON LUNS: ADDRESS ERROR, FILE MARK READ, AND BINARY RECORD READ.

6.3 DELETE - DELETE SAVED FILE

DELETE,[<LUN>=]<FILENAME>

THIS COMMAND WILL DELETE A SAVED FILE FROM THE SYSTEM. IF <LUN> IS NOT SPECIFIED, THE EDITOR WILL DELETE <FILENAME> (IT CANNOT BE FILE PROTECTED) AND IF THAT FILENAME IS NOT EQUIPPED TO SOME LUN ALL THE INFORMATION IS LOST. IF <LUN> IS SPECIFIED, THE EDITOR WILL EQUIP <LUN> TO <FILENAME> THEN DELETE <FILENAME> THUS THE DATA IS RETAINED ON THE SCRATCH <LUN>.

EXAMPLES:

DELETE,ZOT1,ZOT2

DELETE THE SAVED FILES ZOT1 AND ZOT2. THEY MUST NOT BE FILE PROTECTED OR THEY WILL NOT BE DELETED.

DELETE,10=DATA2 EQUIP LUN 10 TO THE FILENAME DATA2 AND
THEN DELETE DATA2.

6.4 EQUIP - EQUIP LUNS

EQUIP, <LUN1>={<LUN2>/<NAME>[<DESTINATION>]}...

THIS COMMAND IS USED TO EQUIP <LUN1> (WHICH CANNOT BE CURRENTLY EQUIPPED) TO ANOTHER LUN (<LUN2>), TO A SAVED FILE, OR TO SOME PREDEFINED OUTPUT DEVICE WITH A DESTINATION. THE DESTINATION SPECIFICATION IS USUALLY USED WITH THE REMOTE BATCH FACILITY TASK. SEE THE SEND COMMAND FOR A LIST OF DESTINATIONS FOR DEVICES.

EXAMPLES:

EQUIP,10=FILE,15=ZOTO	EQUIP LUN 10 TO A SCRATCH FILE AND LUN 15 TO THE SAVED FILE ZOTO.
EQUIP,26=57,12=LP	EQUIP LUN 26 TO LUN 57 AND EQUIP LUN 12 TO A LINE PRINTER.
EQUIP,89=TASK(FAST)	EQUIP LUN 89 TO THE FAST REMOTE BATCH QUEUE.

6.5 FP - SET FILE PROTECTION

FP, (<LUN>/<FILENAME>)...

THIS COMMAND SETS FILE PROTECTION ON THE SPECIFIED LUN OR SAVED FILE. ONCE PROTECTED IT CANNOT BE WRITTEN ON UNTIL FILE PROTECTION IS REMOVED. FILE PROTECTION CAN BE SET BY ANYONE BUT IT CAN ONLY BE REMOVED BY THE OWNER OF THE FILE.

6.6 FWSP - FORWARD SPACE ONE RECORD

FWSP, <LUN>[(<COUNT>)]...

THIS COMMAND CAUSES THE SPECIFIED LUN TO BE FORWARD SPACED ONE RECORD (IF <COUNT> IS NOT SPECIFIED) OR <COUNT> RECORDS.

6.7 LUNLIST - LIST LUNS EQUIPPED

LL
LUNLIST

THIS COMMAND WILL LIST ALL OF THE LUNS THAT ARE EQUIPPED, THE TYPE OF DEVICE THEY ARE EQUIPPED TO (FILE, TTY, TV, RAF, LP, ...) AND THE STATUS OF EACH DEVICE. THE STATUS IS REPRESENTED BY CHARACTERS WHICH ARE:

CHAR	MEANING
----	-----
[LOAD POINT (BEGINNING OF FILE)
]	END OF DATA
F	FILE MARK READ
S	SAVED FILE
B	BINARY RECORD READ
A	ABNORMAL FILE
D	DESTRUCTIVE READ MODE
E	ADDRESS ERROR (RAF ONLY)
+	FILE PROTECTED

6.8 MFBLKS - SET OR DISPLAY SCRATCH LIMIT

MFBLKS[(+/=) <NUMBER>]

THIS COMMAND WITH NO PARAMETERS WILL PRINT OUT THE USERS SCRATCH FILE BLOCKS CURRENTLY IN USE (CFBLKS) AND THE MAXIMUM NUMBER THAT HAS BEEN USED SO FAR (MFBLKS). IF PARAMETERS ARE SPECIFIED, THIS COMMAND WILL SET THE MAXIMUM NUMBER OF SCRATCH BLOCKS THAT CAN BE IN USE AT ONE TIME (IF = IS USED), OR ADD A CERTAIN NUMBER TO THE LIMIT ALREADY SET (IF THE + IS USED).

EXAMPLES:

MFBLKS=100 SET A MAXIMUM OF 100 SCRATCH FILE BLOCKS TO BE USED.

MFBLKS+26 ADD 26 TO THE PREVIOUS SCRATCH BLOCK MAXIMUM.

6.9 OVLOAD - LOAD AN OVERLAY

OVLOAD, <OVERLAY NAME> <PARAMETERS>

THIS COMMAND WILL LOAD AND EXECUTE THE SPECIFIED OVERLAY. ANY TEXT IN THE TEXT BUFFER WILL BE DESTROYED.

6.10 RELEASE - RELEASE THE DATA ON A LUN

RELEASE,<LUN>...

THIS COMMAND WILL RELEASE THE DATA ON THE SPECIFIED LUN(S) BUT NOT UNEQUIP THE LUN. THIS IS USED FOR RELEASING OUTPUT DATA BEFORE A PROGRAM IS RERUN OR TO RELEASE DATA WRITTEN ONTO A LINE PRINTER OR OTHER OUTPUT DEVICE WHEN THE OUTPUT IS NOT DESIRED. UNEQUIPPING AN OUTPUT DEVICE WITHOUT FIRST RELEASING THE DATA WILL CAUSE IT TO BE PRINTED OR PUNCHED.

6.11 RESET - RESET LUN DEFINITIONS

RESET[(+/,)<LOW LUN>[,<HIGH LUN>]]

WHEN A PERSON LOGS ONTO THE SYSTEM ALL LUNS ARE UNEQUIPPED EXCEPT LUN 60 WHICH IS THE STANDARD INPUT UNIT AND 61 WHICH IS THE STANDARD OUTPUT UNIT. THIS COMMAND WILL RESET LUNS IN THE SPECIFIED RANGE TO THEIR INITIAL CONDITION. THE DIFFERENCE BETWEEN USING THE COMMA AND THE PLUS SIGN FOR PARAMETER TERMINATORS IS THAT THE COMMA WILL NOT UNEQUIP FILE PROTECTED UNSAVED LUNS WHILE THE PLUS SIGN WILL. DIFFERENT FORMS OF THIS COMMAND ARE:

COMMAND	ACTION
-----	-----
RESET	UNEQUIP ALL BUT FILE PROTECTED UNSAVED LUNS AND EQUIP LUNS 60 AND 61 TO THEIR INITIAL DEVICES.
RESET+	UNEQUIP ALL LUNS AND EQUIP 60 AND 61 TO THEIR INITIAL DEVICES.
RESET+<LOW>	RESET ALL LUNS IN THE RANGE <LOW> TO 99 AND EQUIP 60 AND 61 (IF IN THE RANGE) TO THEIR INITIAL DEVICES.
RESET+<LOW>,<HIGH>	UNEQUIP ALL LUNS IN THE RANGE <LOW> TO <HIGH>

6.12 REWIND - SET TO LOAD POINT SPECIFIED LUNS

REWIND,<LUN>...

THIS COMMAND WILL CAUSE THE SPECIFIED LUNS TO BE REWOUND (SET TO LOAD POINT). THE SPECIFIED LUNS CAN BE FILES, RAFS, OR TASKS BUT IT IS NOT LEGAL TO REWIND OUTPUT DEVICES (LP,PUN,PLOT,...).

6.13 RFP - REMOVE FILE PROTECTION

RFP, (<LUN>/<FILENAME>)...

THIS COMMAND WILL REMOVE FILE PROTECTION FROM THE SPECIFIED LUN OR SAVED FILE. TO REMOVE PROTECTION FROM A PUBLIC OR SEMI-PUBLIC SAVED FILE ONE MUST BE THE OWNER OF THE FILE (THE PERSON WHO CREATED IT).

6.14 SAVE - SAVE LUN AS SAVED FILE

SAVE,<LUN>=<FILENAME>...

THIS COMMAND WILL SAVE THE SPECIFIED LUN AS A SAVED FILE OF THE NAME <FILENAME>. <LUN> CANNOT ALREADY BE SAVED AND <FILENAME> CANNOT ALREADY EXIST.

<FILENAME> IS MADE UP OF ONE TO EIGHT CHARACTERS WHICH ARE EITHER LETTERS, NUMBERS, OR THE CHARACTERS *, \$, OR †. THE FIRST CHARACTERS OF THE FILE NAME MUST NOT BE A NUMBER. A FILE WHOSE NAME BEGINS WITH A * IS A PUBLIC FILE AND ANY USER ON THE SYSTEM CAN EQUIP IT. IF A FILE NAME BEGINS WITH AN † THEN ANY USER WITH THE SAME JOB NUMBER CAN EQUIP IT. IF THE FIRST CHARACTER OF A FILE NAME IS A LETTER THEN ONLY A PERSON WITH THE SAME JOB NUMBER AND VALIDITY CODE CAN EQUIP THE FILE. A FILE NAME THAT BEGINS WITH A \$ IS A RUN ONLY FILE. A RUN ONLY FILE IS PUBLIC BUT CAN NOT BE INSPECTED AND MUST BE EXECUTED AS AN OVERLAY.

6.15 SDR - SET DESTRUCTIVE READ MODE

SDR,<LUN>...

THIS COMMAND SETS DESTRUCTIVE READ MODE ON THE SPECIFIED LUNS. <LUN> MUST BE A FILE. IF <LUN> IS PROTECTED OR SAVED IT WILL ONLY BE REWOUND. DESTRUCTIVE READ MODE RELEASES THE INFORMATION ON THE FILE AS IT IS READ. THAT IS, AS INFORMATION IS READ FROM THE FILE, THE FILE IS DECREASED IN SIZE AND THE DATA READ IS DESTROYED. ONCE DESTRUCTIVE READ MODE IS SET, ALL YOU CAN DO IS READ THE FILE, UNEQUIP IT, OR RELEASE IT.

6.16 SEFB - SPACE TO FILE MARK BACKWARD

SEFB,<LUN>...

THIS COMMAND WILL CAUSE THE SPECIFIED LUN(S) TO BE SPACED BACKWARD UNTIL A FILE MARK IS FOUND. THE FILE IS POSITIONED BEFORE THE FIRST PREVIOUS FILE MARK OR TO LOAD POINT IF NO FILE MARK WAS FOUND.

6.17 SEFF - SPACE TO FILE MARK FORWARD

SEFF,<LUN>...

THIS COMMAND WILL CAUSE THE SPECIFIED LUN(S) TO BE SPACED FORWARD UNTIL A FILE MARK IS FOUND. THE FILE IS POSITIONED JUST AFTER THE NEXT FILE MARK OR TO THE END OF THE FILE IF NONE WAS FOUND.

6.18 SEND - SEND A DEVICE TO A DESTINATION

SEND,<LUN> TO <DESTINATION>

THIS COMMAND WILL CAUSE THE SPECIFIED LUN TO GO TO THE SPECIFIED DESTINATION WHEN IT IS UNEQUIPPED. THIS COMMAND IS USUALLY USED IN CONJUNCTION WITH THE REMOTE USER TERMINALS OR WITH THE TASK FILE.

DEVICE	DESTINATIONS
-----	-----
TASK	NITE - JOBS TO RUN DURING DISCOUNT RATES FAST - SMALL JOBS (<30SEC,<100MFBLKS) MT1 - JOBS USING 1 TAPE DRIVE MT2 - JOBS USING 2 TAPE DRIVES MT3 - JOBS USING 3 TAPE DRIVES MT4 - JOBS USING 4 TAPE DRIVES TASK - JOB NOT REQUESTING TAPES SITE - SAME AS TASK
LP	SITE - COMPUTER CENTER LINE PRINTER UT01 - USER TERMINAL PORT 1 UT01 - USER TERMINAL PORT 2
PLOT	SITE - COMPUTER CENTER PLOTTER
PUN	SITE - COMPUTER CENTER CARD PUNCH

NORMALLY, WHEN A DEVICE IS EQUIPPED, ITS DESTINATION IS ASSUMED SITE EXCEPT IF THE JOBS ORIGIN IS A USER TERMINAL. THEN THAT TERMINAL IS ASSUMED AS THE DESTINATION.

6.19 SFBLKS - PRINT NUMBER OF SAVED FILE BLOCKS

SFBLKS

THIS COMMAND WILL PRINT OUT THE NUMBER OF SAVED FILE BLOCKS AND THE LIMIT ON SAVED FILE BLOCKS ASSOCIATED WITH THE JOB NUMBER.

6.20 STATUS - PRINT STATUS OF LUN OR SAVED FILE

STATUS,(<LUN>/<FILENAME>)

THIS COMMAND WILL PRINT THE STATUS OF THE SPECIFIED LUN OR SAVED FILE. THE ENTRY PRINTED OUT WILL GIVE THE TYPE OF THE LUN OR SAVED FILE, ITS POSITION (LOAD POINT, ETC.), ITS SIZE IN FILE BLOCKS, AND ITS SIZE IN RECORDS IF APPLICABLE.

6.21 TRAFFIC - GIVE USERS ON SYSTEM

TRAFFIC

THIS COMMAND WILL PRINT OUT THE NUMBER OF PEOPLE LOGGED ONTO THE OPERATING SYSTEM.

6.22 UNEQUIP - UNEQUIP LUNS

UNEQUIP,<LUN>...

THIS COMMAND WILL CAUSE THE SPECIFIED LUNS TO BE UNEQUIPPED. IF THE LUN IS A FILE OR RAF IT MUST NOT BE FILE PROTECTED. IF THE LUN IS AN OUTPUT DEVICE (LP,PUN,PLOT,...) THEN THE INFORMATION ON THAT DEVICE IS SENT TO THE PROPER DESTINATION TO BE PRINTED, PUNCHED OR PLOTTED.

6.23 WFM - WRITE FILE MARK

WFM,<LUN>...

THIS COMMAND WILL WRITE A FILE MARK ON THE SPECIFIED LUN(S).