

codex

EDITOR

Text Editor

Through Version 5.0

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Intelligent Terminal Systems Group

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Through Version 5.0

Preface

This User's Guide is a course of instruction in the use of the Codex EDITOR text editing program. After reading this Guide, the operator should be able to create, modify, print, and manipulate text files.

This User's Guide is intended for the inexperienced user as well as the programmer or other technically-oriented user experienced with text editors in general. Part One, the EDITOR Simplified User's Guide, includes a brief introduction to Codex Intelligent Terminal Systems and the Codex Disk Operating System (CODOS) and a listing of the minimum hardware configuration required for EDITOR use. Typical EDITOR application is illustrated on a step-by-step basis; an explanation of the complete EDITOR process is also included. Part Two, the EDITOR User's Guide, describes the operation of the EDITOR in detail (each EDITOR command is described separately). Appendices cover basic system operation, format commands, and disk and diskette care and handling.

Other Codex publications that may be of interest include the Codex Disk Operating System (CODOS) User's Guide, the CODOS Reference Manual, and the Operator's Guides and Hardware Reference Manuals appropriate to the user's system configuration.

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PART ONE

EDITOR Simplified User's Guide

CHAPTER 1. INTRODUCTION

The Codex EDITOR is a powerful text editing facility that enables users to create, store, modify, list, and manipulate text files. Designed for use with Codex Intelligent Terminal Systems, the EDITOR allows files to be loaded into system memory, listed on the terminal display screen or system printer (or both), and modified by commands entered from the terminal keyboard.

An added feature of the EDITOR is its ability to search through a text file and point to a specific character or group of characters, as well as entire lines or groups of lines. This capability of global searching and modification permits many occurrences of the same modification to be made through a single command.

The EDITOR makes use of special features of the CDX-68 Basic Display Terminal to speed and simplify operations. The cursor is positioned over corrections using a set of six cursor control keys; the edit keypad allows a line or character to be deleted or inserted with a single keystroke. Seven function keys are reserved for EDITOR tasks such as scrolling, line duplication, and so on.

In combination with the Codex Document Processor (DOC), the EDITOR can produce a wide range of business documents. DOC format commands are included in the text file produced by the EDITOR; completely-formatted documents may then be displayed on the terminal screen or printed on an optional system printer.

The EDITOR like other Codex utility programs (including BLOKEDIT, COPY, LIST, and others), operates under the direction of the Codex Disk Operating System (CODOS). This permits the EDITOR to take full advantage of CODOS features, including dynamic file creation and expansion, transparent operation, and compatibility with other Codex software products.

The EDITOR has two modes of operation: the page mode and the line (scroll) mode.

In the page mode, the Terminal screen displays twenty lines of the file being edited; this twenty-line window can be moved to any portion of the file for viewing. The bottom two lines of the display screen list the function keys applicable to editing along with their functions.

The page mode supports both command editing and text editing. With command editing, the user enters edit commands (such as CHANGE, DELETE, FIND, and so on) on a command line at the bottom of the screen; the command then performs its function on the line designated by a pointer. These

commands, and command editing, are described in Part Two, the EDITOR User's Guide.

In text editing, the cursor keypad is used to position the cursor over the text to be modified; other edit keypad keys are then used to insert, change, or delete characters or lines. Text editing is the most commonly-used type of editing, and is described in Part One, the EDITOR Simplified User's Guide.

In the line mode, commands are used to edit text. Each command line is scrolled up after its entry, with the results of the command displayed on the following line. Line mode editing is described in Part Two, the EDITOR User's Guide.

Minimum System Configuration

The minimum configuration required to use the EDITOR in conjunction with Codex Intelligent Terminal Systems consists of:

- Basic Display Terminal (CDX-68) with appropriate firmware options

- 32K bytes of user memory (RAM)

- 10 Mb Disk or 1 Mb Diskette Storage (CDX-DS/FR or CDX-FS3)

- Optional Codex Character or Matrix Printer (CDX-SP Series)

Additional Hardware Supported

The EDITOR also supports a variety of optional printers (the Codex SP Series). Most often used for text processing applications is the 55 CPS Character Printer (SP4), which uses the impact of a hammer on a fully-formed character to produce clear, sharp images suitable for photographic reproduction.

The EDITOR also supports the addition of up to 24K bytes of user memory to the Basic Display Terminal (for a total memory of 56K bytes). This memory addition causes no changes in the method of operation of the EDITOR.

Software Support Required

The EDITOR is shipped on a disk or diskette that includes the Codex Disk Operating System (CODOS) and all other necessary supporting software.

Software Installation

The EDITOR is shipped on the same disk or diskette that contains the system software and requires no installation or initialization.

CHAPTER 2. TYPICAL EDITOR OPERATION

This section is intended for the beginning user of the EDITOR; it is recommended that experienced users or users familiar with text editors in general proceed to Part Two.

Typical EDITOR Operation (Example)

To get the most out of this example, take this manual and a disk or diskette to your Terminal and perform the actions as you read about them. Your Terminal should be displaying:

```
SYSTEM SELF TEST 5.0  
Copyright 1980 by CODEX Corp
```

```
Insert Disk 0
```

```
56K operational
```

```
END SYSTEM SELF TEST
```

```
CODOS 5.0
```

```
=
```

or simply:

```
=
```

If your Terminal is displaying something else -- or nothing at all -- refer to Appendix A for assistance (note that the numbers in the above message differ from system to system and have no effect on operations).

Notice the small blinking rectangle beside the equal sign. This is known as the cursor, and simply indicates where on the screen the Terminal is to put the next character typed.

Press the "ALL CAPS" key, located in the upper left-hand corner of the typewriter-style group of keys. The small red light goes on, indicating that everything you type is in upper-case letters (note that this is not the same as the shift key, as only letters are affected).

To begin editing, type:

```
=EDIT EXAMPLE:1
```

and press the RETURN key (should you make a mistake while typing the command, press the CTRL key and the letter "X" at the same time; the equal sign is displayed on the next line, ready for you to try again). After you type the command, the screen clears momentarily, and then displays:

>0010

Editing NEW File: EXAMPLE .SA:1 with line numbers

F1	F2	F3	F4	F5	F6	F7	
CRT	SCROLL	PAGE^	PAGEv	LINE^	LINEv	DUP	EXAMPLE .SA:1

Press the F1 key (the left-most key in the single line of keys nearest the display screen) and the cursor moves down to the lower left corner of the screen. Press the "ALL CAPS" key again to allow you to use both upper- and lower-case letters (the light in the key goes out to indicate that both upper- and lower-case letters may now be typed).

The line numbers you see are not necessary in this example, so delete them by typing:

rese n

and pressing the RETURN key. Next, type:

c //

and press the RETURN key. The cursor moves to the top left-hand corner of the screen, ready to accept your text. Type the letter on the next page exactly as shown, pressing the RETURN key each time the [R] symbol appears. Should you make a mistake in typing, don't bother to correct it (there are intentional mistakes contained in the letter which will be used for practice later).

Not all of this sample letter fits on the display screen at one time. As you near the bottom of the screen, the display is moved up, or scrolled, a line at a time. This is an automatic feature that requires no effort on your part; it is explained later in this chapter.

\lm10\rm70\s13[R]
Converging Lines, Inc.[R]

\nl[R]
Ms. Teri Herbert[R]

\nl[R]
11938 East Rhode Island School of Design Terrace[R]

\s12[R]
Dear Ms. Herbert[R]

\s12
Thank you for your interest in WorldWide Rulers' line of [R]
measuring devices. We offer the eighteen-inch rulers you [R]
inquired about in several different materials:[R]

\s12\tc\tsl5\ts25\lm25\pl\ttl[R]
Wood[R]

\tt2[R]
- certainly the most natural material, and a favorite [R]
from long ago [R]

\s12\ttl[R]

Plastic[R]

\tt2[R]

- the most popular material today, and available [R]
in a wide variety of colors [R]

\s12\ttl[R]

Metal[R]

\tt2[R] - the most precise and durable material chosen by [R]
most professionals [R]

\s11\lm10\s11[R]

We can also customize your order with the imprinting of [R]
your company's logo or other design. [R]

\s12[R]

But the most important reason for ordering from WorldWide is [R]
[R]

our prompt, friendly service. We hope to, dare we say it, [R]
[R]

rule the world, and your continued business is the only way [R]
[R]

we can achieve our goal. [R]

\s12[R]

Thanks again for your interest, and we hope to be hearing [R]
from you soon. [R]

\s12\sp20[R]

Sincerely yours, [R]

\s15\sp20[R]

Raoul Linear [R]

\nl\sp20[R]

Customer Service Manager [R]

When you've finished typing the letter, press the F1 key again. The cursor again moves to the bottom left-hand corner of the screen, ready to accept the command that tells the EDITOR that your edit is finished. Type:

quit

and press the RETURN key. After a moment or two, the screen clears and then again displays the equal sign. To print the sample letter, first press the "ALL CAPS" key for all upper-case. Then type:

=DOC EXAMPLE.SA:1

and press the RETURN key. The screen displays:

```
=DOC EXAMPLE.SA:1
Document Processor 5.0
?
```

Type in response:

```
=DOC EXAMPLE.SA:1
Document Processor 5.0
?\LP\D1
```

and press the RETURN key. Your letter is now printed by the system printer, and looks like this:

Converging Lines, Inc.
Ms. Teri Herbert
11938 East Rhode Island School of Design Terrace

Dear Ms. Herbert

Thank you for your interest in WorldWide Rulers' line of measuring devices. We offer the eighteen-inch rulers you inquired about in several different materials:

Wood - certainly the most natural material, and a favorite from long ago.

Plastic - the most popular material today, and available in a wide variety of colors.

Metal - the most precise and durable material chosen by most professionals.

We can also customize your order with the imprinting of your company's logo or other design.

But the most important reason for ordering from WorldWide is our prompt, friendly service. We hope to, dare we say it, rule the world, and your continued business is the only way we can achieve our goal.

Thanks again for your interest and we hope to be hearing from you soon.

Sincerely yours,

Raoul Linear
Customer Service Manager

After the letter has been printed, the Terminal screen displays:

```
=DOC EXAMPLE.SA:1
Document Processor 5.0
?\LP\D1
?
```

Type in response:

```
=DOC EXAMPLE.SA:1
Document Processor 5.0
?\LP\D1
?\\OS
```

and press the RETURN key. The Terminal screen once again displays the equal sign.

Read the next section for an explanation of what you just did.

Typical EDITOR Operation (Explanation)

Some information about your system may help simplify the explanation of the edit you just performed. Your Intelligent Terminal System is composed of a Basic Display Terminal, Disk or Diskette Storage, and a Character or Matrix Printer (there may be more components, but these are the essential ones).

Inside the Basic Display Terminal is a processor, the memory, and the associated equipment that makes up what the industry calls an intelligent terminal (a small computer that can communicate with other, larger computers). These are the components that do the real work.

Disk or Diskette Storage makes up an important part of your system. Text, data, and programs are stored here for future use by the Terminal, and are organized into files, separate entities that are roughly analogous to the files stored in metal cabinets. When you wish to edit a file, for example, the EDITOR reads a portion of the file into the memory of the Terminal and creates two scratch files to temporarily hold text and changes. The Terminal displays a portion of the file on the display screen, and accepts editing changes from the keyboard. When editing is completed, the file, along with the changes in the memory of the Terminal and in the two scratch files, is written back to the disk or diskette for storage and future use.

When you wish to print a file, the Terminal reads it from the disk or diskette, processes it (more about that in a moment), and sends it to the printer. The printer then goes to work, and in a few moments, you have your document.

The RETURN key is used to tell the Terminal that the command or text that you just typed is ready to be processed by the Terminal (nothing is done till the RETURN key is pressed).

While the edit you just performed was a fairly simple one, it serves to illustrate the principles that apply whenever using the EDITOR. The starting point for all operations (not just editing) is the Codex Disk Operating System (CODOS). No other program may be executed before CODOS is in control. CODOS is in control whenever the Terminal screen displays the equal sign:

```
CODOS 5.0  
=
```

or simply:

```
=
```

This is both the starting and ending point for every operation; CODOS must be in control before any operation may be started, and is returned to control after each operation has finished. CODOS must also be in control when disks or diskettes are removed from their drives or when power to the system is shut off.

CODOS by itself does nothing directly for you, as its sole purpose is to guide the system. When you have a specific task to perform, you direct CODOS to get a program designed to perform that task. For example, when you wanted to create a letter, you directed CODOS (by typing a command) to get you the program that handles text files (the EDITOR).

In addition to its other functions, CODOS includes a number of utility programs that can prove quite useful (see the CODOS User's Guide for more information on the utility programs).

By typing "EDIT" in response to the equal sign, you specified that you wished to execute the EDITOR program. The EDITOR requires a file name in order to begin; in the example you just did, "EXAMPLE:1" was the name of the file.

File names used under CODOS must adhere to certain rules. The file name must begin with a capital letter; up to seven other characters may be included in the name. These other seven characters may be capital letters or numbers;

they may not be special characters (punctuation marks, for instance) or embedded spaces (spaces between two characters). The following are valid file names:

G
LETTER79
FILEONE
G20735

The names listed below are not valid file names (the reason why not is given to the right of the name):

USERGUIDE more than eight characters
23SKIDOO starts with a number
CDX-68 contains a special character (the -)
FILE ONE contains an embedded space

The period and two-letter code following the name itself is called the file name's extension. The extension serves to classify the file among several different types. The extension ".SA" is assigned to text files automatically by the EDITOR (there is no need to type ".SA" as part of the file name, as the EDITOR assumes this unless specifically directed otherwise). There are many other extensions to describe other types of files (see the CODOS User's Guide for more about extensions).

Following the file name and the extension is a colon and a number (":1" in the example). This specifies which disk drive the file is stored on (disk drive number 1, in this case). To avoid confusion, be sure to specify the file's location each time you type the file name (there might be a second file named "EXAMPLE" located on drive zero, causing no small amount of confusion). Note that computer types use zero as the first number, one as the second, and so on (drive 1 is thus the second drive).

Embedded in the text of your letter are backslashes followed by letters and an occasional number (\s12, for example). These are commands that control the format of your document (for instance, \s12 skips two lines). See Appendix B for a list of the format commands and their function.

When you typed "DOC EXAMPLE:1" in response to the equal sign, you directed the Document Processor (DOC, another program) to process your letter file (EXAMPLE:1). DOC reads through the file and uses the format commands (\s12, \pp2, and the others) as a guide to producing the letter. The "\LP\D1" directs DOC to send the formatted letter to the printer for printing (DOC can send formatted text to the screen, too -- simply omit the "\LP").

After DOC finished your letter, you typed "\OS" to return control to CODOS. CODOS now stands ready to perform another task.

Typical EDITOR Operation (Editing)

While the EDITOR can save you lots of time by speeding the creation of letters, manuals, and other documents, it isn't till changes are required that the EDITOR employs its full potential. For while revisions may sometimes force you to retype a whole document in order to make one small change, the EDITOR enables you to type only the changes. The EDITOR, along with the rest of your system, takes care of the real work for you.

The sample letter you typed earlier is a good subject for learning how to revise documents using the EDITOR. Go back to your system and enter the command to edit your sample letter:

```
=EDIT EXAMPLE:l
```

and press the RETURN key. The screen displays the EDITOR sign on message and then clears to display your letter. Press the "ALL CAPS" key and then type:

```
c //
```

and press RETURN. The cursor moves to the first line of your letter, ready for editing to begin.

Notice the group of six black keys with arrows on them just to the right of the RETURN key. These are the keys that control the cursor; pressing the key with the downward-pointing arrow on it moves the cursor one line toward the bottom of the screen, pressing the key with the right arrow on it moves the cursor one column to the right, and so on with the other keys (the key with the left arrow and line on it moves the cursor to the beginning of the line). Use only these keys to move the cursor around, as using any other key writes into your file (the space bar, for example, differs from that of a typewriter; a typewriter's space bar leaves spaces while the terminal's space bar writes spaces).

Surrounding the black cursor keys are six gray keys labelled "INS CHAR," "DEL CHAR," and so on. These are special editing keys you'll use a bit later in the edit session.

Now to correct those mistakes in your sample letter. Use

the cursor keys to move the cursor to the line below the street address. Press the key labelled "INS LINE" (it's just to the right of the cursor keys). A line opens up to make room for the rest of the address:

```
11938 East Rhode Island School of Design Terrace
```

```
\s12
```

The cursor is positioned on the blank line, ready for the insertion. Type the format command necessary to put the rest of the address on a new line, press RETURN (opening up another line), and then type the rest of the address:

```
11938 East Rhode Island School of Design Terrace
```

```
\nl[R]
```

```
Ocean View, Kansas 40985
```

Move the cursor, using the cursor keys, over the next mistake ("maesuring" in the second line). Position the cursor over the "a" in "maesuring:"

```
maesuring devices. We offer the eighteen-inch rulers you
```

and simply type the correction:

```
measuring devices. We offer the eighteen-inch rulers you
```

The next correction is on text not displayed on the screen right now. A comma was left out of the metal rulers description. Press the F3 key (in the row of keys nearest the screen) and the display is advanced twenty lines (or scrolled) to the text required (see the section "Other Function Keys" at the end of this chapter for more on scrolling). Position the cursor here:

```
- the most precise and durable material chosen by
```

and press the key labeled "INS CHAR" (just above the cursor keys). The line now looks like this:

```
- the most precise and durable material chosen by
```

Now simply type the comma:

- the most precise and durable material, chosen by

The other gray keys around the cursor keys can be quite useful, too. Position the cursor here:

But the most important reason for ordering from WorldWide is

Now press the key marked "DEL CHAR" four times. The word "But" and the space behind it are deleted. Type a capital "T" over the small "t" in "the" and the correction is complete:

The most important reason for ordering from WorldWide is

Next, position the cursor here:

\s12

Thanks again for your interest, and we hope to be hearing from you soon.

and press the gray key marked "DEL LINE." The "\s12" is deleted and the line is closed up. Press the "DEL LINE" key again, and the next line is deleted. Press it once more to delete the rest of the sentence; the result looks like this:

we can achieve our goal.

\s12\sp20

Sincerely yours,

Go ahead and use this sample letter for editing practice; when you're through, finish the edit session just as you did before (press the F1 key, type "quit," and press the RETURN key).

While you're scrolling through your file (using the F3 key), you may reach a point where the cursor jumps to the bottom of the screen and the message "BOF OR EOF ENCOUNTERED" appears. This means only that you have scrolled to the beginning or the file (BOF) or to the end of the file (EOR). The EDITOR automatically places the cursor on the command line, just as if you'd pressed the F1 key. Should you wish to continue editing, simply type "c //" as you did earlier and continue as before.

Other Function Keys

Several of the function keys (in the row of keys nearest the screen) have special functions while your terminal operates the EDITOR program. The F1 key you've already used, and the F2 key is not really suited to this type of editing (see Part Two for more details on F2 if you're curious).

When editing a file, the first twenty lines are displayed on the screen automatically. By pressing the F3 function key, the second twenty lines are displayed on the screen. Pressing the F3 key again displays the third twenty lines on the screen, and so on. The F4 key performs the reverse function; that is, it displays the previous twenty lines (it scrolls back toward the beginning of the file). The F5 and F6 keys perform the same functions except that they scroll one line at a time (as opposed to twenty lines at a time). The F7 key duplicates whatever is on the line immediately above the cursor.

Use your example file to experiment with these function keys. The F7 key in particular can save you lots of time; use the RETURN key to open up a blank line. Pressing the F7 key duplicates whatever is on the line above, which can be a very handy feature in preparing charts, reports, and other documents with a lot of repetitive text.

PART TWO

EDITOR User's Guide

CHAPTER 2. INVOKING THE EDITOR

The CODOS command EDIT invokes the EDITOR to create or modify a named file. The syntax for the EDIT command is as follows. All elements bounded by brackets are optional (for example, [;options]); all elements outside the brackets must be entered. Each use of the EDIT command must be terminated by pressing the RETURN key.

SYNTAX: EDIT FILENAME1[, [FILENAME2][, :DRIVE]]
[;TS][FN][S]]

WHERE: FILENAME1 is the file to be edited. If FILENAME1 already exists, it is edited. If it does not already exist, it is created and made available for editing.

FILENAME2 is the file name of the edited result. This name is valid only if FILENAME1 exists. If FILENAME 2 is not specified, the original FILENAME1 is deleted at the end of the edit process, and the file containing the results of the edit is renamed FILENAME1. If FILENAME2 is specified, FILENAME1 is retained as a CODOS file without any alteration.

DRIVE specifies the drive on which to put the second scratch file. The EDITOR picks the optimum drive if DRIVE is not specified. The EDITOR uses temporary files named SCRATCH1 and SCRATCH2. SCRATCH1 is used whenever FILENAME 1 exists. When the edit is terminated by a QUIT command, SCRATCH1 is renamed FILENAME2 (or FILENAME 1 if FILENAME2 was not specified). SCRATCH2 is used to permit several edit passes in a single edit session.

TS specifies the initial tab stop settings for the EDITOR as follows:

A specifies assembler tabs (tabs set at columns 8, 15, and 23). The space bar is used as a special tab character (an asterisk in column 1 disables the special tab character).

F yields FORTRAN tabs (that is, a tab set at column 7). The space bar is used as a special tab character (a "C" in column 1 disables the special tab character).

C yields COBOL tabs (tabs set at columns 6, 9, and 12). The space bar is used as a special tab character.

FN is the file numbering option. An N specifies editing with line numbers; a -N requests editing without line numbers. The default value for this option is N when FILENAME 1 does not exist; the first line of FILENAME 1 determines the option when FILENAME 1 does exist. Whenever a file with line numbers is edited without using the line numbers, the line numbers are treated as part of the text.

S specifies that the EDITOR is to be initialized in the scroll mode, and that the user is editing from other than a CDX-68 Basic Display Terminal. With this option, the user is restricted to line mode command editing.

The response to the EDIT command is shown in the following example:

```
=EDIT LTR2
CDX-68 EDITOR RELEASE X.X
COPYRIGHT BY CODEX CORP. 1980
```

(The X.X is the version number of the system disk presently in use.) When FILENAME1 exists, the EDITOR checks to determine if there is sufficient disk space to hold the edited result and the work file on the drives specified. If there is not sufficient space to store an edited file the size of which is identical to the input file, the EDITOR displays "INSUFFICIENT DISK SPACE ON DRIVE X CONTINUE (Y/N)?" A "Y" response continues the edit; an "N" response ends editing and returns control to CODOS. Once the EDITOR has been invoked, it displays a message indicating that the file, FILENAME1, was opened or created new, and whether the file has line numbers.

Modes of Operation

The EDITOR has two processing modes: page mode and line mode. The EDITOR is configured to be in the page mode when it is loaded (unless the S option of the EDIT command is used).

Page Mode

The page mode supports both text editing and command editing. When the EDITOR is used to edit an existing file, it dynamically adapts to command editing (refer to Figure 1). With command editing, the user enters edit commands at the cursor position following the prompt (>) on line 22, while continually viewing a portion of the file on the display screen (lines 1 through 20). The screen acts as a window where the portion of the file currently being acted upon is displayed. The EDITOR prompt in this window (column 1) serves as a pointer to indicate the current file position. Table 1 provides a summary of the commands. Table 2 lists the special character commands controlled by the Terminal's function keys (the row of keys nearest the screen) when performing command editing.

Text editing can be initiated only in the page mode. It is initiated when the EDITOR is directed to create a new file (refer to Figure 2), or when one of the following commands is entered:

```
CHANGE (without a STRING2)
INSERT (for text files without line numbers)
NUMBER (for source files with line numbers)
```

Text editing is terminated by a mode change request (pressing the F1 or F2 function keys).

In text editing, the window is positioned on the file; the edit keypad is used to insert, change, or delete characters and lines within the file. Table 3 lists the commands controlled by the terminal's function keys when performing text editing.

The EDITOR accepts only valid printable ASCII characters. Any non-printable character received from the Terminal or file is ignored. The CDX-68 Basic Display Terminal keyboard provides the means of sending the full 128-character ASCII set, plus various function keys. The function keys F1 through F7 are used to effect certain commands in the page mode, as shown in Tables 1 and 2. In page mode, the bottom two lines on the screen are used to display the function of each of the seven function keys.

```
>0010  NAM POLL
0020  OPT MEM
0030  PIA1AC EQU $4005
0040  PIA1BC EQU $4007
0050  PIA2AC EQU $4009
0060  PIA2BC EQU $400B
0070  ORG $100
0080  POLL LDA A PIA1AC
0090  BMI ROUT1
0100  ROL A
0110  BMI ROUT2
0120  LDA A PIA1BC
0130  BMI ROUT3
0140  ROL A
0150  BMI ROUT4
0160  LDA A PIA2AC
0170  BMI ROUT5
0180  ROL A
0190  BMI ROUT6
0200  LDA A PIA2BC
EDITING OLD FILE: LTR2      .SA:0 WITH LINE NUMBERS

>
F1      F2      F3      F4      F5      F6      F7
CRT  SCROLL  PAGE ^  PAGE v  LINE ^  LINE v  DUP  LTR1.SA:0
```

Figure 1. Page Mode (Command Editing)

Table 1. Edit Commands

<u>Command</u>	<u>Description</u>
C, CHANGE	Change a string within a record (or within a group of records).
DEL, DELETE	Delete data from the file.
D, DUPLICATE	Copy a group of records from one place within a file to another place within the file.
E	Finish editing this file and begin editing another file.
EX, EXTEND	Insert data at the end of records.
F, FIND	Find a specified string or a line.
I, INSERT	Insert data into the file (for editing files without line numbers).
L, LIST	Display a portion of the file.
MERGE	Retrieve records from another CODOS file and include them in the edited file.
MOVE	Move a group of records from one place within the file to another place within the file.
N, NUMBER	Insert data into the file and prompt with the next line number (for editing files with line numbers).
PRINT	Print data at an associated line printer.
QUIT	Finish editing and return control to CODOS.
R, RANGE	Establish default values for the vertical and horizontal ranges. (For LIST, PRINT, CHANGE, FIND, and SAVE.)
RESEQUENCE	Add, change, or remove numbers from the file.
SAVE	Save the edited file into the named file.
S, SEARCH	Find the next occurrence of a string.
TAB	Alter the tab settings used for data input.

Table 1. Edit Commands (Continued)

Command -----	Description -----
V, VERIFY	Display on the Basic Display Terminal, any time a change is made to the file, the values after the change.
X, XTRACT	Insert the data in the buffer into the file.
1-9999	Insert, modify, or delete a line from the file (this command type is for editing files with line numbers).

Table 2. Command Editing (Page Mode)

Command -----	Description -----
<-	Move the cursor one column to the left without modifications.
->	Move the cursor one column to the right without modifications.
^	Move the display pointer up one line on the screen, with page wraparound.
v	Move the display pointer down one line on the screen, with page wraparound.
CTRL-W	Pause the processing of this list.
CTRL-X	Cancel this command line.
l<-	Move the cursor to the previous tab stop (backtab).
->l	Move the cursor to the next tab stop (tab).
DEL-SHIFT	Delete the previous character.
BREAK	Stop processing and await a new command.
INS CHAR	All columns in the line, starting with the cursor column, are moved right one column. The cursor is then set at the inserted space.
DEL CHAR	All columns in the line, starting with the cursor column, are moved left one column. The cursor does not change position.
LINE ERASE	All data from the cursor position to the end of the line is deleted.
F2	Change to line mode editing.
F3	Scroll the screen forward one page.
F4	Scroll the screen backward one page.
F5	Scroll the screen forward one line.
F6	Scroll the screen backward one line.

>0010

```
EDITING NEW FILE: LTR3 .SA:0 WITH LINE NUMBERS
>
F1      F2      F3      F4      F5      F6      F7
CRT  SCROLL  PAGE ^   PAGE v   LINE ^   LINE v   DUP  LTR3.SA:0
```

Figure 2. Page Mode (Text Editing)

Table 3. Text Editing (Page Mode)

Command -----	Description -----
<-	Move the cursor one column to the left without modifications.
->	Move the cursor one column to the right without modifications.
^	Move the display pointer and the cursor up one line on the screen, with page wraparound.
v	Move the display pointer and the cursor down one line on the screen, with page wraparound.
CTRL-X	Cancel this line.
l<-	Move the cursor back to the previous tab stop (backtab). If there is no tab stop, move the cursor to the left-most column on the screen.
->l	Move the cursor to the next tab stop (tab).
DEL	Delete the previous character.
INS CHAR	All columns in the line, starting with the cursor column, are moved to the right one column. The cursor is then positioned at the inserted space.
DEL CHAR	All columns in the line, starting with the cursor column, are moved to the left one column. The cursor does not change position.
INS LINE	Insert a line at the current cursor position.
DEL LINE	Delete the line at the current cursor position.
LINE ERASE	All data from the cursor position to the end of the line is deleted.
F1	Stop text editing and begin command editing.
F2	Stop text editing and change to line mode editing.
F3	Scroll the screen forward one page.
F4	Scroll the screen backward one page.

Table 3. Text Editing (Page Mode; continued)

Command -----	Description -----
F5	Scroll the screen forward one line.
F6	Scroll the screen backward one line.
F7	Duplicate the data immediately above the cursor.

Line Mode

In the line mode, the user performs command editing with each command line scrolling up with the resultant display on the next line. Table 4 lists the special character commands used in line mode. Figure 4 shows a typical program being edited in line mode.

Table 4. Command Editing (Line Mode)

Command -----	Description -----
CTRL-W	Pause the processing of this list.
CTRL-X	Cancel this line.
CTRL-D	Redisplay this line without character deletions.
->l	Echo spaces to move to the right to the next tab stop.
DEL	Delete the previous character and indicate so by echoing the eleted character.
BREAK	Stop processing and await a new command.
F1	Change to page mode command editing.

```
=EDIT LTR3;S
CODOS EDITOR RELEASE X.X
COPYRIGHT BY CODEX 1979

EDITING OLD FILE:  LTR3  .SA:0
>L 10-160
0010  NAM POLL
0020  OPT MEM
0030  PIA1AC EQU $3005
0040  PIA1BC EQU $4007
0050  PIA2AC EQU $4009
0060  PIA2BC EQU $400B
0070  ORG $100
0080  POLL LDA A PIA1AC
0090  BMI ROUT1
0100  ROL A
0110  BMI ROUT2
0120  LDA A PIA1BC
0130  BMI ROUT3
0140  ROL A
0150  BMI ROUT4
0160  LDA A PIA2AC

>
```

Figure 4. Command Editing (Line Mode)

CHAPTER 3. EDITOR COMMANDS

There are two levels of edit features available: a basic set, which the user may master in a relatively short period of time, and an advanced set, which gives the user much more flexibility in editing. The advanced set may be mastered as needed.

The basic command set includes the 1-9999, CHANGE, DELETE, PRINT, SAVE, and QUIT commands, along with the elementary edit feature.

The EDITOR prompts the user for the next command by displaying a greater-than sign (>). The command is entered by pressing the RETURN key abbreviated as "[R]" or "cr"). Many of the commands have an abbreviated form, or alias, that the programmer may use if desired. A description of the EDITOR commands follows.

Command Syntax

EDITOR commands may be entered in either upper- or lower-case and in either a short or long form. Only the first four characters of any command have significance, so that all commands may be abbreviated to the first four characters. In all of the commands, the character * may be used to indicate the current line position when referring to a line number.

In defining the commands provided by the EDITOR, the most common syntactical elements, vertical and horizontal range, are defined as follows:

```
VERTICAL-RANGE = [[BEGINNING-LINE-NUMBER]
                  [- ENDING-LINE-NUMBER]]
                OR
                [[COUNT1 - ] COUNT2]
```

WHERE: BEGINNING-LINE-NUMBER / ENDING-LINE-NUMBER
 apply to files with line numbers.
 COUNT1 / COUNT2 apply to unlined files.
 COUNT1 is the offset from the current line at
 which to begin the function performed. The
 offset may be negative.
 COUNT2 is the number of lines upon which to
 perform the function.

The default value for omitted values (where not overridden by the RANGE command) means that the function is performed on the current line.

HORIZONTAL-RANGE = [:COLUMN1 [- COLUMN2]] OR [:Fi [-
Fi+n]]

WHERE: COLUMN1 is the column on each line in which to
begin the function to be performed.
COLUMN2 is the column on each line in which to
end the function to be performed.
Fi is the field defined by the i'th tab stop
through the i'th + 1 tab stop.

The default values where no horizontal range is specified
results in the function being performed on the entire line.

1-9999 Command

FUNCTION: Insert, modify, or delete a line from the file (this command applies only to files with line numbers).

SYNTAX: LN DATA

WHERE: LN is the line number of the line to be inserted, modified, or deleted.
DATA is the new value of the line.

The entry of a line number with no data deletes the line.

Page Mode: The line number inserted, modified, or the line immediately following the line deleted is at the current line position.

EXAMPLES: 1. To insert line number 200 into the file.
>200 DATA ON LINE 200cr

2. To change line number 200.
>200 NEW DATA ON LINE 200cr

3. To delete line number 200 from the file.
>200cr

4. To insert a null line numbered 200 (line 200 does not currently exist in the file).
>200cr

CHANGE Command

FUNCTION: Change a string within a record (or a group of records).

SYNTAX: CHANGE [VERTICAL RANGE] [HORIZONTAL RANGE]
 [[.TRANSPARENT CHAR] [;COUNT] STRING]
 [STRING2] [REPETITION]

ALIAS: C, change, c

WHERE: STRING1 is the target string to be found and changed.
 STRING2 is the value to which STRING1 is to be changed.
 COUNT indicates that the COUNT'th occurrence of STRING1 in a line is the target string.
 REPETITION indicates the number of times STRING1 is to be found and changed.
 TRANSPARENT-CHAR is a character within STRING1 that is to be ignored when testing for equality to STRING1.

An "A" in the COUNT or REPETITION field indicates all occurrences. The default value for COUNT is 1 (the first occurrence), and the default value for REPETITION is all lines within the VERTICAL-RANGE. String data is delimited by the first non-blank, non-numeric character. The same delimiter must also terminate STRING1 and STRING2 (if present). Care should be used in picking a string delimiter as the use of "." or ";" when the TRANSPARENT-CHAR or COUNT is not specified may cause unpredictable results. When the change command is executed with no parameters, the next occurrence of the string data last specified by the user is modified. A null STRING1 is interpreted to instruct the insertion of STRING2 at the beginning of the HORIZONTAL-RANGE.

A null G2 STRING2 is interpreted to imply delete STRING1. If STRING2 does not exist and the user is in the page mode, the user begins text editing with the cursor resting on the first character of STRING1. If STRING2 does not exist and the user is in the line mode, the target line is displayed to STRING1 and the user is placed in the input process (see the INSERT and NUMBER commands). When only COLUMN1 (Fi) of the HORIZONTAL-RANGE is specified and no string is specified, the following will occur: if the user is in the page mode, the user begins text editing with the cursor resting on the column position (or the field position) specified; if the user is in the line mode, the target line is displayed to COLUMN1 (Fi) and the user placed in the input process (see the INSERT and NUMBER commands). A change command with only a null STRING1, in the page mode, initiates text editing at the current line position.

Page Mode: The last data line modified by the change is at the current position line.

- EXAMPLES:
1. Change the string SAM to BILL on the current position line.
>C /SAM/BILL/cr
 2. Change the first occurrence of the string SAM to BILL on each line from line numbers 100 through 200, inclusive.
>C 100-200 /SAM/BILL/cr
 3. Change the first occurrence of the string SAM (that occurs after column 30 and before column 60) to the string BILL on line 100.
>C100 :30-60 /SAM/BILL/cr
 4. Change the third occurrence of the string SAM to BILL on the current position line.
>C ;3/SAM/BILL/cr
 5. Change all occurrences of the string SAM to BILL on each of the lines from line number 100 to 200, inclusive.
>C 100-200 ;A/SAM/BILL/cr
 6. Delete the string BOB from line number 120.
>C 120 /BOB//cr
 7. Insert the string BOB at the beginning of the current line.
>C //BOB/cr
 8. Change the strings LABELx (where x can be any character or digit) to the string 1.25 on the line numbers from 100 to 500, inclusive.
>C 100-500 .X/LABELX/1.25/cr
 9. Change the first occurrence of the string SAM to BILL on the lines from line number 100 to 200. Then change the next occurrence of the string SAM to BILL from wherever it is to the end of the file.
>C 100-200 /SAM/BILL/lcr
>Ccr
 10. Change the second occurrence of the string LABxL (where x can be any character or digit) to the string LABEL where it occurs between columns 30 and 60 on line numbers 100 to 130, inclusive.

>C 100-130 :30-60 .X;2/LABXL/LABEL/cr

11. Change the string SAM to BILL on the next 5 lines (where the file being edited does not have line numbers).

>C *-5 /SAM/BILL/cr

12. Begin text editing at the beginning of this line.

>C //cr

13. Begin text editing at the beginning of the string SAM on this line.

>C /SAM/cr

14. Begin text editing on column 12 of line number 100.

>C 100 :12cr

15. Begin text editing on the second occurrence of the string X on line 200.

>C 200 ;2/X/cr

DELETE Command

FUNCTION: Delete data from the file.

SYNTAX: DELETE [VERTICAL-RANGE] [HORIZONTAL-RANGE]

ALIAS: DEL,delete,del

Specification of a HORIZONTAL-RANGE deletes data within the range from each line within the VERTICAL-RANGE.

Page Mode: The line immediately following the last line affected is at the current position line.

- EXAMPLES:
1. Delete the line at the current file position.
>DELcr
 2. Delete the lines between lines 100 and 200, inclusive.
>DEL 100-200cr
 3. Delete the data between columns 10 and 20, inclusive, on line 210.
>DEL 210 :10-20cr
 4. Delete line number 210.
>DEL 210cr
 5. Delete the next 5 lines (when editing a file without line numbers).
>DEL *-5cr

PRINT Command

FUNCTION: Print data using the system printer.

SYNTAX: PRINT [VERTICAL-RANGE] [SPACING]

ALIAS: Print

WHERE: SPACING is "D" to indicate double spacing and "T" to indicate triple spacing.

Page Mode: The print command does not alter the display.

EXAMPLES: 1. Print the entire file.

>PRINTcr

2. Print this line.

>PRINT *cr

3. Print the lines between line numbers 100 and 200, inclusive, with double spacing.

>PRINT 100-200 Dcr

4. Print the next 10 lines (when editing a file without line numbers) with triple spacing.

>PRINT *-10 Tcr

SAVE Command

FUNCTION: Save the edited file into the named file.

SYNTAX: SAVE [[VERTICAL-RANGE] FILENAME]

ALIAS: Save

WHERE: FILENAME implies that an extract function is to be performed. The specified data (as modified by the edit) is written into the new file: FILENAME.

FILENAME must not already exist as a CODOS file. If no VERTICAL-RANGE is specified, the current modified version of the file is written into FILENAME. When FILENAME is not specified, the current modified version of the source file replaces the old version, and the old version is deleted from CODOS. The new version is then reopened and repositioned to the beginning of the file for further editing.

Page Mode: The save command with FILENAME specified does not alter the display. Without FILENAME specified, the SAVE command resets the display to the beginning of the file.

- EXAMPLES:
1. Save the edited file to disk.
>SAVEcr
 2. Save the edited file into a new file named SAM.
>SAVE SAMcr
 3. Extract the lines between line numbers 100 and 500, inclusive, and put them into a new file named SAM.
>SAVE 100-400 SAMcr
 4. Extract the next 20 lines (when editing a file without line numbers) and put them into a new file named SAM.
>SAVE *-20 SAMcr

QUIT Command

FUNCTION: Finish editing and return control to CODOS.

SYNTAX: QUIT [A]

ALIAS: Quit

WHERE: A implies abort the edit.

The quit command saves the results of the edit unless the A option is specified.

Page Mode: The screen is cleared and the Terminal is reset.

EXAMPLES: 1. Finish editing and save the results.
>QUITcr

2. Abort the edit and do not modify the source file.
>QUIT Acr

DUPLICATE Command

FUNCTION: Copy a group of records from one place within a file to another place within the file.

SYNTAX: DUPLICATE [VERTICAL-RANGE] [/NEW-LINE-NUMBER [,NEW-INCREMENT]]

ALIAS: D,duplicate,d

WHERE: NEW-LINE-NUMBER is the destination line number for the first line copies (for files with line numbers only).
NEW-INCREMENT is the line number increment to be applied to each subsequent line of the

The DUPLICATE command copies the requested data into a buffer area. The data can then be moved from the buffer by the XTRACT command. The DUPLICATE command, when used with line numbered files specifying the NEW-LINE-NUMBER, automatically invokes the XTRACT command to copy the data from the buffer to the target area. See the Block/Line Merge Rules on the following page for the treatment of line number conflicts.

Page Mode: If the NEW-LINE-NUMBER was not utilized, the screen is unchanged. If it was specified, the current position line contains the line following the last line copied at its new location.

- EXAMPLES:**
1. Duplicate this line (put this line into the XTRACT buffer).
>Dcr
 2. Duplicate lines 100 to 300, inclusive.
>D 100-200cr
 3. Duplicate the next 10 lines (when editing a file without line numbers).
>D *-10cr
 4. Duplicate this line and put it at line number 111.
>D/111cr
 5. Duplicate line numbers 110 to 130, inclusive, and put them at line number 151, with an increment of 2 between lines.
>D 110-130/151,2
 6. Duplicate line 130 and put it at 143.

Block/Line Merge Rules

When the establishment of new line numbers for a block insert generates a conflict (a potential duplication or overlap of line numbers), the EDITOR displays:

"LINE NUMBER CONFLICT AT XXXX RESEQUENCE (Y/N)?"

If the user responds with a Y, the balance of the file is renumbered (only until there is no further conflict). If the user responds with an N, the duplicated lines in the file are overwritten by the new lines. Consider the following example:

User file prior to any editing:

```
010 1st line
020 2nd line
030 3rd line
040 4th line
050 5th line
060 6th line
070 7th line
080 8th line
090 9th line
100 10th line
```

After entering:

```
DUPLICATE 10-50/74,4
```

the EDITOR begins processing:

```
010 1st line
020 2nd line
030 3rd line
040 4th line
050 5th line
060 6th line
070 7th line
074 1st line
078 2nd line
```

LINE NUMBER CONFLICT AT 80 RESEQUENCE (Y,N)?

If the user types Y, the rest of the file is:

```
082 3rd line
086 4th line
090 5th line
091 8th line
092 9th line
100 10th line
```

If the user types N, the rest of the file is:

```
080 8th line
082 3rd line
086 4th line
090 5th line
100 10th line
```

EDIT Command

FUNCTION: An EDITOR command that finishes editing the present file and begins editing another named file (for more detailed information, see CHAPTER 2, INVOKING THE EDITOR).

EXTEND Command

FUNCTION: Insert data at the end of records.

SYNTAX: EXTEND [VERTICAL-RANGE] STRING

ALIAS: EX,extend,e

WHERE: STRING is the value to be appended to the end

The STRING must be delimited by the first non-blank non-numeric character. The same delimiter must be used to terminate the string.

Page Mode: The current position line is the last line modified by the Extend command.

- EXAMPLES:
1. Put a comma at the end of the line at the current file position.
>EX /,/cr
 2. Put a period at the end of line 100.
>EX 100 /./cr
 3. Put a period at the end of all lines between line numbers 100 and 200, inclusive.
>EX 100-200 /./cr

FIND Command

FUNCTION: Find a string or a line.

SYNTAX: FIND [VERTICAL-RANGE]
 [HORIZONTAL-RANGE]
 [.TRANSPARENT-CHAR] [;COUNT] STRING
 [REPETITION]]

ALIAS: F,find,f

WHERE: TRANSPARENT-CHAR is a character within the STRING that is to be ignored in determining search satisfaction.
 STRING is the string to be found.
 COUNT indicates that the COUNT'th occurrence of the STRING in a line is the target string.
 REPETITION indicates the number of times the STRING is to be found.

The STRING must be delimited by the first non-blank, non-numeric character; the same delimiter must be used to terminate the string. When a FIND command is executed with no parameters, it implies a request to find the next occurrence of the last STRING entered by the FIND command. Used in this fashion, the FIND command begins the string search at the current position line. When the FIND command is executed with only a VERTICAL-RANGE specified, it implies a request to position the EDITOR at the start of the VERTICAL-RANGE. FIND 0 positions the cursor at the beginning of the file and conversely, FIND 9999 positions the cursor at the end of the file. When the VERTICAL-RANGE is not specified, the string search begins at the beginning of the file.

An A in the COUNT or REPETITION field implies a request to find all the occurrences of the STRING. The default value for COUNT is 1, and the default value for REPETITION is 1. When the REPETITION is greater than 1, the screen, in the page mode, displays only the lines with an occurrence of the STRING. If the screen gets full, the display scrolls up until the list is exhausted or the user depresses the CTRL and W keys (to pause the list) or BREAK (to abort the list). The screen may be returned to the normal page mode display by the entering of a null command or any other valid EDITOR command.

Page Mode: The current position line is always the line with the last occurrence of the STRING.

- EXAMPLES:
1. Scroll to the beginning of the file.
>F 0cr
 2. Scroll to the end of the file.
>F 9999cr
 3. Scroll to line number 140.
>F 140cr
 4. Scroll to the first occurrence of the string SAM in the file.
>F /SAM/cr
 5. Scroll to the first line with two occurrences of the string SAM between line number 100 and 200.
>F 100-200 ;2/SAM/cr
 6. List all occurrences of the string SAM.
>F /SAM/Acr
 7. List all lines with 2 or more occurrences of the string SAM.
>F ;2/SAM/Acr

INSERT Command

FUNCTION: Insert data into the file (for editing files without line numbers).

SYNTAX: INSERT [OFFSET]

ALIAS: I,insert,i

WHERE: OFFSET is the offset from the current position line at which to begin inserting.

The INSERT command inserts all data following the command into the file until a null line is encountered (line mode) or mode change is requested (F1 or F2 keys).

Page Mode:When the INSERT command is received, the current line position is set to the point at which text is to be inserted. The current line is cleared, scrolling all lines on the screen down to make room for the text to be inserted. The cursor is then positioned on the cleared line to accept input. When text editing is terminated, the data below the current line is scrolled up, returning the pointer to the line it was positioned on prior to the insertion. At that time, the cursor is returned to the command line. The INSERT command, in the page mode, initiates text editing.

EXAMPLE: 1. To insert data into the file at the current file position.
>Icr

LIST Command

FUNCTION: Display a portion of the file.

SYNTAX: LIST [VERTICAL-RANGE]

ALIAS: L,list,l

The LIST command displays on the screen the data within the VERTICAL-RANGE. If the list is too long for the screen, the display is scrolled up until the list is exhausted or the user depresses the CTRL and W keys (to pause the listing) or BREAK (to abort the listing). When the listing is finished or aborted, the user can return the screen to the page by mode by entering a null command or any valid EDITOR command.

EXAMPLES: 1. Display the entire file.

>Lcr

2. Display only the current file position.

>L *cr

3. Display the lines between line numbers 100 and 200, inclusive.

>L 100-200cr

4. Display the next 10 lines (when editing a file without line numbers).

>L *-10cr

MERGE Command

FUNCTION: Retrieve records from another CODOS file and include them in the edited file.

SYNTAX: MERGE [VERTICAL-RANGE] FILENAME
[NEW-LINE-NUMBER [,NEW-INCREMENT]]

ALIAS: Merge

WHERE: FILENAME specifies a valid CODOS file.
VERTICAL-RANGE specifies the range in FILENAME to be copied into the edited file.
NEW-LINE-NUMBER is the line number to be assigned to the first line from FILENAME when it is inserted into the file.
NEW-INCREMENT is the increment to be added to each successive line number as the lines are inserted into the edited file.

If the VERTICAL-RANGE is not specified, MERGE gets the entire FILENAME. If the user is editing without line numbers, the data from FILENAME is inserted at the current position line (the line numbers that may be in FILENAME are lost upon extraction). The line numbers applied are as specified by NEW-LINE-NUMBER and NEW-INCREMENT, if specified, or default to the current position line plus 10 with an increment of 10. If the establishment of new line numbers causes a conflict, the BLOCK/LINE MERGE RULES listed following the DUPLICATE command description apply.

Page Mode The current position line following a merge is the line following the last line inserted by the merge.

EXAMPLES: 1. Insert all the lines in the file named SAM into the edited file at the current file location.

>MERGE SAM cr

2. Insert all the lines in the file named SAM into the edited file beginning with line number 400 with an increment of 1 between line numbers.

>MERGE SAM 400,1cr

3. Insert line numbers 100 to 300, inclusive, in the file named SAM into the edited file, beginning with line number 500 and with increments of 2 between lines.

>MERGE 100-300 SAM 500,2cr

MOVE Command

FUNCTION: Move a group of records from one place within the file to another place within the file.

SYNTAX: MOVE [VERTICAL-RANGE] [/NEW-LINE-NUMBER
[,NEW-INCREMENT]]

ALIAS: Move

WHERE: NEW-LINE-NUMBER is the destination line number for the first line moved (line numbered files only).
NEW-INCREMENT is the line number increment to be applied to each subsequent line of the move.

The MOVE command generates a DUPLICATE command followed by a DELETE command. For additional information, see those command descriptions.

- EXAMPLES:**
1. Move this line to the XTRACT buffer.
>MOVEcr
 2. Move line number 100 to the XTRACT buffer.
>MOVE 100cr
 3. Move the lines between line numbers 100 and 200, inclusive, into the XTRACT buffer.
>MOVE 100-200cr
 4. Move the next 10 lines into the XTRACT buffer (when editing a file without line numbers).
>MOVE *-10cr
 5. Move the line at the current file position to line number 131.
>MOVE /131cr
 6. Move line 120 to 123.
>MOVE 120/123cr
 7. Move the lines between 150 and 200, inclusive, to line number 190, with an increment of 1 between lines.
>MOVE 150-200/190,1cr

NUMBER Command

FUNCTION: Insert data into the file and prompt user with the next line number for insert (for editing line numbered files only).

SYNTAX: NUMBER [NEW-LINE-NUMBER [,NEW-INCREMENT]]

ALIAS: N,number,n

WHERE: NEW-LINE-NUMBER is the first line number to be prompted.
NEW-INCREMENT is the value to be added to the NEW-LINE-NUMBER to form each succeeding line number prompted.

The NUMBER command inserts all data following the command into the file. The NUMBER command, with no parameters, forms the line number prompt by adding the default increment of 10 to the last line number in the file. Prompting continues after each carriage return until: a null line is encountered (line mode) or a mode change request is encountered (F1 and F2 keys). At that time, the EDITOR again accepts edit commands.

Page Mode:When the NUMBER command is received, the current position line is set to the point at which input is to begin. The current line is cleared, scrolling all lines on the screen down to make room for the data to be inserted. The cursor is then positioned on the cleared line following the line number prompt. When text editing is terminated, the data below the current line is scrolled up, returning the current position line to the line following the last line keyed in. At that time, the cursor is returned to the command line.

EXAMPLES:

1. Begin text editing and begin prompting line numbers at the end of the file in increments of 10.
>Ncr
2. Begin text editing at line number 100.
>N 100cr
3. Begin text editing at line number 200, with line number prompts in increments of 1.
>N 200,1cr

RANGE Command

FUNCTION: Establish a default value for the vertical and horizontal ranges.

SYNTAX: RANGE [VERTICAL-RANGE] [HORIZONTAL-RANGE]

ALIAS: R, range, r

The RANGE command, with no parameters, deletes the previously established ranges. The RANGE command provides the default ranges for LIST, PRINT, CHANGE, FIND, and SAVE.

- EXAMPLES:**
1. Set the default VERTICAL-RANGE to lines 100 to 300, inclusive.
>R 100-300cr
 2. Set the default HORIZONTAL-RANGE to edit a full 132 character line.
>R :1-132cr
 3. Set the VERTICAL-RANGE default to lines 100 to 200, inclusive, and set the HORIZONTAL-RANGE to columns 16 to 80, inclusive.
>R 100-200 :16-80cr

RESEQUENCE Command

FUNCTION: Add, modify, or delete file line numbers.

SYNTAX: RESEQUENCE [BEGINNING-LINE-NUMBER]
[/NEW-LINE-NUMBER [,NEW-INCREMENT]] [N]

ALIAS: Resequence

WHERE: BEGINNING-LINE-NUMBER is the line number where resequencing is to begin.
NEW-LINE-NUMBER is the line number to be assigned to the first line resequenced.
NEW-INCREMENT is the increment to be applied to form each subsequent line number within the file.
N removes the line numbers from the file.

If BEGINNING-LINE-NUMBER is not specified, the entire file is resequenced. If NEW-LINE-NUMBER is not specified, resequencing begins with the BEGINNING-LINE-NUMBER plus NEW-INCREMENT. If NEW-INCREMENT is not specified, it defaults to 10. The N option is mutually exclusive to the options on this command.

Page Mode: The current line position is not altered by this command; however, the display is altered to show the effect of the resequencing.

- EXAMPLES:
1. Resequence the entire file. Begin the new line numbers with line number 10, with increments of 10 between line numbers.
>RESEcr
 2. Resequence the file from line number 150 to the end of the file. Use increments of 10 between line numbers.
>RESE 150cr
 3. Resequence the entire file. Begin the line numbers with line number 100, with an increment of 2 between line numbers.
>RESE /100,2cr

SEARCH Command

FUNCTION: Find the next occurrence of a string.

SYNTAX: SEARCH [STRING]

ALIAS: S, search, s

WHERE: STRING is the string to be found.

The STRING is delimited by the first non-blank character. The same delimiter must be used to terminate the STRING. The SEARCH command begins a string search at the line following the current line position. A SEARCH command with no STRING searches for the next occurrence of the last string specified by a SEARCH command or a FIND command. Thus, the SEARCH command is equivalent to a FIND 1-9999 /STRING/ in an unlined file, or FIND n-9999 /STRING/ in a numbered file (where n is the current line number + 1).

Page Mode: The SEARCH command places the current line position at the next occurrence of the string.

EXAMPLES: 1. Find the next occurrence of the string
SAM.
>S /SAM/cr

2. Find the first occurrence of the string
BILL and then find the next occurrence.
>F /BILL/cr
>Scr

TAB Command

FUNCTION: Alter the tab settings used for data input.

SYNTAX: TAB [CHAR] [COUNTN]1-20

ALIAS: Tab

WHERE: CHAR is the non-numeric, non-space character to designate a tab request during text editing (a tab key).
COUNTN is the column position to which a tab is to be set.

When no CHAR is specified, the default tab key is the TAB key.

Tabs can be reset by entering the TAB command with no parameters. The 1 to 20 COUNTN's specified must be separated by commas. The COUNTN values add additional tab stops until the tabs are reset by a TAB command with no parameters.

Page Mode: The display is unchanged by the TAB command.

- EXAMPLES: 1. Set tabs at columns 10 and 20 and use the character Z as a special tab key.
>TAB Z 10,20cr
2. Add an additional tab stop at column 15.
>TAB 15cr
3. Delete all tab stops.
>TABcr

VERIFY Command

FUNCTION: Display on the CDX-68 Basic Display Terminal, any time a change is made to the file, the value after the change.

SYNTAX: VERIFY [OFF]

ALIAS: V,verify,v

WHERE: OFF disables the verify.

The verification is enabled by entering the VERIFY command with no parameters. With the verification enabled in the page mode, certain multiple update commands display a list of occurrences rather than a sequential portion of the file surrounding the changed record. Should the list become too long for a single screen, the display scrolls up until the list is exhausted or the user depresses the CTRL and W keys to pause the list or BREAK to abort the list. The screen can be returned to the normal display by entering a null command or any other valid EDITOR command. Use of the BREAK key stops the update command from processing as of the last line listed on the screen.

Page Mode: Execution of the VERIFY command does not alter the display. The VERIFY command causes other update commands to display as noted above.

EXAMPLES: 1. Enable verify.

>Vcr

2. Disable verify.

>V OFFcr

XTRACT Command

FUNCTION: Insert the data in the buffer into the file.

SYNTAX: XTRACT [NEW LINE NUMBER [,NEW INCREMENT]] [A]

ALIAS: X,xtract,x

WHERE: NEW-LINE-NUMBER is the point at which to insert the first line from the buffer.
 NEW-INCREMENT is the increment to be applied to each subsequent line number inserted into the file.
 A indicated that the xtract buffer is to be deleted.

In unlined files, the XTRACT command always copies the data in the buffer into the file at the current position line. If the establishment of new line numbers generates a conflict, the Block/Line Merge Rules (shown following the DUPLICATE command description) are applied to resolve the conflict.

EXAMPLES: 1. Insert the data in the XTRACT buffer into the file at the current file position.

>Xcr

2. Insert the data in the XTRACT buffer into the file beginning with line number 200, with an increment of 10 between lines.

>X 200cr

3. Insert the data in the XTRACT buffer into the file beginning with line number 200, with an increment of 1 between lines.

>X 200,1cr

EDITOR Messages

Table 5 contains a list of the operator messages encountered when using the EDITOR.

Table 5. Operator Messages

<u>Message</u>	<u>Probable Cause</u>
EDITOR OVERLAY NOT AVAILABLE	All EDITOR overlay files must be in drive 0 throughout the edit session.
NAME REQUIRED	The EDITOR was invoked without specifying the file to be edited.
ILLEGAL FILE NAME	The name of the file specified is not a valid CODOS file name.
INVALID DEVICE	The device specified is not a valid CODOS device.
INVALID DRIVE	The drive number specified is not supported by CODOS.
XXXXXXXXXX.DUPLICATE FILE NAME	The file name specified cannot be created (it already exists).
XXXXXXXXXX.DUPLICATE FILE NAME IS WRITE PROTECTED	The file name specified has write protection and cannot be edited without specifying FILENAME2.
XXXXXXXXXX.DUPLICATE FILE NAME IS DELETE PROTECTED	The file name specified has delete protection and cannot be edited without specifying FILENAME2.
XXXXXXXXXX.DUPLICATE FILE NAME HAS INVALID FILE TYPE	The file name specified is not an ASCII file and cannot be edited.

Table 5. Operator Messages (Continued)

Message	Probable Cause
-----	-----

OPTION CONFLICT

The options specified are conflicting.

INSUFFICIENT DISK SPACE ON DRIVE X CONTINUE (Y/N)?

The system compared the free space on drive X to the file size of the file to be edited. If drive X is the drive on which the edited result is to be stored, a DISK SPACE FULL message is displayed and the edit is aborted when the file is written to disk. If drive X is not the drive on which the edited result is to be stored, the edit may continue as long as the edit makes only one pass through the file. An attempt to reposition the cursor to the beginning of the file may result in the disk space full error. If DRIVE was specified in the EDIT command as the same as the drive on which the edited result is to be stored, the first time this message appears, it is the caution to do a one pass edit. A response of Y permits the edit to continue. A response of N returns control to CODOS.

SOURCE FILE SEQUENCE ERROR. RESEQUENCE REQUIRED

The source file contains non-numeric data in columns 1-4, there is no space in column 5, the line numbers in the source file are not in ascending order, or the line numbers in the source file are not unique.

WHAT?

An invalid edit command was entered (commands must be in all upper case letters).

COMMAND SYNTAX ERROR

A valid edit command was entered but the syntax of the command was not correct.

XXXXXXXX.XX DOES NOT EXIST

A MERGE command was received but the specified FILENAME does not exist.

Table 5. Operator Messages (Continued)

Message -----	Probable Cause -----
COMMAND ABORTED	The BREAK key was depressed during file access, and the command last entered has been aborted prior to completion.
STRING NOT FOUND	The string specified in the CHANGE, FIND, or SEARCH command cannot be found in the specified ranges.
INVALID FIELD	The field specified within the HORIZONTAL-RANGE has not been defined by tab stops.
LINE NUMBER OVERFLOW RESEQUENCE	An attempt to generate a line number resulted in a value greater than 9999, and wrapped around to or beyond 0000. The file must be resequenced or the command results may be unpredictable.
XTRACT BUFFER OVERFLOW	Moving or duplicating too large a block of text was attempted.
SOURCE LINES NOT FOUND	An attempt to MERGE, MOVE, DUPLICATE, or XTRACT was made while either the specified data could not be found or while the XTRACT buffer was empty.
EOF ENCOUNTERED	An attempt to MOVE or DUPLICATE a block of data was terminated by the end of a file. Data up to that point has been processed.
BOF OR EOF ENCOUNTERED	An attempt to page or scroll beyond the beginning or the end of the file was made.
LINE NUMBER CONFLICT AT XXXX RESEQUENCE (Y/N)?	Block editing has resulted in a line number conflict. The EDITOR resolves the conflict

according to the rules described earlier.

IS THE SOURCE FILE LINE NUMBERED (Y/N)?

A MERGE command was entered and the EDITOR needs to know whether or not to remove the first five characters of each record extracted.

Appendices

APPENDIX A. BASIC SYSTEM OPERATION

This appendix is intended for the new user of Codex Intelligent Terminal Systems, and provides instruction on how to start the system, load the Disk Operating System (CODOS), and prepare the system for use with the EDITOR. Please read the entire Appendix before attempting any operation of the system.

Codex Intelligent Terminal Systems are composed of the Basic Display Terminal (CDX-68) with the appropriate firmware options, Disk or Diskette Storage, and an optional Character or Matrix Printer. While the system you are using may differ in appearance or configuration, its operation is fundamentally the same.

Back Panel Switches

There are three groups of switches located along the top left-hand side of the Terminal's rear panel. These switches are the slide type and may be slid to the right and left to select the setting labeled on the right and left. There are three separate groups of switches which must be set as follows for the proper operation of the EDITOR:

ENABLE	ON	DUPLEX	FULL	9600	ON
DISPLAY	OFF	PARITY	NO	4800	OFF
TRANSMODE	OFF		EVEN	2400	OFF
VIDEO INV	OFF	XMIT WORDS	8-BIT	1800	OFF
A	OFF	STOP BIT	1	1200	OFF
B	OFF	CONNECTION	DIRECT	600	OFF
C	OFF	MODEM TYPE	103	300	OFF
SPEC CHAR	OFF	TURN AROUND	8-CHAN	150	OFF
LINE FREQ	60	CODE SEL	EDT	110	OFF

Two of the settings, LINE FREQ (in the left-most group of switches) and Baud Rate (the entire right-most group of switches), may vary according to your application. LINE FREQ should be set to match the frequency of the power provided the Terminal (usually 60 Hz). Baud Rate should be set to the same setting as is specified on the Microcomputer Module D (usually 9600 baud). (Your supervisor or Codex service representative can provide help here.)

Applying Power to the System

After the back panel switches have been set, apply power to the system by pressing the small rectangular switch in the lower right-hand corner of the front face of the terminal (when the switch has been pressed and power applied, the red light embedded in the switch lights). Apply power next to the disk or diskette unit (the power switch for the disk is labelled "DISK POWER" and is on the front panel; the diskette unit power switch is the red button on the unit's front face). If your system includes a printer, it should be turned on now, too (the printer power switch is located on the right side of the printer's back panel, next to the power cord).

Always apply power to the system in the same order; Terminal first, then disk or diskette drive, then the printer, and then any other peripherals that may be connected. When turning the system off, follow the same process in reverse order; other peripherals, the printer, the disk or diskette drive, and then the terminal.

Loading the Operating System

The Codex Disk Operating System (CODOS) is the master control program used by your Intelligent Terminal System; it must be loaded into the system before any other program (including the EDITOR) can be used. In addition to functioning as a master control program, CODOS includes a number of special functions, known as utility programs, that can prove quite useful (Appendix B contains a description of the function and use of the more common utility programs; for more detail on the utility programs, as well as a complete description of CODOS, refer to the CODOS User's Guide).

To load the CODOS Disk Operating System, power must first be applied to the system as described in the preceding section. After power has been applied, the following message is listed on the display screen:

```
SYSTEM SELF TEST  5.0  
Insert Disk 0
```

(The number 5.0 in the example above may be different for your system; there is no difference in operation.)

The System Self Test is a program which examines the components of the system to make sure that everything is functioning normally. If you have a diskette system, insert the system diskette into drive zero (the left-most opening) and close the door.

NOTE! THE DISKETTE MUST BE INSERTED INTO THE DRIVE WITH THE LABEL FACING UPWARDS AND OUTWARDS (for FS2 and FS3 drives) OR FACING TO THE RIGHT (for FS4 drives)! INSERTING IT ANY OTHER WAY MAY CAUSE DAMAGE TO YOUR SYSTEM OR THE LOSS OF DATA ON THE DISKETTE OR BOTH!

If your system uses a cartridge disk instead of diskettes, load the disk by opening the drive door and sliding the drive out of the cabinet to its full extended position. With the handle on the disk cartridge flush with the top of the disk (folded down), move the small insert on the disk handle to the left. The bottom cover of the disk pack is loosened; raise the disk handle to the upright position and insert the disk into the drive (with the handle parallel to the front edge of the drive; the disk cannot be inserted any other way, so if there is resistance, the disk is not properly aligned). Push the handle back to where it is flush with the disk itself, and place the bottom of the pack on top of the disk. Close the disk drive door and press the switch labelled "RUN." When the "RUN" light is illuminated, the drive is ready for use (please note that the disk is not available until it has reached operating temperature; this may take one to two minutes).

After a few moments, the Terminal screen displays the message:

```
SYSTEM SELF TEST 5.0
Insert Disk 0

56K operational

END SYSTEM SELFTTEST 5.0

CODOS 5.0
=
```

(The 56K in the message above refers to the amount of memory contained in the system; this number may differ without causing any difference in your system's operation).

The equal sign in the message above is an indication that the CODOS operating system has completed its previous task and is ready to accept another one. This is the only time that CODOS accepts commands; it is also the only time that disks or diskettes may be removed from their drives and the only time that power to the system may be turned off. Removing a disk or diskette from its drive or turning the power off at any other time may cause damage to the system or the loss of data on the disk or diskette.

Power Considerations

Your Intelligent Terminal System has been designed with the greatest care to give you reliable service; however, there are some precautions that you can observe to insure that no damage to the system occurs or that no data is lost.

The main consideration is the power supplied to your system. The system should not be plugged in on the same circuit with an elevator, electric motors, or other heavy power consumers, as irregularities in the power supplied to the Terminal can, in extreme cases, cause the loss of data. For the same reason, you should not operate the system when severe electrical storms are in the area (lightning striking a power line can cause even more pronounced irregularities in the power supplied to the Terminal).

Please see Appendix C for instructions on the care and handling of disks and diskettes.

Removing Power from the System

As a general rule, power to the system should be turned on when the system is first needed and then left on all day (the system consumes very little power when idle). When the system is no longer needed, it may be turned off.

Before removing power from the system, make sure that the CODOS ready message (the equal sign) is being displayed on the screen. Remove all disks and diskettes from their drives, and then turn off power to the printer and disk or diskette drive. Power to the system may then be removed.

APPENDIX B. DOC FORMAT COMMANDS

Text files produced by the EDITOR contain format commands. These commands are used as a guide to the desired format by the DOC Document Processor. Each command is preceded by a backslash (\); should the need arise to include in the text a backslash that does not preface a command, two backslashes should be entered. Note that a command may be in upper- or lower-case letters without changing its function or operation (that is, the command \SL2 performs exactly the same function as the command \sl2).

<u>Format Command</u>	<u>Function</u>
\as	begin "as is" text
\//	end "as is" text
\bf	footer text
\bh	header text
\bl	body length
\cn	center
\lj	left justify
\em	even margins
\rj	right justify
\is	indentation set (for use with the new paragraph command below)
\pp#	new paragraph (# is lines skipped)
\sl#	skip # lines
\nl	new line
\sp#	skip # spaces
\ps#	new page if less than # lines remain
\pg	new page
\pb#	page bottom numbering (# is first page)
\lm##	set left margin at column ##
\rm##	set right margin at column ##
\pl	purge line
\tc	clear tabs
\ts##	set tab at column ##
\tt	tab
\tf	tab with filler
\tb##	tab to column ## regardless of margins (absolute tab)

APPENDIX C. DISK AND DISKETTE CARE AND HANDLING

Diskette Care and Handling

The flexible disk, or diskette, is permanently enclosed by a durable, plastic covering. This outside jacket allows the diskette to be handled and at the same time gives a certain degree of protection for the oxide surface within. The covering also provides rigidity to the diskette, allowing it to be easily inserted into and removed from the diskette drives.

To extend the usable life of a diskette and to maximize trouble-free operation, the diskette should be handled with reasonable care. The following points of diskette care should be followed. Most manufacturers usually list these points on the protective envelope of the diskette as a reminder.

1. The diskette should be returned to its protective envelope when not in a drive unit.
2. The diskette in its envelope should be stored vertically. It should not be stacked or placed under heavy pressure as this can cause warping of the oxide surface.
3. Too many diskettes should not be forced into one box.
4. The diskette should not be exposed to any magnetizing force in excess of 50 oersted. The 50 oersted level can be reached about three inches away from a typical source such as electric motors and transformers.
5. Diskettes should not be subjected to extremes of heat. They should not be kept in direct sunlight as warping can result.
6. The label on the diskette should be written on only with a felt-tipped pen. Pencils, ballpoint pens, or extreme pressure from felt-tipped pens can emboss the oxide surface within and destroy data.
7. The physical oxide surface should never be touched. Skin oils transferred to the surface in this manner can attract and retain dust and other contaminants.

8. The surface of the diskette should never be wiped or cleaned. All physical contact with the surface is to be avoided.
9. The diskette should never be forced into the drive. Neither should the diskette be folded or bent.
10. The door on the diskette drive should not be closed before the diskette has been inserted all the way. Damage to the drive hub hole can result. Likewise, the door on the drive should be fully opened before the diskette is removed.

The diskette may or may not have a write-protect hole along the edge that is inserted first into the drive. This hole is located 6.25 inches from the right edge (as seen from above the diskette). When the hole is not covered, the diskette is write-protected (that is, it may not be written on). The hole must be covered in order to permit writing on the diskette; use an opaque label or tape to cover the hole.

The single-sided diskette is recorded in a format that is similar to the single-sided, single-density format of an IBM-3740 diskette. The detailed format description is contained in the IBM document number GA21-9190-3, "IBM One-sided Diskette OEM Information," Appendix B. The format described in that appendix is in reference to IBM part number 2305830.

The single-sided format is similar to the IBM 3740 format insofar as the addressing information is concerned. The usage and content of the actual sectors and cylinders is not necessarily similar.

The double-sided diskette is recorded in the Motorola single-density, double-sided format. This format is an extension of the single-sided, single-density format onto the other side of the diskette.

Cartridge Disk Care and Handling

The cartridge disks used by Codex 10 Mb Disk Storage are precision devices capable of storing up to five million characters of formatted data. Enclosed within the plastic cartridge is a metal disk covered with an oxide coating. Data is stored on this metal disk through the use of electrical impulses (much the same way that a tape recorder stores sound). Since the disk drive can read from and write on the disk without ever making physical contact, a cartridge disk can last almost indefinitely. But there are things that

can shorten (or end) the life of a cartridge disk: negligence or abuse on the part of the people who handle it.

As with any piece of precision equipment, cartridge disks are manufactured to close tolerances and are extremely sensitive to shock and contamination. The following rules, if diligently followed, permit a disk cartridge to be used indefinitely:

1. Never operate disk units beyond their environmental range! 10 Mb Disk Storage disk drives are designed to operate from 60 to 100 degrees Fahrenheit (15 to 38 degrees Celsius) with from 8 to 80 percent relative humidity (non-condensing).
2. Disk cartridges which have been exposed to environmental conditions in excess of those described above should be permitted to become acclimated to operating conditions for at least two hours before being used (due to the density at which recording information is stored on the disk, the variation in disk size caused by temperature changes can result in information not being where it is supposed to be). Acclimate the disk by placing it in the same room with the disk drive.
3. Cartridge disks may be stored in temperatures from minus 40 degrees to 150 degrees Fahrenheit (minus 40 to 65 degrees Celsius) with from 8 to 80 percent relative humidity (non-condensing).
4. For long periods of storage, the cartridge disk should be returned to its original packing carton for protection against dust, rapid or extreme temperature changes, and other potentially damaging agents.
5. Handle disk cartridges carefully! Dropping or otherwise handling a disk cartridge roughly can bend the metal disk, causing damage to the disk drive or the loss of data on the disk (or both). If a disk has been dropped or is suspected of having been damaged, do not use it without a careful inspection by trained personnel.
6. Although the plastic cartridges are possessed of adequate structural strength to permit their stacking on top of one another, this is not recommended because of possible damage

should they fall.

7. Do not touch the disk surface itself! The mechanism by which data is written on and read from the disk is suspended over the the disk surface on a microscopic cushion of air. Contamination by dust, smoke particles, or skin oil can interfere with this cushion and cause damage to the disk drive and the loss of data on the disk.
8. Always keep the bottom cover on the cartridge to reduce the possibility of contamination. Never place the cartridge disk on any surface without the bottom cover in place. When loading or unloading cartridge disks, place the cartridge (with the bottom cover in place) on only a clean, flat surface in a room free from cigarette smoke, dust, and other contaminants.
9. Carry cartridge disks only by the carrying handle provided. This handle supports the disk in the same way that the drive itself does, and thus prevents damage to the disk.
10. Periodically clean the bottom cover, both on the inside and the outside, by wiping with an alcohol-dampened, lint-free cloth.
11. Keep the cartridge disk away from strong magnetic fields such as those created by transformers or large electric motors. Since data is recorded on the disk magnetically, exposing the disk to a strong magnetic field may erase data.
12. As a general rule, protect cartridge disks from contamination and rapid temperature changes by keeping them away from direct sunlight, heating and air-conditioning vents, and dusty or smoke-laden air.

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